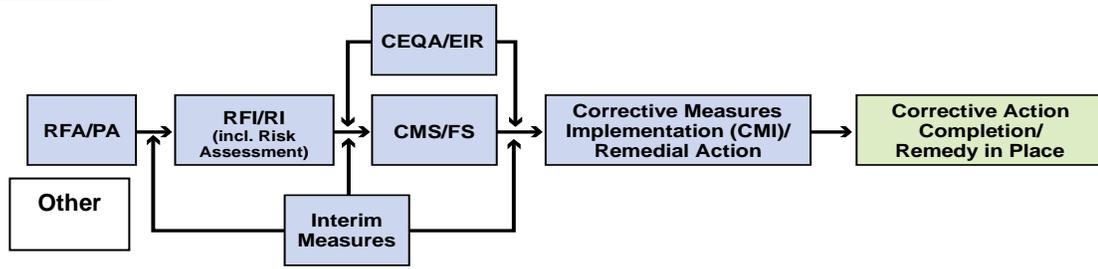


# Topock Project Executive Abstract

<p>Document Title: First Quarter 2011 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&amp;E Topock Compressor Station, Needles, California</p> <p>Submitting Agency: DTSC</p> <p>Final Document? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Date of Document: 4/29/2011</p> <p>Who Created this Document?: (i.e. PG&amp;E, DTSC, DOI, Other)</p> <p>PG&amp;E</p>
<p>Priority Status: <input type="checkbox"/> <b>HIGH</b> <input type="checkbox"/> <b>MED</b> <input checked="" type="checkbox"/> <b>LOW</b></p> <p>Is this time critical? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Action Required:</p> <p><input checked="" type="checkbox"/> Information Only <input type="checkbox"/> Review &amp; Comment</p> <p>Return to: _____</p> <p>By Date: _____</p> <p><input type="checkbox"/> Other / Explain:</p>
<p>Type of Document:</p> <p><input type="checkbox"/> Draft <input checked="" type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Memo</p> <p><input type="checkbox"/> Other / Explain:</p>	<p>What does this information pertain to?</p> <p><input type="checkbox"/> Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA)</p> <p><input type="checkbox"/> RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment)</p> <p><input type="checkbox"/> Corrective Measures Study (CMS)/Feasibility Study (FS)</p> <p><input type="checkbox"/> Corrective Measures Implementation (CMI)/Remedial Action</p> <p><input type="checkbox"/> California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR)</p> <p><input checked="" type="checkbox"/> Interim Measures</p> <p><input type="checkbox"/> Other / Explain:</p>
<p>What is the consequence of NOT doing this item? What is the consequence of DOING this item?</p> <p>Report is required to be in compliance with DTSC requirements.</p>	<p>Is this a Regulatory Requirement?</p> <p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>If no, why is the document needed?</p> <p>Other Justification/s:</p> <p><input type="checkbox"/> Permit <input type="checkbox"/> Other / Explain:</p>
<p>Brief Summary of attached document:</p> <p>This quarterly report documents the monitoring activities and performance evaluation of the Interim Measure (IM) hydraulic containment system under the IM Performance Monitoring Program and the Groundwater Monitoring Program and Surface Water Monitoring Program for the Topock Project. Hydraulic and chemical monitoring data were collected and used to evaluate IM hydraulic containment system performance based on a set of standards approved by DTSC. Key items included in this report are: (1) measured groundwater elevations and hydraulic gradient data at compliance well pairs that indicate the direction of groundwater flow is away from the Colorado River and towards the pumping centers onsite; (2) hexavalent chromium data for monitoring wells; (3) pumping rates and volumes from the IM extraction system; and (4) Groundwater Monitoring Program and Surface Water Monitoring Program activities and results.</p> <p>Based on the data and evaluation presented in this report, the IM performance standard has been met for the first quarter 2011 reporting period, which includes the months of January, February, and March 2011. The average pumping rate for the IM extraction system over the first quarter 2011 was 132.0 gallons per minute, and an estimated 70 kilograms of chromium were removed.</p> <p>Written by: Pacific Gas and Electric Company</p>	
<p>Recommendations:</p> <p>This report is for information only.</p>	
<p>How is this information related to the Final Remedy or Regulatory Requirements:</p> <p>This report is required by DTSC as part of the Interim Measures Performance Monitoring Program.</p>	
<p>Other requirements of this information?</p> <p>None.</p>	

Related Reports and Documents:

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



**Legend**  
RFA/PA – RCRA Facility Assessment/Preliminary Assessment  
RFI/RI – RCRA Facility Investigation/CERCLA Remedial Investigation (including Risk Assessment)  
CMS/FS – RCRA Corrective Measure Study/CERCLA Feasibility Study  
CEQA/EIR – California Environmental Quality Act/Environmental Impact Report

Version 9



**Yvonne J. Meeks**  
Manager

Environmental Remediation  
Gas Transmission & Distribution

*Mailing Address*  
4325 South Higuera Street  
San Luis Obispo, CA 93401

*Location*  
6588 Ontario Road  
San Luis Obispo, CA 93405

805.234.2257  
Fax: 805.546.5232  
E-Mail: [Yjm1@Pge.Com](mailto:Yjm1@Pge.Com)

April 29, 2011

Mr. Aaron Yue  
Project Manager  
California Environmental Protection Agency,  
Department of Toxic Substances Control  
5796 Corporate Avenue  
Cypress, CA 90630

**Subject:** *First Quarter 2011 Interim Measures Performance and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California (Document ID: PGE20110429A)*

Dear Mr. Yue:

Enclosed is the *First Quarter 2011 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California* for PG&E's Interim Measures (IM) Performance Monitoring Program and the Groundwater Monitoring Program and Surface Water Monitoring Program for the Topock project. This report presents the first quarter (January through March 2011) performance monitoring results for the IM hydraulic containment system and summarizes the operations and performance evaluation for the reporting period. This report also presents groundwater and surface water monitoring activities, results, and analyses related to the Groundwater and Surface Water Monitoring Programs during the reporting period.

The IM quarterly performance monitoring report is submitted in conformance with the reporting requirements in the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC's) IM directive dated February 14, 2005 and updates and modifications approved by DTSC in letters or emails dated October 12, 2007, July 14, 2008, July 17, 2008, March 3, 2010, April 28, 2010, and July 23, 2010.

Please contact me at (805) 234-2257 if you have any questions on the combined monitoring report. Comments regarding the new report format and contents are welcomed.

Sincerely,

A handwritten signature in blue ink that reads 'Yvonne Meeks'.

Yvonne Meeks  
Topock Project Manager

Mr. Aaron Yue  
April 29, 2011  
Page 2

Enclosure

*First Quarter 2011 Interim Measures Performance and Site-Wide Groundwater and Surface Water  
Monitoring Report, PG&E Topock Compressor Station, Needles, California*

cc: Chris Guerre/DTSC  
Karen Baker/DTSC  
Susan Young/CA-SLC  
Nancy Garcia/AZ-SLD

---

*Final Report*

**First Quarter 2011  
Interim Measures Performance  
Monitoring and Site-Wide  
Groundwater and Surface Water  
Monitoring Report  
PG&E Topock Compressor Station  
Needles, California**

Document ID: PGE20110429A

Prepared for

**California Department of  
Toxic Substances Control**

on behalf of

**Pacific Gas and Electric Company**

April 29, 2011

**CH2MHILL**

155 Grand Ave. Ste. 1000  
Oakland, CA 94612

# First Quarter 2011 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report

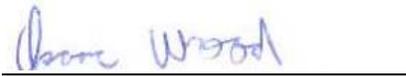
## Interim Measures Performance Monitoring Program and Groundwater Monitoring Program PG&E Topock Compressor Station Needles, California

Prepared for  
California Department of Toxic Substances Control

On behalf of  
Pacific Gas and Electric Company

April 29, 2011

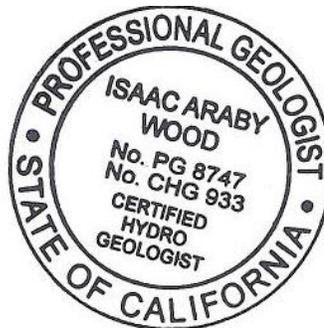
This report was prepared under the supervision of a  
California Professional Geologist



Isaac Wood  
Project Hydrogeologist, P.G., C.Hg



Jay Piper  
CH2M HILL Project Manager



# Contents

---

Section	Page
<b>Acronyms and Abbreviations .....</b>	<b>ix</b>
<b>1.0 Introduction.....</b>	<b>1-1</b>
1.1 Site-wide Groundwater and Surface Water Monitoring Program.....	1-1
1.2 Interim Measure Performance Monitoring Program .....	1-3
<b>2.0 First Quarter 2011 Monitoring Activities .....</b>	<b>2-1</b>
2.1 Groundwater Monitoring Program .....	2-1
2.1.1 Monthly.....	2-1
2.1.2 Quarterly.....	2-1
2.2 Surface Water Monitoring Program .....	2-2
2.3 Performance Monitoring Program.....	2-2
<b>3.0 Results for Site-Wide Groundwater Monitoring and Surface Water Sampling ....</b>	<b>3-1</b>
3.1 Groundwater Results for Cr(VI) and Chromium .....	3-1
3.2 Surface Water Results for Cr(VI) and Chromium.....	3-1
3.3 Other Monitoring Results.....	3-1
3.3.1 Title 22 Metals .....	3-1
3.3.2 Arsenic Sampling in Monitoring Wells.....	3-2
3.3.3 Sample Results for Packer Wells .....	3-2
3.4 Data Validation and Completeness .....	3-2
<b>4.0 IM Performance Monitoring Program Evaluation .....</b>	<b>4-1</b>
4.1 Water Quality Results for PMP Floodplain Wells .....	4-1
4.2 Cr(VI) Distribution and Trends in PMP Wells .....	4-1
4.3 PMP Contingency Plan Cr(VI) Monitoring .....	4-2
4.4 Extraction Systems Operations.....	4-2
4.5 Hydraulic Gradient and River Levels during Quarterly Period .....	4-3
4.6 Projected River Levels during Next Quarter .....	4-4
4.7 Quarterly PMP Evaluation Summary .....	4-5
<b>5.0 Upcoming Operation and Monitoring Events .....</b>	<b>5-1</b>
5.1 Groundwater Monitoring Program .....	5-1
5.1.1 Quarterly Monitoring .....	5-1
5.1.2 Monthly Monitoring .....	5-1
5.2 Surface Water Monitoring Program .....	5-1
5.3 Performance Monitoring Program.....	5-1
5.3.1 Extraction.....	5-1
5.3.2 Transducer Download .....	5-2
<b>6.0 References .....</b>	<b>6-1</b>

**Tables**

- 3-1 Groundwater Sampling Results, February 2010 through March 2011
- 3-2 Surface Water Sampling Results, First Quarter 2011
- 3-3 Title 22 Metals Results, First Quarter 2011
- 4-1 Pumping Rate and Extracted Volume for IM System, First Quarter 2011
- 4-2 Analytical Results for Extraction Wells, October 2009 through March 2011
- 4-3 Average Hydraulic Gradients Measured at Well Pairs, First Quarter 2011
- 4-4 Predicted and Actual Monthly Average Davis Dam Discharge and Colorado River Elevation at I-3

**Figures**

- 1-1 Locations of IM-3 Facilities and Monitoring Locations
- 1-2 Monitoring Locations and Sampling Frequency for GMP
- 1-3 Monitoring Locations and Sampling Frequency for RMP
- 1-4 Locations of Wells and Cross-sections Used for IM Performance Monitoring
- 3-1a Cr(VI) Sampling Results, Shallow Wells in Alluvial Aquifer and Bedrock, First Quarter 2011
- 3-1b Cr(VI) Sampling Results, Mid-depth Wells in Alluvial Aquifer and Bedrock, First Quarter 2011
- 3-1c Cr(VI) Sampling Results, Deep Wells in Alluvial Aquifer and Bedrock, First Quarter 2011
- 4-1 Maximum Cr(VI) Concentrations in Alluvial Aquifer, First Quarter 2011
- 4-2 Cr(VI) Concentrations Floodplain Cross-section B, First Quarter 2011
- 4-3 Cr(VI) Concentration Trends in Selected Performance Monitoring Wells, April 2005 through March 2011
- 4-4a Average Groundwater Elevations for Shallow Wells and River Elevations, First Quarter 2011
- 4-4b Average Groundwater Elevations for Mid-depth Wells, First Quarter 2011
- 4-4c Average Groundwater Elevations for Deep Wells, First Quarter 2011
- 4-5 Average Groundwater Elevations for Wells in Floodplain Cross-section A, First Quarter 2011
- 4-6 Measured Hydraulic Gradients, River Elevations, and Pumping Rate, First Quarter 2011
- 4-7 Past and Predicted Future River Levels at Topock Compressor Station

**Appendices**

- A Lab Reports, First Quarter 2011 (provided on CD-ROM only with hardcopy submittal)
- B Other Groundwater Monitoring Results

**Appendix B Tables**

- B-1 Arsenic Results in Monitoring Wells, March 2010 through March 2011
- B-2 Analytical Results for Packer Wells, First Quarter 2011

- C Groundwater Monitoring Data for GMP and Interim Measures Monitoring Wells

**Appendix C Tables**

- 
- C-1 Chemical Performance Monitoring Analytical Results, March 2005 through March 2011
  - D Interim Measures Extraction System Operations Log, First Quarter 2011
  - E Hydraulic Data for Interim Measures Reporting Period

**Appendix E Tables**

- E-1 Average Monthly and Quarterly Groundwater Elevations, First Quarter 2011

**Appendix E Figures**

- E-1A MW-20 Cluster Hydrographs
- E-1B MW-22, MW-25, and MW-26 Cluster Hydrographs
- E-1C MW-27 Cluster Hydrographs
- E-1D MW-28 Cluster Hydrographs
- E-1E MW-30-50 Hydrograph
- E-1F MW-31 Cluster Hydrographs
- E-1G MW-32 Hydrograph
- E-1H MW-33 Cluster Hydrographs
- E-1I MW-34 Cluster Hydrographs
- E-1J MW-35 Cluster Hydrographs
- E-1K MW-36 Cluster Hydrographs
- E-1L MW-39 Cluster Hydrographs
- E-1M MW-42 Cluster Hydrographs
- E-1N MW-43 Cluster Hydrographs
- E-1O MW-44 Cluster Hydrographs
- E-1P MW-45-95a Hydrograph
- E-1Q MW-46 Hydrograph
- E-1R MW-47 Cluster Hydrographs
- E-1S MW-49 Hydrograph
- E-1T MW-50 Hydrograph
- E-1U MW-26 and MW-51 Hydrographs
- E-1V In situ Pilot Study Well Hydrographs

# Acronyms and Abbreviations

---

µg/L	micrograms per liter
ft bgs	feet/foot below ground surface
BOR	United States Bureau of Reclamation
Cr(VI)	hexavalent chromium
DTSC	California Environmental Protection Agency, Department of Toxic Substances Control
FLUTE	Flexible Liner Underground Technologies
ft/ft	feet per foot
GMP	Groundwater Monitoring Program
gpm	gallons per minute
IM	Interim Measure
IMCP	Interim Measures Contingency Plan
IM-3	Interim Measure Number 3
PG&E	Pacific Gas and Electric Company
PMP	Performance Monitoring Program
RCRA	Resource Conservation and Recovery Act
RMP	Surface Water Monitoring Program
TDS	total dissolved solids

# 1.0 Introduction

---

Pacific Gas and Electric Company (PG&E) is implementing Interim Measures (IM) to address chromium concentrations in groundwater at the Topock Compressor Station near Needles, California. The Topock Compressor Station is located in eastern San Bernardino County, 15 miles southeast of the city of Needles, California, as shown in Figure 1-1. (All figures are located at the end of the report.) This report presents the monitoring data from three key PG&E monitoring programs, which include:

- Site-wide Groundwater Monitoring Program (GMP).
- Site-wide Surface Water Monitoring Program (RMP).
- Interim Measure Number 3 (IM-3) Performance Monitoring Program (PMP) (data and evaluations).

The data presented for the GMP were collected from throughout the months of January through March 2011. The data for the RMP were collected from January 18 through 19, 2011 and March 9 through 10, 2011. The data collected as part of the GMP and RMP are presented in Section 3.0. The data collected throughout the quarter as part of the PMP are presented in Section 4.0. This combined PMP and GMP (including RMP) reporting format was approved by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) in May 2009 (DTSC, 2009a). On July 23, 2010, DTSC approved a new sampling event timing and reporting schedule for the PMP, GMP and RMP programs (DTSC, 2010a). In compliance with this approval, the first quarter 2011 monitoring report contains data from January through March 2011.

## 1.1 Site-wide Groundwater and Surface Water Monitoring Program

The Topock GMP and RMP were initiated as part of a Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation and Liability Act facility investigation/remedial investigation groundwater investigation. These programs are being regulated under a Corrective Action Consent Agreement issued by the DTSC in 1996 for the Topock site (United States Environmental Protection Agency ID No. CAT080011729).

Groundwater monitoring data collected between July 1997 and October 2007 are presented in the *Revised Final RCRA Facility Investigation and Remedial Investigation Report, Volume 2 – Hydrogeological Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*, dated February 11, 2009 (CH2M HILL, 2009a). Select groundwater and surface water monitoring data from November 2007 through September 2008 are presented in the *Final RCRA Facility Investigation/Remedial Investigation Report, Volume 2 Addendum – Hydrogeologic Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and*

*Electric Company, Topock Compressor Station, Needles, California, dated June 29, 2009 (CH2M HILL, 2009b).*

For background and descriptions of the current groundwater and surface water sampling, analyses, and monitoring programs, refer to PG&E's *Fourth Quarter 2010 and Annual Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California, dated March 15, 2011 (CH2M HILL, 2011a).*

## GMP and RMP Monitoring Networks

Figure 1-2 shows the current locations and sampling frequencies of the monitoring wells in the GMP. The complete GMP includes 123 groundwater monitoring wells, which consist of:

- One hundred six monitoring wells in California.
- Eight monitoring wells in Arizona.
- Two water supply wells.
- Two active extraction wells.
- Five test wells.

Sampling frequencies for the GMP wells were updated beginning in First Quarter 2010 following the DTSC directive dated March 3, 2010 (DTSC, 2010b). Figure 1-2 shows these updated frequencies. Sampling frequencies for the Arizona monitoring wells were updated following the April 23, 2010 approval from the Arizona Department of Environmental Quality (2010) and the April 28, 2010 directive from DTSC (DTSC, 2010c).

Figure 1-3 shows the locations and sampling frequencies of the RMP. The RMP consists of:

- Ten river channel surface water monitoring locations.
- Four shoreline surface water monitoring locations.
- Two other surface water monitoring locations.

During the week of January 18, 2010, a series of storm events occurred that caused flooding of low-lying areas and damaged several wells in the GMP monitoring network, including the bedrock wells of the MW-58 cluster: MW-58-115 and MW-58-205. As a result of this cluster being inundated and filled with floodwater, the Flexible Liner Underground Technologies (FLUTE) well liner that allowed discrete sampling at the 115 foot below ground surface (ft bgs) and 205 ft bgs depth intervals was damaged and subsequently removed from the borehole. The MW-58 bedrock well cluster was configured as an open rock borehole and temporarily re-designated as MW-58BR. In September 2010, at the direction of DTSC, a packer system was installed into the open borehole MW-58BR at approximately 115 ft bgs, dividing the open borehole into upper and lower intervals designated as MW-58BR-UPR and MW-58BR-LWR, respectively (CH2M HILL, 2010a). In January of 2011, the packer was moved to a approximately 160 ft bgs, and the upper and lower intervals were designated as MW-58BR-UPR-160 and MW-58BR-LWR-160, respectively.

On an August 5, 2010 conference call, DTSC directed PG&E to initiate monthly sampling at the MW-64 well cluster. Following the results from MW-58 packer samples, DTSC directed PG&E to remove the FLUTE liner creating depth-discrete sampling zones in the MW-64

cluster (MW-64-150, MW-64-205, and MW-64-260). The FLUTE liner was removed during the week of December 6, 2010, and the open borehole was temporarily re-designated as MW-64BR. Following removal of the FLUTE system, the open borehole was developed, and a sample of the open borehole was collected on December 20, 2010. A packer system dividing the MW-64 borehole into two depth intervals similar to MW-58BR was installed in January 2011 as directed by DTSC (CH2M HILL, 2010b). This packer was set at about 150 ft bgs, and the upper and lower intervals were designated as MW-64BR-UPR-150 and MW-64BR-LWR-150, respectively.

The two wells composing the MW-38 cluster, located in Bat Cave Wash adjacent to the Topock Compressor Station, were also damaged in the storm events during the week of January 18, 2010. Plans to repair monitoring well MW-38D and repair or replace monitoring well MW-38S provided in the technical memorandum entitled *Final Revised Implementation Plan for Repair of Monitoring Wells MW-38S and MW-38D and Old Well/Pipe Reconnaissance* (CH2M HILL, 2011b) were approved by DTSC and the United States Department of the Interior on February 24 and 25, 2011, respectively. Repair/replacement of MW-38S and MW-38D is pending as of the time of submittal of this report.

## 1.2 Interim Measure Performance Monitoring Program

In compliance with the requirements for IM monitoring and reporting outlined in the DTSC IM performance directive of March 2005 and in subsequent directives from the DTSC in 2007 (DTSC, 2005a, 2007a-c), this document presents the First Quarter 2011 PMP evaluation report for the IM monitoring activities from January through March 2011.

The Topock project 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 are collectively referred to as IM-3. Currently, the IM-3 facilities include a groundwater extraction system (four extraction wells: TW-2D, TW-3D, TW-2S, and PE-1), conveyance piping, a groundwater treatment plant, and an injection well field for the discharge of the treated groundwater. Figure 1-1 shows the location of the IM-3 extraction, conveyance, treatment, and injection facilities.

In a letter dated February 14, 2005, DTSC established the criteria for evaluating the performance of the IM (DTSC, 2005c). As defined by DTSC, the performance standard for this IM is to “establish and maintain a net landward hydraulic gradient, both horizontally and vertically, that ensures that hexavalent chromium [Cr(VI)] concentrations at or greater than 20 micrograms per liter [ $\mu\text{g}/\text{L}$ ] in the floodplain are contained for removal and treatment” (DTSC, 2005c). A draft *Performance Monitoring Plan for Interim Measures in the Floodplain Area, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California* (CH2M HILL, 2005) was submitted to DTSC on April 15, 2005 (herein referred to as the Performance Monitoring Plan).

The February 2005 DTSC directive also defined the monitoring and reporting requirements for the IM (DTSC, 2005c). In October 2007, DTSC modified the reporting requirements for the PMP (DTSC, 2007a) to discontinue monthly performance monitoring reports (the quarterly and annual reporting requirements were unchanged). Additional updates and

modifications to the PMP were approved by DTSC in letters dated October 12, 2007, July 14, 2008, July 17, 2008 (DTSC, 2007a, 2008a-b), and July 23, 2010 (DTSC, 2010a).

## PMP Monitoring Networks

Figure 1-4 shows the locations of wells used for IM extraction, performance monitoring, and hydraulic gradient measurements. With approval from DTSC, the list of wells included in the PMP was modified beginning August 1, 2008. The performance monitoring wells that were in service/active as of March 2011 are defined as:

- **Floodplain Wells** (monitoring wells on the Colorado River floodplain).
- **Intermediate Wells** (monitoring wells located immediately north, west, and southwest of the floodplain).
- **Interior Wells** (monitoring wells located upgradient of IM pumping).

Three extraction wells (TW-2D, TW-3D, and TW-2S) are located on the MW-20 bench. In addition, extraction well PE-1 is located on the floodplain approximately 450 feet east of extraction well TW-3D, as shown in Figure 1-4. Currently, extraction wells TW-3D and PE-1 operate full time.

Groundwater monitoring wells installed on the Arizona side of the Colorado River are not formally part of the PMP, but some of these wells have been used to collect groundwater elevation data for evaluating the hydraulic gradient on the Arizona side of the river.

The wells screened in the unconsolidated alluvial fan and fluvial deposits, which comprise the Alluvial Aquifer, have been separated into three depth intervals to present groundwater quality and groundwater level data. The depth intervals of the Alluvial Aquifer in the floodplain area – designated upper (shallow wells), middle (mid-depth wells), and lower (deep wells) – are based on grouping the monitoring wells screened at common elevations. These divisions do not correspond to any lithostratigraphic layers within the aquifer. The floodplain aquifer is considered to be hydraulically undivided. The subdivision of the aquifer into three depth intervals is an appropriate construct for presenting and evaluating groundwater quality data in the floodplain. The three-interval concept is also useful for presenting and evaluating lateral gradients while minimizing effects of vertical gradients and observing the influence of pumping from partially penetrating wells.

## 2.0 First Quarter 2011 Monitoring Activities

---

This section provides a summary of the monitoring and sampling activities completed during First Quarter 2011.

### 2.1 Groundwater Monitoring Program

#### 2.1.1 Monthly

The active IM extraction wells (PE-1 and TW-3D) were sampled for Cr(VI) and chromium during January, February, and March 2011.

Wells MW-34-100 and MW-46-175 were sampled monthly in January per DTSC direction (DTSC, 2010a) for Cr(VI), chromium, and arsenic. In addition, open boreholes with packers installed (MW-58BR and MW-64BR) were sampled monthly<sup>1</sup> for Cr(VI), chromium, arsenic, and a larger suite of analytes according to their approved implementation plans (CH2M HILL, 2010a-b).

#### 2.1.2 Quarterly

Following the July 23, 2010 sampling schedule approval (DTSC, 2010a), the first quarter 2011 GMP quarterly groundwater monitoring event was conducted between February 7 through February 10, 2011 and consisted of sampling 29 groundwater monitoring wells.

These wells were sampled for Cr(VI), chromium, field oxidation-reduction potential, field specific conductance, and field pH.

In addition, the following monitoring activities were conducted at selected GMP wells during the first quarter 2011 sampling event:

- One well (MW-12) screened in alluvial sediments was sampled for California Code of Regulations Title 22 metals analyses, which includes arsenic.
- Eight GMP wells screened in fluvial sediments were sampled for arsenic, as directed by DTSC in its Corrective Measures Study review comment No. 186 (DTSC, 2009b).
- Arsenic was also analyzed in groundwater samples from two bedrock monitoring wells.
- Four wells (MW-20-100, MW-130, MW-50-200, and PGE-8) were not sampled during the December 2010 sampling event due to field logistical issues. Makeup sampling was conducted in these four wells in February 2011.

---

<sup>1</sup> The three purge volume method took much longer on these wells due to their very slow purge rates. Therefore they were sampled as often as possible.

## 2.2 Surface Water Monitoring Program

Quarterly surface water sampling was conducted on January 18 through 19, 2011 and March 9 through 10, 2011 from the complete RMP monitoring network. Samples were analyzed for Cr(VI), chromium, specific conductance, and pH.

## 2.3 Performance Monitoring Program

PMP pressure transducers are downloaded in the first week of every month (January, February, and March). The transducers in the key monitoring wells (MW-27-085, MW-31-135, MW-33-150, MW-34-100, and MW-45-095a) are downloaded weekly.

## 3.0 Results for Site-Wide Groundwater Monitoring and Surface Water Sampling

---

### 3.1 Groundwater Results for Cr(VI) and Chromium

Table 3-1 presents the results for Cr(VI), chromium, field oxidation-reduction potential, field specific conductance, and field pH in groundwater samples collected from January 2011 through March 2011. During First Quarter 2011, the maximum detected Cr(VI) concentration was 10,100 µg/L at well MW-20-130. The laboratory reports for results from January through March 2011 are presented in Appendix A.

Figures 3-1a through 3-1c present the Cr(VI) results for wells monitoring the shallow (upper depth interval), mid-depth (middle depth interval), and deep (lower depth interval) wells of the Alluvial Aquifer and bedrock, respectively, from the first quarter 2011. Figures 3-1a through 3-1c also show the approximate outlines of Cr(VI) concentration contours greater than 32 µg/L for the Alluvial Aquifer and bedrock based on results from the more comprehensive groundwater sampling event conducted in December 2010. The value of 32 µg/L is based on the calculated natural background upper tolerance limit for Cr(VI) in groundwater from the background study (CH2M HILL, 2009a).

The areas where Cr(VI) concentrations are greater than 32 µg/L in the shallow, mid-depth, and deep intervals of the Alluvial Aquifer and East Ravine bedrock wells are generally similar to the previous quarterly monitoring events (CH2M HILL, 2009c-e, 2010c-d, 2011a).

### 3.2 Surface Water Results for Cr(VI) and Chromium

Table 3-2 presents results of Cr(VI), chromium, specific conductance, and lab pH from the low river sampling event conducted in January 2011 and the March 2011 surface water monitoring event. Cr(VI) and chromium were not detected above the reporting limit at any in-channel, shoreline, or other surface water monitoring locations during First Quarter 2011.

### 3.3 Other Monitoring Results

#### 3.3.1 Title 22 Metals

Table 3-3 presents the Title 22 metals results for the GMP monitoring well MW-12 sampled during First Quarter 2011. In addition to chromium, the trace metals detected in MW-12 during the first quarter 2011 groundwater sampling event were arsenic, barium, molybdenum, selenium, and vanadium. The dissolved concentrations of the trace metals detected during the first quarter 2011 event—other than chromium and arsenic—are below the respective federal and California maximum contaminant level drinking water standards.

### 3.3.2 Arsenic Sampling in Monitoring Wells

Nine fluvial/alluvial wells (including one makeup well from the December 2010 sampling event sampled in February 2011) were sampled for arsenic in the first quarter 2011 event. These results are presented in Appendix B, Table B-1. Three of the monitoring well samples had arsenic concentrations greater than the California maximum contaminant level of 10 µg/L (MW-12, MW-33-40, and MW-42-55). The maximum concentration was detected in MW-12 at 48.0 µg/L. All eight arsenic concentrations are within the previously observed ranges for each well.

Two bedrock wells (MW-62-110 and MW-62-190) were sampled for arsenic in the first quarter 2011 event. These results are presented in Appendix B, Table B-1. One of the monitoring well samples had arsenic concentrations greater than the California maximum contaminant level of 10 µg/L (MW-62-110 at 14.0 µg/L).

### 3.3.3 Sample Results for Packer Wells

In January 2011, at the direction of DTSC, the packer system installed into the open borehole MW-58BR was moved to 160 ft bgs, dividing the open borehole into upper and lower intervals designated as MW-58BR-UPR-160 and MW-58BR-LWR-160, respectively. In January 2011, a packer system was also installed into the open borehole MW-64BR at about 150 ft bgs, dividing the open borehole into upper and lower intervals designated as MW-64BR-UPR-150 and MW-64BR-LWR-150.

The packer-equipped boreholes MW-58BR and MW-64BR were sampled for arsenic during January, February, and March 2011. These results are presented in Appendix B, Table B-1. No results exceeded the California maximum contaminant level of 10 µg/L. Additional, sample results for these packer-equipped boreholes in the first quarter 2011 are presented in Appendix B, Table B-2.

## 3.4 Data Validation and Completeness

Laboratory analytical data from the first quarter 2011 GMP sampling events were reviewed by project chemists to assess data quality and to identify deviations from analytical requirements. The completeness objectives were met for all method and analyte combinations. No significant analytical deficiencies were identified in the first quarter 2011 GMP data. Additional details are provided in the data validation reports, which are kept in the project file and are available upon request.

# 4.0 IM Performance Monitoring Program Evaluation

---

## 4.1 Water Quality Results for PMP Floodplain Wells

Table C-1 in Appendix C presents the results of the general chemistry and stable isotope analyses for 15 PMP monitoring wells and two river stations during sampling events from March 2005 through March 2011. In July 2008, DTSC approved modifications to the PMP IM chemical performance monitoring program (DTSC, 2008b). With those modifications, there are now 10 monitoring wells and one river station sampled for IM chemical performance monitoring. Figure 1-4 shows the locations of the monitoring wells sampled for the performance monitoring parameters. Water samples from the selected performance monitoring locations are analyzed for general chemistry parameters including total dissolved solids (TDS), chloride, sulfate, nitrate, bromide, calcium, potassium, magnesium, sodium, boron, alkalinity, deuterium, and oxygen-18 to monitor the effects of IM pumping on groundwater chemistry.

## 4.2 Cr(VI) Distribution and Trends in PMP Wells

The January through March 2011 distribution of Cr(VI) in the upper (shallow wells), middle (mid-depth wells), and lower (deep wells) intervals of the Alluvial Aquifer is shown in plan view and cross-section in Figure 4-1<sup>2</sup>. Figure 4-2 presents the January through March 2011 Cr(VI) results for cross-section B, oriented parallel to the Colorado River. The location of cross-section B is shown in Figure 1-4. The Cr(VI) concentration contours shown for the Alluvial Aquifer on these figures are based on results from the most recent comprehensive groundwater sampling conducted in December 2010.

Figure 4-3 presents Cr(VI) concentration trend graphs for selected deep monitoring wells in the floodplain area through March 2011. Sampling results are plotted for wells MW-34-100, MW-36-90, MW-36-100, MW-44-115, MW-44-125, and MW-46-175. The locations of the deep wells selected for performance evaluation are shown in Figure 1-4. Appendix C includes Cr(VI) concentration trend graphs for selected monitoring well clusters through March 2011.

Wells showing marked decreases in concentration are generally in the floodplain area where IM pumping is removing chromium in groundwater. Wells with historic detections near or at reporting limits remained at these levels during the first quarter 2011 period. A review of Figure 4-3 and Appendix C indicates that Cr(VI) concentrations have remained steady or have decreased in many wells since IM and PE-1 pumping began in 2004 and 2005, respectively.

---

<sup>2</sup> In Figures 4-1 and 4-2, the Cr(VI) concentrations are color-coded based on the groundwater background Cr(VI) concentration, which is 32 µg/L (CH2M HILL, 2009a). The 20 µg/L and 50 µg/L Cr(VI) concentration contours presented in Figures 4-1 and 4-2 are shown in accordance with DTSC's 2005 IM directive and are not based on the background Cr(VI) concentration for groundwater.

Key Trends for PMP groundwater monitoring wells sampled during First Quarter 2011 include:

- Concentrations at the MW-20 cluster (located near the TW-3D pumping well) indicate steady concentrations at MW-20-070 (since 2007), decreasing concentrations at MW-20-100 (since May 2007) and variable concentrations at MW-20-130, as shown in Figure C-3 in Appendix C.
- MW-28-90 Cr(VI) concentrations have remained less than laboratory reporting limits since installation in May 2004, as shown in Appendix C, Figure C-4.
- Mid-depth and deep MW-33 cluster Cr(VI) concentrations have shown stable to slightly increasing trends since 2005, as presented in Appendix C, Figure C-5.
- MW-33-40 results have been at or near reporting limits since 2004, as shown in Appendix C, Figure C-5.
- MW-34-80 Cr(VI) concentrations have been less than the reporting limits since June 2004, as shown in Appendix C, Figure C-6.
- As presented in Figure 4-3 and Appendix C, Figure C-6, well MW-34-100 has shown a fluctuating trend in Cr(VI) concentrations over the past 3 years. However, since June 2006, concentrations at this well have shown a general downward trend. Landward gradients have been present at this location since IM pumping began; therefore, the periodic increases in concentration observed at MW-34-100 do not indicate any movement of the plume toward the river.
- Deep well MW-44-115 has shown a downward trend since July 2006, as presented in Figure 4-3 and Appendix C, Figure C-10. Well MW-44-125 has also shown an overall downward trend since November 2008, as presented in Figure 4-3 and Appendix C, Figure C-10.
- Since installation in March 2006, concentrations in deep well MW-46-175 have generally been declining with seasonal fluctuations, as shown in Figure 4-3 and Appendix C, Figure C-11.

### 4.3 PMP Contingency Plan Cr(VI) Monitoring

The Topock Interim Measures Contingency Plan (IMCP) was developed to detect and control any possible migration of the Cr(VI) plume toward the Colorado River. Currently, the IMCP consists of 24 wells (CH2M HILL, 2005, 2006 and PG&E, 2007, 2008). Appendix C includes Cr(VI) concentration trend graphs for the IMCP wells. The IMCP well Cr(VI) results in First Quarter 2011 were all below their assigned trigger levels.

### 4.4 Extraction Systems Operations

Pumping data for the IM-3 groundwater extraction system for the first quarter reporting period of January 1, 2011 through March 31, 2011 are presented in Table 4-1. From January 1, 2011 through March 31, 2011, the volume of groundwater extracted and treated by the IM-3 system was 17,100,068 gallons. This resulted in removal of an estimated 70

kilograms of chromium from the aquifer during the period from January 1, 2011 through March 31, 2011.

During First Quarter 2011, extraction wells TW-3D and PE-1 operated at a combined pump rate of 132.0 gallons per minute (gpm), including periods of planned and unplanned downtime. The average monthly pumping rates were 130.7 gpm (January 2011), 132.9 gpm (February 2011), and 132.4 (March 2011) during the reporting period. Extraction wells TW-2S and TW-2D were not operated during First Quarter 2011. The operational run-time percentage for the IM extraction system was 98.4 percent during this reporting period. The operations log for the extraction system during First Quarter 2011, including planned and unplanned downtime, is included in Appendix D.

The concentrate (i.e., saline water) from the reverse osmosis system was shipped offsite as a RCRA non-hazardous waste and was transported to Liquid Environmental Solutions in Phoenix, Arizona for treatment and disposal. Three containers of solids from the IM-3 facility were disposed of at the Kettleman Hills Chemical Waste Management facility during First Quarter 2011. Daily IM-3 inspections included general facility inspections, flow measurements, and site security monitoring. Daily logs with documentation of inspections are maintained onsite.

During the first quarter 2011 reporting period, Cr(VI) concentrations in TW-3D have remained stable, ranging from a maximum value of 1,100 µg/L in January 2011 to a minimum value of 1,000 µg/L in February 2011, as shown in Table 4-2. TDS concentrations in TW-3D for this period have remained relatively stable, averaging about 5,200 milligrams per liter, as shown in Table 4-2.

The Cr(VI) concentrations in the extracted groundwater at well PE-1, located on the floodplain, have ranged from to 12.9 to 17.5 µg/L during the reporting period, as shown in Table 4-2. TDS concentrations in PE-1 for this period have also remained stable, averaging about 3,100 milligrams per liter.

## 4.5 Hydraulic Gradient and River Levels during Quarterly Period

During the reporting period, water levels were recorded at intervals of 30 minutes with pressure transducers in 53 wells and two river monitoring stations (I-3 and RRB). The data are typically continuous, with only short interruptions for sampling or maintenance. The locations of the wells monitored are shown in Figure 1-4.

Daily average groundwater and river elevations calculated from the pressure transducer data for the first quarter 2011 reporting period are summarized in Table E-1 in Appendix E. Groundwater elevations (or hydraulic heads) are adjusted for temperature and salinity differences between wells (i.e., adjusted to a common freshwater equivalent), as described in the Performance Monitoring Plan. Groundwater elevation hydrographs for the PMP wells during the first quarter 2011 reporting period are included in Appendix E. The elevation of the Colorado River measured at the I-3 gauge station (location shown in Figure 1-4) is also shown on the hydrographs in Appendix E.

Average First Quarter 2011 groundwater elevations for the shallow, mid-depth, and deep wells are presented and contoured in plan view in Figures 4-4a through 4-4c. Average groundwater elevations for wells on floodplain cross-section A are presented and contoured in Figure 4-5. Several monitoring wells are significantly deeper than other wells in the lower depth interval. Due to vertical gradients present at the Topock site, water levels in deeper wells tend to be higher than water levels in shallower wells. Consequently, some of the wells with screen intervals significantly deeper than most of the lower-interval wells exhibit water levels that are not contoured in the plan view in Figure 4-4c.

For the first quarter 2011 reporting period, a full set of transducer data was recorded in wells located on the Arizona side of the Colorado River. The quarterly average groundwater elevations for wells MW-55-120, MW-54-85, MW-54-140, and MW-54-195 are presented on Figure 4-4c and are used for contouring, where appropriate. With the exception of well MW-55-45, all of the wells in the MW-54 and MW-55 clusters are screened in the deep interval of the Alluvial Aquifer. Well MW-55-45 is screened over the boundary between the shallow and middle intervals.

Deep zone water levels shown in Figure 4-4c indicate that potentiometric levels in monitoring wells in Arizona are higher than those in wells across the river on the California floodplain. This means that the hydraulic gradient on the Arizona side of the river is directed to the west and, as a result, groundwater flow would also be towards the west in that area. This is consistent with the site conceptual model and with the current numerical groundwater flow model.

Hydraulic gradients were measured during the first quarter 2011 reporting period for well pairs selected for performance monitoring of the two pumping centers (TW-3D and PE-1). The following well pairs were approved by DTSC on October 12, 2007 (DTSC, 2007a) to define the gradients induced while pumping from two locations:

- MW-31-135 and MW-33-150 (northern gradient pair)
- MW-45-95 and MW-34-100 (central gradient pair)
- MW-45-95 and MW-27-85 (southern gradient pair)

Table 4-3 presents the average monthly hydraulic gradients that were measured between the gradient well pairs in the first quarter 2011. Figure 4-6 presents graphs of the hydraulic gradients, monthly average pumping rates, and river levels for the quarterly period. Strong landward gradients were measured each month. The overall average gradients for all well pairs ranged from 0.0050 to 0.0056 feet per foot (ft/ft). This is 5.0 to 5.6 times greater than the required gradient of 0.001 ft/ft. The gradient for the northern well pair ranged from 1.8 to 2.4 times the target gradient of 0.001 ft/ft. For the central well pair, the average landward gradient ranged from 9.7 to 10.3 times the target gradient. The southern well pair gradients averaged 3.3 to 4.2 times the target gradient for the first quarter 2011 reporting period.

## 4.6 Projected River Levels during Next Quarter

Colorado River stage near the Topock Compressor Station is measured at the I-3 location and is directly influenced by releases from Davis Dam and, to a lesser degree, from Lake Havasu elevations, both of which are controlled by the United States Bureau of Reclamation (BOR). Total releases from Davis Dam follow a predictable annual cycle, with largest

monthly releases typically in spring and early summer and smallest monthly releases in late fall/winter (November and December). Superimposed on this annual cycle is a diurnal cycle determined primarily by daily fluctuations in electric power demand. Releases within a given 24-hour period often fluctuate over a wider range of flows than that of monthly average flows over an entire year.

Figure 4-7 shows river stage measured at I-3 superimposed on the projected I-3 river levels. Projected river levels for future months are based on the BOR projections of Davis Dam discharge and Lake Havasu levels from the month preceding. For example, the projected river level for April 2011 is based on the March 2011 BOR data of Davis Dam release and Lake Havasu level not the actual release and level values. The variability between measured and projected river levels is due to the difference between measured and actual Davis Dam release and Lake Havasu levels. The more recent data plotted in Figure 4-7 are summarized in Table 4-4. The future projections shown in Figure 4-7 are based on BOR long-range projections of Davis Dam releases and Lake Havasu levels from March 2011. There is more uncertainty in these projections at longer times in the future since water demand is based on various elements including climatic factors.

Current BOR projections, presented in Table 4-4, show that the average Davis Dam release for April 2011 (17,900 cubic feet per second) will be more than the actual release in March 2011 (15,875 cubic feet per second). Based on April 2011 BOR projections, it is anticipated that the Colorado River level at the I-3 gage location in April 2011 will be approximately 0.7 foot higher compared to the actual levels in March 2011. Current projections show that the water levels will increase during the next quarterly reporting period (April 2011), followed by a decrease in May and June 2011, as shown in Figure 4-7.

## 4.7 Quarterly PMP Evaluation Summary

The groundwater elevation and hydraulic gradient data from January 2011 through March 2011 performance monitoring indicate that the minimum landward gradient target of 0.001 ft/ft was exceeded each month during the quarterly reporting period. The overall average landward gradients during the first quarter 2011 were 5.0 to 5.6 times the required minimum magnitude. The current gradient well pairs are adequate to define the capture of the hexavalent chromium plume while pumping from extraction wells TW-3D and PE-1. Based on the hydraulic and monitoring data and evaluation presented in this report, the IM performance standard has been met for the first quarter 2011 reporting period.

A total of 17,100,068 gallons of groundwater was extracted between January and March 2011 by the IM-3 treatment facility. The average pumping rate for the IM extraction system during the first quarter 2011, excluding system down time, was 132.0 gpm. An estimated 70 kilograms of chromium were removed and treated during the first quarter 2011.

A review of the groundwater gradient maps for first quarter 2011 (Figures 4-4a to 4-4c) shows that floodplain PMP monitoring wells where Cr(VI) was detected at greater than 20 µg/L are within the IM capture zone of the pumping well(s) during the reporting period. That is, the inferred groundwater flow lines from floodplain PMP wells with Cr(VI) greater than 20 µg/L are oriented towards the TW-3D and PE-1 extraction wells.

The wells that are monitored in the IM pumping area (e.g., MW-36-100, MW-39-70, MW-39-80, and MW-39-100) generally continue to show overall declining Cr(VI) concentrations relative to prior monitoring results, as shown in Figure 4-3 and Appendix C. Presentation and evaluation of the Cr(VI) trends observed in the performance monitoring area during the first quarter 2011 reporting period are discussed in Section 4.2.

## 5.0 Upcoming Operation and Monitoring Events

---

Reporting of the IM extraction and monitoring activities will continue as described in the PMP and under direction from DTSC. All monitoring results, operations, and performance monitoring data will be reported in the second quarter 2011 monitoring report, which will be submitted by August 15, 2011.

### 5.1 Groundwater Monitoring Program

#### 5.1.1 Quarterly Monitoring

As described in the July 23, 2010 DTSC sampling schedule approval (DTSC, 2010a), the second quarter monitoring event will occur April 28 through May 6, 2011. This sampling event will be conducted at 65 GMP wells, including the wells located in the East Ravine area.

#### 5.1.2 Monthly Monitoring

Monthly sampling of the two active extraction wells (TW-3D and PE-1) will continue to be performed during the first two weeks of each month. Monthly sampling will continue at packer wells MW-58BR and MW-64BR. Results will be reported in the second quarter 2011 monitoring report.

### 5.2 Surface Water Monitoring Program

The second quarter 2011 surface water monitoring event will be conducted at locations in the RMP monitoring network and is scheduled to occur on June 7 and 8, 2011. Results will be reported in the second quarter 2011 quarterly monitoring report.

### 5.3 Performance Monitoring Program

#### 5.3.1 Extraction

Per DTSC direction, PG&E will continue to operate wells TW-3D and PE-1 at a target combined pumping rate of 135 gpm during Second Quarter 2011, except for periods when planned and unplanned downtime occurs. Extracted groundwater treated at the IM-3 facility will be discharged into the IM-3 injection wells in accordance with Waste Discharge Requirements Order No. R7-2006-0060. Saline water and solids generated as byproducts of the treatment process will continue to be transported for offsite disposal.

PG&E will balance the pumping rates between wells TW-3D and PE-1 to maintain the target pumping rate and to maintain the DTSC-specified hydraulic gradients across the Alluvial Aquifer. Well TW-2D will serve as a backup to extraction wells TW-3D and PE-1.

### 5.3.2 Transducer Download

Downloads of the transducers in the key gradient control wells (MW-27-085, MW-31-135, MW-33-135, MW-34-100, and MW-45-095) will continue to be conducted weekly during the second quarter 2011 reporting period. Downloads of the remainder of the transducers will occur during the first week of each month during the second quarter reporting period.

## 6.0 References

---

- ARCADIS. 2010. *Third Quarter 2010 Monitoring Report for the Upland Reductive Zone In-Situ Pilot Test*. November 16.
- Arizona Department of Environmental Quality. 2010. Email. "Re: Reminder - sampling frequency modification for Arizona wells proposed with 4Q2009 data submittal." April 23.
- California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). 2005a. Letter to PG&E. "Requirements for Groundwater and Surface Water Monitoring Program, Pacific Gas & Electric Company, Topock Compressor Station, Needles, California (EPA ID No. CAT080011729)." April 26.
- \_\_\_\_\_. 2005b. Letter. "Criteria for Evaluating Interim Measures Performance Requirements to Hydraulically Contain Chromium Plume in Floodplain Area, Pacific Gas & Electric Company, Topock Compressor Station." May 14.
- \_\_\_\_\_. 2005c. Letter. "Contingency Plan for Sentry Well Groundwater Monitoring." February 14.
- \_\_\_\_\_. 2007a. Letter. "Approval of Updates and Modifications to the Interim Measures Performance Monitoring Program. Pacific Gas & Electric Company, Topock Compressor Station." October 12.
- \_\_\_\_\_. 2007b. Letter. "Updates and Modifications to the PG&E's Topock Interim Measures Performance Monitoring Program. PG&E Topock Compressor Station, Needles, California." July 27.
- \_\_\_\_\_. 2007c. Letter. "Conditional Approval of Updates and Modifications to the Groundwater and Surface Water Monitoring Program, Pacific Gas & Electric Company, Topock Compressor Station." September 28.
- \_\_\_\_\_. 2008a. Letter. "Modifications to Hydraulic Data Collection for the Interim Measures Performance Monitoring Program at Pacific Gas and Electric Company (PG&E), Topock Compressor Station, Needles, California." July 14.
- \_\_\_\_\_. 2008b. Letter. "Modifications to Chemical Performance Monitoring and Contingency Plan for the Floodplain Interim Measures Performance Monitoring Program at Pacific Gas and Electric Company (PG&E), Topock Compressor Station, Needles, California." July 17.
- \_\_\_\_\_. 2009a. Email. "Re: Request for Combined Reporting of Topock GMP and PMP." May 26.
- \_\_\_\_\_. 2009b. Letter. "Comments on January 27, 2009 Draft Corrective Measures Study/Feasibility Study (CMS/FS) Report for SWMU1/AOC1, (EPA ID NO. CAT080011729)." March 26.

- \_\_\_\_\_. 2010a. Email. "RE: Topock GMP sampling event timing and reporting schedule." July 23.
- \_\_\_\_\_. 2010b. Email. "Re: Topock GMP Monitoring Frequency Modification." March 3.
- \_\_\_\_\_. 2010c. Letter. "Arizona Monitoring Well Sampling Frequency Modification. Pacific Gas and Electric Company (PG&E), Topock Compressor Station, Needles, California." April 28.
- CH2M HILL. 2005. Draft *Performance Monitoring Plan for Interim Measures in the Floodplain Area, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*. April 15.
- \_\_\_\_\_. 2006. *Topock Interim Measures Performance Contingency Plan, Revision 1*. August.
- \_\_\_\_\_. 2009a. *Revised Final RCRA Facility Investigation/Remedial Investigation Report, Volume 2 – Hydrogeologic Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*. February 11.
- \_\_\_\_\_. 2009b. *Final RCRA Facility Investigation/Remedial Investigation Report, Volume 2 Addendum – Hydrogeologic Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*. June 29.
- \_\_\_\_\_. 2009c. *Quarterly Performance Monitoring Report and Evaluation, February through April 2009, PG&E Topock Compressor Station, Needles, California*. May 29.
- \_\_\_\_\_. 2009d. *Second Quarter 2009 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. August 28.
- \_\_\_\_\_. 2009e. *Third Quarter 2009 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. November 30.
- \_\_\_\_\_. 2010a. *Implementation Plan for Packer Evaluation of the MW-58BR Borehole, PG&E Topock Compressor Station, Needles, California*. August 11.
- \_\_\_\_\_. 2010b. *Revised Implementation Plan for Packer Evaluation of the MW-64BR Borehole, PG&E Topock Compressor Station, Needles, California*. December 14.
- \_\_\_\_\_. 2010c. *Second Quarter 2010 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. November 30.
- \_\_\_\_\_. 2010d. *Third Quarter 2010 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. August 30.
- \_\_\_\_\_. 2011a. *Fourth Quarter and Annual 2010 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. March 15.

---

\_\_\_\_\_. 2011b. *Final Revised Implementation Plan for Repair of Monitoring Wells MW-38S and MW-38D and Old Well/Pipe Reconnaissance*. February 11.

Pacific Gas and Electric (PG&E). 2007. Letter. *Updates and Modifications to the PG&E's Topock Interim Measures Performance Monitoring Program PG&E Topock Compressor Station, Needles, California*. July 27.

\_\_\_\_\_. 2008. *Approved Modifications to the Topock IM Performance Monitoring Program PG&E Topock Compressor Station, Needles, California*. August 4.

## **Tables**

---

Table 3-1  
 Groundwater Sampling Results, February 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-9	SA	15-Dec-10	312	334	93	3,310	7.4
MW-10	SA	11-Mar-10	2,880	3,140	-6.1	2,040	7.7
		07-Dec-10	912	949	82	2,710	7.9
		07-Dec-10 FD	900	909	FD	FD	FD
MW-12	SA	06-Apr-10	1,960	1,900	74	6,150	8.4
		06-Apr-10 FD	1,960	1,840	FD	FD	FD
		06-May-10	2,650	2,700	84	5,820	8.4
		06-May-10 FD	2,650	2,890	FD	FD	FD
		30-Sep-10	2,930	2,810	210	6,390	8.2
		30-Sep-10 FD	3,110	2,810	FD	FD	FD
		16-Dec-10	2,770	2,800	59	6,430	8.3
10-Feb-11	2,950	3,160	180	6,250	8.4		
MW-13	SA	07-Dec-10	21.9	22.6	3.8	2,030	7.9
MW-14	SA	07-Dec-10	22.1	22.1	14	1,560	8.0
MW-15	SA	14-Dec-10	13.8	13.4	150	1,810	7.7
MW-16	SA	16-Mar-10	12.0	10.8	80	1,230	8.0
		10-Dec-10	10.1	10.2	22	1,130	8.0
MW-17	SA	11-Mar-10	16.4	15.1	-15	1,710	7.9
		14-Dec-10	16.7	17.0	150	1,590	7.9
MW-18	SA	14-Dec-10	21.1	19.4	120	1,360	7.6
MW-19	SA	18-Mar-10	542	453	93	2,450	7.5
		15-Dec-10	387	418	120	2,360	7.5
MW-20-70	SA	17-Mar-10	2,740	2,870	68	3,320	7.6
		16-Dec-10	3,130	3,430	75	3,030	7.6
MW-20-100 <sup>b</sup>	MA	17-Mar-10	5,690	5,740	61	3,480	7.4
		10-Feb-11	4,500	4,520	210	3,090	7.5
MW-20-130 <sup>b</sup>	DA	18-Mar-10	11,100	11,100	110	13,100	7.5
		10-Feb-11	10,100	10,600	220	12,200	7.6
MW-21	SA	10-Mar-10	1.4	1.2	-24	8,950	7.0
		04-May-10	2.0	3.8	-30	8,420	7.1
		28-Sep-10	ND (1.0)	1.1	-84	13,100	7.1
		07-Dec-10	ND (1.0)	ND (1.0)	13	12,400	7.2
		08-Feb-11	3.3	3.6	190	8,450	7.4

Refer to table footnotes for data qualifier explanation.

Table 3-1

Groundwater Sampling Results, February 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-22	SA	12-Mar-10	ND (2.1)	ND (1.0)	-87	34,300	6.8
		07-Dec-10	ND (1.0)	ND (1.0)	-66	28,500	6.7
MW-23-060	BR-S	08-Mar-10	19.7	17.2	-9	10,700	10
		03-May-10	24.7	23.9	-32	14,700	9.1
		29-Sep-10	29.6	31.1	51	16,500	8.9
		14-Dec-10	30.4	33.3	53	16,100	10.3
		09-Feb-11	31.5	30.8	93	16,900	9.0
MW-23-080	BR-S	08-Mar-10	11.3	9.6	-46	18,100	10.8
		04-May-10	21.8	20.5	-77	18,000	10.9
		29-Sep-10	6.0	8.0	-53	17,300	10.6
		14-Dec-10	12.2	12.8	3.5	17,400	10.4
		09-Feb-11	19.8	20.7	63	17,400	10.4
MW-24BR	BR	12-Mar-10	ND (1.0)	ND (1.0)	-140	15,500	8.1
		05-May-10	ND (1.0)	ND (1.0)	-150	15,400	8.4
		30-Sep-10	ND (1.0)	1.1	-170	15,000	8.0
		08-Dec-10	ND (1.0)	ND (1.0)	-160	15,000	8.3
		08-Feb-11	ND (1.0)	ND (1.0)	-170	14,900	8.1
MW-25	SA	07-Dec-10	280	344	35	1,360	7.6
MW-26	SA	16-Mar-10	2,280	2,270	71	4,230	7.4
		15-Dec-10	1,890	2,030	110	4,120	7.4
MW-27-20	SA	07-Dec-10	ND (0.2)	ND (1.0)	-170	1,000	7.7
MW-27-60	MA	07-Dec-10	ND (0.2)	ND (1.0)	-160	1,180	8.2
MW-27-85	DA	09-Mar-10	ND (1.0)	ND (1.0)	-24	15,200	7.2
		29-Apr-10	ND (1.0)	ND (1.0)	-29	15,400	7.2
		01-Oct-10	ND (1.0)	1.2	-37	15,100	7.2
		07-Dec-10	ND (1.0)	ND (1.0)	-80	14,400	7.2
		08-Feb-11	ND (1.0)	ND (1.0)	-53	14,400	7.2
		08-Feb-11 FD	ND (1.0)	ND (1.0)	FD	FD	FD
MW-28-25	SA	09-Mar-10	ND (0.2)	ND (1.0)	-25	1,200	7.5
		08-Dec-10	ND (1.0)	ND (1.0)	-34	1,140	7.3
MW-28-90	DA	09-Mar-10	ND (0.2)	ND (1.0)	-100	8,130	7.4
		29-Apr-10	ND (1.0)	ND (1.0)	-100	7,980	7.4
		28-Sep-10	ND (0.2)	ND (1.0)	-110	7,480	7.3

Refer to table footnotes for data qualifier explanation.

Table 3-1  
 Groundwater Sampling Results, February 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters			
					ORP (mV)	Specific Conductance (µS/cm)	Field pH	
MW-28-90	DA	08-Dec-10	ND (1.0)	ND (1.0)	-140	7,670	7.3	
		08-Feb-11	ND (0.2)	ND (1.0)	-79	7,730	7.2	
MW-29	SA	11-Mar-10	ND (0.2)	ND (1.0)	-110	3,480	7.4	
		14-Dec-10	ND (0.2)	ND (1.0)	-140	2,330	7.3	
MW-30-30	SA	07-Dec-10	ND (1.0)	ND (1.0)	-170	22,800	7.3	
MW-30-50	MA	07-Dec-10	ND (0.2)	ND (1.0)	-210	1,330	8.0	
MW-31-60	SA	16-Mar-10	571	531	160	3,190	7.5	
		15-Dec-10	353	386	150	3,300	7.5	
MW-31-135	DA	15-Dec-10	17.8	15.9	89	11,700	7.8	
MW-32-20	SA	08-Dec-10	ND (1.0)	ND (1.0)	-140	51,700	6.8	
MW-32-35	SA	09-Mar-10	ND (2.1)	ND (1.0)	-160	23,400	7.1	
		09-Dec-10	ND (1.0)	3.0	-180	19,700	7.2	
MW-33-40	SA	11-Mar-10	ND (1.0)	ND (1.0)	-25	6,820	8.3	
		30-Apr-10	ND (0.2)	ND (1.0)	-37	5,920	8.3	
		28-Sep-10	ND (0.2)	3.5	-26	5,490	8.2	
		10-Dec-10	ND (1.0)	ND (1.0)	45	14,000	7.7	
		09-Feb-11	ND (1.0)	1.7	22	10,500	7.7	
MW-33-90	MA	12-Mar-10	23.7	25.2	170	11,600	7.5	
		30-Apr-10	24.2	22.7	-32	10,900	7.5	
		29-Sep-10	24.4	20.9	-24	10,700	7.4	
		10-Dec-10	24.5	25.0	-91	10,600	7.5	
		09-Feb-11	24.2	25.3	7.7	10,600	7.4	
MW-33-150	DA	11-Mar-10	10.6	11.6	0.6	18,000	7.7	
		11-Mar-10	FD	10.5	10.1	FD	FD	FD
		30-Apr-10		9.5	9.3	-33	17,600	7.6
		30-Apr-10	FD	10.4	9.7	FD	FD	FD
		29-Sep-10		10.8	10.8	62	17,500	7.4
		29-Sep-10	FD	11.2	11.0	FD	FD	FD
		10-Dec-10		11.5	11.9	-44	17,600	7.6
09-Feb-11		12.2	12.3	120	17,700	7.5		
MW-33-210	DA	11-Mar-10	14.4	15.9	9.4	20,700	7.5	
		30-Apr-10	11.3	11.8	-27	20,400	7.4	
		29-Sep-10	13.0	13.5	88	19,600	7.3	

Refer to table footnotes for data qualifier explanation.

Table 3-1

Groundwater Sampling Results, February 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-33-210	DA	10-Dec-10	14.1	15.5	-69	19,900	7.4
		09-Feb-11	14.8	15.2	61	20,000	7.3
MW-34-55	MA	07-Dec-10	ND (0.2)	ND (1.0)	-150	1,020	7.7
MW-34-80	DA	08-Feb-10	ND (1.0)	ND (1.0)	-34	8,070	7.4
		10-Mar-10	ND (0.2)	ND (1.0)	-77	8,330	7.3
		29-Apr-10	ND (1.0)	ND (1.0)	-6.9	8,570	7.4
		01-Oct-10	ND (0.2)	ND (1.0)	-60	8,400	7.4
		07-Dec-10	ND (0.2)	ND (1.0)	-100	7,830	7.4
		07-Feb-11	ND (0.2)	1.3	3.9	7,660	7.4
		07-Feb-11 FD	ND (0.2)	ND (1.0)	FD	FD	FD
MW-34-100	DA	08-Feb-10	312	311	-10	18,900	7.6
		08-Feb-10 FD	316	372	FD	FD	FD
		10-Mar-10	153	129	-34	19,300	7.5
		10-Mar-10 FD	152	133	FD	FD	FD
		29-Apr-10	71.3	73.5	29	19,500	7.5
		29-Apr-10 FD	78.7	73.6	FD	FD	FD
		01-Oct-10	75.1	66.6	33	18,500	7.4
		01-Oct-10 FD	75.6	67.1	FD	FD	FD
		09-Nov-10	110	104	83	18,400	8.9
		08-Dec-10	145	132	-76	18,600	7.5
		08-Dec-10 FD	141	127	FD	FD	FD
		11-Jan-11	290	259	150	18,400	7.5
		07-Feb-11	210	201	28	18,400	7.5
MW-35-60	SA	16-Mar-10	34.8	36.1	100	6,910	7.4
		16-Mar-10 FD	34.4	35.6	FD	FD	FD
		14-Dec-10	30.2	25.4	110	7,490	7.3
MW-35-135	DA	16-Mar-10	30.6	33.2	97	10,600	7.7
		14-Dec-10	37.8	34.8	130	10,100	7.7
MW-36-20	SA	07-Dec-10	ND (0.2)	ND (1.0)	-170	7,260	7.6
MW-36-40	SA	07-Dec-10	ND (0.2)	ND (1.0)	-200	2,120	7.9
MW-36-50	MA	08-Dec-10	ND (0.2)	ND (1.0)	-110	1,810	7.5
MW-36-70	MA	07-Dec-10	ND (0.2)	ND (1.0)	-100	1,260	8.1
MW-36-90	DA	12-Mar-10	0.25	ND (1.0)	-81	1,430	8.3
		08-Dec-10	ND (0.2)	ND (1.0)	-69	1,430	8.2

Refer to table footnotes for data qualifier explanation.

Table 3-1

Groundwater Sampling Results, February 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-36-90	DA	08-Dec-10 FD	ND (0.2)	ND (1.0)	FD	FD	FD
MW-36-100	DA	09-Mar-10	67.1	74.4	-140	12,600	7.2
		15-Dec-10	69.6	64.6	-160	11,000	7.1
MW-37S	MA	10-Dec-10	9.6	10.0	120	5,240	7.7
MW-37D	DA	15-Dec-10	128	146	92	16,000	7.7
MW-39-50	MA	08-Dec-10	ND (0.2)	ND (1.0)	-7.5	1,720	8.0
MW-39-60	MA	09-Dec-10	ND (0.2)	ND (1.0)	-63	2,040	7.9
MW-39-70	MA	08-Dec-10	ND (0.2)	ND (1.0)	79	3,850	7.4
MW-39-80	DA	09-Dec-10	ND (0.2)	ND (1.0)	-38	9,460	7.0
MW-39-100	DA	14-Dec-10	206	240	6.4	20,300	6.7
MW-40D	DA	15-Dec-10	172	159	22	16,200	7.5
MW-41S	SA	08-Dec-10	19.5	16.4 J	-66	5,090	8.1
		08-Dec-10 FD	19.7	21.3 J	FD	FD	FD
MW-41M	DA	08-Dec-10	11.0	10.4	-83	15,700	7.8
MW-41D	DA	11-Mar-10	3.1	2.6	-71	23,100	7.8
		08-Dec-10	2.2	3.1	-110	22,100	7.9
MW-42-30	SA	06-Dec-10	ND (0.2)	ND (1.0)	-220	4,850	7.8
MW-42-55	MA	09-Mar-10	ND (1.0)	ND (1.0)	-130	11,000	7.4
		29-Apr-10	ND (1.0)	ND (1.0)	-100	10,500	7.5
		27-Sep-10	ND (0.2)	ND (1.0)	-11	9,130	7.2
		06-Dec-10	ND (1.0)	ND (1.0)	-170	8,830	7.3
		07-Feb-11	ND (0.2)	ND (1.0)	-110	8,650	7.4
MW-42-65	MA	09-Mar-10	ND (1.0)	ND (1.0)	-40	14,300	7.2
		29-Apr-10	ND (1.0)	ND (1.0)	-31	13,600	7.2
		27-Sep-10	ND (1.0)	ND (1.0)	2.3	10,800	7.1
		06-Dec-10	ND (1.0)	ND (1.0)	-110	11,200	7.1
		07-Feb-11	ND (1.0)	ND (1.0)	-59	11,500	7.1
MW-43-25	SA	09-Dec-10	ND (0.2)	ND (1.0)	-190	1,260	7.6
MW-43-75	DA	09-Dec-10	ND (1.0)	ND (1.0)	-170	11,700	7.6
MW-43-90	DA	09-Dec-10	ND (1.0)	ND (1.0)	-98	18,400	7.0
MW-44-70	MA	08-Mar-10	ND (0.2)	ND (1.0)	-110	3,080	7.5

Refer to table footnotes for data qualifier explanation.

Table 3-1

Groundwater Sampling Results, February 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters			
					ORP (mV)	Specific Conductance (µS/cm)	Field pH	
MW-44-70	MA	09-Dec-10	ND (0.2)	ND (1.0)	-230	2,850	7.6	
MW-44-115	DA	09-Feb-10	219	256	-110	12,700	7.9	
		08-Mar-10	325	269	-120	12,900	7.9	
		30-Apr-10	269	270	-100	12,600	7.9	
		30-Apr-10	FD	320	273	FD	FD	FD
		28-Sep-10	228	218	-200	11,800	7.9	
		28-Sep-10	FD	236	219	FD	FD	FD
		09-Dec-10	219	191	-230	12,100	8.0	
		09-Dec-10	FD	187	191	FD	FD	FD
		08-Feb-11	203	206	-170	9,990	7.8	
MW-44-125	DA	09-Feb-10	5.0	176	-160	14,400	8.2	
		08-Mar-10	46.4 J	51.8	-160	13,300	7.9	
		08-Mar-10	FD	58.0 J	54.6	FD	FD	FD
		30-Apr-10	9.4	40.8	-210	13,000	8.0	
		28-Sep-10	ND (0.2)	16.0	-220	12,000	7.7	
		09-Dec-10	24.5	26.9	-280	12,900	7.9	
		09-Dec-10	FD	25.0	27.4	FD	FD	FD
		08-Feb-11	65.6	71.1	-230	13,300	7.8	
08-Feb-11	FD	65.4	75.1	FD	FD	FD		
MW-45-095a	DA	14-Dec-10	---	---	-98	9,550	7.5	
MW-46-175	DA	08-Feb-10	177	190	-100	18,500	8.4	
		11-Mar-10	177	154	-160	18,700	8.5	
		30-Apr-10	81.7	79.8	-120	18,400	8.5	
		28-Sep-10	74.5	72.3	-210	17,300	8.3	
		09-Nov-10	102	115	-65	17,600	8.6	
		08-Dec-10	130	123	-190	17,700	8.3	
		08-Dec-10	FD	134	124	FD	FD	FD
		11-Jan-11	169	174	60	18,000	8.2	
08-Feb-11	149	151	-65	18,100	8.3			
MW-46-205	DA	11-Mar-10	5.7	6.5	-90	22,800	8.5	
		08-Dec-10	5.6	6.4	-100	21,800	8.3	
MW-47-55	SA	16-Mar-10	37.4	40.8	83	4,220	7.5	
		13-Dec-10	25.0	22.0	69	4,810	7.4	
		13-Dec-10	FD	23.2	22.3	FD	FD	FD
MW-47-115	DA	10-Mar-10	18.8	16.3	-5.6	14,100	7.7	

Refer to table footnotes for data qualifier explanation.

Table 3-1

Groundwater Sampling Results, February 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-47-115	DA	13-Dec-10	22.5	18.4	58	14,300	7.4
MW-48	BR	08-Apr-10	ND (1.0)	ND (1.0)	89	19,200	7.0
		05-May-10	ND (1.0)	ND (1.0)	-27	19,500	7.8
		29-Sep-10	ND (1.0)	ND (1.0)	110	16,800	7.1
		08-Dec-10	ND (1.0)	ND (1.0)	-4.3	21,400	7.5
		09-Feb-11	ND (1.0)	ND (1.0)	160	18,300	7.0
MW-49-135	DA	13-Dec-10	ND (1.0)	3.1	-1.2	14,400	7.8
MW-49-275	DA	13-Dec-10	ND (1.0)	1.8	-200	26,400	8.1
MW-49-365	DA	13-Dec-10	ND (2.1)	ND (1.0)	-220	40,200	7.9
MW-50-095	MA	12-Mar-10	24.9	25.3	-18	5,330	7.8
		10-Dec-10	18.9	19.7	36	5,240	7.8
MW-50-200 <sup>b</sup>	DA	17-Mar-10	10,100	9,600	77	23,000	7.7
		06-May-10	10,800	9,840	110	22,400	7.8
		30-Sep-10	10,200	9,670	170	21,700	7.7
		10-Feb-11	9,160	9,350	230	21,800	7.9
		10-Feb-11 FD	9,100	9,240	FD	FD	FD
MW-51	MA	17-Mar-10	4,480	4,590	59	11,500	7.4
		16-Dec-10	4,590	4,720	80	11,100	7.4
MW-52S	MA	10-Mar-10	ND (1.0)	ND (1.0)	-170	11,500	7.5
		09-Dec-10	ND (1.0)	ND (1.0)	-180	11,200	7.2
MW-52M	DA	10-Mar-10	ND (1.0)	ND (1.0)	-170	17,700	7.8
		09-Dec-10	ND (1.0)	ND (1.0)	-210	16,800	7.6
MW-52D	DA	10-Mar-10	ND (1.0)	ND (1.0)	-210	23,000	8.3
		09-Dec-10	ND (1.0)	ND (1.0)	-220	21,700	8.0
MW-53M	DA	10-Mar-10	ND (1.0)	ND (1.0)	-220	21,200	8.4
		10-Dec-10	ND (1.0)	ND (1.0)	-210	21,000	8.1
MW-53D	DA	10-Mar-10	ND (2.1)	ND (1.0)	-200	27,800	8.4
		09-Dec-10	ND (1.0)	ND (1.0)	-220	26,200	8.4
MW-54-85	DA	09-Mar-10	ND (1.0)	ND (1.0)	-170	11,200	7.5
		14-Dec-10	ND (1.0)	ND (1.0)	-190	10,700	7.6
MW-54-140	DA	09-Mar-10	ND (2.0)	ND (1.0)	-75	13,800	7.8
		14-Dec-10	ND (1.0)	ND (1.0)	-110	13,100	7.8

Refer to table footnotes for data qualifier explanation.

Table 3-1  
 Groundwater Sampling Results, February 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-54-195	DA	09-Mar-10	ND (2.0)	ND (1.0)	-220	20,900	8.1
		14-Dec-10	ND (1.0)	ND (1.0)	-250	19,700	8.1
MW-55-45	MA	08-Mar-10	ND (0.2)	ND (1.0)	-100	1,550	7.7
		09-Dec-10	ND (0.2)	ND (1.0)	-200	1,560	7.8
MW-55-120	DA	08-Mar-10	5.6	6.1	-27	9,820	7.9
		08-Mar-10 FD	5.4	6.3	FD	FD	FD
		09-Dec-10	6.2	6.8	-120	9,320	8.0
		09-Dec-10 FD	6.2	6.8	FD	FD	FD
MW-56S	SA	18-Mar-10	ND (0.2)	ND (1.0)	-150	6,290	7.3
		14-Dec-10	ND (0.2)	ND (1.0)	-140	6,440	7.3
MW-56M	DA	18-Mar-10	ND (1.0)	ND (1.0)	-140	15,500	7.2
		14-Dec-10	ND (2.0)	ND (1.0)	-130	15,300	7.2
MW-56D	DA	18-Mar-10	ND (2.0)	ND (5.0)	-92	21,600	7.7
		14-Dec-10	ND (2.0)	ND (1.0)	-110	22,400	7.8
MW-57-050	PA	17-Feb-10	86.0	88.0 LF	---	1,900	7.4
MW-57-070	BR	16-Mar-10	542	449	41	1,250	7.3
		05-May-10	452	452	3.5	1,830	7.4
		30-Sep-10	856	733	36	1,940	7.2
		15-Dec-10	456 J	438	1.8	2,160	7.2
		15-Dec-10 FD	330 J	368	FD	FD	FD
		10-Feb-11	507	612	130	2,510	7.3
MW-57-185	BR-D	09-Mar-10	6.8	6.7	-38	19,200	9.5
		05-May-10	3.9	4.7	-50	19,700	8.7
		29-Sep-10	5.6	5.9	11	18,900	8.6
		09-Dec-10	3.7	2.4	-180	19,500	8.7
		08-Feb-11	5.9	6.6	---	---	---
MW-58-065	BR-S	17-Feb-10	ND (0.2)	8.0 LF	---	737	8.0
MW-58BR <sup>a</sup>	BR	25-Mar-10	9.1	15.0	---	---	---
MW-58BR-LWR	BR	16-Sep-10	200	200	---	---	---
		07-Oct-10	199	173	-66	9,890	7.5
MW-58BR-LWR-160	BR	10-Feb-11	140	130	---	---	---
MW-58BR-UPR	BR	14-Sep-10	3.8	3.5	---	---	---
		06-Oct-10	4.7	8.4	-78	11,800	8.0

Refer to table footnotes for data qualifier explanation.

Table 3-1  
 Groundwater Sampling Results, February 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-58BR-UPR-160	BR	01-Feb-11	ND (1.0)	ND (1.0)	---	---	---
		18-Mar-11	ND (5.0)	ND (1.0)	---	---	---
MW-59-100	SA	17-Mar-10	5,320	5,270	100	13,100	6.9
		06-May-10	4,940	4,850	93	10,500	7.0
		30-Sep-10	5,140	4,630	240	10,700	6.9
		16-Dec-10	5,660	4,830	110	9,940	7.0
		10-Feb-11	5,090	5,020	210	10,200	7.2
		10-Feb-11 FD	5,110	5,120	FD	FD	FD
MW-60-125	BR-S	17-Mar-10	657	592	77	9,480	7.5
		06-May-10	1,120	1,080	76	9,610	7.4
		30-Sep-10	806	795	-16	9,210	7.4
		16-Dec-10	1,090	992	49	9,250	7.3
		16-Dec-10 FD	1,070	1,000	FD	FD	FD
		10-Feb-11	1,160	1,170	170	9,330	7.5
MW-61-110	BR-S	17-Mar-10	484	406	24	15,700	7.6
		06-May-10	480	511	110	16,600	7.5
		30-Sep-10	512	507	38	16,400	7.4
		15-Dec-10	567	510	-100	16,600	7.6
		09-Feb-11	684	653	60	16,300	7.5
MW-62-065	BR-S	16-Mar-10	397	372	64	6,170	7.3
		06-May-10	436	456	120	6,580	7.4
		30-Sep-10	500	462	130	6,640	7.3
		15-Dec-10	598	494	19	6,270	7.4
		09-Feb-11	481	475	110	6,430	7.4
MW-62-110	BR-M	10-Feb-10	---	---	-110	8,960	7.9
		11-Mar-10	628	684	-110	9,360	7.8
		04-May-10	579	569	-54	9,220	8.0
		29-Sep-10	414	363	-60	9,130	7.8
		16-Dec-10	390	378	110	8,880	7.8
		09-Feb-11	565	540	190	8,850	7.6
MW-62-190	BR-D	10-Feb-10	---	---	-150	18,700	8.0
		11-Mar-10	ND (1.0)	ND (1.0)	-140	19,600	7.9
		04-May-10	ND (1.0)	ND (1.0)	-95	19,500	8.0
		29-Sep-10	ND (1.0)	ND (1.0)	43	19,100	7.7
		16-Dec-10	ND (1.0)	1.3	-30	17,500	7.9

Refer to table footnotes for data qualifier explanation.

Table 3-1

Groundwater Sampling Results, February 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-62-190	BR-D	09-Feb-11	ND (1.0)	ND (1.0)	130	18,100	7.8
MW-63-065	BR-S	09-Mar-10	ND (1.0)	ND (1.0)	12	7,620	7.1
		09-Mar-10 FD	1.1	ND (1.0)	FD	FD	FD
		03-May-10	1.4	2.1	15	8,070	7.1
		03-May-10 FD	1.4	2.4	FD	FD	FD
		27-Sep-10	1.7	2.2	73	7,440	7.1
		27-Sep-10 FD	1.7	2.2	FD	FD	FD
		06-Dec-10	1.2	ND (1.0)	-23	8,250	7.1
		08-Feb-11	1.3	1.7	61	7,530	7.2
MW-64-150	BR-S	10-Feb-10	ND (1.0)	ND (1.0)	-44	11,800	7.3
		11-Mar-10	ND (1.0)	ND (1.0)	68	11,500	6.9
		04-May-10	ND (1.0)	ND (1.0)	38	11,300	6.9
		25-Aug-10	ND (1.0)	ND (1.0)	-51	10,900	7.2
		29-Sep-10	ND (1.0)	ND (1.0)	18	10,500	6.7
		20-Oct-10	ND (0.2)	ND (1.0)	-49	8,340	7.1
		11-Nov-10	ND (0.2)	ND (1.0)	-26	8,550	7.3
MW-64-205	BR-D	10-Feb-10	ND (1.0)	ND (1.0)	-81	16,300	7.4
		11-Mar-10	ND (1.0)	ND (1.0)	-140	16,700	7.2
		04-May-10	ND (1.0)	2.6	-170	16,300	7.2
		25-Aug-10	ND (1.0)	3.9	-72	15,800	7.6
		29-Sep-10	ND (1.0)	3.8	-110	15,900	6.8
		20-Oct-10	ND (1.0)	3.6	-46	14,900	7.0
		11-Nov-10	ND (1.0)	4.0	-56	14,700	7.3
MW-64-260	BR-D	10-Feb-10	ND (1.0)	ND (1.0)	-210	16,400	7.2
		11-Mar-10	ND (1.0)	ND (1.0)	-220	16,600	7.2
		04-May-10	ND (1.0)	ND (1.0)	-190	16,100	7.2
		25-Aug-10	ND (1.0)	ND (1.0)	-210	15,900	8.1
		29-Sep-10	ND (1.0)	ND (1.0)	-180	15,900	6.7
		20-Oct-10	ND (1.0)	ND (1.0)	-140	14,800	6.9
		11-Nov-10	ND (1.0)	ND (1.0)	-160	14,500	7.2
MW-64BR <sup>a</sup>	BR	20-Dec-10	140	140	---	---	---
MW-64BR-LWR-150	BR	24-Feb-11	100	97.0	---	---	---
MW-64BR-UPR-150	BR	26-Jan-11	220	220	---	---	---
OW-3S	SA	08-Dec-10	25.2	25.6	-49	1,650	7.9

Refer to table footnotes for data qualifier explanation.

Table 3-1

Groundwater Sampling Results, February 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
OW-3M	MA	08-Dec-10	18.0	18.6	-100	5,730	8.2
OW-3D	DA	08-Dec-10	9.4	10.4	-110	8,920	8.2
PE-1	DA	03-Feb-10	22.6	19.1 LF	---	---	---
		03-Mar-10	20.8	17.3 LF	---	---	---
		07-Apr-10	13.7	15.4 LF	---	---	---
		04-May-10	13.0	14.6 LF	---	---	---
		02-Jun-10	14.0	13.4 UF	---	---	---
		07-Jul-10	13.7	11.4 LF	---	---	---
		04-Aug-10	12.4	11.9 LF	---	---	---
		01-Sep-10	14.9	12.4 LF	---	---	---
		05-Oct-10	13.2	12.3 LF	---	---	---
		03-Nov-10	12.9	12.0 LF	---	---	---
		07-Dec-10	15.2	14.4 LF	---	---	---
		04-Jan-11	17.5	16.6 LF	---	---	---
		01-Feb-11	15.4	13.4 LF	---	---	---
01-Mar-11	12.9	15.2 LF	---	---	---		
PGE-7BR	BR	16-Mar-10	ND (1.0)	ND (1.0)	-270	20,200	9.2
		09-Dec-10	ND (1.0)	ND (1.0)	-250	20,400	7.3
PGE-8 <sup>b</sup>	BR	08-Apr-10	ND (1.0)	3.0	-270	21,600	8.3
		10-Feb-11	ND (1.0)	2.0	-330	20,800	8.0
Park Moabi-3	MA	10-Dec-10	11.9	10.5 UF	48	1,300	7.6
Park Moabi-4	MA	10-Dec-10	21.0	20.6 UF	40	1,960	7.4
TW-1	MA	15-Mar-10	3,430	4,010	50	7,520	7.2
		05-May-10	3,700	3,700	31	7,450	7.4
		28-Sep-10	3,690	3,490	2.1	7,130	7.3
		09-Dec-10	3,520	3,780	29	7,330	7.4
		09-Feb-11	3,710	3,620	32	7,440	7.2
TW-2S	MA	15-Dec-10	700	815	200	2,550	7.6
TW-2D	DA	15-Dec-10	274	287	230	9,370	7.2
TW-3D	DA	03-Feb-10	1,400	1,320 LF	---	---	---
		03-Mar-10	1,380	1,340 LF	---	---	---
		07-Apr-10	1,380	1,310 LF	---	---	---
		04-May-10	1,000	1,240 LF	---	---	---
		02-Jun-10	1,500	1,230 UF	---	---	---

Refer to table footnotes for data qualifier explanation.

Table 3-1

Groundwater Sampling Results, February 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
TW-3D	DA	07-Jul-10	1,100	1,130 LF	---	---	---
		04-Aug-10	1,280	1,100 LF	---	---	---
		01-Sep-10	1,130	1,160 LF	---	---	---
		05-Oct-10	1,280	1,150 LF	---	---	---
		03-Nov-10	1,160	1,130 LF	---	---	---
		07-Dec-10	1,080	1,170 LF	---	---	---
		04-Jan-11	1,100	1,200 LF	---	---	---
		01-Feb-11	1,000	1,100 LF	---	---	---
		01-Mar-11	1,090	1,320 LF	---	---	---
TW-4	DA	13-Dec-10	11.4	11.9	83	21,700	7.4
TW-5	DA	10-Dec-10	---	---	63	14,500	7.7

Refer to table footnotes for data qualifier explanation.

Table 3-1

Groundwater Sampling Results, February 2010 through March 2011  
First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
Groundwater and Surface Water Monitoring Report  
PG&E Topock Compressor Station, Needles, California

---

**NOTES:**

ND = not detected at listed reporting limit (RL)

FD = field duplicate sample

UF = unfiltered

LF = lab filtered

R = result exceeded analytical criteria for precision and accuracy; should not be used for project decision-making.

J = concentration or RL estimated by laboratory or data validation

(---) = data not collected, available, rejected, or field instrument malfunction

µg/L = micrograms per liter

mV = millivolts

ORP = oxidation-reduction potential

µS/cm = microSiemens per centimeter

<sup>a</sup> One-time sample collected from an open borehole.

<sup>b</sup> Data collected February 2011 due to field logistical issues.

Beginning February 1, 2008, hexavalent chromium samples are field filtered per DTSC - approved change from analysis method SW7199 to E218.6.

The RLs for certain hexavalent chromium results from Method SW7199 analyses have been elevated above the standard RL of 0.2 µg/L due to required sample dilution to accommodate matrix interferences.

Monitoring wells MW-11, MW-24A, MW-24B, MW-38S, and MW-38D are currently sampled as part of the upland in-situ pilot test monitoring. Results from these wells are presented in the in-situ pilot test reports (ARCADIS, 2010) and are not included in this table.

As a result of a series of storm events in January 2010 the MW-58 cluster (MW-58-115 and MW-58-205) was inundated with flood water. This floodwater destroyed the Flexible Liner Underground Technologies™ well liner that allowed discrete sampling at the 115 feet below ground surface (bgs) and 205 feet bgs depth intervals and was consequently removed from the borehole. The MW-58 bedrock well cluster is now an open borehole with a packer system installed. In September 2010 a packer system was installed in the borehole at about 115 ft bgs that divided the open borehole into upper (UPR) and lower (LWR) intervals. In January 2011 the packer was moved to a new location at about 160 ft bgs.

In accordance with DTSC direction, the Flexible Liner Underground Technologies (FLUTE) multi-level monitoring system, which allowed discrete sampling at the 150, 205 and 260 ft bgs depth intervals, was removed from the MW-64BR borehole in December 2010. Following removal of the FLUTE system, the open borehole was developed and a sample of the open borehole was collected on December 20, 2010. At the direction of DTSC, a packer system was installed in January 2011 at about 150 ft bgs.

ORP is reported to two significant figures. Specific Conductance is reported to three significant figures.

Wells are assigned to separate Aquifer zones for results reporting:

SA: shallow interval of Alluvial Aquifer

MA: mid-depth interval of Alluvial Aquifer

DA: deep interval of Alluvial Aquifer

PA: perched aquifer (unsaturated zone)

BR: well completed in bedrock (Miocene Conglomerate or pre-Tertiary crystalline rock)

BR-S: well completed in shallowest portion of BR

BR-M: well completed in middle portion of BR

BR-D: well completed in deeper portion of BR

---

Refer to table footnotes for data qualifier explanation.

Table 3-2  
 Surface Water Sampling Results, First Quarter 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Lab pH
<b>In-channel Locations</b>					
C-BNS-D	01/18/2011	ND (0.2)	ND (1.0)	933	8.10 J
C-BNS-D	03/09/2011	ND (0.2)	ND (1.0)	945	8.25 J
C-CON-S	01/19/2011	ND (0.2)	ND (1.0)	951	8.26 J
C-CON-S	03/10/2011	ND (0.2)	ND (1.0)	948	8.48 J
C-CON-D	01/19/2011	ND (0.2)	ND (1.0)	952	8.25 J
C-CON-D	03/10/2011	ND (0.2)	ND (1.0)	945	8.45 J
C-I-3-S	01/18/2011	ND (0.2)	ND (1.0)	952	8.19 J
C-I-3-S	03/09/2011	ND (0.2)	ND (1.0)	937	8.29 J
C-I-3-D	01/18/2011	ND (0.2)	ND (1.0)	941	8.14 J
C-I-3-D	03/09/2011	ND (0.2)	ND (1.0)	939	8.20 J
C-MAR-S	03/09/2011	ND (0.2)	ND (1.0)	1010	8.12 J
C-MAR-D	01/18/2011	ND (0.2)	ND (1.0)	1470	7.77 J
C-MAR-D	03/09/2011	ND (0.2)	ND (1.0)	1010	8.13 J
C-NR1-S	01/19/2011	ND (0.2)	ND (1.0)	952	8.25 J
C-NR1-S	03/10/2011	ND (0.2)	ND (1.0)	950	8.44 J
C-NR1-D	01/19/2011	ND (0.2)	ND (1.0)	949	8.27 J
C-NR1-D	03/10/2011	ND (0.2)	ND (1.0)	948	8.45 J
C-NR3-S	01/19/2011	ND (0.2)	ND (1.0)	945	8.25 J
C-NR3-S	03/10/2011	ND (0.2)	ND (1.0)	950	8.44 J
C-NR3-D	01/19/2011	ND (0.2)	ND (1.0)	950	8.24 J
C-NR3-D	03/10/2011	ND (0.2)	ND (1.0)	946	8.43 J
C-NR4-S	01/19/2011	ND (0.2)	ND (1.0)	951	8.16 J
C-NR4-S	03/10/2011	ND (0.2)	ND (1.0)	951	8.42 J
C-NR4-D	01/19/2011	ND (0.2)	ND (1.0)	948	8.19 J
C-NR4-D	03/10/2011	ND (0.2)	ND (1.0)	946	8.42 J
C-R22a-S	01/18/2011	ND (0.2)	ND (1.0)	955	8.24 J
C-R22a-S	03/09/2011	ND (0.2)	ND (1.0)	951	8.39 J
C-R22a-D	01/18/2011	ND (0.2)	ND (1.0)	953	8.22 J
C-R22a-D	03/09/2011	ND (0.2)	ND (1.0)	948	8.38 J
C-R27-S	01/18/2011	ND (0.2)	ND (1.0)	955	8.19 J
C-R27-S	03/09/2011	ND (0.2)	ND (1.0)	947	8.42 J
C-R27-D	01/18/2011	ND (0.2)	ND (1.0)	951	8.18 J
C-R27-D	03/09/2011	ND (0.2)	ND (1.0)	948	8.41 J
C-TAZ-S	01/18/2011	ND (0.2)	ND (1.0)	950	8.24 J
C-TAZ-S	03/09/2011	ND (0.2)	ND (1.0)	908	8.48 J
C-TAZ-D	01/18/2011	ND (0.2)	ND (1.0)	952	8.25 J

Table 3-2  
 Surface Water Sampling Results, First Quarter 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Lab pH
<b>In-channel Locations</b>					
C-TAZ-D	03/09/2011	ND (0.2)	ND (1.0)	961	8.46 J
<b>Shoreline Samples</b>					
R-19	01/18/2011	ND (0.2)	ND (1.0)	961	8.22 J
R-19	03/09/2011	ND (0.2)	ND (1.0)	949	8.45 J
R-28	01/18/2011	ND (0.2)	ND (1.0)	959	8.24 J
R-28	03/09/2011	ND (0.2)	ND (1.0)	944	8.47 J
R63	01/18/2011	ND (0.2)	ND (1.0)	951	8.14 J
R63	03/09/2011	ND (0.2)	ND (1.0)	948	8.48 J
RRB	01/19/2011	ND (0.2)	ND (1.0)	1100	8.10 J
RRB	03/10/2011	ND (0.2)	ND (1.0)	953	8.40 J
<b>Other Surface Water Monitoring Locations</b>					
SW1	01/18/2011	ND (0.2)	ND (1.0)	1050	7.75 J
SW1	03/09/2011	ND (0.2)	ND (1.0)	984	7.91 J
SW2	01/19/2011	ND (0.2)	ND (1.0)	1050	7.37 J
SW2	03/09/2011	ND (0.2)	ND (1.0)	962	7.92 J

Notes:

µg/L micrograms per liter  
 µS/cm microSiemens per centimeter  
 ND not detected at listed reporting limit  
 J concentration or reporting limit estimated by laboratory or data validation  
 (---) data not collected or not available

Hexavalent chromium analytical method EPA 218.6 (reporting limit 0.2 µg/L for undiluted samples).

Other analytical methods: dissolved chromium - method SW6020A, specific conductance - EPA 120.1, pH -SM4500-HB.

Specific conductance is reported to three significant figures.

Table 3-3

Title 22 Metals Results, First Quarter 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Well ID	California MCL: Sample Date	6	10	1,000	4	5	NE	50	1,000*	15	2	NE	100	50	100*	2	NE	5,000*
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
MW-12	02/10/2011	ND (10)	<b>48.0</b>	51.0	ND (1.0)	ND (3.0)	ND (3.0)	<b>3,160</b>	ND (5.0)	ND (10)	ND (0.2)	13.0	ND (5.0)	9.8	ND (3.0)	ND (0.5)	13.0	ND (10)

**Notes:**

- ND not detected at listed reporting limit
- FD field duplicate sample
- NE not established
- \* Secondary USEPA MCL

Title 22 metals are the metals listed in California Code of Regulations, Title 22, Section 66261.24(a)(2)(A).

The maximum contaminant levels (MCLs) listed, in micrograms per liter (µg/L), are the California primary drinking water standards, except where noted.

All results are dissolved metals concentrations in µg/L from field-filtered samples.

Metals analyzed by Methods SW6010B or SW6020A or SW7470A.

Analytes detected above MCL are in bold.

TABLE 4-1

Pumping Rate and Extracted Volume for IM System, First Quarter 2011  
 First Quarter 2011 Interim Measures Performance Monitoring  
 and Site-Wide Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Extraction Well ID	January 2011		February 2011		March 2011		First Quarter 2011	
	Average Pumping Rate <sup>a</sup> (gpm)	Volume Pumped (gal)	Average Pumping Rate <sup>a</sup> (gpm)	Volume Pumped (gal)	Average Pumping Rate <sup>a</sup> (gpm)	Volume Pumped (gal)	Average Pumping Rate <sup>a</sup> (gpm)	Volume Pumped (gal)
TW-02S	0.00	0	0.00	0	0.00	0	0.00	0
TW-02D	0.00	0	0.00	0	0.00	0	0.00	0
TW-03D	105.65	4,716,116	107.37	4,329,155	106.50	4,753,953	106.50	13,799,223
PE-01	25.05	1,118,297	25.49	1,027,699	25.87	1,154,848	25.47	3,300,845
<b>TOTAL</b>	<b>130.7</b>	<b>5,834,413</b>	<b>132.9</b>	<b>5,356,854</b>	<b>132.4</b>	<b>5,908,801</b>	<b>132.0</b>	<b>17,100,068</b>

Chromium Removed This Quarter (kg) 70  
 Chromium Removed Project to Date (kg) 3000

**NOTES:**

gpm gallons per minute  
 gal gallons  
 ac-ft acre-feet  
 kg kilograms

<sup>a</sup> The "Average Pumping Rate" is the overall average during the reporting period, including system downtime, based on flow meter readings.

Table 4-2

Analytical Results for Extraction Wells, October 2009 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Well ID	Sample Date	Dissolved Chromium (µg/L)	Hexavalent Chromium (µg/L)	Total Dissolved Solids (mg/L)
TW-3D	07-Oct-09	1,340 LF	1,330	5,530
	04-Nov-09	1,310 LF	1,160	5,810
	02-Dec-09	1,340	1,410	5,370
	06-Jan-10	1,350 LF	1,300	5,350
	03-Feb-10	1,320 LF	1,400	5,220
	03-Mar-10	1,340 LF	1,380	5,080
	07-Apr-10	1,310 LF	1,380	5,110
	04-May-10	1,240 LF	1,000	5,210
	02-Jun-10	1,230 UF	1,500	5,500
	07-Jul-10	1,130 LF	1,100	5,280
	04-Aug-10	1,100 LF	1,280	5,330
	01-Sep-10	1,160 LF	1,130	4,900
	05-Oct-10	1,150 LF	1,280	5,160
	03-Nov-10	1,130 LF	1,160	5,360
	07-Dec-10	1,170 LF	1,080	5,530
	04-Jan-11	1,200 LF	1,100	5,550
	01-Feb-11	1,100 LF	1,000	4,700
01-Mar-11	1,320 LF	1,090	5,380	
PE-1	07-Oct-09	18.6 LF	20.7	3,360
	04-Nov-09	19.6 LF	19.9	3,620
	02-Dec-09	19.4	19.7	3,430
	06-Jan-10	19.6 LF	20.0	3,110
	03-Feb-10	19.1 LF	22.6	3,330
	03-Mar-10	17.3 LF	20.8	3,080
	07-Apr-10	15.4 LF	13.7	3,120
	04-May-10	14.6 LF	13.0	3,280
	02-Jun-10	13.4 UF	14.0	3,450
	07-Jul-10	11.4 LF	13.7	3,350
	04-Aug-10	11.9 LF	12.4	3,180
	01-Sep-10	12.4 LF	14.9	3,420
	05-Oct-10	12.3 LF	13.2	3,290
	03-Nov-10	12.0 LF	12.9	3,300
	07-Dec-10	14.4 LF	15.2	3,160
	04-Jan-11	16.6 LF	17.5	3,110
	01-Feb-11	13.4 LF	15.4	3,120
01-Mar-11	15.2 LF	12.9	3,200	

**NOTES:**

µg/L = concentration in micrograms per liter

mg/L = concentration in milligrams per liter

LF = lab filtered

UF = unfiltered

Groundwater samples from active extraction wells are taken at sample taps in Valve Vault 1 on the MW-20 Bench.

Dissolved chromium was analyzed by Method SW6020A or EPA200.8 or EPA200.7, hexavalent chromium analyzed by Method SM3500-CrB or EPA218.6 and total dissolved solids were analyzed by Method SM2540C.

**TABLE 4-3**

Average Hydraulic Gradients Measured at Well Pairs, First Quarter 2011  
 First Quarter 2011 Interim Measures Performance Monitoring  
 and Site-Wide Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

<b>Well Pair <sup>a</sup></b>	<b>Reporting Period</b>	<b>Mean landward <sup>b</sup> Hydraulic Gradient (feet/foot)</b>	<b>Days in <sup>c</sup> Monthly Average</b>
Overall Average	January	0.0050	NA
	February	0.0052	NA
	March	0.0056	NA
Northern Gradient Pair MW-31-135 / MW-33-150	January	0.0018	31 / 31
	February	0.0021	28 / 28
	March	0.0024	31 / 31
Central Gradient Pair MW-45-95 / MW-34-100	January	0.0098	31 / 31
	February	0.0097	28 / 28
	March	0.0103	31 / 31
Southern Gradient Pair MW-45-95 / MW-27-85	January	0.0033	31 / 31
	February	0.0037	28 / 28
	March	0.0042	31 / 31

**Notes:**

NA = All available data used in calculating overall average except where noted.

a Refer to Figure 1-3 for location of well pairs

b For IM pumping, the target landward gradient for the selected well pairs is 0.001 feet/foot

c Number of days transducers in both wells were operating correctly / Total number of days in month.

**TABLE 4-4**

Predicted and Actual Monthly Average Davis Dam Discharge and Colorado River Elevation at I-3  
 First Quarter 2011 Interim Measures Performance Monitoring and  
 Site-Wide Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Month	Davis Dam Release			Colorado River Elevation at I-3		
	Projected (cfs)	Actual (cfs)	Difference (cfs)	Predicted (ft amsl)	Actual (ft amsl)	Difference (feet)
January 2008	9,300	8,900	400	453.5	453.6	0.1
February 2008	10,100	12,463	-2,363	454.5	454.7	0.1
March 2008	15,200	15,837	-637	455.6	455.9	0.3
April 2008	17,600	18,554	-954	456.6	457.0	0.4
May 2008	17,200	16,155	1,045	456.6	456.4	-0.3
June 2008	15,400	15,655	-255	456.2	456.5	0.3
July 2008	14,500	14,574	-74	455.8	456.0	0.2
August 2008	13,100	12,976	124	455.2	455.2	0.0
September 2008	12,300	11,731	569	454.9	455.0	0.1
October 2008	10,500	10,272	228	454.1	454.2	0.1
November 2008	10,400	10,130	270	454.1	454.03	-0.1
December 2008	5,800	5,506	294	452.3	452.45	0.2
January 2009	9,300	10,644	-1,344	452.6	454.02	1.4
February 2009	10,800	11,319	-519	454.2	454.34	0.2
March 2009	16,200	16,826	-626	456.1	456.37	0.3
April 2009	18,800	18,432	368	457.2	457.13	-0.1
May 2009	15,800	14,889	911	456.4	456.26	-0.1
June 2009	14,100	13,246	854	455.8	455.73	0.0
July 2009	13,500	13,579	-79	455.5	455.65	0.1
August 2009	11,900	12,296	-396	454.8	455.08	0.3
September 2009	12,700	12,203	497	454.9	455.24	0.4
October 2009	9,500	10,128	-628	453.8	454.04	0.3
November 2009	10,200	9,909	291	454.1	454.27	0.2
December 2009	9,000	8,650	350	453.6	453.54	-0.1
January 2010	9,900	7,415	2,485	453.9	453.36	-0.5
February 2010	7,700	7,961	-261	453.0	453.41	0.4
March 2010	14,700	14,014	686	455.5	455.40	-0.1
April 2010	16,100	14,762	1,338	455.3	455.94	0.7
May 2010	15,500	15,246	254	456.2	456.41	0.3
June 2010	15,800	15,332	468	456.4	456.45	0.0
July 2010	14,500	14,841	-341	455.9	456.34	0.4
August 2010	13,500	13,627	-127	455.4	455.87	0.5
September 2010	13,400	13,555	-155	455.2	455.79	0.6
October 2010	12,300	12,463	-163	454.7	455.41	0.7
November 2010	10,900	10,597	303	454.3	454.92	0.6
December 2010	9,800	9,286	514	453.9	453.86	-0.1
January 2011	7,700	8,172	-472	453.1	453.34	0.2
February 2011	11,000	10,547	453	454.2	454.38	0.2
March 2011	15,900	15,875	25	455.9	456.22	0.3
April 2011	17,900			456.9		

**NOTES:**

cfs = cubic feet per second; ft amsl = feet above mean sea level.

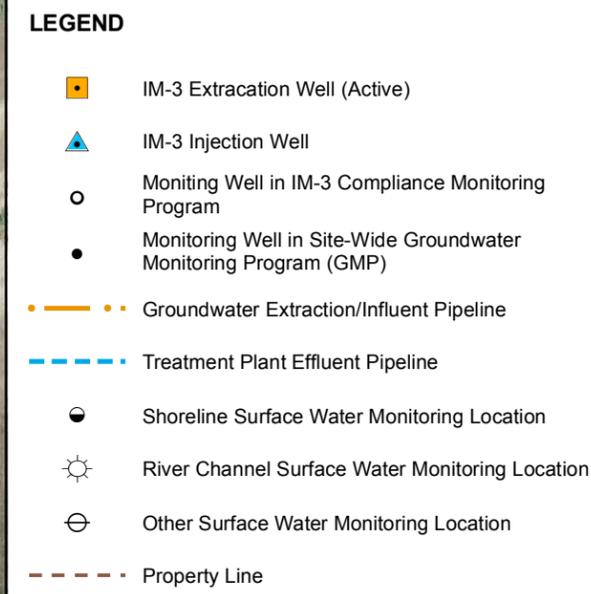
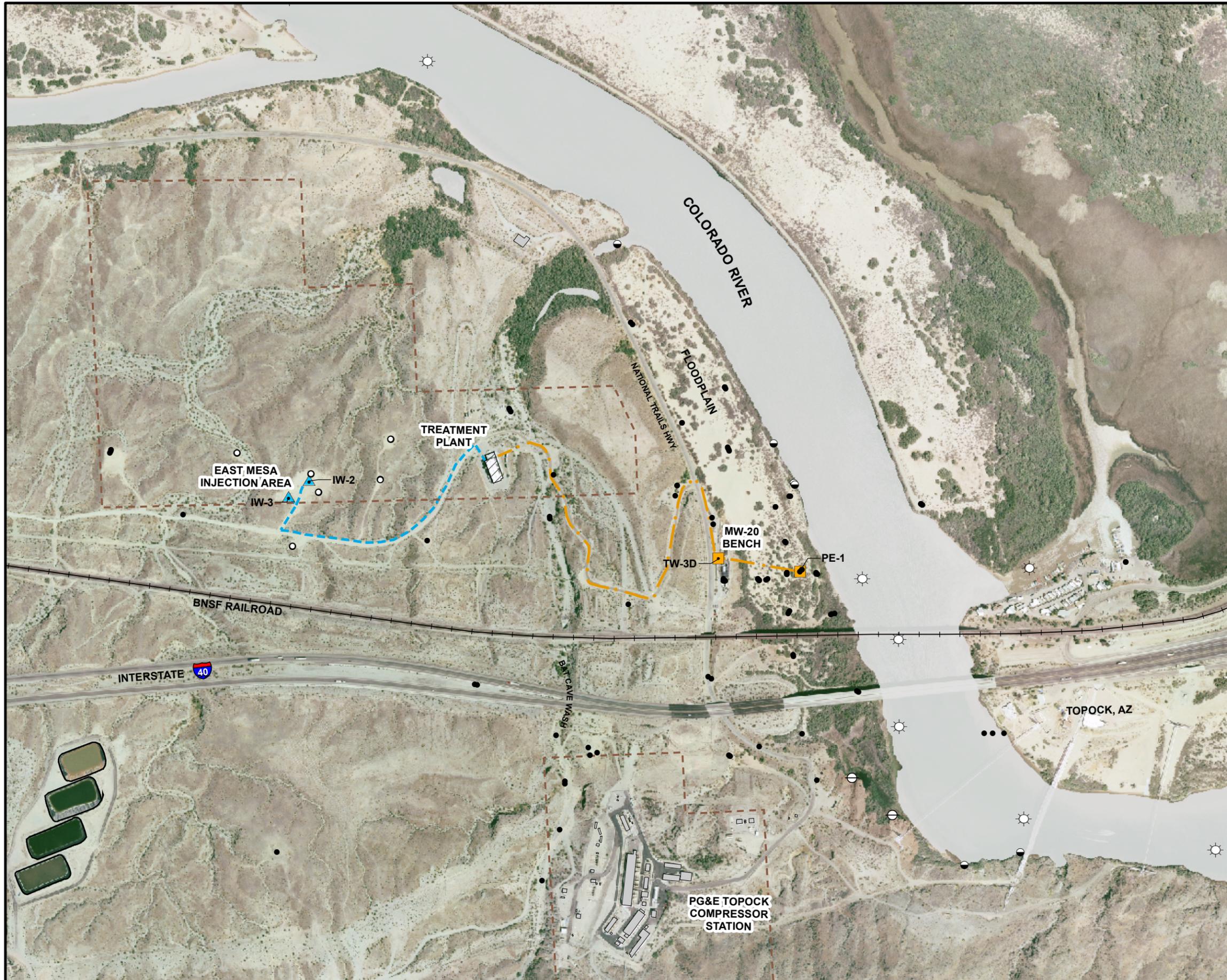
Projected river level for each month in the past is calculated based on the preceding months USBR projections of Davis Dam release and stage in Lake Havasu. Future projections of river level at I-3 are based upon April 2011 USBR projections. These data are reported monthly by the US Department of Interior, at <http://www.usbr.gov/lc/region/g4000/24mo.pdf>

The difference in I-3 elevation is the difference between the I-3 elevation predicted and the actual elevation measured at I-3. The source of this difference is differences between BOR projections and actual dam releases/Havasu reservoir levels, rather than the multiple regression error.

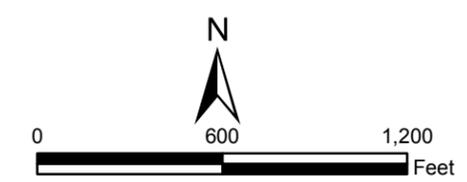
For data prior to 2008 please see *Fourth Quarter 2009 and Annual Interim Measure Performance Monitoring Report, PG&E Topock Compressor Station, Needles, California* (CH2M HILL, 2010a).

## Figures

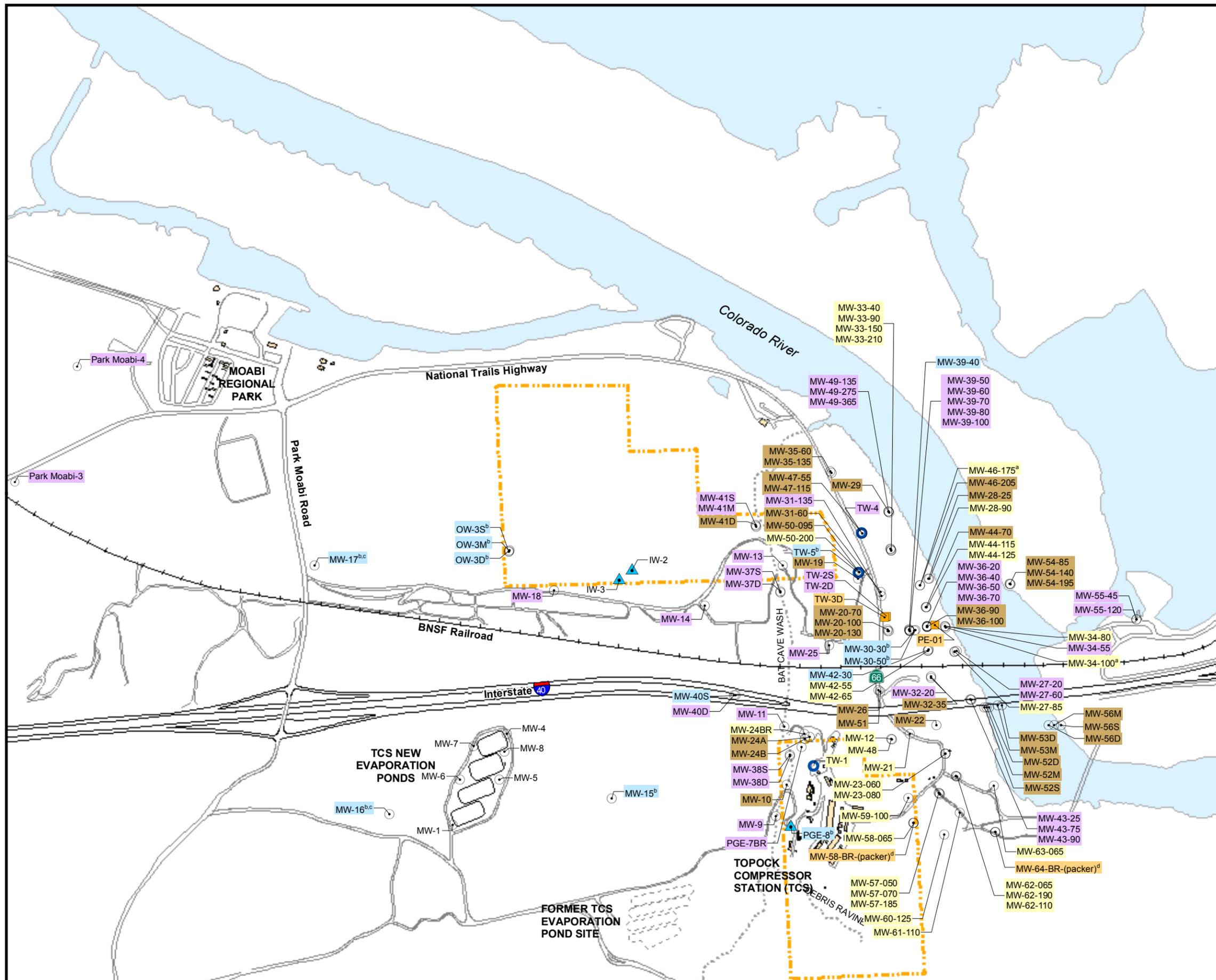
---



**Note:** 1. Location map shows Interim Measure No. 3 (IM-3) active facilities as of current report  
 2. See Figures 1-2 and 1-3 for complete monitoring locations and identifications.



**FIGURE 1-1**  
**LOCATIONS OF IM-3 FACILITIES**  
**AND MONITORING LOCATIONS**  
 FIRST QUARTER 2011 INTERIM MEASURE PERFORMANCE  
 MONITORING AND SITE-WIDE GROUNDWATER AND  
 SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA



**LEGEND**

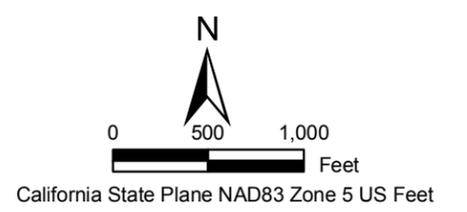
- Injection Well
- Groundwater Monitoring Well
- Test Well or Supply Well (inactive)
- Extraction Well
- Property Boundary

**Sampling Frequency for Groundwater Monitoring Program (GMP)**

- MW-17 Biennial Sampling
- MW-9 Annual Sampling
- MW-22 Semiannual Sampling
- MW-12 Quarterly Sampling
- TW-3D Monthly Sampling

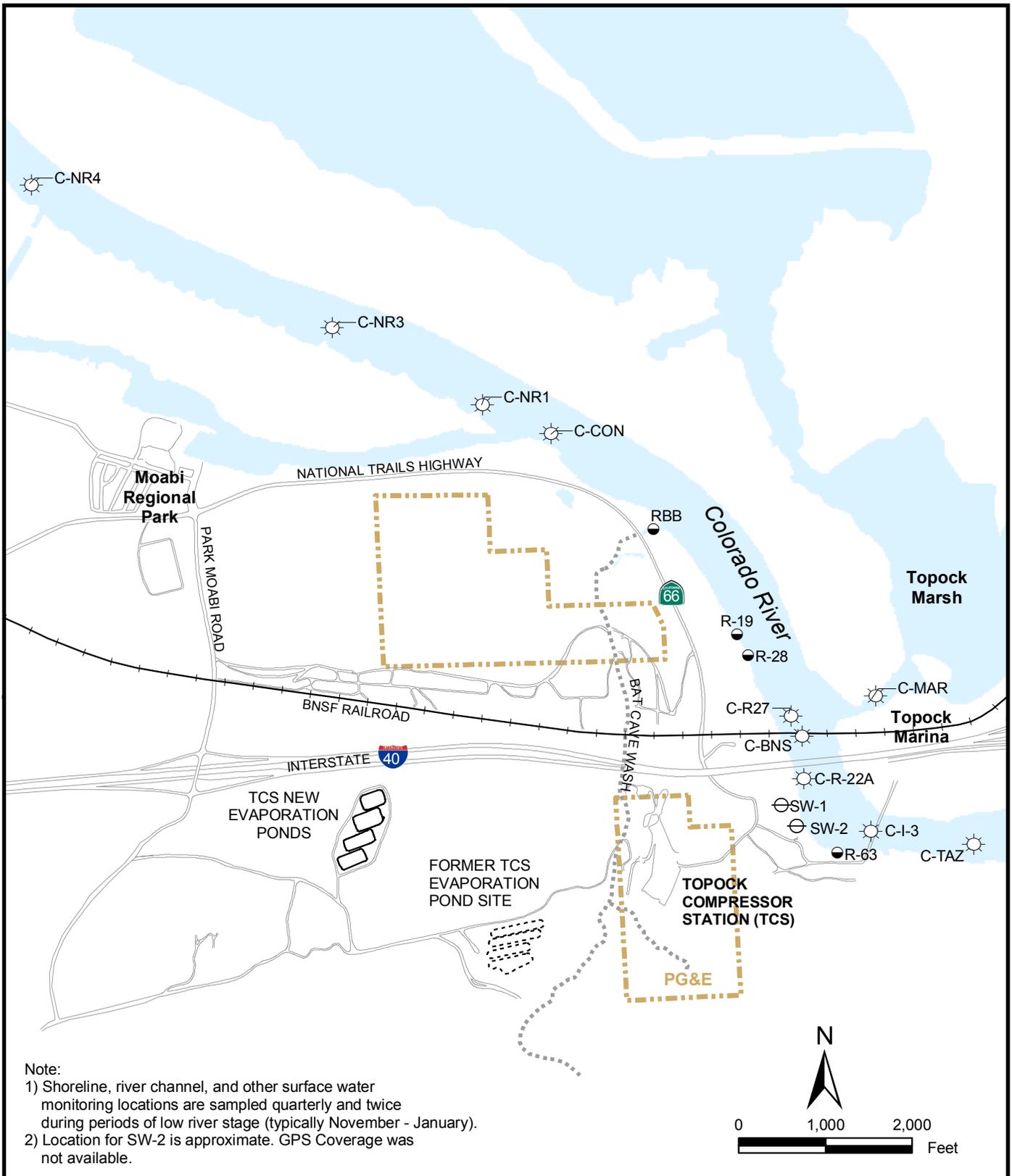
**Notes:**

- <sup>a</sup> Monthly sampling November through February, otherwise quarterly.
- <sup>b</sup> These wells required to be sampled biennially, will be sampled annually for the water quality snapshot.
- <sup>c</sup> Background metals collected semiannually.
- <sup>d</sup> Monthly sampling.



**FIGURE 1-2  
MONITORING LOCATIONS AND  
SAMPLING FREQUENCY FOR GMP**

FIRST QUARTER 2011 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPECK COMPRESSOR STATION  
NEEDLES, CALIFORNIA



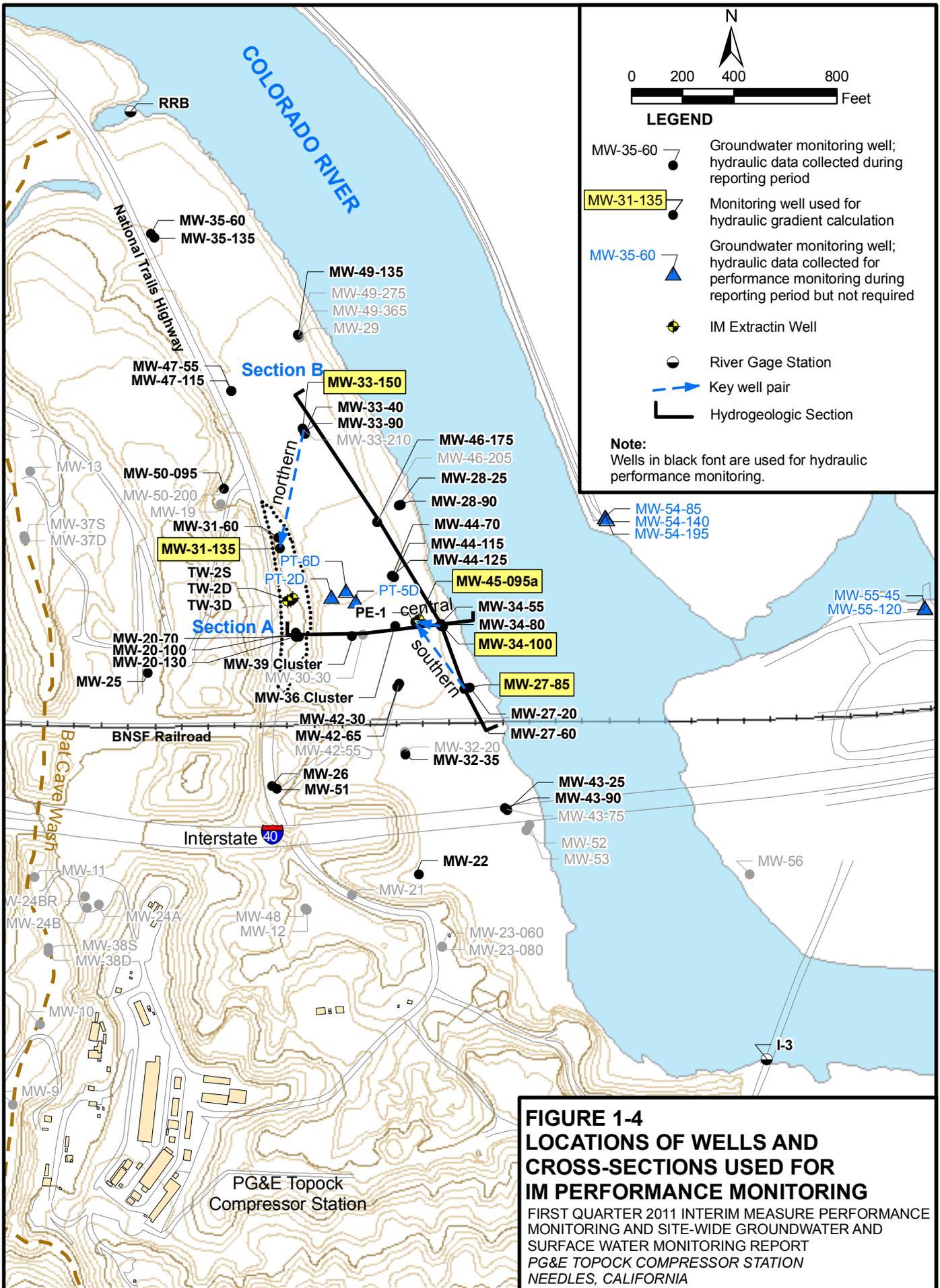
Note:  
 1) Shoreline, river channel, and other surface water monitoring locations are sampled quarterly and twice during periods of low river stage (typically November - January).  
 2) Location for SW-2 is approximate. GPS Coverage was not available.

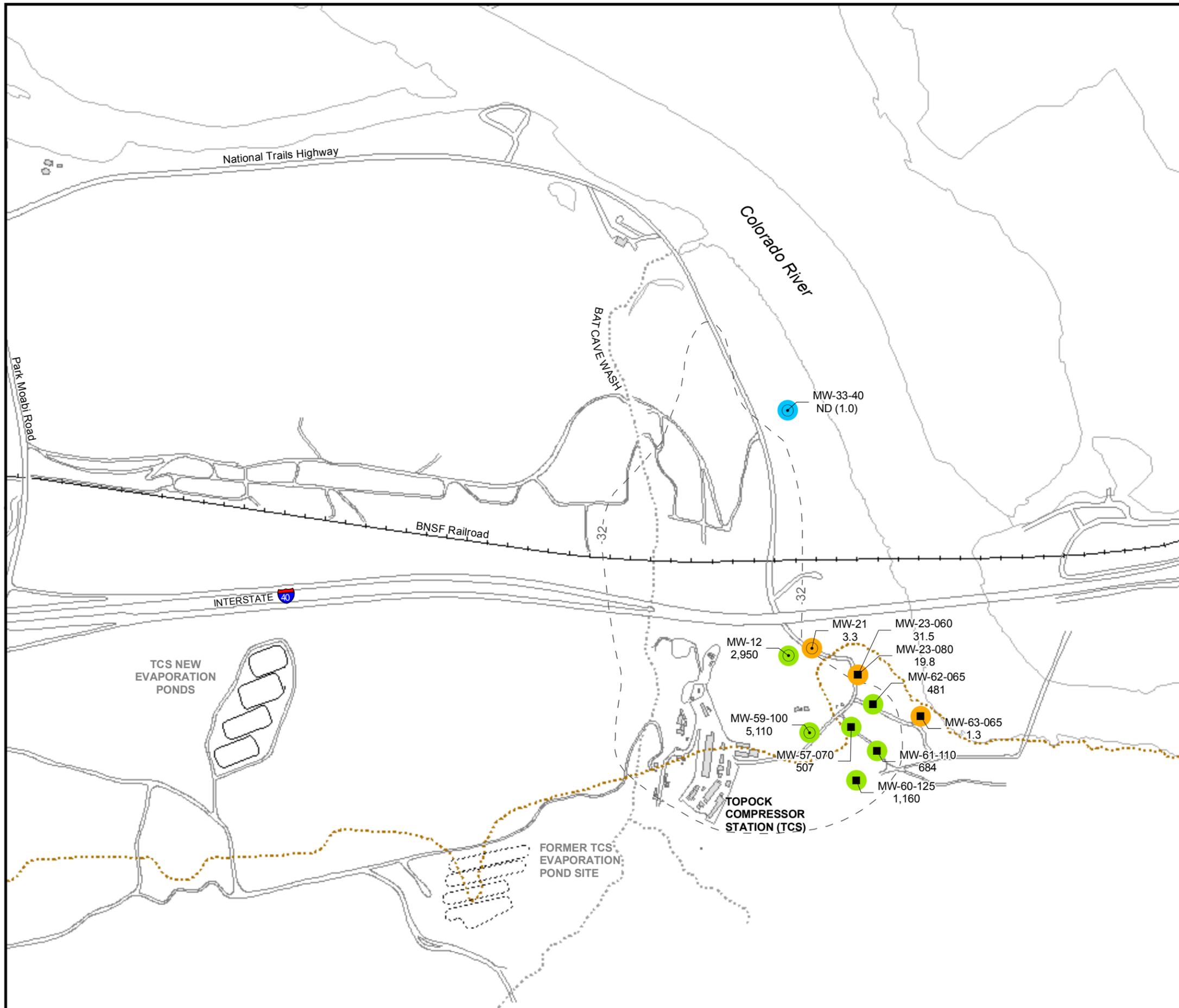
**LEGEND**

- Shoreline Surface Water Monitoring Location
- ☀ River Channel Surface Water Monitoring Location
- ⊖ Other Surface Water Monitoring Location

**FIGURE 1-3  
 MONITORING LOCATIONS AND  
 SAMPLING FREQUENCY FOR RMP**

FIRST QUARTER 2011 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA





**LEGEND**

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event

6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L)

Results shown are maximum concentrations in primary and duplicate samples from wells completed in **Shallow zone** of Alluvial Aquifer and Bedrock.

ND (0.2) Cr(VI) not detected at listed reporting limit

**Cr(VI) Concentrations - First Quarter 2011**

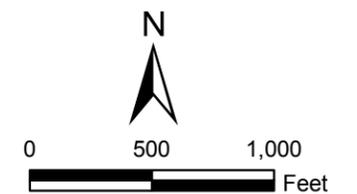
- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L

- - -32- - Approximate outline of monitoring wells in Alluvial Aquifer and Bedrock with Cr(VI) concentrations ≥ 32 µg/L based on Fourth Quarter 2010 groundwater sampling.

⋯ Approximate bedrock contact at 455 feet above mean sea level.

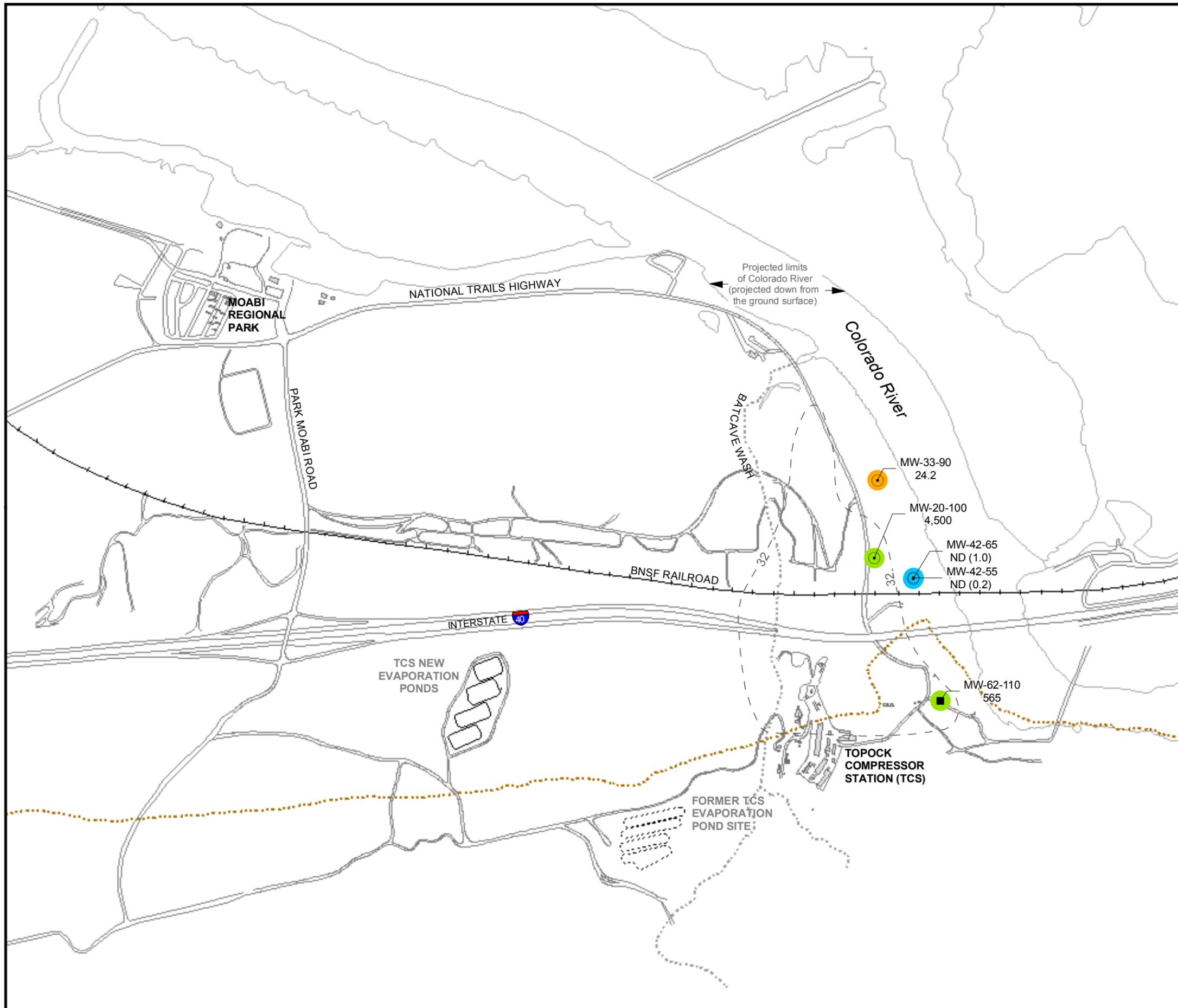
**Notes:**

Results plotted are maximum concentration from primary and duplicate samples, see table 3-1 for complete results.



**FIGURE 3-1a**  
**Cr(VI) SAMPLING RESULTS,**  
**SHALLOW WELLS IN ALLUVIAL AQUIFER**  
**AND BEDROCK, FIRST QUARTER 2011**

FIRST QUARTER 2011 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA



**LEGEND**

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event

6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L)

Results shown are maximum concentrations in primary and duplicate samples from wells completed in **Mid-Depth zone** of Alluvial Aquifer and Bedrock.

ND (0.2) Cr(VI) not detected at listed reporting limit

**Cr(VI) Concentrations - First Quarter 2011**

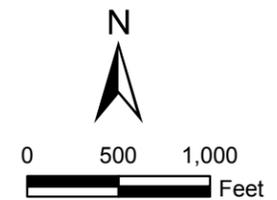
- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L

Approximate outline of monitoring wells in Alluvial Aquifer and Bedrock with Cr(VI) concentrations ≥ 32 µg/L based on Fourth Quarter 2010 groundwater sampling.

Approximate bedrock contact at 425 feet above mean sea level.

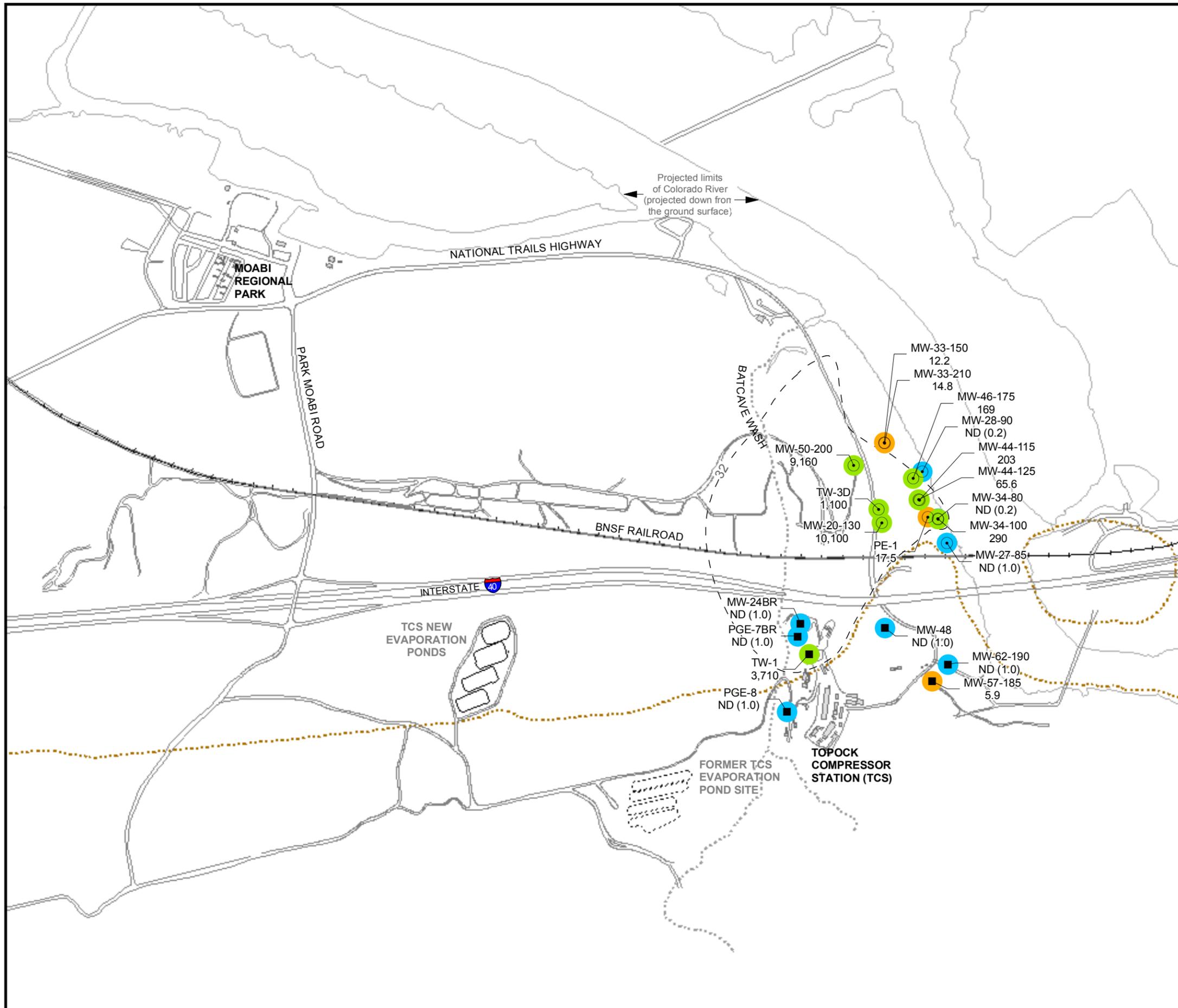
**Note:**

1. Results plotted are maximum concentration from primary and duplicate samples, see table 3-1 for complete results.



**FIGURE 3-1b  
Cr(VI) SAMPLING RESULTS  
MID-DEPTH WELLS IN ALLUVIAL AQUIFER  
AND BEDROCK, FIRST QUARTER 2011**

FIRST QUARTER 2011 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA



**LEGEND**

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event

6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L)

Results shown are maximum concentrations in primary and duplicate samples from wells completed in **Deep zone** of Alluvial Aquifer and Bedrock.

ND (0.2) Cr(VI) not detected at listed reporting limit

**Cr(VI) Concentrations - First Quarter 2011**

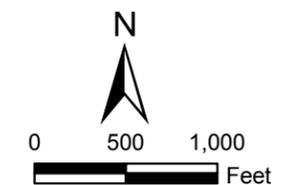
- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L

--- 32 --- Approximate outline of monitoring wells in Alluvial Aquifer and Bedrock with Cr(VI) concentrations ≥ 32 µg/L based on Fourth Quarter 2010 groundwater sampling.

--- 395 --- Approximate bedrock contact at 395 feet above mean sea level.

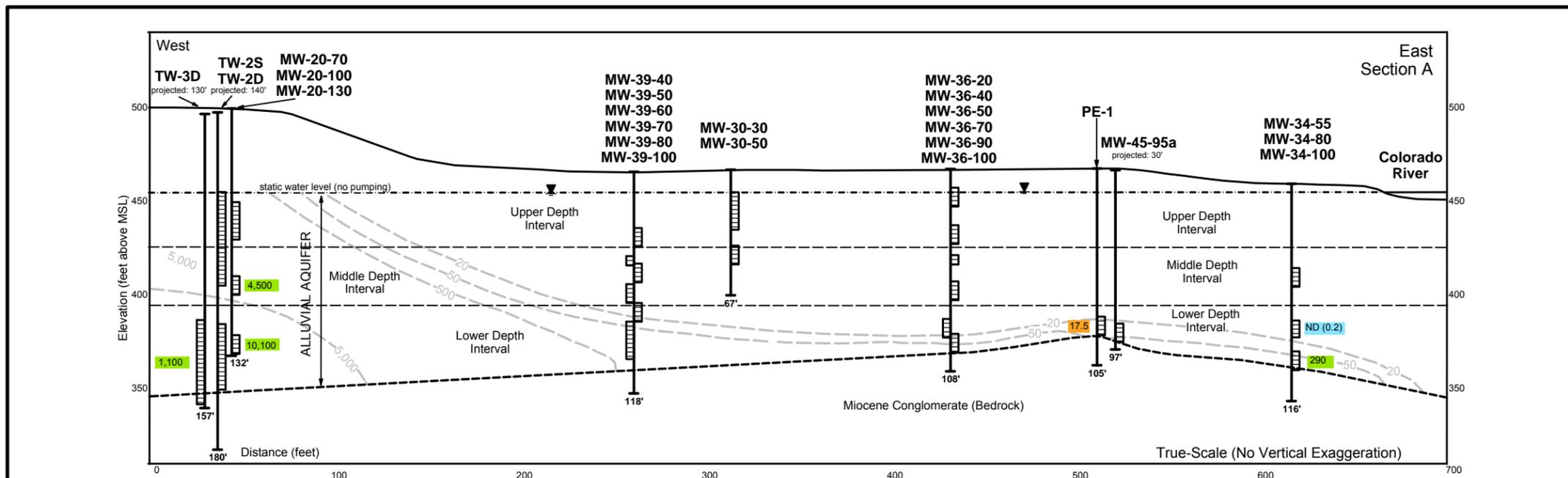
**Notes:**

1. Results plotted are maximum concentration from primary and duplicate samples, see table 3-1 for complete results.
2. In the floodplain area, the 32 µg/L line for Cr(VI) in deep zone (80-90 feet below Colorado River) is estimated based on available groundwater sampling, hydrogeologic and geochemical data. There are no data confirming the existence of Cr(VI) under the Colorado River.



**FIGURE 3-1c**  
**Cr(VI) SAMPLING RESULTS,**  
**DEEP WELLS IN ALLUVIAL AQUIFER**  
**AND BEDROCK, FIRST QUARTER 2011**

FIRST QUARTER 2011 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA



**LEGEND**

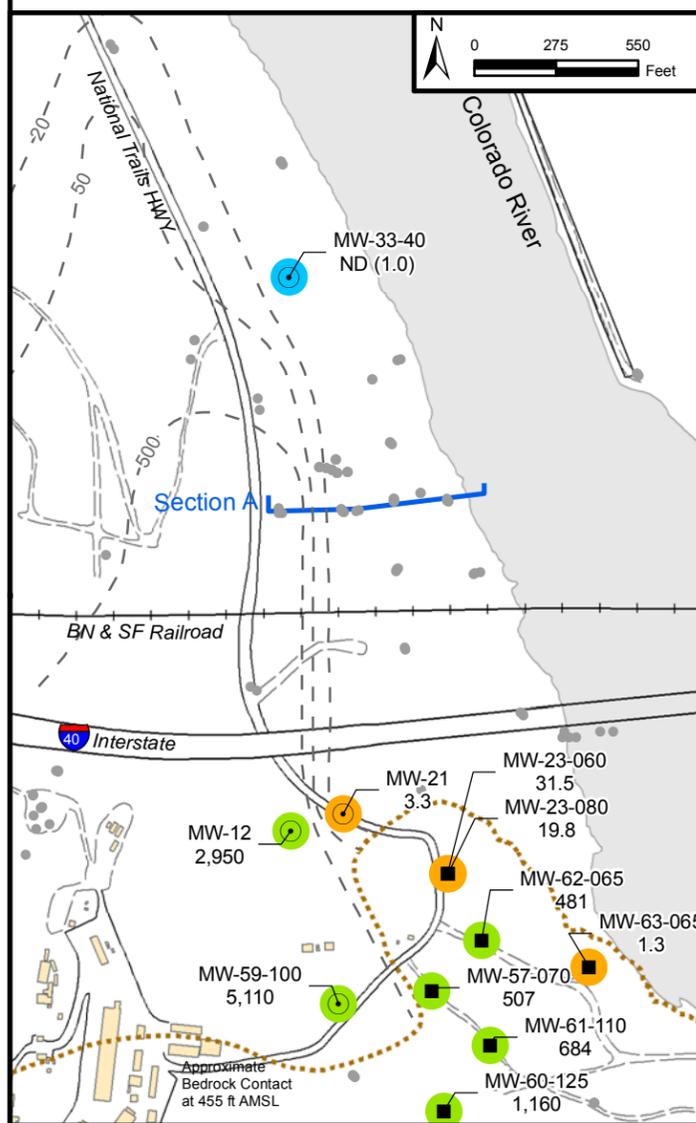
- Alluvial Aquifer well sampled during sampling event
  - Bedrock well sampling during sampling event
  - ◆ Extraction well sampled during sampling event
  - Well not sampled during sampling event
- 6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L). Results posted are maximum Cr(VI) concentrations.
- ND (0.2) Cr(VI) not detected at listed reporting limit

**Cr(VI) Concentrations - First Quarter 2011**

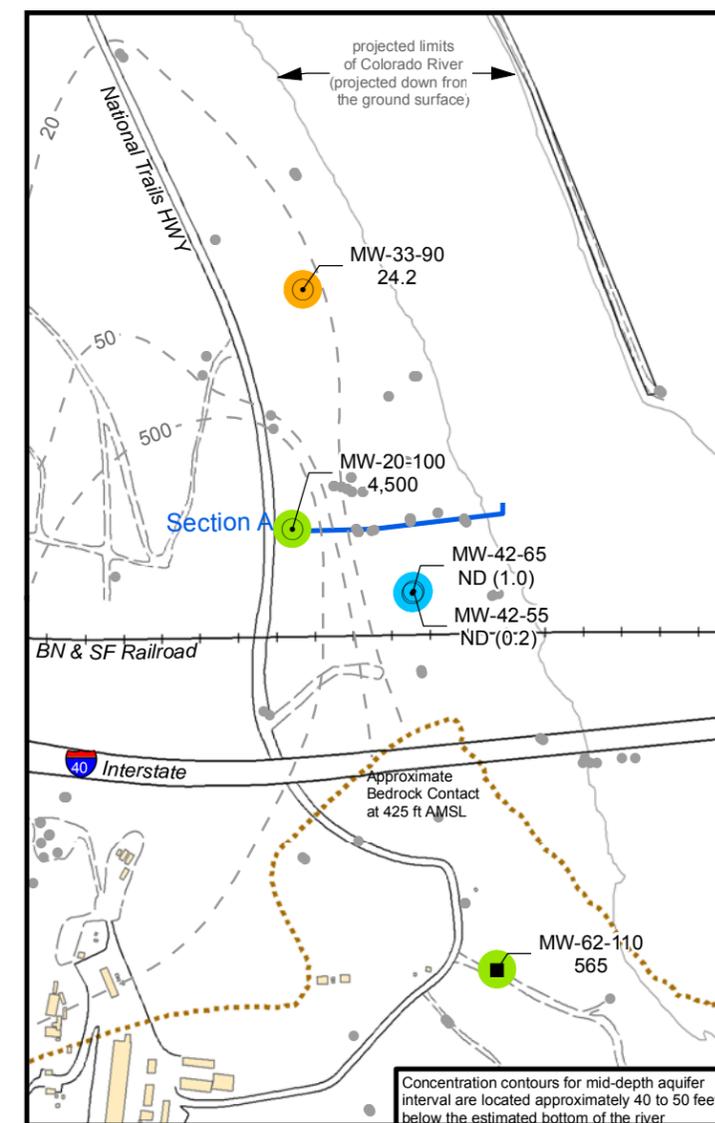
- Not detected at analytical reporting limit
  - Concentration between reporting limit and 32 µg/L
  - Concentration ≥ 32 µg/L
- 50 --- Inferred Cr(VI) concentration contour within Alluvial aquifer depth interval based on Fourth 2010 sampling results.
- Hydrogeologic Section A
- Approximate bedrock contact

**NOTES ON CONTOUR MAPS**

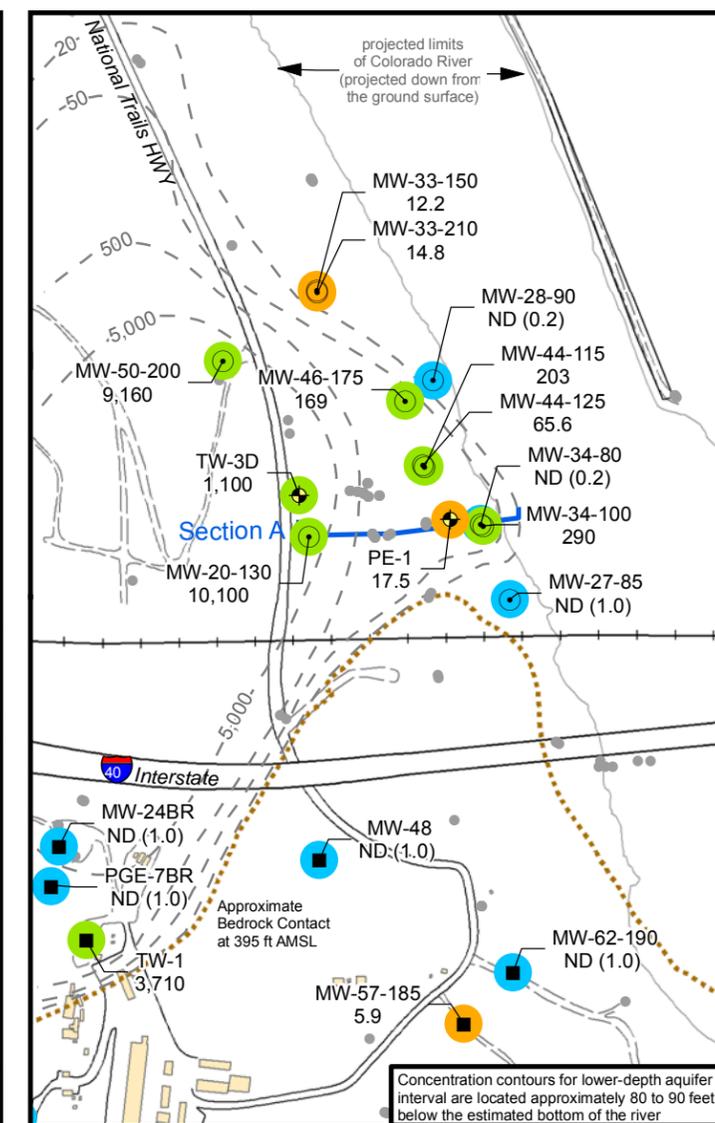
1. The Cr(VI) concentration contours of 20 and 50 µg/L are shown in accordance with DTSC's 2005 IM performance monitoring directive. The IM performance standard was established for containment of Cr(VI) concentrations greater than 20 µg/L in the floodplain portion of the Alluvial Aquifer.
2. In the floodplain area, the 20 µg/L line for Cr(VI) in deep zone (80-90 feet below Colorado River) is estimated based on available groundwater sampling, hydrogeologic and geochemical data. There are no data confirming the existence of Cr(VI) under the Colorado River.
3. Extraction wells PE-1 and TW-3D are not included in contouring. These wells draw water from a larger area and do not represent Cr(VI) concentrations at their specific locations.
4. Results from TW-3D, PE-01, MW-46-175 and MW-34-100 are from January 2011; the remainder are from February 2011. See table 3-1 for complete results.



**Shallow Wells (Upper Depth Interval)**



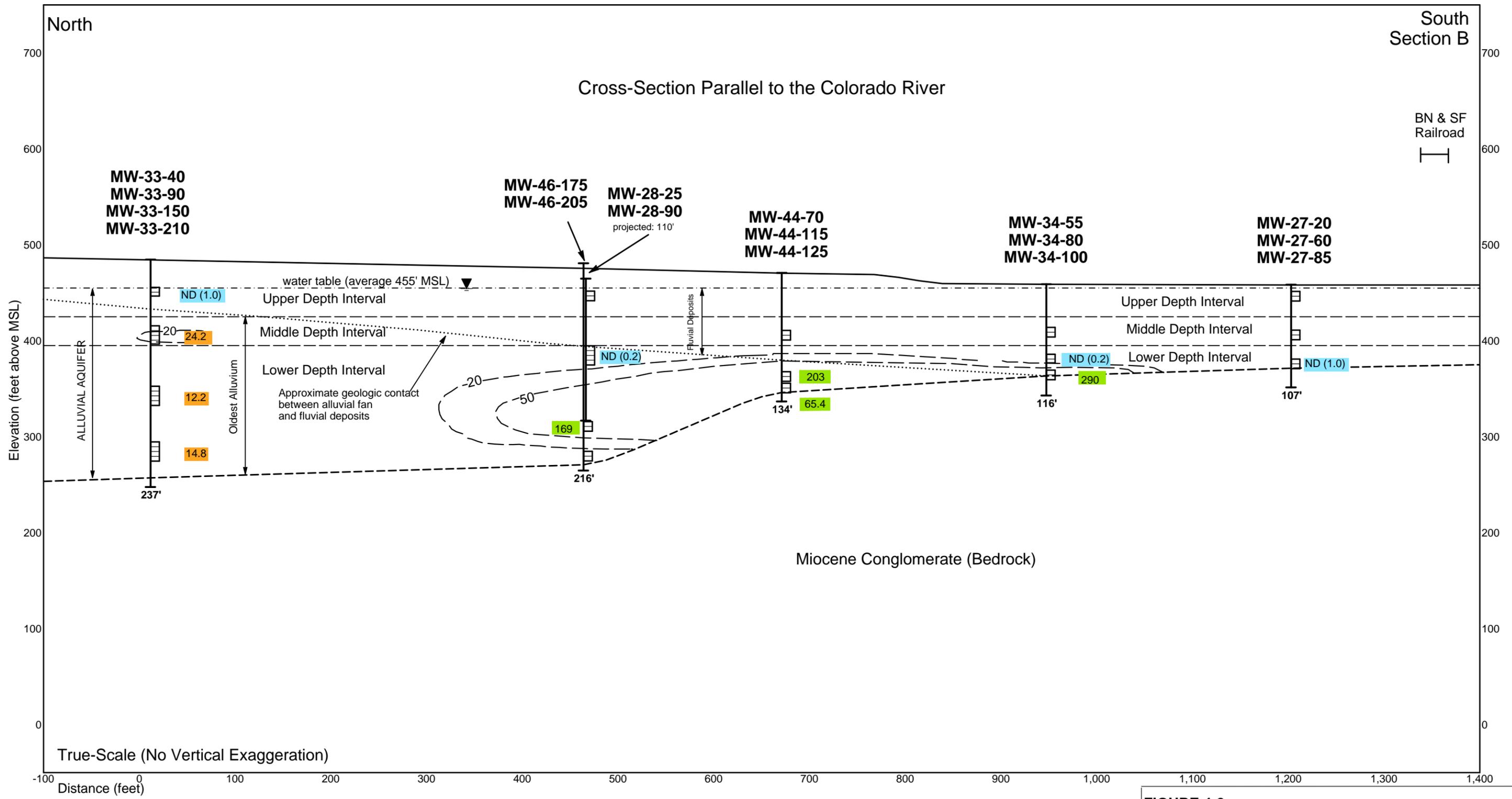
**Mid-Depth Wells (Middle-Depth Interval)**



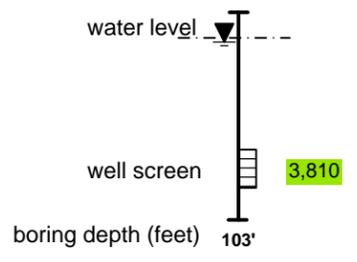
**Deep Wells (Lower Depth Interval)**

**FIGURE 4-1  
MAXIMUM Cr(VI) CONCENTRATIONS  
IN ALLUVIAL AQUIFER,  
FIRST QUARTER 2011**

FIRST QUARTER 2011 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA



Notes:  
 ND = Not detected at listed reporting limit.  
 See Table 3-1 for additional sampling data and prior results for wells on this figure.  
 See Figure 1-4 for map of this cross-section.



--- 50 ---  
 Inferred Cr(VI) concentration contour from December 2010 sampling.

Hexavalent Chromium [Cr(VI)] concentration in micrograms per liter (µg/L), equivalent to parts per billion (ppb).

ND (0.2) Not detected at listed reporting limit (ppb)

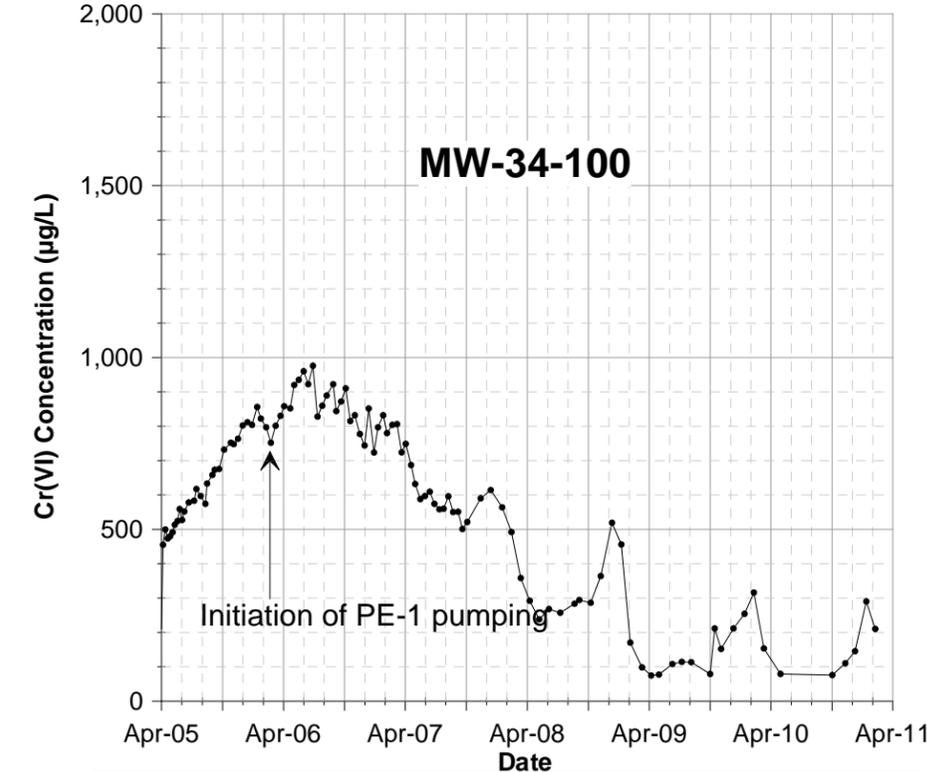
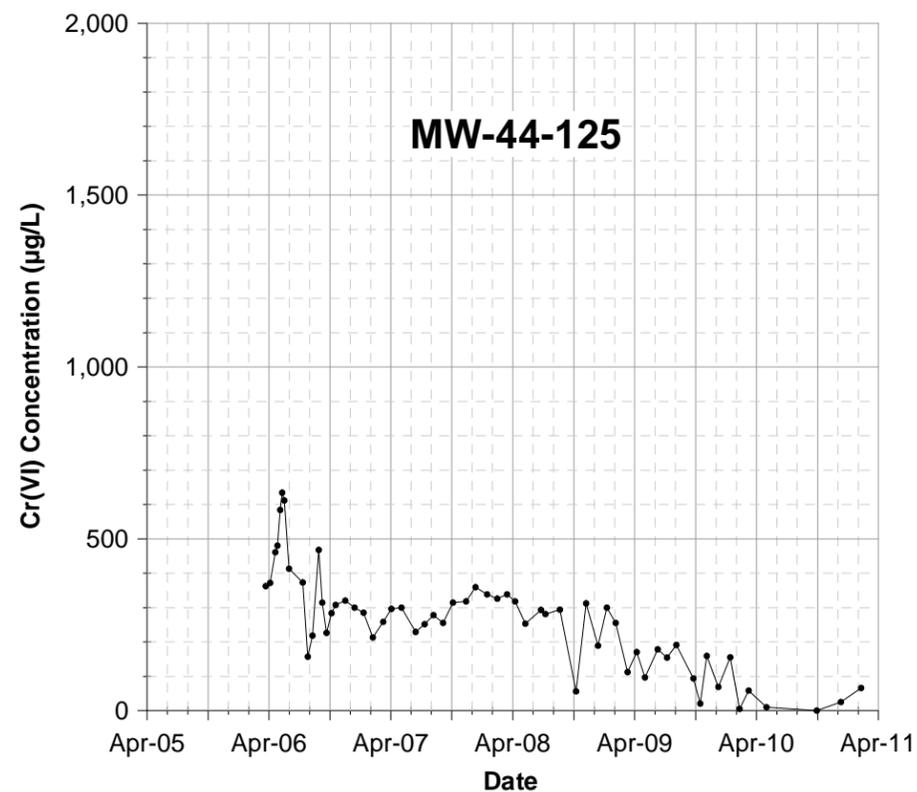
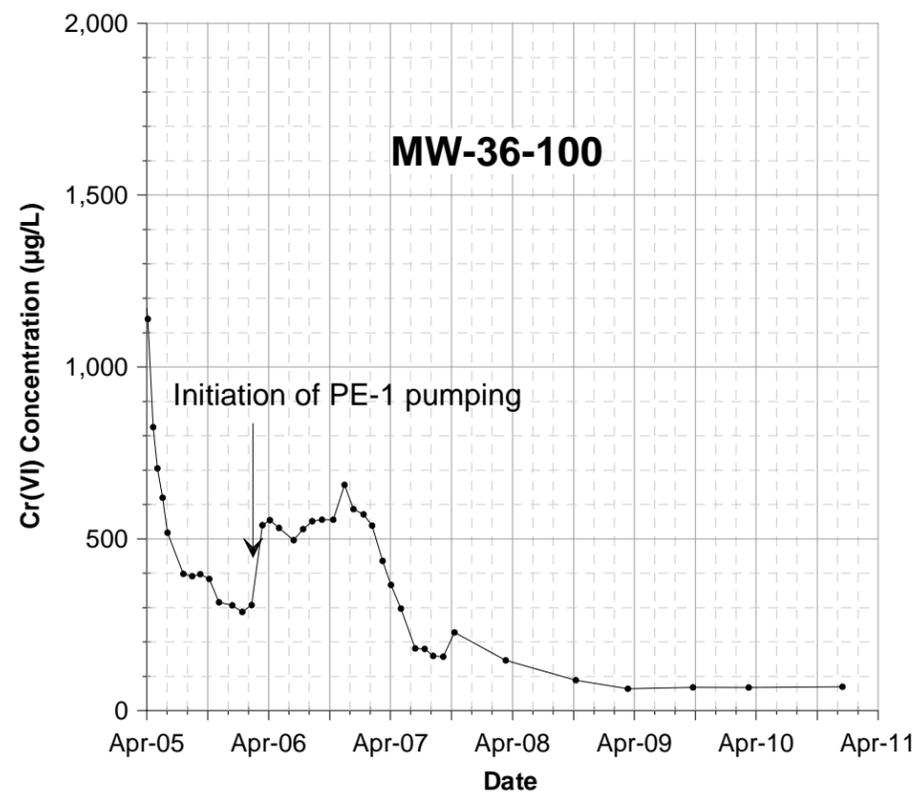
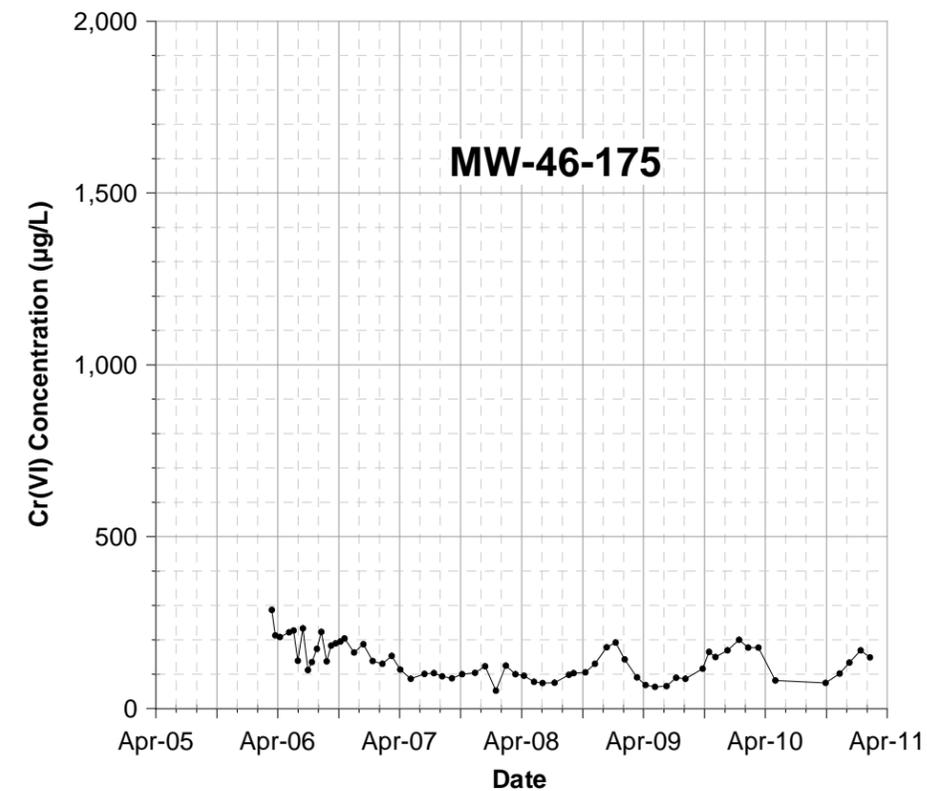
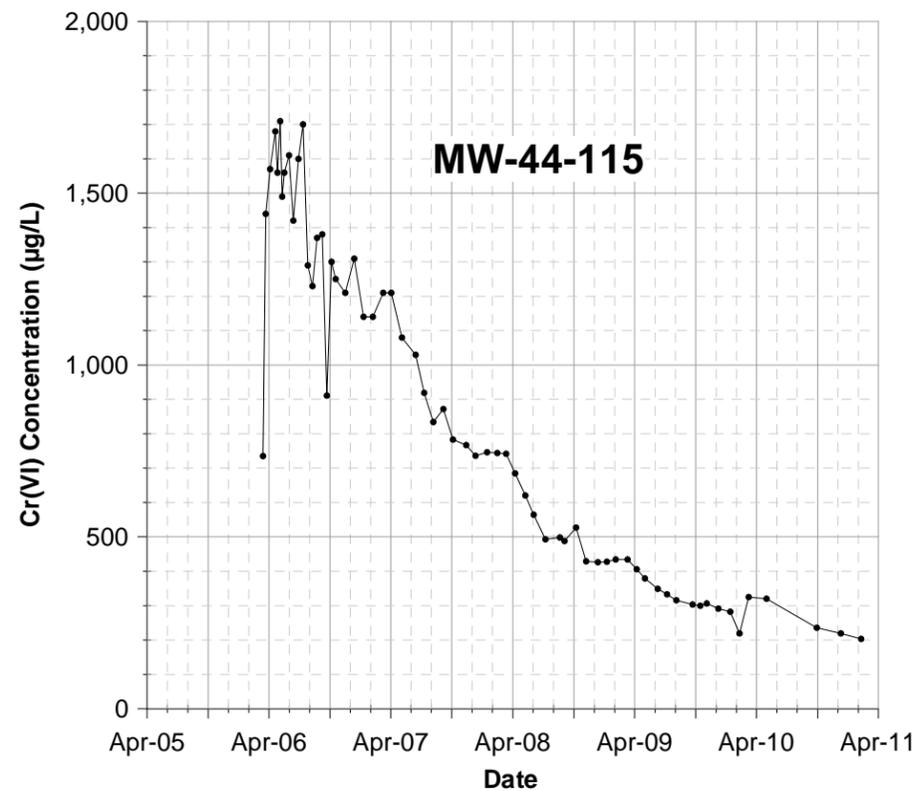
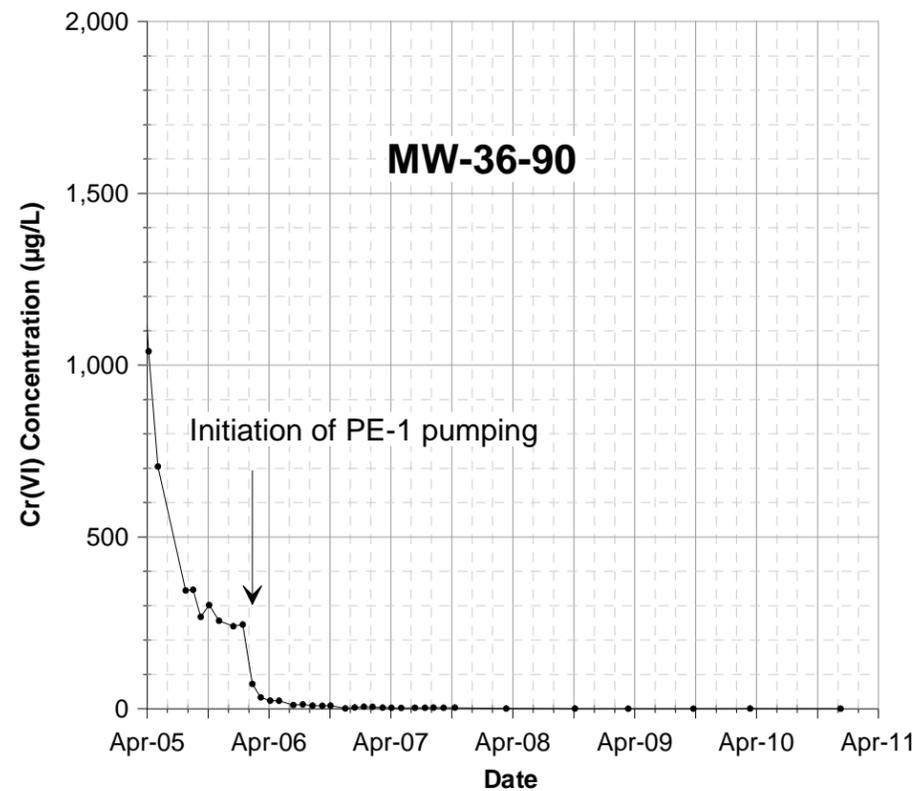
24.2 Less than 32 µg/L

203 Greater than 32 µg/L

**FIGURE 4-2**  
**Cr(VI) CONCENTRATIONS**  
**FLOODPLAIN CROSS-SECTION B,**  
**FIRST QUARTER 2011**

FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION,  
 NEEDLES, CALIFORNIA

**CH2MHILL**



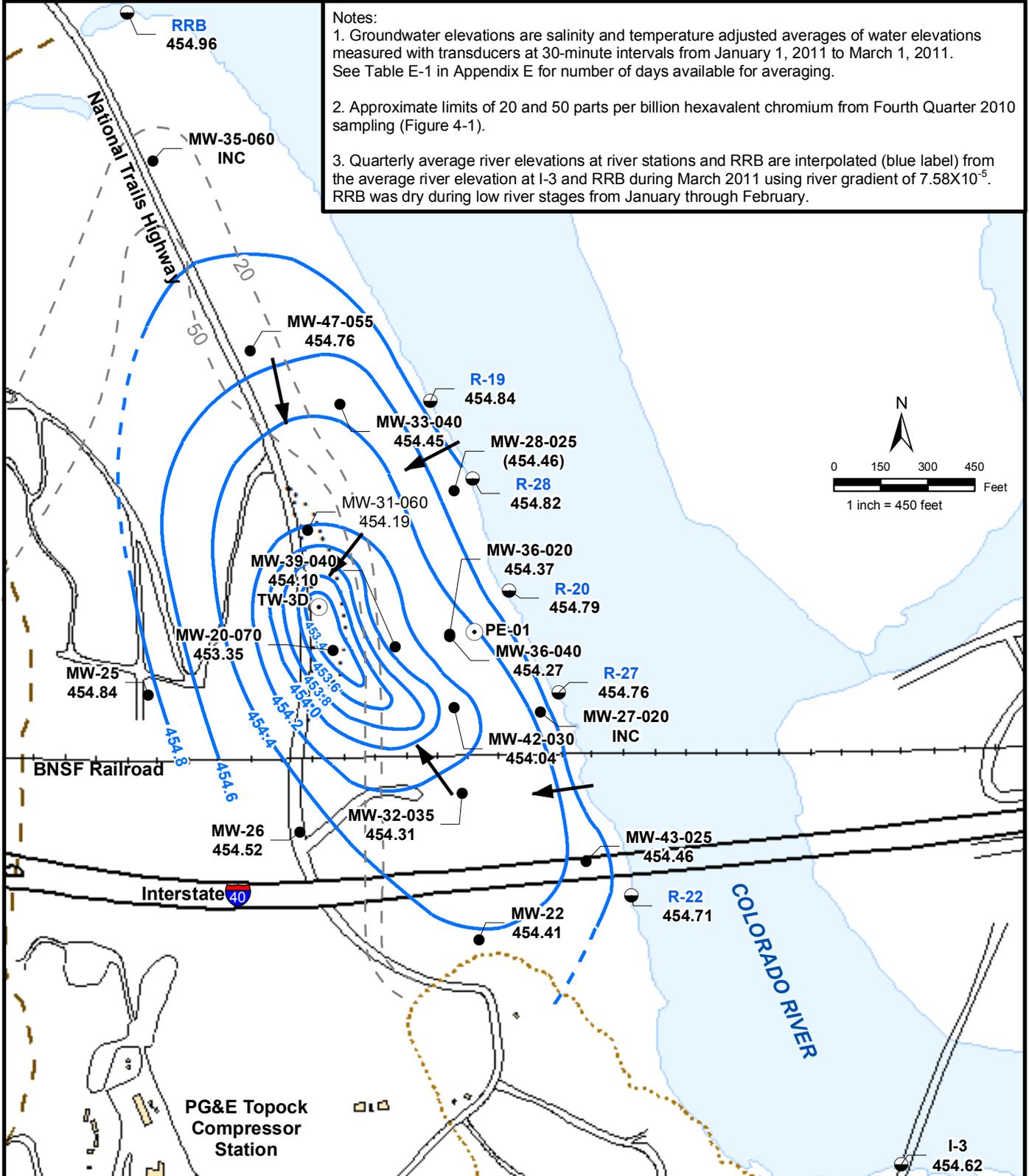
**Notes**

1. Hexavalent chromium [Cr(VI)] results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples; see Table 3-1 for complete results.
3. MW-36 wells selected to monitor effects of PE-1 pumping on plume west of PE-1. MW-44 wells, MW-46-175, and MW-34-100 selected to monitor concentrations within the plume.

**FIGURE 4-3**  
**Cr(VI) CONCENTRATION TRENDS IN**  
**SELECTED PERFORMANCE MONITORING WELLS,**  
**APRIL 2005 THROUGH MARCH 2011**  
 FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING AND  
 SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA

Notes:

1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30-minute intervals from January 1, 2011 to March 1, 2011. See Table E-1 in Appendix E for number of days available for averaging.
2. Approximate limits of 20 and 50 parts per billion hexavalent chromium from Fourth Quarter 2010 sampling (Figure 4-1).
3. Quarterly average river elevations at river stations and RRB are interpolated (blue label) from the average river elevation at I-3 and RRB during March 2011 using river gradient of  $7.58 \times 10^{-5}$ . RRB was dry during low river stages from January through February.

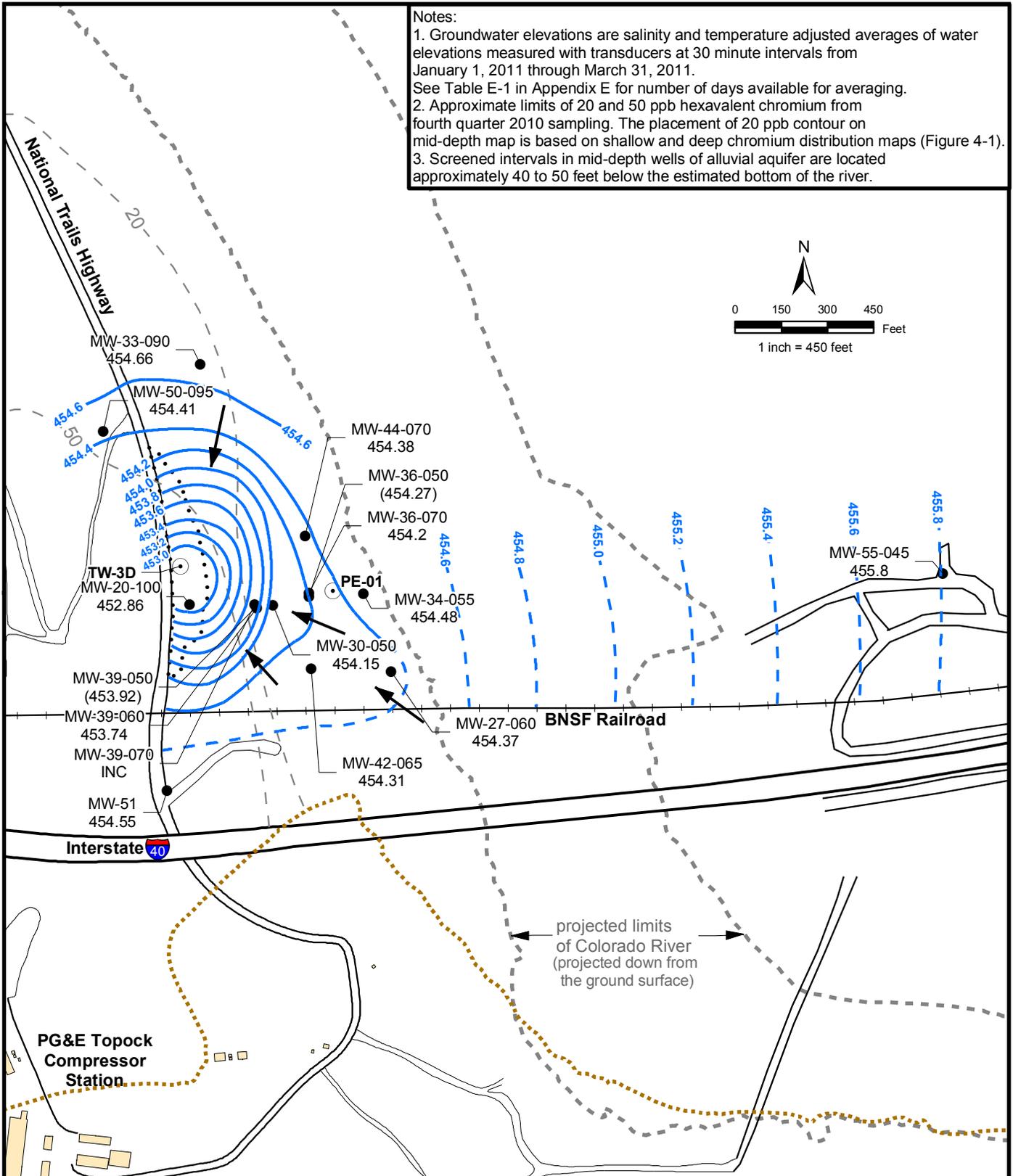


- MW-29 455.85 Average Groundwater Elevation at Monitoring Station (ft AMSL)
- MW-29 (455.85) Average Groundwater Elevation at Monitoring Station (ft AMSL) Not Used for Contouring
- R-22 455.85 River Elevation (ft MSL) Interpolated Average
- ➔ Interpreted Groundwater Flow Direction
- ⋯ Bedrock Contact at 455 ft elevation
- Monitoring Well
- River Station
- Extraction Well
- Groundwater Elevation Contour 0.2 ft (dashed where inferred)
- INC Data incomplete for reporting period

**FIGURE 4-4a**  
**AVERAGE GROUNDWATER ELEVATIONS IN SHALLOW WELLS AND RIVER ELEVATIONS, FIRST QUARTER 2011**  
 FIRST QUARTER 2011 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA

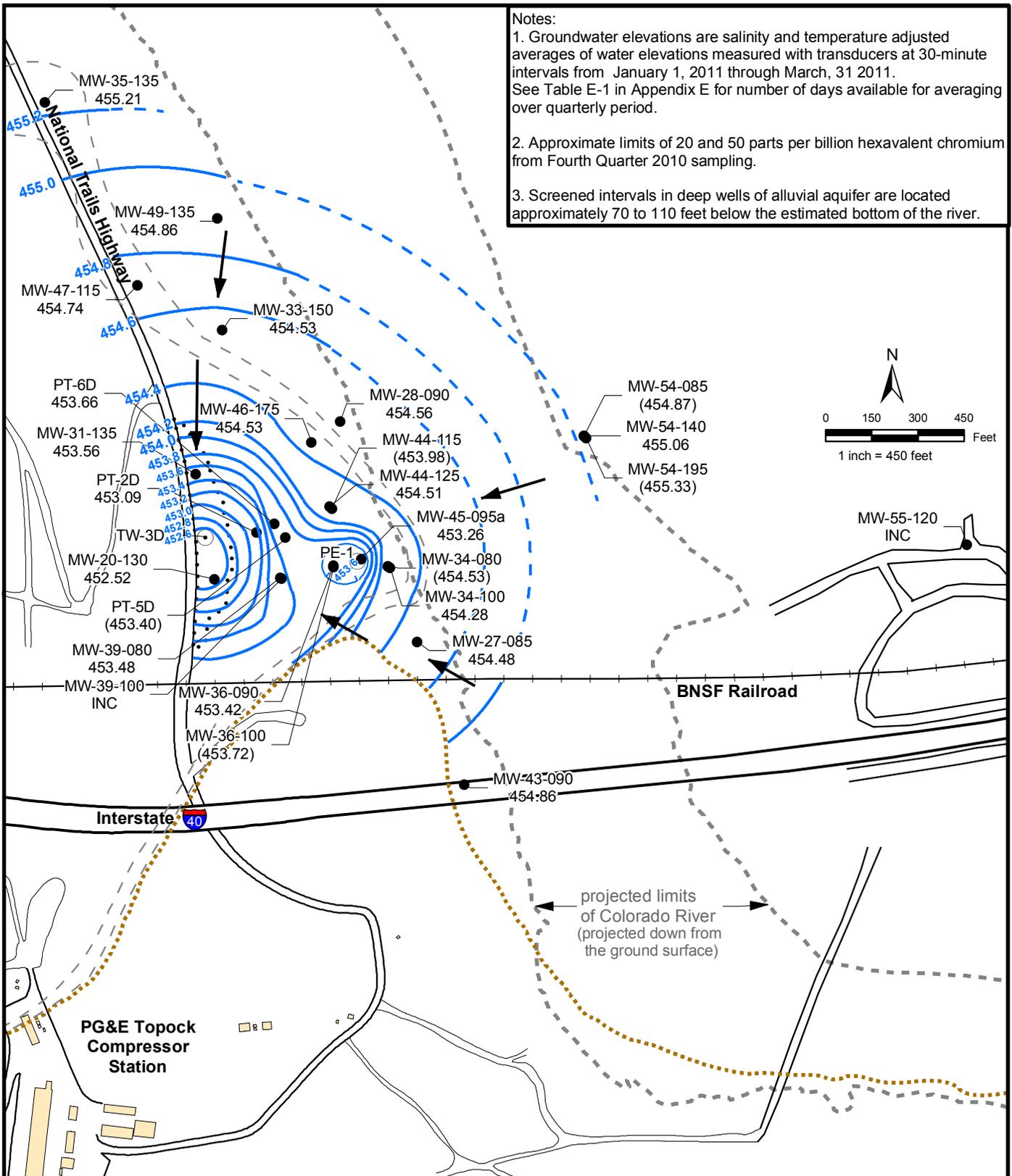
Notes:

1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30 minute intervals from January 1, 2011 through March 31, 2011. See Table E-1 in Appendix E for number of days available for averaging.
2. Approximate limits of 20 and 50 ppb hexavalent chromium from fourth quarter 2010 sampling. The placement of 20 ppb contour on mid-depth map is based on shallow and deep chromium distribution maps (Figure 4-1).
3. Screened intervals in mid-depth wells of alluvial aquifer are located approximately 40 to 50 feet below the estimated bottom of the river.



● MW-29 455.85	Average Groundwater Elevation at Monitoring Station (ft AMSL)	● Monitoring Well
● MW-29 (455.85)	Average Groundwater Elevation at Monitoring Station (ft AMSL) Not Used for Contouring	○ Extraction Well
➔	Interpreted Groundwater Flow Direction	— Groundwater Elevation Contour 0.2 ft (dashed where inferred)
⋯	Bedrock Contact at 425 ft elevation	INC Data incomplete for reporting period

**FIGURE 4-4b**  
**AVERAGE GROUNDWATER ELEVATIONS FOR MID-DEPTH WELLS, FIRST QUARTER 2011**  
 FIRST QUARTER 2011 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA

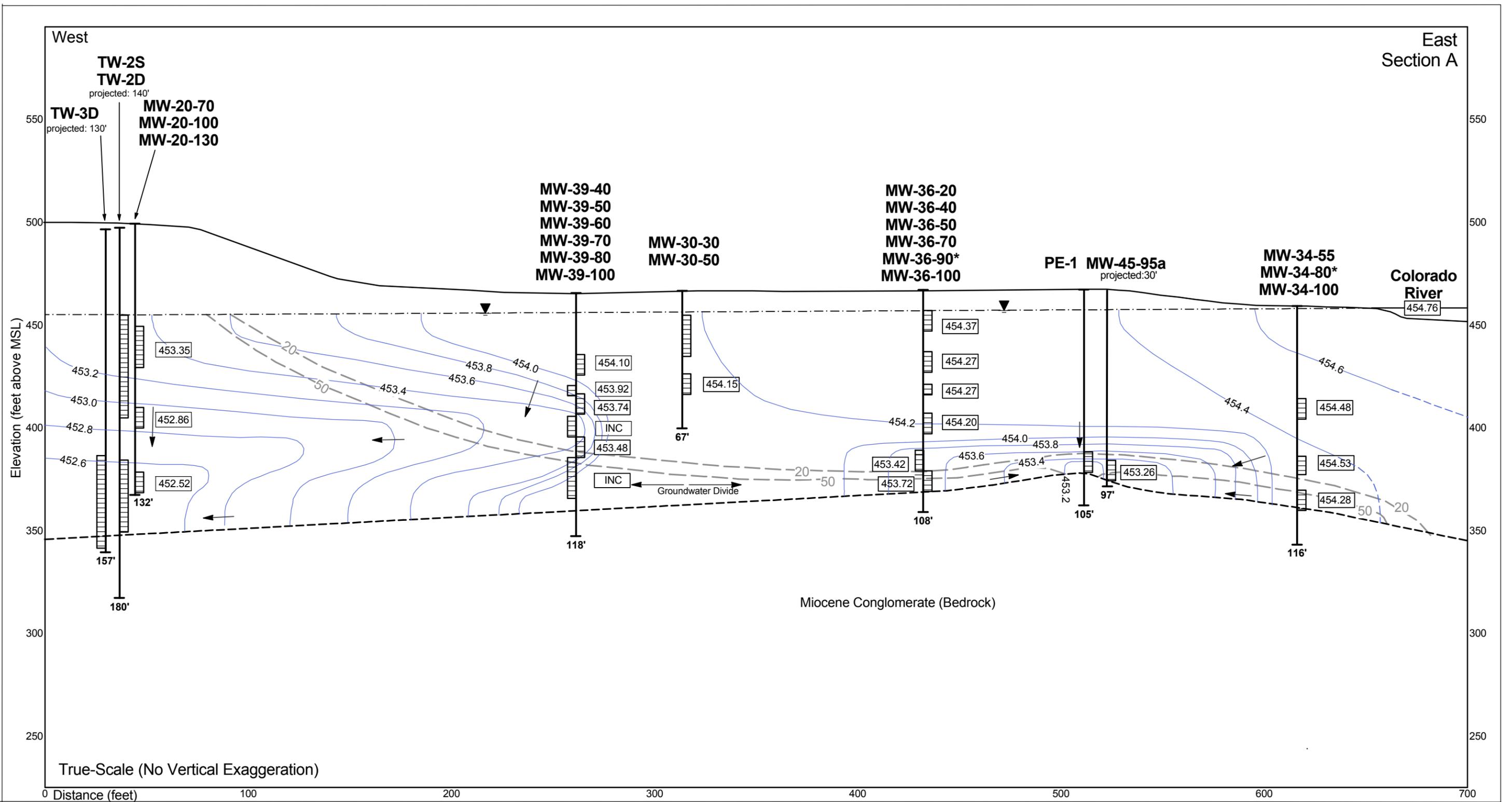


Notes:

1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30-minute intervals from January 1, 2011 through March, 31 2011. See Table E-1 in Appendix E for number of days available for averaging over quarterly period.
2. Approximate limits of 20 and 50 parts per billion hexavalent chromium from Fourth Quarter 2010 sampling.
3. Screened intervals in deep wells of alluvial aquifer are located approximately 70 to 110 feet below the estimated bottom of the river.

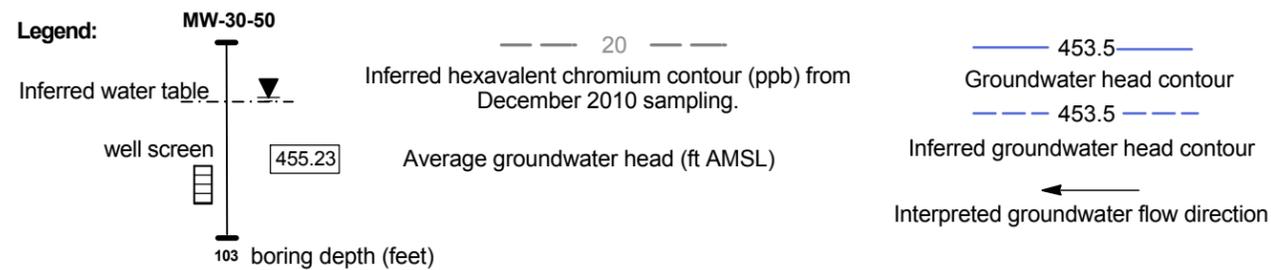
<ul style="list-style-type: none"> <li>● MW-29 455.85 Average Groundwater Elevation at Monitoring Station (ft AMSL)</li> <li>● MW-29 (455.85) Average Groundwater Elevation at Monitoring Station (ft AMSL) Not Used for Contouring</li> <li>➔ Interpreted Groundwater Flow Direction</li> <li>⋯ Bedrock Contact at 395 ft elevation</li> </ul>	<ul style="list-style-type: none"> <li>● Monitoring Well</li> <li>○ Extraction Well</li> <li>— Groundwater Elevation Contour 0.2 ft (dashed where inferred)</li> <li>INC Data incomplete for reporting period</li> </ul>
---	--

**FIGURE 4-4c**  
**AVERAGE GROUNDWATER ELEVATIONS FOR DEEP WELLS, FIRST QUARTER 2011**  
 FIRST QUARTER 2011 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA



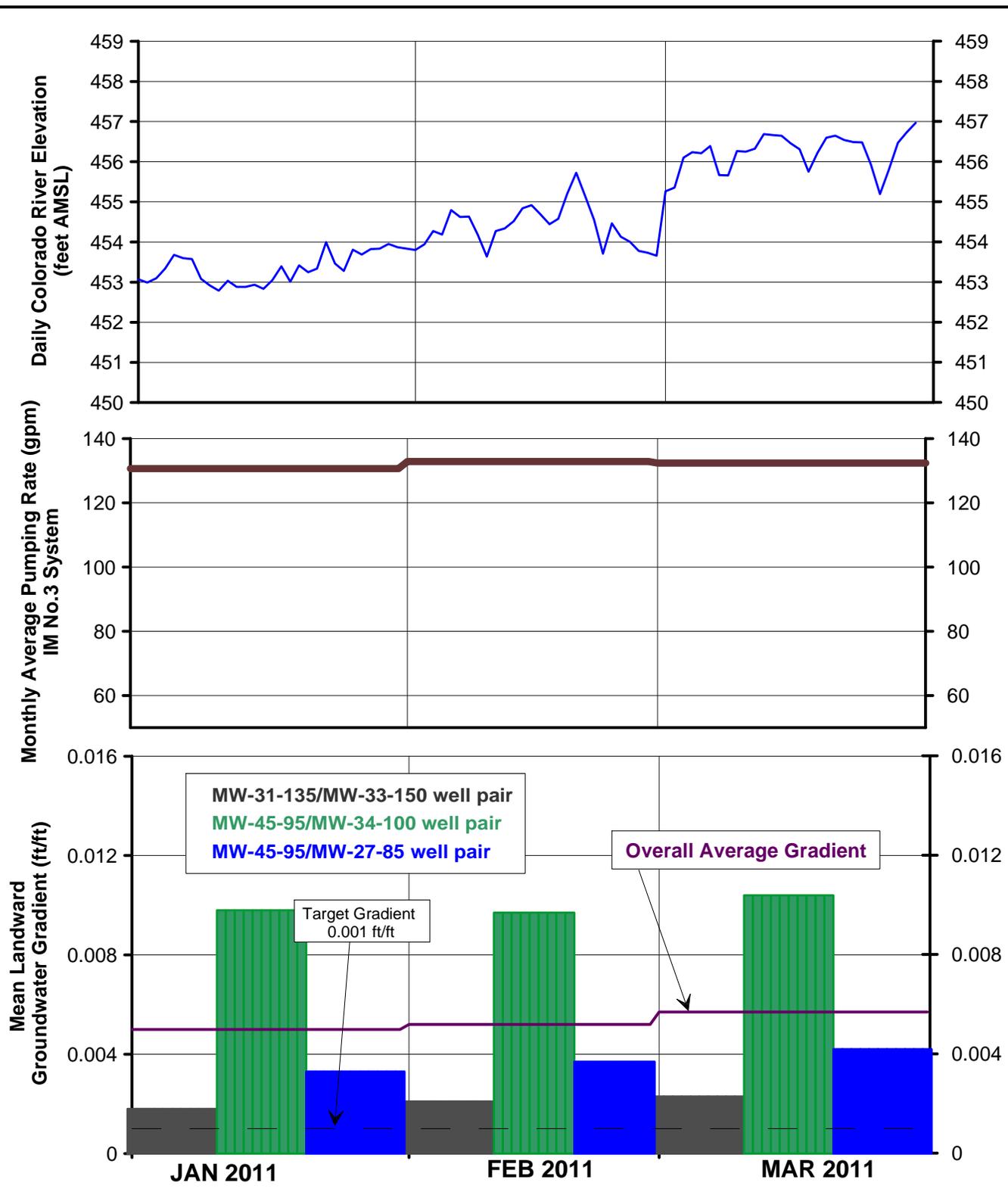
**Notes:**  
 Results show average groundwater elevations for January 1, 2011 through March 31, 2011 measured with transducers at 30 minute intervals.

Groundwater elevations adjusted for salinity and temperature. Wells MW-36-90\* and MW-34-80 are excluded from contouring. River elevation (R-27) is the calculated average river level based upon the river gradient between RRB and I-3.



**FIGURE 4-5**  
**AVERAGE GROUNDWATER ELEVATIONS**  
**FOR WELLS IN FLOODPLAIN CROSS-SECTION A**  
**FIRST QUARTER 2011**

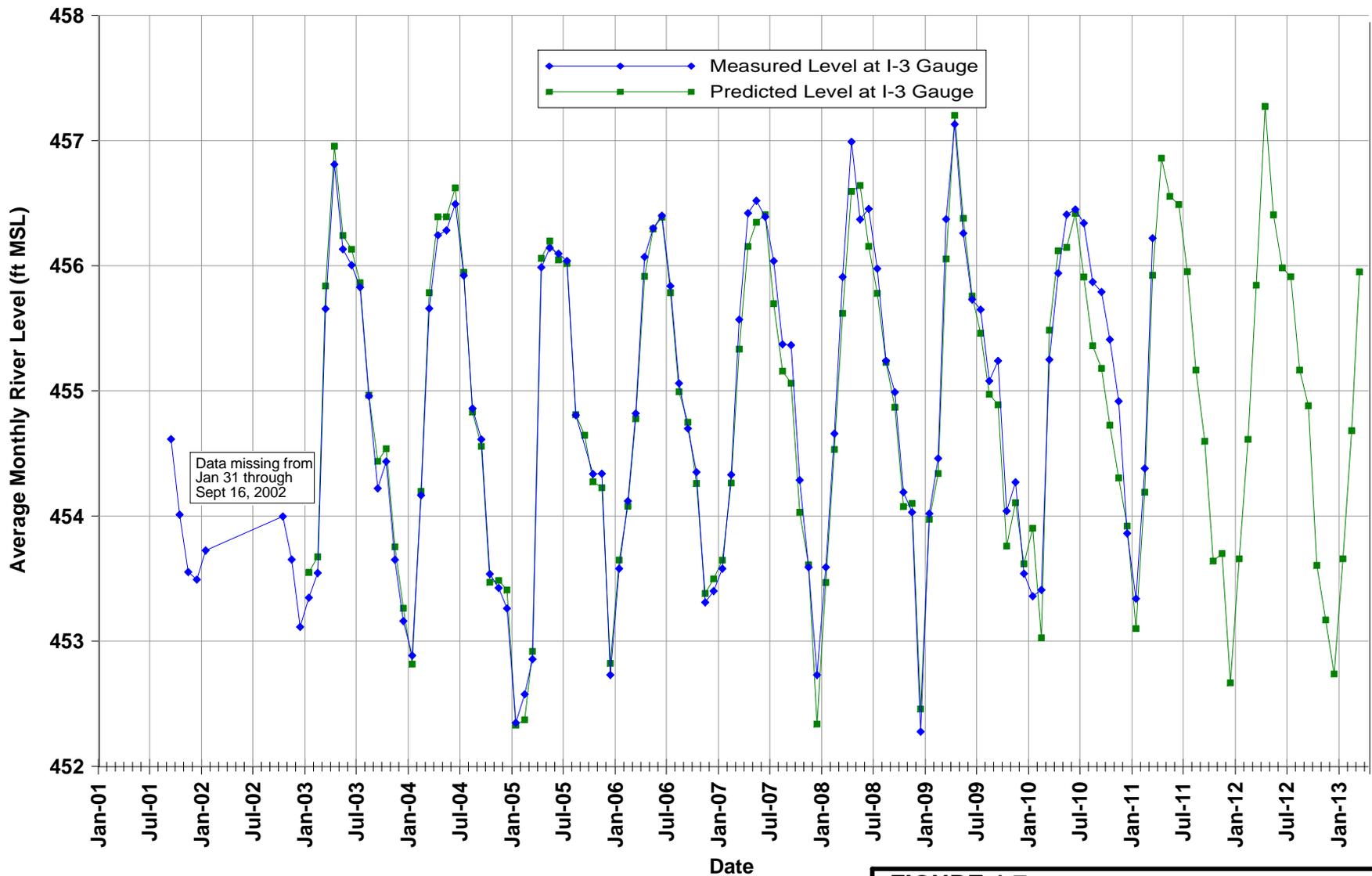
FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION,  
 NEEDLES, CALIFORNIA



- Notes:**
- 1) For IM pumping, the target landward gradient for well pairs is 0.001 feet/foot.
  - 2) Refer to Table 4-1 and Section 4.4 for discussion of pumping data.
  - 3) Pumping rate plotted is the combined rate of extraction wells TW-3D and PE-1 in operation each month.
  - 4) Refer to Table 4-3 and Section 4.5 for discussion of gradient data.

**FIGURE 4-6  
MEASURED HYDRAULIC GRADIENTS,  
RIVER ELEVATIONS, AND PUMPING RATE,  
FIRST QUARTER 2011**

FIRST QUARTER 2011 INTERIM MEASURES  
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER  
AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA



Note:  
 Projected river level for each month in the past is calculated based on the preceding months USBR projections of Davis Dam release and stage in Lake Havasu. Future projections of river level at I-3 are based upon April 2011 USBR projections. These data are reported monthly by the US Department of Interior, at <http://www.usbr.gov/lc/region/g4000/24mo.pdf>

**FIGURE 4-7**  
**PAST AND PREDICTED FUTURE RIVER LEVELS**  
**AT TOPOCK COMPRESSOR STATION**

FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE  
 MONITORING AND SITE-WIDE GROUNDWATER AND  
 SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

**Appendix A**  
**Lab Reports, First Quarter 2011**  
**(Provided on CD-ROM with hardcopy submittal)**

---

Dr. Yi Wang  
 Director of ZymaX Forensics Isotope  
 600 S. Andreasen Dr., Suite B  
 Escondido, CA 92029  
 Tel: 760.781.3338 ext 43  
 Fax: 760.781.3339  
 Cell: 609.721.2843  
 Email: yi.wang@zymaxusa.com

## REPORT OF ISOTOPE ANALYSES

Report Date: March 2nd, 2011

Samples from Shawn Duffy (CH2M HILL) and Matt Ringier (E2) for  $\delta^{18}\text{O}$  and  $\delta\text{D}$  (‰ VSMOW) analysis

ZymaX ID	Sample ID	$\delta^{18}\text{O}$	$\delta\text{D}$	ZymaX ID	$\delta^{18}\text{O}$	$\delta\text{D}$
42129-1	MW-20-100-172B	-7.0	-58.8	QC-01	-6.7	-42.9
42129-2	MW-20-130-172B	-6.6	-59.0	QC-02	-7.0	-43.3
Analytical Precision (1 $\sigma$ )		0.2	0.3	<b>Mean</b>	<b>-6.9</b>	<b>-43.1</b>
				<b>STDEV</b>	<b>0.2</b>	<b>0.3</b>

### ZYMAX FORENSICS ISOTOPE LABORATORY ANALYSES

- Gas**  
 $^{13}\text{C}$  and D of C1 to C4;  $^{13}\text{C}$  of  $\text{CO}_2$ ; C-14 of Methane and  $\text{CO}_2$ ;  $^{34}\text{S}$  of  $\text{H}_2\text{S}$ ;  $^{15}\text{N}$  and  $^{18}\text{O}$  of  $\text{N}_2\text{O}$  gas
- Oil, Extract, Fraction and Kerogen**  
 Compound-Specific  $^{13}\text{C}$  and D of MTBE, Chlorinated Solvents, PAH, Gasoline, Oil; Bulk  $^{13}\text{C}$ , D/H,  $^{34}\text{S}$ , and  $^{15}\text{N}$
- Water**  
 D and  $^{18}\text{O}$ ;  $^{34}\text{S}$  and  $^{18}\text{O}$  of dissolved sulfate;  $^{34}\text{S}$  of dissolved  $\text{H}_2\text{S}$ ;  $^{37}\text{Cl}$ ,  $^{13}\text{C}$  and D of chlorinated solvents  
 $^{15}\text{N}$  and  $^{18}\text{O}$  of dissolved Nitrate;  $^{15}\text{N}$  of Ammonia;  $^{13}\text{C}$  of dissolved  $\text{CO}_2$  and Carbonate/Bicarbonate
- Soil and Minerals:**  
 $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{34}\text{S}$ , D/H,  $^{18}\text{O}$ ; C-14 of carbonate or organics

Zymax GMP-174 1 of 1

CH2MHILL

CHAIN OF CUSTODY RECORD

2/10/2011 5:05:14 PM

Project Name PG&E Topock Location Topock Project Number 405681.MP.02.GM.04 Project Manager Jay Piper Sample Manager Shawn Duffy Task Order Project 2010-GMP-172B-Q4 Turnaround Time 10 Days Shipping Date: 2/3/2011 COC Number: ZYM_172BQ4				Container: 250 ml Poly Preservatives: 4°C Filtered: NA Holding Time: NA	Oxy_Deut (C-F-RMS)	Number of Containers	COMMENTS
DATE	TIME	Matrix					
MW-20-100-172B	2/10/2011	14:22	Water	X			
MW-20-130-172B	2/10/2011	16:50	Water	X			
TOTAL NUMBER OF CONTAINERS				2			

Approved by _____ Sampled by _____ Relinquished by _____ Received by <u>Rafael Davila</u> 2-10-11 17:30 Relinquished by <u>Rafael Davila</u> 2-10-11 23:00 Received by <u>Luda</u> 2/10/11 23:00 Received by <u>Ruan Lam</u> 2/11/11 12:40	Signatures _____ Date/Time <u>2-10-11</u> <u>17:30</u>	Shipping Details Method of Shipment: FedEx On Ice: yes / no Airbill No: Lab Name: Zymax Envirotechnology Lab Phone: (805) 544-4696	ATTN: Sample Custody and Michael Ng	Special Instructions: Dec 6-17, 2010 Report Copy to Shawn Duffy (530) 229-3303
--	--	---	--	--

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

February 1, 2011

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

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-178, GROUNDWATER MONITORING PROJECT, TLI NO.: 992957

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-178 groundwater-monitoring project for Total Dissolved and Hexavalent Chromium, Total Dissolved Solids, and Specific Conductivity. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on January 4, 2011, 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.

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

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

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

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

*for*   
Mona Nassimi  
Manager, Analytical Services

*K. R. P. Iyer*

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

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

**Attention:** Shawn Duffy

**Sample:** Two (2) Groundwater Samples

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

**Project No.:** 408401.01.DM

**Laboratory No.:** 992957

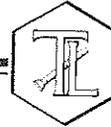
**Date:** February 1, 2011

**Collected:** January 4, 2011

**Received:** January 4, 2011

## ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Jordan Stavrev
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 200.7	Total Chromium	Ethel Suico
EPA 218.6	Hexavalent Chromium	Sonya Bersudsky
SM 3500-CrB	Hexavalent Chromium	Jenny Tankunakorn



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

**Attention:** Shawn Duffy

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

**Laboratory No.:** 992957  
**Date Received:** January 4, 2011

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
992957-001	PE-01-178	E120.1	NONE	1/4/2011	13:20	EC	5330	umhos/cm	2.00
992957-001	PE-01-178	E200.7	LABFLT	1/4/2011	13:20	Chromium	16.6	ug/L	10.0
992957-001	PE-01-178	E218.6	LABFLT	1/4/2011	13:20	Chromium, hexavalent	17.5	ug/L	0.20
992957-001	PE-01-178	SM2540C	NONE	1/4/2011	13:20	Total Dissolved Solids	3110	mg/L	125
992957-002	TW-03D-178	E120.1	NONE	1/4/2011	13:25	EC	8710	umhos/cm	2.00
992957-002	TW-03D-178	E200.7	LABFLT	1/4/2011	13:25	Chromium	1200	ug/L	10.0
992957-002	TW-03D-178	SM2540C	NONE	1/4/2011	13:25	Total Dissolved Solids	5550	mg/L	250
992957-002	TW-03D-178	SM3500-CrB	LABFLT	1/4/2011	13:25	Chromium, hexavalent	1100	ug/L	100

ND: Non Detected (below reporting limit)

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

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

## REPORT

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

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 408401.01.DM

Project Number: 408401.01.DM

Laboratory No. 992957

Page 1 of 10

Printed 2/1/2011

Samples Received on 1/4/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-178	992957-001	01/04/2011 13:20	Water
TW-03D-178	992957-002	01/04/2011 13:25	Water

### Specific Conductivity - EPA 120.1

Batch 01EC111

1/12/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
992957-001 Specific Conductivity	umhos/cm	01/12/2011	1.00	0.0380	2.00	5330
992957-002 Specific Conductivity	umhos/cm	01/12/2011	1.00	0.0380	2.00	8710

#### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

#### Duplicate

Lab ID = 992959-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	8040	8060	0.248	0 - 10

#### Duplicate

Lab ID = 993043-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7460	7460	0	0 - 10

#### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	691.	706.	97.9	90 - 110

#### Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	698.	706.	98.9	90 - 110

#### MRCCS - Secondary

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

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

007



# TRUESDAIL LABORATORIES, INC.

*Report Continued*

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

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

**Page 2 of 10**

**Project Number: 408401.01.DM**

**Printed 2/1/2011**

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	991.	999.	99.2	90 - 110

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	995.	999.	99.6	90 - 110

---

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

**008**



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 10

Project Number: 408401.01.DM

Printed 2/1/2011

Chrome VI by EPA 218.6

Batch 01CrH11B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
992957-001 Chromium, Hexavalent	ug/L	01/05/2011 16:05	1.05	0.0210	0.20	17.5

Method Blank

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

Duplicate

Lab ID = 992658-020

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	24.3	23.2	4.39	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.10	5.00	102	90 - 110

Matrix Spike

Lab ID = 992658-016

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.92	5.71(5.25)	104	90 - 110

Matrix Spike

Lab ID = 992658-017

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.5	10.9	10.5(10.5)	104	90 - 110

Matrix Spike

Lab ID = 992658-017

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	4.51	5.25(5.25)	85.9	90 - 110

Matrix Spike

Lab ID = 992658-018

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.09	1.19(1.06)	91.0	90 - 110

Matrix Spike

Lab ID = 992658-019

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.12	1.18(1.06)	93.9	90 - 110

Matrix Spike

Lab ID = 992658-020

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	47.5	49.4(26.2)	92.7	90 - 110

Matrix Spike

Lab ID = 992658-021

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	35.6	37.6(26.2)	92.2	90 - 110

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



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 10

Project Number: 408401.01.DM

Printed 2/1/2011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Matrix Spike						
Chromium, Hexavalent	ug/L	1.08	39.1	39.1(21.6)	100	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.45	1.38(1.06)	106	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	105	2540	2700(1580)	89.9	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	10.5	13.1	13.0(10.5)	101	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	5.25	0.263	6.79(5.25)	-24.3	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	ND	1.06(1.06)		90 - 110
MRCCS - Secondary						
Chromium, Hexavalent	ug/L	1.00	5.02	5.00	100	90 - 110
MRCVS - Primary						
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103	95 - 105
MRCVS - Primary						
Chromium, Hexavalent	ug/L	1.00	10.4	10.0	104	95 - 105
MRCVS - Primary						
Chromium, Hexavalent	ug/L	1.00	9.82	10.0	98.2	95 - 105

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 10

Project Number: 408401.01.DM

Printed 2/1/2011

Chromium, Hexavalent by SM 3500-Cr B

Batch 01CrH11C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
992957-002 Chromium, Hexavalent	ug/L	01/31/2011 14:48	10.0	35.0	100.	1100

Method Blank

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

Duplicate

Lab ID = 993319-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	1590	1580	0.768	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	93.7	100.	93.7	90 - 110

Matrix Spike

Lab ID = 993319-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	2570	2580(1000)	98.6	85 - 115

Matrix Spike Duplicate

Lab ID = 993319-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	2570	2580(1000)	98.6	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	54.7	60.0	91.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	54.7	60.0	91.2	90 - 110

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



**TRUESDAIL LABORATORIES, INC.**

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 10

Project Number: 408401.01.DM

Printed 2/1/2011

**Total Dissolved Solids by SM 2540 C**

Batch 01TDS11A

1/6/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
992957-001 Total Dissolved Solids	mg/L	01/06/2011	1.00	0.434	125.	3110
992957-002 Total Dissolved Solids	mg/L	01/06/2011	1.00	0.434	250.	5550

Method Blank

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

Duplicate

Lab ID = 992959-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	41400	41200	0.363	0 - 5

Lab Control Sample

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

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 408401.01.DM

Page 7 of 10
Printed 2/1/2011

Metals by 200.7, Dissolved

Batch 012111B-Th

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row: 992957-001 Chromium, ug/L, 01/21/2011 21:16, 1.00, 0.325, 1.0, 16.6

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row: Chromium, ug/L, 1.00, ND

Duplicate

Lab ID = 993099-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Chromium, ug/L, 1.00, 4.47, 4.37, 2.22, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, 49.8, 50.0, 99.5, 90 - 110

Matrix Spike

Lab ID = 993099-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, 54.5, 54.4(50.0), 100, 75 - 125

Matrix Spike Duplicate

Lab ID = 993099-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, 54.8, 54.4(50.0), 101, 75 - 125

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, 49.7, 50.0, 99.3, 95 - 105

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, 51.6, 50.0, 103, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, 53.1, 50.0, 106, 90 - 110

Interference Check Standard A

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, ND, 0

Interference Check Standard A

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, ND, 0

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



**TRUESDAIL LABORATORIES, INC.**

*Report Continued*

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

Project Name: PG&E Topock Project

Page 8 of 10

Project Number: 408401.01.DM

Printed 2/1/2011

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.7	50.0	99.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	54.1	50.0	108	80 - 120

---



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 408401.01.DM

Page 9 of 10
Printed 2/1/2011

Metals by 200.7, Dissolved

Batch 012611A-Th

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row: 992957-002 Chromium, ug/L, 01/26/2011 22:07, 5.00, 1.62, 10.0, 1200

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row: Chromium, ug/L, 1.00, ND

Duplicate

Lab ID = 993187-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Chromium, ug/L, 1.00, ND, 0, 0, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, 49.5, 50.0, 99.0, 90 - 110

Matrix Spike

Lab ID = 993187-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, 49.7, 50.0(50.0), 99.4, 75 - 125

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, 49.0, 50.0, 98.0, 95 - 105

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, 53.8, 50.0, 108, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, 50.4, 50.0, 101, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, 49.2, 50.0, 98.5, 90 - 110

Interference Check Standard A

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, ND, 0, Recovery, Acceptance Range

Interference Check Standard A

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, ND, 0, Recovery, Acceptance Range

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



**TRUESDAIL LABORATORIES, INC.**

*Report Continued*

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

Project Name: PG&E Topock Project

Page 10 of 10

Project Number: 408401.01.DM

Printed 2/1/2011

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.8	50.0	102	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	53.9	50.0	108	80 - 120

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**

for Mona Nassimi

Manager, Analytical Services

EZ Condon



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 01TDS11A

Date Calculated: 1/10/11

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	103.7171	103.7175	103.7171	0.0004	No	0.0000	0.0	25.0	ND	1
992932	50	74.7166	74.7516	74.7512	0.0004	No	0.0346	692.0	50.0	692.0	1
992957-1	20	68.1904	68.2526	68.2526	0.0000	No	0.0622	3110.0	125.0	3110.0	1
992957-2	10	48.1834	48.2391	48.2389	0.0002	No	0.0555	5550.0	250.0	5550.0	1
992959-1	10	49.4984	49.5425	49.5425	0.0000	No	0.0441	4410.0	250.0	4410.0	1
992959-2	10	47.9716	48.0266	48.0263	0.0003	No	0.0547	5470.0	250.0	5470.0	1
992959-3	2	76.5670	76.6493	76.6493	0.0000	No	0.0823	41150.0	1250.0	41150.0	1
992959-3D	2	68.9843	69.067	69.067	0.0000	No	0.0827	41350.0	1250.0	41350.0	1
LCSB	100	111.1860	111.2364	111.2364	0.0000	No	0.0504	504.0	25.0	504.0	1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left( \frac{A - B}{C} \right) \times 10^5$$

- Where: A = weight of dish + residue in grams.
- B = weight of dish in grams.
- C = mL of sample filtered.

RL= reporting limit

ND = not detected (below the reporting limit)

  
 Analyst Printed Name

  
 Analyst Signature

  
 Reviewer Printed Name

  
 Reviewer Signature





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

CHAIN OF CUSTODY RECORD

992957

[IM3Plant-EW-178]

COC Number

TURNAROUND TIME

10 Days

DATE 01/04/11

PAGE 1 OF 1

COMPANY				TEST PARAMETERS										COMMENTS			
CH2M HILL /E2				<div style="text-align: center;"> <p>Rec'd 01/04/11            992957</p> </div>													
PROJECT NAME																	
PG&E Topock IM3Plant-EW																	
PHONE		FAX															
530-229-3303		530-339-3303															
ADDRESS																	
155 Grand Ave Ste 1000 Oakland, CA 94612																	
P.O. NUMBER																	
408401.01.DM																	
SAMPLERS (SIGNATURE)																	
C. Knight																	
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Dissolved Cr (200.7) Lab filtered	Cr(VI) (3500-Cr B)	PH (150.0) EC (120.1)	TDS (160.1)	Cr(VI) (218.6)								NUMBER OF CONTAINERS	COMMENTS
PE-01-178	01/04/11	13:20	Ground water	X	X	X	X								4	} 200.7 PH = 7 PH = 7	
TW-03D-178	01/04/11	13:25	Ground water	X	X	X	X							4			
													8	TOTAL NUMBER OF CONTAINERS			

**ALERT!!**  
**Level III QC**

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	<i>C. Knight</i>	Printed Name	<i>C. Knight</i>	Company/ Agency	<i>OMI</i>	Date/ Time	<i>1/4/11 15:40</i>
Signature (Received)	<i>Rafael Davila</i>	Printed Name	<i>Rafael</i>	Company/ Agency	<i>T.L.I</i>	Date/ Time	<i>1-4-11 15:40</i>
Signature (Relinquished)	<i>Rafael Davila</i>	Printed Name	<i>Rafael</i>	Company/ Agency	<i>T.L.I</i>	Date/ Time	<i>1-4-11 21:30</i>
Signature (Received)	<i>Ludwig</i>	Printed Name	<i>Ludwig</i>	Company/ Agency	<i>TLI</i>	Date/ Time	<i>1/4/11 21:30</i>
Signature (Relinquished)		Printed Name		Company/ Agency		Date/ Time	
Signature (Received)		Printed Name		Company/ Agency		Date/ Time	

SAMPLE CONDITIONS

RECEIVED COOL  WARM  *4°C °F*

CUSTODY SEALED YES  NO

SPECIAL REQUIREMENTS:

047



Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
993093	71	72	1/14/11	ES	yes	3010A
993106	71	72			yes	
107	71	72				
108						
110						
992957(1-2)	<1	72	1/17/11	KK	-	Y @ 11:30 am
992959(1-3)	<1	72			-	Y @ 11:30 am
993000 (1-13)	<1	72			-	-
993001 (1-13)	<1	72			-	-
993002 (1-12)	<1	72			-	-
993042 (1-2)	<1	72			-	-
993043	<1	72			-	Y @ 12 pm
993000	<1	72			-	-
993097 (1-7)	<1	72			-	-
993098 (1-10)	<1	72			-	-
993099 (1-7, 10)	<1	72			-	-
993121	<1	72	1/19/11	KK	NO	-
3122						
3127	<1	72			NO	Y @ 2:15 pm
3128	-	-			YES	TTL
3142 (3)	<1	72			NO	Y @ 2:20 pm
3143		72				-
3144						-
3145						-
3146						-
3147						-
3148						-
3149 (3)	71	72			YES	-
992174	<1	72	1/20/11	ES	NO	-
178(1-3)	<1	72				w 12:30 pm
992958	SLUDGE	GE			yes	TTL
992996	<1	72	1/21/11	M.M	NO	Y @ 13:30 pm
993210	Solid		1/21/11	M.M	yes	TTL
993213	Solid			M.M	-	-
993223(1-4)	<1	72	1/21/11	ES	NO	-
993130 (1-7)	<1	72	1/24/11	KK	NO	-
993186(1-10)	<1	72	1/24/11	KK	NO	-
993159	<1	72	1/24/11	KK	NO	Y @ 12:20 pm
993187(1-10)	<1	72	1/24/11	ES	NO	-
993202	<1	72	1/25/11	ES	NO	-
220						-
221						-
254						-
255						-
258		72				Y @ 10:00 am
993280 (1-10)	Solid		1/26/11	ES	yes	TTL
993202(1-3)	<1	72			NO	yes w 10:30 am
993202-1	<1	71				-
993160 (1-14)	<1	72				-



ALERT!!  
Level III QC

# Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # \_\_\_\_\_

Date Delivered: 01/04/11 Time: 21:30 By:  Mail  Field Service  Client

1. Was a Chain of Custody received and signed?  Yes  No  N/A
2. Does Customer require an acknowledgement of the COC?  Yes  No  N/A
3. Are there any special requirements or notes on the COC?  Yes  No  N/A
4. If a letter was sent with the COC, does it match the COC?  Yes  No  N/A
5. Were all requested analyses understood and acceptable?  Yes  No  N/A
6. Were samples received in a chilled condition?  
Temperature (if yes)? 4 °C  Yes  No  N/A
7. Were samples received intact  
(i.e. broken bottles, leaks, air bubbles, etc..)?  Yes  No  N/A
8. Were sample custody seals intact?  Yes  No  N/A
9. Does the number of samples received agree with COC?  Yes  No  N/A
10. Did sample labels correspond with the client ID's?  Yes  No  N/A
11. Did sample labels indicate proper preservation?  
Preserved (if yes) by:  Truesdail  Client  Yes  No  N/A
12. Were samples pH checked? pH = See c.o.c.  Yes  No  N/A
13. Were all analyses within holding time at time of receipt?  
If not, notify Project Manager.  Yes  No  N/A
14. Have Project due dates been checked and accepted?  
Turn Around Time (TAT):  RUSH  Std  Yes  No  N/A
15. **Sample Matrix:**  Liquid  Drinking Water  Ground Water  Waste Water  
 Sludge  Soil  Wipe  Paint  Solid  Other \_\_\_\_\_

16. Comments: \_\_\_\_\_

17. Sample Check-In completed by Truesdail Log-In/Receiving: Luder

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

January 28, 2011

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2011-GMP-173, GROUNDWATER MONITORING  
PROJECT; TLI No.: 993042

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2011-GMP-173 groundwater-monitoring project for Hexavalent Chromium and Total Dissolved Chromium and Arsenic. 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 are under Section 5.

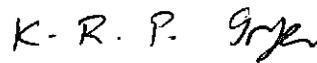
The samples were received and delivered with the chain of custody January 11, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

  
for Mona Nassimi  
Manager, Analytical Services



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



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

**Laboratory No.:** 993042  
**Date Received:** January 11, 2011

**Project Name:** PG&E Topock Project  
**Project No.:** 405681.MP.02.GM.03  
**P.O. No.:** 405681.MP.02.GM.03

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
993042-001	MW-34-100-173	E218.6	FLDFLT	1/11/2011	11:43	Chromium, hexavalent	290	ug/L	5.2
993042-001	MW-34-100-173	SW6020	FLDFLT	1/11/2011	11:43	Arsenic	1.2	ug/L	1.0
993042-001	MW-34-100-173	SW6020	FLDFLT	1/11/2011	11:43	Chromium	259	ug/L	1.0
993042-002	MW-46-175-173	E218.6	FLDFLT	1/11/2011	14:27	Chromium, hexavalent	169	ug/L	2.1
993042-002	MW-46-175-173	SW6010B	FLDFLT	1/11/2011	14:27	Chromium	174	ug/L	1.0

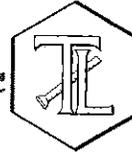
ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

## REPORT

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

155 Grand Avenue, Suite 800  
Oakland, CA 94612

Laboratory No. 993042

Page 1 of 7

Attention: Shawn Duffy

Printed 2/7/2011

Project Name: PG&E Topock Project

Revision 1

P.O. Number: 405681.MP.02.GM.03

Project Number: 405681.MP.02.GM.03

Samples Received on 1/11/2011 10:00:00 PM

Field ID	Lab ID	Collected	Matrix
MW-34-100-173	993042-001	01/11/2011 11:43	Water
MW-46-175-173	993042-002	01/11/2011 14:27	Water

### Chrome VI by EPA 218.6

Batch 01CrH11M

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993042-001 Chromium, Hexavalent	ug/L	01/22/2011 12:43	26.2	1.05	5.2	290
993042-002 Chromium, Hexavalent	ug/L	01/22/2011 12:11	10.5	0.420	2.1	169

#### Method Blank

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	ND			
Duplicate						
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	10.5	282	290	2.95	0 - 20
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.95	5.00	99.0	90 - 110
Matrix Spike						
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	684	684(394)	99.8	90 - 110
Matrix Spike						
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.5	383	379(210.)	102	90 - 110
Matrix Spike						
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	5.60	5.98(5.25)	92.7	90 - 110

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

006



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.GM.03

Page 3 of 7
Printed 1/28/2011

Metals by EPA 6020A, Dissolved

Batch 012611A

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include Arsenic and Chromium with their respective units and results.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Rows for Arsenic and Chromium showing ND results.

Duplicate

Lab ID = 993042-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Rows for Arsenic and Chromium with expected values and RPD.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows for Arsenic and Chromium with recovery percentages.

Matrix Spike

Lab ID = 993042-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Rows for Arsenic and Chromium with expected/added values.

Matrix Spike Duplicate

Lab ID = 993042-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Rows for Arsenic and Chromium with recovery percentages.

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows for Arsenic and Chromium with recovery percentages.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Arsenic with recovery percentage.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Arsenic with recovery percentage.

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 7

Project Number: 405681.MP.02.GM.03

Printed 1/28/2011

Metals by EPA 6010B, Dissolved

Batch 012111B-Th

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993042-002 Chromium	ug/L	01/21/2011 21:27	1.00	0.162	1.0	174

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 993099-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	1.00	4.47	4.37	2.22	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.8	50.0	99.5	90 - 110

Matrix Spike

Lab ID = 993099-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	1.00	54.5	54.4(50.0)	100	75 - 125

Matrix Spike Duplicate

Lab ID = 993099-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	1.00	54.8	54.4(50.0)	101	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.7	50.0	99.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.6	50.0	103	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	53.1	50.0	106	90 - 110

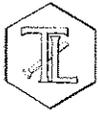
Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

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



**TRUESDAIL LABORATORIES, INC.**

*Report Continued*

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

Project Name: PG&E Topock Project  
Project Number: 405681.MP.02.GM.03

Page 7 of 7  
Printed 1/28/2011

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.7	50.0	99.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	54.1	50.0	108	80 - 120

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

*for*   
Mona Nassimi  
Manager, Analytical Services

993042

CH2MHILL

CHAIN OF CUSTODY RECORD

1/11/2011 3:18:41 PM

Page 1 OF 1

Project Name PG&E Topock				Container:	250 ml Poly	500 ml Poly	500 ml Poly	Rec'd 01/11/11 s2tc 9 30 4 2		
Location Topock				Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C			
Project Number 405681.MP.02.GM.03				Filtered:	Field	Field	Field			
Project Manager Jay Piper				Holding Time:	28	180	180			
Sample Manager Shawn Duffy										
Task Order					Cr6 (E218 6) Field Filtered	Metals (SW60108/SW6020A) Field Filtered Arsenic, Chromium	Dissolved Chromium (6010BCRPF) Field Filtered Chromium			
Project 2011-GMP-173										
Turnaround Time 10 Days										
Shipping Date: 1/6/2011										
COC Number: TLI_GMP173										
	DATE	TIME	Matrix						Number of Containers	COMMENTS
-1	MW-34-100-173	1/11/2011 11:43	Water	X	X				2	
-2	MW-46-175-173	1/11/2011 14:27	Water	X		X			2	PH=2 6008/1809 6020A
TOTAL NUMBER OF CONTAINERS									4	

**ALERT !!**  
**Level III QC**

See Sample Condition  
 See Form Number

Approved by Sampled by Relinquished by Received by Relinquished by Received by	Signatures  Rafael Davila Rafael Davila Shakuntla	Date/Time 1-11-11 1605 1/11/11 16:05 1-11-11 22:00 1/11/11 22:00	Shipping Details Method of Shipment: FedEx On Ice: yes / no Airbill No: Lab Name: Truesdell Laboratories, Inc. Lab Phone: (714) 730-6239	ATTN: Sample Custody	Special Instructions: Jan 10-12, 2011 Report Copy to Shawn Duffy (530) 229-3303
---	--	--	---	-------------------------	---

## Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
01/10/11	993002-1	9.5	N/A	N/A	N/A	SB
↓	-2	↓	↓	↓	↓	↓
↓	-3	↓	↓	↓	↓	↓
↓	-4	↓	↓	↓	↓	↓
↓	-5	↓	↓	↓	↓	↓
↓	-6	↓	↓	↓	↓	↓
↓	-7	↓	↓	↓	↓	↓
↓	-8	↓	↓	↓	↓	↓
↓	-9	↓	↓	↓	↓	↓
↓	-10	↓	↓	↓	↓	↓
↓	-11	↓	↓	↓	↓	↓
↓	-12	↓	↓	↓	↓	↓
01/12/11	993042-1	9.5	N/A	N/A	N/A	SB
↓	-2	↓	↓	↓	↓	↓
01/14/11	993097-1	9.5	N/A	N/A	N/A	SB
↓	-2	↓	↓	↓	↓	↓
↓	-3	↓	↓	↓	↓	↓
↓	-4	↓	↓	↓	↓	↓
↓	-5	↓	↓	↓	↓	↓
↓	-6	↓	↓	↓	↓	↓
↓	-7	↓	↓	↓	↓	↓
01/14/11	993098-1	9.5	N/A	N/A	N/A	SB
↓	-2	↓	↓	↓	↓	↓
↓	-3	↓	↓	↓	↓	↓
↓	-4	↓	↓	↓	↓	↓
↓	-5	↓	↓	↓	↓	↓
↓	-6	↓	↓	↓	↓	↓
↓	-7	↓	↓	↓	↓	↓
↓	-8	↓	↓	↓	↓	↓
↓	-9	↓	↓	↓	↓	↓
↓	-10	↓	↓	↓	↓	↓

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
993093	71	~2	1/14/11	ES	yes	3010A
993106	71	~2			yes	
107	71	~2				
108						
110						
992957(1-2)	<1	~2	1/17/11	KK	-	Y @ 11:30 am
992959(1-3)	<1	~2			-	Y @ 11:30 am
993000 (1-13)	<1	~2			-	-
993001 (1-13)	<1	~2			-	-
993002 (1-12)	<1	~2			-	-
993042 (1-2)	<1	~2			-	-
993043	<1	~2			-	Y @ 12 pm
993008	<1	~2			-	-
993097 (1-7)	<1	~2			-	-
993098 (1-10)	<1	~2			-	-
993099 (1-7, 10)	<1	~2			-	-
993121	<1	~2	1/19/11	KK	NO	-
3122						
3127	<1	72			NO	Y @ 2:15 pm
3128	-	-			YES	TTLc
3142 (3)	<1	72			NO	Y @ 2:20 pm
3143		~2				
3144						
3145						
3146						
3147						
3148						
3149 (3)	71	~2			YES	-
992174	<1	~2	1/20/11	ES	NO	-
178(1-3)	<1	72				Y @ 12:30 pm
992958	SLUDGE	GE			yes	TTLc
992196	<1	~2	1/21/11	M.M	NO	Y @ 13:30 pm
993210	Solid		1/21/11	M.M	yes	TTLc
993213	Solid			M.M	-	-
993223(1-4)	<1	~2	1/21/11	ES	NO	-
993130 (1-7)	<1	~2	1/24/11	KK	NO	-
993186(1-10)	<1	~2	1/24/11	KK	NO	-
993159	<1	~2	1/24/11	KK	NO	Y @ 12:20 pm
993187(1-10)	<1	~2	1/24/11	ES	NO	-
993202	<1	~2	1/25/11	ES	NO	-
220						
221						
254						
255						
258		72				
993280 (1-10)	Solid		1/26/11	ES	yes	Y @ 10:00 a.m TTLc
993292(1-3)	<1	72			NO	yes @ 10:30 a.m
993302-1	<1	<1				
993160 (1-14)	<1	~2				



# Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 993042

Date Delivered: 01/11/11 Time: 22:00 By:  Mail  Field Service  Client

1. Was a Chain of Custody received and signed?  Yes  No  N/A
2. Does Customer require an acknowledgement of the COC?  Yes  No  N/A
3. Are there any special requirements or notes on the COC?  Yes  No  N/A
4. If a letter was sent with the COC, does it match the COC?  Yes  No  N/A
5. Were all requested analyses understood and acceptable?  Yes  No  N/A
6. Were samples received in a chilled condition?  
Temperature (if yes)? 4.2 C  Yes  No  N/A
7. Were samples received intact  
(i.e. broken bottles, leaks, air bubbles, etc.)?  Yes  No  N/A
8. Were sample custody seals intact?  Yes  No  N/A
9. Does the number of samples received agree with COC?  Yes  No  N/A
10. Did sample labels correspond with the client ID's?  Yes  No  N/A
11. Did sample labels indicate proper preservation?  
Preserved (if yes) by:  Truesdail  Client  Yes  No  N/A
12. Were samples pH checked? pH = See C.O.C.  Yes  No  N/A
13. Were all analyses within holding time at time of receipt?  
If not, notify Project Manager.  Yes  No  N/A
14. Have Project due dates been checked and accepted?  
Turn Around Time (TAT):  RUSH  Std  Yes  No  N/A
15. **Sample Matrix:**  Liquid  Drinking Water  Ground Water  Waste Water  
 Sludge  Soil  Wipe  Paint  Solid  Other Water

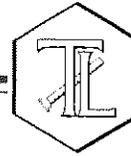
16. Comments: \_\_\_\_\_

17. Sample Check-In completed by Truesdail Log-In/Receiving: Linda

**ALERT!!**  
**Level III QC**

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

March 4, 2011

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-179, GROUNDWATER MONITORING PROJECT, TLI NO.: 993428

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-179 groundwater-monitoring project for Total Dissolved and Hexavalent Chromium, Total Dissolved Solids, and Specific Conductivity. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on February 1, 2011, 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.

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

Samples for Total Dissolved Chromium were analyzed by method EPA 200.8 with the approval of Mr. Shawn Duffy of CH2M Hill.

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

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

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

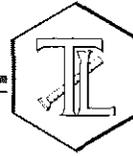
*for*   
Mona Nassimi  
Manager, Analytical Services



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

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

**Attention:** Shawn Duffy

**Sample:** Two (2) Groundwater Samples

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

**Project No.:** 408401.01.DM

**Laboratory No.:** 993428

**Date:** March 4, 2011

**Collected:** February 1, 2011

**Received:** February 1, 2011

## ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Jordan Stavrev
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 200.8	Total Dissolved Chromium	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Sonya Bersudsky
SM 3500-CrB	Hexavalent Chromium	Kim Luck



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

**Attention:** Shawn Duffy

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

**Laboratory No.:** 993428  
**Date Received:** February 1, 2011

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
993428-001	PE-01-179	E120.1	NONE	2/1/2011	11:50	EC	5240	umhos/cm	2.00
993428-001	PE-01-179	E200.8	LABFLT	2/1/2011	11:50	Chromium	13.4	ug/L	1.0
993428-001	PE-01-179	E218.6	LABFLT	2/1/2011	11:50	Chromium, hexavalent	15.4	ug/L	0.20
993428-001	PE-01-179	SM2540C	NONE	2/1/2011	11:50	Total Dissolved Solids	3120	mg/L	125
993428-002	TW-03D-179	E120.1	NONE	2/1/2011	11:50	EC	8720	umhos/cm	2.00
993428-002	TW-03D-179	E200.8	LABFLT	2/1/2011	11:50	Chromium	1100	ug/L	2.0
993428-002	TW-03D-179	SM2540C	NONE	2/1/2011	11:50	Total Dissolved Solids	4700	mg/L	250
993428-002	TW-03D-179	SM3500-CrB	LABFLT	2/1/2011	11:50	Chromium, hexavalent	1000	ug/L	250

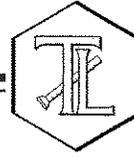
ND: Non Detected (below reporting limit)

**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.

005

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

## REPORT

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

155 Grand Avenue, Suite 800  
Oakland, CA 94612

Laboratory No. 993428

Page 1 of 9

Printed 3/4/2011

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 408401.01.DM

Project Number: 408401.01.DM

Samples Received on 2/1/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-179	993428-001	02/01/2011 11:50	Water
TW-03D-179	993428-002	02/01/2011 11:50	Water

### Specific Conductivity - EPA 120.1

Batch 02EC11A

2/2/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993428-001 Specific Conductivity	umhos/cm	02/02/2011	1.00	0.0380	2.00	5240
993428-002 Specific Conductivity	umhos/cm	02/02/2011	1.00	0.0380	2.00	8720

#### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

#### Duplicate

Lab ID = 993428-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	8720	8720	0	0 - 10

#### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	705.	706.	99.9	90 - 110

#### Lab Control Sample Duplicate

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

#### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	709.	706.	100	90 - 110

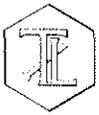
#### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	1020	999.	102	90 - 110

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

009

Intention Blank



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project  
Project Number: 408401.01.DM

Page 2 of 9  
Printed 4/4/2011

Chrome VI by EPA 218.6

Batch 02CrH11C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993428-001 Chromium, Hexavalent	ug/L	02/02/2011 12:31	1.05	0.0210	0.20	15.4

Method Blank

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

Duplicate

Lab ID = 993429-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	105	1060	1060	0.353	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.22	5.00	104.	90 - 110

Matrix Spike

Lab ID = 993321-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	9.66	9.37(5.30)	105.	90 - 110

Matrix Spike

Lab ID = 993321-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	9.09	8.81(5.30)	105.	90 - 110

Matrix Spike

Lab ID = 993428-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.08	38.5	37.0(21.6)	107.	90 - 110

Matrix Spike

Lab ID = 993429-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.11	5.68(5.25)	108.	90 - 110

Matrix Spike

Lab ID = 993429-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.36	1.27(1.06)	108.	90 - 110

Matrix Spike

Lab ID = 993429-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	105	2740	2640(1580)	106.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.09	5.00	102.	90 - 110

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 9

Project Number: 408401.01.DM

Printed 3/4/2011

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.78	10.0	97.8	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.1	10.0	101	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.1	10.0	101	95 - 105

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 9

Project Number: 408401.01.DM

Printed 3/4/2011

Chromium, Hexavalent by SM 3500-Cr B

Batch 02CrH11A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993428-002 Chromium, Hexavalent	ug/L	02/09/2011 12:03	25.0	87.5	250.	1000

Method Blank

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

Duplicate

Lab ID = 993428-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	1000	1000	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	103	100.	103	90 - 110

Matrix Spike

Lab ID = 993428-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	3320	3500(2500)	92.5	85 - 115

Matrix Spike Duplicate

Lab ID = 993428-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	3410	3500(2500)	96.1	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	56.0	60.0	93.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	60.8	60.0	101	90 - 110

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project  
Project Number: 408401.01.DM

Page 5 of 9  
Printed 3/4/2011

**Total Dissolved Solids by SM 2540 C**

Batch 02TDS11F

2/8/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993428-001 Total Dissolved Solids	mg/L	02/07/2011	1.00	0.434	125.	3120
993428-002 Total Dissolved Solids	mg/L	02/07/2011	1.00	0.434	250.	4700

Method Blank

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

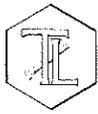
Duplicate

Lab ID = 993428-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	3070	3120	1.62	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	484.	500.	96.8	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 9

Project Number: 408401.01.DM

Printed 3/4/2011

Metals by EPA 200.8, Dissolved

Batch 020411C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993428-001 Chromium	ug/L	02/04/2011 22:39	5.00	0.0950	1.0	13.4

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 993429-001

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.8	50.0	97.6	90 - 110

Matrix Spike

Lab ID = 993429-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	241	250.(250.)	96.3	75 - 125

Matrix Spike Duplicate

Lab ID = 993429-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	246	250.(250.)	98.5	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.0	50.0	100	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.2	50.0	100	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.1	50.0	100	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.9	50.0	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.9	50.0	97.8	90 - 110

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 9

Project Number: 408401.01.DM

Printed 3/4/2011

Metals by EPA 200.8, Dissolved

Batch 021011D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993428-002 Chromium	ug/L	02/11/2011 04:11	10.0	0.190	2.0	1100

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 993437-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	10.0	1640	1640	0.488	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	45.2	50.0	90.3	90 - 110

Matrix Spike

Lab ID = 993437-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	2160	2140(500.)	103	75 - 125

Matrix Spike Duplicate

Lab ID = 993437-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	2150	2140(500.)	102	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.0	50.0	92.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	45.2	50.0	90.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	45.6	50.0	91.3	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

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



**TRUESDAIL LABORATORIES, INC.**

Report Continued

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

**Project Name: PG&E Topock Project**  
**Project Number: 408401.01.DM**

**Page 9 of 9**  
**Printed 3/4/2011**

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	43.1	50.0	86.1	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	44.0	50.0	88.0	80 - 120

Serial Dilution

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	1050	1100	4.66	0 - 10

Lab ID = 993428-002

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

*Mona Nassimi*  
 Mona Nassimi  
 Manager, Analytical Services



EZ SC

### Total Dissolved Solids by SM 2540 C

#### Calculations

Batch: 02TDS11F

Date Calculated: 2/8/11

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	78.3882	78.3895	78.3895	0.0000	No	0.0013	13.0	25.0	ND	1
993428-1	20	49.3591	49.4216	49.4216	0.0000	No	0.0625	3125.0	125.0	3125.0	1
993428-2	10	48.1853	48.2323	48.2323	0.0000	No	0.0470	4700.0	250.0	4700.0	1
993429-1	10	49.7261	49.765	49.765	0.0000	No	0.0389	3890.0	250.0	3890.0	1
993429-2	10	51.5134	51.5814	51.5814	0.0000	No	0.0680	6800.0	250.0	6800.0	1
QC1	100	68.1821	68.1956	68.1956	0.0000	No	0.0135	135.0	25.0	135.0	1
QC2	100	74.7175	74.7315	74.7315	0.0000	No	0.0140	140.0	25.0	140.0	1
PE1	100	76.5261	76.5392	76.5392	0.0000	No	0.0131	131.0	25.0	131.0	1
PE2	100	48.1918	48.2043	48.2043	0.0000	No	0.0125	125.0	25.0	125.0	1
993428-1D	20	110.2323	110.2937	110.2937	0.0000	No	0.0614	3070.0	125.0	3070.0	1
LCS	100	121.7176	121.766	121.766	0.0000	No	0.0484	484.0	25.0	484.0	1
LCS D											1

Calculation as follows:

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

Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

C = mL of sample filtered.

RL= reporting limit.

ND = not detected (below the reporting limit)

Analyst Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

**Total Dissolved Solids by SM 2540 C**

**TDS/EC CHECK**

Batch: 02TDS11F

Date Calculated: 2/8/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
993428-1	5240	0.60	3406	0.92
993428-2	8720	0.54	5668	0.83
993429-1	7200	0.54	4680	0.83
993429-2	8080	0.84	5252	1.29
QC1				
QC2				
PE1				
PE2				
993428-1D	5240	0.59	3406	0.90
LCS				



Rec'd 02/01/11  
 Lab#: 993428



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-EW-179] 993428

COC Number

TURNAROUND TIME 10 Days

DATE 02/01/11

PAGE 1 OF 1

COMPANY CH2M HILL /E2				ALERT!!! Level III QC NUMBER OF CONTAINERS										COMMENTS	
PROJECT NAME PG&E Topock IM3Plant-EW															
PHONE 530-229-3303		FAX 530-339-3303													
ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612															
P.O. NUMBER 408401.01.DM															
SAMPLERS (SIGNATURE) <i>C. Knight</i>															
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Dissolved Cr (200.7) Lab filtered	Cr(VI) (3500-Cr B)	pH (150.0)	EC (120.1)	TDS (160.1)	Cr(VI) (218.6)					NUMBER OF CONTAINERS	COMMENTS
1- PE-01-179	02/01/11	11:50	Ground water	X	X	X	X						4	} pH = 7	
2- TW-03D-179	02/01/11	11:50	Ground water	X	X	X	X						4		
For Sample Conditions: See Form Attached															
													8	TOTAL NUMBER OF CONTAINERS	

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished) <i>C. Knight</i>	Printed Name <i>C. Knight</i>	Company/ Agency <i>OMI</i>	Date/ Time <i>2-1-11 15:30</i>
Signature (Received) <i>Rafael Davila</i>	Printed Name <i>Rafael</i>	Company/ Agency <i>T.L.I.</i>	Date/ Time <i>2-1-11 15:30</i>
Signature (Relinquished) <i>Rafael Davila</i>	Printed Name <i>Rafael</i>	Company/ Agency <i>T.L.I.</i>	Date/ Time <i>2-1-11 21:30</i>
Signature (Received) <i>Linda</i>	Printed Name <i>Linda</i>	Company/ Agency <i>T.L.I.</i>	Date/ Time <i>2/1/11 21:30</i>
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time
Signature (Received)	Printed Name	Company/ Agency	Date/ Time

SAMPLE CONDITIONS

RECEIVED COOL  WARM  3.6 °C °F  
 CUSTODY SEALED YES  NO

SPECIAL REQUIREMENTS:

047

# Hexavalent Chromium

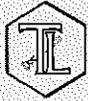
## Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
01/28/11	993376-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
01/28/11	993377-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
01/28/11	993378-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
01/28/11	993379-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
01/28/11	993380-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
01/28/11	993381	9.5	N/A	N/A	N/A	SB
02/02/11	993428-1	7.0	5.00	9.5	8:50	SB
02/02/11	993429-1	7.0	5.00	9.5	8:55	SB
↓	↓ -2	↓	↓	↓	9:00	↓
<del>02/02/11</del>	<del>993430</del>	<del>7.0</del>	<del>5.00</del>	<del>9.5</del>	<del>9:05</del>	<del>SB</del>
02/02/11	993431-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓

SB

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
993382	solid	-	02/03/11	M.M	yes	TTLC
993453-2	-	-	↓	↓	↓	TTLC
↓ -3	-	-	↓	M.M	yes	↓
↓ -4	-	-	↓	↓	↓	↓
993464	-	-	02/03/11	M.M	yes	TTLC
993470	>1	<2	02/03/11	M.M	yes	-
993301(-45,8,10,14)	<1	<2	2/3/11	KK	yes	-
993428 (1-2)	<1	<2	2/3/11	KK	NO	-
993429 (1-2)	<1	<2			NO	-
993431 (1-11)	<1	<2			NO	-
993432 (1-4)	<1	<2			NO	-
993433 (1-8, 10)	<1	<2			NO	-
993436 (1-8, 10)	<1	<2			NO	-
993437 (1-8)	<1	<2			NO	-
993438 (2-10)	<1	<2			NO	-
993439 (1-10)	<1	<2			NO	-
993440 (1-8, 10)	<1	<2			NO	-
993441 (1-9)	<1	<2			NO	-
993442 (1-3)	<1	<2			NO	-
993044 (1-6)	<1	<2	1/25/11		NO	-
993096 (1-6)	<1	<2	1/25/11		NO	-
993506 (1-3)	<1	<2	2/6/11	↓	NO	-
147486	<1	<2	2/9/11	ES	NO	-
993517	<1	<2				
993514	<1	<2				
993515 (16, 20)	<1	>2				yes will be a.m
993572	<1	<2				
993564						
993565						
993566						
993567						
993568	↓	↓	↓	↓	↓	
993569	>1	↓	↓	↓	yes	3010A
99358	solid	-	02/10/11	M.M	yes	TTLC
993502 (1,2)	<1	<2	2/7/11	KK	NO	-
993009	<1	<2	2/11/11	KK	NO	-
993607	>1	>2	↓	↓	yes	3010A
993559	>1	>2	↓	↓	yes	3010A
993621	>1	>2	↓	↓	yes	3010A
993621 (Hy bottle)	<1	<2	↓	↓	NO	-
993619	<1	<2	↓	↓	NO	-
993597 (1-4)	<1	>2	↓	↓	NO	@ 9:30 am
993589 (1-3)	<1	>2	↓	↓	NO	@ 9:30 am
993625 (1-5)	<1	<2	↓	↓	NO	-
993493 (1-9)	<1	<2	2/10/11	KK	NO	-
993353 (1-3)	<1	<2	2/2/11	KK	NO	-
993378	<1	<2	2/2/11	KK	NO	-
993489 (1-8)	<1	<2	2/15/11	KK	NO	-
993490 (1-2)	<1	<2	2/15/11	KK	NO	-



# Sample Integrity & Analysis Discrepancy Form

Client: CH2M HILL

Lab # 993428

Date Delivered: 02/01/11 Time: 21:30 By:  Mail  Field Service  Client

- 1. Was a Chain of Custody received and signed?  Yes  No  N/A
- 2. Does Customer require an acknowledgement of the COC?  Yes  No  N/A
- 3. Are there any special requirements or notes on the COC?  Yes  No  N/A
- 4. If a letter was sent with the COC, does it match the COC?  Yes  No  N/A
- 5. Were all requested analyses understood and acceptable?  Yes  No  N/A
- 6. Were samples received in a chilled condition?  
Temperature (if yes) 3.6°C  Yes  No  N/A
- 7. Were samples received intact  
(i.e. broken bottles, leaks, air bubbles, etc.)?  Yes  No  N/A
- 8. Were sample custody seals intact?  Yes  No  N/A
- 9. Does the number of samples received agree with COC?  Yes  No  N/A
- 10. Did sample labels correspond with the client ID's?  Yes  No  N/A
- 11. Did sample labels indicate proper preservation?  
Preserved (if yes) by:  Truesdail  Client  Yes  No  N/A
- 12. Were samples pH checked? pH = see C.O.C.  Yes  No  N/A
- 13. Were all analyses within holding time at time of receipt?  
If not, notify Project Manager.  Yes  No  N/A
- 14. Have Project due dates been checked and accepted?  
Turn Around Time (TAT):  RUSH  Std  Yes  No  N/A
- 15. **Sample Matrix:**  Liquid  Drinking Water  Ground Water  Waste Water  
 Sludge  Soil  Wipe  Paint  Solid  Other \_\_\_\_\_

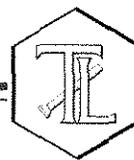
16. Comments: \_\_\_\_\_

17. Sample Check-In completed by **Truesdail!** Log-In/Receiving: \_\_\_\_\_

**ALERT!!**  
**Level III QC**

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

March 30, 2011

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 2011-GMP-174-Q1, GROUNDWATER MONITORING PROJECT, TLI No.: 993562

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2011-GMP-174-Q1 groundwater-monitoring project for Hexavalent and Total Dissolved Chromium. 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 are under Section 5.

The samples were received and delivered with the chain of custody February 8, 2010, 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.

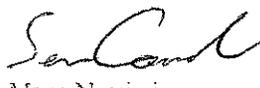
The matrix spike results for samples MW-101-174, MW-42-055-174, and MW-28-090-174 for Hexavalent Chromium analysis by EPA 218.6 were just outside the retention time window. Because the matrix spike recoveries were within acceptable limits and the results from the analysis at a 5x dilution matched those of the straight runs, the results from the straight runs are reported.

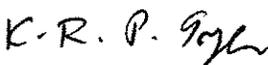
Total Dissolved Chromium, for sample MW-34-080-174, was digested and re-analyzed due to the discrepancy between the Total Dissolved Chromium and Hexavalent Chromium results. The result from the re-analysis is reported.

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

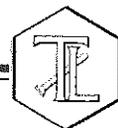
If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

*for*   
Mona Nassimi  
Manager, Analytical Services



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



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

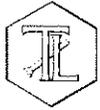
Laboratory No.: 993562  
Date Received: February 8, 2011  
Revision 1; March 30, 2011

Project Name: PG&E Topock Project  
Project No.: 405681.MP.02.GM.03  
P.O. No.: 405681.MP.02.GM.03

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
993562-001	MW-101-174	SW6020	FLDFLT	2/7/2011	12:54	Chromium	ND	ug/L	1.0
993562-001	MW-101-174	E218.6	FLDFLT	2/7/2011	12:54	Chromium, hexavalent	ND	ug/L	0.20
993562-002	MW-34-080-174	E218.6	FLDFLT	2/7/2011	12:52	Chromium, hexavalent	ND	ug/L	0.20
993562-002	MW-34-080-174	SW6020	FLDFLT-digested	2/7/2011	12:52	Chromium	1.3	ug/L	1.0
993562-003	MW-34-100-174	SW6020	FLDFLT	2/7/2011	14:03	Chromium	201	ug/L	1.0
993562-003	MW-34-100-174	E218.6	FLDFLT	2/7/2011	14:03	Chromium, hexavalent	210	ug/L	2.1
993562-004	MW-42-055-174	SW6020	FLDFLT	2/7/2011	14:55	Chromium	ND	ug/L	1.0
993562-004	MW-42-055-174	E218.6	FLDFLT	2/7/2011	14:55	Chromium, hexavalent	ND	ug/L	0.20
993562-005	MW-42-065-174	SW6020	FLDFLT	2/7/2011	15:30	Chromium	ND	ug/L	1.0
993562-005	MW-42-065-174	E218.6	FLDFLT	2/7/2011	15:30	Chromium, hexavalent	ND	ug/L	1.0
993562-006	MW-100-174	SW6020	FLDFLT	2/8/2011	11:53	Chromium	ND	ug/L	1.0
993562-006	MW-100-174	E218.6	FLDFLT	2/8/2011	11:53	Chromium, hexavalent	ND	ug/L	1.0
993562-007	MW-102-174	SW6020	FLDFLT	2/8/2011	14:45	Chromium	75.1	ug/L	1.0
993562-007	MW-102-174	E218.6	FLDFLT	2/8/2011	14:45	Chromium, hexavalent	65.4	ug/L	1.0
993562-008	MW-21-174	SW6020	FLDFLT	2/8/2011	11:03	Chromium	3.6	ug/L	1.0
993562-008	MW-21-174	E218.6	FLDFLT	2/8/2011	11:03	Chromium, hexavalent	3.3	ug/L	1.0
993562-009	MW-24BR-174	SW6020	FLDFLT	2/8/2011	10:06	Chromium	ND	ug/L	1.0
993562-009	MW-24BR-174	E218.6	FLDFLT	2/8/2011	10:06	Chromium, hexavalent	ND	ug/L	1.0
993562-010	MW-27-085-174	SW6020	FLDFLT	2/8/2011	11:51	Chromium	ND	ug/L	1.0
993562-010	MW-27-085-174	E218.6	FLDFLT	2/8/2011	11:51	Chromium, hexavalent	ND	ug/L	1.0

004



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
993562-011	MW-28-090-174	SW6020	FLDFLT	2/8/2011	8:52	Chromium	ND	ug/L	1.0
993562-011	MW-28-090-174	E218.6	FLDFLT	2/8/2011	8:52	Chromium, hexavalent	ND	ug/L	0.20
993562-012	MW-44-115-174	SW6020	FLDFLT	2/8/2011	15:11	Chromium	206	ug/L	1.0
993562-012	MW-44-115-174	E218.6	FLDFLT	2/8/2011	15:11	Chromium, hexavalent	203	ug/L	5.2
993562-013	MW-44-125-174	SW6020	FLDFLT	2/8/2011	14:30	Chromium	71.1	ug/L	1.0
993562-013	MW-44-125-174	E218.6	FLDFLT	2/8/2011	14:30	Chromium, hexavalent	65.6	ug/L	1.0
993562-014	MW-46-175-174	SW6020	FLDFLT	2/8/2011	10:26	Chromium	151	ug/L	1.0
993562-014	MW-46-175-174	E218.6	FLDFLT	2/8/2011	10:26	Chromium, hexavalent	149	ug/L	2.1
993562-015	MW-57-185-174	SW6020	FLDFLT	2/8/2011	13:25	Chromium	6.6	ug/L	1.0
993562-015	MW-57-185-174	E218.6	FLDFLT	2/8/2011	13:25	Chromium, hexavalent	5.9	ug/L	1.0

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

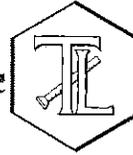
Results below 0.01ppm will have two (2) significant figures.

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

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

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

## REPORT

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

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 405681.MP.02.GM.03

Project Number: 405681.MP.02.GM.03

Laboratory No. 993562

Page 1 of 11

Printed 3/15/2011

Samples Received on 2/8/2011 7:00:00 PM

Field ID	Lab ID	Collected	Matrix
MW-101-174	993562-001	02/07/2011 12:54	Water
MW-34-080-174	993562-002	02/07/2011 12:52	Water
MW-34-100-174	993562-003	02/07/2011 14:03	Water
MW-42-055-174	993562-004	02/07/2011 14:55	Water
MW-42-065-174	993562-005	02/07/2011 15:30	Water
MW-100-174	993562-006	02/08/2011 11:53	Water
MW-102-174	993562-007	02/08/2011 14:45	Water
MW-21-174	993562-008	02/08/2011 11:03	Water
MW-24BR-174	993562-009	02/08/2011 10:06	Water
MW-27-085-174	993562-010	02/08/2011 11:51	Water
MW-28-090-174	993562-011	02/08/2011 08:52	Water
MW-44-115-174	993562-012	02/08/2011 15:11	Water
MW-44-125-174	993562-013	02/08/2011 14:30	Water
MW-46-175-174	993562-014	02/08/2011 10:26	Water
MW-57-185-174	993562-015	02/08/2011 13:25	Water

### Chrome VI by EPA 218.6

Batch 02CrH11V

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993562-001 Chromium, Hexavalent	ug/L	02/16/2011 04:48	1.05	0.0210	0.20	ND
993562-002 Chromium, Hexavalent	ug/L	02/16/2011 12:30	1.05	0.0210	0.20	ND
993562-003 Chromium, Hexavalent	ug/L	02/16/2011 11:37	10.5	0.220	2.1	210
993562-004 Chromium, Hexavalent	ug/L	02/16/2011 05:30	1.05	0.0210	0.20	ND
993562-005 Chromium, Hexavalent	ug/L	02/16/2011 15:08	5.25	0.110	1.0	ND
993562-006 Chromium, Hexavalent	ug/L	02/16/2011 15:28	5.25	0.110	1.0	ND
993562-007 Chromium, Hexavalent	ug/L	02/16/2011 13:22	5.25	0.110	1.0	65.4
993562-008 Chromium, Hexavalent	ug/L	02/16/2011 13:32	5.25	0.110	1.0	3.3
993562-009 Chromium, Hexavalent	ug/L	02/16/2011 15:49	5.25	0.110	1.0	ND
993562-010 Chromium, Hexavalent	ug/L	02/16/2011 17:41	5.25	0.110	1.0	ND

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.GM.03

Page 2 of 11
Printed 3/15/2011

Table with 7 columns: Sample ID, Description, Unit, Date/Time, Result 1, Result 2, Result 3. Rows include Chromium, Hexavalent samples 993562-011 through 993562-015.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row: Chromium, Hexavalent, ug/L, 1.00, ND

Duplicate

Lab ID = 993562-003

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 10.5, 212, 210, 0.953, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.00, 4.96, 5.00, 99.2, 90 - 110

Matrix Spike

Lab ID = 993562-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 5.25, 5.14, 5.25(5.25), 97.9, 90 - 110

Matrix Spike

Lab ID = 993562-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 1.09, 1.06(1.06), 103, 90 - 110

Matrix Spike

Lab ID = 993562-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 1.10, 1.06(1.06), 104, 90 - 110

Matrix Spike

Lab ID = 993562-003

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 10.5, 411, 420(210.), 95.8, 90 - 110

Matrix Spike

Lab ID = 993562-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 5.25, 5.46, 5.25(5.25), 104, 90 - 110

Matrix Spike

Lab ID = 993562-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 0.970, 1.06(1.06), 91.5, 90 - 110

Matrix Spike

Lab ID = 993562-005

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 0.825, 1.06(1.06), 77.8, 90 - 110

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

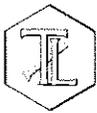
Page 3 of 11

Project Number: 405681.MP.02.GM.03

Printed 3/15/2011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Matrix Spike						
Chromium, Hexavalent	ug/L	5.25	5.51	5.25(5.25)	105	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	5.25	5.60	5.25(5.25)	107	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	0.608	1.06(1.06)	57.4	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	5.25	146	144(78.8)	102	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	5.25	8.31	8.57(5.25)	95.0	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	5.25	5.61	5.25(5.25)	107	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	0.597	1.06(1.06)	56.3	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	5.25	5.18	5.25(5.25)	98.6	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	0.565	1.06(1.06)	53.3	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	5.25	5.29	5.25(5.25)	101	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	0.989	1.06(1.06)	93.3	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	26.2	472	465(262)	103	90 - 110

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



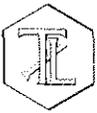
Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project  
Project Number: 405681.MP.02.GM.03

Page 4 of 11  
Printed 3/15/2011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Matrix Spike						
Chromium, Hexavalent	ug/L	5.25	149	144(78.8)	106	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	10.5	316	307(158)	106	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	5.25	59.4	58.4(52.5)	102	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.25	1.22(1.06)	103	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	5.25	5.31	5.46(5.25)	97.2	90 - 110
MRCCS - Secondary						
Chromium, Hexavalent	ug/L	1.00	4.96	5.00	99.2	90 - 110
MRCVS - Primary						
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103	95 - 105
MRCVS - Primary						
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103	95 - 105
MRCVS - Primary						
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103	95 - 105
MRCVS - Primary						
Chromium, Hexavalent	ug/L	1.00	10.1	10.0	101	95 - 105
MRCVS - Primary						
Chromium, Hexavalent	ug/L	1.00	9.68	10.0	96.8	95 - 105
MRCVS - Primary						
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103	95 - 105

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.GM.03

Page 6 of 11
Printed 3/15/2011

Metals by EPA 6020A, Dissolved

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include Chromium samples 993562-001 through 993562-015.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row: Chromium ug/L 1.00 ND

Duplicate

Lab ID = 993562-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Chromium ug/L 5.00 ND 0 0 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium ug/L 1.00 48.8 50.0 97.6 90 - 110

Matrix Spike

Lab ID = 993562-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium ug/L 5.00 243 250.(250.) 97.2 75 - 125

Matrix Spike Duplicate

Lab ID = 993562-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium ug/L 5.00 241 250.(250.) 96.3 75 - 125

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium ug/L 1.00 47.6 50.0 95.3 90 - 110

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 11

Project Number: 405681.MP.02.GM.03

Printed 3/15/2011

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	45.8	50.0	91.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	45.5	50.0	91.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	45.9	50.0	91.9	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.2	50.0	94.5	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	45.3	50.0	90.7	80 - 120

Serial Dilution

Lab ID = 993562-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	182	201	9.93	0 - 10

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project  
Project Number: 405681.MP.02.GM.03

Page 8 of 11  
Printed 3/15/2011

Metals by EPA 6020A, Dissolved

Batch 022511B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993562-009 Chromium	ug/L	02/25/2011 20:27	5.00	0.0950	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 993432-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	2.55	2.73	6.67	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.0	50.0	98.1	90 - 110

Matrix Spike

Lab ID = 993432-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	239	253(250.)	94.4	75 - 125

Matrix Spike Duplicate

Lab ID = 993432-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	241	253(250.)	95.4	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.0	50.0	98.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.8	50.0	102	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.1	50.0	98.3	90 - 110

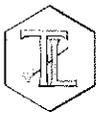
MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.2	50.0	100	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.GM.03

Page 10 of 11
Printed 3/15/2011

Metals by EPA 6020A, Dissolved

Batch 030111A

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 993562-002 Chromium, ug/L, 03/01/2011 19:26, 4.44, 0.0844, 1.0, 1.3

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Chromium, ug/L, 1.00, ND

Duplicate

Lab ID = 993325-005

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Chromium, ug/L, 4.44, 6.20, 6.37, 2.77, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 5.00, 96.6, 100., 96.6, 90 - 110

Lab Control Sample Duplicate

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 5.00, 103, 100., 103, 90 - 110

Matrix Spike

Lab ID = 993325-005

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 4.44, 127, 117(111.), 109, 75 - 125

Matrix Spike Duplicate

Lab ID = 993325-005

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 4.44, 122, 117(111.), 105, 75 - 125

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 9.96, 10.0, 99.6, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 10.5, 10.0, 105, 90 - 110

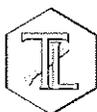
MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 10.7, 10.0, 107, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 10.8, 10.0, 108, 90 - 110

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



**TRUESDAIL LABORATORIES, INC.**

*Report Continued*

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

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

**Page 11 of 11**

**Project Number: 405681.MP.02.GM.03**

**Printed 3/15/2011**

**Interference Check Standard A**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

**Interference Check Standard A**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

**Interference Check Standard AB**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.8	10.0	108	80 - 120

**Interference Check Standard AB**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	11.1	10.0	111	80 - 120

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**

Mona Nassimi

Manager, Analytical Services

CH2MHILL

Rec'd 02/08/11  
Lab#: 993562

993562  
CHAIN OF CUSTODY RECORD

2/8/2011 3:19:25 PM

Page 1 OF 2

Project Name PG&E Topock  
Location Topock  
Project Number 405681.MP.02.GM.03  
Project Manager Jay Piper  
Sample Manager Shawn Duffy

Container:	250 ml Poly	2x250 ml Poly	500 ml Poly
Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C
Filtered:	Field	Field	Field
Holding Time:	28	28	180

Task Order  
Project 2011-GMP-174-Q1  
Turnaround Time 10 Days  
Shipping Date: 2/8/2011  
COC Number: 1

Where provided w/2 Cr6 bottles, please analyze 1 + hold 1

	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Cr6 (E218.6) Field Filtered Dissolved Chromium (60108CRFF) Field Filtered Chromium	Number of Containers	COMMENTS
-1	MW-101-174	2/7/2011	12:54	Water		X	3	PH=2
	MW-21-174-EB	2/7/2011	11:40	Water	X		1	Hold
-2	MW-34-000-174	2/7/2011	12:52	Water		X	3	} PH=2
-3	MW-34-100-174	2/7/2011	14:03	Water		X	3	
-4	MW-42-055-174	2/7/2011	14:55	Water		X	3	} Hold
	MW-42-055-174-EB	2/7/2011	14:25	Water	X		1	
-5	MW-42-065-174	2/7/2011	15:30	Water		X	3	PH=2
	MW-42-065-174-EB	2/7/2011	15:08	Water	X		1	Hold
	MW-72-174	2/7/2011	15:46	Water	X		1	Hold
	MW-73-174	2/7/2011	16:15	Water	X		1	Hold
6	MW-100-174	2/8/2011	11:53	Water		X	3	} PH=2
7	MW-102-174	2/8/2011	14:45	Water	X		2	
8	MW-21-174	2/8/2011	11:03	Water		X	3	} PH=2
9	MW-24BR-174	2/8/2011	10:06	Water	X		2	
10	MW-27-085-174	2/8/2011	11:51	Water		X	3	

ALERT II  
Level III OC

For Sample Condition  
See Form Attached

Approved by \_\_\_\_\_  
 Sampled by \_\_\_\_\_  
 Relinquished by \_\_\_\_\_  
 Received by Rafael Davila 2/8/11 15:30  
 Relinquished by Rafael Davila 2-8-11 21:30  
 Received by Linda 2/8/11 21:30

Shipping Details  
 Method of Shipment: courier  
 On Ice: yes / no  
 Airbill No:  
 Lab Name: Truesdail Laboratories, Inc.  
 Lab Phone: (714) 730-6239

ATTN:  
 Sample Custody

Special Instructions:  
 Feb 7-11, 2011  
 Report Copy to  
 Shawn Duffy  
 (530) 229-3303



CH2MHILL

Rec'd 02/08/11

Lab#: 993562

CHAIN OF CUSTODY RECORD

993562

2/8/2011 3:19:25 PM

Page 2 OF 2

				Container:	250 ml Poly	2x250 ml Poly	500 ml Poly	Where provided w/ 2 Cr <sup>6</sup> bottles, please analyze 1 + hold 1	Number of Containers	COMMENTS
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C			
				Filtered:	Field	Field	Field			
				Holding Time:	28	28	180			
				Task Order	Cr6 (E218 6) Field Filtered	Cr6 (E218 6R) Field Filtered	Dissolved Chromium (6010BCREF) Field Filtered Chromium			
				Project	2011-GMP-174-Q1					
				Turnaround Time	10 Days					
				Shipping Date:	2/8/2011					
				COC Number:	1					
DATE	TIME	Matrix								
MW-27-085-174-EB	2/8/2011	11:07	Water	X					1	Hold
-11 MW-28-090-174	2/8/2011	8:52	Water		X	X			3	pH=2 G010B
MW-28-090-174-EB	2/8/2011	8:03	Water	X					1	Hold
-12 MW-44-115-174	2/8/2011	15:11	Water	X		X			2	G010B pH=2
-13 MW-44-125-174	2/8/2011	14:30	Water	X		X			2	
-14 MW-46-175-174	2/8/2011	10:26	Water	X		X			2	
-15 MW-57-185-174	2/8/2011	13:25	Water	X		X			2	
MW-74-174	2/8/2011	10:59	Water	X					1	Hold
TOTAL NUMBER OF CONTAINERS									47	

ALERT !!  
Level III QC

Approved by \_\_\_\_\_  
 Sampled by \_\_\_\_\_  
 Relinquished by \_\_\_\_\_  
 Received by \_\_\_\_\_  
 Relinquished by \_\_\_\_\_  
 Received by \_\_\_\_\_

Signatures: *Rafael Davila*, *Linda*

Date/Time: 2-8-11 15:30, 2-8-11 21:30, 2/8/11 21:20

Shipping Details

Method of Shipment: courier

On Ice: yes / no

Airbill No:

Lab Name: Truesdail Laboratories, Inc.

Lab Phone: (714) 730-6239

Special Instructions:

ATTN: Feb 7-11, 2011

Sample Custody

Report Copy to  
 Shawn Duffy  
 (530) 229-3303

# Hexavalent Chromium

## Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
2/09/11	993562-1	9.5	NA	NA	NA	ALI
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-12					
	-13					
	-14					
	-15					
02/10/11	993602-1	9.5	N/A	N/A	N/A	SB
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
02/11/11	993625-5	9.5	N/A	N/A	N/A	SB
02/11/11	993626-1	9.5	N/A	N/A	N/A	SB
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					

*ali*

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
997843	<1	72	2/25/11	ES	NO	yes @ 2:30 p.m.
997839(1-8)	<1	<2				-1 digest
840(1-4)						
841(1-9)						
993866-1	<1	<2	2/25/11	KK	YES	
993867	<1	<2				
993868(1-2)	<1	<2				
993862(1-15)	<1	<2	2/15/11	KK	NO	
993853(1-2)	<1	72	2/25/11	ES	NO	yes @ 2:00 p.m.
T/D 993871(1-7)	71	72			yes for total	
872(1-10)						
873(1-6)						
993869(1-6)	71	<2	3/1/11	ES	yes	(1-4 SRC)(6/25/6 7/10A)
993886	<1	<2			NO	
887						
889						
993897(1-10)		72				yes @ 2:30 p.m.
993919(1-2)	>1	<2	3/2/11	MA	yes	
993953	>1	<2	3/2/11	MA	yes	
993297(1-68)	<1	<2	01/31/11	KK	NO	
99322(1-11)	<1	<2	02/02/11	KK	NO	
993966	71	<2	3/7/11	ES	yes	
993967	<1	<2			NO	
969	<1	<2				
970	<1	<2				
983	71	<2			yes	
988	<1	<2			NO	
999	<1	<2				
994000	71	<2			yes	
993969(1-8)	<1	<2	3/7/11	ES	yes	3/10A
993990(1-9)	<1	<2				
993991(1-3)	<1	<2				
994005(16,23)	<1	72	3/7/11	ES	NO	yes @ 2:40 p.m.
993705	<1	72	3/8/11	ES	NO	yes @ 2:00 p.m.
993799	<1	72				
993920(1-2)	<1	72				
T/D 993921(1-2)	<1	<2				yes for Dissolved 2:00 p.m.
994023	<1	<2	3/8/11	ES	NO	
994024						
994025						
994026						
027						
028	71	<2			yes	
006(16 samples)		TTC				
994039	<1	<2	3/9/11	ES	NO	
994040(1-3)	<1	72				yes @ 11:30
993560(2-12)	<1	<2	3/8/11	KK	NO	
993561(1-9)	<1	<2	3/8/11	KK	NO	
993323(1-9)	<1	<2	2/6/11	KK	NO	



# Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 993562

Date Delivered: 12/11/11 Time: 4:30 By:  Mail  Field Service  Client

1. Was a Chain of Custody received and signed?  Yes  No  N/A
2. Does Customer require an acknowledgement of the COC?  Yes  No  N/A
3. Are there any special requirements or notes on the COC?  Yes  No  N/A
4. If a letter was sent with the COC, does it match the COC?  Yes  No  N/A
5. Were all requested analyses understood and acceptable?  Yes  No  N/A
6. Were samples received in a chilled condition?  
Temperature (if yes)? 4°C  Yes  No  N/A
7. Were samples received intact  
(i.e. broken bottles, leaks, air bubbles, etc.)?  Yes  No  N/A
8. Were sample custody seals intact?  Yes  No  N/A
9. Does the number of samples received agree with COC?  Yes  No  N/A
10. Did sample labels correspond with the client ID's?  Yes  No  N/A
11. Did sample labels indicate proper preservation?  
Preserved (if yes) by:  Truesdail  Client  Yes  No  N/A
12. Were samples pH checked? pH = See c.o.e.  Yes  No  N/A
13. Were all analyses within holding time at time of receipt?  
If not, notify Project Manager.  Yes  No  N/A
14. Have Project due dates been checked and accepted?  
Turn Around Time (TAT):  RUSH  Std  Yes  No  N/A
15. **Sample Matrix:**  Liquid  Drinking Water  Ground Water  Waste Water  
 Sludge  Soil  Wipe  Paint  Solid  Other Water

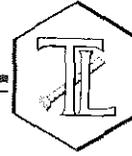
ALERT!!  
Level III QC

16. Comments: \_\_\_\_\_

17. Sample Check-In completed by Truesdail Log-In/Receiving: Luda

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

February 25, 2011

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2010-GMP-172B-Q4, GROUNDWATER MONITORING PROJECT, TLI NO.: 993625

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2010-GMP-172B-Q4 groundwater-monitoring project for Hexavalent and Total Dissolved Chromium. 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 are under Section 5.

The samples were received and delivered with the chain of custody February 10, 2010, 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.

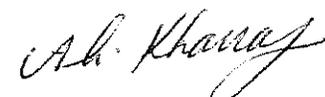
The matrix spike for sample PGE-08-172B at a 5x dilution for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery was within acceptable limits and the results from the 10x dilution agreed with those of the 5x, the data from the 5x dilution is reported.

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

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

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi  
Manager, Analytical Services

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



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

**Attention:** Shawn Duffy

**Laboratory No.:** 993625

**Date Received:** February 10, 2011

**Project Name:** PG&E Topock Project  
**Project No.:** 405681.MP.02.GM.04  
**P.O. No.:** 405681.MP.02.GM.04

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
993625-001	MW-20-100-172B	SM3500-CrB	FLDFLT	2/10/2011	14:22	Chromium, hexavalent	4500	ug/L	250
993625-001	MW-20-100-172B	SW6020	FLDFLT	2/10/2011	14:22	Chromium	4520	ug/L	4.0
993625-002	MW-20-130-172B	SM3500-CrB	FLDFLT	2/10/2011	16:50	Chromium, hexavalent	10100	ug/L	250
993625-002	MW-20-130-172B	SW6020	FLDFLT	2/10/2011	16:50	Chromium	10600	ug/L	20.0
993625-003	MW-50-200-172B	SM3500-CrB	FLDFLT	2/10/2011	15:42	Chromium, hexavalent	9160	ug/L	250
993625-003	MW-50-200-172B	SW6020	FLDFLT	2/10/2011	15:42	Chromium	9350	ug/L	20.0
993625-004	MW-98-172B	SM3500-CrB	FLDFLT	2/10/2011	12:05	Chromium, hexavalent	9100	ug/L	250
993625-004	MW-98-172B	SW6020	FLDFLT	2/10/2011	12:05	Chromium	9240	ug/L	20.0
993625-005	PGE-08-172B	E218.6	FLDFLT	2/10/2011	16:47	Chromium, hexavalent	ND	ug/L	1.0
993625-005	PGE-08-172B	SW6020	FLDFLT	2/10/2011	16:47	Chromium	2.0	ug/L	1.0

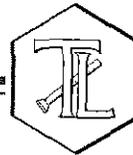
ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

## REPORT

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

155 Grand Avenue, Suite 800  
Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 405681.MP.02.GM.04

Project Number: 405681.MP.02.GM.04

Laboratory No. 993625

Page 1 of 8

Printed 2/25/2011

Samples Received on 2/10/2011 11:00:00 PM

Field ID	Lab ID	Collected	Matrix
MW-20-100-172B	993625-001	02/10/2011 14:22	Water
MW-20-130-172B	993625-002	02/10/2011 16:50	Water
MW-50-200-172B	993625-003	02/10/2011 15:42	Water
MW-98-172B	993625-004	02/10/2011 12:05	Water
PGE-08-172B	993625-005	02/10/2011 16:47	Water

### Chrome VI by EPA 218.6

Batch 02CrH11T

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993625-005 Chromium, Hexavalent	ug/L	02/15/2011 16:18	5.25	0.210	1.0	ND

#### Method Blank

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

#### Duplicate

Lab ID = 993504-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	2.52	2.34	7.38	0 - 20

#### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.82	5.00	96.5	90 - 110

#### Matrix Spike

Lab ID = 993504-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.80	7.64(5.30)	103	90 - 110

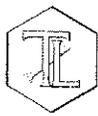
#### Matrix Spike

Lab ID = 993504-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	2.03	1.97(1.06)	106	90 - 110

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

008



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.GM.04

Page 2 of 8
Printed 2/25/2011

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Rows include Matrix Spike and MRCVS - Primary for Chromium, Hexavalent.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 8

Project Number: 405681.MP.02.GM.04

Printed 2/25/2011

Metals by EPA 6020A, Dissolved

Batch 022411A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993625-001 Chromium	ug/L	02/24/2011 17:34	20.0	0.380	4.0	4520
993625-002 Chromium	ug/L	02/24/2011 18:33	100	1.90	20.0	10600
993625-003 Chromium	ug/L	02/24/2011 18:40	100	1.90	20.0	9350
993625-004 Chromium	ug/L	02/24/2011 18:46	100	1.90	20.0	9240

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 993625-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	20.0	4540	4520	0.508	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.8	50.0	95.7	90 - 110

Matrix Spike

Lab ID = 993625-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	20.0	5750	5520(1000)	123.	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.4	50.0	94.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.3	50.0	94.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.8	50.0	95.6	90 - 110

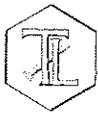
MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.0	50.0	94.1	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

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



**TRUESDAIL LABORATORIES, INC.**

*Report Continued*

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

**Project Name: PG&E Topock Project**  
**Project Number: 405681.MP.02.GM.04**

**Page 5 of 8**  
**Printed 2/25/2011**

**Interference Check Standard A**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

**Interference Check Standard AB**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.1	50.0	96.2	80 - 120

**Interference Check Standard AB**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.5	50.0	97.0	80 - 120

**Serial Dilution**

Lab ID = 993625-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	100	4580	4520	1.39	0 - 10

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project  
Project Number: 405681.MP.02.GM.04

Page 6 of 8  
Printed 2/25/2011

Metals by EPA 6020A, Dissolved

Batch 022511A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993625-005 Chromium	ug/L	02/25/2011 13:26	5.00	0.0950	1.0	2.0

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 993625-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	2.00	2.00	0.100	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.0	50.0	94.1	90 - 110

Matrix Spike

Lab ID = 993625-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	260	252.(250.)	103	75 - 125

Matrix Spike Duplicate

Lab ID = 993625-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	255	252.(250.)	101	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.5	50.0	94.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.0	50.0	92.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.8	50.0	95.6	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.GM.04

Page 7 of 8
Printed 2/25/2011

Interference Check Standard AB

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, 48.2, 50.0, 96.3, 80 - 120

Interference Check Standard AB

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, ug/L, 1.00, 46.4, 50.0, 92.7, 80 - 120

Chromium, Hexavalent by SM 3500-Cr B

Batch 02CrH11B

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows for 993625-001 to 993625-004 Chromium, Hexavalent

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row: Chromium, Hexavalent, ug/L, 1.00, ND

Duplicate

Lab ID = 993625-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 25.0, 9040, 9100, 0.671, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.00, 102, 100, 102, 90 - 110

Matrix Spike

Lab ID = 993625-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 25.0, 11500, 11600(2500), 96.1, 85 - 115

Matrix Spike Duplicate

Lab ID = 993625-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 25.0, 11400, 11600(2500), 93.7, 85 - 115

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.00, 62.0, 60.0, 103, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.00, 57.2, 60.0, 95.3, 90 - 110

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



TRUESDAIL LABORATORIES, INC.

*Report Continued*

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

Project Name: PG&E Topock Project

Page 8 of 8

Project Number: 405681.MP.02.GM.04

Printed 2/25/2011

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**

*for*   
Mona Nassimi  
Manager, Analytical Services

TLI GMP-172B 993625

CH2MHILL

CHAIN OF CUSTODY RECORD

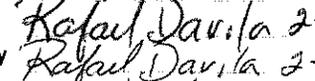
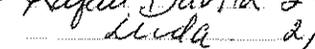
2/10/2011 5:05:45 PM

Page 1 OF 1

Project Name PG&E Topock				Container:			Number of Containers	COMMENTS	
Location Topock				250 ml Poly	250 ml Poly	500 ml Poly			
Project Number 405681.MP.02.GM.04				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C			HNO3, 4°C
Project Manager Jay Piper				Filtered:	Field	Field			Field
Sample Manager Shawn Duffy				Holding Time:	28	28			180
Task Order									
Project 2010-GMP-172B-Q4									
Turnaround Time 10 Days									
Shipping Date: 2/3/2011									
COC Number: TLI_172BQ4									
DATE	TIME	MATRIX							
1 MW-20-100-172B	2/10/2011	14:22	Water		X	X	2	} GOWB GOWA MI=2	
2 MW-20-130-172B	2/10/2011	16:50	Water		X	X	2		
3 MW-60-200-172B	2/10/2011	15:42	Water		X	X	2		
4 MW-98-172B	2/10/2011	12:05	Water		X	X	2		
5 PGE-08-172B	2/10/2011	16:47	Water	X		X	2		
TOTAL NUMBER OF CONTAINERS							10		

ALERT!!  
Level III QC

For Sample Conditions:  
See Form Attached

Approved by Sampled by Relinquished by Received by Relinquished by Received by	Signatures   	Date/Time 2-10-11 17:30 2-10-11 17:30 2-10-11 23:00 2/10/11 23:00	Shipping Details Method of Shipment: FedEx On Ice: yes / no Airbill No: Lab Name: Truesdail Laboratories, Inc. Lab Phone: (714) 730-6239	ATTN: Sample Custody	Special Instructions: Dec 6-17, 2010 Report Copy to Shawn Duffy (530) 229-3303
---	---	--	---	-------------------------	--

## Hexavalent Chromium

### Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
2/09/11	993562-1	9.5	NA	NA	NA	ALI
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
↓	↓ -11	↓	↓	↓	↓	↓
↓	↓ -12	↓	↓	↓	↓	↓
↓	↓ -13	↓	↓	↓	↓	↓
↓	↓ -14	↓	↓	↓	↓	↓
↓	↓ -15	↓	↓	↓	↓	↓
02/10/11	993602-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
02/11/11	993625-5	9.5	N/A	N/A	N/A	SB
02/11/11	993626-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓

*ah*

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
993382	solid	-	02/03/11	M.M	yes	TTLc
993453-2	-	-	↓	↓	↓	TTLc
-3	-	-	↓	M.M	yes	↓
-4	-	-	↓	↓	↓	↓
993464	- ↓	-	02/03/11	M.M	yes	TTLc
993470	>1	<2	02/03/11	M.M	yes	-
993301(-458,10,14)	<1	<2	2/3/11	KK	yes	-
993428 (1-2)	<1	<2	2/3/11	KK	NO	-
993429 (1-2)	<1	<2	↓	↓	NO	-
993431 (1-11)	<1	<2	↓	↓	NO	-
993432 (1-4)	<1	<2	↓	↓	NO	-
993433 (1-8,10)	<1	<2	↓	↓	NO	-
993436 (13-10)	<1	<2	↓	↓	NO	-
993437 (1-8)	<1	<2	↓	↓	NO	-
993438 (2-10)	<1	<2	↓	↓	NO	-
993439 (1-10)	<1	<2	↓	↓	NO	-
993440 (1-8,10)	<1	<2	↓	↓	NO	-
993441 (1-9)	<1	<2	↓	↓	NO	-
993442 (1-3)	<1	<2	↓	↓	NO	-
993044 (1-6)	<1	<2	1/25/11	↓	NO	-
993096 (1-6)	<1	<2	1/25/11	↓	NO	-
993506 (1-3)	<1	<2	2/6/11	↓	NO	-
993486	<1	<2	2/9/11	ES	NO	-
993513	<1	<2	↓	↓	↓	↓
993514	<1	<2	↓	↓	↓	↓
993515 (16,23)	<1	<2	↓	↓	↓	yes will be a...
993572	<1	<2	↓	↓	↓	↓
993564	↓	↓	↓	↓	↓	↓
565	↓	↓	↓	↓	↓	↓
566	↓	↓	↓	↓	↓	↓
567	↓	↓	↓	↓	↓	↓
568	↓	↓	↓	↓	↓	↓
993569	>1	↓	↓	↓	yes	3010A
99358 (1-4)	solid	-	02/10/11	M.M	yes	TTLc
993502 (1,2)	<1	<2	2/7/11	KK	NO	-
993609	<1	<2	2/11/11	KK	NO	-
993607	>1	>2	↓	↓	yes	3010A
993569	>1	>2	↓	↓	yes	3010A
993621	>1	>2	↓	↓	yes	3010A
993621 (Hy bottle)	<1	<2	↓	↓	NO	-
993619	<1	<2	↓	↓	NO	-
993597 (1-4)	<1	>2	↓	↓	NO	@ 30 am
993589 (1-3)	<1	>2	↓	↓	NO	@ 30 am
993625 (1-5)	<1	<2	↓	↓	NO	-
993493 (1-9)	<1	<2	2/10/11	KK	NO	-
993353 (1-3)	<1	<2	2/2/11	KK	NO	-
993378	<1	<2	2/2/11	KK	NO	-
993489 (1-8)	<1	<2	2/5/11	KK	NO	-
993490 (1-12)	<1	<2	2/5/11	KK	NO	-



# Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 993625

Date Delivered: 02/10/11 Time: 23:00 By:  Mail  Field Service  Client

1. Was a Chain of Custody received and signed?  Yes  No  N/A
2. Does Customer require an acknowledgement of the COC?  Yes  No  N/A
3. Are there any special requirements or notes on the COC?  Yes  No  N/A
4. If a letter was sent with the COC, does it match the COC?  Yes  No  N/A
5. Were all requested analyses understood and acceptable?  Yes  No  N/A
6. Were samples received in a chilled condition?  Yes  No  N/A  
Temperature (if yes)? 4°C
7. Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc.)?  Yes  No  N/A
8. Were sample custody seals intact?  Yes  No  N/A
9. Does the number of samples received agree with COC?  Yes  No  N/A
10. Did sample labels correspond with the client ID's?  Yes  No  N/A
11. Did sample labels indicate proper preservation?  Yes  No  N/A  
Preserved (if yes) by:  Truesdail  Client
12. Were samples pH checked? pH = See C.O.C.  Yes  No  N/A
13. Were all analyses within holding time at time of receipt?  Yes  No  N/A  
If not, notify Project Manager.
14. Have Project due dates been checked and accepted?  Yes  No  N/A  
Turn Around Time (TAT):  RUSH  Std
15. **Sample Matrix:**  Liquid  Drinking Water  Ground Water  Waste Water  
 Sludge  Soil  Wipe  Paint  Solid  Other Water

ALERT!!  
Level III CC

16. Comments: \_\_\_\_\_

17. Sample Check-In completed by **Truesdail** Log-In/Receiving: Lucia

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

March 15, 2011

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2011-GMP-174-Q1, GROUNDWATER MONITORING PROJECT, TLI NO.: 993626

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2011-GMP-174-Q1 groundwater-monitoring project for Hexavalent and Total Dissolved Chromium. 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 are under Section 5.

The samples were received and delivered with the chain of custody February 10, 2010, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

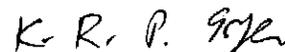
Total Dissolved Chromium was analyzed by SW 6020 rather than SW 6010B as requested on the chain of custody with Mr. Shawn Duffy's approval.

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

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

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

  
for Mona Nassimi  
Manager, Analytical Services



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



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

**Attention:** Shawn Duffy

**Laboratory No.:** 993626

**Date Received:** February 10, 2011

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

**Project No.:** 405681.MP.02.GM.03

**P.O. No.:** 405681.MP.02.GM.03

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
993626-001	MW-63-065-174	E218.6	FLDFLT	2/8/2011	15:17	Chromium, hexavalent	1.3	ug/L	1.0
993626-001	MW-63-065-174	SW6020	FLDFLT	2/8/2011	15:17	Chromium	1.7	ug/L	1.0
993626-002	MW-23-060-174	E218.6	FLDFLT	2/9/2011	10:35	Chromium, hexavalent	31.5	ug/L	1.0
993626-002	MW-23-060-174	SW6020	FLDFLT	2/9/2011	10:35	Chromium	30.8	ug/L	1.0
993626-003	MW-23-080-174	E218.6	FLDFLT	2/9/2011	12:30	Chromium, hexavalent	19.8	ug/L	1.0
993626-003	MW-23-080-174	SW6020	FLDFLT	2/9/2011	12:30	Chromium	20.7	ug/L	1.0
993626-004	MW-33-040-174	E218.6	FLDFLT	2/9/2011	13:27	Chromium, hexavalent	ND	ug/L	1.0
993626-004	MW-33-040-174	SW6020	FLDFLT	2/9/2011	13:27	Chromium	1.7	ug/L	1.0
993626-005	MW-33-090-174	E218.6	FLDFLT	2/9/2011	12:24	Chromium, hexavalent	24.2	ug/L	1.0
993626-005	MW-33-090-174	SW6020	FLDFLT	2/9/2011	12:24	Chromium	25.3	ug/L	1.0
993626-006	MW-33-150-174	E218.6	FLDFLT	2/9/2011	9:41	Chromium, hexavalent	12.2	ug/L	1.0
993626-006	MW-33-150-174	SW6020	FLDFLT	2/9/2011	9:41	Chromium	12.3	ug/L	1.0
993626-007	MW-33-210-174	E218.6	FLDFLT	2/9/2011	10:42	Chromium, hexavalent	14.8	ug/L	1.0
993626-007	MW-33-210-174	SW6020	FLDFLT	2/9/2011	10:42	Chromium	15.2	ug/L	1.0
993626-008	MW-48-174	E218.6	FLDFLT	2/9/2011	9:27	Chromium, hexavalent	ND	ug/L	1.0
993626-008	MW-48-174	SW6020	FLDFLT	2/9/2011	9:27	Chromium	ND	ug/L	1.0
993626-009	MW-61-110-174	E218.6	FLDFLT	2/9/2011	15:20	Chromium, hexavalent	684	ug/L	10.5
993626-009	MW-61-110-174	SW6020	FLDFLT	2/9/2011	15:20	Chromium	653	ug/L	4.0
993626-010	MW-62-065-174	E218.6	FLDFLT	2/9/2011	14:05	Chromium, hexavalent	481	ug/L	10.5
993626-010	MW-62-065-174	SW6020	FLDFLT	2/9/2011	14:05	Chromium	475	ug/L	4.0

004



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
993626-011	MW-62-110-174	E218.6	FLDFLT	2/9/2011	15:45	Chromium, hexavalent	565	ug/L	10.5
993626-011	MW-62-110-174	SW6020	FLDFLT	2/9/2011	15:45	Chromium	540	ug/L	4.0
993626-012	MW-62-190-174	E218.6	FLDFLT	2/9/2011	15:55	Chromium, hexavalent	ND	ug/L	1.0
993626-012	MW-62-190-174	SW6020	FLDFLT	2/9/2011	15:55	Chromium	ND	ug/L	1.0
993626-013	TW-01-174	SM3500-CrB	FLDFLT	2/9/2011	15:01	Chromium, hexavalent	3710	ug/L	250
993626-013	TW-01-174	SW6020	FLDFLT	2/9/2011	15:01	Chromium	3620	ug/L	20.0
993626-014	MW-103-174	E218.6	FLDFLT	2/10/2011	10:30	Chromium, hexavalent	5110	ug/L	105
993626-014	MW-103-174	SW6020	FLDFLT	2/10/2011	10:30	Chromium	5120	ug/L	40.0
993626-015	MW-12-174	SM3500-CrB	FLDFLT	2/10/2011	11:59	Chromium, hexavalent	2950	ug/L	250
993626-015	MW-12-174	SW6020	FLDFLT	2/10/2011	11:59	Chromium	3160	ug/L	20.0
993626-016	MW-57-070-174	E218.6	FLDFLT	2/10/2011	11:00	Chromium, hexavalent	507	ug/L	21.0
993626-016	MW-57-070-174	SW6020	FLDFLT	2/10/2011	11:00	Chromium	612	ug/L	4.0
993626-017	MW-59-100-174	E218.6	FLDFLT	2/10/2011	13:12	Chromium, hexavalent	5090	ug/L	105
993626-017	MW-59-100-174	SW6020	FLDFLT	2/10/2011	13:12	Chromium	5020	ug/L	40.0
993626-018	MW-60-125-174	E218.6	FLDFLT	2/10/2011	9:23	Chromium, hexavalent	1160	ug/L	21.0
993626-018	MW-60-125-174	SW6020	FLDFLT	2/10/2011	9:23	Chromium	1170	ug/L	5.0

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

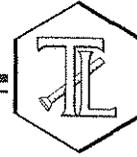
Results below 0.01ppm will have two (2) significant figures.

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

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

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

## REPORT

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

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 405681.MP.02.GM.03

Project Number: 405681.MP.02.GM.03

Laboratory No. 993626

Page 1 of 10

Printed 3/15/2011

Samples Received on 2/10/2011 11:00:00 PM

Field ID	Lab ID	Collected	Matrix
MW-63-065-174	993626-001	02/08/2011 15:17	Water
MW-23-060-174	993626-002	02/09/2011 10:35	Water
MW-23-080-174	993626-003	02/09/2011 12:30	Water
MW-33-040-174	993626-004	02/09/2011 13:27	Water
MW-33-090-174	993626-005	02/09/2011 12:24	Water
MW-33-150-174	993626-006	02/09/2011 09:41	Water
MW-33-210-174	993626-007	02/09/2011 10:42	Water
MW-48-174	993626-008	02/09/2011 09:27	Water
MW-61-110-174	993626-009	02/09/2011 15:20	Water
MW-62-065-174	993626-010	02/09/2011 14:05	Water
MW-62-110-174	993626-011	02/09/2011 15:45	Water
MW-62-190-174	993626-012	02/09/2011 15:55	Water
TW-01-174	993626-013	02/09/2011 15:01	Water
MW-103-174	993626-014	02/10/2011 10:30	Water
MW-12-174	993626-015	02/10/2011 11:59	Water
MW-57-070-174	993626-016	02/10/2011 11:00	Water
MW-59-100-174	993626-017	02/10/2011 13:12	Water
MW-60-125-174	993626-018	02/10/2011 09:23	Water

### Chrome VI by EPA 218.6

Batch 02CrH11Y

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993626-001 Chromium, Hexavalent	ug/L	02/17/2011 16:45	5.25	0.110	1.0	1.3
993626-002 Chromium, Hexavalent	ug/L	02/17/2011 14:40	5.25	0.110	1.0	31.5
993626-003 Chromium, Hexavalent	ug/L	02/17/2011 13:59	5.25	0.110	1.0	19.8
993626-004 Chromium, Hexavalent	ug/L	02/17/2011 14:09	5.25	0.110	1.0	ND
993626-005 Chromium, Hexavalent	ug/L	02/17/2011 11:05	5.25	0.110	1.0	24.2
993626-006 Chromium, Hexavalent	ug/L	02/17/2011 14:20	5.25	0.110	1.0	12.2
993626-007 Chromium, Hexavalent	ug/L	02/17/2011 14:30	5.25	0.110	1.0	14.8
993626-008 Chromium, Hexavalent	ug/L	02/17/2011 17:06	5.25	0.110	1.0	ND

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

009



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

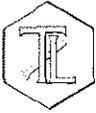
Page 2 of 10

Project Number: 405681.MP.02.GM.03

Printed 3/15/2011

Method Blank						
Parameter	Unit	DF	Result			
Chromium, Hexavalent	ug/L	1.00	ND			
Duplicate						Lab ID = 993626-002
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	33.0	31.5	4.42	0 - 20
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.06	5.00	101	90 - 110
Matrix Spike						Lab ID = 993626-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.56	6.52(5.25)	101	90 - 110
Matrix Spike						Lab ID = 993626-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	2.17	2.03(1.06)	114	90 - 110
Matrix Spike						Lab ID = 993626-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	82.6	84.0(52.5)	97.3	90 - 110
Matrix Spike						Lab ID = 993626-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	47.8	46.0(26.2)	107	90 - 110
Matrix Spike						Lab ID = 993626-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.29	6.08(5.25)	104	90 - 110
Matrix Spike						Lab ID = 993626-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	48.4	50.4(26.2)	92.6	90 - 110
Matrix Spike						Lab ID = 993626-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	40.0	38.4(26.2)	106	90 - 110
Matrix Spike						Lab ID = 993626-007
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	41.9	41.0(26.2)	103	90 - 110
Matrix Spike						Lab ID = 993626-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.06	5.68(5.25)	107	90 - 110

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project  
Project Number: 405681.MP.02.GM.03

Page 3 of 10  
Printed 3/15/2011

Matrix Spike

Lab ID = 993626-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	ND	1.06(1.06)		90 - 110
MRCSS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.89	5.00	97.7	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.5	10.0	105	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.98	10.0	99.8	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.88	10.0	98.8	95 - 105



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.GM.03

Page 4 of 10
Printed 3/15/2011

Chrome VI by EPA 218.6

Batch 02CrH11Z

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include samples 993626-009 through 993626-018.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row: Chromium, Hexavalent, ug/L, 1.00, ND

Duplicate

Lab ID = 993626-009

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 52.5, 686, 684, 0.374, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.00, 5.06, 5.00, 101, 90 - 110

Matrix Spike

Lab ID = 993325-012

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 9.38, 9.47(5.30), 98.2, 90 - 110

Matrix Spike

Lab ID = 993626-009

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 52.5, 1460, 1470(788), 98.5, 90 - 110

Matrix Spike

Lab ID = 993626-010

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 52.5, 1030, 1010(525.), 104, 90 - 110

Matrix Spike

Lab ID = 993626-011

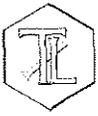
Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 52.5, 1420, 1350(788), 109, 90 - 110

Matrix Spike

Lab ID = 993626-012

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 5.25, 5.30, 5.25(5.25), 101, 90 - 110

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 10

Project Number: 405681.MP.02.GM.03

Printed 3/15/2011

Matrix Spike						Lab ID = 993626-012
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	ND	1.06(1.06)		90 - 110
Matrix Spike						Lab ID = 993626-014
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	525	10400	10400(5250)	102	90 - 110
Matrix Spike						Lab ID = 993626-016
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	105	1050	1030(525.)	103	90 - 110
Matrix Spike						Lab ID = 993626-017
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	525	10400	10300(5250)	101	90 - 110
Matrix Spike						Lab ID = 993626-018
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	105	2740	2740(1580)	100	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.96	5.00	99.3	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.57	10.0	95.7	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.52	10.0	95.2	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100	95 - 105

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.GM.03

Page 6 of 10
Printed 3/15/2011

Metals by EPA 6020A, Dissolved

Batch 031211A

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include Chromium samples 993626-001 through 993626-018.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row: Chromium ug/L 1.00 ND

Duplicate

Lab ID = 993626-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Chromium ug/L 5.00 1.87 1.73 8.06 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium ug/L 1.00 10.6 10.0 106 90 - 110

Matrix Spike

Lab ID = 993626-001

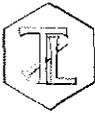
Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium ug/L 5.00 52.8 51.7(50.0) 102 75 - 125

Matrix Spike Duplicate

Lab ID = 993626-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium ug/L 5.00 53.2 51.7(50.0) 103 75 - 125

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 10

Project Number: 405681.MP.02.GM.03

Printed 3/15/2011

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.4	10.0	104	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.7	10.0	107	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.8	10.0	108	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	11.0	10.0	110	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.8	10.0	108	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	11.5	10.0	115	80 - 120

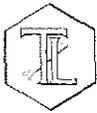
Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	11.4	10.0	114	80 - 120

Serial Dilution

Lab ID = 993626-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	100	681	653	4.12	0 - 10



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.GM.03

Page 8 of 10
Printed 3/15/2011

Metals by EPA 6020A, Dissolved

Batch 031411A

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 993626-002 Chromium, ug/L, 03/14/2011 11:38, 5.00, 0.0950, 1.0, 30.8

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Chromium, ug/L, 1.00, ND

Duplicate

Lab ID = 993626-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Chromium, ug/L, 5.00, 29.4, 30.8, 4.71, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 10.0, 10.0, 100., 90 - 110

Matrix Spike

Lab ID = 993626-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 5.00, 82.1, 80.8(50.0), 103, 75 - 125

Matrix Spike Duplicate

Lab ID = 993626-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 5.00, 80.2, 80.8(50.0), 98.7, 75 - 125

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 10.2, 10.0, 102., 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 10.2, 10.0, 102, 90 - 110

Interference Check Standard A

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, ND, 0, Recovery, Acceptance Range

Interference Check Standard A

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, ND, 0, Recovery, Acceptance Range

Interference Check Standard AB

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 10.2, 10.0, 102., 80 - 120

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.GM.03

Page 9 of 10
Printed 3/15/2011

Interference Check Standard AB

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows include Chromium with values 11.0, 10.0, 110, 80-120 and Serial Dilution with values 30.6, 30.8, 0.749, 0-10.

Chromium, Hexavalent by SM 3500-Cr B

Batch 02CrH11B

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows show results for 993626-013 and 993626-015 Chromium, Hexavalent.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row for Chromium, Hexavalent with result ND.

Duplicate

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row for Chromium, Hexavalent with result 9040, expected 9100, RPD 0.671, range 0-20.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Chromium, Hexavalent with result 102, expected 100, recovery 102, range 90-110.

Matrix Spike

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row for Chromium, Hexavalent with result 11500, expected/added 11600(2500), recovery 96.1, range 85-115.

Matrix Spike Duplicate

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row for Chromium, Hexavalent with result 11400, expected/added 11600(2500), recovery 93.7, range 85-115.

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Chromium, Hexavalent with result 62.0, expected 60.0, recovery 103, range 90-110.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Chromium, Hexavalent with result 57.2, expected 60.0, recovery 95.3, range 90-110.

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



**TRUESDAIL LABORATORIES, INC.**

*Report Continued*

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

Project Name: PG&E Topock Project  
Project Number: 405681.MP.02.GM.03

Page 10 of 10  
Printed 3/15/2011

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

*for*   
for - Mona Nassimi  
Manager, Analytical Services

GMP 174

TLI #2

pg 1 993626

CH2MHILL

CHAIN OF CUSTODY RECORD

2/10/2011 5:09:20 PM

Page 1 OF 2

Project Name	Location	Project Number	Project Manager	Sample Manager	Task Order	Project	Turnaround Time	Shipping Date	COC Number	Container:				Matrix	OATE	TIME	Matrix	Number of Containers	COMMENTS					
										250 ml Poly	250 ml Poly	2x250 ml Poly	500 ml Poly											
PG&E Topock	Topock	405681.MP.02.GM.03	Jay Piper	Shawn Duffy	2011-GMP-174-Q1	10 Days	2/10/2011	3																
										Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C										
										Filtered:	Field	Field	Field	Field										
										Holding Time:	28	28	28	180										
											C6 (E218.8) Field Filtered	C6 (SM3500B) Field Filtered	C6 (E218.8R) Field Filtered	Disolved Chromium (6010BCRF) Field Filtered Chromium										
-1	MW-63-065-174	2/8/2011	15:17	Water	X				X								2	PH=2						
	MW-75-174	2/8/2011	15:30	Water	X												1	Hold						
-2	MW-23-060-174	2/9/2011	10:35	Water	X												2							
-3	MW-23-080-174	2/9/2011	12:30	Water	X												2	PH=2						
-4	MW-33-040-174	2/9/2011	13:27	Water					X	X							3							
	MW-33-040-174-EB	2/9/2011	12:55	Water	X												1	Hold						
-5	MW-33-090-174	2/9/2011	12:24	Water	X					X							2							
-6	MW-33-150-174	2/9/2011	9:41	Water	X					X							2							
-7	MW-33-210-174	2/9/2011	10:42	Water	X					X							2							
-8	MW-48-174	2/9/2011	9:27	Water	X					X							2							
-9	MW-61-110-174	2/9/2011	15:20	Water	X					X							2	PH=2						
-10	MW-62-065-174	2/9/2011	14:05	Water	X					X							2							
-11	MW-62-110-174	2/9/2011	15:45	Water	X					X							2							
-12	MW-62-190-174	2/9/2011	15:55	Water	X					X							2							
	MW-76-174	2/9/2011	14:09	Water	X												1	Hold						

For Sample Condition: See Form Attached

ALERT !! Level III QC

Signatures

Approved by: [Signature] Date/Time: 2-10-11 17:30

Relinquished by: Rafael Davila 2-10-11 17:30

Received by: Rafael Davila 2-10-11 23:00

Relinquished by: [Signature] Date/Time: 2-10-11 23:00

Received by: Lucia 2/10/11 23:00

Shipping Details

Method of Shipment: courier

On Ice: yes / no

Airbill No:

Lab Name: Truesdail Laboratories, Inc.

Lab Phone: (714) 730-6239

ATTN:

Sample Custody

Special Instructions:

Feb 7-11, 2011

Report Copy to:

Shawn Duffy (530) 229-3303



GMP 174 TLI #2 pg 2

993626

CH2MHILL

CHAIN OF CUSTODY RECORD

2/10/2011 5:09:21 PM

Page 2 OF 2

				Container:	250 ml Poly	250 ml Poly	2x250 ml Poly	500 ml Poly	Number of Containers	COMMENTS
Project Name PG&E Topock				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C		
Location Topock				Filtered:	Field	Field	Field	Field		
Project Number 405681.MP.02.GM.03				Holding Time:	28	28	28	180		
Project Manager Jay Piper										
Sample Manager Shawn Duffy										
Task Order										
Project 2011-GMP-174-Q1										
Turnaround Time 10 Days										
Shipping Date: 2/10/2011										
COC Number: 3										
DATE	TIME	Matrix								
MW-77-174	2/9/2011	15:35	Water	X					1	Hold
-13 TW-01-174	2/9/2011	15:01	Water		X		X		2	} G-10B M=2
-14 MW-103-174	2/10/2011	10:30	Water	X			X		2	
-15 MW-12-174	2/10/2011	11:59	Water		X		X		2	
-16 MW-57-070-174	2/10/2011	11:00	Water	X			X		2	
-17 MW-59-100-174	2/10/2011	13:12	Water	X			X		2	
-18 MW-60-125-174	2/10/2011	9:23	Water	X			X		2	
MW-78-174	2/10/2011	17:05	Water	X					1	Hold
TOTAL NUMBER OF CONTAINERS									42	

ALERT !!  
Level III QC

Approved by	Signatures	Date/Time	Shipping Details
Sampled by	<i>[Signature]</i>	2-10-11	Method of Shipment: courier
Relinquished by	<i>[Signature]</i>	17:30	On Ice: yes / no
Received by	Rafael Davila	2-10-11 17:30	Airbill No:
Relinquished by	Rafael Davila	2-10-11 23:00	Lab Name: Truesdail Laboratories, Inc.
Received by	Linda	2/10/11 23:00	Lab Phone: (714) 730-6239

ATTN: Sample Custody

Special Instructions:  
Feb 7-11, 2011

Report Copy to  
Shawn Duffy  
(530) 229-3303

# Hexavalent Chromium

## Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
2/09/11	993562-1	9.5	NA	NA	NA	ALI
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
↓	↓ -11	↓	↓	↓	↓	↓
↓	↓ -12	↓	↓	↓	↓	↓
↓	↓ -13	↓	↓	↓	↓	↓
↓	↓ -14	↓	↓	↓	↓	↓
↓	↓ -15	↓	↓	↓	↓	↓
02/10/11	993602-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
02/11/11	993625-5	9.5	N/A	N/A	N/A	SB
02/11/11	993626-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓

*ali*

## Hexavalent Chromium

### Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
02/11/11	993626-8	9.5	N/A	N/A	N/A	SB
↓	-9	↓	↓	↓	↓	↓
↓	-10	↓	↓	↓	↓	↓
↓	-11	↓	↓	↓	↓	↓
↓	-12	↓	↓	↓	↓	↓
↓	-14	↓	↓	↓	↓	↓
↓	-16	↓	↓	↓	↓	↓
↓	-17	↓	↓	↓	↓	↓
↓	-18	↓	↓	↓	↓	↓
02/10/11	993624-1	9.5	N/A	N/A	N/A	SB
↓	-2	↓	↓	↓	↓	↓
↓	-3	↓	↓	↓	↓	↓
02/16/11	993705	7.0	5.00	9.5	8:00	SB





# Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 993626

Date Delivered: 02/10/11 Time: 23:00 By:  Mail  Field Service  Client

1. Was a Chain of Custody received and signed?  Yes  No  N/A
2. Does Customer require an acknowledgement of the COC?  Yes  No  N/A
3. Are there any special requirements or notes on the COC?  Yes  No  N/A
4. If a letter was sent with the COC, does it match the COC?  Yes  No  N/A
5. Were all requested analyses understood and acceptable?  Yes  No  N/A
6. Were samples received in a chilled condition?  
Temperature (if yes)? 7 °C  Yes  No  N/A
7. Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc.)?  Yes  No  N/A
8. Were sample custody seals intact?  Yes  No  N/A
9. Does the number of samples received agree with COC?  Yes  No  N/A
10. Did sample labels correspond with the client ID's?  Yes  No  N/A
11. Did sample labels indicate proper preservation?  
Preserved (if yes) by:  Truesdail  Client  Yes  No  N/A
12. Were samples pH checked? pH = See C.O.C.  Yes  No  N/A
13. Were all analyses within holding time at time of receipt?  
If not, notify Project Manager.  Yes  No  N/A
14. Have Project due dates been checked and accepted?  
Turn Around Time (TAT):  RUSH  Std  Yes  No  N/A
15. **Sample Matrix:**  Liquid  Drinking Water  Ground Water  Waste Water  
 Sludge  Soil  Wipe  Paint  Solid  Other Water

ALERT!!  
Level III QC

16. Comments: \_\_\_\_\_

17. Sample Check-In completed by Truesdail! Log-In/Receiving: Luda

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

March 31, 2011

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-180, GROUNDWATER MONITORING PROJECT, TLI NO.: 993920

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-180 groundwater-monitoring project for Total Dissolved and Hexavalent Chromium, Total Dissolved Solids, and Specific Conductivity. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on March 1, 2011, 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.

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

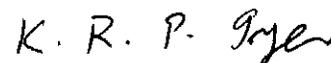
Samples for Total Dissolved Chromium were analyzed by method EPA 200.8 with the approval of Mr. Shawn Duffy of CH2M Hill.

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

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

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi  
Manager, Analytical Services



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

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

**Attention:** Shawn Duffy

**Sample:** Two (2) Groundwater Samples

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

**Project No.:** 408401.01.DM

**Laboratory No.:** 993920

**Date:** March 31, 2011

**Collected:** March 1, 2011

**Received:** March 1, 2011

## ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani / Nathan Atthawimol
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 200.8	Total Dissolved Chromium	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Sonya Bersudsky
SM 3500-CrB	Hexavalent Chromium	Jenny Tankunakorn



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

**Attention:** Shawn Duffy

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

**Project No.:** 408401.01.DM

**P.O. No.:** 408401.01.DM

**Laboratory No.:** 993920

**Date Received:** March 1, 2011

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
993920-001	PE-01-180	E120.1	NONE	3/1/2011	12:49	EC	5080	umhos/cm	2.00
993920-001	PE-01-180	E200.8	LABFLT	3/1/2011	12:49	Chromium	15.2	ug/L	1.0
993920-001	PE-01-180	E218.6	LABFLT	3/1/2011	12:49	Chromium, hexavalent	12.9	ug/L	0.20
993920-001	PE-01-180	SM2540C	NONE	3/1/2011	12:49	Total Dissolved Solids	3200	mg/L	125
993920-002	TW-03D-180	E120.1	NONE	3/1/2011	12:49	EC	8820	umhos/cm	2.00
993920-002	TW-03D-180	E200.8	LABFLT	3/1/2011	12:49	Chromium	1320	ug/L	2.0
993920-002	TW-03D-180	SM2540C	NONE	3/1/2011	12:49	Total Dissolved Solids	5380	mg/L	250
993920-002	TW-03D-180	SM3500-CrB	LABFLT	3/1/2011	12:49	Chromium, hexavalent	1090	ug/L	100

ND: Non Detected (below reporting limit)

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

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

## REPORT

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

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 408401.01.DM

Project Number: 408401.01.DM

Laboratory No. 993920

Page 1 of 7

Printed 4/2/2011

Samples Received on 3/1/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-180	993920-001	03/01/2011 12:49	Water
TW-03D-180	993920-002	03/01/2011 12:49	Water

### Specific Conductivity - EPA 120.1

Batch 03EC11B

3/3/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993920-001 Specific Conductivity	umhos/cm	03/03/2011	1.00	0.0380	2.00	5080
993920-002 Specific Conductivity	umhos/cm	03/03/2011	1.00	0.0380	2.00	8820

#### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

#### Duplicate

Lab ID = 993921-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	8180	8120	0.736	0 - 10

#### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	717	706	102.	90 - 110

#### Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	718	706	102.	90 - 110

#### MRCCS - Secondary

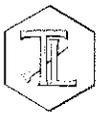
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	703	706	99.6	90 - 110

#### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	1030	999	103.	90 - 110

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

009



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 408401.01.DM

Page 3 of 7
Printed 4/2/2011

Chrome VI by EPA 218.6

Batch 03CrH11A

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 993920-001 Chromium, Hexavalent, ug/L, 03/02/2011 12:30, 1.05, 0.0210, 0.20, 12.9

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Chromium, Hexavalent, ug/L, 1.00, ND

Duplicate

Lab ID = 993920-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.05, 13.1, 12.9, 1.26, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 5.09, 5.00, 102., 90 - 110

Matrix Spike

Lab ID = 993920-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.09, 29.6, 29.3(16.4), 102., 90 - 110

Matrix Spike

Lab ID = 993921-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 5.25, 5.58, 5.25(5.25), 106., 90 - 110

Matrix Spike

Lab ID = 993921-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.21, 1.17(1.06), 103., 90 - 110

Matrix Spike

Lab ID = 993921-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 105, 2060, 2040(1050), 102., 90 - 110

MRCCS - Secondary

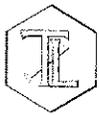
Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 5.11, 5.00, 102., 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 10.4, 10.0, 104., 95 - 105

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 10.4, 10.0, 104., 95 - 105



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 7

Project Number: 408401.01.DM

Printed 4/2/2011

Chromium, Hexavalent by SM 3500-Cr B

Batch 03CrH11A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993920-002 Chromium, Hexavalent	ug/L	03/09/2011 17:03	10.0	35.0	100.	1090

Method Blank

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

Duplicate

Lab ID = 993920-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	1120	1090	2.33	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	99.4	100.	99.4	90 - 110

Matrix Spike

Lab ID = 993920-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	2080	2090(1000)	98.5	85 - 115

Matrix Spike Duplicate

Lab ID = 993920-002

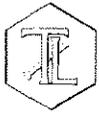
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	2010	2090(1000)	92.4	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	55.7	60.0	92.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	59.3	60.0	98.8	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 7

Project Number: 408401.01.DM

Printed 4/2/2011

Total Dissolved Solids by SM 2540 C

Batch 03TDS11B

3/3/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993920-001 Total Dissolved Solids	mg/L	03/03/2011	1.00	0.434	125	3200
993920-002 Total Dissolved Solids	mg/L	03/03/2011	1.00	0.434	250.	5380

Method Blank

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

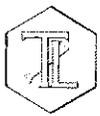
Duplicate

Lab ID = 993872-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	251	260.	3.52	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	518	500.	104.	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 7

Project Number: 408401.01.DM

Printed 4/2/2011

Metals by EPA 200.8, Dissolved

Batch 032811A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993920-001 Chromium	ug/L	03/29/2011 00:45	5.00	0.0950	1.0	15.2
993920-002 Chromium	ug/L	03/29/2011 00:58	10.0	0.190	2.0	1320

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 994222-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	2.39	2.02	16.9	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.1	50.0	102.	90 - 110

Matrix Spike

Lab ID = 994222-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	252	252.(250.)	100.0	75 - 125

Matrix Spike Duplicate

Lab ID = 994222-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	239.	252.(250.)	95.0	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.7	50.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.5	50.0	103.	90 - 110

MRCVS - Primary

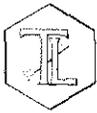
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.7	50.0	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.8	50.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	52.2	50.0	104.	90 - 110



**TRUESDAIL LABORATORIES, INC.**

Report Continued

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

Project Name: PG&E Topock Project  
Project Number: 408401.01.DM

Page 7 of 7  
Printed 4/2/2011

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	53.4	50.0	107.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.7	50.0	103.	90 - 110

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.3	50.0	100.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.3	50.0	101.	80 - 120

Serial Dilution

Lab ID = 993921-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	960.	1050	8.92	0 - 10

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

*Mona Nassimi*  
for Mona Nassimi  
Manager, Analytical Services

EZ Condon



**Total Dissolved Solids by SM 2540 C**

**Calculations**

Batch: 03TDS11B  
Date Calculated: 3/8/11

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	111.6504	111.6504	111.6504	0.0000	No	0.0000	0.0	25.0	ND	1
993872-1	100	112.9002	112.9263	112.9263	0.0000	No	0.0261	261.0	25.0	261.0	1
993872-2	100	102.8490	102.8768	102.8768	0.0000	No	0.0278	278.0	25.0	278.0	1
993872-3	100	111.5210	111.5452	111.5452	0.0000	No	0.0242	242.0	25.0	242.0	1
993872-4	100	75.1428	75.1665	75.1665	0.0000	No	0.0237	237.0	25.0	237.0	1
993872-5	100	111.1889	111.2107	111.2107	0.0000	No	0.0218	218.0	25.0	218.0	1
993872-6	100	104.2456	104.268	104.268	0.0000	No	0.0224	224.0	25.0	224.0	1
993872-7	100	115.2465	115.2694	115.2694	0.0000	No	0.0229	229.0	25.0	229.0	1
993872-8	100	67.7319	67.755	67.755	0.0000	No	0.0231	231.0	25.0	231.0	1
993872-9	100	75.7751	75.7988	75.7988	0.0000	No	0.0237	237.0	25.0	237.0	1
993872-10	100	110.4348	110.4608	110.4608	0.0000	No	0.0260	260.0	25.0	260.0	1
993872-10D	100	78.4058	78.4309	78.4309	0.0000	No	0.0251	251.0	25.0	251.0	1
LCS	100	112.3579	112.4097	112.4097	0.0000	No	0.0518	518.0	25.0	518.0	1
993903	20	48.1855	48.2891	48.2891	0.0000	No	0.1036	5180.0	125.0	5180.0	1
993918	50	47.6375	47.7489	47.7489	0.0000	No	0.1114	2228.0	50.0	2228.0	1
993920-1	20	50.6088	50.6727	50.6727	0.0000	No	0.0639	3195.0	125.0	3195.0	1
993920-2	10	68.2408	68.2946	68.2946	0.0000	No	0.0538	5380.0	250.0	5380.0	1
993921-1	10	67.8105	67.854	67.854	0.0000	No	0.0435	4350.0	250.0	4350.0	1
993921-2	10	68.7328	68.7804	68.7804	0.0000	No	0.0476	4760.0	250.0	4760.0	1
993927	400	165.1107	165.1127	165.1127	0.0000	No	0.0020	5.0	6.3	ND	1
993933-11	100	50.2146	50.2568	50.2568	0.0000	No	0.0422	422.0	25.0	422.0	1
993952-9	100	72.4258	72.4858	72.4858	0.0000	No	0.0600	600.0	25.0	600.0	1
993952-10	100	73.1444	73.2036	73.2036	0.0000	No	0.0592	592.0	25.0	592.0	1
LCS											1

Calculation as follows:

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

- Where: A = weight of dish + residue in grams.
- B = weight of dish in grams.
- C = mL of sample filtered.

RL= reporting limit.  
ND = not detected (below the reporting limit)

Analyst Printed Name  
*[Signature]*

Analyst Signature  
*[Signature]*

Reviewer Printed Name  
*Mark*

Reviewer Signature  
*[Signature]*

**Total Dissolved Solids by SM 2540 C**

**TDS/EC CHECK**

Batch: 03TDS11B

Date Calculated: 3/8/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
993872-1	340	0.77	221	1.18
993872-2	350	0.79	227.5	1.22
993872-3	292	0.83	189.8	1.28
993872-4	308	0.77	200.2	1.18
993872-5	262	0.83	170.3	1.28
993872-6	272	0.82	176.8	1.27
993872-7	278	0.82	180.7	1.27
993872-8	279	0.83	181.35	1.27
993872-9	314	0.75	204.1	1.16
993872-10	322	0.81	209.3	1.24
993872-10D	322	0.78	209.3	1.20
LCS				
993903	6380	0.81	4147	1.25
993918	2880	0.77	1872	1.19
993920-1	5190	0.62	3373.5	0.95
993920-2	8830	0.61	5739.5	0.94
993921-1	7420	0.59	4823	0.90
993921-2	8120	0.59	5278	0.90
993927	7.17	ND	4.6605	ND
993933-11	684	0.62	444.6	0.95
993952-9	938	0.64	609.7	0.98
993952-10	886	0.67	575.9	1.03



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-EW-180]

993920

COC Number

TURNAROUND TIME

10 Days

DATE 03/01/11

PAGE 1 OF 1

COMPANY				[Diagonal Lines]										COMMENTS	
CH2M HILL /E2				Dissolved Cr (200.7) Lab filtered Cr(VI) (3500-Cr B) pH (150.0) EC (120.1) TDS (160.1) Cr(VI) (218.6) Rec'd 03/01/11 s 993920										NUMBER OF CONTAINERS	
PROJECT NAME															
PG&E Topock IM3Plant-EW															
PHONE															
530-229-3303 FAX 530-339-3303															
ADDRESS															
155 Grand Ave Ste 1000 Oakland, CA 94612															
P.O. NUMBER															
408401.01.DM															
SAMPLERS (SIGNATURE)															
<i>[Signature]</i>															
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Dissolved Cr	Cr(VI)	pH	EC	TDS	Cr(VI)					NUMBER OF CONTAINERS	COMMENTS
-1 PE-01-180	03/01/11	12:49	Ground water	X	X	X	X							4	pH = 7 } 200.7
-2 TW-03D-180	03/01/11	12:49	Ground water	X	X	X	X							4	pH = 7 )
														8	TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished) <i>[Signature]</i>	Printed Name Scott O'Donnell	Company/ Agency Ch2mhill	Date/ Time 3-1-11 15:10
Signature (Received) <i>[Signature]</i>	Printed Name Rafael	Company/ Agency T.H.I	Date/ Time 3-1-11 15:10
Signature (Relinquished) <i>[Signature]</i>	Printed Name Rafael	Company/ Agency T.H.I	Date/ Time 3-1-11 21:30
Signature (Received) <i>[Signature]</i>	Printed Name Sha Brown	Company/ Agency T.H.I	Date/ Time 3/1/11 21:30
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:

040

## Hexavalent Chromium

### Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
02/11/11	993626-8	9.5	N/A	N/A	N/A	SB
	↓ -9	↓	↓	↓	↓	↓
	↓ -10	↓	↓	↓	↓	↓
	↓ -11	↓	↓	↓	↓	↓
	↓ -12	↓	↓	↓	↓	↓
	↓ -14	↓	↓	↓	↓	↓
	↓ -16	↓	↓	↓	↓	↓
	↓ -17	↓	↓	↓	↓	↓
	↓ -18	↓	↓	↓	↓	↓
02/10/11	993624-1	9.5	N/A	N/A	N/A	SB
	↓ -2	↓	↓	↓	↓	↓
	↓ -3	↓	↓	↓	↓	↓
02/16/11	993705	7.0	5.00	9.5	8:00	SB
02/23/11	993799	7.0	5.00	9.5	8:30	SB
02/25/11	993866-2	9.5	N/A	N/A	N/A	SB
02/25/11	993867	9.5	N/A	N/A	N/A	SB
02/25/11	993868-1	9.5	N/A	N/A	N/A	SB
	↓ -2	↓	↓	↓	↓	↓
02/02/11	993920-1	7.0	5.00	9.5	10:05	SB
03/02/11	993921-1	7.0	5.00	9.5	10:10	SB
	↓ -2	↓	↓	↓	10:15	SB

*ah*

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
993843	<1	72	2/25/11	ES	NO	yes w/ 2:30 p.m.
993839(1-8)	<1	<2				-1 digested
840(1-4)						
↓ 841(1-9)						
993866-1	<1	<2	2/25/11	KK	YES	
993867	<1	<2	↓	↓	↓	
993868(1-2)	<1	<2	↓	↓	↓	
993862(1-19)	<1	<2	2/13/11	KK	NO	
993853(1-2)	<1	72	2/28/11	ES	NO	yes w/ 2:00 p.m.
T/D 993871(1-7)	71	72			Yes for total	
872(1-10)						
↓ 873(1-6)	↓				↓	
993869(1-6)	71	<2	3/1/11	ES	YES	(1-4 SPC)(65, 6 7010A)
993886	<1	<2			NO	
887						
↓ 889						
993897(1-10)		72				yes w/ 2:30 p.m.
993919(1-2)	71	<2	3/2/11	M/M	YES	
993953	71	<2	3/2/11	M/M	YES	
993297(1-68)	<1	<2	01/31/11	KK	NO	
993322(1-11)	<1	<2	02/02/11	KK	NO	
993966	71	<2	3/7/11	ES	YES	
993967	<1	<2			NO	
969	<1	<2				
970	<1	<2			↓	
983	71	<2			YES	
988	<1	<2			NO	
999	<1	<2			↓	
994000	71	<2			YES	
993969(1-8)	<1	<2	3/7/11	ES	YES	3010A
993990(1-9)	<1	<2			↓	
993991(1-3)	<1	<2			↓	
994005(16,23)	<1	72	3/7/11	ES	NO	yes w/ 4:30 p.m.
993705	<1	72	3/8/11	ES	NO	yes w/ 2:00 p.m.
993799	<1	72			↓	
993920(1-2)	<1	72			↓	
T/D 993921(1-2)	<1	<2			↓	yes for Dissolved 2:00 p.m.
994023	<1	<2	3/8/11	ES	NO	
9941624						
994025						
994026						
027	↓				↓	
028	71	<2			YES	
006(16 SPC)		TTC			↓	
994039	<1	<2	3/9/11	ES	NO	
994040(1-3)	<1	72				yes w/ 11:30
993560(2-12)	<1	<2	3/8/11	KK	NO	
993561(1-9)	<1	<2	3/8/11	KK	NO	
993323(1-9)	<1	<2	2/10/11	KK	NO	



# Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 993920

Date Delivered: 03/01/11 Time: 11:30 By:  Mail  Field Service  Client

1. Was a Chain of Custody received and signed?  Yes  No  N/A
2. Does Customer require an acknowledgement of the COC?  Yes  No  N/A
3. Are there any special requirements or notes on the COC?  Yes  No  N/A
4. If a letter was sent with the COC, does it match the COC?  Yes  No  N/A
5. Were all requested analyses understood and acceptable?  Yes  No  N/A
6. Were samples received in a chilled condition?  
Temperature (if yes)? 7 °C  Yes  No  N/A
7. Were samples received intact  
(i.e. broken bottles, leaks, air bubbles, etc.)?  Yes  No  N/A
8. Were sample custody seals intact?  Yes  No  N/A
9. Does the number of samples received agree with COC?  Yes  No  N/A
10. Did sample labels correspond with the client ID's?  Yes  No  N/A
11. Did sample labels indicate proper preservation?  
Preserved (if yes) by:  Truesdail  Client  Yes  No  N/A
12. Were samples pH checked? pH = See c.o.c.  Yes  No  N/A
13. Were all analyses within holding time at time of receipt?  
If not, notify Project Manager.  Yes  No  N/A
14. Have Project due dates been checked and accepted?  
Turn Around Time (TAT):  RUSH  Std  Yes  No  N/A
15. **Sample Matrix:**  Liquid  Drinking Water  Ground Water  Waste Water  
 Sludge  Soil  Wipe  Paint  Solid  Other \_\_\_\_\_

ALERT!!  
Level III QC

16. Comments: \_\_\_\_\_

17. Sample Check-In completed by Truesdail Log-In/Receiving: Luda

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

March 14, 2011

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2011-GMP-PACKER-175, GROUNDWATER  
MONITORING PROJECT, TLI NO.: 994096

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2011-GMP-Packer-175 groundwater-monitoring project for Nitrate as N and Chloride. 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 are under Section 5.

The samples were received and delivered with the chain of custody February 1, 2010, 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.

These analyses are reported here as SDG 994096 in all final report pages and as SDG 993430 in all raw data. Due to a misunderstanding, SDG 993430 was cancelled after the analysis had been performed. The sample was then logged in again under a new SDG.

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

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

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

*for*   
Mona Nassimi  
Manager, Analytical Services

*K. R. P. Iyer*

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

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

**Laboratory No.:** 994096  
**Date Received:** February 1, 2011

**Project Name:** PG&E Topock Project  
**Project No.:** 405681.MP.02.GM.03  
**P.O. No.:** 405681.MP.02.GM.03

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
994096-001	MW-58BR-UPR-160-175	E300	NONE	2/1/2011	11:25	Chloride	3870	mg/L	500
994096-001	MW-58BR-UPR-160-175	E300	NONE	2/1/2011	11:25	Nitrate as N	ND	mg/L	1.00

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.

004

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

## REPORT

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

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 405681.MP.02.GM.03

Project Number: 405681.MP.02.GM.03

Laboratory No. 994096

Page 1 of 2

Printed 3/14/2011

Samples Received on 2/1/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
MW-58BR-UPR-160	994096-001	02/01/2011 11:25	Water

### Anions By I.C. - EPA 300.0

Batch 02AN11C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
994096-001 Chloride	mg/L	02/02/2011 16:09	1000	30.0	500.	3870
Nitrate as Nitrogen	mg/L	02/02/2011 10:52	5.00	0.0550	1.00	ND

#### Method Blank

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

#### Duplicate

Lab ID = 993429-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	5.00	3.13	3.19	1.83	0 - 20

#### Duplicate

Lab ID = 993448-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chloride	mg/L	1.00	ND	0	0	0 - 20

#### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.92	4.00	98.0	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00	100.	90 - 110

#### Matrix Spike

Lab ID = 993429-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	5.00	25.0	23.2(20.0)	109	85 - 115

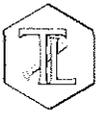
#### Matrix Spike

Lab ID = 993448-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chloride	mg/L	1.00	1.93	2.00(2.00)	96.6	85 - 115

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

006



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project  
Project Number: 405681.MP.02.GM.03

Page 2 of 2  
Printed 3/14/2011

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.94	4.00	98.4	90 - 110
Nitrate as Nitrogen	mg/L	1.00	3.99	4.00	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.17	3.00	106	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.19	3.00	106	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.92	3.00	97.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.96	3.00	98.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.96	3.00	98.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.96	3.00	98.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.96	3.00	98.6	90 - 110

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

*Mona Nassimi*  
for Mona Nassimi  
Manager, Analytical Services

Rec'd 02/01/11  
Lab # ~~000100~~

994096

994096

~~999430~~

**CH2MHILL**

**CHAIN OF CUSTODY RECORD**

Project Name PG&E Topock Location Topock Project Number 405681.MP.02.GM.03 Project Manager Jay Piper Sample Manager Shawn Duffy		Container: 250 ml Poly Preservatives: (NH4)2SO4, HNO3, 4°C Filtered: Field Holding Time: 28	500 ml Poly HNO3, 4°C Field 180	1 Liter Poly 4°C NA 2	1 Liter Poly 4°C NA 2	3 x 40 ml VOA H3PO4, 4°C NA 28	3 x 40 ml VOA HCL, 4°C NA 14	<div style="border: 2px solid black; padding: 5px; text-align: center;"> <b>ALERT !!</b>  <b>Level III QC</b> </div>	Number of Containers  COMMENTS
Task Order Project 2011-GMP-PACKER-175 Turnaround Time 10 Days Shipping Date: COC Number:		C6 (E218.6) Field Filtered	Metals (601087) Field Filtered Chromium, Arsenic	Anions (E300.0) Nitrate, Chloride	TDS (SM2540C)	TOC (SM5310C)	VOCs (826B)		
SAMPLE ID	DATE	TIME	Matrix						
MW-58BR-UPR-160-175	2-1-11	1125	Water		X				10 pH=2
TB-Packer-175-02	"	1100	Water						22 Hold <i>see</i>
TOTAL NUMBER OF CONTAINERS								13	

TLI - Please report the Nitrate and Chloride for sample MW-58BR-UPR-160-175.

*Shawn P. Duffy*  
3/11/11

**ALERT !!**  
**Level III QC**

**For Sample Condition:**  
**See Form Attached**

Approved by Sampled by Relinquished by Received by <i>Rafael Davila</i> 2/1/11 15:30 Relinquished by <i>Rafael Davila</i> 2-1-11 21:30 Received by <i>[Signature]</i> 2/1/11 21:30	Signatures Date/Time 2-1-11	Shipping Details Method of Shipment: On Ice: yes / no Airbill No: Lab Name: ADVANCED TECHNOLOGY LABORATORIES Lab Phone: (702) 307-2659	ATTN: Molly Nguyen	Special Instructions: Report Copy to Shawn Duffy (530) 229-3303
---	-----------------------------------	---	-----------------------	--



# Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 994 096

Date Delivered: 09/01/11 Time: 21:30 By:  Mail  Field Service  Client

1. Was a Chain of Custody received and signed?  Yes  No  N/A
2. Does Customer require an acknowledgement of the COC?  Yes  No  N/A
3. Are there any special requirements or notes on the COC?  Yes  No  N/A
4. If a letter was sent with the COC, does it match the COC?  Yes  No  N/A
5. Were all requested analyses understood and acceptable?  Yes  No  N/A
6. Were samples received in a chilled condition?  
Temperature (if yes)? 4°C  Yes  No  N/A
7. Were samples received intact  
(i.e. broken bottles, leaks, air bubbles, etc.)?  Yes  No  N/A
8. Were sample custody seals intact?  Yes  No  N/A
9. Does the number of samples received agree with COC?  Yes  No  N/A
10. Did sample labels correspond with the client ID's?  Yes  No  N/A
11. Did sample labels indicate proper preservation?  
Preserved (if yes) by:  Truesdail  Client  Yes  No  N/A
12. Were samples pH checked? pH = \_\_\_\_\_  Yes  No  N/A
13. Were all analyses within holding time at time of receipt?  
If not, notify Project Manager.  Yes  No  N/A
14. Have Project due dates been checked and accepted?  
Turn Around Time (TAT):  RUSH  Std  Yes  No  N/A
15. **Sample Matrix:**  Liquid  Drinking Water  Ground Water  Waste Water  
 Sludge  Soil  Wipe  Paint  Solid  Other Water

ALERT!!  
Level III QC

16. Comments: \_\_\_\_\_

17. Sample Check-In completed by **Truesdail** Log-In/Receiving: Linda

February 14, 2011

Shawn P. Duffy  
CH2M HILL  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

TEL: (530) 229-3303  
FAX: (530) 339-3303

CA-ELAP No.: 2676  
NV Cert. No.: NV-009222007A

Workorder No.: N005256

RE: PG&E Topock, 405681.MP.02.GM.03

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on January 27, 2011 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

  
Jose Tenorio Jr.

Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.



**Advanced Technology Laboratories, Inc.**

Date: 14-Feb-11

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab Order:** N005256

## CASE NARRATIVE

---

### SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

### Analytical Comments for EPA 8260B:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for 2-Butanone and Acetone. The associated Laboratory Control Sample (LCS) recovery was acceptable.

RPD for Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria for Styrene; however, the analytical batch was validated by the Laboratory Control Sample (LCS).



**Advanced Technology Laboratories, Inc.**

Date: 14-Feb-11

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab Order:** N005256  
**Contract No:**

**Work Order Sample Summary**

---

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N005256-001A	MW-64BR-UPR-150-175	Water	1/26/2011 12:30:00 PM	1/27/2011	
N005256-001B	MW-64BR-UPR-150-175	Water	1/26/2011 12:30:00 PM	1/27/2011	
N005256-001C	MW-64BR-UPR-150-175	Water	1/26/2011 12:30:00 PM	1/27/2011	
N005256-001D	MW-64BR-UPR-150-175	Water	1/26/2011 12:30:00 PM	1/27/2011	
N005256-001E	MW-64BR-UPR-150-175	Water	1/26/2011 12:30:00 PM	1/27/2011	
N005256-002A	TB-Packer-175-01	Water	1/26/2011 12:00:00 PM	1/27/2011	



Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 14-Feb-11

CLIENT: CH2M HILL  
Lab Order: N005256  
Project: PG&E Topock, 405681.MP.02.GM.03  
Lab ID: N005256-001

Client Sample ID: MW-64BR-UPR-150-175  
Collection Date: 1/26/2011 12:30:00 PM  
Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

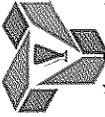
**TOTAL FILTERABLE RESIDUE**

**SM2540C**

RunID: WETCHEM\_110131B QC Batch: 36086 PrepDate: 1/31/2011 Analyst: CEI  
Total Dissolved Solids (Residue, Filterable) 8300 100 100 mg/L 1 1/31/2011

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out





CLIENT: CH2M HILL
Work Order: N005256
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1\_2540C\_W

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Total Dissolved Solids (Residue, Filtera), ND, 10

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Total Dissolved Solids (Residue, Filtera), 955.000, 10, 1000, 0, 95.5, 80, 120

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Total Dissolved Solids (Residue, Filtera), 1305.556, 11, 1279, 2.06, 5

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 14-Feb-11

CLIENT: CH2M HILL  
 Lab Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005256-001

Client Sample ID: MW-64BR-UPR-150-175  
 Collection Date: 1/26/2011 12:30:00 PM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>HEXAVALENT CHROMIUM BY IC</b>							
<b>EPA 218.6</b>							
RunID: IC1_110128A	QC Batch: R79062				PrepDate:		Analyst: QBM
Hexavalent Chromium	220	0.56	4.0		µg/L	20	1/28/2011 03:06 PM

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - H Holding times for preparation or analysis exceeded
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
  - E Value above quantitation range
  - ND Not Detected at the Reporting Limit
  - Results are wet unless otherwise specified





CLIENT: CH2M HILL
Work Order: N005256
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6\_W

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 14-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005256  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab ID:** N005256-001

**Client Sample ID:** MW-64BR-UPR-150-175  
**Collection Date:** 1/26/2011 12:30:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**ANIONS BY ION CHROMATOGRAPHY**

**EPA 300.0**

RunID: IC2_110128A	QC Batch: R79063				PrepDate:	Analyst: QBM
Chloride	4100	63	500	mg/L	1000	1/28/2011 12:07 PM

**ANIONS BY ION CHROMATOGRAPHY**

**EPA 300.0**

RunID: IC2_110128A	QC Batch: R79063				PrepDate:	Analyst: QBM
Nitrogen, Nitrate (As N)	2.6	0.022	1.0	mg/L	2	1/28/2011 10:36 AM

**Qualifiers:** B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified





CLIENT: CH2M HILL
Work Order: N005256
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 300\_W\_CLPGE

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual.

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691



**CLIENT:** CH2M HILL  
**Work Order:** N005256  
**Project:** PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_NO3PGE

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

Sample ID: <b>MB-R79063_NO3</b>	SampType: <b>MBLK</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79063</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R79063</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>1/28/2011</b>	SeqNo: <b>1242864</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N)	ND	0.50									
--------------------------	----	------	--	--	--	--	--	--	--	--	--

Sample ID: <b>LCS-R79063_NO3</b>	SampType: <b>LCS</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79063</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R79063</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>1/28/2011</b>	SeqNo: <b>1242865</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N)	2.410	0.50	2.500	0	96.4	90	110				
--------------------------	-------	------	-------	---	------	----	-----	--	--	--	--

Sample ID: <b>N005256-001BDUP</b>	SampType: <b>DUP</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79063</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R79063</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>1/28/2011</b>	SeqNo: <b>1242867</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N)	2.584	1.0						2.594	0.386	20	
--------------------------	-------	-----	--	--	--	--	--	-------	-------	----	--

Sample ID: <b>N005256-001BMS</b>	SampType: <b>MS</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79063</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R79063</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>1/28/2011</b>	SeqNo: <b>1242868</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N)	7.558	1.0	5.000	2.594	99.3	80	120				
--------------------------	-------	-----	-------	-------	------	----	-----	--	--	--	--

Sample ID: <b>N005256-001BMSD</b>	SampType: <b>MSD</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79063</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R79063</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>1/28/2011</b>	SeqNo: <b>1242869</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N)	7.596	1.0	5.000	2.594	100	80	120	7.558	0.502	20	
--------------------------	-------	-----	-------	-------	-----	----	-----	-------	-------	----	--

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 14-Feb-11

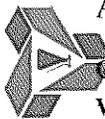
CLIENT: CH2M HILL  
 Lab Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005256-001

Client Sample ID: MW-64BR-UPR-150-175  
 Collection Date: 1/26/2011 12:30:00 PM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP</b>							
	<b>EPA 3010A</b>			<b>EPA 6010B</b>			
RunID: ICP1_110201A	QC Batch: 36125			PrepDate:		1/31/2011	Analyst: KAB
Chromium	220	0.44	2.0		µg/L	2	2/1/2011 11:06 AM

**Qualifiers:** B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified





CLIENT: CH2M HILL  
Work Order: N005256  
Project: PG&E Topock, 405681.MP.02.GM.03

### ANALYTICAL QC SUMMARY REPORT

TestCode: 6010\_WDPGPPB

Sample ID: MB-36125	SampType: MBLK	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 1/31/2011	RunNo: 78952						
Client ID: PBW	Batch ID: 36125	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/1/2011	SeqNo: 1240657						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	0.324	1.0									
----------	-------	-----	--	--	--	--	--	--	--	--	--

Sample ID: LCS-36125	SampType: LCS	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 1/31/2011	RunNo: 78952						
Client ID: LCSW	Batch ID: 36125	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/1/2011	SeqNo: 1240658						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	500.077	1.0	500.0	0	100	85	115				
----------	---------	-----	-------	---	-----	----	-----	--	--	--	--

Sample ID: N005256-001C-MS	SampType: MS	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 1/31/2011	RunNo: 78952						
Client ID: ZZZZZZ	Batch ID: 36125	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/1/2011	SeqNo: 1240662						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	710.979	2.0	500.0	221.7	97.9	75	125				
----------	---------	-----	-------	-------	------	----	-----	--	--	--	--

Sample ID: N005256-001C-MSD	SampType: MSD	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 1/31/2011	RunNo: 78952						
Client ID: ZZZZZZ	Batch ID: 36125	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/1/2011	SeqNo: 1240663						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	707.082	2.0	500.0	221.7	97.1	75	125	711.0	0.550	20	
----------	---------	-----	-------	-------	------	----	-----	-------	-------	----	--

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 14-Feb-11

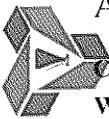
**CLIENT:** CH2M HILL  
**Lab Order:** N005256  
**Project:** PG&E Topock. 405681.MP.02.GM.03  
**Lab ID:** N005256-001

**Client Sample ID:** MW-64BR-UPR-150-175  
**Collection Date:** 1/26/2011 12:30:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP-MS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110212A	QC Batch: 36132			PrepDate:		2/7/2011	Analyst: JT
Arsenic	2.8	0.0020	0.080	µg/L	1	2/12/2011 02:40 PM	

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - E Value above quantitation range
  - H Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - S Spike/Surrogate outside of limits due to matrix interference
  - Results are wet unless otherwise specified
  - DO Surrogate Diluted Out





CLIENT: CH2M HILL
Work Order: N005256
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020\_DIS

Table with 13 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, EPA 3010A, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: MB-36132, MBLK, 6020\_DIS, ug/L, 2/7/2011, 79086, PBW, 36132, EPA 6020, EPA 3010A, 2/12/2011, 1243753, Arsenic, 0.017, 0.10

Table with 13 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, EPA 3010A, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: LCS-36132, LCS, 6020\_DIS, ug/L, 2/7/2011, 79086, LCSW, 36132, EPA 6020, EPA 3010A, 2/12/2011, 1243754, Arsenic, 9.739, 0.10, 10.00, 0, 97.4, 85, 115

Table with 13 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, EPA 3010A, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005256-001C-MS, MS, 6020\_DIS, ug/L, 2/7/2011, 79086, ZZZZZZ, 36132, EPA 6020, EPA 3010A, 2/12/2011, 1243760, Arsenic, 12.650, 0.10, 10.00, 2.834, 98.2, 75, 125

Table with 13 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, EPA 3010A, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005256-001C-MSD, MSD, 6020\_DIS, ug/L, 2/7/2011, 79086, ZZZZZZ, 36132, EPA 6020, EPA 3010A, 2/12/2011, 1243761, Arsenic, 12.708, 0.10, 10.00, 2.834, 98.7, 75, 125, 12.65, 0.461, 20

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 14-Feb-11

CLIENT: CH2M HILL  
 Lab Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005256-001

Client Sample ID: MW-64BR-UPR-150-175  
 Collection Date: 1/26/2011 12:30:00 PM  
 Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS1_110209A	QC Batch: K11VW001	PrepDate:	Analyst: QBM
1,1,1,2-Tetrachloroethane	ND 0.061	1.0	µg/L 1 2/9/2011 09:32 AM
1,1,1-Trichloroethane	ND 0.068	1.0	µg/L 1 2/9/2011 09:32 AM
1,1,2,2-Tetrachloroethane	ND 0.054	1.0	µg/L 1 2/9/2011 09:32 AM
1,1,2-Trichloroethane	ND 0.083	1.0	µg/L 1 2/9/2011 09:32 AM
1,1-Dichloroethane	ND 0.099	1.0	µg/L 1 2/9/2011 09:32 AM
1,1-Dichloroethene	ND 0.094	1.0	µg/L 1 2/9/2011 09:32 AM
1,1-Dichloropropene	ND 0.082	1.0	µg/L 1 2/9/2011 09:32 AM
1,2,3-Trichlorobenzene	ND 0.10	1.0	µg/L 1 2/9/2011 09:32 AM
1,2,3-Trichloropropane	ND 0.12	1.0	µg/L 1 2/9/2011 09:32 AM
1,2,4-Trichlorobenzene	ND 0.12	1.0	µg/L 1 2/9/2011 09:32 AM
1,2,4-Trimethylbenzene	ND 0.095	1.0	µg/L 1 2/9/2011 09:32 AM
1,2-Dibromo-3-chloropropane	ND 0.15	2.0	µg/L 1 2/9/2011 09:32 AM
1,2-Dibromoethane	ND 0.14	1.0	µg/L 1 2/9/2011 09:32 AM
1,2-Dichlorobenzene	ND 0.070	1.0	µg/L 1 2/9/2011 09:32 AM
1,2-Dichloroethane	ND 0.17	1.0	µg/L 1 2/9/2011 09:32 AM
1,2-Dichloropropane	ND 0.085	1.0	µg/L 1 2/9/2011 09:32 AM
1,3,5-Trimethylbenzene	ND 0.087	1.0	µg/L 1 2/9/2011 09:32 AM
1,3-Dichlorobenzene	ND 0.090	1.0	µg/L 1 2/9/2011 09:32 AM
1,3-Dichloropropane	ND 0.074	1.0	µg/L 1 2/9/2011 09:32 AM
1,4-Dichlorobenzene	ND 0.092	1.0	µg/L 1 2/9/2011 09:32 AM
2,2-Dichloropropane	ND 0.061	1.0	µg/L 1 2/9/2011 09:32 AM
2-Butanone	ND 1.0	10	µg/L 1 2/9/2011 09:32 AM
2-Chlorotoluene	ND 0.080	1.0	µg/L 1 2/9/2011 09:32 AM
4-Chlorotoluene	ND 0.10	1.0	µg/L 1 2/9/2011 09:32 AM
4-Isopropyltoluene	ND 0.080	1.0	µg/L 1 2/9/2011 09:32 AM
4-Methyl-2-pentanone	ND 0.76	10	µg/L 1 2/9/2011 09:32 AM
Acetone	ND 1.6	10	µg/L 1 2/9/2011 09:32 AM
Acrolein	ND 4.3	20	µg/L 1 2/9/2011 09:32 AM
Acrylonitrile	ND 0.61	20	µg/L 1 2/9/2011 09:32 AM
Benzene	ND 0.075	1.0	µg/L 1 2/9/2011 09:32 AM
Bromobenzene	ND 0.082	1.0	µg/L 1 2/9/2011 09:32 AM
Bromochloromethane	ND 0.15	1.0	µg/L 1 2/9/2011 09:32 AM
Bromodichloromethane	ND 0.063	1.0	µg/L 1 2/9/2011 09:32 AM
Bromoform	ND 0.086	1.0	µg/L 1 2/9/2011 09:32 AM
Bromomethane	ND 0.13	1.0	µg/L 1 2/9/2011 09:32 AM
Carbon disulfide	ND 0.054	1.0	µg/L 1 2/9/2011 09:32 AM

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 14-Feb-11

CLIENT: CH2M HILL  
 Lab Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005256-001

Client Sample ID: MW-64BR-UPR-150-175  
 Collection Date: 1/26/2011 12:30:00 PM  
 Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID:	MS1_110209A	QC Batch:	K11VW001	PrepDate:	Analyst:	QBM
Carbon tetrachloride	ND	0.10	1.0	µg/L	1	2/9/2011 09:32 AM
Chlorobenzene	ND	0.092	1.0	µg/L	1	2/9/2011 09:32 AM
Chloroethane	ND	0.14	1.0	µg/L	1	2/9/2011 09:32 AM
Chloroform	ND	0.058	1.0	µg/L	1	2/9/2011 09:32 AM
Chloromethane	ND	0.054	1.0	µg/L	1	2/9/2011 09:32 AM
cis-1,2-Dichloroethene	ND	0.11	1.0	µg/L	1	2/9/2011 09:32 AM
cis-1,3-Dichloropropene	ND	0.10	1.0	µg/L	1	2/9/2011 09:32 AM
Dibromochloromethane	ND	0.061	1.0	µg/L	1	2/9/2011 09:32 AM
Dibromomethane	ND	0.15	1.0	µg/L	1	2/9/2011 09:32 AM
Dichlorodifluoromethane	ND	0.12	1.0	µg/L	1	2/9/2011 09:32 AM
Ethylbenzene	ND	0.051	1.0	µg/L	1	2/9/2011 09:32 AM
Freon-113	ND	0.080	1.0	µg/L	1	2/9/2011 09:32 AM
Hexachlorobutadiene	ND	0.17	1.0	µg/L	1	2/9/2011 09:32 AM
Isopropylbenzene	ND	0.057	1.0	µg/L	1	2/9/2011 09:32 AM
m,p-Xylene	ND	0.17	1.0	µg/L	1	2/9/2011 09:32 AM
Methylene chloride	ND	0.10	5.0	µg/L	1	2/9/2011 09:32 AM
MTBE	ND	0.089	1.0	µg/L	1	2/9/2011 09:32 AM
n-Butylbenzene	ND	0.082	1.0	µg/L	1	2/9/2011 09:32 AM
n-Propylbenzene	ND	0.087	1.0	µg/L	1	2/9/2011 09:32 AM
Naphthalene	ND	0.056	1.0	µg/L	1	2/9/2011 09:32 AM
o-Xylene	ND	0.077	1.0	µg/L	1	2/9/2011 09:32 AM
sec-Butylbenzene	ND	0.098	1.0	µg/L	1	2/9/2011 09:32 AM
Styrene	ND	0.072	1.0	µg/L	1	2/9/2011 09:32 AM
tert-Butylbenzene	ND	0.062	1.0	µg/L	1	2/9/2011 09:32 AM
Tetrachloroethene	ND	0.13	1.0	µg/L	1	2/9/2011 09:32 AM
Toluene	18	0.12	2.5	µg/L	1	2/9/2011 09:32 AM
trans-1,2-Dichloroethene	ND	0.094	1.0	µg/L	1	2/9/2011 09:32 AM
trans-1,3-Dichloropropene	ND	0.10	1.0	µg/L	1	2/9/2011 09:32 AM
Trichloroethene	ND	0.060	1.0	µg/L	1	2/9/2011 09:32 AM
Trichlorofluoromethane	ND	0.097	1.0	µg/L	1	2/9/2011 09:32 AM
Vinyl chloride	ND	0.12	1.0	µg/L	1	2/9/2011 09:32 AM
Xylenes, Total	ND	1.5	2.0	µg/L	1	2/9/2011 09:32 AM
Surr: 1,2-Dichloroethane-d4	96.4	0	72-119	%REC	1	2/9/2011 09:32 AM
Surr: 4-Bromofluorobenzene	102	0	76-119	%REC	1	2/9/2011 09:32 AM
Surr: Dibromofluoromethane	102	0	85-115	%REC	1	2/9/2011 09:32 AM
Surr: Toluene-d8	106	0	81-120	%REC	1	2/9/2011 09:32 AM

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 14-Feb-11

CLIENT: CH2M HILL  
 Lab Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005256-002

Client Sample ID: TB-Packer-175-01  
 Collection Date: 1/26/2011 12:00:00 PM  
 Matrix: WATER

Analyses **Result MDL PQL Qual Units DF Date Analyzed**

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS1_110209A	QC Batch: K11VW001	PrepDate:	Analyst: QBM		
1,1,1,2-Tetrachloroethane	ND 0.061	1.0	µg/L	1	2/9/2011 10:40 AM
1,1,1-Trichloroethane	ND 0.068	1.0	µg/L	1	2/9/2011 10:40 AM
1,1,2,2-Tetrachloroethane	ND 0.054	1.0	µg/L	1	2/9/2011 10:40 AM
1,1,2-Trichloroethane	ND 0.083	1.0	µg/L	1	2/9/2011 10:40 AM
1,1-Dichloroethane	ND 0.099	1.0	µg/L	1	2/9/2011 10:40 AM
1,1-Dichloroethene	ND 0.094	1.0	µg/L	1	2/9/2011 10:40 AM
1,1-Dichloropropene	ND 0.082	1.0	µg/L	1	2/9/2011 10:40 AM
1,2,3-Trichlorobenzene	ND 0.10	1.0	µg/L	1	2/9/2011 10:40 AM
1,2,3-Trichloropropane	ND 0.12	1.0	µg/L	1	2/9/2011 10:40 AM
1,2,4-Trichlorobenzene	ND 0.12	1.0	µg/L	1	2/9/2011 10:40 AM
1,2,4-Trimethylbenzene	ND 0.095	1.0	µg/L	1	2/9/2011 10:40 AM
1,2-Dibromo-3-chloropropane	ND 0.15	2.0	µg/L	1	2/9/2011 10:40 AM
1,2-Dibromoethane	ND 0.14	1.0	µg/L	1	2/9/2011 10:40 AM
1,2-Dichlorobenzene	ND 0.070	1.0	µg/L	1	2/9/2011 10:40 AM
1,2-Dichloroethane	ND 0.17	1.0	µg/L	1	2/9/2011 10:40 AM
1,2-Dichloropropane	ND 0.085	1.0	µg/L	1	2/9/2011 10:40 AM
1,3,5-Trimethylbenzene	ND 0.087	1.0	µg/L	1	2/9/2011 10:40 AM
1,3-Dichlorobenzene	ND 0.090	1.0	µg/L	1	2/9/2011 10:40 AM
1,3-Dichloropropane	ND 0.074	1.0	µg/L	1	2/9/2011 10:40 AM
1,4-Dichlorobenzene	ND 0.092	1.0	µg/L	1	2/9/2011 10:40 AM
2,2-Dichloropropane	ND 0.061	1.0	µg/L	1	2/9/2011 10:40 AM
2-Butanone	ND 1.0	10	µg/L	1	2/9/2011 10:40 AM
2-Chlorotoluene	ND 0.080	1.0	µg/L	1	2/9/2011 10:40 AM
4-Chlorotoluene	ND 0.10	1.0	µg/L	1	2/9/2011 10:40 AM
4-Isopropyltoluene	ND 0.080	1.0	µg/L	1	2/9/2011 10:40 AM
4-Methyl-2-pentanone	ND 0.76	10	µg/L	1	2/9/2011 10:40 AM
Acetone	ND 1.6	10	µg/L	1	2/9/2011 10:40 AM
Acrolein	ND 4.3	20	µg/L	1	2/9/2011 10:40 AM
Acrylonitrile	ND 0.61	20	µg/L	1	2/9/2011 10:40 AM
Benzene	ND 0.075	1.0	µg/L	1	2/9/2011 10:40 AM
Bromobenzene	ND 0.082	1.0	µg/L	1	2/9/2011 10:40 AM
Bromochloromethane	ND 0.15	1.0	µg/L	1	2/9/2011 10:40 AM
Bromodichloromethane	ND 0.063	1.0	µg/L	1	2/9/2011 10:40 AM
Bromoform	ND 0.086	1.0	µg/L	1	2/9/2011 10:40 AM
Bromomethane	ND 0.13	1.0	µg/L	1	2/9/2011 10:40 AM
Carbon disulfide	ND 0.054	1.0	µg/L	1	2/9/2011 10:40 AM

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 14-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005256  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab ID:** N005256-002

**Client Sample ID:** TB-Packer-175-01  
**Collection Date:** 1/26/2011 12:00:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

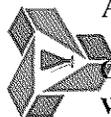
**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID:	MS1_110209A	QC Batch:	K11VW001	PrepDate:	Analyst:	QBM
Carbon tetrachloride	ND	0.10	1.0	µg/L	1	2/9/2011 10:40 AM
Chlorobenzene	ND	0.092	1.0	µg/L	1	2/9/2011 10:40 AM
Chloroethane	ND	0.14	1.0	µg/L	1	2/9/2011 10:40 AM
Chloroform	ND	0.058	1.0	µg/L	1	2/9/2011 10:40 AM
Chloromethane	ND	0.054	1.0	µg/L	1	2/9/2011 10:40 AM
cis-1,2-Dichloroethene	ND	0.11	1.0	µg/L	1	2/9/2011 10:40 AM
cis-1,3-Dichloropropene	ND	0.10	1.0	µg/L	1	2/9/2011 10:40 AM
Dibromochloromethane	ND	0.061	1.0	µg/L	1	2/9/2011 10:40 AM
Dibromomethane	ND	0.15	1.0	µg/L	1	2/9/2011 10:40 AM
Dichlorodifluoromethane	ND	0.12	1.0	µg/L	1	2/9/2011 10:40 AM
Ethylbenzene	ND	0.051	1.0	µg/L	1	2/9/2011 10:40 AM
Freon-113	ND	0.080	1.0	µg/L	1	2/9/2011 10:40 AM
Hexachlorobutadiene	ND	0.17	1.0	µg/L	1	2/9/2011 10:40 AM
Isopropylbenzene	ND	0.057	1.0	µg/L	1	2/9/2011 10:40 AM
m,p-Xylene	ND	0.17	1.0	µg/L	1	2/9/2011 10:40 AM
Methylene chloride	ND	0.10	5.0	µg/L	1	2/9/2011 10:40 AM
MTBE	ND	0.089	1.0	µg/L	1	2/9/2011 10:40 AM
n-Butylbenzene	ND	0.082	1.0	µg/L	1	2/9/2011 10:40 AM
n-Propylbenzene	ND	0.087	1.0	µg/L	1	2/9/2011 10:40 AM
Naphthalene	ND	0.056	1.0	µg/L	1	2/9/2011 10:40 AM
o-Xylene	ND	0.077	1.0	µg/L	1	2/9/2011 10:40 AM
sec-Butylbenzene	ND	0.098	1.0	µg/L	1	2/9/2011 10:40 AM
Styrene	ND	0.072	1.0	µg/L	1	2/9/2011 10:40 AM
tert-Butylbenzene	ND	0.062	1.0	µg/L	1	2/9/2011 10:40 AM
Tetrachloroethene	ND	0.13	1.0	µg/L	1	2/9/2011 10:40 AM
Toluene	ND	0.12	2.5	µg/L	1	2/9/2011 10:40 AM
trans-1,2-Dichloroethene	ND	0.094	1.0	µg/L	1	2/9/2011 10:40 AM
trans-1,3-Dichloropropene	ND	0.10	1.0	µg/L	1	2/9/2011 10:40 AM
Trichloroethene	ND	0.060	1.0	µg/L	1	2/9/2011 10:40 AM
Trichlorofluoromethane	ND	0.097	1.0	µg/L	1	2/9/2011 10:40 AM
Vinyl chloride	ND	0.12	1.0	µg/L	1	2/9/2011 10:40 AM
Xylenes, Total	ND	1.5	2.0	µg/L	1	2/9/2011 10:40 AM
Surr: 1,2-Dichloroethane-d4	98.7	0	72-119	%REC	1	2/9/2011 10:40 AM
Surr: 4-Bromofluorobenzene	99.8	0	76-119	%REC	1	2/9/2011 10:40 AM
Surr: Dibromofluoromethane	99.7	0	85-115	%REC	1	2/9/2011 10:40 AM
Surr: Toluene-d8	99.8	0	81-120	%REC	1	2/9/2011 10:40 AM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out





CLIENT: CH2M HILL
Work Order: N005256
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Table with columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Contains 28 rows of analyte data.

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691



CLIENT: CH2M HILL  
 Work Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: K110209LCS	SampType: LCS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065
Client ID: LCSW	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242942

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	26.830	1.0	25.00	0	107	81	122				
Bromobenzene	26.290	1.0	25.00	0	105	76	124				
Bromochloromethane	27.100	1.0	25.00	0	108	65	129				
Bromodichloromethane	24.750	1.0	25.00	0	99.0	76	121				
Bromoform	24.170	1.0	25.00	0	96.7	69	128				
Bromomethane	25.490	1.0	25.00	0	102	53	141				
Carbon disulfide	27.250	1.0	25.00	0	109	75	125				
Carbon tetrachloride	28.330	1.0	25.00	0	113	66	138				
Chlorobenzene	25.290	1.0	25.00	0	101	81	122				
Chloroethane	27.440	1.0	25.00	0	110	58	133				
Chloroform	26.180	1.0	25.00	0	105	69	128				
Chloromethane	27.680	1.0	25.00	0	111	56	131				
cis-1,2-Dichloroethene	27.700	1.0	25.00	0	111	72	126				
cis-1,3-Dichloropropene	26.160	1.0	25.00	0	105	69	131				
Dibromochloromethane	23.610	1.0	25.00	0	94.4	66	133				
Dibromomethane	23.650	1.0	25.00	0	94.6	76	125				
Dichlorodifluoromethane	31.390	1.0	25.00	0	126	53	153				
Ethylbenzene	26.320	1.0	25.00	0	105	73	127				
Freon-113	27.560	1.0	25.00	0	110	75	125				
Hexachlorobutadiene	25.900	1.0	25.00	0	104	67	131				
Isopropylbenzene	28.780	1.0	25.00	0	115	75	127				
m,p-Xylene	55.100	1.0	50.00	0	110	76	128				
Methylene chloride	25.280	5.0	25.00	0	101	63	137				
MTBE	24.960	1.0	25.00	0	99.8	65	123				
n-Butylbenzene	27.980	1.0	25.00	0	112	69	137				
n-Propylbenzene	28.560	1.0	25.00	0	114	72	129				
Naphthalene	24.380	1.0	25.00	0	97.5	54	138				
o-Xylene	27.230	1.0	25.00	0	109	80	121				
sec-Butylbenzene	27.610	1.0	25.00	0	110	72	127				
Styrene	26.640	1.0	25.00	0	107	65	134				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: <b>K110209LCS</b>	SampType: <b>LCS</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>79065</b>
Client ID: <b>LCSW</b>	Batch ID: <b>K11VW001</b>	TestNo: <b>EPA 8260B</b>		Analysis Date: <b>2/9/2011</b>	SeqNo: <b>1242942</b>

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
tert-Butylbenzene	27.480	1.0	25.00	0	110	70	129				
Tetrachloroethene	24.200	1.0	25.00	0	96.8	66	128				
Toluene	27.050	2.5	25.00	0	108	77	122				
trans-1,2-Dichloroethene	25.880	1.0	25.00	0	104	63	137				
trans-1,3-Dichloropropene	24.230	1.0	25.00	0	96.9	59	135				
Trichloroethene	23.730	1.0	25.00	0	94.9	70	127				
Trichlorofluoromethane	27.960	1.0	25.00	0	112	57	129				
Vinyl chloride	28.480	1.0	25.00	0	114	50	134				
Xylenes, Total	82.330	2.0	75.00	0	110	75	125				
Surr: 1,2-Dichloroethane-d4	22.640		25.00		90.6	72	119				
Surr: 4-Bromofluorobenzene	26.530		25.00		106	76	119				
Surr: Dibromofluoromethane	26.060		25.00		104	85	115				
Surr: Toluene-d8	27.020		25.00		108	81	120				

Sample ID: <b>N005256-001EMS</b>	SampType: <b>MS</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>79065</b>
Client ID: <b>ZZZZZ</b>	Batch ID: <b>K11VW001</b>	TestNo: <b>EPA 8260B</b>		Analysis Date: <b>2/9/2011</b>	SeqNo: <b>1242943</b>

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	25.100	1.0	25.00	0	100	81	129				
1,1,1-Trichloroethane	26.940	1.0	25.00	0	108	67	132				
1,1,2,2-Tetrachloroethane	23.150	1.0	25.00	0	92.6	63	128				
1,1,2-Trichloroethane	23.390	1.0	25.00	0	93.6	75	125				
1,1-Dichloroethane	26.540	1.0	25.00	0	106	69	133				
1,1-Dichloroethene	26.840	1.0	25.00	0	107	68	130				
1,1-Dichloropropene	25.480	1.0	25.00	0	102	73	132				
1,2,3-Trichlorobenzene	24.620	1.0	25.00	0	98.5	67	137				
1,2,3-Trichloropropane	22.240	1.0	25.00	0	89.0	73	124				
1,2,4-Trichlorobenzene	26.460	1.0	25.00	0	106	66	134				
1,2,4-Trimethylbenzene	25.400	1.0	25.00	0	102	74	132				
1,2-Dibromo-3-chloropropane	22.330	2.0	25.00	0	89.3	50	132				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: N005256-001EMS	SampType: MS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: ZZZZZZ	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242943						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane	23.860	1.0	25.00	0	95.4	80	121				
1,2-Dichlorobenzene	25.580	1.0	25.00	0	102	71	122				
1,2-Dichloroethane	21.690	1.0	25.00	0	86.8	69	132				
1,2-Dichloropropane	23.720	1.0	25.00	0	94.9	75	125				
1,3,5-Trimethylbenzene	26.900	1.0	25.00	0	108	74	131				
1,3-Dichlorobenzene	26.130	1.0	25.00	0	105	75	124				
1,3-Dichloropropane	22.340	1.0	25.00	0	89.4	73	126				
1,4-Dichlorobenzene	24.840	1.0	25.00	0	99.4	74	123				
2,2-Dichloropropane	28.380	1.0	25.00	0	114	69	137				
2-Butanone	113.310	10	250.0	0	45.3	49	136				S
2-Chlorotoluene	26.620	1.0	25.00	0	106	73	126				
4-Chlorotoluene	27.050	1.0	25.00	0	108	74	128				
4-Isopropyltoluene	26.660	1.0	25.00	0	107	73	130				
4-Methyl-2-pentanone	198.560	10	250.0	0	79.4	58	134				
Acetone	84.140	10	250.0	0	33.7	40	135				S
Acrolein	256.230	20	250.0	0	102	75	125				
Acrylonitrile	228.710	20	250.0	0	91.5	75	125				
Benzene	23.030	1.0	25.00	0	92.1	81	122				
Bromobenzene	25.640	1.0	25.00	0	103	76	124				
Bromochloromethane	26.800	1.0	25.00	0	107	65	129				
Bromodichloromethane	23.890	1.0	25.00	0	95.6	76	121				
Bromoform	22.000	1.0	25.00	0	88.0	69	128				
Bromomethane	23.960	1.0	25.00	0	95.8	53	141				
Carbon disulfide	28.240	1.0	25.00	0.9300	109	75	125				
Carbon tetrachloride	27.360	1.0	25.00	0	109	66	138				
Chlorobenzene	25.050	1.0	25.00	0	100	81	122				
Chloroethane	27.000	1.0	25.00	0	108	58	133				
Chloroform	26.300	1.0	25.00	0	105	69	128				
Chloromethane	26.370	1.0	25.00	0	105	56	131				
cis-1,2-Dichloroethene	27.140	1.0	25.00	0	109	72	126				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: N005256-001EMS	SampType: MS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: ZZZZZZ	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242943						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	24.910	1.0	25.00	0	99.6	69	131				
Dibromochloromethane	22.440	1.0	25.00	0	89.8	66	133				
Dibromomethane	21.980	1.0	25.00	0	87.9	76	125				
Dichlorodifluoromethane	30.500	1.0	25.00	0	122	53	153				
Ethylbenzene	25.500	1.0	25.00	0	102	73	127				
Freon-113	27.490	1.0	25.00	0	110	75	125				
Hexachlorobutadiene	24.520	1.0	25.00	0	98.1	67	131				
Isopropylbenzene	27.670	1.0	25.00	0	111	75	127				
m,p-Xylene	53.220	1.0	50.00	0	106	76	128				
Methylene chloride	25.700	5.0	25.00	0	103	63	137				
MTBE	23.970	1.0	25.00	0	95.9	65	123				
n-Butylbenzene	26.610	1.0	25.00	0	106	69	137				
n-Propylbenzene	27.720	1.0	25.00	0	111	72	129				
Naphthalene	22.330	1.0	25.00	0	89.3	54	138				
o-Xylene	26.780	1.0	25.00	0	107	80	121				
sec-Butylbenzene	26.520	1.0	25.00	0	106	72	127				
Styrene	24.380	1.0	25.00	0	97.5	65	134				
tert-Butylbenzene	26.590	1.0	25.00	0	106	70	129				
Tetrachloroethene	23.580	1.0	25.00	0	94.3	66	128				
Toluene	44.700	2.5	25.00	18.11	106	77	122				
trans-1,2-Dichloroethene	25.730	1.0	25.00	0	103	63	137				
trans-1,3-Dichloropropene	22.920	1.0	25.00	0	91.7	59	135				
Trichloroethene	23.040	1.0	25.00	0	92.2	70	127				
Trichlorofluoromethane	27.140	1.0	25.00	0	109	57	129				
Vinyl chloride	27.890	1.0	25.00	0	112	50	134				
Xylenes, Total	80.000	2.0	75.00	0	107	75	125				
Surr: 1,2-Dichloroethane-d4	22.510		25.00		90.0	72	119				
Surr: 4-Bromofluorobenzene	26.060		25.00		104	76	119				
Surr: Dibromofluoromethane	26.210		25.00		105	85	115				
Surr: Toluene-d8	26.770		25.00		107	81	120				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: N005256-001EMSD	SampType: MSD	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: ZZZZZZ	Batch ID: K11VW001	TestNo: EPA 8260B	Analysis Date: 2/9/2011	SeqNo: 1242944							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	24.450	1.0	25.00	0	97.8	81	129	25.10	2.62	20	
1,1,1-Trichloroethane	24.140	1.0	25.00	0	96.6	67	132	26.94	11.0	20	
1,1,2,2-Tetrachloroethane	24.670	1.0	25.00	0	98.7	63	128	23.15	6.36	20	
1,1,2-Trichloroethane	24.370	1.0	25.00	0	97.5	75	125	23.39	4.10	20	
1,1-Dichloroethane	23.700	1.0	25.00	0	94.8	69	133	26.54	11.3	20	
1,1-Dichloroethene	24.190	1.0	25.00	0	96.8	68	130	26.84	10.4	20	
1,1-Dichloropropene	26.210	1.0	25.00	0	105	73	132	25.48	2.82	20	
1,2,3-Trichlorobenzene	25.010	1.0	25.00	0	100	67	137	24.62	1.57	20	
1,2,3-Trichloropropane	25.590	1.0	25.00	0	102	73	124	22.24	14.0	20	
1,2,4-Trichlorobenzene	25.840	1.0	25.00	0	103	66	134	26.46	2.37	20	
1,2,4-Trimethylbenzene	22.920	1.0	25.00	0	91.7	74	132	25.40	10.3	20	
1,2-Dibromo-3-chloropropane	24.730	2.0	25.00	0	98.9	50	132	22.33	10.2	20	
1,2-Dibromoethane	25.960	1.0	25.00	0	104	80	121	23.86	8.43	20	
1,2-Dichlorobenzene	25.670	1.0	25.00	0	103	71	122	25.58	0.351	20	
1,2-Dichloroethane	25.710	1.0	25.00	0	103	69	132	21.69	17.0	20	
1,2-Dichloropropane	24.240	1.0	25.00	0	97.0	75	125	23.72	2.17	20	
1,3,5-Trimethylbenzene	26.480	1.0	25.00	0	106	74	131	26.90	1.57	20	
1,3-Dichlorobenzene	25.790	1.0	25.00	0	103	75	124	26.13	1.31	20	
1,3-Dichloropropane	23.710	1.0	25.00	0	94.8	73	126	22.34	5.95	20	
1,4-Dichlorobenzene	24.900	1.0	25.00	0	99.6	74	123	24.84	0.241	20	
2,2-Dichloropropane	25.110	1.0	25.00	0	100	69	137	28.38	12.2	20	
2-Butanone	115.470	10	250.0	0	46.2	49	136	113.3	1.89	20	S
2-Chlorotoluene	26.430	1.0	25.00	0	106	73	126	26.62	0.716	20	
4-Chlorotoluene	26.590	1.0	25.00	0	106	74	128	27.05	1.72	20	
4-Isopropyltoluene	26.490	1.0	25.00	0	106	73	130	26.66	0.640	20	
4-Methyl-2-pentanone	230.170	10	250.0	0	92.1	58	134	198.6	14.7	20	
Acetone	87.310	10	250.0	0	34.9	40	135	84.14	3.70	20	S
Acrolein	261.220	20	250.0	0	104	75	125	256.2	1.93	20	
Acrylonitrile	222.100	20	250.0	0	88.8	75	125	228.7	2.93	20	
Benzene	26.890	1.0	25.00	0	108	81	122	23.03	15.5	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: N005256-001EMSD	SampType: MSD	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: ZZZZZZ	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242944						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Bromobenzene	26.000	1.0	25.00	0	104	76	124	25.64	1.39	20	
Bromochloromethane	25.080	1.0	25.00	0	100	65	129	26.80	6.63	20	
Bromodichloromethane	24.560	1.0	25.00	0	98.2	76	121	23.89	2.77	20	
Bromoform	22.700	1.0	25.00	0	90.8	69	128	22.00	3.13	20	
Bromomethane	21.860	1.0	25.00	0	87.4	53	141	23.96	9.17	20	
Carbon disulfide	25.540	1.0	25.00	0.9300	98.4	75	125	28.24	10.0	20	
Carbon tetrachloride	28.490	1.0	25.00	0	114	66	138	27.36	4.05	20	
Chlorobenzene	25.200	1.0	25.00	0	101	81	122	25.05	0.597	20	
Chloroethane	25.060	1.0	25.00	0	100	58	133	27.00	7.45	20	
Chloroform	23.610	1.0	25.00	0	94.4	69	128	26.30	10.8	20	
Chloromethane	24.480	1.0	25.00	0	97.9	56	131	26.37	7.43	20	
cis-1,2-Dichloroethene	24.810	1.0	25.00	0	99.2	72	126	27.14	8.97	20	
cis-1,3-Dichloropropene	25.900	1.0	25.00	0	104	69	131	24.91	3.90	20	
Dibromochloromethane	22.620	1.0	25.00	0	90.5	66	133	22.44	0.799	20	
Dibromomethane	22.610	1.0	25.00	0	90.4	76	125	21.98	2.83	20	
Dichlorodifluoromethane	26.150	1.0	25.00	0	105	53	153	30.50	15.4	20	
Ethylbenzene	25.570	1.0	25.00	0	102	73	127	25.50	0.274	20	
Freon-113	24.530	1.0	25.00	0	98.1	75	125	27.49	11.4	20	
Hexachlorobutadiene	23.990	1.0	25.00	0	96.0	67	131	24.52	2.19	20	
Isopropylbenzene	27.960	1.0	25.00	0	112	75	127	27.67	1.04	20	
m,p-Xylene	52.770	1.0	50.00	0	106	76	128	53.22	0.849	20	
Methylene chloride	23.180	5.0	25.00	0	92.7	63	137	25.70	10.3	20	
MTBE	22.900	1.0	25.00	0	91.6	65	123	23.97	4.57	20	
n-Butylbenzene	26.810	1.0	25.00	0	107	69	137	26.61	0.749	20	
n-Propylbenzene	27.730	1.0	25.00	0	111	72	129	27.72	0.0361	20	
Naphthalene	21.550	1.0	25.00	0	86.2	54	138	22.33	3.56	20	
o-Xylene	26.380	1.0	25.00	0	106	80	121	26.78	1.50	20	
sec-Butylbenzene	26.640	1.0	25.00	0	107	72	127	26.52	0.451	20	
Styrene	18.500	1.0	25.00	0	74.0	65	134	24.38	27.4	20	R
tert-Butylbenzene	26.480	1.0	25.00	0	106	70	129	26.59	0.415	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
 Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tetrachloroethene	23.830	1.0	25.00	0	95.3	66	128	23.58	1.05	20	
Toluene	44.680	2.5	25.00	18.11	106	77	122	44.70	0.0448	20	
trans-1,2-Dichloroethene	23.390	1.0	25.00	0	93.6	63	137	25.73	9.53	20	
trans-1,3-Dichloropropene	24.240	1.0	25.00	0	97.0	59	135	22.92	5.60	20	
Trichloroethene	23.200	1.0	25.00	0	92.8	70	127	23.04	0.692	20	
Trichlorofluoromethane	23.990	1.0	25.00	0	96.0	57	129	27.14	12.3	20	
Vinyl chloride	25.300	1.0	25.00	0	101	50	134	27.89	9.74	20	
Xylenes, Total	79.150	2.0	75.00	0	106	75	125	80.00	1.07	20	
Surr: 1,2-Dichloroethane-d4	23.180		25.00		92.7	72	119		0		
Surr: 4-Bromofluorobenzene	26.150		25.00		105	76	119		0		
Surr: Dibromofluoromethane	24.100		25.00		96.4	85	115		0		
Surr: Toluene-d8	27.480		25.00		110	81	120		0		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0									
1,1,1-Trichloroethane	ND	1.0									
1,1,2,2-Tetrachloroethane	ND	1.0									
1,1,2-Trichloroethane	ND	1.0									
1,1-Dichloroethane	ND	1.0									
1,1-Dichloroethene	ND	1.0									
1,1-Dichloropropene	ND	1.0									
1,2,3-Trichlorobenzene	ND	1.0									
1,2,3-Trichloropropane	ND	1.0									
1,2,4-Trichlorobenzene	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
1,2-Dibromoethane	ND	1.0									

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: K110209MB3	SampType: MBLK	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: PBW	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242945						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2-Dichlorobenzene	ND	1.0									
1,2-Dichloroethane	ND	1.0									
1,2-Dichloropropane	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,3-Dichloropropane	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
2,2-Dichloropropane	ND	1.0									
2-Butanone	ND	10									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
4-Isopropyltoluene	ND	1.0									
4-Methyl-2-pentanone	ND	10									
Acetone	ND	10									
Acrolein	ND	20									
Acrylonitrile	ND	20									
Benzene	ND	1.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon disulfide	ND	1.0									
Carbon tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	1.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
cis-1,2-Dichloroethene	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: <b>K110209MB3</b>	SampType: <b>MBLK</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>79065</b>						
Client ID: <b>PBW</b>	Batch ID: <b>K11VW001</b>	TestNo: <b>EPA 8260B</b>		Analysis Date: <b>2/9/2011</b>	SeqNo: <b>1242945</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
Dichlorodifluoromethane	ND	1.0									
Ethylbenzene	ND	1.0									
Freon-113	ND	1.0									
Hexachlorobutadiene	ND	1.0									
Isopropylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
Methylene chloride	ND	5.0									
MTBE	ND	1.0									
n-Butylbenzene	ND	1.0									
n-Propylbenzene	ND	1.0									
Naphthalene	ND	1.0									
o-Xylene	ND	1.0									
sec-Butylbenzene	ND	1.0									
Styrene	ND	1.0									
tert-Butylbenzene	ND	1.0									
Tetrachloroethene	ND	1.0									
Toluene	ND	2.5									
trans-1,2-Dichloroethene	ND	1.0									
trans-1,3-Dichloropropene	ND	1.0									
Trichloroethene	ND	1.0									
Trichlorofluoromethane	ND	1.0									
Vinyl chloride	ND	1.0									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	22.290		25.00		89.2	72	119				
Surr: 4-Bromofluorobenzene	25.500		25.00		102	76	119				
Surr: Dibromofluoromethane	26.480		25.00		106	85	115				
Surr: Toluene-d8	26.090		25.00		104	81	120				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Project Name PG&E Topock	Container:	250 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	3 x 40 ml VOA	3 x 40 ml VOA	Number of Containers	COMMENTS
Location Topock	Preservatives:	(NH4)2SO4	HNO3	4°C	4°C	H3PO4	HCL		
Project Number 405681.MP.02.GM.03	Filtered:	Field	Field	NA	NA	NA	NA		
Project Manager Jay Piper	Holding Time:	28	180	2	2	28	14		
Sample Manager Shawn Duffy									
Task Order									
Project 2011-GMP-PACKER-175									
Turnaround Time 10 Days									
Shipping Date: 1-27-11									
COC Number:									
SAMPLE ID	DATE	TIME	Matrix	C/6 (E210.6) Field Filled	Metals (6010BFF) Field Filled Chromium, Arsenic	Anions (E300.0) Nitrate, Chloride	TDS (SM2540C)	TOC (SM5310C)	VOCs (8260B)
MW-64BR-UPR-150	1-26-11	1230	Water	X	X	X	X	X	X
TB-Packer-175-01	1	1200	1						X
TOTAL NUMBER OF CONTAINERS									10

Approved by \_\_\_\_\_  
 Sampled by \_\_\_\_\_  
 Relinquished by \_\_\_\_\_  
 Received by \_\_\_\_\_  
 Relinquished by \_\_\_\_\_  
 Received by \_\_\_\_\_

Signatures \_\_\_\_\_  
 Date/Time 1-27-11  
 17:07  
 1/27/10 @ 1715

Shipping Details  
 Method of Shipment:  
 On Ice:  yes / no 1.5°C  
 Airbill No:  
 Lab Name: ADVANCED TECHNOLOGY LABORATORIES  
 Lab Phone: (702) 307-2659

Special Instructions:  
 ATTN:  
 Molly Nguyen  
 Report Copy to  
 Shawn Duffy  
 (530) 229-3303

Project Name PG&E Topock Location Topock Project Number 405681.MP.02.GM.03 Project Manager Jay Piper Sample Manager Shawn Duffy				Container: 250 ml Poly (NH4)2SO4 500 ml Poly HNO3 1 Liter Poly 4°C 1 Liter Poly 4°C 3 x 40 ml VOA H3PO4, 4°C 3 x 40 ml VOA HCL, 4°C		Preservatives: 4/NH4OH, 4°C 4/NH4OH, 4°C		Filtered: Field Field		Holding Time: 28 180		Task Order Project 2011-GMP-PACKER-175 Turnaround Time 10 Days Shipping Date: 1-27-11 COC Number:	Number of Containers	COMMENTS
SAMPLE ID	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Metals (6010BFF) Field Filtered Chromium, Arsenic	Anions (E300.0) Nitrate, Chloride	TDS (SM2540C)	TOC (SM5310C)	VOCs (8250B)					
MW-64BR-UPR-150	1-26-11	1230	Water	X	X	X	X	X	X			8		
TB-Packer-175-01	1	1200	1						X			2	trip Blank - Hold	
TOTAL NUMBER OF CONTAINERS												10		

Approved by \_\_\_\_\_  
 Sampled by \_\_\_\_\_  
 Relinquished by \_\_\_\_\_  
 Received by \_\_\_\_\_  
 Relinquished by \_\_\_\_\_  
 Received by \_\_\_\_\_

Signatures

Date/Time  
 1-27-11  
 17:07  
 1/21/10 @ 1715

Shipping Details

Method of Shipment:  
 On Ice:  yes /  no 1.5°C

Airbill No:  
 Lab Name: ADVANCED TECHNOLOGY LABORATORIES  
 Lab Phone: (702) 307-2659

Special Instructions:

ATTN:  
 Molly Nguyen

Report Copy to  
 Shawn Duffy  
 (530) 229-3303

# Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO and/or NA signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

## Sample Receipt Checklist

Cooler Received/Opened On: 1/27/2011 Workorder: N005256  
 Rep sample Temp (Deg C): 1.5 IR Gun ID: 1  
 Temp Blank: Yes  No   
 Carrier name: ATL  
 Last 4 digits of Tracking No.: na Packing Material Used: Bubble Wrap  
 Cooling process:  Ice  Ice Pack  Dry Ice  Other  None

- |   |   |                             |   |
|---|---|-----------------------------|---|
| 1. Shipping container/cooler in good condition?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present                                     |
| 2. Custody seals intact, signed, dated on shipping container/cooler?                    | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 5. Sampler's name present in COC?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 6. Chain of custody signed when relinquished and received?                              | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 7. Chain of custody agrees with sample labels?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 8. Samples in proper container/bottle?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 9. Sample containers intact?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 10. Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 11. All samples received within holding time?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 12. Temperature of rep sample or Temp Blank within acceptable limit?                    | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA  |
| 13. Water - VOA vials have zero headspace?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA  |
| 14. Water - pH acceptable upon receipt?<br>Example: pH > 12 for (CN,S); pH<2 for Metals | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA  |
| 15. Did the bottle labels indicate correct preservatives used?                          | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA  |
| 16. Were there Non-Conformance issues at login?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/>          |
| Was Client notified?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/>          |

Comments:

Checklist Completed By **MBC**

Reviewed By: 2/2/11

## SAMPLE CALCULATION

**METHOD:** SM 2540C

**TEST NAME:** Total Filterable Residue

**MATRIX:** Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B) * 1000000}{C}$$

Where:

A = weight in g of dish + residue after drying

B = weight of dish in g

C = volume of sample used in mL

For **N005256-001B**, TDS concentration in mg/L is calculated as follows:

$$\begin{aligned} \text{TDS, mg/L} &= \frac{(15.9827 - 15.8995) * 1000000}{10} \\ &= 8320 \text{ mg/L} \end{aligned}$$

Reporting result in two significant figures,

$$\text{TDS} = 8300 \text{ mg/L}$$

## Sample Calculation

**METHOD:** EPA 218.6

**TEST NAME:** HEXAVALENT CHROMIUM BY IC

**MATRIX:** Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in  $\mu\text{g/L}$ , in the original sample as follows:

$$\text{Cr}^{+6}, \mu\text{g/L} = A * \text{DF}$$

where:

A =  $\mu\text{g/L}$ , IC  $\text{Cr}^{+6}$  calculated concentration  
DF = dilution factor

For N005256-001A, concentration in  $\mu\text{g/L}$  is calculated as follows:

$$\begin{aligned}\text{Cr}^{+6}, \mu\text{g/L} &= 10.848907 * 20 \\ &= 216.97814 \mu\text{g/L}\end{aligned}$$

Reporting results in two significant figures:

$$\text{Cr}^{+6}, \mu\text{g/L} = 220 \mu\text{g/L}$$

*Archie*

## Sample Calculation

**METHOD:** EPA 300

**TEST NAME:** INORGANIC ANIONS BY IC

**MATRIX:** WATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

$$\text{Nitrate as N, mg/L} = A * DF$$

where:

A = mg/L, IC calculated concentration

DF = dilution factor

For **N005256-001B**, concentration in mg/L are calculated as follows:

$$\begin{aligned} \text{Nitrate as N, mg/L} &= 1.297 * 2 \\ &= 2.594 \text{ mg/L} \end{aligned}$$

Reporting **N005256-001B**, results in two significant figures,

$$\text{Nitrate as N, mg/L} = 2.6 \text{ mg/L}$$

*Arbela*

*Sg  
2/19/11*

### SAMPLE CALCULATION

METHOD: EPA 6010B  
TEST NAME: METALS BY ICP  
MATRIX: WATER

FORMULA:

Calculate the individual metal concentration, in ug/L, in the original sample as follows:

$$M, \text{ ug/L} = \frac{A * C * DF * 1000}{B}$$

where:

M= concentration of the metal in ug/L  
A= mg/L, ICP calculated concentration  
B= volume of sample, Liter  
C= final volume of digestate, Liter  
DF= dilution factor

For N005256-001C, concentration in ug/L are calculated as follows:

$$\text{Cr, ug/L} = 0.11085 \frac{\text{mg/L} * 0.025 \text{ L} * 2 * 1000}{0.025 \text{ L}}$$

$$\text{Cr} = 221.7 \text{ ug/L}$$

Reporting result in two significant figures,

$$\text{Cr} = 220 \text{ ug/L}$$

*Handwritten signature/initials*

DILUTION TEST

Analytical Method: EPA 6010B / 200.7  
 Digestion Method: EPA 3010B  
 Date of Analysis: 2/1/2011  
 Digestion Date: 1/31/2011  
 Instrument Name: ICP1  
 Analysts: KB

Matrix: Water  
 Amount of Sample: 25 mL  
 Units: mg/L

Work Order #: N005256-001C  
 Batch #: 36125

Analyte	A	B	Difference	% D
Chromium	221.7	209.98	11.72000	5.3

FORMULA:

$$\%D = \frac{(A-B)*100}{A}$$

where:

% D = % Difference  
 A= mg/L, ICP calculated concentration @2X dilution  
 B= mg/L, ICP calculated concentration @10x dilution

NS for KB  
 2/8/11

CLIENT: CH2M HILL  
 Work Order: N005256  
 Project: PG&E Topock

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6010\_WDPGEPPB

Sample ID: N005256-001CDT	SampType: DT	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 78952						
Client ID: ZZZZZZ	Batch ID: 36125	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/1/2011	SeqNo: 1240666						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	209.980	10						221.7	5.43	10	

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |

CLIENT: CH2M HILL  
 Work Order: N005256  
 Project: PG&E Topock

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6010\_WDPGEPPB

Sample ID: N005256-001CPS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 78952						
Client ID: ZZZZZZ	Batch ID: 36125	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/1/2011	SeqNo: 1240664						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2690.854	5.0	2500	221.7	98.8	75	125				

Sample ID: N005256-001CPS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 78952						
Client ID: ZZZZZZ	Batch ID: 36125	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/1/2011	SeqNo: 1240665						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	5157.340	10	5000	221.7	98.7	75	125				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

## Sample Calculation

**METHOD:** EPA 6020

**TEST NAME:** Heavy Metals by ICP-MS

**MATRIX:** Aqueous

**FORMULA:**

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

$$\text{Arsenic, ug/L} = A * DF * PF$$

where:

A = ug/L, calculated concentration

DF = dilution factor

PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N005256-001**, the concentration in ug/L is calculated as follows:

$$\begin{aligned} \text{Arsenic, ug/L} &= 2.8334 * 1 * (25/25) \\ &= 2.8334 \text{ ug/L} \end{aligned}$$

Reporting results in two significant figures,

$$\text{Arsenic, ug/L} = 2.8$$

9  
2/14/11

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Work Order No.: N005256  
 Test Method: EPA 6020  
 Analysis Date: 02/12/11

Dilution Test Summary

Matrix: Aqueous  
 Batch No.: 36132

Instrument ID: ICP-MS #2  
 Instrument Description: Agilent 7700x

Comments:

Analyzed By: Jojo Tenorio

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N005256-001C-DT 5X	Arsenic	ug/L	2.940982		2.833885	3.78%	10

*S. Tenorio*

CLIENT: CH2M HILL  
 Work Order: N005256  
 Project: PG&E Topock, 405681.MP.02.GM.03

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6020\_DIS

Sample ID: N005256-001C-PS 2	SampType: PS	TestCode: 6020_DIS	Units: µg/L	Prep Date:	RunNo: 79086						
Client ID: ZZZZZZ	Batch ID: 36132	TestNo: EPA 6020	EPA 3010A	Analysis Date: 2/12/2011	SeqNo: 1243762						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.350	0.20	20.00	0	112	75	125				

*Copy  
2/14/11*

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SAMPLE CALCULATION

METHOD: EPA 8260B  
TEST NAME: VOLATILE ORGANIC COMPOUNDS BY GC/MS  
MATRIX: WATER

CALCULATION OF TARGET PARAMETERS

Calculate the target analyte concentrations using internal standard quantitation

$$C_x, \text{ug/L} = \frac{A_x * C_{IS} * DF}{\text{Ave RF} * A_{IS}}$$

where:

$A_x$  = Area of the TOTAL ion for the compound being measured  
 $C_{IS}$  = Concentration of the specific internal standard in ug/L  
 $A_{IS}$  = Area of the characteristic ion of the specific internal standard  
 $C_x$  = Concentration of the compound being measured in ug/L

N005256-001E

For Toluene the corresponding Internal Standard is 1,4-Difluorobenzene

Ave RF	1.287
Area of Toluene	241884
Area of Internal Standard	259378
Conc of Internal Standard (ug/L)	25.00

$$\text{Conc of Toluene (ug/L)} = \frac{241884 * 25.00 \text{ug/L} * 1}{1.287 * 259378}$$

Conc of Toluene (ug/L) = 18.11488021

Reporting result in two significant figures,

**Concentration of Toluene = 18 ug/L**

*S*  
*2/14/11*

*18.11488021*

February 18, 2011

Shawn P. Duffy  
CH2M HILL  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612  
TEL: (530) 229-3303  
FAX: (530) 339-3303

CA-ELAP No.: 2676  
NV Cert. No.: NV-009222007A

Workorder No.: N005311

RE: PG&E Topock, 405681.MP.02.GM.03

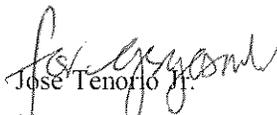
Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 04, 2011 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

  
Jose Tenorio Jr.  
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.



**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab Order:** N005311

**CASE NARRATIVE**

---

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 8260B:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for 2-Butanone and Acetone. The associated Laboratory Control Sample (LCS) recovery was acceptable.

RPD for Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria for Styrene; however, the analytical batch was validated by the Laboratory Control Sample (LCS).



**Advanced Technology Laboratories, Inc.**

Date: 18-Feb-11

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab Order:** N005311  
**Contract No:**

**Work Order Sample Summary**

---

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N005311-001A	MW-58BR-UPR-160-175	Water	2/1/2011 11:25:00 AM	2/4/2011	
N005311-001B	MW-58BR-UPR-160-175	Water	2/1/2011 11:25:00 AM	2/4/2011	
N005311-001C	MW-58BR-UPR-160-175	Water	2/1/2011 11:25:00 AM	2/4/2011	
N005311-001D	MW-58BR-UPR-160-175	Water	2/1/2011 11:25:00 AM	2/4/2011	
N005311-001E	MW-58BR-UPR-160-175	Water	2/1/2011 11:25:00 AM	2/4/2011	
N005311-002A	TB-Packer-175-02	Water	2/1/2011 11:00:00 AM	2/4/2011	



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 18-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005311  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab ID:** N005311-001

**Client Sample ID:** MW-58BR-UPR-160-175  
**Collection Date:** 2/1/2011 11:25:00 AM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**TOTAL FILTERABLE RESIDUE**

**SM2540C**

RunID: WETCHEM_110207A	QC Batch: 36176					PrepDate: 2/7/2011	Analyst: CEI
Total Dissolved Solids (Residue, Filterable)	7100	50	50		mg/L	1	2/7/2011

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Sunogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



**CLIENT:** CH2M HILL  
**Work Order:** N005311  
**Project:** PG&E Topock, 405681.MP.02.GM.03

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: 160.1\_2540C\_W**

Sample ID:	SampType:	TestCode:	Units:	Prep Date:	RunNo:						
<b>MB-36176</b>	<b>MBLK</b>	<b>160.1_2540C_</b>	<b>mg/L</b>	<b>2/7/2011</b>	<b>79025</b>						
<b>Client ID: PBW</b>	<b>Batch ID: 36176</b>	<b>TestNo: SM2540C</b>		<b>Analysis Date: 2/7/2011</b>	<b>SeqNo: 1242158</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID:	SampType:	TestCode:	Units:	Prep Date:	RunNo:						
<b>LCS-36176</b>	<b>LCS</b>	<b>160.1_2540C_</b>	<b>mg/L</b>	<b>2/7/2011</b>	<b>79025</b>						
<b>Client ID: LCSW</b>	<b>Batch ID: 36176</b>	<b>TestNo: SM2540C</b>		<b>Analysis Date: 2/7/2011</b>	<b>SeqNo: 1242159</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	991.000	10	1000	0	99.1	80	120				

Sample ID:	SampType:	TestCode:	Units:	Prep Date:	RunNo:						
<b>N005311-001B-DUP</b>	<b>DUP</b>	<b>160.1_2540C_</b>	<b>mg/L</b>	<b>2/7/2011</b>	<b>79025</b>						
<b>Client ID: ZZZZZZ</b>	<b>Batch ID: 36176</b>	<b>TestNo: SM2540C</b>		<b>Analysis Date: 2/7/2011</b>	<b>SeqNo: 1242163</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	6830.000	50						7130	4.30	5	

REVISION 1, 03/14/11

**Qualifiers:**

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 18-Feb-11

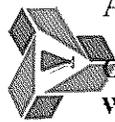
CLIENT: CH2M HILL  
 Lab Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005311-001

Client Sample ID: MW-58BR-UPR-160-175  
 Collection Date: 2/1/2011 11:25:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>HEXAVALENT CHROMIUM BY IC</b>							
	<b>EPA 218.6</b>						
RunID: IC1_110205A	QC Batch: R79111				PrepDate:		Analyst: <b>QBM</b>
Hexavalent Chromium	ND	0.14	1.0		µg/L	5	2/5/2011 11:46 AM

**Qualifiers:** B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified





CLIENT: CH2M HILL
Work Order: N005311
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6\_W

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, and 4 columns for analyte results (PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual).

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, and 4 columns for analyte results (PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual).

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, and 4 columns for analyte results (PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual).

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, and 4 columns for analyte results (PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual).

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, and 4 columns for analyte results (PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual).

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 18-Feb-11

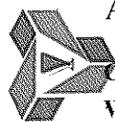
CLIENT: CH2M HILL  
 Lab Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005311-001

Client Sample ID: MW-58BR-UPR-160-175  
 Collection Date: 2/1/2011 11:25:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP</b>							
	<b>EPA 3010A</b>			<b>EPA 6010B</b>			
RunID: ICP1_110208B	QC Batch: 36183				PrepDate: 2/7/2011	Analyst: KAB	
Chromium	ND	0.22	1.0		µg/L	1	2/8/2011 12:02 PM

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - H Holding times for preparation or analysis exceeded
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
  - E Value above quantitation range
  - ND Not Detected at the Reporting Limit
  - Results are wet unless otherwise specified





CLIENT: CH2M HILL
Work Order: N005311
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010\_WDPGEPPB

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: MB-36183, MBLK, 6010\_WDPG, ug/L, 2/7/2011, 79009, PBW, 36183, EPA 6010B EPA 3010A, 2/8/2011, 1241989, Chromium, ND, 1.0

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: LCS-36183, LCS, 6010\_WDPG, ug/L, 2/7/2011, 79009, LCSW, 36183, EPA 6010B EPA 3010A, 2/8/2011, 1241990, Chromium, 502.565, 1.0, 500.0, 0, 101, 85, 115

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005311-001C-MS, MS, 6010\_WDPG, ug/L, 2/7/2011, 79009, ZZZZZZ, 36183, EPA 6010B EPA 3010A, 2/8/2011, 1241992, Chromium, 471.130, 1.0, 500.0, 0, 94.2, 75, 125

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005311-001C-MSD, MSD, 6010\_WDPG, ug/L, 2/7/2011, 79009, ZZZZZZ, 36183, EPA 6010B EPA 3010A, 2/8/2011, 1241993, Chromium, 494.016, 1.0, 500.0, 0, 98.8, 75, 125, 471.1, 4.74, 20

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 18-Feb-11

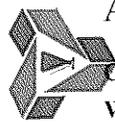
CLIENT: CH2M HILL  
 Lab Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005311-001

Client Sample ID: MW-58BR-UPR-160-175  
 Collection Date: 2/1/2011 11:25:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP-MS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110212A	QC Batch:	36132		PrepDate:	2/7/2011	Analyst: JT	
Arsenic	1.9	0.0020	0.080	µg/L	1	2/12/2011 02:53 PM	

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - H Holding times for preparation or analysis exceeded
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
  - E Value above quantitation range
  - ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified





CLIENT: CH2M HILL
Work Order: N005311
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020\_DIS

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, EPA 3010A, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, EPA 3010A, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, EPA 3010A, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, EPA 3010A, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 18-Feb-11

CLIENT: CH2M HILL  
 Lab Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005311-001

Client Sample ID: MW-58BR-UPR-160-175  
 Collection Date: 2/1/2011 11:25:00 AM  
 Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS1_110209A	QC Batch: K11VW001	PrepDate:	Analyst: QBM
1,1,1,2-Tetrachloroethane	ND 0.061	1.0	µg/L 1 2/9/2011 09:55 AM
1,1,1-Trichloroethane	ND 0.068	1.0	µg/L 1 2/9/2011 09:55 AM
1,1,2,2-Tetrachloroethane	ND 0.054	1.0	µg/L 1 2/9/2011 09:55 AM
1,1,2-Trichloroethane	ND 0.083	1.0	µg/L 1 2/9/2011 09:55 AM
1,1-Dichloroethane	ND 0.099	1.0	µg/L 1 2/9/2011 09:55 AM
1,1-Dichloroethene	ND 0.094	1.0	µg/L 1 2/9/2011 09:55 AM
1,1-Dichloropropene	ND 0.082	1.0	µg/L 1 2/9/2011 09:55 AM
1,2,3-Trichlorobenzene	ND 0.10	1.0	µg/L 1 2/9/2011 09:55 AM
1,2,3-Trichloropropane	ND 0.12	1.0	µg/L 1 2/9/2011 09:55 AM
1,2,4-Trichlorobenzene	ND 0.12	1.0	µg/L 1 2/9/2011 09:55 AM
1,2,4-Trimethylbenzene	ND 0.095	1.0	µg/L 1 2/9/2011 09:55 AM
1,2-Dibromo-3-chloropropane	ND 0.15	2.0	µg/L 1 2/9/2011 09:55 AM
1,2-Dibromoethane	ND 0.14	1.0	µg/L 1 2/9/2011 09:55 AM
1,2-Dichlorobenzene	ND 0.070	1.0	µg/L 1 2/9/2011 09:55 AM
1,2-Dichloroethane	ND 0.17	1.0	µg/L 1 2/9/2011 09:55 AM
1,2-Dichloropropane	ND 0.085	1.0	µg/L 1 2/9/2011 09:55 AM
1,3,5-Trimethylbenzene	ND 0.087	1.0	µg/L 1 2/9/2011 09:55 AM
1,3-Dichlorobenzene	ND 0.090	1.0	µg/L 1 2/9/2011 09:55 AM
1,3-Dichloropropane	ND 0.074	1.0	µg/L 1 2/9/2011 09:55 AM
1,4-Dichlorobenzene	ND 0.092	1.0	µg/L 1 2/9/2011 09:55 AM
2,2-Dichloropropane	ND 0.061	1.0	µg/L 1 2/9/2011 09:55 AM
2-Butanone	ND 1.0	10	µg/L 1 2/9/2011 09:55 AM
2-Chlorotoluene	ND 0.080	1.0	µg/L 1 2/9/2011 09:55 AM
4-Chlorotoluene	ND 0.10	1.0	µg/L 1 2/9/2011 09:55 AM
4-Isopropyltoluene	ND 0.080	1.0	µg/L 1 2/9/2011 09:55 AM
4-Methyl-2-pentanone	ND 0.76	10	µg/L 1 2/9/2011 09:55 AM
Acetone	ND 1.6	10	µg/L 1 2/9/2011 09:55 AM
Acrolein	ND 4.3	20	µg/L 1 2/9/2011 09:55 AM
Acrylonitrile	ND 0.61	20	µg/L 1 2/9/2011 09:55 AM
Benzene	ND 0.075	1.0	µg/L 1 2/9/2011 09:55 AM
Bromobenzene	ND 0.082	1.0	µg/L 1 2/9/2011 09:55 AM
Bromochloromethane	ND 0.15	1.0	µg/L 1 2/9/2011 09:55 AM
Bromodichloromethane	ND 0.063	1.0	µg/L 1 2/9/2011 09:55 AM
Bromoform	ND 0.086	1.0	µg/L 1 2/9/2011 09:55 AM
Bromomethane	ND 0.13	1.0	µg/L 1 2/9/2011 09:55 AM
Carbon disulfide	ND 0.054	1.0	µg/L 1 2/9/2011 09:55 AM

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 18-Feb-11

CLIENT: CH2M HILL  
 Lab Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005311-001

Client Sample ID: MW-58BR-UPR-160-175  
 Collection Date: 2/1/2011 11:25:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS1_110209A	QC Batch: K11VW001					PrepDate:	Analyst: QBM
Carbon tetrachloride	ND	0.10	1.0		µg/L	1	2/9/2011 09:55 AM
Chlorobenzene	ND	0.092	1.0		µg/L	1	2/9/2011 09:55 AM
Chloroethane	ND	0.14	1.0		µg/L	1	2/9/2011 09:55 AM
Chloroform	ND	0.058	1.0		µg/L	1	2/9/2011 09:55 AM
Chloromethane	ND	0.054	1.0		µg/L	1	2/9/2011 09:55 AM
cis-1,2-Dichloroethene	ND	0.11	1.0		µg/L	1	2/9/2011 09:55 AM
cis-1,3-Dichloropropene	ND	0.10	1.0		µg/L	1	2/9/2011 09:55 AM
Dibromochloromethane	ND	0.061	1.0		µg/L	1	2/9/2011 09:55 AM
Dibromomethane	ND	0.15	1.0		µg/L	1	2/9/2011 09:55 AM
Dichlorodifluoromethane	ND	0.12	1.0		µg/L	1	2/9/2011 09:55 AM
Ethylbenzene	ND	0.051	1.0		µg/L	1	2/9/2011 09:55 AM
Freon-113	ND	0.080	1.0		µg/L	1	2/9/2011 09:55 AM
Hexachlorobutadiene	ND	0.17	1.0		µg/L	1	2/9/2011 09:55 AM
Isopropylbenzene	ND	0.057	1.0		µg/L	1	2/9/2011 09:55 AM
m,p-Xylene	ND	0.17	1.0		µg/L	1	2/9/2011 09:55 AM
Methylene chloride	ND	0.10	5.0		µg/L	1	2/9/2011 09:55 AM
MTBE	ND	0.089	1.0		µg/L	1	2/9/2011 09:55 AM
n-Butylbenzene	ND	0.082	1.0		µg/L	1	2/9/2011 09:55 AM
n-Propylbenzene	ND	0.087	1.0		µg/L	1	2/9/2011 09:55 AM
Naphthalene	ND	0.056	1.0		µg/L	1	2/9/2011 09:55 AM
o-Xylene	ND	0.077	1.0		µg/L	1	2/9/2011 09:55 AM
sec-Butylbenzene	ND	0.098	1.0		µg/L	1	2/9/2011 09:55 AM
Styrene	ND	0.072	1.0		µg/L	1	2/9/2011 09:55 AM
tert-Butylbenzene	ND	0.062	1.0		µg/L	1	2/9/2011 09:55 AM
Tetrachloroethene	ND	0.13	1.0		µg/L	1	2/9/2011 09:55 AM
Toluene	57	0.12	2.5		µg/L	1	2/9/2011 09:55 AM
trans-1,2-Dichloroethene	ND	0.094	1.0		µg/L	1	2/9/2011 09:55 AM
trans-1,3-Dichloropropene	ND	0.10	1.0		µg/L	1	2/9/2011 09:55 AM
Trichloroethene	ND	0.060	1.0		µg/L	1	2/9/2011 09:55 AM
Trichlorofluoromethane	ND	0.097	1.0		µg/L	1	2/9/2011 09:55 AM
Vinyl chloride	ND	0.12	1.0		µg/L	1	2/9/2011 09:55 AM
Xylenes, Total	ND	1.5	2.0		µg/L	1	2/9/2011 09:55 AM
Surr: 1,2-Dichloroethane-d4	99.0	0	72-119		%REC	1	2/9/2011 09:55 AM
Surr: 4-Bromofluorobenzene	103	0	76-119		%REC	1	2/9/2011 09:55 AM
Surr: Dibromofluoromethane	106	0	85-115		%REC	1	2/9/2011 09:55 AM
Surr: Toluene-d8	105	0	81-120		%REC	1	2/9/2011 09:55 AM

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 18-Feb-11

CLIENT: CH2M HILL  
 Lab Order: N005311  
 Project: PG&E Topock. 405681.MP.02.GM.03  
 Lab ID: N005311-002

Client Sample ID: TB-Packer-175-02  
 Collection Date: 2/1/2011 11:00:00 AM  
 Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS1_110209A	QC Batch: K11VW001	PrepDate:	Analyst: QBM			
1,1,1,2-Tetrachloroethane	ND	0.061	1.0	µg/L	1	2/9/2011 11:03 AM
1,1,1-Trichloroethane	ND	0.068	1.0	µg/L	1	2/9/2011 11:03 AM
1,1,2,2-Tetrachloroethane	ND	0.054	1.0	µg/L	1	2/9/2011 11:03 AM
1,1,2-Trichloroethane	ND	0.083	1.0	µg/L	1	2/9/2011 11:03 AM
1,1-Dichloroethane	ND	0.099	1.0	µg/L	1	2/9/2011 11:03 AM
1,1-Dichloroethene	ND	0.094	1.0	µg/L	1	2/9/2011 11:03 AM
1,1-Dichloropropene	ND	0.082	1.0	µg/L	1	2/9/2011 11:03 AM
1,2,3-Trichlorobenzene	ND	0.10	1.0	µg/L	1	2/9/2011 11:03 AM
1,2,3-Trichloropropane	ND	0.12	1.0	µg/L	1	2/9/2011 11:03 AM
1,2,4-Trichlorobenzene	ND	0.12	1.0	µg/L	1	2/9/2011 11:03 AM
1,2,4-Trimethylbenzene	ND	0.095	1.0	µg/L	1	2/9/2011 11:03 AM
1,2-Dibromo-3-chloropropane	ND	0.15	2.0	µg/L	1	2/9/2011 11:03 AM
1,2-Dibromoethane	ND	0.14	1.0	µg/L	1	2/9/2011 11:03 AM
1,2-Dichlorobenzene	ND	0.070	1.0	µg/L	1	2/9/2011 11:03 AM
1,2-Dichloroethane	ND	0.17	1.0	µg/L	1	2/9/2011 11:03 AM
1,2-Dichloropropane	ND	0.085	1.0	µg/L	1	2/9/2011 11:03 AM
1,3,5-Trimethylbenzene	ND	0.087	1.0	µg/L	1	2/9/2011 11:03 AM
1,3-Dichlorobenzene	ND	0.090	1.0	µg/L	1	2/9/2011 11:03 AM
1,3-Dichloropropane	ND	0.074	1.0	µg/L	1	2/9/2011 11:03 AM
1,4-Dichlorobenzene	ND	0.092	1.0	µg/L	1	2/9/2011 11:03 AM
2,2-Dichloropropane	ND	0.061	1.0	µg/L	1	2/9/2011 11:03 AM
2-Butanone	ND	1.0	10	µg/L	1	2/9/2011 11:03 AM
2-Chlorotoluene	ND	0.080	1.0	µg/L	1	2/9/2011 11:03 AM
4-Chlorotoluene	ND	0.10	1.0	µg/L	1	2/9/2011 11:03 AM
4-Isopropyltoluene	ND	0.080	1.0	µg/L	1	2/9/2011 11:03 AM
4-Methyl-2-pentanone	ND	0.76	10	µg/L	1	2/9/2011 11:03 AM
Acetone	ND	1.6	10	µg/L	1	2/9/2011 11:03 AM
Acrolein	ND	4.3	20	µg/L	1	2/9/2011 11:03 AM
Acrylonitrile	ND	0.61	20	µg/L	1	2/9/2011 11:03 AM
Benzene	ND	0.075	1.0	µg/L	1	2/9/2011 11:03 AM
Bromobenzene	ND	0.082	1.0	µg/L	1	2/9/2011 11:03 AM
Bromochloromethane	ND	0.15	1.0	µg/L	1	2/9/2011 11:03 AM
Bromodichloromethane	ND	0.063	1.0	µg/L	1	2/9/2011 11:03 AM
Bromoform	ND	0.086	1.0	µg/L	1	2/9/2011 11:03 AM
Bromomethane	ND	0.13	1.0	µg/L	1	2/9/2011 11:03 AM
Carbon disulfide	ND	0.054	1.0	µg/L	1	2/9/2011 11:03 AM

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 18-Feb-11

CLIENT: CH2M HILL  
 Lab Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005311-002

Client Sample ID: TB-Packer-175-02  
 Collection Date: 2/1/2011 11:00:00 AM  
 Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS1_110209A	QC Batch: K11VW001	PrepDate:	Analyst: QBM
Carbon tetrachloride	ND 0.10	1.0	µg/L 1 2/9/2011 11:03 AM
Chlorobenzene	ND 0.092	1.0	µg/L 1 2/9/2011 11:03 AM
Chloroethane	ND 0.14	1.0	µg/L 1 2/9/2011 11:03 AM
Chloroform	ND 0.058	1.0	µg/L 1 2/9/2011 11:03 AM
Chloromethane	ND 0.054	1.0	µg/L 1 2/9/2011 11:03 AM
cis-1,2-Dichloroethene	ND 0.11	1.0	µg/L 1 2/9/2011 11:03 AM
cis-1,3-Dichloropropene	ND 0.10	1.0	µg/L 1 2/9/2011 11:03 AM
Dibromochloromethane	ND 0.061	1.0	µg/L 1 2/9/2011 11:03 AM
Dibromomethane	ND 0.15	1.0	µg/L 1 2/9/2011 11:03 AM
Dichlorodifluoromethane	ND 0.12	1.0	µg/L 1 2/9/2011 11:03 AM
Ethylbenzene	ND 0.051	1.0	µg/L 1 2/9/2011 11:03 AM
Freon-113	ND 0.080	1.0	µg/L 1 2/9/2011 11:03 AM
Hexachlorobutadiene	ND 0.17	1.0	µg/L 1 2/9/2011 11:03 AM
Isopropylbenzene	ND 0.057	1.0	µg/L 1 2/9/2011 11:03 AM
m,p-Xylene	ND 0.17	1.0	µg/L 1 2/9/2011 11:03 AM
Methylene chloride	ND 0.10	5.0	µg/L 1 2/9/2011 11:03 AM
MTBE	ND 0.089	1.0	µg/L 1 2/9/2011 11:03 AM
n-Butylbenzene	ND 0.082	1.0	µg/L 1 2/9/2011 11:03 AM
n-Propylbenzene	ND 0.087	1.0	µg/L 1 2/9/2011 11:03 AM
Naphthalene	ND 0.056	1.0	µg/L 1 2/9/2011 11:03 AM
o-Xylene	ND 0.077	1.0	µg/L 1 2/9/2011 11:03 AM
sec-Butylbenzene	ND 0.098	1.0	µg/L 1 2/9/2011 11:03 AM
Styrene	ND 0.072	1.0	µg/L 1 2/9/2011 11:03 AM
tert-Butylbenzene	ND 0.062	1.0	µg/L 1 2/9/2011 11:03 AM
Tetrachloroethene	ND 0.13	1.0	µg/L 1 2/9/2011 11:03 AM
Toluene	ND 0.12	2.5	µg/L 1 2/9/2011 11:03 AM
trans-1,2-Dichloroethene	ND 0.094	1.0	µg/L 1 2/9/2011 11:03 AM
trans-1,3-Dichloropropene	ND 0.10	1.0	µg/L 1 2/9/2011 11:03 AM
Trichloroethene	ND 0.060	1.0	µg/L 1 2/9/2011 11:03 AM
Trichlorofluoromethane	ND 0.097	1.0	µg/L 1 2/9/2011 11:03 AM
Vinyl chloride	ND 0.12	1.0	µg/L 1 2/9/2011 11:03 AM
Xylenes, Total	ND 1.5	2.0	µg/L 1 2/9/2011 11:03 AM
Surr: 1,2-Dichloroethane-d4	93.6 0	72-119	%REC 1 2/9/2011 11:03 AM
Surr: 4-Bromofluorobenzene	101 0	76-119	%REC 1 2/9/2011 11:03 AM
Surr: Dibromofluoromethane	96.8 0	85-115	%REC 1 2/9/2011 11:03 AM
Surr: Toluene-d8	100 0	81-120	%REC 1 2/9/2011 11:03 AM

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



CLIENT: CH2M HILL  
 Work Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 8260\_WP\_LLPGE

Sample ID: K110209LCS	SampType: LCS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065
Client ID: LCSW	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242942

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	25.450	1.0	25.00	0	102	81	129				
1,1,1-Trichloroethane	27.070	1.0	25.00	0	108	67	132				
1,1,2,2-Tetrachloroethane	24.670	1.0	25.00	0	98.7	63	128				
1,1,2-Trichloroethane	25.070	1.0	25.00	0	100	75	125				
1,1-Dichloroethane	26.570	1.0	25.00	0	106	69	133				
1,1-Dichloroethene	27.700	1.0	25.00	0	111	68	130				
1,1-Dichloropropene	27.020	1.0	25.00	0	108	73	132				
1,2,3-Trichlorobenzene	25.170	1.0	25.00	0	101	67	137				
1,2,3-Trichloropropane	24.630	1.0	25.00	0	98.5	73	124				
1,2,4-Trichlorobenzene	26.240	1.0	25.00	0	105	66	134				
1,2,4-Trimethylbenzene	26.970	1.0	25.00	0	108	74	132				
1,2-Dibromo-3-chloropropane	26.090	2.0	25.00	0	104	50	132				
1,2-Dibromoethane	25.110	1.0	25.00	0	100	80	121				
1,2-Dichlorobenzene	25.980	1.0	25.00	0	104	71	122				
1,2-Dichloroethane	23.090	1.0	25.00	0	92.4	69	132				
1,2-Dichloropropane	24.510	1.0	25.00	0	98.0	75	125				
1,3,5-Trimethylbenzene	28.180	1.0	25.00	0	113	74	131				
1,3-Dichlorobenzene	26.700	1.0	25.00	0	107	75	124				
1,3-Dichloropropane	23.330	1.0	25.00	0	93.3	73	126				
1,4-Dichlorobenzene	25.580	1.0	25.00	0	102	74	123				
2,2-Dichloropropane	28.090	1.0	25.00	0	112	69	137				
2-Butanone	234.020	10	250.0	0	93.6	49	136				
2-Chlorotoluene	26.610	1.0	25.00	0	106	73	126				
4-Chlorotoluene	27.490	1.0	25.00	0	110	74	128				
4-Isopropyltoluene	27.670	1.0	25.00	0	111	73	130				
4-Methyl-2-pentanone	238.100	10	250.0	0	95.2	58	134				
Acetone	241.010	10	250.0	0	96.4	40	135				
Acrolein	295.280	20	250.0	0	118	75	125				
Acrylonitrile	242.580	20	250.0	0	97.0	75	125				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: K110209LCS	SampType: LCS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: LCSW	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242942						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	26.830	1.0	25.00	0	107	81	122				
Bromobenzene	26.290	1.0	25.00	0	105	76	124				
Bromochloromethane	27.100	1.0	25.00	0	108	65	129				
Bromodichloromethane	24.750	1.0	25.00	0	99.0	76	121				
Bromoform	24.170	1.0	25.00	0	96.7	69	128				
Bromomethane	25.490	1.0	25.00	0	102	53	141				
Carbon disulfide	27.250	1.0	25.00	0	109	75	125				
Carbon tetrachloride	28.330	1.0	25.00	0	113	66	138				
Chlorobenzene	25.290	1.0	25.00	0	101	81	122				
Chloroethane	27.440	1.0	25.00	0	110	58	133				
Chloroform	26.180	1.0	25.00	0	105	69	128				
Chloromethane	27.680	1.0	25.00	0	111	56	131				
cis-1,2-Dichloroethene	27.700	1.0	25.00	0	111	72	126				
cis-1,3-Dichloropropene	26.160	1.0	25.00	0	105	69	131				
Dibromochloromethane	23.610	1.0	25.00	0	94.4	66	133				
Dibromomethane	23.650	1.0	25.00	0	94.6	76	125				
Dichlorodifluoromethane	31.390	1.0	25.00	0	126	53	153				
Ethylbenzene	26.320	1.0	25.00	0	105	73	127				
Freon-113	27.560	1.0	25.00	0	110	75	125				
Hexachlorobutadiene	25.900	1.0	25.00	0	104	67	131				
Isopropylbenzene	28.780	1.0	25.00	0	115	75	127				
m,p-Xylene	55.100	1.0	50.00	0	110	76	128				
Methylene chloride	25.280	5.0	25.00	0	101	63	137				
MTBE	24.960	1.0	25.00	0	99.8	65	123				
n-Butylbenzene	27.980	1.0	25.00	0	112	69	137				
n-Propylbenzene	28.560	1.0	25.00	0	114	72	129				
Naphthalene	24.380	1.0	25.00	0	97.5	54	138				
o-Xylene	27.230	1.0	25.00	0	109	80	121				
sec-Butylbenzene	27.610	1.0	25.00	0	110	72	127				
Styrene	26.640	1.0	25.00	0	107	65	134				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: K110209LCS	SampType: LCS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: LCSW	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242942						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
tert-Butylbenzene	27.480	1.0	25.00	0	110	70	129				
Tetrachloroethene	24.200	1.0	25.00	0	96.8	66	128				
Toluene	27.050	2.5	25.00	0	108	77	122				
trans-1,2-Dichloroethene	25.880	1.0	25.00	0	104	63	137				
trans-1,3-Dichloropropene	24.230	1.0	25.00	0	96.9	59	135				
Trichloroethene	23.730	1.0	25.00	0	94.9	70	127				
Trichlorofluoromethane	27.960	1.0	25.00	0	112	57	129				
Vinyl chloride	28.480	1.0	25.00	0	114	50	134				
Xylenes, Total	82.330	2.0	75.00	0	110	75	125				
Surr: 1,2-Dichloroethane-d4	22.640		25.00		90.6	72	119				
Surr: 4-Bromofluorobenzene	26.530		25.00		106	76	119				
Surr: Dibromofluoromethane	26.060		25.00		104	85	115				
Surr: Toluene-d8	27.020		25.00		108	81	120				

Sample ID: N005256-001EMS	SampType: MS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: ZZZZZZ	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242943						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	25.100	1.0	25.00	0	100	81	129				
1,1,1-Trichloroethane	26.940	1.0	25.00	0	108	67	132				
1,1,2,2-Tetrachloroethane	23.150	1.0	25.00	0	92.6	63	128				
1,1,2-Trichloroethane	23.390	1.0	25.00	0	93.6	75	125				
1,1-Dichloroethane	26.540	1.0	25.00	0	106	69	133				
1,1-Dichloroethene	26.840	1.0	25.00	0	107	68	130				
1,1-Dichloropropene	25.480	1.0	25.00	0	102	73	132				
1,2,3-Trichlorobenzene	24.620	1.0	25.00	0	98.5	67	137				
1,2,3-Trichloropropane	22.240	1.0	25.00	0	89.0	73	124				
1,2,4-Trichlorobenzene	26.460	1.0	25.00	0	106	66	134				
1,2,4-Trimethylbenzene	25.400	1.0	25.00	0	102	74	132				
1,2-Dibromo-3-chloropropane	22.330	2.0	25.00	0	89.3	50	132				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118  
Tel: 702 307-2659 Fax: 702 307-2691

Sample ID: N005256-001EMS	SampType: MS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: ZZZZZZ	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242943						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane	23.860	1.0	25.00	0	95.4	80	121				
1,2-Dichlorobenzene	25.580	1.0	25.00	0	102	71	122				
1,2-Dichloroethane	21.690	1.0	25.00	0	86.8	69	132				
1,2-Dichloropropane	23.720	1.0	25.00	0	94.9	75	125				
1,3,5-Trimethylbenzene	26.900	1.0	25.00	0	108	74	131				
1,3-Dichlorobenzene	26.130	1.0	25.00	0	105	75	124				
1,3-Dichloropropane	22.340	1.0	25.00	0	89.4	73	126				
1,4-Dichlorobenzene	24.840	1.0	25.00	0	99.4	74	123				
2,2-Dichloropropane	28.380	1.0	25.00	0	114	69	137				
2-Butanone	113.310	10	250.0	0	45.3	49	136				S
2-Chlorotoluene	26.620	1.0	25.00	0	106	73	126				
4-Chlorotoluene	27.050	1.0	25.00	0	108	74	128				
4-Isopropyltoluene	26.660	1.0	25.00	0	107	73	130				
4-Methyl-2-pentanone	198.560	10	250.0	0	79.4	58	134				
Acetone	84.140	10	250.0	0	33.7	40	135				S
Acrolein	256.230	20	250.0	0	102	75	125				
Acrylonitrile	228.710	20	250.0	0	91.5	75	125				
Benzene	23.030	1.0	25.00	0	92.1	81	122				
Bromobenzene	25.640	1.0	25.00	0	103	76	124				
Bromochloromethane	26.800	1.0	25.00	0	107	65	129				
Bromodichloromethane	23.890	1.0	25.00	0	95.6	76	121				
Bromoform	22.000	1.0	25.00	0	88.0	69	128				
Bromomethane	23.960	1.0	25.00	0	95.8	53	141				
Carbon disulfide	28.240	1.0	25.00	0.9300	109	75	125				
Carbon tetrachloride	27.360	1.0	25.00	0	109	66	138				
Chlorobenzene	25.050	1.0	25.00	0	100	81	122				
Chloroethane	27.000	1.0	25.00	0	108	58	133				
Chloroform	26.300	1.0	25.00	0	105	69	128				
Chloromethane	26.370	1.0	25.00	0	105	56	131				
cis-1,2-Dichloroethene	27.140	1.0	25.00	0	109	72	126				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: N005256-001EMS	SampType: MS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: ZZZZZZ	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242943						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	24.910	1.0	25.00	0	99.6	69	131				
Dibromochloromethane	22.440	1.0	25.00	0	89.8	66	133				
Dibromomethane	21.980	1.0	25.00	0	87.9	76	125				
Dichlorodifluoromethane	30.500	1.0	25.00	0	122	53	153				
Ethylbenzene	25.500	1.0	25.00	0	102	73	127				
Freon-113	27.490	1.0	25.00	0	110	75	125				
Hexachlorobutadiene	24.520	1.0	25.00	0	98.1	67	131				
isopropylbenzene	27.670	1.0	25.00	0	111	75	127				
m,p-Xylene	53.220	1.0	50.00	0	106	76	128				
Methylene chloride	25.700	5.0	25.00	0	103	63	137				
MTBE	23.970	1.0	25.00	0	95.9	65	123				
n-Butylbenzene	26.610	1.0	25.00	0	106	69	137				
n-Propylbenzene	27.720	1.0	25.00	0	111	72	129				
Naphthalene	22.330	1.0	25.00	0	89.3	54	138				
o-Xylene	26.780	1.0	25.00	0	107	80	121				
sec-Butylbenzene	26.520	1.0	25.00	0	106	72	127				
Styrene	24.380	1.0	25.00	0	97.5	65	134				
tert-Butylbenzene	26.590	1.0	25.00	0	106	70	129				
Tetrachloroethene	23.580	1.0	25.00	0	94.3	66	128				
Toluene	44.700	2.5	25.00	18.11	106	77	122				
trans-1,2-Dichloroethene	25.730	1.0	25.00	0	103	63	137				
trans-1,3-Dichloropropene	22.920	1.0	25.00	0	91.7	59	135				
Trichloroethene	23.040	1.0	25.00	0	92.2	70	127				
Trichlorofluoromethane	27.140	1.0	25.00	0	109	57	129				
Vinyl chloride	27.890	1.0	25.00	0	112	50	134				
Xylenes, Total	80.000	2.0	75.00	0	107	75	125				
Surr: 1,2-Dichloroethane-d4	22.510		25.00		90.0	72	119				
Surr: 4-Bromofluorobenzene	26.060		25.00		104	76	119				
Surr: Dibromofluoromethane	26.210		25.00		105	85	115				
Surr: Toluene-d8	26.770		25.00		107	81	120				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: N005256-001EMSD	SampType: MSD	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: ZZZZZZ	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242944						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	24.450	1.0	25.00	0	97.8	81	129	25.10	2.62	20	
1,1,1-Trichloroethane	24.140	1.0	25.00	0	96.6	67	132	26.94	11.0	20	
1,1,2,2-Tetrachloroethane	24.670	1.0	25.00	0	98.7	63	128	23.15	6.36	20	
1,1,2-Trichloroethane	24.370	1.0	25.00	0	97.5	75	125	23.39	4.10	20	
1,1-Dichloroethane	23.700	1.0	25.00	0	94.8	69	133	26.54	11.3	20	
1,1-Dichloroethene	24.190	1.0	25.00	0	96.8	68	130	26.84	10.4	20	
1,1-Dichloropropene	26.210	1.0	25.00	0	105	73	132	25.48	2.82	20	
1,2,3-Trichlorobenzene	25.010	1.0	25.00	0	100	67	137	24.62	1.57	20	
1,2,3-Trichloropropane	25.590	1.0	25.00	0	102	73	124	22.24	14.0	20	
1,2,4-Trichlorobenzene	25.840	1.0	25.00	0	103	66	134	26.46	2.37	20	
1,2,4-Trimethylbenzene	22.920	1.0	25.00	0	91.7	74	132	25.40	10.3	20	
1,2-Dibromo-3-chloropropane	24.730	2.0	25.00	0	98.9	50	132	22.33	10.2	20	
1,2-Dibromoethane	25.960	1.0	25.00	0	104	80	121	23.86	8.43	20	
1,2-Dichlorobenzene	25.670	1.0	25.00	0	103	71	122	25.58	0.351	20	
1,2-Dichloroethane	25.710	1.0	25.00	0	103	69	132	21.69	17.0	20	
1,2-Dichloropropane	24.240	1.0	25.00	0	97.0	75	125	23.72	2.17	20	
1,3,5-Trimethylbenzene	26.480	1.0	25.00	0	106	74	131	26.90	1.57	20	
1,3-Dichlorobenzene	25.790	1.0	25.00	0	103	75	124	26.13	1.31	20	
1,3-Dichloropropane	23.710	1.0	25.00	0	94.8	73	126	22.34	5.95	20	
1,4-Dichlorobenzene	24.900	1.0	25.00	0	99.6	74	123	24.84	0.241	20	
2,2-Dichloropropane	25.110	1.0	25.00	0	100	69	137	28.38	12.2	20	
2-Butanone	115.470	10	250.0	0	46.2	49	136	113.3	1.89	20	S
2-Chlorotoluene	26.430	1.0	25.00	0	106	73	126	26.62	0.716	20	
4-Chlorotoluene	26.590	1.0	25.00	0	106	74	128	27.05	1.72	20	
4-Isopropyltoluene	26.490	1.0	25.00	0	106	73	130	26.66	0.640	20	
4-Methyl-2-pentanone	230.170	10	250.0	0	92.1	58	134	198.6	14.7	20	
Acetone	87.310	10	250.0	0	34.9	40	135	84.14	3.70	20	S
Acrolein	261.220	20	250.0	0	104	75	125	256.2	1.93	20	
Acrylonitrile	222.100	20	250.0	0	88.8	75	125	228.7	2.93	20	
Benzene	26.890	1.0	25.00	0	108	81	122	23.03	15.5	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Sample ID: N005256-001EMSD	SampType: MSD	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: ZZZZZZ	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242944						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	26.000	1.0	25.00	0	104	76	124	25.64	1.39	20	
Bromochloromethane	25.080	1.0	25.00	0	100	65	129	26.80	6.63	20	
Bromodichloromethane	24.560	1.0	25.00	0	98.2	76	121	23.89	2.77	20	
Bromoform	22.700	1.0	25.00	0	90.8	69	128	22.00	3.13	20	
Bromomethane	21.860	1.0	25.00	0	87.4	53	141	23.96	9.17	20	
Carbon disulfide	25.540	1.0	25.00	0.9300	98.4	75	125	28.24	10.0	20	
Carbon tetrachloride	28.490	1.0	25.00	0	114	66	138	27.36	4.05	20	
Chlorobenzene	25.200	1.0	25.00	0	101	81	122	25.05	0.597	20	
Chloroethane	25.060	1.0	25.00	0	100	58	133	27.00	7.45	20	
Chloroform	23.610	1.0	25.00	0	94.4	69	128	26.30	10.8	20	
Chloromethane	24.480	1.0	25.00	0	97.9	56	131	26.37	7.43	20	
cis-1,2-Dichloroethene	24.810	1.0	25.00	0	99.2	72	126	27.14	8.97	20	
cis-1,3-Dichloropropene	25.900	1.0	25.00	0	104	69	131	24.91	3.90	20	
Dibromochloromethane	22.620	1.0	25.00	0	90.5	66	133	22.44	0.799	20	
Dibromomethane	22.610	1.0	25.00	0	90.4	76	125	21.98	2.83	20	
Dichlorodifluoromethane	26.150	1.0	25.00	0	105	53	153	30.50	15.4	20	
Ethylbenzene	25.570	1.0	25.00	0	102	73	127	25.50	0.274	20	
Freon-113	24.530	1.0	25.00	0	98.1	75	125	27.49	11.4	20	
Hexachlorobutadiene	23.990	1.0	25.00	0	96.0	67	131	24.52	2.19	20	
Isopropylbenzene	27.960	1.0	25.00	0	112	75	127	27.67	1.04	20	
m,p-Xylene	52.770	1.0	50.00	0	106	76	128	53.22	0.849	20	
Methylene chloride	23.180	5.0	25.00	0	92.7	63	137	25.70	10.3	20	
MTBE	22.900	1.0	25.00	0	91.6	65	123	23.97	4.57	20	
n-Butylbenzene	26.810	1.0	25.00	0	107	69	137	26.61	0.749	20	
n-Propylbenzene	27.730	1.0	25.00	0	111	72	129	27.72	0.0361	20	
Naphthalene	21.550	1.0	25.00	0	86.2	54	138	22.33	3.56	20	
o-Xylene	26.380	1.0	25.00	0	106	80	121	26.78	1.50	20	
sec-Butylbenzene	26.640	1.0	25.00	0	107	72	127	26.52	0.451	20	
Styrene	18.500	1.0	25.00	0	74.0	65	134	24.38	27.4	20	R
tert-Butylbenzene	26.480	1.0	25.00	0	106	70	129	26.59	0.415	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc  
 3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691



CLIENT: CH2M HILL  
 Work Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: N005256-001EMSD	SampType: MSD	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: ZZZZZZ	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242944						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tetrachloroethene	23.830	1.0	25.00	0	95.3	66	128	23.58	1.05	20	
Toluene	44.680	2.5	25.00	18.11	106	77	122	44.70	0.0448	20	
trans-1,2-Dichloroethene	23.390	1.0	25.00	0	93.6	63	137	25.73	9.53	20	
trans-1,3-Dichloropropene	24.240	1.0	25.00	0	97.0	59	135	22.92	5.60	20	
Trichloroethene	23.200	1.0	25.00	0	92.8	70	127	23.04	0.692	20	
Trichlorofluoromethane	23.990	1.0	25.00	0	96.0	57	129	27.14	12.3	20	
Vinyl chloride	25.300	1.0	25.00	0	101	50	134	27.89	9.74	20	
Xylenes, Total	79.150	2.0	75.00	0	106	75	125	80.00	1.07	20	
Surr: 1,2-Dichloroethane-d4	23.180		25.00		92.7	72	119		0		
Surr: 4-Bromofluorobenzene	26.150		25.00		105	76	119		0		
Surr: Dibromofluoromethane	24.100		25.00		96.4	85	115		0		
Surr: Toluene-d8	27.480		25.00		110	81	120		0		

Sample ID: K110209MB3	SampType: MBLK	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: PBW	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242945						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0									
1,1,1-Trichloroethane	ND	1.0									
1,1,2,2-Tetrachloroethane	ND	1.0									
1,1,2-Trichloroethane	ND	1.0									
1,1-Dichloroethane	ND	1.0									
1,1-Dichloroethene	ND	1.0									
1,1-Dichloropropene	ND	1.0									
1,2,3-Trichlorobenzene	ND	1.0									
1,2,3-Trichloropropane	ND	1.0									
1,2,4-Trichlorobenzene	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
1,2-Dibromoethane	ND	1.0									

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Sample ID: K110209MB3	SampType: MBLK	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79065						
Client ID: PBW	Batch ID: K11VW001	TestNo: EPA 8260B		Analysis Date: 2/9/2011	SeqNo: 1242945						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichlorobenzene	ND	1.0									
1,2-Dichloroethane	ND	1.0									
1,2-Dichloropropane	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,3-Dichloropropane	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
2,2-Dichloropropane	ND	1.0									
2-Butanone	ND	10									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
4-Isopropyltoluene	ND	1.0									
4-Methyl-2-pentanone	ND	10									
Acetone	ND	10									
Acrolein	ND	20									
Acrylonitrile	ND	20									
Benzene	ND	1.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon disulfide	ND	1.0									
Carbon tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	1.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
cis-1,2-Dichloroethene	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691



CLIENT: CH2M HILL  
 Work Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Sample ID: <b>K110209MB3</b>	SampType: <b>MBLK</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>79065</b>						
Client ID: <b>PBW</b>	Batch ID: <b>K11VW001</b>	TestNo: <b>EPA 8260B</b>		Analysis Date: <b>2/9/2011</b>	SeqNo: <b>1242945</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
Dichlorodifluoromethane	ND	1.0									
Ethylbenzene	ND	1.0									
Freon-113	ND	1.0									
Hexachlorobutadiene	ND	1.0									
Isopropylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
Methylene chloride	ND	5.0									
MTBE	ND	1.0									
n-Butylbenzene	ND	1.0									
n-Propylbenzene	ND	1.0									
Naphthalene	ND	1.0									
o-Xylene	ND	1.0									
sec-Butylbenzene	ND	1.0									
Styrene	ND	1.0									
tert-Butylbenzene	ND	1.0									
Tetrachloroethene	ND	1.0									
Toluene	ND	2.5									
trans-1,2-Dichloroethene	ND	1.0									
trans-1,3-Dichloropropene	ND	1.0									
Trichloroethene	ND	1.0									
Trichlorofluoromethane	ND	1.0									
Vinyl chloride	ND	1.0									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	22.290		25.00		89.2	72	119				
Surr: 4-Bromofluorobenzene	25.500		25.00		102	76	119				
Surr: Dibromofluoromethane	26.480		25.00		106	85	115				
Surr: Toluene-d8	26.090		25.00		104	81	120				

**Qualifiers:**

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

Advanced Technology  
Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

Project Name PG&E Topock				Container:	250 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	3 x 40 ml VOA	3 x 40 ml VOA	ALERT !! Level III QC	Number of Containers	COMMENTS
Location Topock				Preservatives:	(NH4)2SO4 4/NH4OH, 4°C	HNO3, 4°C	4°C	4°C	H3PO4, 4°C	HCL, 4°C			
Project Number 405681.MP.02.GM.03				Filtered:	Field	Field	NA	NA	NA	NA			
Project Manager Jay Piper				Holding Time:	28	180	2	2	28	14			
Sample Manager Shawn Duffy													
Task Order													
Project 2011-GMP-PACKER-175													
Turnaround Time 10 Days													
Shipping Date:													
COC Number:													
SAMPLE ID	DATE	TIME	Matrix										
WW-58BR-UPR-160-175	2-1-11	1125	Water	X	X	X	X	X	X	X	NO05311-1	20	8
TB-Packer-175-02	"	1100	Water							X	trip blank	2	2 Hold BCC
TOTAL NUMBER OF CONTAINERS												13	

For Sample Condition  
See Form Attach

NO3, Cl  
Done  
by TLI  
5.2°C

Approved by	Signatures	Date/Time	Shipping Details	Sp
Sampled by		2-1-11	Method of Shipment:	
Relinquished by			On Ice: yes / no	ATTN: Molly Nguyen
Received by	Rafael Davila	2/1/11 15:30	Airbill No:	Report Copy to
Relinquished by	Rafael Davila	2-1-11 21:30	Lab Name: ADVANCED TECHNOLOGY LABORATORIES	Shawn Duffy
Received by		2/1/11 21:30	Lab Phone: (702) 307-2659	(530) 229-3303

**CH2MHILL**

**CHAIN OF CUSTODY RECORD**

Project Name PG&E Topock Location Topock Project Number 405681.MP.02.GM.03 Project Manager Jay Piper Sample Manager Shawn Duffy  Task Order Project 2011-GMP-PACKER-175 Turnaround Time 10 Days Shipping Date: COC Number:				Container: 250 ml Poly Preservatives: (NH4)2SO4/NH4OH, 4°C Filtered: Field Holding Time: 28	500 ml Poly HNO3, 4°C Field 180  Metals (6010BFF) Field Filtered Chromium, Arsenic	1 Liter Poly 4°C NA 2  Anions (E300.0) Nitrate, Chloride	1 Liter Poly 4°C NA 2  TDS (SM2540C)	3 x 40 ml VOA H3PO4, 4°C NA 28  TOC (SM5310C)	3 x 40 ml VOA HCL, 4°C NA 14  VOCs (8260B)	<div style="border: 2px solid black; padding: 10px; display: inline-block;"> <b>ALERT !!</b>  <b>Level III QC</b> </div>	Number of Containers  COMMENTS
SAMPLE ID      DATE      TIME      Matrix											
MW-58ER-UPR-160-175	2-1-11	1125	Water	X	X	X	X	X	X		
TB-Packer-175-02	"	1100	Water						X	2	Hold <i>sec</i>
TOTAL NUMBER OF CONTAINERS										13	

**For Sample Condition:  
See Form Attached**

Approved by		Signatures	Date/Time	
Sampled by			2-1-11	
Relinquished by				
Received by	Rafael Davila		2/1/11 15:30	
Relinquished by	Rafael Davila		2-1-11 21:30	
Received by	Judea		2/1/11 21:30	

**Shipping Details**

Method of Shipment: \_\_\_\_\_

On Ice: yes / no

Airbill No: \_\_\_\_\_

Lab Name: ADVANCED TECHNOLOGY LABORATORIES

Lab Phone: (702) 307-2659

ATTN: Molly Nguyen

**Special Instructions:**

Report Copy to  
Shawn Duffy  
(530) 229-3303

# Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO and/or NA signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

## Sample Receipt Checklist

Cooler Received/Opened On: 2/4/2011 Workorder: N005311  
 Rep sample Temp (Deg C): 5.2 IR Gun ID: IR 1  
 Temp Blank:  Yes  No  
 Carrier name: FedEx  
 Last 4 digits of Tracking No.: 9502 Packing Material Used: Bubble Wrap  
 Cooling process:  Ice  Ice Pack  Dry Ice  Other  None

- |   |   |                             |   |
|---|---|-----------------------------|---|
| 1. Shipping container/cooler in good condition?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>            |
| 2. Custody seals intact, signed, dated on shipping container/cooler?                    | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 5. Sampler's name present in COC?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 6. Chain of custody signed when relinquished and received?                              | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 7. Chain of custody agrees with sample labels?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 8. Samples in proper container/bottle?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 9. Sample containers intact?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 10. Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 11. All samples received within holding time?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 12. Temperature of rep sample or Temp Blank within acceptable limit?                    | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/>                     |
| 13. Water - VOA vials have zero headspace?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/>                     |
| 14. Water - pH acceptable upon receipt?<br>Example: pH > 12 for (CN,S); pH<2 for Metals | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/>                     |
| 15. Did the bottle labels indicate correct preservatives used?                          | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/>                     |
| 16. Were there Non-Conformance issues at login?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/>          |
| Was Client notified?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/>          |

CJ 2/7/11

Comments: sample for nitrate, chloride was analyzed by TLI

Checklist Completed By *JT* *2/4/11*

Reviewed By: *CJ 2/7/11*

## SAMPLE CALCULATION

**METHOD:** SM 2540C

**TEST NAME:** Total Filterable Residue

**MATRIX:** Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B) * 1000000}{C}$$

Where:

A = weight in g of dish + residue after drying  
B = weight of dish in g  
C = volume of sample used in mL

For **N005311-001B**, TDS concentration in mg/L is calculated as follows:

$$\begin{aligned} \text{TDS, mg/L} &= \frac{(30.2506 - 30.1080) * 1000000}{20} \\ &= 7130 \text{ mg/L} \end{aligned}$$

Reporting result in two significant figures,

$$\text{TDS} = 7100 \text{ mg/L}$$

## Sample Calculation

**METHOD:** EPA 218.6

**TEST NAME:** HEXAVALENT CHROMIUM BY IC

**MATRIX:** Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in  $\mu\text{g/L}$ , in the original sample as follows:

$$\text{Cr}^{+6}, \mu\text{g/L} = A * \text{DF}$$

where:

A =  $\mu\text{g/L}$ , IC  $\text{Cr}^{+6}$  calculated concentration

DF = dilution factor

For N005311-001A, concentration in  $\mu\text{g/L}$  is calculated as follows:

$$\begin{aligned}\text{Cr}^{+6}, \mu\text{g/L} &= 0 * 5 \\ &= 0 \mu\text{g/L}\end{aligned}$$

$$\text{Cr}^{+6}, \mu\text{g/L} = \text{ND}$$

*Andish*

### SAMPLE CALCULATION

METHOD: EPA 6010B  
TEST NAME: METALS BY ICP  
MATRIX: WATER

FORMULA:

Calculate the individual metal concentration, in ug/L, in the original sample as follows:

$$M, \text{ ug/L} = \frac{A * C * DF * 1000}{B}$$

where:

M= concentration of the metal in ug/L  
A= mg/L, ICP calculated concentration  
B= volume of sample, Liter  
C= final volume of digestate, Liter  
DF= dilution factor

For N005311-001C, concentration in ug/L are calculated as follows:

$$\text{Cr, ug/L} = \frac{-0.00381 \text{ mg/L} * 0.025 \text{ L} * 1 * 1000}{0.025 \text{ L}}$$

$$\text{Cr} = -0.00381 \text{ ug/L}$$

Reporting result in two significant figures,  
Result is below the reporting limit therefore,

**Cr =ND**

yc - 2/12/2011

CLIENT: CH2M HILL

Work Order: N005311

Project: PG&E Topock, 405681.MP.02.GM.03

## ANALYTICAL QC SUMMARY REPORT

TestCode: 6010\_WDPGEPPB

Sample ID: N005311-001CPS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79009						
Client ID: ZZZZZZ	Batch ID: 36183	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/8/2011	SeqNo: 1241994						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	971.647	2.0	1000	0	97.2	75	125				
----------	---------	-----	------	---	------	----	-----	--	--	--	--

Sample ID: N005311-001CPS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79009						
Client ID: ZZZZZZ	Batch ID: 36183	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/8/2011	SeqNo: 1242916						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	2414.291	5.0	2500	0	96.6	75	125				
----------	----------	-----	------	---	------	----	-----	--	--	--	--

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - E Value above quantitation range
  - H Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - R RPD outside accepted recovery limits
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
  - Calculations are based on raw values

## Sample Calculation

**METHOD:** EPA 6020

**TEST NAME:** Heavy Metals by ICP-MS

**MATRIX:** Aqueous

**FORMULA:**

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

$$\text{Arsenic, ug/L} = A * DF * PF$$

where:

A = ug/L, calculated concentration

DF = dilution factor

PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N005311-001**, the concentration in ug/L is calculated as follows:

$$\begin{aligned} \text{Arsenic, ug/L} &= 1.8667 * 1 * (25/25) \\ &= 1.8667 \text{ ug/L} \end{aligned}$$

Reporting results in two significant figures,

$$\text{Arsenic, ug/L} = 1.9$$

**Advanced Technology Laboratories, Inc.**

**ICP-Metals in Water**

Work Order No.: N005311  
 Test Method: EPA 6020  
 Analysis Date: 02/12/11

**Dilution Test Summary**

Matrix: Aqueous  
 Batch No.: 36132

Instrument ID: ICP-MS #2  
 Instrument Description: Agilent 7700x

Comments:

Analyzed By: Jojo Tenorio

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N005256-001C-DT 5X	Arsenic	ug/L	2.940982		2.833885	3.78%	10

CLIENT: CH2M HILL  
 Work Order: N005311  
 Project: PG&E Topock, 405681.MP.02.GM.03

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6020\_DIS

Sample ID: N005256-001C-PS 2	SampType: PS	TestCode: 6020_DIS	Units: µg/L	Prep Date:	RunNo: 79086						
Client ID: ZZZZZZ	Batch ID: 36132	TestNo: EPA 6020	EPA 3010A	Analysis Date: 2/12/2011	SeqNo: 1243762						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.350	0.20	20.00	0	112	75	125				

- Qualifiers:
- B Analyte detected in the associated Method Blank
  - ND Not Detected at the Reporting Limit
  - DO Surrogate Diluted Out
  - E Value above quantitation range
  - R RPD outside accepted recovery limits
  - Calculations are based on raw values
  - H Holding times for preparation or analysis exceeded
  - S Spike/Surrogate outside of limits due to matrix interference

SAMPLE CALCULATION

METHOD: EPA 8260B  
TEST NAME: VOLATILE ORGANIC COMPOUNDS BY GC/MS  
MATRIX: WATER

CALCULATION OF TARGET PARAMETERS

Calculate the target analyte concentrations using internal standard quantitation

$$C_x, \text{ug/L} = \frac{A_x * C_{IS} * DF}{\text{Ave RF} * A_{IS}}$$

where:  
 $A_x$  = Area of the TOTAL ion for the compound being measured  
 $C_{IS}$  = Concentration of the specific internal standard in ug/L  
 $A_{IS}$  = Area of the characteristic ion of the specific internal standard  
 $C_x$  = Concentration of the compound being measured in ug/L

N005311-001E

For Toluene the corresponding Internal Standard is 1,4-Difluorobenzene

Ave RF	1.287
Area of Toluene	770258
Area of Internal Standard	261007
Conc of Internal Standard (ug/L)	25.00

$$\text{Conc of Toluene (ug/L)} = \frac{770258 * 25.00 \text{ug/L} * 1}{1.287 * 261007}$$

Conc of Toluene (ug/L) = 57.32519286

Reporting result in two significant figures,

**Concentration of Toluene = 57 ug/L**

*Abela*

February 28, 2011

Shawn P. Duffy  
CH2M HILL  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

TEL: (530) 229-3303  
FAX: (530) 339-3303

CA-ELAP No.: 2676  
NV Cert. No.: NV-009222007A

Workorder No.: N005349

RE: PG&E Topock, 405681.MP.02.GM.04

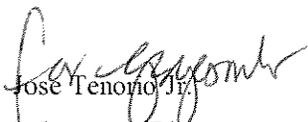
Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 10, 2011 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

  
Jose Tenorio Jr.  
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.



**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab Order:** N005349

**CASE NARRATIVE**

---

**SAMPLE RECEIVING/GENERAL COMMENTS:**

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

**Analytical Comments for EPA 6010B:**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium, Sodium, Potassium on QC samples N005349-005A-MS and N005349-005A-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.



**Advanced Technology Laboratories, Inc.**

Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock. 405681.MP.02.GM.04  
**Lab Order:** N005349  
**Contract No:**

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N005349-001A	MW-20-100-172B	Water	2/10/2011 2:22:00 PM	2/10/2011	
N005349-001B	MW-20-100-172B	Water	2/10/2011 2:22:00 PM	2/10/2011	
N005349-001C	MW-20-100-172B	Water	2/10/2011 2:22:00 PM	2/10/2011	
N005349-001D	MW-20-100-172B	Water	2/10/2011 2:22:00 PM	2/10/2011	
N005349-002A	MW-20-130-172B	Water	2/10/2011 4:50:00 PM	2/10/2011	
N005349-002B	MW-20-130-172B	Water	2/10/2011 4:50:00 PM	2/10/2011	
N005349-002C	MW-20-130-172B	Water	2/10/2011 4:50:00 PM	2/10/2011	
N005349-002D	MW-20-130-172B	Water	2/10/2011 4:50:00 PM	2/10/2011	
N005349-003A	MW-50-200-172B	Water	2/10/2011 3:42:00 PM	2/10/2011	
N005349-003B	MW-50-200-172B	Water	2/10/2011 3:42:00 PM	2/10/2011	
N005349-003C	MW-50-200-172B	Water	2/10/2011 3:42:00 PM	2/10/2011	
N005349-003D	MW-50-200-172B	Water	2/10/2011 3:42:00 PM	2/10/2011	
N005349-003E	MW-50-200-172B	Water	2/10/2011 3:42:00 PM	2/10/2011	
N005349-004A	MW-98-172B	Water	2/10/2011 12:05:00 PM	2/10/2011	
N005349-004B	MW-98-172B	Water	2/10/2011 12:05:00 PM	2/10/2011	
N005349-004C	MW-98-172B	Water	2/10/2011 12:05:00 PM	2/10/2011	
N005349-004D	MW-98-172B	Water	2/10/2011 12:05:00 PM	2/10/2011	
N005349-004E	MW-98-172B	Water	2/10/2011 12:05:00 PM	2/10/2011	
N005349-005A	PGE-08-172B	Water	2/10/2011 4:47:00 PM	2/10/2011	
N005349-005B	PGE-08-172B	Water	2/10/2011 4:47:00 PM	2/10/2011	
N005349-005C	PGE-08-172B	Water	2/10/2011 4:47:00 PM	2/10/2011	
N005349-005D	PGE-08-172B	Water	2/10/2011 4:47:00 PM	2/10/2011	



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-001

**Client Sample ID:** MW-20-100-172B  
**Collection Date:** 2/10/2011 2:22:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>SPECIFIC CONDUCTANCE</b>							
<b>EPA 120.1</b>							
RunID: WETCHEM_110211B	QC Batch: R79100				PrepDate:		Analyst: CEI
Specific Conductance	2800	0.10	0.10		µmhos/cm	1	2/11/2011

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

CLIENT: CH2M HILL  
Lab Order: N005349  
Project: PG&E Topock, 405681.MP.02.GM.04  
Lab ID: N005349-002

Client Sample ID: MW-20-130-172B  
Collection Date: 2/10/2011 4:50:00 PM  
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>SPECIFIC CONDUCTANCE</b>							
<b>EPA 120.1</b>							
RunID: WETCHEM_110211B	QC Batch: R79100				PrepDate:		Analyst: CEI
Specific Conductance	10000	0.10	0.10		umhos/cm	1	2/11/2011

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-003

**Client Sample ID:** MW-50-200-172B  
**Collection Date:** 2/10/2011 3:42:00 PM  
**Matrix:** WATER

**Analyses** **Result** **MDL** **PQL** **Qual** **Units** **DF** **Date Analyzed**

**SPECIFIC CONDUCTANCE**

**EPA 120.1**

RunID: **WETCHEM\_110211B**      QC Batch: **R79100**      PrepDate:      Analyst: **CEI**  
Specific Conductance      17000      0.10      0.10      µmhos/cm      1      2/11/2011

**Qualifiers:**    B    Analyte detected in the associated Method Blank      E    Value above quantitation range  
                  H    Holding times for preparation or analysis exceeded      ND    Not Detected at the Reporting Limit  
                  S    Spike/Surrogate outside of limits due to matrix interference      Results are wet unless otherwise specified  
                  DO    Surrogate Diluted Out





**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

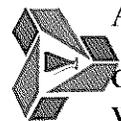
**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-005

**Client Sample ID:** PGE-08-172B  
**Collection Date:** 2/10/2011 4:47:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>SPECIFIC CONDUCTANCE</b>							
<b>EPA 120.1</b>							
RunID: WETCHEM_110211B	QC Batch: R79100		PrepDate:		Analyst: CEI		
Specific Conductance	16000	0.10	0.10	µmhos/cm	1	2/11/2011	

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out





CLIENT: CH2M HILL
Work Order: N005349
Project: PG&E Topock, 405681.MP.02.GM.04

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1\_W

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: Specific Conductance, 1461.000, 0.10, 1411, 0, 104, 85, 115.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: Specific Conductance, 2750.000, 0.10, 2760, 0.363, 10.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: Specific Conductance, 4114.000, 0.20, 1411, 2760, 96.0, 75, 125.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: Specific Conductance, 4106.000, 0.20, 1411, 2760, 95.4, 75, 125, 4114, 0.195, 10.

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc. 3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: 28-Feb-11

CLIENT: CH2M HILL
Lab Order: N005349
Project: PG&E Topock, 405681.MP.02.GM.04
Lab ID: N005349-001

Client Sample ID: MW-20-100-172B
Collection Date: 2/10/2011 2:22:00 PM
Matrix: WATER

Table with columns: Analyses, Result, MDL, PQL, Qual, Units, DF, Date Analyzed. Row 1: TOTAL FILTERABLE RESIDUE, SM2540C. Row 2: RunID: WETCHEM\_110214C, QC Batch: 36249, PrepDate: 2/14/2011, Analyst: CEI. Row 3: Total Dissolved Solids (Residue, Filterable), 1800, 20, 20, mg/L, 1, 2/14/2011.

- Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified



Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

CLIENT: CH2M HILL  
Lab Order: N005349  
Project: PG&E Topock, 405681.MP.02.GM.04  
Lab ID: N005349-002

Client Sample ID: MW-20-130-172B  
Collection Date: 2/10/2011 4:50:00 PM  
Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

**TOTAL FILTERABLE RESIDUE**

**SM2540C**

RunID: WETCHEM\_110214C QC Batch: 36249 PrepDate: 2/14/2011 Analyst: CEI  
Total Dissolved Solids (Residue, Filterable) 5900 100 100 mg/L 1 2/14/2011

- Qualifiers: B Analyte detected in the associated Method Blank
  - H Holding times for preparation or analysis exceeded
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
  - E Value above quantitation range
  - ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified





CLIENT: CH2M HILL

Work Order: N005349

Project: PG&E Topock, 405681.MP.02.GM.04

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1\_2540C\_W

Sample ID: <b>MB-36249</b>	SampType: <b>MBLK</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>2/14/2011</b>	RunNo: <b>79141</b>						
Client ID: <b>PBW</b>	Batch ID: <b>36249</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>2/14/2011</b>	SeqNo: <b>1247807</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera	ND	10									
--	----	----	--	--	--	--	--	--	--	--	--

Sample ID: <b>LCS-36249</b>	SampType: <b>LCS</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>2/14/2011</b>	RunNo: <b>79141</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>36249</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>2/14/2011</b>	SeqNo: <b>1247808</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera	958.000	10	1000	0	95.8	80	120				
--	---------	----	------	---	------	----	-----	--	--	--	--

Sample ID: <b>N005349-001C-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>2/14/2011</b>	RunNo: <b>79141</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>36249</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>2/14/2011</b>	SeqNo: <b>1247810</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera	1872.000	20						1840	1.72	5	
--	----------	----	--	--	--	--	--	------	------	---	--

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: 28-Feb-11

CLIENT: CH2M HILL
Lab Order: N005349
Project: PG&E Topock, 405681.MP.02.GM.04
Lab ID: N005349-001

Client Sample ID: MW-20-100-172B
Collection Date: 2/10/2011 2:22:00 PM
Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

ALKALINITY, SPECIATED

SM 2320 B

Table with columns: RunID, QC Batch, PrepDate, Analyst, and rows for Alkalinity, Bicarbonate (As CaCO3), Alkalinity, Carbonate (As CaCO3), Alkalinity, Hydroxide (As CaCO3), Alkalinity, Total (As CaCO3) with associated values.

- Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-002

**Client Sample ID:** MW-20-130-172B  
**Collection Date:** 2/10/2011 4:50:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**ALKALINITY, SPECIATED**

**SM 2320 B**

RunID:	QC Batch:					PrepDate:	Analyst:
WETCHEM_110211D	R79104						CEI
Alkalinity, Bicarbonate (As CaCO3)	80	1.2	5.0		mg/L	1	2/11/2011
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	2/11/2011
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	2/11/2011
Alkalinity, Total (As CaCO3)	80	1.2	5.0		mg/L	1	2/11/2011

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

CLIENT: CH2M HILL  
Lab Order: N005349  
Project: PG&E Topock, 405681.MP.02.GM.04  
Lab ID: N005349-003

Client Sample ID: MW-50-200-172B  
Collection Date: 2/10/2011 3:42:00 PM  
Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

**ALKALINITY, SPECIATED**

**SM 2320 B**

RunID: WETCHEM_110211D	QC Batch: R79104	PrepDate:	Analyst: CEI
Alkalinity, Bicarbonate (As CaCO3)	39 1.2	5.0 mg/L	1 2/11/2011
Alkalinity, Carbonate (As CaCO3)	ND 1.2	5.0 mg/L	1 2/11/2011
Alkalinity, Hydroxide (As CaCO3)	ND 1.2	5.0 mg/L	1 2/11/2011
Alkalinity, Total (As CaCO3)	39 1.2	5.0 mg/L	1 2/11/2011

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - H Holding times for preparation or analysis exceeded
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
  - E Value above quantitation range
  - ND Not Detected at the Reporting Limit
  - Results are wet unless otherwise specified



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-004

**Client Sample ID:** MW-98-172B  
**Collection Date:** 2/10/2011 12:05:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**ALKALINITY, SPECIATED**

**SM 2320 B**

RunID:	QC Batch:	PrepDate:	Analyst:			
WETCHEM_110211D	R79104		CEI			
Alkalinity, Bicarbonate (As CaCO3)	39	1.2	5.0	mg/L	1	2/11/2011
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0	mg/L	1	2/11/2011
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0	mg/L	1	2/11/2011
Alkalinity, Total (As CaCO3)	39	1.2	5.0	mg/L	1	2/11/2011

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock. 405681.MP.02.GM.04  
**Lab ID:** N005349-005

**Client Sample ID:** PGE-08-172B  
**Collection Date:** 2/10/2011 4:47:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**ALKALINITY, SPECIATED**

**SM 2320 B**

RunID: WETCHEM_110211D	QC Batch: R79104	PrepDate:	Analyst: CEI
Alkalinity, Bicarbonate (As CaCO3)	53 1.2	5.0 mg/L	1 2/11/2011
Alkalinity, Carbonate (As CaCO3)	ND 1.2	5.0 mg/L	1 2/11/2011
Alkalinity, Hydroxide (As CaCO3)	ND 1.2	5.0 mg/L	1 2/11/2011
Alkalinity, Total (As CaCO3)	53 1.2	5.0 mg/L	1 2/11/2011

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out





CLIENT: CH2M HILL
Work Order: N005349
Project: PG&E Topock, 405681.MP.02.GM.04

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320\_W\_SP

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: LCS-1, LCS, 2320\_W\_SP, mg/L, 2/11/2011, 79104, LCSW, R79104, SM 2320 B, 2/11/2011, 1247491, Alkalinity, Carbonate (As CaCO3), 91.684, 5.0, 100.0, 0, 91.7, 80, 120, 91.68, 0, 20.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: LCSD-1, LCSD, 2320\_W\_SP, mg/L, 2/11/2011, 79104, LCSS02, R79104, SM 2320 B, 2/11/2011, 1247492, Alkalinity, Carbonate (As CaCO3), 91.684, 5.0, 100.0, 0, 91.7, 80, 120, 91.68, 0, 20.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: MB-1, MBLK, 2320\_W\_SP, mg/L, 2/11/2011, 79104, PBW, R79104, SM 2320 B, 2/11/2011, 1247493, Alkalinity, Bicarbonate (As CaCO3), ND, 5.0, ND, 5.0, ND, 5.0, ND, 5.0.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005349-003C-DUP, DUP, 2320\_W\_SP, mg/L, 2/11/2011, 79104, ZZZZZZ, R79104, SM 2320 B, 2/11/2011, 1247497, Alkalinity, Bicarbonate (As CaCO3), 39.446, 5.0, 39.45, 0, 30.

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
Calculations are based on raw values

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691



CLIENT: CH2M HILL  
 Work Order: N005349  
 Project: PG&E Topock, 405681.MP.02.GM.04

# ANALYTICAL QC SUMMARY REPORT

TestCode: 2320\_W\_SP

Sample ID: N005349-003C-MS	SampType: MS	TestCode: 2320_W_SP	Units: mg/L	Prep Date:	RunNo: 79104						
Client ID: ZZZZZZ	Batch ID: R79104	TestNo: SM 2320 B		Analysis Date: 2/11/2011	SeqNo: 1247498						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Carbonate (As CaCO3)	85.288	5.0	100.0	0	85.3	80	120				
Alkalinity, Total (As CaCO3)	137.527	5.0	100.0	39.45	98.1	80	120				

Sample ID: N005349-003C-MSD	SampType: MSD	TestCode: 2320_W_SP	Units: mg/L	Prep Date:	RunNo: 79104						
Client ID: ZZZZZZ	Batch ID: R79104	TestNo: SM 2320 B		Analysis Date: 2/11/2011	SeqNo: 1247499						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Carbonate (As CaCO3)	85.288	5.0	100.0	0	85.3	80	120	85.29	0	20	
Alkalinity, Total (As CaCO3)	137.527	5.0	100.0	39.45	98.1	80	120	137.5	0	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

CLIENT: CH2M HILL  
 Lab Order: N005349  
 Project: PG&E Topock. 405681.MP.02.GM.04  
 Lab ID: N005349-001

Client Sample ID: MW-20-100-172B  
 Collection Date: 2/10/2011 2:22:00 PM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270		PrepDate:		Analyst: QBM		
Bromide	0.57	0.039	0.50	mg/L	1	2/11/2011 01:38 PM	
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270		PrepDate:		Analyst: QBM		
Chloride	610	13	100	mg/L	200	2/11/2011 10:59 AM	
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270		PrepDate:		Analyst: QBM		
Nitrogen, Nitrate (As N)	15	0.11	5.0	mg/L	10	2/11/2011 01:04 PM	
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270		PrepDate:		Analyst: QBM		
Sulfate	380	2.9	50	mg/L	50	2/11/2011 11:10 AM	

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-002

**Client Sample ID:** MW-20-130-172B  
**Collection Date:** 2/10/2011 4:50:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270				PrepDate:		Analyst: QBM
Bromide	1.0	0.078	1.0		mg/L	2	2/11/2011 03:40 PM
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270				PrepDate:		Analyst: QBM
Chloride	3100	63	500		mg/L	1000	2/11/2011 02:11 PM
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270				PrepDate:		Analyst: QBM
Nitrogen, Nitrate (As N)	13	0.055	2.5		mg/L	5	2/11/2011 03:18 PM
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270				PrepDate:		Analyst: QBM
Sulfate	1100	5.8	100		mg/L	100	2/11/2011 02:56 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-003

**Client Sample ID:** MW-50-200-172B  
**Collection Date:** 2/10/2011 3:42:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270				PrepDate:		Analyst: QBM
Chloride	6900	63	500		mg/L	1000	2/11/2011 04:14 PM
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270				PrepDate:		Analyst: QBM
Nitrogen, Nitrate (As N)	6.4	0.055	2.5		mg/L	5	2/11/2011 04:36 PM
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270				PrepDate:		Analyst: QBM
Sulfate	1000	5.8	100		mg/L	100	2/11/2011 04:25 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-004

**Client Sample ID:** MW-98-172B  
**Collection Date:** 2/10/2011 12:05:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270				PrepDate:		Analyst: QBM
Chloride	7000	63	500		mg/L	1000	2/11/2011 05:09 PM
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270				PrepDate:		Analyst: QBM
Nitrogen, Nitrate (As N)	6.1	0.055	2.5		mg/L	5	2/11/2011 05:32 PM
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270				PrepDate:		Analyst: QBM
Sulfate	1100	5.8	100		mg/L	100	2/11/2011 05:21 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-005

**Client Sample ID:** PGE-08-172B  
**Collection Date:** 2/10/2011 4:47:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270		PrepDate:		Analyst: QBM		
Chloride	6100	63	500	mg/L	1000	2/11/2011 05:43 PM	
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270		PrepDate:		Analyst: QBM		
Nitrogen, Nitrate (As N)	ND	0.055	2.5	mg/L	5	2/11/2011 06:05 PM	
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
<b>EPA 300.0</b>							
RunID: IC2_110211B	QC Batch: R79270		PrepDate:		Analyst: QBM		
Sulfate	2000	5.8	100	mg/L	100	2/11/2011 05:54 PM	

**Qualifiers:** B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified



CLIENT: CH2M HILL  
 Work Order: N005349  
 Project: PG&E Topock, 405681.MP.02.GM.04

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 300\_W\_BRPGE

Sample ID: MB-R79270_BR	SampType: MBLK	TestCode: 300_W_BRP	Units: mg/L	Prep Date:	RunNo: 79270						
Client ID: PBW	Batch ID: R79270	TestNo: EPA 300.0		Analysis Date: 2/11/2011	SeqNo: 1248676						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID: LCS-R79270_BR	SampType: LCS	TestCode: 300_W_BRP	Units: mg/L	Prep Date:	RunNo: 79270						
Client ID: LCSW	Batch ID: R79270	TestNo: EPA 300.0		Analysis Date: 2/11/2011	SeqNo: 1248677						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.415	0.50	2.500	0	96.6	90	110				

Sample ID: N005349-001BMS	SampType: MS	TestCode: 300_W_BRP	Units: mg/L	Prep Date:	RunNo: 79270						
Client ID: ZZZZZ	Batch ID: R79270	TestNo: EPA 300.0		Analysis Date: 2/11/2011	SeqNo: 1248681						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.942	0.50	2.500	0.5650	95.1	80	120				

Sample ID: N005349-001BMSD	SampType: MSD	TestCode: 300_W_BRP	Units: mg/L	Prep Date:	RunNo: 79270						
Client ID: ZZZZZ	Batch ID: R79270	TestNo: EPA 300.0		Analysis Date: 2/11/2011	SeqNo: 1248682						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	3.014	0.50	2.500	0.5650	98.0	80	120	2.942	2.42	20	

Sample ID: N005349-002BDUP	SampType: DUP	TestCode: 300_W_BRP	Units: mg/L	Prep Date:	RunNo: 79270						
Client ID: ZZZZZ	Batch ID: R79270	TestNo: EPA 300.0		Analysis Date: 2/11/2011	SeqNo: 1248686						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.022	1.0						1.004	1.78	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



**CLIENT:** CH2M HILL  
**Work Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_CLPGE

Sample ID: MB-R79270_CL	SampType: MBLK	TestCode: 300_W_CLP	Units: mg/L	Prep Date:	RunNo: 79270						
Client ID: PBW	Batch ID: R79270	TestNo: EPA 300.0		Analysis Date: 2/11/2011	SeqNo: 1248693						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	ND	0.50									
----------	----	------	--	--	--	--	--	--	--	--	--

Sample ID: LCS-R79270_CL	SampType: LCS	TestCode: 300_W_CLP	Units: mg/L	Prep Date:	RunNo: 79270						
Client ID: LCSW	Batch ID: R79270	TestNo: EPA 300.0		Analysis Date: 2/11/2011	SeqNo: 1248694						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	2.345	0.50	2.500	0	93.8	90	110				
----------	-------	------	-------	---	------	----	-----	--	--	--	--

Sample ID: N005349-001BMS	SampType: MS	TestCode: 300_W_CLP	Units: mg/L	Prep Date:	RunNo: 79270						
Client ID: ZZZZZZ	Batch ID: R79270	TestNo: EPA 300.0		Analysis Date: 2/11/2011	SeqNo: 1248697						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	1078.600	100	500.0	609.0	93.9	80	120				
----------	----------	-----	-------	-------	------	----	-----	--	--	--	--

Sample ID: N005349-001BMSD	SampType: MSD	TestCode: 300_W_CLP	Units: mg/L	Prep Date:	RunNo: 79270						
Client ID: ZZZZZZ	Batch ID: R79270	TestNo: EPA 300.0		Analysis Date: 2/11/2011	SeqNo: 1248698						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	1079.800	100	500.0	609.0	94.2	80	120	1079	0.111	20	
----------	----------	-----	-------	-------	------	----	-----	------	-------	----	--

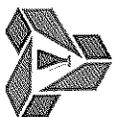
Sample ID: N005349-002BDUP	SampType: DUP	TestCode: 300_W_CLP	Units: mg/L	Prep Date:	RunNo: 79270						
Client ID: ZZZZZZ	Batch ID: R79270	TestNo: EPA 300.0		Analysis Date: 2/11/2011	SeqNo: 1248702						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	3106.000	500						3127	0.674	20	
----------	----------	-----	--	--	--	--	--	------	-------	----	--

**Qualifiers:**

- B Analyte detected in the associated Method Blank
  - E Value above quantitation range
  - H Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - R RPD outside accepted recovery limits
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
- Calculations are based on raw values

Advanced Technology Laboratories, Inc  
 3151 W. Post Road  
 Las Vegas, NV 89118  
 Tel: 702 307-2659  
 Fax: 702 307-2691



**CLIENT:** CH2M HILL  
**Work Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_NO3PGE

Sample ID: <b>MB-R79270_NO3</b>	SampType: <b>MBLK</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248714</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N) ND 0.50

Sample ID: <b>LCS-R79270_NO3</b>	SampType: <b>LCS</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248715</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N) 2.391 0.50 2.500 0 95.6 90 110

Sample ID: <b>N005349-001BMS</b>	SampType: <b>MS</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248720</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N) 39.050 5.0 25.00 14.53 98.1 80 120

Sample ID: <b>N005349-001BMSD</b>	SampType: <b>MSD</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248721</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N) 38.950 5.0 25.00 14.53 97.7 80 120 39.05 0.256 20

Sample ID: <b>N005349-002BDUP</b>	SampType: <b>DUP</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248725</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N) 12.985 2.5 12.77 1.67 20

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



**CLIENT:** CH2M HILL  
**Work Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_SO4PGE

Sample ID: <b>MB-R79270_SO4</b>	SampType: <b>MBLK</b>	TestCode: <b>300_W_SO4P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248735</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	1.0									

Sample ID: <b>LCS-R79270_SO4</b>	SampType: <b>LCS</b>	TestCode: <b>300_W_SO4P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248736</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.771	1.0	5.000	0	95.4	90	110				

Sample ID: <b>N005349-001BMS</b>	SampType: <b>MS</b>	TestCode: <b>300_W_SO4P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248740</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	622.950	50	250.0	379.2	97.5	80	120				

Sample ID: <b>N005349-001BMSD</b>	SampType: <b>MSD</b>	TestCode: <b>300_W_SO4P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248741</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	620.850	50	250.0	379.2	96.7	80	120	623.0	0.338	20	

Sample ID: <b>N005349-002BDUP</b>	SampType: <b>DUP</b>	TestCode: <b>300_W_SO4P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248745</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1138.000	100						1135	0.273	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

CLIENT: CH2M HILL  
 Lab Order: N005349  
 Project: PG&E Topock, 405681.MP.02.GM.04  
 Lab ID: N005349-003

Client Sample ID: MW-50-200-172B  
 Collection Date: 2/10/2011 3:42:00 PM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>AMMONIA-N</b>							
					<b>SM4500-NH3C</b>		
RunID: WETCHEM_110221C	QC Batch: 36283				PrepDate: 2/21/2011	Analyst: CEI	
Nitrogen, Ammonia (As N)	0.10	0.030	0.10		mg/L	1	2/21/2011

**Qualifiers:** B Analyte detected in the associated Method Blank  
 II Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified



Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

CLIENT: CH2M HILL  
Lab Order: N005349  
Project: PG&E Topock, 405681.MP.02.GM.04  
Lab ID: N005349-004

Client Sample ID: MW-98-172B  
Collection Date: 2/10/2011 12:05:00 PM  
Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

**AMMONIA-N**

**SM4500-NH3C**

RunID: WETCHEM\_110221C      QC Batch: 36283      PrepDate: 2/21/2011      Analyst: CEI  
Nitrogen, Ammonia (As N)      0.14      0.030      0.10      mg/L      1      2/21/2011

**Qualifiers:** B Analyte detected in the associated Method Blank      E Value above quantitation range  
H Holding times for preparation or analysis exceeded      ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference      Results are wet unless otherwise specified  
DO Surrogate Diluted Out



CLIENT: CH2M HILL  
 Work Order: N005349  
 Project: PG&E Topock, 405681.MP.02.GM.04

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 350.2\_4500NH3C\_WPGE

Sample ID: LCS-36283	SampType: LCS	TestCode: 350.2_4500N	Units: mg/L	Prep Date: 2/21/2011	RunNo: 79202						
Client ID: LCSW	Batch ID: 36283	TestNo: SM4500-NH3		Analysis Date: 2/21/2011	SeqNo: 1247057						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	0.923	0.10	1.000	0	92.3	85	115				

Sample ID: MB-36283	SampType: MBLK	TestCode: 350.2_4500N	Units: mg/L	Prep Date: 2/21/2011	RunNo: 79202						
Client ID: PBW	Batch ID: 36283	TestNo: SM4500-NH3		Analysis Date: 2/21/2011	SeqNo: 1247058						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	ND	0.10									

Sample ID: N005349-003D-MS	SampType: MS	TestCode: 350.2_4500N	Units: mg/L	Prep Date: 2/21/2011	RunNo: 79202						
Client ID: ZZZZZZ	Batch ID: 36283	TestNo: SM4500-NH3		Analysis Date: 2/21/2011	SeqNo: 1247060						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	1.926	0.10	2.000	0.1030	91.2	75	125				

Sample ID: N005349-003D-MSD	SampType: MSD	TestCode: 350.2_4500N	Units: mg/L	Prep Date: 2/21/2011	RunNo: 79202						
Client ID: ZZZZZZ	Batch ID: 36283	TestNo: SM4500-NH3		Analysis Date: 2/21/2011	SeqNo: 1247061						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	1.926	0.10	2.000	0.1030	91.2	75	125	1.926	0	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-001

**Client Sample ID:** MW-20-100-172B  
**Collection Date:** 2/10/2011 2:22:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP</b>							
	<b>EPA 3010A</b>			<b>EPA 6010B</b>			
RunID: ICP1_110214A	QC Batch: 36240			PrepDate:		2/11/2011	Analyst: KAB
Boron	810	13	100		µg/L	1	2/14/2011 12:01 PM
Calcium	180000	120	500		µg/L	1	2/14/2011 12:01 PM
Iron	150	14	20		µg/L	1	2/14/2011 12:01 PM
Magnesium	28000	6.3	100		µg/L	1	2/14/2011 12:01 PM
Manganese	ND	1.7	10		µg/L	1	2/14/2011 12:01 PM
Potassium	14000	310	2500		µg/L	5	2/19/2011 02:09 PM
Sodium	400000	12000	50000		µg/L	100	2/19/2011 02:57 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-002

**Client Sample ID:** MW-20-130-172B  
**Collection Date:** 2/10/2011 4:50:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP</b>							
	<b>EPA 3010A</b>			<b>EPA 6010B</b>			
RunID: ICP1_110214A	QC Batch: 36240			PrepDate:	2/11/2011	Analyst: KAB	
Boron	2200	13	100	µg/L	1	2/14/2011 12:26 PM	
Calcium	310000	120	500	µg/L	1	2/14/2011 12:26 PM	
Iron	26	14	20	µg/L	1	2/14/2011 12:26 PM	
Magnesium	18000	6.3	100	µg/L	1	2/14/2011 12:26 PM	
Manganese	ND	1.7	10	µg/L	1	2/14/2011 12:26 PM	
Potassium	50000	620	5000	µg/L	10	2/19/2011 02:12 PM	
Sodium	2100000	120000	500000	µg/L	1000	2/19/2011 02:33 PM	

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-003

**Client Sample ID:** MW-50-200-172B  
**Collection Date:** 2/10/2011 3:42:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP</b>							
	<b>EPA 3010A</b>			<b>EPA 6010B</b>			
RunID: ICP1_110214A	QC Batch: 36240			PrepDate:	2/11/2011	Analyst: KAB	
Calcium	590000	230	1000	µg/L	2	2/14/2011 01:54 PM	
Iron	ND	29	40	µg/L	2	2/14/2011 01:54 PM	
Magnesium	32000	13	200	µg/L	2	2/14/2011 01:54 PM	
Manganese	ND	3.3	20	µg/L	2	2/14/2011 01:54 PM	
Potassium	75000	1200	10000	µg/L	20	2/19/2011 03:06 PM	
Sodium	4100000	120000	500000	µg/L	1000	2/19/2011 02:36 PM	

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-004

**Client Sample ID:** MW-98-172B  
**Collection Date:** 2/10/2011 12:05:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP</b>							
	<b>EPA 3010A</b>			<b>EPA 6010B</b>			
RunID: ICP1_110214A	QC Batch: 36240			PrepDate:	2/11/2011	Analyst: KAB	
Calcium	570000	230	1000	µg/L	2	2/14/2011 02:02 PM	
Iron	ND	29	40	µg/L	2	2/14/2011 02:02 PM	
Magnesium	31000	13	200	µg/L	2	2/14/2011 02:02 PM	
Manganese	ND	3.3	20	µg/L	2	2/14/2011 02:02 PM	
Potassium	73000	1200	10000	µg/L	20	2/19/2011 03:09 PM	
Sodium	4000000	120000	500000	µg/L	1000	2/19/2011 02:40 PM	

**Qualifiers:** B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-005

**Client Sample ID:** PGE-08-172B  
**Collection Date:** 2/10/2011 4:47:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP</b>							
	<b>EPA 3010A</b>			<b>EPA 6010B</b>			
RunID: ICP1_110214A	QC Batch: 36240				PrepDate: 2/11/2011		Analyst: KAB
Calcium	870000	230	1000		µg/L	2	2/14/2011 01:13 PM
Iron	240	29	40		µg/L	2	2/14/2011 01:13 PM
Magnesium	20000	13	200		µg/L	2	2/14/2011 01:13 PM
Manganese	610	3.3	20		µg/L	2	2/14/2011 01:13 PM
Potassium	96000	3100	25000		µg/L	50	2/19/2011 02:54 PM
Sodium	3800000	120000	500000		µg/L	1000	2/19/2011 02:43 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified





CLIENT: CH2M HILL
Work Order: N005349
Project: PG&E Topock, 405681.MP.02.GM.04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010\_WDPGEPPB

Table with 6 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo. Row 1: MB-36240, MBLK, 6010\_WDPG, ug/L, 2/11/2011, 79185.

Table with 12 columns: Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Rows for Boron, Calcium, Iron, Magnesium, Manganese.

Table with 6 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo. Row 1: LCS-36240, LCS, 6010\_WDPG, ug/L, 2/11/2011, 79185.

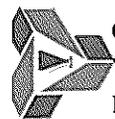
Table with 12 columns: Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Rows for Boron, Calcium, Iron, Magnesium, Manganese.

Table with 6 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo. Row 1: N005349-005A-MS, MS, 6010\_WDPG, ug/L, 2/11/2011, 79185.

Table with 12 columns: Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Rows for Boron, Calcium, Iron, Magnesium, Manganese.

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005349  
 Project: PG&E Topock, 405681.MP.02.GM.04

# ANALYTICAL QC SUMMARY REPORT

TestCode: 6010\_WDPGPPB

Sample ID: N005349-005A-MSD	SampType: MSD	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79185						
Client ID: ZZZZZZ	Batch ID: 36240	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/14/2011	SeqNo: 1246703						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	8725.224	200	5000	3395	107	75	125	8538	2.16	20	
Calcium	889575.437	1000	10000	866600	230	75	125	857000	3.73	20	S
Iron	9673.856	40	10000	236.0	94.4	75	125	9581	0.962	20	
Magnesium	29082.847	200	10000	19580	95.0	75	125	28230	2.98	20	
Manganese	1567.536	20	1000	606.3	96.1	75	125	1543	1.56	20	

Sample ID: MB-36240	SampType: MBLK	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79185						
Client ID: PBW	Batch ID: 36240	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/19/2011	SeqNo: 1246961						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID: LCS2-36240	SampType: LCS	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79185						
Client ID: LCSW	Batch ID: 36240	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/19/2011	SeqNo: 1246962						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	2355.465	500	2500	0	94.2	85	115				
Sodium	2401.361	500	2500	0	96.1	85	115				

Sample ID: N005349-005A-MS	SampType: MS	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79185						
Client ID: ZZZZZZ	Batch ID: 36240	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/19/2011	SeqNo: 1246977						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	123900.531	25000	15000	96190	185	75	125				S

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.  
 3151 W. Post Road  
 Las Vegas, NV 89118  
 Tel: 702 307-2659  
 Fax: 702 307-2691



**CLIENT:** CH2M HILL  
**Work Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 6010\_WDPGEPPB

Sample ID: N005349-005A-MSD	SampType: MSD	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79185						
Client ID: ZZZZZZ	Batch ID: 36240	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/19/2011	SeqNo: 1246978						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	119717.268	25000	15000	96190	157	75	125	123900	3.43	20	S

Sample ID: N005349-005A-MS	SampType: MS	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79185						
Client ID: ZZZZZZ	Batch ID: 36240	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/19/2011	SeqNo: 1246979						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3886324.480	500000	15000	3838000	324	75	125				S

Sample ID: N005349-005A-MSD	SampType: MSD	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79185						
Client ID: ZZZZZZ	Batch ID: 36240	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/19/2011	SeqNo: 1246980						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3812877.475	500000	15000	3838000	-166	75	125	3886000	1.91	20	S

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc  
 3151 W. Post Road  
 Las Vegas, NV 89118  
 Tel: 702 307-2659  
 Fax: 702 307-2691

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock. 405681.MP.02.GM.04  
**Lab ID:** N005349-001

**Client Sample ID:** MW-20-100-172B  
**Collection Date:** 2/10/2011 2:22:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP-MS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110221C	QC Batch: 36244			PrepDate:		2/11/2011	Analyst: JT
Molybdenum	4.4	0.047	0.50		µg/L	1	2/21/2011 01:07 PM
Selenium	6.2	0.29	0.50		µg/L	1	2/21/2011 01:07 PM

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - H Holding times for preparation or analysis exceeded
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
  - E Value above quantitation range
  - ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

CLIENT: CH2M HILL  
 Lab Order: N005349  
 Project: PG&E Topock, 405681.MP.02.GM.04  
 Lab ID: N005349-002

Client Sample ID: MW-20-130-172B  
 Collection Date: 2/10/2011 4:50:00 PM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP-MS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110221C	QC Batch: 36244			PrepDate:		2/11/2011	Analyst: JT
Arsenic	4.9	0.0025	0.10	µg/L	1	2/21/2011 01:12 PM	
Molybdenum	40	0.24	2.5	µg/L	5	2/21/2011 05:09 PM	
Selenium	21	0.29	0.50	µg/L	1	2/21/2011 01:12 PM	

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 28-Feb-11

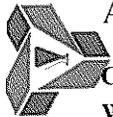
**CLIENT:** CH2M HILL  
**Lab Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04  
**Lab ID:** N005349-005

**Client Sample ID:** PGE-08-172B  
**Collection Date:** 2/10/2011 4:47:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP-MS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110221C	QC Batch: 36244			PrepDate:		2/11/2011	Analyst: JT
Molybdenum	85	0.24	2.5		µg/L	5	2/21/2011 05:14 PM
Selenium	ND	1.4	2.5		µg/L	5	2/21/2011 05:14 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out





CLIENT: CH2M HILL

Work Order: N005349

Project: PG&E Topock, 405681.MP.02.GM.04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020\_DIS

Sample ID: MB-36244	SampType: MBLK	TestCode: 6020_DIS	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79269						
Client ID: PBW	Batch ID: 36244	TestNo: EPA 6020	EPA 3010A	Analysis Date: 2/21/2011	SeqNo: 1248629						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: LCS-36244	SampType: LCS	TestCode: 6020_DIS	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79269						
Client ID: LCSW	Batch ID: 36244	TestNo: EPA 6020	EPA 3010A	Analysis Date: 2/21/2011	SeqNo: 1248630						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.627	0.10	10.00	0	86.3	85	115				
Molybdenum	9.046	0.50	10.00	0	90.5	85	115				
Selenium	8.519	0.50	10.00	0	85.2	85	115				

Sample ID: N005350-001B-MS	SampType: MS	TestCode: 6020_DIS	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79269						
Client ID: ZZZZZZ	Batch ID: 36244	TestNo: EPA 6020	EPA 3010A	Analysis Date: 2/21/2011	SeqNo: 1248633						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.873	0.10	10.00	1.596	92.8	75	125				
Molybdenum	29.713	0.50	10.00	19.22	105	75	125				
Selenium	10.333	0.50	10.00	1.877	84.6	75	125				

Sample ID: N005350-001B-MSD	SampType: MSD	TestCode: 6020_DIS	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79269						
Client ID: ZZZZZZ	Batch ID: 36244	TestNo: EPA 6020	EPA 3010A	Analysis Date: 2/21/2011	SeqNo: 1248634						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.377	0.10	10.00	1.596	97.8	75	125	10.87	4.52	20	
Molybdenum	30.523	0.50	10.00	19.22	113	75	125	29.71	2.69	20	
Selenium	10.434	0.50	10.00	1.877	85.6	75	125	10.33	0.966	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

ATL GMP 172B

CH2MHILL

CHAIN OF CUSTODY RECORD

2/10/2011 5:06:11 PM

Project Name PG&E Topock Location Topock Project Number 405681.MP.02.GM.04 Project Manager Jay Piper Sample Manager Shawn Duffy				Container:		1 Liter Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	Please add Mo, and Se to sample MW-20-100-172B SPD 2/15/11.	Number of Containers	COMMENTS
Preservatives:				4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C				
Filtered:				NA	Field	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA				
Holding Time:				30	180	180	180	180	180	2	2	2	2	2	28				
Task Order Project 2010-GMP-172B-Q4 Turnaround Time 10 Days Shipping Date: 2/3/2011 COC Number: ATL_172BQ4				Extra (*)	Metals (6010BFF) Field Filtered Ca,Mg,K,Na,B,Fe,Mn	Metals (6010BFF) Field Filtered Cations:Ca,Mg,Na,Fe,Mn	Metals (6010BFF) Field Filtered Mo,Se	Metals (SW6010B/SW6020A) Field Filtered Mo,Se	Arsenic (9020) Field Filtered	Specific Conductance (E120, 1)	Bromide, Chloride, Sulfate, Nitrate Anions (E300 0)	Chloride, Sulfate, Nitrate Anions (E300 0)	TDS (SM2540C)	Alkalinity (SM2320B)	Ammonia (SM4500NH3)				
DATE	TIME	Matrix																	
MW-20-100-172B	2/10/2011	14:22	Water	X	X		X		X	X		X	X			2005349-1	4		
MW-20-130-172B	2/10/2011	16:50	Water	X	X		X	X	X	X		X	X			-2	5	4 Bix	
MW-50-200-172B	2/10/2011	15:42	Water	X		X			X		X		X	X		-3	5		
MW-98-172B	2/10/2011	12:05	Water	X		X			X		X		X	X		-4	5		
PGE-08-172B	2/10/2011	16:47	Water	X		X	X		X		X		X			-5	5		
TOTAL NUMBER OF CONTAINERS																25			

Approved by \_\_\_\_\_  
 Sampled by \_\_\_\_\_  
 Relinquished by \_\_\_\_\_  
 Received by \_\_\_\_\_  
 Relinquished by \_\_\_\_\_  
 Received by \_\_\_\_\_

Signatures  
 Date/Time  
 2-18-11  
 1714  
 2/10/11 @ 1714

**Shipping Details**  
 Method of Shipment: FedEx  
 On Ice: yes / no  
 Airbill No:  
 Lab Name: ADVANCED TECHNOLOGY LABORATO  
 Lab Phone: (702) 307-2659

ATTN:  
 Sample Custody  
 and  
 Molly Nguyen

**Special Instructions:**  
 Dec 6-17, 2010  
**Report Copy to**  
 Shawn Duffy  
 (530) 229-3303

ATL GMP 172B

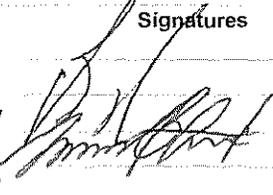
**CH2MHILL**

**CHAIN OF CUSTODY RECORD**

2/10/2011 5:06:11 PM

Page 1 OF 1

<b>Project Name</b> PG&E Topock <b>Location</b> Topock <b>Project Number</b> 405681.MP.02.GM.04 <b>Project Manager</b> Jay Piper <b>Sample Manager</b> Shawn Duffy  <b>Task Order</b> <b>Project</b> 2010-GMP-172B-Q4 <b>Turnaround Time</b> 10 Days <b>Shipping Date:</b> 2/3/2011 <b>COC Number:</b> ATL_172BQ4				<b>Container:</b> 1 Liter Poly <b>Preservatives:</b> 4°C <b>Filtered:</b> NA <b>Holding Time:</b> 30	500 ml Poly HNO <sub>3</sub> , 4°C Field	500 ml Poly HNO <sub>3</sub> , 4°C Field	500 ml Poly HNO <sub>3</sub> , 4°C Field	500 ml Poly HNO <sub>3</sub> , 4°C Field	1 Liter Poly 4°C NA	1 Liter Poly H <sub>2</sub> SO <sub>4</sub> , pH<2, 4°C NA	Number of Containers	COMMENTS				
	Extra (*)	Metals (6010BEF) Field Filtered Ca, Mg, K, Na, B, Fe, Mn	Metals (6010BEF) Field Filtered Cations: Ca, Mg, Na, Fe, Mn	Metals (SM6010B/SM6020A) Field Filtered Mo, Se	Arsenic (6020) Field Filtered	Specific Conductance (E120.1)	Bromide, Chloride, Sulfate, Nitrate Anions (E300.0)	Chloride, Sulfate, Nitrate Anions (E300.0)	TDS (SM2540C)	Alkalinity (SM2320B)	Ammonia (SM4500NH3)					
<b>DATE</b>	<b>TIME</b>	<b>Matrix</b>														
MW-20-100-172B	2/10/2011	14:22	Water	X	X			X	X		X	X		N005349-1	4	
MW-20-130-172B	2/10/2011	16:50	Water	X	X		X	X	X		X	X		-2	5	4 BEK
MW-50-200-172B	2/10/2011	15:42	Water	X		X		X		X		X	X	-3	5	
MW-98-172B	2/10/2011	12:05	Water	X		X		X		X		X	X	-4	5	
PGE-08-172B	2/10/2011	16:47	Water	X		X	X	X		X		X		-5	5	
<b>TOTAL NUMBER OF CONTAINERS</b>												<b>25</b>				

<b>Signatures</b> Approved by:  Sampled by: Relinquished by: Received by: Relinquished by: Received by:	<b>Date/Time</b> 2-10-11 (7:14) 2/10/11 @ 1714	<b>Shipping Details</b> Method of Shipment: FedEx On Ice: yes / no Airbill No: Lab Name: ADVANCED TECHNOLOGY LABORATO Lab Phone: (702) 307-2659	<b>Special Instructions:</b> ATTN: Sample Custody and Molly Nguyen Dec 6-17, 2010 Report Copy to Shawn Duffy (530) 229-3303
--	---	--	---

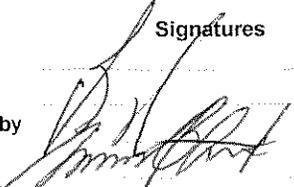
ATL GMP 172B

**CH2MHILL**

**CHAIN OF CUSTODY RECORD**

2/10/2011 5:06:11 PM

			Container:	1 Liter Poly	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly	Number of Containers	COMMENTS		
Project Name PG&E Topock			Preservatives:	4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2, 4°C				
Location Topock			Filtered:	NA	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA				
Project Number 405681.MP.02.GM.04			Holding Time:	30	180	180	180	180	2	2	2	2	2	28				
Project Manager Jay Piper																		
Sample Manager Shawn Duffy																		
Task Order																		
Project 2010-GMP-172B-Q4																		
Turnaround Time 10 Days																		
Shipping Date: 2/3/2011																		
COC Number: ATL_172BQ4																		
DATE	TIME	Matrix		Extra (*)	Metals (6010BFF) Field Filtered Ca, Mg, K, Na, B, Fe, Mn	Metals (6010BFF) Field Filtered Cations: Ca, Mg, Na, Fe, Mn	Metals (SW6010B/SW6020A) Field Filtered Mo, Se	Arsenic (6020) Field Filtered	Specific Conductance (E120.1)	Anions (E300.0) Bromide, Chloride, Sulfate, Nitrate	Anions (E300.0) Chloride, Sulfate, Nitrate	TDS (SM2540C)	Alkalinity (SM2320B)	Ammonia (SM4500NH3)				
MW-20-100-172B	2/10/2011 14:22	Water	X	X				X	X			X	X		4			
MW-20-130-172B	2/10/2011 16:50	Water	X	X		X	X	X	X			X	X		4	4 BSC		
MW-50-200-172B	2/10/2011 15:42	Water	X		X			X		X		X	X		5			
MW-98-172B	2/10/2011 12:05	Water	X		X			X		X		X	X		5			
PGE-08-172B	2/10/2011 16:47	Water	X		X	X		X		X		X			5			
TOTAL NUMBER OF CONTAINERS														25				

**Signatures**  
 Approved by:   
 Sampled by:   
 Relinquished by:   
 Received by:   
**Date/Time**  
 2-18-11  
 1714  
 2/10/11 @ 1714

**Shipping Details**  
 Method of Shipment: FedEx  
 On Ice: yes / no  
 Airbill No:  
 Lab Name: ADVANCED TECHNOLOGY LABORATO  
 Lab Phone: (702) 307-2659

**Special Instructions:**  
 Dec 6-17, 2010  
**ATTN:**  
 Sample Custody  
 and  
 Molly Nguyen  
**Report Copy to**  
 Shawn Duffy  
 (530) 229-3303

# Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO and/or NA signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

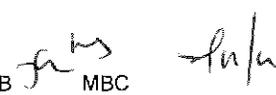
If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

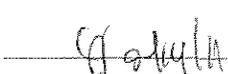
## Sample Receipt Checklist

Cooler Received/Opened On: 2/10/2011 Workorder: N005349  
 Rep sample Temp (Deg C): 2.4,3.4 IR Gun ID: IR 1  
 Temp Blank:  Yes  No  
 Carrier name: ATL  
 Last 4 digits of Tracking No.: Packing Material Used: None  
 Cooling process:  Ice  Ice Pack  Dry Ice  Other  None

- |   |  |  |  |
|---|--|--|--|
| 1. Shipping container/cooler in good condition?   | Yes <input checked="" type="checkbox"/>                      | No <input type="checkbox"/>                                | Not Present <input type="checkbox"/>   |
| 2. Custody seals intact, signed, dated on shipping container/cooler?                    | Yes <input type="checkbox"/>                                 | No <input type="checkbox"/>                                | Not Present <input checked="" type="checkbox"/>                                  |
| 3. Custody seals intact on sample bottles?  | Yes <input type="checkbox"/>                                 | No <input type="checkbox"/>                                | Not Present <input checked="" type="checkbox"/>                                  |
| 4. Chain of custody present?  | Yes <input checked="" type="checkbox"/>                      | No <input type="checkbox"/>                                |  |
| 5. Sampler's name present in COC?   | Yes <input checked="" type="checkbox"/>                      | No <input type="checkbox"/>                                |  |
| 6. Chain of custody signed when relinquished and received?                              | Yes <input checked="" type="checkbox"/>                      | No <input type="checkbox"/>                                |  |
| 7. Chain of custody agrees with sample labels?  | Yes <input type="checkbox"/>                                 | No <input checked="" type="checkbox"/>                     |  |
| 8. Samples in proper container/bottle?  | Yes <input checked="" type="checkbox"/>                      | No <input type="checkbox"/>                                |  |
| 9. Sample containers intact?  | Yes <input checked="" type="checkbox"/>                      | No <input type="checkbox"/>                                |  |
| 10. Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/>                      | No <input type="checkbox"/>                                |  |
| 11. All samples received within holding time?   | Yes <input checked="" type="checkbox"/>                      | No <input type="checkbox"/>                                |  |
| 12. Temperature of rep sample or Temp Blank within acceptable limit?                    | Yes <input checked="" type="checkbox"/>                      | No <input type="checkbox"/>                                | NA <input type="checkbox"/>  |
| 13. Water - VOA vials have zero headspace?  | Yes <input type="checkbox"/>                                 | No <input type="checkbox"/>                                | NA <input checked="" type="checkbox"/>   |
| 14. Water - pH acceptable upon receipt?<br>Example: pH > 12 for (CN,S); pH<2 for Metals | Yes <input checked="" type="checkbox"/>                      | No <input type="checkbox"/>                                | NA <input type="checkbox"/>  |
| 15. Did the bottle labels indicate correct preservatives used?                          | Yes <input checked="" type="checkbox"/>                      | No <input type="checkbox"/>                                | NA <input type="checkbox"/>  |
| 16. Were there Non-Conformance issues at login?<br>Was Client notified?                 | Yes <input type="checkbox"/><br>Yes <input type="checkbox"/> | No <input type="checkbox"/><br>No <input type="checkbox"/> | NA <input checked="" type="checkbox"/><br>NA <input checked="" type="checkbox"/> |

Comments: third and fourth sample on the COC was received labelled as MW-50-200-172 and MW-98-172 respectively

Checklist Completed By  MBC

Reviewed By: 

## **Nancy Sibucan**

---

**From:** Advanced Technology Labs, Inc. [reports@atl-labs.com]  
**Sent:** Friday, February 11, 2011 4:23 PM  
**To:** 'shawn.duffy@ch2m.com'  
**Cc:** 'erlene.contreras@ch2m.com'  
**Subject:** PG&E Topock, 405681.MP.02.GM.04 sample receiving items for samples received 2/10/2011  
**Attachments:** N005349 WOSummary.pdf

Please see attached. This is just a routine procedure; we want to inform you that the third and fourth sample on the COC were received labelled as MW-50-200-172 and MW-98-172 respectively, the letter B at the end was missing.

Thanks.

**Nancy Sibucan**  
Project Coordinator  
**Advanced Technology Laboratories, Inc.**  
[www.atl-labs.com](http://www.atl-labs.com)  
Tel: (702) 307-3248 ext. 412  
Fax: (702) 307-2691

Advanced Technology Laboratories, Inc. is a full-service environmental lab providing organic and inorganic analyses of soil, water, wastewater, storm water and hazardous waste samples. ATL is accredited by the State of California, NELAP and State of Nevada and holds various SBE, DBE and MBE certificates and a USDA soil permit. ATL takes pride in providing our customers with quick turnaround time, excellent customer service and defensible data while offering very competitive rates. Advanced Technology Labs - Your Partner for Quality Environmental Testing

This message is intended for the use of the individual or entity to which it is addressed. This may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and delete the original message. Thank you.

## SAMPLE CALCULATION

**METHOD:** SM 2540C

**TEST NAME:** Total Filterable Residue

**MATRIX:** Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B) * 1000000}{C}$$

Where:

A = weight in g of dish + residue after drying

B = weight of dish in g

C = volume of sample used in mL

For **N005349-001C**, TDS concentration in mg/L is calculated as follows:

$$\begin{aligned} \text{TDS, mg/L} &= \frac{(30.2003 - 30.1083) * 1000000}{50} \\ &= 1840 \text{ mg/L} \end{aligned}$$

Reporting result in two significant figures,

$$\text{TDS} = 1800 \text{ mg/L}$$

Sample ID: **N005349-001C @ pH 7.49**

A. Standardization of Sulfuric Acid (titrant):

$$\text{Normality of acid} = (A)(B)/(53.00)(C)$$

Where:

A, grams weighed for Na<sub>2</sub>CO<sub>3</sub> solution (MS/MSD Stock Solution)

B, mL Na<sub>2</sub>CO<sub>3</sub> solution taken for titration, and

C, ml of sulfuric acid used to inflection point

Spike Standards

**MS/MSD Stock** Na<sub>2</sub>CO<sub>3</sub>, ACS Grade (1.00 ml = 2500 ug as CaCO<sub>3</sub>): Dissolve 2.650 grams of Na<sub>2</sub>CO<sub>3</sub> in distilled water and dilute to 1 liter.

**LCS** Na<sub>2</sub>CO<sub>3</sub>, ACS Grade (1.00 ml = 2500 ug as CaCO<sub>3</sub>): Dissolve 2.650 grams of Na<sub>2</sub>CO<sub>3</sub> in distilled water and dilute to 1 liter. The reagent must be purchased from a secondary source

Therefore,

$$\begin{aligned} \text{Normality of Acid} &= (2.65\text{g/L}) (5\text{mL}) / (53.00) (11.725\text{mL}) \\ &= \mathbf{0.02132\text{ N}} \end{aligned}$$

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

$$\text{Total Alkalinity (as CaCO}_3\text{), mg/L} = M_{\text{vol.}} * N \text{ H}_2\text{SO}_4 * \text{DF} * 1000$$

Where:

M<sub>vol.</sub>, volume titrant used to reach pH 4.5, ml

N, Normality of H<sub>2</sub>SO<sub>4</sub>

DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

$$\begin{aligned} \text{Total Alkalinity (as CaCO}_3\text{), mg/L} &= (5.70\text{mL}) (0.02132\text{N}) (1) * 1000 \\ &= \mathbf{121.52\text{mg/L}} \end{aligned}$$

Reporting results in two significant figures,

$$= 120 \text{ mg/L as CaCO}_3$$

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

$$\begin{aligned} \text{P alkalinity, mg/L as CaCO}_3 &= P_{\text{vol.}} * N \text{ H}_2\text{SO}_4 * \text{DF} * 1000 \\ &= (0.0) (0.02132) (1) * 1000 \\ &= 0 \end{aligned}$$

Total Alkalinity

$$\begin{aligned} \text{T alkalinity, mg/L as CaCO}_3 &= M_{\text{vol.}} * N \text{ H}_2\text{SO}_4 * \text{DF} * 1000 \\ &= (5.70 \text{ mL}) (0.02132) (1) * 1000 \\ &= 120 \text{ mg/L as CaCO}_3 \end{aligned}$$

Where:

- $P_{\text{vol.}}$  - volume titrant used to reach pH 8.3, ml
- $M_{\text{vol.}}$  - volume titrant used to reach pH 4.5, ml
- $N$  - Normality of  $\text{H}_2\text{SO}_4$
- $\text{DF}$  - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH,  $\text{CO}_3$ ,  $\text{HCO}_3$  alkalinities as  $\text{CaCO}_3$  will be calculated as follows:

Result of Titration	OH Alkalinity as $\text{CaCO}_3$	$\text{CO}_3$ Alkalinity as $\text{CaCO}_3$	$\text{HCO}_3$ Alkalinity as $\text{CaCO}_3$
$P = 0$	0	0	T
$P < \frac{1}{2} T$	0	2P	$T - 2P$
$P = \frac{1}{2} T$	0	2P	0
$P > \frac{1}{2} T$	$2P - T$	$2(T - P)$	0
$P = T$	T	0	0

Therefore,

$$\text{OH Alkalinity as CaCO}_3 = 0$$

$$\text{CO}_3 \text{ Alkalinity as CaCO}_3 = 0$$

$$\text{HCO}_3 \text{ Alkalinity as CaCO}_3 = 121.52 \text{ mg/L}$$

Reporting results in two significant figures,

OH Alkalinity as  $\text{CaCO}_3 = 0$

$\text{CO}_3$  Alkalinity as  $\text{CaCO}_3 = 0$

$\text{HCO}_3$  Alkalinity as  $\text{CaCO}_3 = 120 \text{ mg/L}$

## Sample Calculation

**METHOD:** EPA 300

**TEST NAME:** INORGANIC ANIONS BY IC

**MATRIX:** WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

$$\text{Nitrate as N, mg/L} = A * DF$$

where:

A = mg/L, IC calculated concentration

DF = dilution factor

For **N005349-001B**, concentration in mg/L are calculated as follows:

$$\begin{aligned} \text{Nitrate as N, mg/L} &= 1.453 * 10 \\ &= 14.53 \text{ mg/L} \end{aligned}$$

Reporting **N005349-001B**, results in two significant figures,

$$\text{Nitrate as N, mg/L} = 15 \text{ mg/L}$$

*Artesha*  
*2/20/11*

## SAMPLE CALCULATION

**METHOD:** SM4500-NH3C

**TEST NAME:** Ammonia-Nitrogen

**MATRIX:** Water

FORMULA:

Calculate the Ammonia as N concentration , in mg/L , in the original sample as follows:

$$\text{Ammonia as N, mg/L} = A * DF$$

Where:

A= mg/L, UV-VIS NH<sub>3</sub> as N calculated concentration

DF= dilution factor

For **N005349-003D**, concentration in mg/L is calculated as follows:

$$\begin{aligned} \text{Ammonia as N, mg/L} &= 0.103 * 1 \\ &= 0.103 \text{ mg/L} \end{aligned}$$

Reporting result in two significant figures,

$$\text{Ammonia as N} = 0.10 \text{ mg/L}$$

### SAMPLE CALCULATION

METHOD: EPA 6010B  
TEST NAME: METALS BY ICP  
MATRIX: WATER

FORMULA:

Calculate the individual metal concentration, in ug/L, in the original sample as follows:

$$M, \text{ ug/L} = \frac{A * C * DF * 1000}{B}$$

where:

M= concentration of the metal in ug/L  
A= mg/L, ICP calculated concentration  
B= volume of sample, Liter  
C= final volume of digestate, Liter  
DF= dilution factor

For N005349-001A, concentration in ug/L are calculated as follows:

$$B, \text{ ug/L} = \frac{0.81207 \text{ mg/L} * 0.025 \text{ L} * 1 * 1000}{0.025 \text{ L}}$$

$$B = 81207 \text{ ug/L}$$

Reporting result in two significant figures,

$$B = 810 \text{ ug/L}$$

*fc 2/28/2011*

**DILUTION TEST**

**Analytical Method:** EPA 6010B / 200.7  
**Digestion Method:** EPA 3010A  
**Date of Analysis:** 2/14/2011  
**Digestion Date:** 2/11/2011  
**Instrument Name:** ICP1  
**Analysts:** KB

**Matrix:** WATER  
**Amount of Sample:** 25 mL  
**Units:** ug/L

**Work Order # :** N005349-005A  
**Batch # :** 36240

Analyte	A	B	Difference	% D
Boron	3395	3093.134	301.86600	8.9
Calcium	866600	822872.733	43727.26700	5.0
Iron	236	232.76	3.24000	1.4
Magnesium	19580	20220.962	-640.96200	-3.3
Manganese	606.3	567.148	39.15200	6.5

FORMULA:

$$\%D = \frac{(A-B)*100}{A}$$

where:

% D = % Difference  
 A= ug/L, ICP calculated concentration @2X dilution  
 B= ug/L, ICP calculated concentration @10x dilution

DILUTION TEST

Analytical Method: EPA 6010B / 200.7  
Digestion Method: EPA 3010A  
Date of Analysis: 2/19/2011  
Digestion Date: 2/11/2011  
Instrument Name: ICP1  
Analysts: KB

Matrix: Water  
Amount of Sample: 25 mL  
Units: mg/L

Work Order # : N005349-005A  
Batch # : 36240

Analyte	A	B	Difference	% D
Sodium	3838000	3524996.714	313003.28600	8.2

FORMULA:

$$\%D = \frac{(A-B)*100}{A}$$

where:

% D = % Difference  
A= ug/L, ICP calculated concentration @ 1000X dilution  
B= ug/L, ICP calculated concentration @5000x dilution

CLIENT: CH2M HILL  
 Work Order: N005349  
 Project: PG&E Topock, 405681.MP.02.GM.04

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6010\_WDPGPPB

Sample ID: N005349-005ADT	SampType: DT	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79185						
Client ID: ZZZZZZ	Batch ID: 36240	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/14/2011	SeqNo: 1246706						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron	3093.134	1000						3395	9.30	10	
Calcium	822872.733	5000						866600	5.17	10	
Iron	232.760	200						236.0	1.39	10	
Magnesium	20220.962	1000						19580	3.23	10	
Manganese	567.148	100						606.3	6.68	10	

Sample ID: N005349-005ADT	SampType: DT	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79185						
Client ID: ZZZZZZ	Batch ID: 36240	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/19/2011	SeqNo: 1246985						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sodium	3524996.714	2500000						3838000	8.50	10	
--------	-------------	---------	--	--	--	--	--	---------	------	----	--

**Qualifiers:**

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL

Work Order: N005349

Project: PG&E Topock, 405681.MP.02.GM.04

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6010\_WDPGPPB

Sample ID: N005349-005APS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79185						
Client ID: ZZZZZZ	Batch ID: 36240	TestNo: EPA 6010B EPA 3010A		Analysis Date: 2/14/2011	SeqNo: 1246708						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron	13639.838	200	10000	3395	102	75	125				
Calcium	884629.138	1000	20000	866600	90.4	75	125				
Iron	19084.828	40	20000	236.0	94.2	75	125				
Magnesium	37376.062	200	20000	19580	89.0	75	125				
Manganese	2497.334	20	2000	606.3	94.5	75	125				

Sample ID: N005349-005APS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79185						
Client ID: ZZZZZZ	Batch ID: 36240	TestNo: EPA 6010B EPA 3010A		Analysis Date: 2/14/2011	SeqNo: 1246710						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron	28946.679	500	25000	3395	102	75	125				
Calcium	910212.874	2500	50000	866600	87.3	75	125				
Iron	48416.033	100	50000	236.0	96.4	75	125				
Magnesium	66685.811	500	50000	19580	94.2	75	125				
Manganese	5435.425	50	5000	606.3	96.6	75	125				

Sample ID: N005349-005APS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79185						
Client ID: ZZZZZZ	Batch ID: 36240	TestNo: EPA 6010B EPA 3010A		Analysis Date: 2/14/2011	SeqNo: 1246711						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron	53762.353	1000	50000	3395	101	75	125				
Calcium	950459.459	5000	100000	866600	83.9	75	125				
Iron	96284.623	200	100000	236.0	96.0	75	125				
Magnesium	113267.712	1000	100000	19580	93.7	75	125				
Manganese	10209.844	100	10000	606.3	96.0	75	125				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

**CLIENT:** CH2M HILL  
**Work Order:** N005349  
**Project:** PG&E Topock, 405681.MP.02.GM.04

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 6010\_WDPGEPPB**

Sample ID: <b>N005349-005APS</b>	SampType: <b>PS</b>	TestCode: <b>6010_WDPG</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>79185</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>36240</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>2/19/2011</b>	SeqNo: <b>1246981</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	297848.770	25000	125000	96190	161	75	125				S

Sample ID: <b>N005349-005APS</b>	SampType: <b>PS</b>	TestCode: <b>6010_WDPG</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>79185</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>36240</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>2/19/2011</b>	SeqNo: <b>1246982</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	432154.389	50000	250000	96190	134	75	125				S

Sample ID: <b>N005349-005APS</b>	SampType: <b>PS</b>	TestCode: <b>6010_WDPG</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>79185</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>36240</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>2/19/2011</b>	SeqNo: <b>1246983</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	6360775.501	500000	2500000	3838000	101	75	125				

Sample ID: <b>N005349-005APS</b>	SampType: <b>PS</b>	TestCode: <b>6010_WDPG</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>79185</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>36240</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>2/19/2011</b>	SeqNo: <b>1248803</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	2616467.913	500000	2500000	96190	101	75	125				

**Qualifiers:**

B Analyte detected in the associated Method Blank	E Value above quantitation range	H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits	S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out	Calculations are based on raw values	

## Sample Calculation

**METHOD:** EPA 6020

**TEST NAME:** Heavy Metals by ICP-MS

**MATRIX:** Aqueous

**FORMULA:**

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

$$\text{Arsenic, ug/L} = A * DF * PF$$

where:

A = ug/L, calculated concentration

DF = dilution factor

PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N005349-002A**, the concentration in ug/L is calculated as follows:

$$\text{Arsenic, ug/L} = 4.893 * 1 * (1)$$

$$= 4.893 \text{ ug/L}$$

Reporting results in two significant figures,

$$\text{Arsenic, ug/L} = 4.9$$

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Work Order No.: N005349  
 Test Method: EPA 6020  
 Analysis Date: 02/21/11

Dilution Test Summary

Matrix: Aqueous  
 Batch No.: 36244

Instrument ID: ICP-MS #2  
 Instrument Description: Agilent 7700x

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable to Tl. The calc. Values are < 25X the RL.

*As, Se*  
*NSP*  
*21/2/11*

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N005350-001B-DT 5X	Molybdenum	µg/L	19.09423019		19.22087091	-0.66%	10
N005350-001B-DT 5X	Arsenic	µg/L	1.651144783		1.595823471	3.47%	10
N005350-001B-DT 5X	Selenium	µg/L	1.777908308		1.877337108	-5.30%	10
N005350-001B-DT 5X	Thallium	µg/L	0.718054628	NA	0.818259983	-12.25%	10



CLIENT: CH2M HILL  
 Work Order: N005349  
 Project: PG&E Topock, 405681.MP.02.GM.04

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6020\_DIS

Sample ID: N005350-001B-PS 2	SampType: PS	TestCode: 6020_DIS	Units: µg/L	Prep Date:	RunNo: 79269						
Client ID: ZZZZZZ	Batch ID: 36244	TestNo: EPA 6020	EPA 3010A	Analysis Date: 2/21/2011	SeqNo: 1248635						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.338	0.20	20.00	1.596	88.7	75	125				
Molybdenum	39.474	1.0	20.00	19.22	101	75	125				
Selenium	18.453	1.0	20.00	1.877	82.9	75	125				

- Qualifiers:
- B Analyte detected in the associated Method Blank
  - ND Not Detected at the Reporting Limit
  - DO Surrogate Diluted Out
  - E Value above quantitation range
  - R RPD outside accepted recovery limits
  - Calculations are based on raw values
  - H Holding times for preparation or analysis exceeded
  - S Spike/Surrogate outside of limits due to matrix interference

March 01, 2011

Shawn P. Duffy  
CH2M HILL  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

TEL: (530) 229-3303  
FAX: (530) 339-3303

CA-ELAP No.: 2676  
NV Cert. No.: NV-009222007A

Workorder No.: N005350

RE: PG&E Topock, 405681.MP.02.GM.03

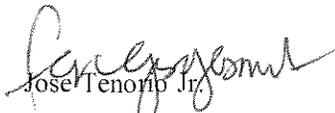
Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 10, 2011 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

  
Jose Tenorio Jr.  
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.



---

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab Order:** N005350

---

**CASE NARRATIVE**

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 8260B:

Matrix Spike (MS) is outside recovery criteria for Acetone possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

RPD for Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria for Styrene; however, the analytical batch was validated by the Laboratory Control Sample (LCS).



**Advanced Technology Laboratories, Inc.**

Date: 01-Mar-11

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock. 405681.MP.02.GM.03  
**Lab Order:** N005350  
**Contract No:**

**Work Order Sample Summary**

---

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N005350-001A	MW-58BR-LWR-160-175	Water	2/10/2011 9:53:00 AM	2/11/2011	
N005350-001B	MW-58BR-LWR-160-175	Water	2/10/2011 9:53:00 AM	2/11/2011	
N005350-001C	MW-58BR-LWR-160-175	Water	2/10/2011 9:53:00 AM	2/11/2011	
N005350-001D	MW-58BR-LWR-160-175	Water	2/10/2011 9:53:00 AM	2/11/2011	
N005350-001E	MW-58BR-LWR-160-175	Water	2/10/2011 9:53:00 AM	2/11/2011	
N005350-001F	MW-58BR-LWR-160-175	Water	2/10/2011 9:53:00 AM	2/11/2011	
N005350-002A	TB-Packer-175-03	Water	2/10/2011 8:30:00 AM	2/11/2011	







CLIENT: CH2M HILL
Work Order: N005350
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1\_2540C\_W

Table with 12 columns: Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: Total Dissolved Solids (Residue, Filtera) ND 10

Table with 12 columns: Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: Total Dissolved Solids (Residue, Filtera) 958.000 10 1000 0 95.8 80 120

Table with 12 columns: Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: Total Dissolved Solids (Residue, Filtera) 1872.000 20 1840 1.72 5

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

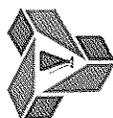
**CLIENT:** CH2M HILL  
**Lab Order:** N005350  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab ID:** N005350-001

**Client Sample ID:** MW-58BR-LWR-160-175  
**Collection Date:** 2/10/2011 9:53:00 AM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>HEXAVALENT CHROMIUM BY IC</b>							
<b>EPA 218.6</b>							
RunID: IC1_110222B	QC Batch: R79272				PrepDate:	Analyst: QBM	
Hexavalent Chromium	140	0.56	4.0		µg/L	20	2/22/2011 01:55 PM

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - H Holding times for preparation or analysis exceeded
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
  - E Value above quantitation range
  - ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified





CLIENT: CH2M HILL
Work Order: N005350
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6\_W

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: MB-R79272, MBLK, 218.6\_W, ug/L, 79272, PBW, R79272, EPA 218.6, 2/22/2011, 1248765, Hexavalent Chromium, ND, 0.20

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: LCS-R79272, LCS, 218.6\_W, ug/L, 79272, LCSW, R79272, EPA 218.6, 2/22/2011, 1248766, Hexavalent Chromium, 4.945, 0.20, 5.000, 0, 98.9, 90, 110

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005350-001ADUP, DUP, 218.6\_W, ug/L, 79272, ZZZZZ, R79272, EPA 218.6, 2/22/2011, 1248768, Hexavalent Chromium, 136.570, 4.0, 135.6, 0.713, 20

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005350-001AMS, MS, 218.6\_W, ug/L, 79272, ZZZZZ, R79272, EPA 218.6, 2/22/2011, 1248769, Hexavalent Chromium, 232.324, 4.0, 100.0, 135.6, 96.7, 90, 110

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005350-001AMSD, MSD, 218.6\_W, ug/L, 79272, ZZZZZ, R79272, EPA 218.6, 2/22/2011, 1248770, Hexavalent Chromium, 235.005, 4.0, 100.0, 135.6, 99.4, 90, 110, 232.3, 1.15, 20

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W Post Road Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005350  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab ID:** N005350-001

**Client Sample ID:** MW-58BR-LWR-160-175  
**Collection Date:** 2/10/2011 9:53:00 AM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**ANIONS BY ION CHROMATOGRAPHY**

**EPA 300.0**

RunID: IC2_110211B	QC Batch: R79270				PrepDate:		Analyst: QBM
Chloride	2600	63	500	mg/L	1000	2/11/2011 10:34 AM	

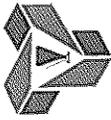
**ANIONS BY ION CHROMATOGRAPHY**

**EPA 300.0**

RunID: IC2_110211B	QC Batch: R79270				PrepDate:		Analyst: QBM
Nitrogen, Nitrate (As N)	1.2	0.022	1.0	mg/L	2	2/11/2011 10:45 AM	

**Qualifiers:** B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified





CLIENT: CH2M HILL
Work Order: N005350
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 300\_W\_CLPGE

Table with 13 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: MB-R79270\_CL, MBLK, 300\_W\_CLP, mg/L, 2/11/2011, 79270, PBW, R79270, EPA 300.0, 2/11/2011, 1248693, Chloride, ND, 0.50.

Table with 13 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: LCS-R79270\_CL, LCS, 300\_W\_CLP, mg/L, 2/11/2011, 79270, LCSW, R79270, EPA 300.0, 2/11/2011, 1248694, Chloride, 2.345, 0.50, 2.500, 0, 93.8, 90, 110.

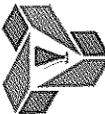
Table with 13 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005349-001BMS, MS, 300\_W\_CLP, mg/L, 2/11/2011, 79270, ZZZZZZ, R79270, EPA 300.0, 2/11/2011, 1248697, Chloride, 1078.600, 100, 500.0, 609.0, 93.9, 80, 120.

Table with 13 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005349-001BMSD, MSD, 300\_W\_CLP, mg/L, 2/11/2011, 79270, ZZZZZZ, R79270, EPA 300.0, 2/11/2011, 1248698, Chloride, 1079.800, 100, 500.0, 609.0, 94.2, 80, 120, 1079, 0.111, 20.

Table with 13 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005349-002BDUP, DUP, 300\_W\_CLP, mg/L, 2/11/2011, 79270, ZZZZZZ, R79270, EPA 300.0, 2/11/2011, 1248702, Chloride, 3106.000, 500, 3127, 0.674, 20.

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference



**CLIENT:** CH2M HILL  
**Work Order:** N005350  
**Project:** PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_NO3PGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: <b>MB-R79270_NO3</b>	SampType: <b>MBLK</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>
Client ID: <b>PBW</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>	Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248714</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Nitrate (As N)	ND	0.50			
--------------------------	----	------	--	--	--

Sample ID: <b>LCS-R79270_NO3</b>	SampType: <b>LCS</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>
Client ID: <b>LCSW</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>	Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248715</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Nitrate (As N)	2.391	0.50	2.500	0	95.6 90 110
--------------------------	-------	------	-------	---	-------------

Sample ID: <b>N005349-001BMS</b>	SampType: <b>MS</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>
Client ID: <b>ZZZZZ</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>	Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248720</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Nitrate (As N)	39.050	5.0	25.00	14.53	98.1 80 120
--------------------------	--------	-----	-------	-------	-------------

Sample ID: <b>N005349-001BMDS</b>	SampType: <b>MSD</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>
Client ID: <b>ZZZZZ</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>	Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248721</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Nitrate (As N)	38.950	5.0	25.00	14.53	97.7 80 120 39.05 0.256 20
--------------------------	--------	-----	-------	-------	----------------------------

Sample ID: <b>N005349-002BDUP</b>	SampType: <b>DUP</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79270</b>
Client ID: <b>ZZZZZ</b>	Batch ID: <b>R79270</b>	TestNo: <b>EPA 300.0</b>	Analysis Date: <b>2/11/2011</b>	SeqNo: <b>1248725</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Nitrate (As N)	12.985	2.5			12.77 1.67 20
--------------------------	--------	-----	--	--	---------------

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005350  
**Project:** PG&E Topock. 405681.MP.02.GM.03  
**Lab ID:** N005350-001

**Client Sample ID:** MW-58BR-LWR-160-175  
**Collection Date:** 2/10/2011 9:53:00 AM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP</b>							
	<b>EPA 3010A</b>			<b>EPA 6010B</b>			
RunID: ICP1_110222C	QC Batch: 36315			PrepDate: 2/22/2011 Analyst: KAB			
Chromium	130	0.44	2.0		µg/L	2	2/22/2011 03:50 PM

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - H Holding times for preparation or analysis exceeded
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
  - E Value above quantitation range
  - ND Not Detected at the Reporting Limit
  - Results are wet unless otherwise specified





CLIENT: CH2M HILL
Work Order: N005350
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010\_WDPGEPBB

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: MB-36315, MBLK, 6010\_WDPG, ug/L, 2/22/2011, 79244, PBW, 36315, EPA 6010B EPA 3010A, 2/22/2011, 1248056, Chromium, ND, 1.0

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: LCS-36315, LCS, 6010\_WDPG, ug/L, 2/22/2011, 79244, LCSW, 36315, EPA 6010B EPA 3010A, 2/22/2011, 1248057, Chromium, 489.226, 1.0, 500.0, 0, 97.8, 85, 115

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005350-001B-MS, MS, 6010\_WDPG, ug/L, 2/22/2011, 79244, ZZZZZZ, 36315, EPA 6010B EPA 3010A, 2/22/2011, 1248062, Chromium, 620.286, 2.0, 500.0, 131.9, 97.7, 75, 125

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005350-001B-MSD, MSD, 6010\_WDPG, ug/L, 2/22/2011, 79244, ZZZZZZ, 36315, EPA 6010B EPA 3010A, 2/22/2011, 1248063, Chromium, 616.330, 2.0, 500.0, 131.9, 96.9, 75, 125, 620.3, 0.640, 20

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

CLIENT: CH2M HILL  
 Lab Order: N005350  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005350-001

Client Sample ID: MW-58BR-LWR-160-175  
 Collection Date: 2/10/2011 9:53:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED ICP-MS METALS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110221B	QC Batch: 36244			PrepDate: 2/11/2011		Analyst: JT	
Arsenic	1.6	0.0025	0.10		µg/L	1	2/21/2011 12:43 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified





CLIENT: CH2M HILL  
 Work Order: N005350  
 Project: PG&E Topock, 405681.MP.02.GM.03

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6020\_WD\_AsPGE

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

Sample ID: MB-36244	SampType: MBLK	TestCode: 6020_WD_As	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79268						
Client ID: PBW	Batch ID: 36244	TestNo: EPA 6020	EPA 3010A	Analysis Date: 2/21/2011	SeqNo: 1248579						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	0.10									
---------	----	------	--	--	--	--	--	--	--	--	--

Sample ID: LCS-36244	SampType: LCS	TestCode: 6020_WD_As	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79268						
Client ID: LCSW	Batch ID: 36244	TestNo: EPA 6020	EPA 3010A	Analysis Date: 2/21/2011	SeqNo: 1248580						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	8.627	0.10	10.00	0	86.3	85	115				
---------	-------	------	-------	---	------	----	-----	--	--	--	--

Sample ID: N005350-001B-MS	SampType: MS	TestCode: 6020_WD_As	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79268						
Client ID: ZZZZZZ	Batch ID: 36244	TestNo: EPA 6020	EPA 3010A	Analysis Date: 2/21/2011	SeqNo: 1248583						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	10.873	0.10	10.00	1.596	92.8	75	125				
---------	--------	------	-------	-------	------	----	-----	--	--	--	--

Sample ID: N005350-001B-MSD	SampType: MSD	TestCode: 6020_WD_As	Units: µg/L	Prep Date: 2/11/2011	RunNo: 79268						
Client ID: ZZZZZZ	Batch ID: 36244	TestNo: EPA 6020	EPA 3010A	Analysis Date: 2/21/2011	SeqNo: 1248584						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	11.377	0.10	10.00	1.596	97.8	75	125	10.87	4.52	20	
---------	--------	------	-------	-------	------	----	-----	-------	------	----	--

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005350  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab ID:** N005350-001

**Client Sample ID:** MW-58BR-LWR-160-175  
**Collection Date:** 2/10/2011 9:53:00 AM  
**Matrix:** WATER

**Analyses Result MDL PQL Qual Units DF Date Analyzed**

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID:	MS4_110216A	QC Batch:	K11VW003	PrepDate:	Analyst:	QBM
1,1,1,2-Tetrachloroethane	ND	0.061	1.0	µg/L	1	2/16/2011 12:21 PM
1,1,1-Trichloroethane	ND	0.068	1.0	µg/L	1	2/16/2011 12:21 PM
1,1,2,2-Tetrachloroethane	ND	0.054	1.0	µg/L	1	2/16/2011 12:21 PM
1,1,2-Trichloroethane	ND	0.083	1.0	µg/L	1	2/16/2011 12:21 PM
1,1-Dichloroethane	ND	0.099	1.0	µg/L	1	2/16/2011 12:21 PM
1,1-Dichloroethene	ND	0.094	1.0	µg/L	1	2/16/2011 12:21 PM
1,1-Dichloropropene	ND	0.082	1.0	µg/L	1	2/16/2011 12:21 PM
1,2,3-Trichlorobenzene	ND	0.10	1.0	µg/L	1	2/16/2011 12:21 PM
1,2,3-Trichloropropane	ND	0.12	1.0	µg/L	1	2/16/2011 12:21 PM
1,2,4-Trichlorobenzene	ND	0.12	1.0	µg/L	1	2/16/2011 12:21 PM
1,2,4-Trimethylbenzene	ND	0.095	1.0	µg/L	1	2/16/2011 12:21 PM
1,2-Dibromo-3-chloropropane	ND	0.15	2.0	µg/L	1	2/16/2011 12:21 PM
1,2-Dibromoethane	ND	0.14	1.0	µg/L	1	2/16/2011 12:21 PM
1,2-Dichlorobenzene	ND	0.070	1.0	µg/L	1	2/16/2011 12:21 PM
1,2-Dichloroethane	ND	0.17	1.0	µg/L	1	2/16/2011 12:21 PM
1,2-Dichloropropane	ND	0.085	1.0	µg/L	1	2/16/2011 12:21 PM
1,3,5-Trimethylbenzene	ND	0.087	1.0	µg/L	1	2/16/2011 12:21 PM
1,3-Dichlorobenzene	ND	0.090	1.0	µg/L	1	2/16/2011 12:21 PM
1,3-Dichloropropane	ND	0.074	1.0	µg/L	1	2/16/2011 12:21 PM
1,4-Dichlorobenzene	ND	0.092	1.0	µg/L	1	2/16/2011 12:21 PM
2,2-Dichloropropane	ND	0.061	1.0	µg/L	1	2/16/2011 12:21 PM
2-Butanone	ND	1.0	10	µg/L	1	2/16/2011 12:21 PM
2-Chlorotoluene	ND	0.080	1.0	µg/L	1	2/16/2011 12:21 PM
4-Chlorotoluene	ND	0.10	1.0	µg/L	1	2/16/2011 12:21 PM
4-Isopropyltoluene	ND	0.080	1.0	µg/L	1	2/16/2011 12:21 PM
4-Methyl-2-pentanone	ND	0.76	10	µg/L	1	2/16/2011 12:21 PM
Acetone	ND	1.6	10	µg/L	1	2/16/2011 12:21 PM
Acrolein	ND	4.3	20	µg/L	1	2/16/2011 12:21 PM
Acrylonitrile	ND	0.61	20	µg/L	1	2/16/2011 12:21 PM
Benzene	ND	0.075	1.0	µg/L	1	2/16/2011 12:21 PM
Bromobenzene	ND	0.082	1.0	µg/L	1	2/16/2011 12:21 PM
Bromochloromethane	ND	0.15	1.0	µg/L	1	2/16/2011 12:21 PM
Bromodichloromethane	ND	0.063	1.0	µg/L	1	2/16/2011 12:21 PM
Bromoform	ND	0.086	1.0	µg/L	1	2/16/2011 12:21 PM
Bromomethane	ND	0.13	1.0	µg/L	1	2/16/2011 12:21 PM
Carbon disulfide	ND	0.054	1.0	µg/L	1	2/16/2011 12:21 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

CLIENT: CH2M HILL  
 Lab Order: N005350  
 Project: PG&E Topock. 405681.MP.02.GM.03  
 Lab ID: N005350-001

Client Sample ID: MW-58BR-LWR-160-175  
 Collection Date: 2/10/2011 9:53:00 AM  
 Matrix: WATER

**Analyses Result MDL PQL Qual Units DF Date Analyzed**

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS4_110216A	QC Batch: K11VW003	PrepDate:	Analyst: QBM
Carbon tetrachloride	ND 0.10	1.0	µg/L 1 2/16/2011 12:21 PM
Chlorobenzene	ND 0.092	1.0	µg/L 1 2/16/2011 12:21 PM
Chloroethane	ND 0.14	1.0	µg/L 1 2/16/2011 12:21 PM
Chloroform	ND 0.058	1.0	µg/L 1 2/16/2011 12:21 PM
Chloromethane	ND 0.054	1.0	µg/L 1 2/16/2011 12:21 PM
cis-1,2-Dichloroethene	ND 0.11	1.0	µg/L 1 2/16/2011 12:21 PM
cis-1,3-Dichloropropene	ND 0.10	1.0	µg/L 1 2/16/2011 12:21 PM
Dibromochloromethane	ND 0.061	1.0	µg/L 1 2/16/2011 12:21 PM
Dibromomethane	ND 0.15	1.0	µg/L 1 2/16/2011 12:21 PM
Dichlorodifluoromethane	ND 0.12	1.0	µg/L 1 2/16/2011 12:21 PM
Ethylbenzene	ND 0.051	1.0	µg/L 1 2/16/2011 12:21 PM
Freon-113	ND 0.080	1.0	µg/L 1 2/16/2011 12:21 PM
Hexachlorobutadiene	ND 0.17	1.0	µg/L 1 2/16/2011 12:21 PM
Isopropylbenzene	ND 0.057	1.0	µg/L 1 2/16/2011 12:21 PM
m,p-Xylene	ND 0.17	1.0	µg/L 1 2/16/2011 12:21 PM
Methylene chloride	ND 0.10	5.0	µg/L 1 2/16/2011 12:21 PM
MTBE	ND 0.089	1.0	µg/L 1 2/16/2011 12:21 PM
n-Butylbenzene	ND 0.082	1.0	µg/L 1 2/16/2011 12:21 PM
n-Propylbenzene	ND 0.087	1.0	µg/L 1 2/16/2011 12:21 PM
Naphthalene	ND 0.056	1.0	µg/L 1 2/16/2011 12:21 PM
o-Xylene	ND 0.077	1.0	µg/L 1 2/16/2011 12:21 PM
sec-Butylbenzene	ND 0.098	1.0	µg/L 1 2/16/2011 12:21 PM
Styrene	ND 0.072	1.0	µg/L 1 2/16/2011 12:21 PM
tert-Butylbenzene	ND 0.062	1.0	µg/L 1 2/16/2011 12:21 PM
Tetrachloroethene	ND 0.13	1.0	µg/L 1 2/16/2011 12:21 PM
Toluene	ND 0.12	2.5	µg/L 1 2/16/2011 12:21 PM
trans-1,2-Dichloroethene	ND 0.094	1.0	µg/L 1 2/16/2011 12:21 PM
trans-1,3-Dichloropropene	ND 0.10	1.0	µg/L 1 2/16/2011 12:21 PM
Trichloroethene	ND 0.060	1.0	µg/L 1 2/16/2011 12:21 PM
Trichlorofluoromethane	ND 0.097	1.0	µg/L 1 2/16/2011 12:21 PM
Vinyl chloride	ND 0.12	1.0	µg/L 1 2/16/2011 12:21 PM
Xylenes, Total	ND 1.5	2.0	µg/L 1 2/16/2011 12:21 PM
Surr: 1,2-Dichloroethane-d4	100 0	72-119	%REC 1 2/16/2011 12:21 PM
Surr: 4-Bromofluorobenzene	101 0	76-119	%REC 1 2/16/2011 12:21 PM
Surr: Dibromofluoromethane	104 0	85-115	%REC 1 2/16/2011 12:21 PM
Surr: Toluene-d8	97.3 0	81-120	%REC 1 2/16/2011 12:21 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005350  
**Project:** PG&E Topock. 405681.MP.02.GM.03  
**Lab ID:** N005350-002

**Client Sample ID:** TB-Packer-175-03  
**Collection Date:** 2/10/2011 8:30:00 AM  
**Matrix:** WATER

**Analyses** **Result** **MDL** **PQL** **Qual** **Units** **DF** **Date Analyzed**

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID:	MS4_110216A	QC Batch:	K11VW003	PrepDate:	Analyst:	QBM
1,1,1,2-Tetrachloroethane	ND	0.061	1.0	µg/L	1	2/16/2011 01:10 PM
1,1,1-Trichloroethane	ND	0.068	1.0	µg/L	1	2/16/2011 01:10 PM
1,1,2,2-Tetrachloroethane	ND	0.054	1.0	µg/L	1	2/16/2011 01:10 PM
1,1,2-Trichloroethane	ND	0.083	1.0	µg/L	1	2/16/2011 01:10 PM
1,1-Dichloroethane	ND	0.099	1.0	µg/L	1	2/16/2011 01:10 PM
1,1-Dichloroethene	ND	0.094	1.0	µg/L	1	2/16/2011 01:10 PM
1,1-Dichloropropene	ND	0.082	1.0	µg/L	1	2/16/2011 01:10 PM
1,2,3-Trichlorobenzene	ND	0.10	1.0	µg/L	1	2/16/2011 01:10 PM
1,2,3-Trichloropropane	ND	0.12	1.0	µg/L	1	2/16/2011 01:10 PM
1,2,4-Trichlorobenzene	ND	0.12	1.0	µg/L	1	2/16/2011 01:10 PM
1,2,4-Trimethylbenzene	ND	0.095	1.0	µg/L	1	2/16/2011 01:10 PM
1,2-Dibromo-3-chloropropane	ND	0.15	2.0	µg/L	1	2/16/2011 01:10 PM
1,2-Dibromoethane	ND	0.14	1.0	µg/L	1	2/16/2011 01:10 PM
1,2-Dichlorobenzene	ND	0.070	1.0	µg/L	1	2/16/2011 01:10 PM
1,2-Dichloroethane	ND	0.17	1.0	µg/L	1	2/16/2011 01:10 PM
1,2-Dichloropropane	ND	0.085	1.0	µg/L	1	2/16/2011 01:10 PM
1,3,5-Trimethylbenzene	ND	0.087	1.0	µg/L	1	2/16/2011 01:10 PM
1,3-Dichlorobenzene	ND	0.090	1.0	µg/L	1	2/16/2011 01:10 PM
1,3-Dichloropropane	ND	0.074	1.0	µg/L	1	2/16/2011 01:10 PM
1,4-Dichlorobenzene	ND	0.092	1.0	µg/L	1	2/16/2011 01:10 PM
2,2-Dichloropropane	ND	0.061	1.0	µg/L	1	2/16/2011 01:10 PM
2-Butanone	ND	1.0	10	µg/L	1	2/16/2011 01:10 PM
2-Chlorotoluene	ND	0.080	1.0	µg/L	1	2/16/2011 01:10 PM
4-Chlorotoluene	ND	0.10	1.0	µg/L	1	2/16/2011 01:10 PM
4-Isopropyltoluene	ND	0.080	1.0	µg/L	1	2/16/2011 01:10 PM
4-Methyl-2-pentanone	ND	0.76	10	µg/L	1	2/16/2011 01:10 PM
Acetone	ND	1.6	10	µg/L	1	2/16/2011 01:10 PM
Acrolein	ND	4.3	20	µg/L	1	2/16/2011 01:10 PM
Acrylonitrile	ND	0.61	20	µg/L	1	2/16/2011 01:10 PM
Benzene	ND	0.075	1.0	µg/L	1	2/16/2011 01:10 PM
Bromobenzene	ND	0.082	1.0	µg/L	1	2/16/2011 01:10 PM
Bromochloromethane	ND	0.15	1.0	µg/L	1	2/16/2011 01:10 PM
Bromodichloromethane	ND	0.063	1.0	µg/L	1	2/16/2011 01:10 PM
Bromoform	ND	0.086	1.0	µg/L	1	2/16/2011 01:10 PM
Bromomethane	ND	0.13	1.0	µg/L	1	2/16/2011 01:10 PM
Carbon disulfide	ND	0.054	1.0	µg/L	1	2/16/2011 01:10 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005350  
**Project:** PG&E Topock. 405681.MP.02.GM.03  
**Lab ID:** N005350-002

**Client Sample ID:** TB-Packer-175-03  
**Collection Date:** 2/10/2011 8:30:00 AM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS4_110216A	QC Batch: K11VW003	PrepDate:	Analyst: QBM
Carbon tetrachloride	ND 0.10	1.0	µg/L 1 2/16/2011 01:10 PM
Chlorobenzene	ND 0.092	1.0	µg/L 1 2/16/2011 01:10 PM
Chloroethane	ND 0.14	1.0	µg/L 1 2/16/2011 01:10 PM
Chloroform	ND 0.058	1.0	µg/L 1 2/16/2011 01:10 PM
Chloromethane	ND 0.054	1.0	µg/L 1 2/16/2011 01:10 PM
cis-1,2-Dichloroethene	ND 0.11	1.0	µg/L 1 2/16/2011 01:10 PM
cis-1,3-Dichloropropene	ND 0.10	1.0	µg/L 1 2/16/2011 01:10 PM
Dibromochloromethane	ND 0.061	1.0	µg/L 1 2/16/2011 01:10 PM
Dibromomethane	ND 0.15	1.0	µg/L 1 2/16/2011 01:10 PM
Dichlorodifluoromethane	ND 0.12	1.0	µg/L 1 2/16/2011 01:10 PM
Ethylbenzene	ND 0.051	1.0	µg/L 1 2/16/2011 01:10 PM
Freon-113	ND 0.080	1.0	µg/L 1 2/16/2011 01:10 PM
Hexachlorobutadiene	ND 0.17	1.0	µg/L 1 2/16/2011 01:10 PM
Isopropylbenzene	ND 0.057	1.0	µg/L 1 2/16/2011 01:10 PM
m,p-Xylene	ND 0.17	1.0	µg/L 1 2/16/2011 01:10 PM
Methylene chloride	ND 0.10	5.0	µg/L 1 2/16/2011 01:10 PM
MTBE	ND 0.089	1.0	µg/L 1 2/16/2011 01:10 PM
n-Butylbenzene	ND 0.082	1.0	µg/L 1 2/16/2011 01:10 PM
n-Propylbenzene	ND 0.087	1.0	µg/L 1 2/16/2011 01:10 PM
Naphthalene	ND 0.056	1.0	µg/L 1 2/16/2011 01:10 PM
o-Xylene	ND 0.077	1.0	µg/L 1 2/16/2011 01:10 PM
sec-Butylbenzene	ND 0.098	1.0	µg/L 1 2/16/2011 01:10 PM
Styrene	ND 0.072	1.0	µg/L 1 2/16/2011 01:10 PM
tert-Butylbenzene	ND 0.062	1.0	µg/L 1 2/16/2011 01:10 PM
Tetrachloroethene	ND 0.13	1.0	µg/L 1 2/16/2011 01:10 PM
Toluene	ND 0.12	2.5	µg/L 1 2/16/2011 01:10 PM
trans-1,2-Dichloroethene	ND 0.094	1.0	µg/L 1 2/16/2011 01:10 PM
trans-1,3-Dichloropropene	ND 0.10	1.0	µg/L 1 2/16/2011 01:10 PM
Trichloroethene	ND 0.060	1.0	µg/L 1 2/16/2011 01:10 PM
Trichlorofluoromethane	ND 0.097	1.0	µg/L 1 2/16/2011 01:10 PM
Vinyl chloride	ND 0.12	1.0	µg/L 1 2/16/2011 01:10 PM
Xylenes, Total	ND 1.5	2.0	µg/L 1 2/16/2011 01:10 PM
Surr: 1,2-Dichloroethane-d4	99.7 0	72-119	%REC 1 2/16/2011 01:10 PM
Surr: 4-Bromofluorobenzene	97.0 0	76-119	%REC 1 2/16/2011 01:10 PM
Surr: Dibromofluoromethane	106 0	85-115	%REC 1 2/16/2011 01:10 PM
Surr: Toluene-d8	102 0	81-120	%REC 1 2/16/2011 01:10 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out





CLIENT: CH2M HILL
Work Order: N005350
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Table with columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Rows include various chemical analytes like 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, etc.

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691



CLIENT: CH2M HILL  
 Work Order: N005350  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

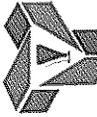
Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: K110216LCS	SampType: LCS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79127						
Client ID: LCSW	Batch ID: K11VW003	TestNo: EPA 8260B	Analysis Date: 2/16/2011	SeqNo: 1244876							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	24.960	1.0	25.00	0	99.8	81	122				
Bromobenzene	26.110	1.0	25.00	0	104	76	124				
Bromochloromethane	25.400	1.0	25.00	0	102	65	129				
Bromodichloromethane	24.930	1.0	25.00	0	99.7	76	121				
Bromoform	20.740	1.0	25.00	0	83.0	69	128				
Bromomethane	24.030	1.0	25.00	0	96.1	53	141				
Carbon disulfide	24.750	1.0	25.00	0	99.0	75	125				
Carbon tetrachloride	25.200	1.0	25.00	0	101	66	138				
Chlorobenzene	24.950	1.0	25.00	0	99.8	81	122				
Chloroethane	24.810	1.0	25.00	0	99.2	58	133				
Chloroform	24.210	1.0	25.00	0	96.8	69	128				
Chloromethane	24.530	1.0	25.00	0	98.1	56	131				
cis-1,2-Dichloroethene	24.660	1.0	25.00	0	98.6	72	126				
cis-1,3-Dichloropropene	24.420	1.0	25.00	0	97.7	69	131				
Dibromochloromethane	20.630	1.0	25.00	0	82.5	66	133				
Dibromomethane	24.060	1.0	25.00	0	96.2	76	125				
Dichlorodifluoromethane	25.240	1.0	25.00	0	101	53	153				
Ethylbenzene	25.200	1.0	25.00	0	101	73	127				
Freon-113	25.360	1.0	25.00	0	101	75	125				
Hexachlorobutadiene	25.700	1.0	25.00	0	103	67	131				
Isopropylbenzene	27.230	1.0	25.00	0	109	75	127				
m,p-Xylene	54.110	1.0	50.00	0	108	76	128				
Methylene chloride	23.090	5.0	25.00	0	92.4	63	137				
MTBE	24.220	1.0	25.00	0	96.9	65	123				
n-Butylbenzene	27.820	1.0	25.00	0	111	69	137				
n-Propylbenzene	27.480	1.0	25.00	0	110	72	129				
Naphthalene	27.140	1.0	25.00	0	109	54	138				
o-Xylene	27.010	1.0	25.00	0	108	80	121				
sec-Butylbenzene	26.630	1.0	25.00	0	107	72	127				
Styrene	26.680	1.0	25.00	0	107	65	134				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005350  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702.307-2659

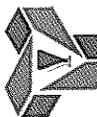
Fax: 702.307-2691

Sample ID: K110216LCS	SampType: LCS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79127						
Client ID: LCSW	Batch ID: K11VW003	TestNo: EPA 8260B		Analysis Date: 2/16/2011	SeqNo: 1244876						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
tert-Butylbenzene	26.530	1.0	25.00	0	106	70	129				
Tetrachloroethene	23.900	1.0	25.00	0	95.6	66	128				
Toluene	23.730	2.5	25.00	0	94.9	77	122				
trans-1,2-Dichloroethene	23.500	1.0	25.00	0	94.0	63	137				
trans-1,3-Dichloropropene	22.690	1.0	25.00	0	90.8	59	135				
Trichloroethene	24.240	1.0	25.00	0	97.0	70	127				
Trichlorofluoromethane	25.460	1.0	25.00	0	102	57	129				
Vinyl chloride	26.500	1.0	25.00	0	106	50	134				
Xylenes, Total	81.120	2.0	75.00	0	108	75	125				
Surr: 1,2-Dichloroethane-d4	24.220		25.00		96.9	72	119				
Surr: 4-Bromofluorobenzene	26.060		25.00		104	76	119				
Surr: Dibromofluoromethane	24.810		25.00		99.2	85	115				
Surr: Toluene-d8	24.490		25.00		98.0	81	120				

Sample ID: N005350-001FMS	SampType: MS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79127						
Client ID: ZZZZZZ	Batch ID: K11VW003	TestNo: EPA 8260B		Analysis Date: 2/16/2011	SeqNo: 1244935						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	21.510	1.0	25.00	0	86.0	81	129				
1,1,1-Trichloroethane	24.420	1.0	25.00	0	97.7	67	132				
1,1,2,2-Tetrachloroethane	24.470	1.0	25.00	0	97.9	63	128				
1,1,2-Trichloroethane	21.980	1.0	25.00	0	87.9	75	125				
1,1-Dichloroethane	24.040	1.0	25.00	0	96.2	69	133				
1,1-Dichloroethene	25.340	1.0	25.00	0	101	68	130				
1,1-Dichloropropene	23.420	1.0	25.00	0	93.7	73	132				
1,2,3-Trichlorobenzene	25.860	1.0	25.00	0	103	67	137				
1,2,3-Trichloropropane	24.310	1.0	25.00	0	97.2	73	124				
1,2,4-Trichlorobenzene	26.700	1.0	25.00	0	107	66	134				
1,2,4-Trimethylbenzene	23.690	1.0	25.00	0	94.8	74	132				
1,2-Dibromo-3-chloropropane	23.540	2.0	25.00	0	94.2	50	132				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
  - E Value above quantitation range
  - H Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - R RPD outside accepted recovery limits
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
- Calculations are based on raw values



**CLIENT:** CH2M HILL  
**Work Order:** N005350  
**Project:** PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: N005350-001FMS	SampType: MS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79127
Client ID: ZZZZZZ	Batch ID: K11VW003	TestNo: EPA 8260B		Analysis Date: 2/16/2011	SeqNo: 1244935

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane	23.480	1.0	25.00	0	93.9	80	121				
1,2-Dichlorobenzene	24.450	1.0	25.00	0	97.8	71	122				
1,2-Dichloroethane	23.960	1.0	25.00	0	95.8	69	132				
1,2-Dichloropropane	23.190	1.0	25.00	0	92.8	75	125				
1,3,5-Trimethylbenzene	25.300	1.0	25.00	0	101	74	131				
1,3-Dichlorobenzene	24.650	1.0	25.00	0	98.6	75	124				
1,3-Dichloropropane	24.640	1.0	25.00	0	98.6	73	126				
1,4-Dichlorobenzene	23.480	1.0	25.00	0	93.9	74	123				
2,2-Dichloropropane	25.620	1.0	25.00	0	102	69	137				
2-Butanone	133.070	10	250.0	0	53.2	49	136				
2-Chlorotoluene	23.920	1.0	25.00	0	95.7	73	126				
4-Chlorotoluene	24.730	1.0	25.00	0	98.9	74	128				
4-Isopropyltoluene	25.370	1.0	25.00	0	101	73	130				
4-Methyl-2-pentanone	219.070	10	250.0	0	87.6	58	134				
Acetone	93.030	10	250.0	0	37.2	40	135				S
Acrolein	225.180	20	250.0	0	90.1	75	125				
Acrylonitrile	242.340	20	250.0	0	96.9	75	125				
Benzene	23.490	1.0	25.00	0	94.0	81	122				
Bromobenzene	24.370	1.0	25.00	0	97.5	76	124				
Bromochloromethane	26.290	1.0	25.00	0	105	65	129				
Bromodichloromethane	24.500	1.0	25.00	0	98.0	76	121				
Bromoform	20.930	1.0	25.00	0	83.7	69	128				
Bromomethane	23.580	1.0	25.00	0	94.3	53	141				
Carbon disulfide	24.920	1.0	25.00	0	99.7	75	125				
Carbon tetrachloride	23.290	1.0	25.00	0	93.2	66	138				
Chlorobenzene	24.710	1.0	25.00	0	98.8	81	122				
Chloroethane	25.710	1.0	25.00	0	103	58	133				
Chloroform	23.830	1.0	25.00	0	95.3	69	128				
Chloromethane	24.680	1.0	25.00	0	98.7	56	131				
cis-1,2-Dichloroethene	24.190	1.0	25.00	0	96.8	72	126				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005350  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: N005350-001FMS	SampType: MS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79127						
Client ID: ZZZZZZ	Batch ID: K11VW003	TestNo: EPA 8260B		Analysis Date: 2/16/2011	SeqNo: 1244935						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	23.580	1.0	25.00	0	94.3	69	131				
Dibromochloromethane	20.500	1.0	25.00	0	82.0	66	133				
Dibromomethane	23.260	1.0	25.00	0	93.0	76	125				
Dichlorodifluoromethane	24.230	1.0	25.00	0	96.9	53	153				
Ethylbenzene	25.110	1.0	25.00	0	100	73	127				
Freon-113	24.750	1.0	25.00	0	99.0	75	125				
Hexachlorobutadiene	22.850	1.0	25.00	0	91.4	67	131				
Isopropylbenzene	25.080	1.0	25.00	0	100	75	127				
m,p-Xylene	52.910	1.0	50.00	0	106	76	128				
Methylene chloride	24.800	5.0	25.00	0	99.2	63	137				
MTBE	24.910	1.0	25.00	0	99.6	65	123				
n-Butylbenzene	25.630	1.0	25.00	0	103	69	137				
n-Propylbenzene	25.190	1.0	25.00	0	101	72	129				
Naphthalene	24.780	1.0	25.00	0	99.1	54	138				
o-Xylene	26.260	1.0	25.00	0	105	80	121				
sec-Butylbenzene	24.510	1.0	25.00	0	98.0	72	127				
Styrene	23.640	1.0	25.00	0	94.6	65	134				
tert-Butylbenzene	24.410	1.0	25.00	0	97.6	70	129				
Tetrachloroethene	22.970	1.0	25.00	0	91.9	66	128				
Toluene	22.460	2.5	25.00	0	89.8	77	122				
trans-1,2-Dichloroethene	24.270	1.0	25.00	0	97.1	63	137				
trans-1,3-Dichloropropene	21.500	1.0	25.00	0	86.0	59	135				
Trichloroethene	22.310	1.0	25.00	0	89.2	70	127				
Trichlorofluoromethane	26.750	1.0	25.00	0	107	57	129				
Vinyl chloride	26.290	1.0	25.00	0	105	50	134				
Xylenes, Total	79.170	2.0	75.00	0	106	75	125				
Surr: 1,2-Dichloroethane-d4	25.090		25.00		100	72	119				
Surr: 4-Bromofluorobenzene	26.640		25.00		107	76	119				
Surr: Dibromofluoromethane	25.560		25.00		102	85	115				
Surr: Toluene-d8	23.240		25.00		93.0	81	120				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005350  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: N005350-001FMMSD	SampType: MSD	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79127						
Client ID: ZZZZZZ	Batch ID: K11VW003	TestNo: EPA 8260B		Analysis Date: 2/16/2011	SeqNo: 1244936						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	22.670	1.0	25.00	0	90.7	81	129	21.51	5.25	20	
1,1,1-Trichloroethane	24.970	1.0	25.00	0	99.9	67	132	24.42	2.23	20	
1,1,2,2-Tetrachloroethane	26.240	1.0	25.00	0	105	63	128	24.47	6.98	20	
1,1,2-Trichloroethane	22.570	1.0	25.00	0	90.3	75	125	21.98	2.65	20	
1,1-Dichloroethane	24.500	1.0	25.00	0	98.0	69	133	24.04	1.90	20	
1,1-Dichloroethene	25.780	1.0	25.00	0	103	68	130	25.34	1.72	20	
1,1-Dichloropropene	24.860	1.0	25.00	0	99.4	73	132	23.42	5.97	20	
1,2,3-Trichlorobenzene	27.270	1.0	25.00	0	109	67	137	25.86	5.31	20	
1,2,3-Trichloropropane	26.470	1.0	25.00	0	106	73	124	24.31	8.51	20	
1,2,4-Trichlorobenzene	26.840	1.0	25.00	0	107	66	134	26.70	0.523	20	
1,2,4-Trimethylbenzene	21.590	1.0	25.00	0	86.4	74	132	23.69	9.28	20	
1,2-Dibromo-3-chloropropane	24.700	2.0	25.00	0	98.8	50	132	23.54	4.81	20	
1,2-Dibromoethane	24.230	1.0	25.00	0	96.9	80	121	23.48	3.14	20	
1,2-Dichlorobenzene	24.980	1.0	25.00	0	99.9	71	122	24.45	2.14	20	
1,2-Dichloroethane	24.290	1.0	25.00	0	97.2	69	132	23.96	1.37	20	
1,2-Dichloropropane	23.390	1.0	25.00	0	93.6	75	125	23.19	0.859	20	
1,3,5-Trimethylbenzene	25.140	1.0	25.00	0	101	74	131	25.30	0.634	20	
1,3-Dichlorobenzene	25.030	1.0	25.00	0	100	75	124	24.65	1.53	20	
1,3-Dichloropropane	25.930	1.0	25.00	0	104	73	126	24.64	5.10	20	
1,4-Dichlorobenzene	24.790	1.0	25.00	0	99.2	74	123	23.48	5.43	20	
2,2-Dichloropropane	26.200	1.0	25.00	0	105	69	137	25.62	2.24	20	
2-Butanone	141.760	10	250.0	0	56.7	49	136	133.1	6.32	20	
2-Chlorotoluene	24.840	1.0	25.00	0	99.4	73	126	23.92	3.77	20	
4-Chlorotoluene	25.620	1.0	25.00	0	102	74	128	24.73	3.54	20	
4-Isopropyltoluene	25.840	1.0	25.00	0	103	73	130	25.37	1.84	20	
4-Methyl-2-pentanone	253.660	10	250.0	0	101	58	134	219.1	14.6	20	
Acetone	102.140	10	250.0	0	40.9	40	135	93.03	9.34	20	
Acrolein	245.450	20	250.0	0	98.2	75	125	225.2	8.61	20	
Acrylonitrile	242.240	20	250.0	0	96.9	75	125	242.3	0.0413	20	
Benzene	24.430	1.0	25.00	0	97.7	81	122	23.49	3.92	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005350  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: N005350-001FMSD	SampType: MSD	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79127						
Client ID: ZZZZZZ	Batch ID: K11VW003	TestNo: EPA 8260B	Analysis Date: 2/16/2011	SeqNo: 1244936							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	24.530	1.0	25.00	0	98.1	76	124	24.37	0.654	20	
Bromochloromethane	25.630	1.0	25.00	0	103	65	129	26.29	2.54	20	
Bromodichloromethane	25.220	1.0	25.00	0	101	76	121	24.50	2.90	20	
Bromoform	20.760	1.0	25.00	0	83.0	69	128	20.93	0.816	20	
Bromomethane	23.680	1.0	25.00	0	94.7	53	141	23.58	0.423	20	
Carbon disulfide	26.700	1.0	25.00	0	107	75	125	24.92	6.90	20	
Carbon tetrachloride	24.540	1.0	25.00	0	98.2	66	138	23.29	5.23	20	
Chlorobenzene	24.610	1.0	25.00	0	98.4	81	122	24.71	0.406	20	
Chloroethane	24.910	1.0	25.00	0	99.6	58	133	25.71	3.16	20	
Chloroform	24.660	1.0	25.00	0	98.6	69	128	23.83	3.42	20	
Chloromethane	24.380	1.0	25.00	0	97.5	56	131	24.68	1.22	20	
cis-1,2-Dichloroethene	24.640	1.0	25.00	0	98.6	72	126	24.19	1.84	20	
cis-1,3-Dichloropropene	24.720	1.0	25.00	0	98.9	69	131	23.58	4.72	20	
Dibromochloromethane	22.270	1.0	25.00	0	89.1	66	133	20.50	8.28	20	
Dibromomethane	25.030	1.0	25.00	0	100	76	125	23.26	7.33	20	
Dichlorodifluoromethane	23.160	1.0	25.00	0	92.6	53	153	24.23	4.52	20	
Ethylbenzene	25.710	1.0	25.00	0	103	73	127	25.11	2.36	20	
Freon-113	26.770	1.0	25.00	0	107	75	125	24.75	7.84	20	
Hexachlorobutadiene	23.550	1.0	25.00	0	94.2	67	131	22.85	3.02	20	
Isopropylbenzene	25.530	1.0	25.00	0	102	75	127	25.08	1.78	20	
m,p-Xylene	53.600	1.0	50.00	0	107	76	128	52.91	1.30	20	
Methylene chloride	24.840	5.0	25.00	0	99.4	63	137	24.80	0.161	20	
MTBE	25.410	1.0	25.00	0	102	65	123	24.91	1.99	20	
n-Butylbenzene	26.390	1.0	25.00	0	106	69	137	25.63	2.92	20	
n-Propylbenzene	26.620	1.0	25.00	0	106	72	129	25.19	5.52	20	
Naphthalene	24.280	1.0	25.00	0	97.1	54	138	24.78	2.04	20	
o-Xylene	26.200	1.0	25.00	0	105	80	121	26.26	0.229	20	
sec-Butylbenzene	25.540	1.0	25.00	0	102	72	127	24.51	4.12	20	
Styrene	18.370	1.0	25.00	0	73.5	65	134	23.64	25.1	20	R
tert-Butylbenzene	25.720	1.0	25.00	0	103	70	129	24.41	5.23	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005350  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: N005350-001FMSD		SampType: MSD		TestCode: 8260_WP_LL		Units: µg/L		Prep Date:		RunNo: 79127	
Client ID: ZZZZZZ		Batch ID: K11VW003		TestNo: EPA 8260B		Analysis Date: 2/16/2011		SeqNo: 1244936			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tetrachloroethene	24.900	1.0	25.00	0	99.6	66	128	22.97	8.06	20	
Toluene	23.310	2.5	25.00	0	93.2	77	122	22.46	3.71	20	
trans-1,2-Dichloroethene	25.100	1.0	25.00	0	100	63	137	24.27	3.36	20	
trans-1,3-Dichloropropene	23.210	1.0	25.00	0	92.8	59	135	21.50	7.65	20	
Trichloroethene	24.360	1.0	25.00	0	97.4	70	127	22.31	8.79	20	
Trichlorofluoromethane	26.100	1.0	25.00	0	104	57	129	26.75	2.46	20	
Vinyl chloride	27.010	1.0	25.00	0	108	50	134	26.29	2.70	20	
Xylenes, Total	79.800	2.0	75.00	0	106	75	125	79.17	0.793	20	
Surr: 1,2-Dichloroethane-d4	25.390		25.00		102	72	119		0		
Surr: 4-Bromofluorobenzene	27.130		25.00		109	76	119		0		
Surr: Dibromofluoromethane	25.020		25.00		100	85	115		0		
Surr: Toluene-d8	23.740		25.00		95.0	81	120		0		

Sample ID: K110216MB3		SampType: MBLK		TestCode: 8260_WP_LL		Units: µg/L		Prep Date:		RunNo: 79127	
Client ID: PBW		Batch ID: K11VW003		TestNo: EPA 8260B		Analysis Date: 2/16/2011		SeqNo: 1244937			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0									
1,1,1-Trichloroethane	ND	1.0									
1,1,2,2-Tetrachloroethane	ND	1.0									
1,1,2-Trichloroethane	ND	1.0									
1,1-Dichloroethane	ND	1.0									
1,1-Dichloroethene	ND	1.0									
1,1-Dichloropropene	ND	1.0									
1,2,3-Trichlorobenzene	ND	1.0									
1,2,3-Trichloropropane	ND	1.0									
1,2,4-Trichlorobenzene	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
1,2-Dibromoethane	ND	1.0									

**Qualifiers:**

- |    |   |                                      |                                      |   |  |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B  | Analyte detected in the associated Method Blank | E                                    | Value above quantitation range       | H | Holding times for preparation or analysis exceeded           |
| ND | Not Detected at the Reporting Limit             | R                                    | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out                           | Calculations are based on raw values |                                      |   |  |



CLIENT: CH2M HILL  
 Work Order: N005350  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: <b>K110216MB3</b>	SampType: <b>MBLK</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>79127</b>						
Client ID: <b>PBW</b>	Batch ID: <b>K11VW003</b>	TestNo: <b>EPA 8260B</b>		Analysis Date: <b>2/16/2011</b>	SeqNo: <b>1244937</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichlorobenzene	ND	1.0									
1,2-Dichloroethane	ND	1.0									
1,2-Dichloropropane	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,3-Dichloropropane	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
2,2-Dichloropropane	ND	1.0									
2-Butanone	ND	10									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
4-Isopropyltoluene	ND	1.0									
4-Methyl-2-pentanone	ND	10									
Acetone	ND	10									
Acrolein	ND	20									
Acrylonitrile	ND	20									
Benzene	ND	1.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon disulfide	ND	1.0									
Carbon tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	1.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
cis-1,2-Dichloroethene	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005350  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: K110216MB3	SampType: MBLK	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79127						
Client ID: PBW	Batch ID: K11VW003	TestNo: EPA 8260B		Analysis Date: 2/16/2011	SeqNo: 1244937						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
Dichlorodifluoromethane	ND	1.0									
Ethylbenzene	ND	1.0									
Freon-113	ND	1.0									
Hexachlorobutadiene	ND	1.0									
Isopropylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
Methylene chloride	ND	5.0									
MTBE	ND	1.0									
n-Butylbenzene	ND	1.0									
n-Propylbenzene	ND	1.0									
Naphthalene	ND	1.0									
o-Xylene	ND	1.0									
sec-Butylbenzene	ND	1.0									
Styrene	ND	1.0									
tert-Butylbenzene	ND	1.0									
Tetrachloroethene	ND	1.0									
Toluene	ND	2.5									
trans-1,2-Dichloroethene	ND	1.0									
trans-1,3-Dichloropropene	ND	1.0									
Trichloroethene	ND	1.0									
Trichlorofluoromethane	ND	1.0									
Vinyl chloride	ND	1.0									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	23.410		25.00		93.6	72	119				
Surr: 4-Bromofluorobenzene	24.770		25.00		99.1	76	119				
Surr: Dibromofluoromethane	24.870		25.00		99.5	85	115				
Surr: Toluene-d8	24.340		25.00		97.4	81	120				

**Qualifiers:**

- |    |   |                                      |                                      |   |  |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B  | Analyte detected in the associated Method Blank | E                                    | Value above quantitation range       | H | Holding times for preparation or analysis exceeded           |
| ND | Not Detected at the Reporting Limit             | R                                    | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out                           | Calculations are based on raw values |                                      |   |  |

MW 58BR-LWR ATL

CH2MHILL

CHAIN OF CUSTODY RECORD

Project Name PG&E Topock Location Topock Project Number 405681.MP.02.GM.03 Project Manager Jay Piper Sample Manager Shawn Duffy  Task Order Project 2011-GMP-PACKER-175 Turnaround Time 10 Days Shipping Date: COC Number:				Container: Preservatives: Filtered: Holding Time:	250 ml Poly (NH4)2SO4/NH4OH, 4°C Field 28	500 ml Poly HNO3, 4°C Field 180	1 Liter Poly 4°C NA 2	1 Liter Poly 4°C NA 2	3 x 40 ml VOA H3PO4, 4°C NA 28	3 x 40 ml VOA HCL, 4°C NA 14	Number of Containers	COMMENTS
SAMPLE ID DATE TIME Matrix	C6 (E218.6) Field Filtered Metals (60108FF) Field Filtered Chromium, Arsenic Anions (E300.0) Nitrate, Chloride TDS (SM2540C) TOC (SM5310C) VOCs (8260B)											
MW-58BR-LWR-160-175	2-10-11	0953	Water	X	X	X	X	X	X	1005350-1 -2	10	
TB-Packer-175-03		0830	Water						X			2
TOTAL NUMBER OF CONTAINERS											13	

Approved by		Signatures	Date/Time
Sampled by			2-10-11
Relinquished by			1714
Received by			2/10/11 @ 1714
Relinquished by			
Received by			

Shipping Details	
Method of Shipment:	ATTN:
On Ice: yes / no	Molly Nguyen
Airbill No:	
Lab Name: ADVANCED TECHNOLOGY LABORATORIES	
Lab Phone: (702) 307-2659	

Special Instructions:
Report Copy to Shawn Duffy (530) 229-3303

MW 58BR-LWR ATL

**CH2MHILL**

**CHAIN OF CUSTODY RECORD**

Project Name PG&E Topock Location Topock Project Number 405681.MP.02.GM.03 Project Manager Jay Piper Sample Manager Shawn Duffy				Container:	250 ml Poly (NH4)2SO4/NH4OH, 4°C	500 ml Poly HNO3, 4°C	1 Liter Poly 4°C	1 Liter Poly 4°C	3 x 40 ml VOA H3PO4, 4°C	3 x 40 ml VOA HCL, 4°C	Number of Containers	COMMENTS
Task Order Project 2011-GMP-PACKER-175 Turnaround Time 10 Days Shipping Date: COC Number:				Filtered:	Field	Field	NA	NA	NA	NA		
				Holding Time:	28	180	2	2	28	14		
					Cr6 (E218.6) Field Filtered	Metals (6010BFF) Field Filtered Chromium, Arsenic	Anions (E300.0) Nitrate, Chloride	TDS (SM2540C)	TOC (SM5310C)	VOCs (8260B)		
SAMPLE ID	DATE	TIME	Matrix									
MW-58BR-LWR-160-175	2-10-11	0953	Water	X	X	X	X	X	X		10	
TB-Packer-175-03		0830	Water						X		2	Hold
TOTAL NUMBER OF CONTAINERS											13	

**Approved by** \_\_\_\_\_  
**Sampled by** \_\_\_\_\_  
**Relinquished by** \_\_\_\_\_  
**Received by** \_\_\_\_\_  
**Relinquished by** \_\_\_\_\_  
**Received by** \_\_\_\_\_

**Signatures**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Date/Time**  
 2-10-11  
 1714  
 2/10/11 @ 1714

**Shipping Details**  
**Method of Shipment:**  
**On ice:** yes / no  
**Airbill No:**  
**Lab Name:** ADVANCED TECHNOLOGY LABORATORIES  
**Lab Phone:** (702) 307-2659

**ATTN:**  
 Molly Nguyen

**Special Instructions:**  
  
**Report Copy to**  
 Shawn Duffy  
 (530) 229-3303

# Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO and/or NA signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

## Sample Receipt Checklist

Cooler Received/Opened On: 2/10/2011 Workorder: N005350  
 Rep sample Temp (Deg C): 2.4,3.4 IR Gun ID: IR 1  
 Temp Blank:  Yes  No  
 Carrier name: ATL  
 Last 4 digits of Tracking No.: Packing Material Used: Bubble Wrap  
 Cooling process:  Ice  Ice Pack  Dry Ice  Other  None

- |   |   |  |   |
|---|---|--|---|
| 1. Shipping container/cooler in good condition?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>            |
| 2. Custody seals intact, signed, dated on shipping container/cooler?                    | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 5. Sampler's name present in COC?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 6. Chain of custody signed when relinquished and received?                              | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 7. Chain of custody agrees with sample labels?  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> |   |
| 8. Samples in proper container/bottle?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 9. Sample containers intact?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 10. Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 11. All samples received within holding time?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 12. Temperature of rep sample or Temp Blank within acceptable limit?                    | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>                     |
| 13. Water - VOA vials have zero headspace?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>                     |
| 14. Water - pH acceptable upon receipt?<br>Example: pH > 12 for (CN,S); pH<2 for Metals | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>                     |
| 15. Did the bottle labels indicate correct preservatives used?                          | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>                     |
| 16. Were there Non-Conformance issues at login?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>                     |
| Was Client notified?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>                     |

Comments: received only one 32 oz for anions & TDS; received only 2VOAs for TOC

Checklist Completed By for MBC zulu

Reviewed By: [Signature]

## Nancy Sibucan

---

**From:** Advanced Technology Labs, Inc. [reports@atl-labs.com]  
**Sent:** Friday, February 11, 2011 4:34 PM  
**To:** 'shawn.duffy@ch2m.com'  
**Cc:** 'erlene.contreras@ch2m.com'  
**Subject:** PG&E Topock, 405681.MP.02.GM.03 sample receiving items for samples received 2/10/2011  
**Attachments:** N005350 WOSummary.pdf

Please see attached. For sample MW-58BR-LWR-160-175, we received only one 32oz. for EPA 300.0/ SM2540C analysis and 2VOAs for SM5310C analysis and so, eight is the total number of containers for the said sample .

Thanks.

**Nancy Sibucan**  
**Project Coordinator**  
**Advanced Technology Laboratories, Inc.**

[www.atl-labs.com](http://www.atl-labs.com)

Tel: (702) 307-3248 ext. 412

Fax: (702) 307-2691

*Advanced Technology Laboratories, Inc. is a full-service environmental lab providing organic and inorganic analyses of soil, water, wastewater, storm water and hazardous waste samples. ATL is accredited by the State of California, NELAP and State of Nevada and holds various SBE, DBE and MBE certificates and a USDA soil permit. ATL takes pride in providing our customers with quick turnaround time, excellent customer service and defensible data while offering very competitive rates. Advanced Technology Labs - Your Partner for Quality Environmental Testing*

*This message is intended for the use of the individual or entity to which it is addressed. This may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and delete the original message. Thank you.*

## SAMPLE CALCULATION

**METHOD:** SM 2540C

**TEST NAME:** Total Filterable Residue

**MATRIX:** Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B) * 1000000}{C}$$

Where:

A = weight in g of dish + residue after drying

B = weight of dish in g

C = volume of sample used in mL

For **N005350-001C**, TDS concentration in mg/L is calculated as follows:

$$\begin{aligned} \text{TDS, mg/L} &= \frac{(30.8218 - 30.7181) * 1000000}{20} \\ &= 5185 \text{ mg/L} \end{aligned}$$

Reporting result in two significant figures,

$$\text{TDS} = 5200 \text{ mg/L}$$

## Sample Calculation

**METHOD:** EPA 218.6

**TEST NAME:** HEXAVALENT CHROMIUM BY IC

**MATRIX:** Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in  $\mu\text{g/L}$ , in the original sample as follows:

$$\text{Cr}^{+6}, \mu\text{g/L} = A * \text{DF}$$

where:

A =  $\mu\text{g/L}$ , IC  $\text{Cr}^{+6}$  calculated concentration

DF = dilution factor

For N005350-001A, concentration in  $\mu\text{g/L}$  is calculated as follows:

$$\begin{aligned}\text{Cr}^{+6}, \mu\text{g/L} &= 6.780022 * 20 \\ &= 135.60044 \mu\text{g/L}\end{aligned}$$

Reporting results in two significant figures,

$$\text{Cr}^{+6}, \mu\text{g/L} = 140 \mu\text{g/L}$$

*Autobahn*

## Sample Calculation

**METHOD:** EPA 300

**TEST NAME:** INORGANIC ANIONS BY IC

**MATRIX:** WATER

FORMULA:

Calculate the Nitrate concentration, in mg/L, in the original sample as follows:

$$\text{Nitrate as N, mg/L} = A * DF$$

where:

A = mg/L, IC calculated concentration

DF = dilution factor

For **N005350-001C**, concentration in mg/L are calculated as follows:

$$\begin{aligned} \text{Nitrate as N, mg/L} &= 0.587 * 2 \\ &= 1.174 \text{ mg/L} \end{aligned}$$

Reporting **N005350-001C**, results in two significant figures,

$$\text{Nitrate as N, mg/L} = 1.2 \text{ mg/L}$$

*Arbush*

*g  
Arbush*

## SAMPLE CALCULATION

METHOD: EPA 6010B  
TEST NAME: METALS BY ICP  
MATRIX: WATER

FORMULA:

Calculate the individual metal concentration, in ug/L, in the original sample as follows:

$$M, \text{ ug/L} = \frac{A * C * DF * 1000}{B}$$

where:

M= concentration of the metal in ug/L  
A= mg/L, ICP calculated concentration  
B= volume of sample, Liter  
C= final volume of digestate, Liter  
DF= dilution factor

For N005350-001B, concentration in ug/L are calculated as follows:

$$\text{Cr, ug/L} = \frac{0.06596 \text{ mg/L} * 0.025 \text{ L} * 2 * 1000}{0.025 \text{ L}}$$

$$\text{Cr} = 131.92 \text{ ug/L}$$

Reporting result in two significant figures,

$$\text{Cr} = 130 \text{ ug/L}$$

**DILUTION TEST**

Analytical Method: EPA 6010B / 200.7  
 Digestion Method: EPA 3010A  
 Date of Analysis: 2/22/2011  
 Digestion Date: 2/22/2011  
 Instrument Name: ICP1  
 Analysts: KB

Matrix: WATER  
 Amount of Sample: 25 mL  
 Units: ug/L

Work Order # : N005350-001B  
 Batch # : 36315

Analyte	A	B	Difference	% D
Chromium	131.9	124.657	7.24300	5.5

FORMULA:

$$\%D = \frac{(A-B)*100}{A}$$

where:

% D = % Difference  
 A= ug/L, ICP calculated concentration @2X dilution  
 B= ug/L, ICP calculated concentration @10x dilution

CLIENT: CH2M HILL  
 Work Order: N005350  
 Project: PG&E Topock, 405681.MP.02.GM.03

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6010\_WDPGEPPB

Sample ID: N005350-001BDT	SampType: DT	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79244						
Client ID: ZZZZZZ	Batch ID: 36315	TestNo: EPA 6010B EPA 3010A		Analysis Date: 2/22/2011	SeqNo: 1248064						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	124.657	10						131.9	5.66	10	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL  
 Work Order: N005350  
 Project: PG&E Topock, 405681.MP.02.GM.03

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6010\_WDPGEPPB

Sample ID: N005350-001BPS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79244						
Client ID: ZZZZZZ	Batch ID: 36315	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/22/2011	SeqNo: 1248066						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2550.593	5.0	2500	131.9	96.7	75	125				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

## Sample Calculation

**METHOD:** EPA 6020

**TEST NAME:** Heavy Metals by ICP-MS

**MATRIX:** Aqueous

**FORMULA:**

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

$$\text{Arsenic, ug/L} = A * DF * PF$$

where:

A = ug/L, calculated concentration

DF = dilution factor

PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N005350-001B**, the concentration in ug/L is calculated as follows:

$$\begin{aligned} \text{Arsenic, ug/L} &= 1.596 * 1 * (1) \\ &= 1.596 \text{ ug/L} \end{aligned}$$

Reporting results in two significant figures,

$$\text{Arsenic, ug/L} = 1.6$$

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Work Order No.: N005350  
 Test Method: EPA 6020  
 Analysis Date: 02/21/11

Dilution Test Summary

Matrix: Aqueous  
 Batch No.: 36244

Instrument ID: ICP-MS #2  
 Instrument Description: Agilent 7700x

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable . The calc. values are < 25X the RL.

Sample ID	Analyte	&Units	Calc/Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N005350-001B-DT 5X	Arsenic	ug/L	1.651144783		1.595823471	3.47%	10

CLIENT: CH2M HILL  
 Work Order: N005350  
 Project: PG&E Topock, 405681.MP.02.GM.03

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6020\_WD\_AsPGE

Sample ID: N005350-001B-PS 2	SampType: PS	TestCode: 6020_WD_As	Units: µg/L	Prep Date:	RunNo: 79268						
Client ID: ZZZZZZ	Batch ID: 36244	TestNo: EPA 6020	EPA 3010A	Analysis Date: 2/21/2011	SeqNo: 1248585						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.338	0.20	20.00	1.596	88.7	75	125				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SAMPLE CALCULATION

METHOD: EPA 8260B  
TEST NAME: VOLATILE ORGANIC COMPOUNDS BY GC/MS  
MATRIX: WATER

CALCULATION OF TARGET PARAMETERS

Calculate the target analyte concentrations using internal standard quantitation

$$C_x, \text{ug/L} = \frac{A_x * C_{IS}}{\text{Ave RF} * A_{IS}}$$

where:  $A_x$  = Area of the TOTAL ion for the compound being measured  
 $C_{IS}$  = Concentration of the specific internal standard in ug/L  
 $A_{IS}$  = Area of the characteristic ion of the specific internal standard  
 $C_x$  = Concentration of the compound being measured in ug/L

N005350-001F

For Dibromofluoromethane the corresponding Internal Standard is Pentafluorobenzene

Ave RF	0.411
Area of Dibromofluoromethane	74581
Area of Internal Standard	173984
Conc of Internal Standard (ug/L)	25.00

$$\text{Conc of Dibromofluoromethane (ug/L)} = \frac{74581 * 25.00 \text{ug/L}}{0.411 * 173984}$$

Conc of Dibromofluoromethane (ug/L) = 26.07456535

Reporting result in three significant figures,

**Concentration of Dibromofluoromethane = 26.1ug/L**

*SJ*  
*2/28/11*

*Arbols*

March 01, 2011

Shawn P. Duffy  
CH2M HILL  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

TEL: (530) 229-3303  
FAX: (530) 339-3303

CA-ELAP No.: 2676  
NV Cert. No.: NV-009222007A

Workorder No.: N005351

RE: PG&E Topock, 405681.MP.02.GM.03

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 10, 2011 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

  
Jose Tenorio Jr.  
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.



**Advanced Technology Laboratories, Inc.**

**Date:** 01-Mar-11

**CLIENT:** CH2M HILL

**Project:** PG&E Topock. 405681.MP.02.GM.03

**Lab Order:** N005351

## **CASE NARRATIVE**

---

### **SAMPLE RECEIVING/GENERAL COMMENTS:**

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.



**Advanced Technology Laboratories, Inc.**

Date: 01-Mar-11

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab Order:** N005351  
**Contract No:**

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N005351-001A	MW-101-174	Water	2/7/2011 12:54:00 PM	2/11/2011	
N005351-002A	MW-34-080-174	Water	2/7/2011 12:52:00 PM	2/11/2011	
N005351-003A	MW-34-100-174	Water	2/7/2011 2:03:00 PM	2/11/2011	
N005351-004A	MW-42-055-174	Water	2/7/2011 2:55:00 PM	2/11/2011	
N005351-005A	MW-42-065-174	Water	2/7/2011 3:30:00 PM	2/11/2011	
N005351-006A	MW-100-174	Water	2/8/2011 11:53:00 AM	2/11/2011	
N005351-007A	MW-27-085-174	Water	2/8/2011 11:51:00 AM	2/11/2011	
N005351-008A	MW-28-090-174	Water	2/8/2011 8:52:00 AM	2/11/2011	
N005351-009A	MW-33-040-174	Water	2/9/2011 1:27:00 PM	2/11/2011	
N005351-010A	MW-62-110-174	Water	2/9/2011 3:45:00 PM	2/11/2011	
N005351-010B	MW-62-110-174	Water	2/9/2011 3:45:00 PM	2/11/2011	
N005351-011A	MW-62-190-174	Water	2/9/2011 3:55:00 PM	2/11/2011	
N005351-011B	MW-62-190-174	Water	2/9/2011 3:55:00 PM	2/11/2011	
N005351-012A	MW-12-174	Water	2/10/2011 11:59:00 AM	2/11/2011	



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

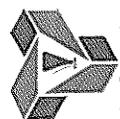
CLIENT: CH2M HILL  
 Lab Order: N005351  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005351-012

Client Sample ID: MW-12-174  
 Collection Date: 2/10/2011 11:59:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP</b>							
	<b>EPA 3010A</b>			<b>EPA 6010B</b>			
RunID: ICP1_110214A	QC Batch: 36240			PrepDate:		2/11/2011	Analyst: KAB
Antimony	ND	5.4	10		µg/L	1	2/14/2011 02:19 PM
Barium	51	0.20	3.0		µg/L	1	2/14/2011 02:19 PM
Beryllium	ND	0.090	1.0		µg/L	1	2/14/2011 02:19 PM
Cadmium	ND	0.23	3.0		µg/L	1	2/14/2011 02:19 PM
Cobalt	ND	0.31	3.0		µg/L	1	2/14/2011 02:19 PM
Copper	ND	0.53	5.0		µg/L	1	2/14/2011 02:19 PM
Lead	ND	1.5	10		µg/L	1	2/14/2011 02:19 PM
Molybdenum	13	0.49	5.0		µg/L	1	2/14/2011 02:19 PM
Nickel	ND	1.1	5.0		µg/L	1	2/14/2011 02:19 PM
Silver	ND	0.72	3.0		µg/L	1	2/21/2011 01:21 PM
Vanadium	13	0.19	3.0		µg/L	1	2/14/2011 02:19 PM
Zinc	ND	4.6	10		µg/L	1	2/14/2011 02:19 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified





CLIENT: CH2M HILL
Work Order: N005351
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010\_WDPGPPB

Table with 6 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo. Row 1: MB-36240, MBLK, 6010\_WDPG, ug/L, 2/11/2011, 79185. Row 2: Client ID: PBW, Batch ID: 36240, TestNo: EPA 6010B EPA 3010A, Analysis Date: 2/14/2011, SeqNo: 1246696.

Table with 13 columns: Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Rows include Antimony, Barium, Beryllium, Cadmium, Cobalt, Copper, Lead, Molybdenum, Nickel, Vanadium, Zinc.

Table with 6 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo. Row 1: LCS-36240, LCS, 6010\_WDPG, ug/L, 2/11/2011, 79185. Row 2: Client ID: LCSW, Batch ID: 36240, TestNo: EPA 6010B EPA 3010A, Analysis Date: 2/14/2011, SeqNo: 1246697.

Table with 13 columns: Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Rows include Antimony, Barium, Beryllium, Cadmium, Cobalt, Copper, Lead, Molybdenum, Nickel, Vanadium, Zinc.

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc
3151 W. Post Road
Las Vegas, NV 89118
Tel: 702 307-2659 Fax: 702 307-2691



**CLIENT:** CH2M HILL  
**Work Order:** N005351  
**Project:** PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** 6010\_WDPGEPBB

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: <b>N005349-005A-MS</b>	SampType: <b>MS</b>	TestCode: <b>6010_WDPG</b>	Units: <b>µg/L</b>	Prep Date: <b>2/11/2011</b>	RunNo: <b>79185</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>36240</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>2/14/2011</b>	SeqNo: <b>1246703</b>

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	528.275	20	500.0	0	106	75	125				
Barium	540.868	6.0	500.0	78.71	92.4	75	125				
Beryllium	493.391	2.0	500.0	0	98.7	75	125				
Cadmium	466.084	6.0	500.0	0	93.2	75	125				
Cobalt	462.149	6.0	500.0	0	92.4	75	125				
Copper	500.456	10	500.0	0	100	75	125				
Lead	462.638	20	500.0	0	92.5	75	125				
Molybdenum	585.835	10	500.0	97.46	97.7	75	125				
Nickel	468.805	10	500.0	2.349	93.3	75	125				
Vanadium	480.237	6.0	500.0	0	96.0	75	125				
Zinc	488.092	20	500.0	0	97.6	75	125				

Sample ID: <b>N005349-005A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>6010_WDPG</b>	Units: <b>µg/L</b>	Prep Date: <b>2/11/2011</b>	RunNo: <b>79185</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>36240</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>2/14/2011</b>	SeqNo: <b>1246703</b>

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	543.093	20	500.0	0	109	75	125	528.3	2.77	20	
Barium	550.459	6.0	500.0	78.71	94.3	75	125	540.9	1.76	20	
Beryllium	501.117	2.0	500.0	0	100	75	125	493.4	1.55	20	
Cadmium	477.189	6.0	500.0	0	95.4	75	125	466.1	2.35	20	
Cobalt	472.991	6.0	500.0	0	94.6	75	125	462.1	2.32	20	
Copper	506.761	10	500.0	0	101	75	125	500.5	1.25	20	
Lead	472.304	20	500.0	0	94.5	75	125	462.6	2.07	20	
Molybdenum	599.948	10	500.0	97.46	100	75	125	585.8	2.38	20	
Nickel	479.917	10	500.0	2.349	95.5	75	125	468.8	2.34	20	
Vanadium	487.364	6.0	500.0	0	97.5	75	125	480.2	1.47	20	
Zinc	499.666	20	500.0	0	99.9	75	125	488.1	2.34	20	

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |



**CLIENT:** CH2M HILL  
**Work Order:** N005351  
**Project:** PG&E Topock, 405681.MP.02.GM.03

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 6010\_WDPGEPB

Sample ID: <b>MB-36240</b>	SampType: <b>MBLK</b>	TestCode: <b>6010_WDPG</b>	Units: <b>µg/L</b>	Prep Date: <b>2/11/2011</b>	RunNo: <b>79185</b>						
Client ID: <b>PBW</b>	Batch ID: <b>36240</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>2/21/2011</b>	SeqNo: <b>1246852</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	3.0									

Sample ID: <b>LCS-36240</b>	SampType: <b>LCS</b>	TestCode: <b>6010_WDPG</b>	Units: <b>µg/L</b>	Prep Date: <b>2/11/2011</b>	RunNo: <b>79185</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>36240</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>2/21/2011</b>	SeqNo: <b>1246853</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	472.492	3.0	500.0	0	94.5	85	115				

Sample ID: <b>N005349-005A-MS</b>	SampType: <b>MS</b>	TestCode: <b>6010_WDPG</b>	Units: <b>µg/L</b>	Prep Date: <b>2/11/2011</b>	RunNo: <b>79185</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>36240</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>2/21/2011</b>	SeqNo: <b>1246856</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	509.738	6.0	500.0	0	102	75	125				

Sample ID: <b>N005349-005A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>6010_WDPG</b>	Units: <b>µg/L</b>	Prep Date: <b>2/11/2011</b>	RunNo: <b>79185</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>36240</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>2/21/2011</b>	SeqNo: <b>1246857</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	523.113	6.0	500.0	0	105	75	125	509.7	2.59	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005351  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab ID:** N005351-001

**Client Sample ID:** MW-101-174  
**Collection Date:** 2/7/2011 12:54:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED ICP-MS METALS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110221B	QC Batch: 36244				PrepDate: 2/11/2011	Analyst: JT	
Arsenic	1.2	0.0025	0.10		µg/L	1	2/21/2011 01:31 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005351  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab ID:** N005351-002

**Client Sample ID:** MW-34-080-174  
**Collection Date:** 2/7/2011 12:52:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED ICP-MS METALS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110221B	QC Batch: 36244				PrepDate: 2/11/2011	Analyst: JT	
Arsenic	1.3	0.0025	0.10		µg/L	1	2/21/2011 01:36 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out  
E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005351  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab ID:** N005351-003

**Client Sample ID:** MW-34-100-174  
**Collection Date:** 2/7/2011 2:03:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED ICP-MS METALS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110221B	QC Batch: 36244			PrepDate:		2/11/2011	Analyst: JT
Arsenic	1.5	0.0025	0.10		µg/L	1	2/21/2011 01:41 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out  
E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

CLIENT: CH2M HILL  
 Lab Order: N005351  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005351-004

Client Sample ID: MW-42-055-174  
 Collection Date: 2/7/2011 2:55:00 PM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED ICP-MS METALS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110221B	QC Batch: 36244			PrepDate: 2/11/2011	Analyst: JT		
Arsenic	12	0.0025	0.10	µg/L	1	2/21/2011 01:45 PM	

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005351  
**Project:** PG&E Topock. 405681.MP.02.GM.03  
**Lab ID:** N005351-005

**Client Sample ID:** MW-42-065-174  
**Collection Date:** 2/7/2011 3:30:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED ICP-MS METALS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110221B	QC Batch: 36244				PrepDate: 2/11/2011	Analyst: JT	
Arsenic	1.9	0.0025	0.10		µg/L	1	2/21/2011 01:50 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out  
E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

CLIENT: CH2M HILL  
 Lab Order: N005351  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005351-006

Client Sample ID: MW-100-174  
 Collection Date: 2/8/2011 11:53:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED ICP-MS METALS</b>							
	EPA 3010A			EPA 6020			
RunID: ICP7_110221B	QC Batch: 36244				PrepDate: 2/11/2011	Analyst: JT	
Arsenic	1.3	0.0025	0.10		µg/L	1	2/21/2011 01:55 PM

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - H Holding times for preparation or analysis exceeded
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
  - E Value above quantitation range
  - ND Not Detected at the Reporting Limit
  - Results are wet unless otherwise specified



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

CLIENT: CH2M HILL  
 Lab Order: N005351  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005351-007

Client Sample ID: MW-27-085-174  
 Collection Date: 2/8/2011 11:51:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED ICP-MS METALS</b>							
	EPA 3010A			EPA 6020			
RunID: ICP7_110221B	QC Batch: 36244			PrepDate: 2/11/2011		Analyst: JT	
Arsenic	1.3	0.0025	0.10		µg/L	1	2/21/2011 02:00 PM

Qualifiers: B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

CLIENT: CH2M HILL  
 Lab Order: N005351  
 Project: PG&E Topock, 405681.MP.02.GM.03  
 Lab ID: N005351-008

Client Sample ID: MW-28-090-174  
 Collection Date: 2/8/2011 8:52:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED ICP-MS METALS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110221B	QC Batch: 36244				PrepDate: 2/11/2011	Analyst: JT	
Arsenic	1.7	0.0025	0.10		µg/L	1	2/21/2011 02:05 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005351  
**Project:** PG&E Topock, 405681.MP.02.GM.03  
**Lab ID:** N005351-009

**Client Sample ID:** MW-33-040-174  
**Collection Date:** 2/9/2011 1:27:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED ICP-MS METALS</b>							
	EPA 3010A			EPA 6020			
RunID: ICP7_110221B	QC Batch: 36244				PrepDate: 2/11/2011	Analyst: JT	
Arsenic	12	0.0025	0.10		µg/L	1	2/21/2011 02:10 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

CLIENT: CH2M HILL  
 Lab Order: N005351  
 Project: PG&E Topock. 405681.MP.02.GM.03  
 Lab ID: N005351-010

Client Sample ID: MW-62-110-174  
 Collection Date: 2/9/2011 3:45:00 PM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED ICP-MS METALS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110221B	QC Batch: 36244				PrepDate: 2/11/2011	Analyst: JT	
Arsenic	14	0.0025	0.10		µg/L	1	2/21/2011 02:14 PM

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - H Holding times for preparation or analysis exceeded
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
  - E Value above quantitation range
  - ND Not Detected at the Reporting Limit
  - Results are wet unless otherwise specified



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005351  
**Project:** PG&E Topock. 405681.MP.02.GM.03  
**Lab ID:** N005351-011

**Client Sample ID:** MW-62-190-174  
**Collection Date:** 2/9/2011 3:55:00 PM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED ICP-MS METALS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110221B	QC Batch: 36244				PrepDate: 2/11/2011	Analyst: JT	
Arsenic	8.0	0.0025	0.10		µg/L	1	2/21/2011 02:28 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out  
E Value above quantitation range  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

**CLIENT:** CH2M HILL **Client Sample ID:** MW-12-174  
**Lab Order:** N005351 **Collection Date:** 2/10/2011 11:59:00 AM  
**Project:** PG&E Topock, 405681.MP.02.GM.03 **Matrix:** WATER  
**Lab ID:** N005351-012

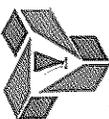
Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**DISSOLVED METALS BY ICP-MS**

RunID:	EPA 3010A			EPA 6020			Analyst:
	QC Batch:			PrepDate:			
ICP7_110221C	36244			2/11/2011			JT
Arsenic	48	0.012	0.50	µg/L	5		2/21/2011 02:48 PM
Selenium	9.8	0.29	0.50	µg/L	1		2/21/2011 02:33 PM
Thallium	ND	0.015	0.50	µg/L	1		2/21/2011 02:33 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified





CLIENT: CH2M HILL
Work Order: N005351
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020\_DIS

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, EPA 3010A, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: MB-36244, MBLK, 6020\_DIS, ug/L, 2/11/2011, 79269, PBW, 36244, EPA 6020, EPA 3010A, 2/21/2011, 1248629. Analytes: Arsenic (ND), Selenium (ND), Thallium (ND).

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, EPA 3010A, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: LCS-36244, LCS, 6020\_DIS, ug/L, 2/11/2011, 79269, LCSW, 36244, EPA 6020, EPA 3010A, 2/21/2011, 1248630. Analytes: Arsenic (8.627), Selenium (8.519), Thallium (9.049).

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, EPA 3010A, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005350-001B-MS, MS, 6020\_DIS, ug/L, 2/11/2011, 79269, ZZZZZZ, 36244, EPA 6020, EPA 3010A, 2/21/2011, 1248633. Analytes: Arsenic (10.873), Selenium (10.333), Thallium (10.320).

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, EPA 3010A, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005350-001B-MSD, MSD, 6020\_DIS, ug/L, 2/11/2011, 79269, ZZZZZZ, 36244, EPA 6020, EPA 3010A, 2/21/2011, 1248634. Analytes: Arsenic (11.377), Selenium (10.434), Thallium (10.435).

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691



CLIENT: CH2M HILL  
 Work Order: N005351  
 Project: PG&E Topock, 405681.MP.02.GM.03

# ANALYTICAL QC SUMMARY REPORT

TestCode: 6020\_WD\_AsPGE

Sample ID: <b>MB-36244</b>	SampType: <b>MBLK</b>	TestCode: <b>6020_WD_As</b>	Units: <b>µg/L</b>	Prep Date: <b>2/11/2011</b>	RunNo: <b>79268</b>						
Client ID: <b>PBW</b>	Batch ID: <b>36244</b>	TestNo: <b>EPA 6020</b>	<b>EPA 3010A</b>	Analysis Date: <b>2/21/2011</b>	SeqNo: <b>1248579</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic ND 0.10

Sample ID: <b>LCS-36244</b>	SampType: <b>LCS</b>	TestCode: <b>6020_WD_As</b>	Units: <b>µg/L</b>	Prep Date: <b>2/11/2011</b>	RunNo: <b>79268</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>36244</b>	TestNo: <b>EPA 6020</b>	<b>EPA 3010A</b>	Analysis Date: <b>2/21/2011</b>	SeqNo: <b>1248580</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic 8.627 0.10 10.00 0 86.3 85 115

Sample ID: <b>N005350-001B-MS</b>	SampType: <b>MS</b>	TestCode: <b>6020_WD_As</b>	Units: <b>µg/L</b>	Prep Date: <b>2/11/2011</b>	RunNo: <b>79268</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>36244</b>	TestNo: <b>EPA 6020</b>	<b>EPA 3010A</b>	Analysis Date: <b>2/21/2011</b>	SeqNo: <b>1248583</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic 10.873 0.10 10.00 1.596 92.8 75 125

Sample ID: <b>N005350-001B-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>6020_WD_As</b>	Units: <b>µg/L</b>	Prep Date: <b>2/11/2011</b>	RunNo: <b>79268</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>36244</b>	TestNo: <b>EPA 6020</b>	<b>EPA 3010A</b>	Analysis Date: <b>2/21/2011</b>	SeqNo: <b>1248584</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic 11.377 0.10 10.00 1.596 97.8 75 125 10.87 4.52 20

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 01-Mar-11

CLIENT: CH2M HILL  
Lab Order: N005351  
Project: PG&E Topock, 405681.MP.02.GM.03  
Lab ID: N005351-012

Client Sample ID: MW-12-174  
Collection Date: 2/10/2011 11:59:00 AM  
Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE

EPA 7470A

RunID: AA1\_110218B QC Batch: 36292 PrepDate: 2/17/2011 Analyst: CEI  
Mercury ND 0.091 0.20 µg/L 1 2/18/2011

- Qualifiers: B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified





CLIENT: CH2M HILL
Work Order: N005351
Project: PG&E Topock, 405681.MP.02.GM.03

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470\_W\_DISSPGE

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: LCS-36292, LCS, 7470\_W\_DIS, ug/L, 2/17/2011, 79271, LCSW, 36292, EPA 7470A, 2/18/2011, 1248757, Mercury, 9.010, 0.20, 10.00, 0, 90.1, 85, 115.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: MB-36292, MBLK, 7470\_W\_DIS, ug/L, 2/17/2011, 79271, PBW, 36292, EPA 7470A, 2/18/2011, 1248758, Mercury, ND, 0.20.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005351-012A-MS, MS, 7470\_W\_DIS, ug/L, 2/17/2011, 79271, ZZZZZZ, 36292, EPA 7470A, 2/18/2011, 1248760, Mercury, 18.456, 0.20, 20.00, 0, 92.3, 75, 125.

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005351-012A-MSD, MSD, 7470\_W\_DIS, ug/L, 2/17/2011, 79271, ZZZZZZ, 36292, EPA 7470A, 2/18/2011, 1248761, Mercury, 18.777, 0.20, 20.00, 0, 93.9, 75, 125, 18.46, 1.73, 20.

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

ATL #1 GMP-174

CH2MHILL

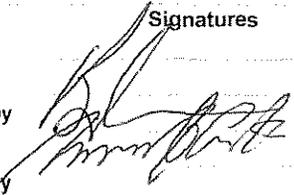
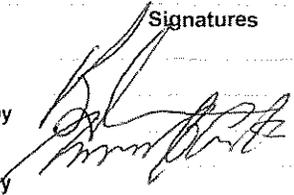
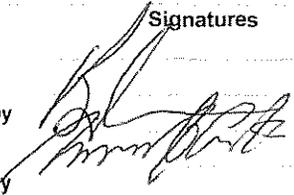
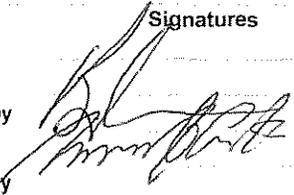
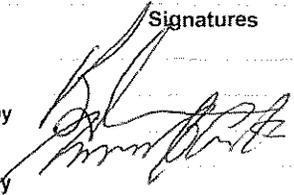
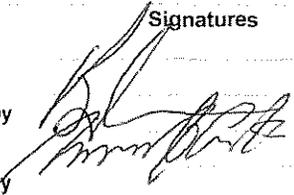
CHAIN OF CUSTODY RECORD

2/10/2011 5:09:49 PM

Page 1 OF 1

Project Name PG&E Topock				Container:			Number of Containers	COMMENTS	
Location Topock				500 ml Poly	500 ml Poly	3 x 40 ml VOA			
Project Number 405681.MP.02.GM.03				Preservatives:	HNO3, 4°C	HNO3, 4°C			H3PO4, 4°C
Project Manager Jay Piper				Filtered:	Field	Field			NA
Sample Manager Shawn Duffy				Holding Time:	180	180	28		
Task Order				Metals (6000/700) Field Filtered Tl;Fe;Zn;Sb;Ba;Be;Cd;Co;Cu;Pb;Hg;Mn; i;S;Ag;As;Tl;V;Zn)			TOC (SM6310C)		
Project 2011-GMP-174-Q1				Arsenic (6020) Field Filtered					
Turnaround Time 10 Days				DATE	TIME	Matrix			
Shipping Date: 2/8/2011									
COC Number: 2									
MW-101-174	2/7/2011	12:54	Water	X				1	N005357 - 1
MW-34-080-174	2/7/2011	12:52	Water	X				1	2
MW-34-100-174	2/7/2011	14:03	Water	X				1	3
MW-42-055-174	2/7/2011	14:55	Water	X				1	4
MW-42-065-174	2/7/2011	15:30	Water	X				1	5
MW-100-174	2/8/2011	11:53	Water	X				1	6
MW-27-085-174	2/8/2011	11:51	Water	X				1	7
MW-28-090-174	2/8/2011	8:52	Water	X				1	8
MW-33-040-174	2/9/2011	13:27	Water	X				1	9
MW-62-110-174	2/9/2011	15:45	Water	X		X		4	10
MW-62-190-174	2/9/2011	15:55	Water	X		X		4	11
MW-12-174	2/10/2011	11:59	Water		X			2	12
TOTAL NUMBER OF CONTAINERS								18	

19 BSL

Approved by  Signatures  
 Sampled by   
 Relinquished by   
 Received by   
 Relinquished by   
 Received by 

Date/Time  
 2-10-11  
 1714  
 2/10/11 @ 1714

Shipping Details  
 Method of Shipment: courier  
 On Ice: yes / no  
 Airbill No:  
 Lab Name: ADVANCED TECHNOLOGY LABORATO  
 Lab Phone: (702) 307-2659

ATTN:  
 Sample Custody  
 and  
 Molly Nguyen

Special Instructions:  
 Feb 7-11, 2011  
 Report Copy to  
 Shawn Duffy  
 (530) 229-3303

ATL #1 GMP-174

CH2MHILL

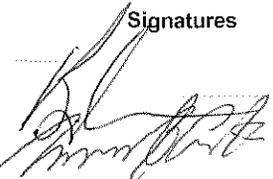
CHAIN OF CUSTODY RECORD

2/10/2011 5:09:49 PM

Page 1 OF 1

Project Name PG&E Topock Location Topock Project Number 405681.MP.02.GM.03 Project Manager Jay Piper Sample Manager Shawn Duffy  Task Order Project 2011-GMP-174-Q1 Turnaround Time 10 Days Shipping Date: 2/8/2011 COC Number: 2				Container:	500 ml Poly	500 ml Poly	3 x 40 ml VOA	Preservatives: HNO3, 4°C HNO3, 4°C H3PO4, 4°C	Filtered: Field Field NA	Holding Time: 180 180 28	Asenic (6020) Field Filtered	Metals (60007/000) Field Filtered Tite22(SbBaBeCdCoCuPbHgMn SeAgAsTlVZn)	TOC (SM6310C)	Number of Containers	COMMENTS							
DATE	TIME	Matrix																				
MW-101-174	2/7/2011	12:54	Water	X																	1	
MW-34-080-174	2/7/2011	12:52	Water	X																	1	
MW-34-100-174	2/7/2011	14:03	Water	X									1									
MW-42-055-174	2/7/2011	14:55	Water	X									1									
MW-42-065-174	2/7/2011	15:30	Water	X									1									
MW-100-174	2/8/2011	11:53	Water	X									1									
MW-27-085-174	2/8/2011	11:51	Water	X									1									
MW-28-090-174	2/8/2011	8:52	Water	X									1									
MW-33-040-174	2/9/2011	13:27	Water	X									1									
MW-62-110-174	2/9/2011	15:45	Water	X			X						4									
MW-62-190-174	2/9/2011	15:55	Water	X			X						4									
MW-12-174	2/10/2011	11:59	Water		X								2									
TOTAL NUMBER OF CONTAINERS													18									

19 BSL

<b>Signatures</b> Approved by  Sampled by  Relinquished by  Received by  Relinquished by  Received by 	<b>Date/Time</b> 2-10-11 1714 2/10/11 @ 1714	<b>Shipping Details</b> Method of Shipment: courier On Ice: yes / no Airbill No: Lab Name: ADVANCED TECHNOLOGY LABORATO Lab Phone: (702) 307-2659	<b>Special Instructions:</b> Feb 7-11, 2011  ATTN:  Sample Custody and Molly Nguyen  Report Copy to Shawn Duffy (530) 229-3303
--	---	--	---

# Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO and/or NA signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

## Sample Receipt Checklist

Cooler Received/Opened On: 2/10/2011 Workorder: N005351  
 Rep sample Temp (Deg C): 2.4,3.4 IR Gun ID: IR 1  
 Temp Blank:  Yes  No  
 Carrier name: ATL  
 Last 4 digits of Tracking No.: Packing Material Used: Bubble Wrap  
 Cooling process:  Ice  Ice Pack  Dry Ice  Other  None

- |   |   |                             |   |
|---|---|-----------------------------|---|
| 1. Shipping container/cooler in good condition?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>            |
| 2. Custody seals intact, signed, dated on shipping container/cooler?                    | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 5. Sampler's name present in COC?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 6. Chain of custody signed when relinquished and received?                              | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 7. Chain of custody agrees with sample labels?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 8. Samples in proper container/bottle?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 9. Sample containers intact?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 10. Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 11. All samples received within holding time?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 12. Temperature of rep sample or Temp Blank within acceptable limit?                    | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/>                     |
| 13. Water - VOA vials have zero headspace?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/>          |
| 14. Water - pH acceptable upon receipt?<br>Example: pH > 12 for (CN,S); pH<2 for Metals | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/>                     |
| 15. Did the bottle labels indicate correct preservatives used?                          | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/>                     |
| 16. Were there Non-Conformance issues at login?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/>          |
| Was Client notified?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/>          |

Comments:

Checklist Completed B fw MBC 2/11/11

Reviewed By: g 2/11/11

### SAMPLE CALCULATION

METHOD: EPA 6010B  
TEST NAME: METALS BY ICP  
MATRIX: WATER

FORMULA:

Calculate the individual metal concentration, in ug/L, in the original sample as follows:

$$M, \text{ ug/L} = \frac{A \cdot C \cdot DF \cdot 1000}{B}$$

where: M= concentration of the metal in ug/L  
A= mg/L, ICP calculated concentration  
B= volume of sample, Liter  
C= final volume of digestate, Liter  
DF= dilution factor

For N005351-012A, concentration in ug/L are calculated as follows:

$$Ba, \text{ ug/L} = \frac{0.05083 \text{ mg/L} \cdot 0.025 \text{ L} \cdot 1 \cdot 1000}{0.025 \text{ L}}$$

$$Ba = 50.83 \text{ ug/L}$$

Reporting result in two significant figures,

$$Ba = 51 \text{ ug/L}$$

*4/2/2011*

CLIENT: CH2M HILL  
 Work Order: N005351  
 Project: PG&E Topock, 405681.MP.02.GM.03

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6010\_WDPGEPPB

Sample ID: N005349-005ADT	SampType: DT	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79185						
Client ID: ZZZZZZ	Batch ID: 36240	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 2/14/2011	SeqNo: 1246706						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	80.352	30						78.71	2.06	10	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

**DILUTION TEST**

**Analytical Method:** EPA 6010B / 200.7  
**Digestion Method:** EPA 3010A  
**Date of Analysis:** 2/14/2011  
**Digestion Date:** 2/11/2011  
**Instrument Name:** ICP1  
**Analysts:** KB

**Matrix:** WATER  
**Amount of Sample:** 25 mL  
**Units:** ug/L

**Work Order # :** N005349-005A  
**Batch # :** 36240

Analyte	A	B	Difference	% D
Barium	78.71	80.352	-1.64200	-2.1

FORMULA:

$$\%D = \frac{(A-B)*100}{A}$$

where:

% D = % Difference  
 A= ug/L, ICP calculated concentration @2X dilution  
 B= ug/L, ICP calculated concentration @10x dilution

CLIENT: CH2M HILL  
 Work Order: N005351  
 Project: PG&E Topock, 405681.MP.02.GM.03

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6010\_WDPGEPPB

Sample ID: N005349-005APS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79185						
Client ID: ZZZZZZ	Batch ID: 36240	TestNo: EPA 6010B EPA 3010A		Analysis Date: 2/14/2011	SeqNo: 1246708						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1062.949	20	1000	0	106	75	125				
Barium	1017.427	6.0	1000	78.71	93.9	75	125				
Beryllium	998.282	2.0	1000	0	99.8	75	125				
Cadmium	949.271	6.0	1000	0	94.9	75	125				
Cobalt	924.274	6.0	1000	0	92.4	75	125				
Copper	1010.143	10	1000	0	101	75	125				
Lead	925.019	20	1000	0	92.5	75	125				
Molybdenum	1084.163	10	1000	97.46	98.7	75	125				
Nickel	941.151	10	1000	2.349	93.9	75	125				
Vanadium	977.844	6.0	1000	0	97.8	75	125				
Zinc	983.735	20	1000	0	98.4	75	125				

Sample ID: N005349-005APS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79185						
Client ID: ZZZZZZ	Batch ID: 36240	TestNo: EPA 6010B EPA 3010A		Analysis Date: 2/14/2011	SeqNo: 1246710						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	2595.368	50	2500	0	104	75	125				
Barium	2472.463	15	2500	78.71	95.7	75	125				
Beryllium	2493.294	5.0	2500	0	99.7	75	125				
Cadmium	2418.291	15	2500	0	96.7	75	125				
Cobalt	2366.909	15	2500	0	94.7	75	125				
Copper	2478.098	25	2500	0	99.1	75	125				
Lead	2383.554	50	2500	0	95.3	75	125				
Molybdenum	2607.374	25	2500	97.46	100	75	125				
Nickel	2403.318	25	2500	2.349	96.0	75	125				
Vanadium	2463.618	15	2500	0	98.5	75	125				
Zinc	2494.886	50	2500	0	99.8	75	125				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

**CLIENT:** CH2M HILL  
**Work Order:** N005351  
**Project:** PG&E Topock, 405681.MP.02.GM.03

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 6010\_WDPGEPB

Sample ID: N005349-005APS		SampType: PS		TestCode: 6010_WDPG		Units: µg/L		Prep Date:		RunNo: 79185	
Client ID: ZZZZZZ		Batch ID: 36240		TestNo: EPA 6010B EPA 3010A		Analysis Date: 2/14/2011		SeqNo: 1246711			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	5019.810	100	5000	0	100	75	125				
Barium	4833.790	30	5000	78.71	95.1	75	125				
Beryllium	4941.110	10	5000	0	98.8	75	125				
Cadmium	4784.556	30	5000	0	95.7	75	125				
Cobalt	4722.414	30	5000	0	94.4	75	125				
Copper	4857.846	50	5000	0	97.2	75	125				
Lead	4745.480	100	5000	0	94.9	75	125				
Molybdenum	5042.072	50	5000	97.46	98.9	75	125				
Nickel	4771.825	50	5000	2.349	95.4	75	125				
Vanadium	4866.283	30	5000	0	97.3	75	125				
Zinc	4917.200	100	5000	0	98.3	75	125				

Sample ID: N005349-005APS		SampType: PS		TestCode: 6010_WDPG		Units: µg/L		Prep Date:		RunNo: 79185	
Client ID: ZZZZZZ		Batch ID: 36240		TestNo: EPA 6010B EPA 3010A		Analysis Date: 2/21/2011		SeqNo: 1246858			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	1049.618	6.0	1000	0	105	75	125				

Sample ID: N005349-005APS		SampType: PS		TestCode: 6010_WDPG		Units: µg/L		Prep Date:		RunNo: 79185	
Client ID: ZZZZZZ		Batch ID: 36240		TestNo: EPA 6010B EPA 3010A		Analysis Date: 2/21/2011		SeqNo: 1246859			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	2510.201	15	2500	0	100	75	125				

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |

## Sample Calculation

**METHOD:** EPA 6020

**TEST NAME:** Heavy Metals by ICP-MS

**MATRIX:** Aqueous

**FORMULA:**

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

$$\text{Arsenic, ug/L} = A * DF * PF$$

where:

A = ug/L, calculated concentration

DF = dilution factor

PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N005351-001A**, the concentration in ug/L is calculated as follows:

$$\begin{aligned} \text{Arsenic, ug/L} &= 1.226 * 1 * (1) \\ &= 1.226 \text{ ug/L} \end{aligned}$$

Reporting results in two significant figures,

$$\text{Arsenic, ug/L} = 1.2$$

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Work Order No.: N005351  
 Test Method: EPA 6020  
 Analysis Date: 02/21/11

Dilution Test Summary

Matrix: Aqueous  
 Batch No.: 36244

Instrument ID: ICP-MS #2  
 Instrument Description: Agilent 7700x

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable to TI. The calc. Values are < 25X the RL.

*ALSO  
 \* WS for  
 2/28/11*

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N005350-001B-DT 5X	Molybdenum	µg/L	19.09423019		19.22087091	-0.66%	10
N005350-001B-DT 5X	Arsenic	µg/L	1.651144783		1.595823471	3.47%	10
N005350-001B-DT 5X	Selenium	µg/L	1.777908306		1.877397108	-5.30%	10
N005350-001B-DT 5X	Thallium	µg/L	0.718054626	NA	0.818259983	-12.25%	10



CLIENT: CH2M HILL  
 Work Order: N005351  
 Project: PG&E Topock, 405681.MP.02.GM.03

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6020\_DIS

Sample ID: N005350-001B-PS 2	SampType: PS	TestCode: 6020_DIS	Units: µg/L	Prep Date:	RunNo: 79269						
Client ID: ZZZZZZ	Batch ID: 36244	TestNo: EPA 6020	EPA 3010A	Analysis Date: 2/21/2011	SeqNo: 1248635						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.338	0.20	20.00	1.596	88.7	75	125				
Selenium	18.453	1.0	20.00	1.877	82.9	75	125				
Thallium	19.326	1.0	20.00	0.8183	92.5	75	125				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

## Sample Calculation

**METHOD:** EPA 7470

**TEST NAME:** Mercury in Water by Cold-Vapor Technique

**MATRIX:** Aqueous

FORMULA:

Calculate the Mercury concentration, in ug/L, in the original sample as follows:

$$\text{Mercury, ug/L} = A * DF * PF * 0.5$$

where:

A = ug/L, calculated concentration

DF = dilution factor

PF = Final Vol. of Digestate in mL / Wt. of Sample used in mL

0.5, is the conversion factor.

For Sample **N005351-012A**, the concentration in ug/L is calculated as follows:

$$\begin{aligned} \text{Mercury, ug/L} &= 0 * 1 * (50/25) * 0.5 \\ &= 0.0 \text{ ug/L} \end{aligned}$$

Reporting results in two significant figures,

$$\text{Mercury, ug/L} = 0.0$$

$$\text{Mercury, ug/L} = \text{ND}$$



March 10, 2011

Shawn P. Duffy  
CH2M HILL  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

TEL: (530) 229-3303  
FAX: (530) 339-3303

CA-ELAP No.: 2676  
NV Cert. No.: NV-009222007A

Workorder No.: N005426

RE: PG&E Topock

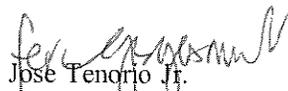
Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 25, 2011 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

  
Jose Tenorio Jr.  
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.



**CLIENT:** CH2M HILL  
**Project:** PG&E Topock  
**Lab Order:** N005426

**CASE NARRATIVE**

---

**SAMPLE RECEIVING/GENERAL COMMENTS:**

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

**Analytical Comments for EPA 8260B:**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N005426-001EMS and N005426-001EMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

RPD for Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria for 1,2,4-Trimethylbenzene, Naphthalene and Styrene ; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

**Analytical Comments for SM 5310C:**

Matrix Spike(MS) and Matrix Spike Duplicate(MSD) were not performed due to limited sample. LCS/LCSD was used instead to measure precision.



**Advanced Technology Laboratories, Inc.**

Date: 10-Mar-11

CLIENT: CH2M HILL  
Project: PG&E Topock  
Lab Order: N005426  
Contract No:

**Work Order Sample Summary**

---

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N005426-001A	MW-64BR-LWR-150-175	Water	2/24/2011 11:50:00 AM	2/25/2011	
N005426-001B	MW-64BR-LWR-150-175	Water	2/24/2011 11:50:00 AM	2/25/2011	
N005426-001C	MW-64BR-LWR-150-175	Water	2/24/2011 11:50:00 AM	2/25/2011	
N005426-001D	MW-64BR-LWR-150-175	Water	2/24/2011 11:50:00 AM	2/25/2011	
N005426-001E	MW-64BR-LWR-150-175	Water	2/24/2011 11:50:00 AM	2/25/2011	
N005426-002A	TB-Packer-175-04	Water	2/24/2011 11:30:00 AM	2/25/2011	



Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: 10-Mar-11

CLIENT: CH2M HILL  
Lab Order: N005426  
Project: PG&E Topock  
Lab ID: N005426-001

Client Sample ID: MW-64BR-LWR-150-175  
Collection Date: 2/24/2011 11:50:00 AM  
Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

TOTAL FILTERABLE RESIDUE

SM2540C

RunID: WETCHEM\_110301G QC Batch: 36384 PrepDate: 3/1/2011 Analyst: CEI  
Total Dissolved Solids (Residue, Filterable) 9700 100 100 mg/L 1 3/1/2011

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out





CLIENT: CH2M HILL  
Work Order: N005426  
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1\_2540C\_W

Sample ID: MB-36384	SampType: MBLK	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 3/1/2011	RunNo: 79313						
Client ID: PBW	Batch ID: 36384	TestNo: SM2540C		Analysis Date: 3/1/2011	SeqNo: 1249376						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera	ND	10									
--	----	----	--	--	--	--	--	--	--	--	--

Sample ID: LCS-36384	SampType: LCS	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 3/1/2011	RunNo: 79313						
Client ID: LCSW	Batch ID: 36384	TestNo: SM2540C		Analysis Date: 3/1/2011	SeqNo: 1249377						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera	933.000	10	1000	0	93.3	80	120				
--	---------	----	------	---	------	----	-----	--	--	--	--

Sample ID: N005426-001C-DUP	SampType: DUP	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 3/1/2011	RunNo: 79313						
Client ID: ZZZZZZ	Batch ID: 36384	TestNo: SM2540C		Analysis Date: 3/1/2011	SeqNo: 1249380						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera	9930.000	100						9660	2.76	5	
--	----------	-----	--	--	--	--	--	------	------	---	--

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 10-Mar-11

CLIENT: CH2M HILL  
Lab Order: N005426  
Project: PG&E Topock  
Lab ID: N005426-001

Client Sample ID: MW-64BR-LWR-150-175  
Collection Date: 2/24/2011 11:50:00 AM  
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

HEXAVALENT CHROMIUM BY IC

EPA 218.6

RunID: IC1_110226A	QC Batch: R79342					PrepDate:	Analyst: QBM
Hexavalent Chromium	100	0.56	4.0		µg/L	20	2/26/2011 11:35 AM

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



CLIENT: CH2M HILL  
 Work Order: N005426  
 Project: PG&E Topock

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 218.6\_W

Sample ID: MB-R79342	SampType: MBLK	TestCode: 218.6_W	Units: µg/L	Prep Date:	RunNo: 79342						
Client ID: PBW	Batch ID: R79342	TestNo: EPA 218.6		Analysis Date: 2/26/2011	SeqNo: 1249902						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: LCS-R79342	SampType: LCS	TestCode: 218.6_W	Units: µg/L	Prep Date:	RunNo: 79342						
Client ID: LCSW	Batch ID: R79342	TestNo: EPA 218.6		Analysis Date: 2/26/2011	SeqNo: 1249903						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.995	0.20	5.000	0	99.9	90	110				

Sample ID: N005425-001ADUP	SampType: DUP	TestCode: 218.6_W	Units: µg/L	Prep Date:	RunNo: 79342						
Client ID: ZZZZZZ	Batch ID: R79342	TestNo: EPA 218.6		Analysis Date: 2/26/2011	SeqNo: 1249905						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.116	0.20						0.1085	0	20	

Sample ID: N005425-001AMS	SampType: MS	TestCode: 218.6_W	Units: µg/L	Prep Date:	RunNo: 79342						
Client ID: ZZZZZZ	Batch ID: R79342	TestNo: EPA 218.6		Analysis Date: 2/26/2011	SeqNo: 1249906						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075	0.20	1.000	0.1085	96.6	90	110				

Sample ID: N005425-001AMSD	SampType: MSD	TestCode: 218.6_W	Units: µg/L	Prep Date:	RunNo: 79342						
Client ID: ZZZZZZ	Batch ID: R79342	TestNo: EPA 218.6		Analysis Date: 2/26/2011	SeqNo: 1249907						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0.1085	97.2	90	110	1.075	0.522	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



**CLIENT:** CH2M HILL  
**Work Order:** N005426  
**Project:** PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** 218.6\_W

Advanced Technology Laboratories, Inc

Sample ID: <b>N005426-001AMS</b>	SampType: <b>MS</b>	TestCode: <b>218.6_W</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>79342</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>R79342</b>	TestNo: <b>EPA 218.6</b>		Analysis Date: <b>2/26/2011</b>	SeqNo: <b>1249909</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	202.461	4.0	100.0	103.5	99.0	90	110				

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 10-Mar-11

CLIENT: CH2M HILL  
 Lab Order: N005426  
 Project: PG&E Topock  
 Lab ID: N005426-001

Client Sample ID: MW-64BR-LWR-150-175  
 Collection Date: 2/24/2011 11:50:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**ANIONS BY ION CHROMATOGRAPHY**

**EPA 300.0**

RunID: IC2_110226A	QC Batch: R79338						Analyst: QBM
Chloride	5300	63	500		mg/L	1000	2/26/2011 09:26 AM

**ANIONS BY ION CHROMATOGRAPHY**

**EPA 300.0**

RunID: IC2_110226A	QC Batch: R79338						Analyst: QBM
Nitrogen, Nitrate (As N)	ND	0.055	2.5		mg/L	5	2/26/2011 10:14 AM

**Qualifiers:** B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 S Spike/Surrogate outside of limits due to matrix interference  
 DO Surrogate Diluted Out  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 Results are wet unless otherwise specified





CLIENT: CH2M HILL
Work Order: N005426
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300\_W\_CLPGE

Table with 12 columns: Sample ID, Client ID, Analyte, SampType, Batch ID, Result, TestCode, PQL, SPK value, SPK Ref Val, Units, %REC, Prep Date, LowLimit, HighLimit, RunNo, SeqNo, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: MB-R79338\_CL, PBW, Chloride, MBLK, R79338, ND, 300\_W\_CLP, 0.50, EPA 300.0, mg/L, 2/26/2011, 79338, 1249813.

Table with 12 columns: Sample ID, Client ID, Analyte, SampType, Batch ID, Result, TestCode, PQL, SPK value, SPK Ref Val, Units, %REC, Prep Date, LowLimit, HighLimit, RunNo, SeqNo, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: LCS-R79338\_CL, LCSW, Chloride, LCS, R79338, 2.367, 300\_W\_CLP, 0.50, EPA 300.0, mg/L, 2/26/2011, 79338, 1249814.

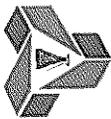
Table with 12 columns: Sample ID, Client ID, Analyte, SampType, Batch ID, Result, TestCode, PQL, SPK value, SPK Ref Val, Units, %REC, Prep Date, LowLimit, HighLimit, RunNo, SeqNo, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005426-001CDUP, ZZZZZZ, Chloride, DUP, R79338, 5429.000, 300\_W\_CLP, 500, EPA 300.0, mg/L, 2/26/2011, 79338, 1249816.

Table with 12 columns: Sample ID, Client ID, Analyte, SampType, Batch ID, Result, TestCode, PQL, SPK value, SPK Ref Val, Units, %REC, Prep Date, LowLimit, HighLimit, RunNo, SeqNo, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005426-001CMS, ZZZZZZ, Chloride, MS, R79338, 7980.000, 300\_W\_CLP, 500, EPA 300.0, mg/L, 2/26/2011, 79338, 1249817.

Table with 12 columns: Sample ID, Client ID, Analyte, SampType, Batch ID, Result, TestCode, PQL, SPK value, SPK Ref Val, Units, %REC, Prep Date, LowLimit, HighLimit, RunNo, SeqNo, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005426-001CMSD, ZZZZZZ, Chloride, MSD, R79338, 7890.000, 300\_W\_CLP, 500, EPA 300.0, mg/L, 2/26/2011, 79338, 1249818.

Qualifiers:
B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.
3151 W. Post Road Las Vegas, NV 89118
Tel: 702 307-2659 Fax: 702 307-2691



**CLIENT:** CH2M HILL  
**Work Order:** N005426  
**Project:** PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_NO3PGE

Advanced Technology Laboratories, Inc

Sample ID: <b>MB-R79338_NO3</b>	SampType: <b>MBLK</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79338</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R79338</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/26/2011</b>	SeqNo: <b>1249823</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N)	ND	0.50									
--------------------------	----	------	--	--	--	--	--	--	--	--	--

Sample ID: <b>LCS-R79338_NO3</b>	SampType: <b>LCS</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79338</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R79338</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/26/2011</b>	SeqNo: <b>1249824</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N)	2.417	0.50	2.500	0	96.7	90	110				
--------------------------	-------	------	-------	---	------	----	-----	--	--	--	--

Sample ID: <b>N005426-001CDUP</b>	SampType: <b>DUP</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79338</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>R79338</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/26/2011</b>	SeqNo: <b>1249826</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N)	0.935	2.5						0.9550	0	20	
--------------------------	-------	-----	--	--	--	--	--	--------	---	----	--

Sample ID: <b>N005426-001CMS</b>	SampType: <b>MS</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79338</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>R79338</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/26/2011</b>	SeqNo: <b>1249827</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N)	12.515	2.5	12.50	0.9550	92.5	80	120				
--------------------------	--------	-----	-------	--------	------	----	-----	--	--	--	--

Sample ID: <b>N005426-001CMSD</b>	SampType: <b>MSD</b>	TestCode: <b>300_W_NO3P</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>79338</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>R79338</b>	TestNo: <b>EPA 300.0</b>		Analysis Date: <b>2/26/2011</b>	SeqNo: <b>1249828</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Nitrate (As N)	12.500	2.5	12.50	0.9550	92.4	80	120	12.52	0.120	20	
--------------------------	--------	-----	-------	--------	------	----	-----	-------	-------	----	--

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 10-Mar-11

CLIENT: CH2M HILL  
Lab Order: N005426  
Project: PG&E Topock  
Lab ID: N005426-001

Client Sample ID: MW-64BR-LWR-150-175  
Collection Date: 2/24/2011 11:50:00 AM  
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP</b>							
	<b>EPA 3010A</b>			<b>EPA 6010B</b>			
RunID: ICP1_110303C	QC Batch: 36401			PrepDate:	3/2/2011	Analyst: KAB	
Chromium	97	0.44	2.0	µg/L	2	3/3/2011 04:59 PM	

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out





CLIENT: CH2M HILL  
Work Order: N005426  
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010\_WDPGPPB

Sample ID: MB-36401	SampType: MBLK	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 3/2/2011	RunNo: 79321						
Client ID: PBW	Batch ID: 36401	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 3/3/2011	SeqNo: 1249502						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.488	1.0									

Sample ID: LCS-36401	SampType: LCS	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 3/2/2011	RunNo: 79321						
Client ID: LCSW	Batch ID: 36401	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 3/3/2011	SeqNo: 1249503						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	472.734	1.0	500.0	0	94.5	85	115				

Sample ID: N005426-001B-MS	SampType: MS	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 3/2/2011	RunNo: 79321						
Client ID: ZZZZZZ	Batch ID: 36401	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 3/3/2011	SeqNo: 1249510						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	574.300	2.0	500.0	97.11	95.4	75	125				

Sample ID: N005426-001B-MSD	SampType: MSD	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 3/2/2011	RunNo: 79321						
Client ID: ZZZZZZ	Batch ID: 36401	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 3/3/2011	SeqNo: 1249511						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	577.062	2.0	500.0	97.11	96.0	75	125	574.3	0.480	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 10-Mar-11

CLIENT: CH2M HILL  
Lab Order: N005426  
Project: PG&E Topock  
Lab ID: N005426-001

Client Sample ID: MW-64BR-LWR-150-175  
Collection Date: 2/24/2011 11:50:00 AM  
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED ICP-MS METALS</b>							
	EPA 3010A			EPA 6020			
RunID: ICP7_110302B	QC Batch: 36388			PrepDate:		3/1/2011	Analyst: JT
Arsenic	4.5	0.0025	0.10		µg/L	1	3/2/2011 06:14 PM

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



Advanced Technology Laboratories, Inc.

Date: 10-Mar-11

CLIENT: CH2M HILL  
 Work Order: N005426  
 Project: PG&E Topock

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6020\_WD\_AsPGE

Sample ID: MB-36388	SampType: MBLK	TestCode: 6020_WD_As	Units: µg/L	Prep Date: 3/1/2011	RunNo: 79344						
Client ID: PBW	Batch ID: 36388	TestNo: EPA 6020	EPA 3010A	Analysis Date: 3/2/2011	SeqNo: 1249925						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	0.10									
---------	----	------	--	--	--	--	--	--	--	--	--

Sample ID: LCS-36388	SampType: LCS	TestCode: 6020_WD_As	Units: µg/L	Prep Date: 3/1/2011	RunNo: 79344						
Client ID: LCSW	Batch ID: 36388	TestNo: EPA 6020	EPA 3010A	Analysis Date: 3/2/2011	SeqNo: 1249926						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	8.986	0.10	10.00	0	89.9	85	115				
---------	-------	------	-------	---	------	----	-----	--	--	--	--

Sample ID: N005426-001B-MS	SampType: MS	TestCode: 6020_WD_As	Units: µg/L	Prep Date: 3/1/2011	RunNo: 79344						
Client ID: ZZZZZZ	Batch ID: 36388	TestNo: EPA 6020	EPA 3010A	Analysis Date: 3/2/2011	SeqNo: 1249930						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	14.057	0.10	10.00	4.452	96.1	75	125				
---------	--------	------	-------	-------	------	----	-----	--	--	--	--

Sample ID: N005426-001B-MSD	SampType: MSD	TestCode: 6020_WD_As	Units: µg/L	Prep Date: 3/1/2011	RunNo: 79344						
Client ID: ZZZZZZ	Batch ID: 36388	TestNo: EPA 6020	EPA 3010A	Analysis Date: 3/2/2011	SeqNo: 1249931						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	14.157	0.10	10.00	4.452	97.1	75	125	14.06	0.710	20	
---------	--------	------	-------	-------	------	----	-----	-------	-------	----	--

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 10-Mar-11

CLIENT: CH2M HILL  
 Lab Order: N005426  
 Project: PG&E Topock  
 Lab ID: N005426-001

Client Sample ID: MW-64BR-LWR-150-175  
 Collection Date: 2/24/2011 11:50:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS1_110308B	QC Batch: D11VW030	PrepDate:	Analyst: QBM		
1,1,1,2-Tetrachloroethane	ND 0.061	1.0	µg/L	1	3/8/2011 04:02 PM
1,1,1-Trichloroethane	ND 0.068	1.0	µg/L	1	3/8/2011 04:02 PM
1,1,2,2-Tetrachloroethane	ND 0.054	1.0	µg/L	1	3/8/2011 04:02 PM
1,1,2-Trichloroethane	ND 0.083	1.0	µg/L	1	3/8/2011 04:02 PM
1,1-Dichloroethane	ND 0.099	1.0	µg/L	1	3/8/2011 04:02 PM
1,1-Dichloroethene	ND 0.094	1.0	µg/L	1	3/8/2011 04:02 PM
1,1-Dichloropropene	ND 0.082	1.0	µg/L	1	3/8/2011 04:02 PM
1,2,3-Trichlorobenzene	ND 0.10	1.0	µg/L	1	3/8/2011 04:02 PM
1,2,3-Trichloropropane	ND 0.12	1.0	µg/L	1	3/8/2011 04:02 PM
1,2,4-Trichlorobenzene	ND 0.12	1.0	µg/L	1	3/8/2011 04:02 PM
1,2,4-Trimethylbenzene	ND 0.095	1.0	µg/L	1	3/8/2011 04:02 PM
1,2-Dibromo-3-chloropropane	ND 0.15	2.0	µg/L	1	3/8/2011 04:02 PM
1,2-Dibromoethane	ND 0.14	1.0	µg/L	1	3/8/2011 04:02 PM
1,2-Dichlorobenzene	ND 0.070	1.0	µg/L	1	3/8/2011 04:02 PM
1,2-Dichloroethane	ND 0.17	1.0	µg/L	1	3/8/2011 04:02 PM
1,2-Dichloropropane	ND 0.085	1.0	µg/L	1	3/8/2011 04:02 PM
1,3,5-Trimethylbenzene	ND 0.087	1.0	µg/L	1	3/8/2011 04:02 PM
1,3-Dichlorobenzene	ND 0.090	1.0	µg/L	1	3/8/2011 04:02 PM
1,3-Dichloropropane	ND 0.074	1.0	µg/L	1	3/8/2011 04:02 PM
1,4-Dichlorobenzene	ND 0.092	1.0	µg/L	1	3/8/2011 04:02 PM
2,2-Dichloropropane	ND 0.061	1.0	µg/L	1	3/8/2011 04:02 PM
2-Butanone	ND 1.0	10	µg/L	1	3/8/2011 04:02 PM
2-Chlorotoluene	ND 0.080	1.0	µg/L	1	3/8/2011 04:02 PM
4-Chlorotoluene	ND 0.10	1.0	µg/L	1	3/8/2011 04:02 PM
4-Isopropyltoluene	ND 0.080	1.0	µg/L	1	3/8/2011 04:02 PM
4-Methyl-2-pentanone	ND 0.76	10	µg/L	1	3/8/2011 04:02 PM
Acetone	ND 1.6	10	µg/L	1	3/8/2011 04:02 PM
Acrolein	ND 4.3	20	µg/L	1	3/8/2011 04:02 PM
Acrylonitrile	ND 0.61	20	µg/L	1	3/8/2011 04:02 PM
Benzene	ND 0.075	1.0	µg/L	1	3/8/2011 04:02 PM
Bromobenzene	ND 0.082	1.0	µg/L	1	3/8/2011 04:02 PM
Bromochloromethane	ND 0.15	1.0	µg/L	1	3/8/2011 04:02 PM
Bromodichloromethane	ND 0.063	1.0	µg/L	1	3/8/2011 04:02 PM
Bromoform	ND 0.086	1.0	µg/L	1	3/8/2011 04:02 PM
Bromomethane	ND 0.13	1.0	µg/L	1	3/8/2011 04:02 PM
Carbon disulfide	ND 0.054	1.0	µg/L	1	3/8/2011 04:02 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 10-Mar-11

CLIENT: CH2M HILL  
 Lab Order: N005426  
 Project: PG&E Topock  
 Lab ID: N005426-001

Client Sample ID: MW-64BR-LWR-150-175  
 Collection Date: 2/24/2011 11:50:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS1_110308B	QC Batch: D11VW030	PrepDate:	Analyst: QBM			
Carbon tetrachloride	ND	0.10	1.0	µg/L	1	3/8/2011 04:02 PM
Chlorobenzene	ND	0.092	1.0	µg/L	1	3/8/2011 04:02 PM
Chloroethane	ND	0.14	1.0	µg/L	1	3/8/2011 04:02 PM
Chloroform	ND	0.058	1.0	µg/L	1	3/8/2011 04:02 PM
Chloromethane	ND	0.054	1.0	µg/L	1	3/8/2011 04:02 PM
cis-1,2-Dichloroethene	ND	0.11	1.0	µg/L	1	3/8/2011 04:02 PM
cis-1,3-Dichloropropene	ND	0.10	1.0	µg/L	1	3/8/2011 04:02 PM
Dibromochloromethane	ND	0.061	1.0	µg/L	1	3/8/2011 04:02 PM
Dibromomethane	ND	0.15	1.0	µg/L	1	3/8/2011 04:02 PM
Dichlorodifluoromethane	ND	0.12	1.0	µg/L	1	3/8/2011 04:02 PM
Ethylbenzene	ND	0.051	1.0	µg/L	1	3/8/2011 04:02 PM
Freon-113	ND	0.080	1.0	µg/L	1	3/8/2011 04:02 PM
Hexachlorobutadiene	ND	0.17	1.0	µg/L	1	3/8/2011 04:02 PM
Isopropylbenzene	ND	0.057	1.0	µg/L	1	3/8/2011 04:02 PM
m,p-Xylene	ND	0.17	1.0	µg/L	1	3/8/2011 04:02 PM
Methylene chloride	ND	0.10	5.0	µg/L	1	3/8/2011 04:02 PM
MTBE	ND	0.089	1.0	µg/L	1	3/8/2011 04:02 PM
n-Butylbenzene	ND	0.082	1.0	µg/L	1	3/8/2011 04:02 PM
n-Propylbenzene	ND	0.087	1.0	µg/L	1	3/8/2011 04:02 PM
Naphthalene	ND	0.056	1.0	µg/L	1	3/8/2011 04:02 PM
o-Xylene	ND	0.077	1.0	µg/L	1	3/8/2011 04:02 PM
sec-Butylbenzene	ND	0.098	1.0	µg/L	1	3/8/2011 04:02 PM
Styrene	ND	0.072	1.0	µg/L	1	3/8/2011 04:02 PM
tert-Butylbenzene	ND	0.062	1.0	µg/L	1	3/8/2011 04:02 PM
Tetrachloroethene	ND	0.13	1.0	µg/L	1	3/8/2011 04:02 PM
Toluene	ND	0.12	2.5	µg/L	1	3/8/2011 04:02 PM
trans-1,2-Dichloroethene	ND	0.094	1.0	µg/L	1	3/8/2011 04:02 PM
trans-1,3-Dichloropropene	ND	0.10	1.0	µg/L	1	3/8/2011 04:02 PM
Trichloroethene	ND	0.060	1.0	µg/L	1	3/8/2011 04:02 PM
Trichlorofluoromethane	ND	0.097	1.0	µg/L	1	3/8/2011 04:02 PM
Vinyl chloride	ND	0.12	1.0	µg/L	1	3/8/2011 04:02 PM
Xylenes, Total	ND	1.5	2.0	µg/L	1	3/8/2011 04:02 PM
Surr: 1,2-Dichloroethane-d4	85.5	0	72-119	%REC	1	3/8/2011 04:02 PM
Surr: 4-Bromofluorobenzene	108	0	76-119	%REC	1	3/8/2011 04:02 PM
Surr: Dibromofluoromethane	89.1	0	85-115	%REC	1	3/8/2011 04:02 PM
Surr: Toluene-d8	107	0	81-120	%REC	1	3/8/2011 04:02 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 10-Mar-11

CLIENT: CH2M HILL  
 Lab Order: N005426  
 Project: PG&E Topock  
 Lab ID: N005426-002

Client Sample ID: TB-Packer-175-04  
 Collection Date: 2/24/2011 11:30:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS1_110308B	QC Batch: D11VW030	PrepDate:	Analyst: QBM		
1,1,1,2-Tetrachloroethane	ND 0.061	1.0	µg/L	1	3/8/2011 04:24 PM
1,1,1-Trichloroethane	ND 0.068	1.0	µg/L	1	3/8/2011 04:24 PM
1,1,2,2-Tetrachloroethane	ND 0.054	1.0	µg/L	1	3/8/2011 04:24 PM
1,1,2-Trichloroethane	ND 0.083	1.0	µg/L	1	3/8/2011 04:24 PM
1,1-Dichloroethane	ND 0.099	1.0	µg/L	1	3/8/2011 04:24 PM
1,1-Dichloroethene	ND 0.094	1.0	µg/L	1	3/8/2011 04:24 PM
1,1-Dichloropropene	ND 0.082	1.0	µg/L	1	3/8/2011 04:24 PM
1,2,3-Trichlorobenzene	ND 0.10	1.0	µg/L	1	3/8/2011 04:24 PM
1,2,3-Trichloropropane	ND 0.12	1.0	µg/L	1	3/8/2011 04:24 PM
1,2,4-Trichlorobenzene	ND 0.12	1.0	µg/L	1	3/8/2011 04:24 PM
1,2,4-Trimethylbenzene	ND 0.095	1.0	µg/L	1	3/8/2011 04:24 PM
1,2-Dibromo-3-chloropropane	ND 0.15	2.0	µg/L	1	3/8/2011 04:24 PM
1,2-Dibromoethane	ND 0.14	1.0	µg/L	1	3/8/2011 04:24 PM
1,2-Dichlorobenzene	ND 0.070	1.0	µg/L	1	3/8/2011 04:24 PM
1,2-Dichloroethane	ND 0.17	1.0	µg/L	1	3/8/2011 04:24 PM
1,2-Dichloropropane	ND 0.085	1.0	µg/L	1	3/8/2011 04:24 PM
1,3,5-Trimethylbenzene	ND 0.087	1.0	µg/L	1	3/8/2011 04:24 PM
1,3-Dichlorobenzene	ND 0.090	1.0	µg/L	1	3/8/2011 04:24 PM
1,3-Dichloropropane	ND 0.074	1.0	µg/L	1	3/8/2011 04:24 PM
1,4-Dichlorobenzene	ND 0.092	1.0	µg/L	1	3/8/2011 04:24 PM
2,2-Dichloropropane	ND 0.061	1.0	µg/L	1	3/8/2011 04:24 PM
2-Butanone	ND 1.0	10	µg/L	1	3/8/2011 04:24 PM
2-Chlorotoluene	ND 0.080	1.0	µg/L	1	3/8/2011 04:24 PM
4-Chlorotoluene	ND 0.10	1.0	µg/L	1	3/8/2011 04:24 PM
4-Isopropyltoluene	ND 0.080	1.0	µg/L	1	3/8/2011 04:24 PM
4-Methyl-2-pentanone	ND 0.76	10	µg/L	1	3/8/2011 04:24 PM
Acetone	ND 1.6	10	µg/L	1	3/8/2011 04:24 PM
Acrolein	ND 4.3	20	µg/L	1	3/8/2011 04:24 PM
Acrylonitrile	ND 0.61	20	µg/L	1	3/8/2011 04:24 PM
Benzene	ND 0.075	1.0	µg/L	1	3/8/2011 04:24 PM
Bromobenzene	ND 0.082	1.0	µg/L	1	3/8/2011 04:24 PM
Bromochloromethane	ND 0.15	1.0	µg/L	1	3/8/2011 04:24 PM
Bromodichloromethane	ND 0.063	1.0	µg/L	1	3/8/2011 04:24 PM
Bromoform	ND 0.086	1.0	µg/L	1	3/8/2011 04:24 PM
Bromomethane	ND 0.13	1.0	µg/L	1	3/8/2011 04:24 PM
Carbon disulfide	ND 0.054	1.0	µg/L	1	3/8/2011 04:24 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 10-Mar-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005426  
**Project:** PG&E Topock  
**Lab ID:** N005426-002

**Client Sample ID:** TB-Packer-175-04  
**Collection Date:** 2/24/2011 11:30:00 AM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS1_110308B	QC Batch: D11VW030	PrepDate:	Analyst: QBM			
Carbon tetrachloride	ND	0.10	1.0	µg/L	1	3/8/2011 04:24 PM
Chlorobenzene	ND	0.092	1.0	µg/L	1	3/8/2011 04:24 PM
Chloroethane	ND	0.14	1.0	µg/L	1	3/8/2011 04:24 PM
Chloroform	ND	0.058	1.0	µg/L	1	3/8/2011 04:24 PM
Chloromethane	ND	0.054	1.0	µg/L	1	3/8/2011 04:24 PM
cis-1,2-Dichloroethene	ND	0.11	1.0	µg/L	1	3/8/2011 04:24 PM
cis-1,3-Dichloropropene	ND	0.10	1.0	µg/L	1	3/8/2011 04:24 PM
Dibromochloromethane	ND	0.061	1.0	µg/L	1	3/8/2011 04:24 PM
Dibromomethane	ND	0.15	1.0	µg/L	1	3/8/2011 04:24 PM
Dichlorodifluoromethane	ND	0.12	1.0	µg/L	1	3/8/2011 04:24 PM
Ethylbenzene	ND	0.051	1.0	µg/L	1	3/8/2011 04:24 PM
Freon-113	ND	0.080	1.0	µg/L	1	3/8/2011 04:24 PM
Hexachlorobutadiene	ND	0.17	1.0	µg/L	1	3/8/2011 04:24 PM
Isopropylbenzene	ND	0.057	1.0	µg/L	1	3/8/2011 04:24 PM
m,p-Xylene	ND	0.17	1.0	µg/L	1	3/8/2011 04:24 PM
Methylene chloride	ND	0.10	5.0	µg/L	1	3/8/2011 04:24 PM
MTBE	ND	0.089	1.0	µg/L	1	3/8/2011 04:24 PM
n-Butylbenzene	ND	0.082	1.0	µg/L	1	3/8/2011 04:24 PM
n-Propylbenzene	ND	0.087	1.0	µg/L	1	3/8/2011 04:24 PM
Naphthalene	ND	0.056	1.0	µg/L	1	3/8/2011 04:24 PM
o-Xylene	ND	0.077	1.0	µg/L	1	3/8/2011 04:24 PM
sec-Butylbenzene	ND	0.098	1.0	µg/L	1	3/8/2011 04:24 PM
Styrene	ND	0.072	1.0	µg/L	1	3/8/2011 04:24 PM
tert-Butylbenzene	ND	0.062	1.0	µg/L	1	3/8/2011 04:24 PM
Tetrachloroethene	ND	0.13	1.0	µg/L	1	3/8/2011 04:24 PM
Toluene	ND	0.12	2.5	µg/L	1	3/8/2011 04:24 PM
trans-1,2-Dichloroethene	ND	0.094	1.0	µg/L	1	3/8/2011 04:24 PM
trans-1,3-Dichloropropene	ND	0.10	1.0	µg/L	1	3/8/2011 04:24 PM
Trichloroethene	ND	0.060	1.0	µg/L	1	3/8/2011 04:24 PM
Trichlorofluoromethane	ND	0.097	1.0	µg/L	1	3/8/2011 04:24 PM
Vinyl chloride	ND	0.12	1.0	µg/L	1	3/8/2011 04:24 PM
Xylenes, Total	ND	1.5	2.0	µg/L	1	3/8/2011 04:24 PM
Surr: 1,2-Dichloroethane-d4	83.8	0	72-119	%REC	1	3/8/2011 04:24 PM
Surr: 4-Bromofluorobenzene	110	0	76-119	%REC	1	3/8/2011 04:24 PM
Surr: Dibromofluoromethane	88.3	0	85-115	%REC	1	3/8/2011 04:24 PM
Surr: Toluene-d8	111	0	81-120	%REC	1	3/8/2011 04:24 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



**CLIENT:** CH2M HILL  
**Work Order:** N005426  
**Project:** PG&E Topock

**ANALYTICAL QC SUMMARY REPORT**

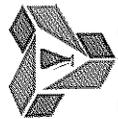
**TestCode: 8260\_WP\_LLPGE**

Sample ID: <b>D110308LCS</b>	SampType: <b>LCS</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>79352</b>
Client ID: <b>LCSW</b>	Batch ID: <b>D11VW030</b>	TestNo: <b>EPA 8260B</b>		Analysis Date: <b>3/8/2011</b>	SeqNo: <b>1250092</b>

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	23.940	1.0	25.00	0	95.8	81	129				
1,1,1-Trichloroethane	19.440	1.0	25.00	0	77.8	67	132				
1,1,2,2-Tetrachloroethane	24.630	1.0	25.00	0	98.5	63	128				
1,1,2-Trichloroethane	23.150	1.0	25.00	0	92.6	75	125				
1,1-Dichloroethane	24.390	1.0	25.00	0	97.6	69	133				
1,1-Dichloroethene	24.470	1.0	25.00	0	97.9	68	130				
1,1-Dichloropropene	22.120	1.0	25.00	0	88.5	73	132				
1,2,3-Trichlorobenzene	24.380	1.0	25.00	0	97.5	67	137				
1,2,3-Trichloropropane	24.410	1.0	25.00	0	97.6	73	124				
1,2,4-Trichlorobenzene	23.860	1.0	25.00	0	95.4	66	134				
1,2,4-Trimethylbenzene	25.810	1.0	25.00	0	103	74	132				
1,2-Dibromo-3-chloropropane	23.690	2.0	25.00	0	94.8	50	132				
1,2-Dibromoethane	24.440	1.0	25.00	0	97.8	80	121				
1,2-Dichlorobenzene	24.540	1.0	25.00	0	98.2	71	122				
1,2-Dichloroethane	22.920	1.0	25.00	0	91.7	69	132				
1,2-Dichloropropane	22.690	1.0	25.00	0	90.8	75	125				
1,3,5-Trimethylbenzene	25.680	1.0	25.00	0	103	74	131				
1,3-Dichlorobenzene	24.320	1.0	25.00	0	97.3	75	124				
1,3-Dichloropropane	23.670	1.0	25.00	0	94.7	73	126				
1,4-Dichlorobenzene	24.190	1.0	25.00	0	96.8	74	123				
2,2-Dichloropropane	19.220	1.0	25.00	0	76.9	69	137				
2-Butanone	188.290	10	250.0	0	75.3	49	136				
2-Chlorotoluene	24.080	1.0	25.00	0	96.3	73	126				
4-Chlorotoluene	24.830	1.0	25.00	0	99.3	74	128				
4-Isopropyltoluene	25.550	1.0	25.00	0	102	73	130				
4-Methyl-2-pentanone	234.570	10	250.0	0	93.8	58	134				
Acetone	177.380	10	250.0	0	71.0	40	135				
Acrolein	236.940	20	250.0	0	94.8	75	125				
Acrylonitrile	225.990	20	250.0	0	90.4	75	125				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



**CLIENT:** CH2M HILL  
**Work Order:** N005426  
**Project:** PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** 8260\_WP\_LLPGE

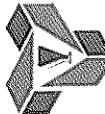
Sample ID: <b>D110308LCS</b>	SampType: <b>LCS</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>79352</b>
Client ID: <b>LCSW</b>	Batch ID: <b>D11VW030</b>	TestNo: <b>EPA 8260B</b>		Analysis Date: <b>3/8/2011</b>	SeqNo: <b>1250092</b>

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	23.650	1.0	25.00	0	94.6	81	122				
Bromobenzene	24.930	1.0	25.00	0	99.7	76	124				
Bromochloromethane	23.250	1.0	25.00	0	93.0	65	129				
Bromodichloromethane	20.730	1.0	25.00	0	82.9	76	121				
Bromoform	23.270	1.0	25.00	0	93.1	69	128				
Bromomethane	23.940	1.0	25.00	0	95.8	53	141				
Carbon disulfide	22.190	1.0	25.00	0	88.8	75	125				
Carbon tetrachloride	20.650	1.0	25.00	0	82.6	66	138				
Chlorobenzene	24.430	1.0	25.00	0	97.7	81	122				
Chloroethane	23.860	1.0	25.00	0	95.4	58	133				
Chloroform	23.760	1.0	25.00	0	95.0	69	128				
Chloromethane	23.050	1.0	25.00	0	92.2	56	131				
cis-1,2-Dichloroethene	24.610	1.0	25.00	0	98.4	72	126				
cis-1,3-Dichloropropene	25.010	1.0	25.00	0	100	69	131				
Dibromochloromethane	23.420	1.0	25.00	0	93.7	66	133				
Dibromomethane	23.910	1.0	25.00	0	95.6	76	125				
Dichlorodifluoromethane	23.110	1.0	25.00	0	92.4	53	153				
Ethylbenzene	24.460	1.0	25.00	0	97.8	73	127				
Freon-113	19.660	1.0	25.00	0	78.6	75	125				
Hexachlorobutadiene	24.020	1.0	25.00	0	96.1	67	131				
Isopropylbenzene	25.820	1.0	25.00	0	103	75	127				
m,p-Xylene	50.210	1.0	50.00	0	100	76	128				
Methylene chloride	22.760	5.0	25.00	0	91.0	63	137				
MTBE	22.310	1.0	25.00	0	89.2	65	123				
n-Butylbenzene	25.460	1.0	25.00	0	102	69	137				
n-Propylbenzene	25.490	1.0	25.00	0	102	72	129				
Naphthalene	25.310	1.0	25.00	0	101	54	138				
o-Xylene	24.700	1.0	25.00	0	98.8	80	121				
sec-Butylbenzene	25.330	1.0	25.00	0	101	72	127				
Styrene	24.950	1.0	25.00	0	99.8	65	134				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
  - E Value above quantitation range
  - H Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - R RPD outside accepted recovery limits
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
- Calculations are based on raw values

Advanced Technology Laboratories, Inc.  
 3151 W. Post Road Las Vegas, NV 89118  
 Tel: 702 307-2659 Fax: 702 307-2691



CLIENT: CH2M HILL  
 Work Order: N005426  
 Project: PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Sample ID: D110308LCS	SampType: LCS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79352						
Client ID: LCSW	Batch ID: D11VW030	TestNo: EPA 8260B		Analysis Date: 3/8/2011	SeqNo: 1250092						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
tert-Butylbenzene	25.230	1.0	25.00	0	101	70	129				
Tetrachloroethene	24.590	1.0	25.00	0	98.4	66	128				
Toluene	24.010	2.5	25.00	0	96.0	77	122				
trans-1,2-Dichloroethene	22.270	1.0	25.00	0	89.1	63	137				
trans-1,3-Dichloropropene	25.490	1.0	25.00	0	102	59	135				
Trichloroethene	22.710	1.0	25.00	0	90.8	70	127				
Trichlorofluoromethane	23.950	1.0	25.00	0	95.8	57	129				
Vinyl chloride	22.830	1.0	25.00	0	91.3	50	134				
Xylenes, Total	74.910	2.0	75.00	0	99.9	75	125				
Surr: 1,2-Dichloroethane-d4	22.630		25.00		90.5	72	119				
Surr: 4-Bromofluorobenzene	23.350		25.00		93.4	76	119				
Surr: Dibromofluoromethane	24.110		25.00		96.4	85	115				
Surr: Toluene-d8	23.920		25.00		95.7	81	120				

Sample ID: N005426-001EMS	SampType: MS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79352						
Client ID: ZZZZZZ	Batch ID: D11VW030	TestNo: EPA 8260B		Analysis Date: 3/8/2011	SeqNo: 1250093						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	24.230	1.0	25.00	0	96.9	81	129				
1,1,1-Trichloroethane	19.240	1.0	25.00	0	77.0	67	132				
1,1,2,2-Tetrachloroethane	21.450	1.0	25.00	0	85.8	63	128				
1,1,2-Trichloroethane	20.470	1.0	25.00	0	81.9	75	125				
1,1-Dichloroethane	23.480	1.0	25.00	0	93.9	69	133				
1,1-Dichloroethene	23.900	1.0	25.00	0	95.6	68	130				
1,1-Dichloropropene	22.940	1.0	25.00	0	91.8	73	132				
1,2,3-Trichlorobenzene	26.850	1.0	25.00	0	107	67	137				
1,2,3-Trichloropropane	20.930	1.0	25.00	0	83.7	73	124				
1,2,4-Trichlorobenzene	28.180	1.0	25.00	0	113	66	134				
1,2,4-Trimethylbenzene	25.380	1.0	25.00	0	102	74	132				
1,2-Dibromo-3-chloropropane	20.090	2.0	25.00	0	80.4	50	132				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc.  
 3151 W. Post Road  
 Las Vegas, NV 89118  
 Tel: 702 307-2659  
 Fax: 702 307-2691



CLIENT: CH2M HILL  
 Work Order: N005426  
 Project: PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

Sample ID: N005426-001EMS	SampType: MS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79352						
Client ID: ZZZZZZ	Batch ID: D11VW030	TestNo: EPA 8260B		Analysis Date: 3/8/2011	SeqNo: 1250093						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane	20.960	1.0	25.00	0	83.8	80	121				
1,2-Dichlorobenzene	25.510	1.0	25.00	0	102	71	122				
1,2-Dichloroethane	20.240	1.0	25.00	0	81.0	69	132				
1,2-Dichloropropane	22.520	1.0	25.00	0	90.1	75	125				
1,3,5-Trimethylbenzene	26.650	1.0	25.00	0	107	74	131				
1,3-Dichlorobenzene	26.550	1.0	25.00	0	106	75	124				
1,3-Dichloropropane	22.070	1.0	25.00	0	88.3	73	126				
1,4-Dichlorobenzene	26.150	1.0	25.00	0	105	74	123				
2,2-Dichloropropane	19.660	1.0	25.00	0	78.6	69	137				
2-Butanone	105.060	10	250.0	0	42.0	49	136				S
2-Chlorotoluene	25.770	1.0	25.00	0	103	73	126				
4-Chlorotoluene	26.780	1.0	25.00	0	107	74	128				
4-Isopropyltoluene	27.890	1.0	25.00	0	112	73	130				
4-Methyl-2-pentanone	193.250	10	250.0	0	77.3	58	134				
Acetone	81.900	10	250.0	0	32.8	40	135				S
Acrolein	179.690	20	250.0	0	71.9	75	125				S
Acrylonitrile	166.250	20	250.0	0	66.5	75	125				S
Benzene	24.060	1.0	25.00	0	96.2	81	122				
Bromobenzene	25.400	1.0	25.00	0	102	76	124				
Bromochloromethane	20.740	1.0	25.00	0	83.0	65	129				
Bromodichloromethane	20.290	1.0	25.00	0	81.2	76	121				
Bromoform	20.590	1.0	25.00	0	82.4	69	128				
Bromomethane	23.240	1.0	25.00	0	93.0	53	141				
Carbon disulfide	21.890	1.0	25.00	0	87.6	75	125				
Carbon tetrachloride	21.110	1.0	25.00	0	84.4	66	138				
Chlorobenzene	25.530	1.0	25.00	0	102	81	122				
Chloroethane	23.230	1.0	25.00	0	92.9	58	133				
Chloroform	22.670	1.0	25.00	0	90.7	69	128				
Chloromethane	22.840	1.0	25.00	0	91.4	56	131				
cis-1,2-Dichloroethene	23.490	1.0	25.00	0	94.0	72	126				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005426  
 Project: PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology Laboratories, Inc  
 3151 W. Post Road Las Vegas, NV 89118  
 Tel: 702 307-2659 Fax: 702 307-2691

Sample ID: N005426-001EMS	SampType: MS	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79352						
Client ID: ZZZZZZ	Batch ID: D11VW030	TestNo: EPA 8260B		Analysis Date: 3/8/2011	SeqNo: 1250093						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	25.010	1.0	25.00	0	100	69	131				
Dibromochloromethane	21.860	1.0	25.00	0	87.4	66	133				
Dibromomethane	20.830	1.0	25.00	0	83.3	76	125				
Dichlorodifluoromethane	23.040	1.0	25.00	0	92.2	53	153				
Ethylbenzene	25.980	1.0	25.00	0	104	73	127				
Freon-113	19.190	1.0	25.00	0	76.8	75	125				
Hexachlorobutadiene	27.710	1.0	25.00	0	111	67	131				
Isopropylbenzene	28.060	1.0	25.00	0	112	75	127				
m,p-Xylene	52.970	1.0	50.00	0	106	76	128				
Methylene chloride	20.980	5.0	25.00	0	83.9	63	137				
MTBE	19.710	1.0	25.00	0	78.8	65	123				
n-Butylbenzene	28.720	1.0	25.00	0	115	69	137				
n-Propylbenzene	27.240	1.0	25.00	0	109	72	129				
Naphthalene	22.470	1.0	25.00	0	89.9	54	138				
o-Xylene	25.770	1.0	25.00	0	103	80	121				
sec-Butylbenzene	27.190	1.0	25.00	0	109	72	127				
Styrene	21.030	1.0	25.00	0	84.1	65	134				
tert-Butylbenzene	26.890	1.0	25.00	0	108	70	129				
Tetrachloroethene	26.300	1.0	25.00	0	105	66	128				
Toluene	24.960	2.5	25.00	0.6900	97.1	77	122				
trans-1,2-Dichloroethene	21.550	1.0	25.00	0	86.2	63	137				
trans-1,3-Dichloropropene	24.210	1.0	25.00	0	96.8	59	135				
Trichloroethene	23.360	1.0	25.00	0	93.4	70	127				
Trichlorofluoromethane	22.870	1.0	25.00	0	91.5	57	129				
Vinyl chloride	22.380	1.0	25.00	0	89.5	50	134				
Xylenes, Total	78.740	2.0	75.00	0	105	75	125				
Surr: 1,2-Dichloroethane-d4	19.330		25.00		77.3	72	119				
Surr: 4-Bromofluorobenzene	24.520		25.00		98.1	76	119				
Surr: Dibromofluoromethane	22.270		25.00		89.1	85	115				
Surr: Toluene-d8	24.350		25.00		97.4	81	120				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005426  
 Project: PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Sample ID: N005426-001EMSD	SampType: MSD	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79352						
Client ID: ZZZZZZ	Batch ID: D11VW030	TestNo: EPA 8260B		Analysis Date: 3/8/2011	SeqNo: 1250094						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	23.450	1.0	25.00	0	93.8	81	129	24.23	3.27	20	
1,1,1-Trichloroethane	19.230	1.0	25.00	0	76.9	67	132	19.24	0.0520	20	
1,1,2,2-Tetrachloroethane	21.060	1.0	25.00	0	84.2	63	128	21.45	1.83	20	
1,1,2-Trichloroethane	20.460	1.0	25.00	0	81.8	75	125	20.47	0.0489	20	
1,1-Dichloroethane	23.200	1.0	25.00	0	92.8	69	133	23.48	1.20	20	
1,1-Dichloroethene	23.330	1.0	25.00	0	93.3	68	130	23.90	2.41	20	
1,1-Dichloropropene	22.310	1.0	25.00	0	89.2	73	132	22.94	2.78	20	
1,2,3-Trichlorobenzene	25.610	1.0	25.00	0	102	67	137	26.85	4.73	20	
1,2,3-Trichloropropane	20.580	1.0	25.00	0	82.3	73	124	20.93	1.69	20	
1,2,4-Trichlorobenzene	26.910	1.0	25.00	0	108	66	134	28.18	4.61	20	
1,2,4-Trimethylbenzene	17.350	1.0	25.00	0	69.4	74	132	25.38	37.6	20	SR
1,2-Dibromo-3-chloropropane	19.880	2.0	25.00	0	79.5	50	132	20.09	1.05	20	
1,2-Dibromoethane	20.840	1.0	25.00	0	83.4	80	121	20.96	0.574	20	
1,2-Dichlorobenzene	24.600	1.0	25.00	0	98.4	71	122	25.51	3.63	20	
1,2-Dichloroethane	20.140	1.0	25.00	0	80.6	69	132	20.24	0.495	20	
1,2-Dichloropropane	22.210	1.0	25.00	0	88.8	75	125	22.52	1.39	20	
1,3,5-Trimethylbenzene	23.100	1.0	25.00	0	92.4	74	131	26.65	14.3	20	
1,3-Dichlorobenzene	25.670	1.0	25.00	0	103	75	124	26.55	3.37	20	
1,3-Dichloropropane	21.510	1.0	25.00	0	86.0	73	126	22.07	2.57	20	
1,4-Dichlorobenzene	25.350	1.0	25.00	0	101	74	123	26.15	3.11	20	
2,2-Dichloropropane	19.430	1.0	25.00	0	77.7	69	137	19.66	1.18	20	
2-Butanone	104.410	10	250.0	0	41.8	49	136	105.1	0.621	20	S
2-Chlorotoluene	26.910	1.0	25.00	0	108	73	126	25.77	4.33	20	
4-Chlorotoluene	25.820	1.0	25.00	0	103	74	128	26.78	3.65	20	
4-Isopropyltoluene	25.850	1.0	25.00	0	103	73	130	27.89	7.59	20	
4-Methyl-2-pentanone	193.110	10	250.0	0	77.2	58	134	193.2	0.0725	20	
Acetone	82.070	10	250.0	0	32.8	40	135	81.90	0.207	20	S
Acrolein	183.860	20	250.0	0	73.5	75	125	179.7	2.29	20	S
Acrylonitrile	169.130	20	250.0	0	67.7	75	125	166.2	1.72	20	S
Benzene	23.710	1.0	25.00	0	94.8	81	122	24.06	1.47	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691



**CLIENT:** CH2M HILL  
**Work Order:** N005426  
**Project:** PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** 8260\_WP\_LLPGE

Sample ID: N005426-001EMSD	SampType: MSD	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79352						
Client ID: ZZZZZZ	Batch ID: D11VW030	TestNo: EPA 8260B		Analysis Date: 3/8/2011	SeqNo: 1250094						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	24.670	1.0	25.00	0	98.7	76	124	25.40	2.92	20	
Bromochloromethane	20.760	1.0	25.00	0	83.0	65	129	20.74	0.0964	20	
Bromodichloromethane	19.910	1.0	25.00	0	79.6	76	121	20.29	1.89	20	
Bromoform	20.520	1.0	25.00	0	82.1	69	128	20.59	0.341	20	
Bromomethane	22.680	1.0	25.00	0	90.7	53	141	23.24	2.44	20	
Carbon disulfide	21.720	1.0	25.00	0	86.9	75	125	21.89	0.780	20	
Carbon tetrachloride	21.120	1.0	25.00	0	84.5	66	138	21.11	0.0474	20	
Chlorobenzene	24.970	1.0	25.00	0	99.9	81	122	25.53	2.22	20	
Chloroethane	22.850	1.0	25.00	0	91.4	58	133	23.23	1.65	20	
Chloroform	22.580	1.0	25.00	0	90.3	69	128	22.67	0.398	20	
Chloromethane	22.510	1.0	25.00	0	90.0	56	131	22.84	1.46	20	
cis-1,2-Dichloroethene	23.400	1.0	25.00	0	93.6	72	126	23.49	0.384	20	
cis-1,3-Dichloropropene	24.600	1.0	25.00	0	98.4	69	131	25.01	1.65	20	
Dibromochloromethane	21.430	1.0	25.00	0	85.7	66	133	21.86	1.99	20	
Dibromomethane	20.540	1.0	25.00	0	82.2	76	125	20.83	1.40	20	
Dichlorodifluoromethane	23.070	1.0	25.00	0	92.3	53	153	23.04	0.130	20	
Ethylbenzene	25.380	1.0	25.00	0	102	73	127	25.98	2.34	20	
Freon-113	19.080	1.0	25.00	0	76.3	75	125	19.19	0.575	20	
Hexachlorobutadiene	26.470	1.0	25.00	0	106	67	131	27.71	4.58	20	
Isopropylbenzene	26.320	1.0	25.00	0	105	75	127	28.06	6.40	20	
m,p-Xylene	49.930	1.0	50.00	0	99.9	76	128	52.97	5.91	20	
Methylene chloride	21.170	5.0	25.00	0	84.7	63	137	20.98	0.902	20	
MTBE	19.690	1.0	25.00	0	78.8	65	123	19.71	0.102	20	
n-Butylbenzene	27.580	1.0	25.00	0	110	69	137	28.72	4.05	20	
n-Propylbenzene	26.580	1.0	25.00	0	106	72	129	27.24	2.45	20	
Naphthalene	18.130	1.0	25.00	0	72.5	54	138	22.47	21.4	20	R
o-Xylene	24.650	1.0	25.00	0	98.6	80	121	25.77	4.44	20	
sec-Butylbenzene	26.230	1.0	25.00	0	105	72	127	27.19	3.59	20	
Styrene	9.550	1.0	25.00	0	38.2	65	134	21.03	75.1	20	SR
tert-Butylbenzene	26.250	1.0	25.00	0	105	70	129	26.89	2.41	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118

Tel: 702.307.2659

Fax: 702.307.2691



CLIENT: CH2M HILL  
 Work Order: N005426  
 Project: PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Sample ID: N005426-001EMSD	SampType: MSD	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79352						
Client ID: ZZZZZZ	Batch ID: D11VW030	TestNo: EPA 8260B		Analysis Date: 3/8/2011	SeqNo: 1250094						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tetrachloroethene	25.830	1.0	25.00	0	103	66	128	26.30	1.80	20	
Toluene	24.380	2.5	25.00	0.6900	94.8	77	122	24.96	2.35	20	
trans-1,2-Dichloroethene	21.020	1.0	25.00	0	84.1	63	137	21.55	2.49	20	
trans-1,3-Dichloropropene	23.340	1.0	25.00	0	93.4	59	135	24.21	3.66	20	
Trichloroethene	23.150	1.0	25.00	0	92.6	70	127	23.36	0.903	20	
Trichlorofluoromethane	22.510	1.0	25.00	0	90.0	57	129	22.87	1.59	20	
Vinyl chloride	21.990	1.0	25.00	0	88.0	50	134	22.38	1.76	20	
Xylenes, Total	74.580	2.0	75.00	0	99.4	75	125	78.74	5.43	20	
Surr: 1,2-Dichloroethane-d4	19.620		25.00		78.5	72	119		0		
Surr: 4-Bromofluorobenzene	24.200		25.00		96.8	76	119		0		
Surr: Dibromofluoromethane	22.390		25.00		89.6	85	115		0		
Surr: Toluene-d8	24.040		25.00		96.2	81	120		0		

Sample ID: D110308MB3	SampType: MBLK	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79352						
Client ID: PBW	Batch ID: D11VW030	TestNo: EPA 8260B		Analysis Date: 3/8/2011	SeqNo: 1250095						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0									
1,1,1-Trichloroethane	ND	1.0									
1,1,2,2-Tetrachloroethane	ND	1.0									
1,1,2-Trichloroethane	ND	1.0									
1,1-Dichloroethane	ND	1.0									
1,1-Dichloroethene	ND	1.0									
1,1-Dichloropropene	ND	1.0									
1,2,3-Trichlorobenzene	ND	1.0									
1,2,3-Trichloropropane	ND	1.0									
1,2,4-Trichlorobenzene	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
1,2-Dibromoethane	ND	1.0									

**Qualifiers:**

- B Analyte detected in the associated Method Blank
  - E Value above quantitation range
  - II Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - R RPD outside accepted recovery limits
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
- Calculations are based on raw values

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691



CLIENT: CH2M HILL  
 Work Order: N005426  
 Project: PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Sample ID: <b>D110308MB3</b>	SampType: <b>MBLK</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>79352</b>						
Client ID: <b>PBW</b>	Batch ID: <b>D11VW030</b>	TestNo: <b>EPA 8260B</b>		Analysis Date: <b>3/8/2011</b>	SeqNo: <b>1250095</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2-Dichlorobenzene	ND	1.0									
1,2-Dichloroethane	ND	1.0									
1,2-Dichloropropane	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,3-Dichloropropane	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
2,2-Dichloropropane	ND	1.0									
2-Butanone	ND	10									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
4-Isopropyltoluene	ND	1.0									
4-Methyl-2-pentanone	ND	10									
Acetone	ND	10									
Acrolein	ND	20									
Acrylonitrile	ND	20									
Benzene	ND	1.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon disulfide	ND	1.0									
Carbon tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	1.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
cis-1,2-Dichloroethene	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691



CLIENT: CH2M HILL  
 Work Order: N005426  
 Project: PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Sample ID: D110308MB3	SampType: MBLK	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 79352						
Client ID: PBW	Batch ID: D11VW030	TestNo: EPA 8260B		Analysis Date: 3/8/2011	SeqNo: 1250095						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
Dichlorodifluoromethane	ND	1.0									
Ethylbenzene	ND	1.0									
Freon-113	ND	1.0									
Hexachlorobutadiene	ND	1.0									
Isopropylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
Methylene chloride	ND	5.0									
MTBE	ND	1.0									
n-Butylbenzene	ND	1.0									
n-Propylbenzene	ND	1.0									
Naphthalene	ND	1.0									
o-Xylene	ND	1.0									
sec-Butylbenzene	ND	1.0									
Styrene	ND	1.0									
tert-Butylbenzene	ND	1.0									
Tetrachloroethene	ND	1.0									
Toluene	ND	2.5									
trans-1,2-Dichloroethene	ND	1.0									
trans-1,3-Dichloropropene	ND	1.0									
Trichloroethene	ND	1.0									
Trichlorofluoromethane	ND	1.0									
Vinyl chloride	ND	1.0									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	22.140		25.00		88.6	72	119				
Surr: 4-Bromofluorobenzene	27.890		25.00		112	76	119				
Surr: Dibromofluoromethane	22.140		25.00		88.6	85	115				
Surr: Toluene-d8	27.810		25.00		111	81	120				

**Qualifiers:**

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

**CH2MHILL**

**CHAIN OF CUSTODY RECORD**

Project Name PG&E Topock Location Topock Project Number 405681.MP.02.GM.03 Project Manager Jay Piper Sample Manager Shawn Duffy  Task Order Project 2011-GMP-PACKER-175 Turnaround Time 10 Days Shipping Date: COC Number:	Container:  Preservatives:  Filtered:  Holding Time:	250 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	3 x 40 ml VOA	3 x 40 ml VOA	Number of Containers	COMMENTS
		(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	4°C	4°C	H3PO4, 4°C	HCL, 4°C		
		Field	Field	NA	NA	NA	NA		
		28	180	2	2	28	14		
		Cr6 (E218.6) Field Filtered	Metals (60.10BFF) Field Filtered Chromium, Arsenic	Anions (E300.0) Nitrate, Chloride	TDS (SM2540C)	TOC (SM5310C)	VOCs (8260B)		
SAMPLE ID	DATE	TIME	Matrix						
MW-64BR-LWR-150-175	2-24-11	1150	Water	X	X	X	X		NODS 426-001
TB-Packer-175-004		1130	Water				X		trip Blank - 002
TOTAL NUMBER OF CONTAINERS								13	10 BCC

Approved by _____ Sampled by _____ Relinquished by _____ Received by _____ Relinquished by _____ Received by _____	Signatures  Date/Time 11-24-11 2/25/11 @ 3:23	Shipping Details Method of Shipment: On Ice: <u>yes</u> / no 21 °C Airbill No: ICE 1241 Lab Name: ADVANCED TECHNOLOGY LABORATORIES Lab Phone: (702) 307-2659	ATTN: Molly Nguyen Report Copy to Shawn Duffy (530) 229-3303	Special Instructions:
---	--	---	--	-----------------------



# Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO and/or NA signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

## Sample Receipt Checklist

Cooler Received/Opened On: 2/25/2011 Workorder: N005426  
 Rep sample Temp (Deg C): 2.1 IR Gun ID: IR 1  
 Temp Blank:  Yes  No  
 Carrier name: ATL  
 Last 4 digits of Tracking No.: Packing Material Used: Bubble Wrap  
 Cooling process:  Ice  Ice Pack  Dry Ice  Other  None

- |   |   |  |   |
|---|---|--|---|
| 1. Shipping container/cooler in good condition?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>            |
| 2. Custody seals intact, signed, dated on shipping container/cooler?                    | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 5. Sampler's name present in COC?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 6. Chain of custody signed when relinquished and received?                              | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 7. Chain of custody agrees with sample labels?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 8. Samples in proper container/bottle?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 9. Sample containers intact?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 10. Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 11. All samples received within holding time?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| 12. Temperature of rep sample or Temp Blank within acceptable limit?                    | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>                     |
| 13. Water - VOA vials have zero headspace?  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/>                     |
| 14. Water - pH acceptable upon receipt?<br>Example: pH > 12 for (CN,S); pH<2 for Metals | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>                     |
| 15. Did the bottle labels indicate correct preservatives used?                          | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>                     |
| 16. Were there Non-Conformance issues at login?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | NA <input checked="" type="checkbox"/>          |
| Was Client notified?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | NA <input checked="" type="checkbox"/>          |

Comments: all VOAs for TB-Packer-175-04 have a headspace>5 mm

Checklist Completed By NS [Signature]

Reviewed By: [Signature]

## SAMPLE CALCULATION

**METHOD:** SM 2540C

**TEST NAME:** Total Filterable Residue

**MATRIX:** Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B) * 1000000}{C}$$

Where:

A = weight in g of dish + residue after drying

B = weight of dish in g

C = volume of sample used in mL

For **N005426-001C**, TDS concentration in mg/L is calculated as follows:

$$\begin{aligned} \text{TDS, mg/L} &= \frac{(15.8227 - 15.7261) * 1000000}{10} \\ &= 9660 \text{ mg/L} \end{aligned}$$

Reporting result in two significant figures,

$$\text{TDS} = 9700 \text{ mg/L}$$

## Sample Calculation

**METHOD:** EPA 218.6

**TEST NAME:** HEXAVALENT CHROMIUM BY IC

**MATRIX:** Water

**FORMULA:**

Calculate the Hexavalent Chromium concentration, in  $\mu\text{g/L}$ , in the original sample as follows:

$$\text{Cr}^{+6}, \mu\text{g/L} = A * \text{DF}$$

where:

A =  $\mu\text{g/L}$ , IC  $\text{Cr}^{+6}$  calculated concentration

DF = dilution factor

For N005426-001A, concentration in  $\mu\text{g/L}$  is calculated as follows:

$$\begin{aligned}\text{Cr}^{+6}, \mu\text{g/L} &= 5.172917 * 20 \\ &= 103.45834 \mu\text{g/L}\end{aligned}$$

Reporting results in two significant figures,

$$\text{Cr}^{+6}, \mu\text{g/L} = 100 \mu\text{g/L}$$

*12/8/14*

*5/3/14*

## Sample Calculation

**METHOD:** EPA 300

**TEST NAME:** INORGANIC ANIONS BY IC

**MATRIX:** WATER

**FORMULA:**

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

$$\text{Chloride, mg/L} = A * DF$$

where:

A = mg/L, IC calculated concentration

DF = dilution factor

For **N005426-001C**, concentration in mg/L are calculated as follows:

$$\text{Chloride, mg/L} = 5.328 * 1000$$

$$= 5328 \text{ mg/L}$$

Reporting **N005426-001C**, results in two significant figures,

$$\text{Chloride, mg/L} = 5300 \text{ mg/L}$$

*AS/h*  
*7/18/12*

### SAMPLE CALCULATION

METHOD: EPA 6010B  
TEST NAME: METALS BY ICP  
MATRIX: WATER

FORMULA:

Calculate the individual metal concentration, in ug/L, in the original sample as follows:

$$M, \text{ ug/L} = \frac{A * C * DF * 1000}{B}$$

where:

M= concentration of the metal in ug/L  
A= mg/L, ICP calculated concentration  
B= volume of sample, Liter  
C= final volume of digestate, Liter  
DF= dilution factor

For N005426-001B, concentration in ug/L are calculated as follows:

$$\text{Cr, ug/L} = \frac{0.04856 \text{ mg/L} * 0.025 \text{ L} * 2 * 1000}{0.025 \text{ L}}$$

$$\text{Cr} = 97.12 \text{ ug/L}$$

Reporting result in two significant figures,

$$\text{Cr} = 97 \text{ ug/L}$$

*jk - 3/4/2011 ✓*

DILUTION TEST

Analytical Method: EPA 6010B / 200.7  
Digestion Method: EPA 3010A  
Date of Analysis: 3/3/2011  
Digestion Date: 3/2/2011  
Instrument Name: ICP1  
Analysts: KB

Matrix: WATER  
Amount of Sample: 25 mL  
Units: ug/L

Work Order # : N005426-001B  
Batch # : 36401

Analyte	A	B	Difference	% D
Chromium	97.11	97.828	-0.71800	-0.7

FORMULA:

$$\%D = \frac{(A-B)*100}{A}$$

where:

% D = % Difference  
A= ug/L, ICP calculated concentration @2X dilution  
B= ug/L, ICP calculated concentration @10x dilution

CLIENT: CH2M HILL  
 Work Order: N005426  
 Project: PG&E Topock

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6010\_WDPGEPPB

Sample ID: N005426-001BDT	SampType: DT	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79321						
Client ID: ZZZZZZ	Batch ID: 36401	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 3/3/2011	SeqNo: 1249513						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	97.828	10						97.11	0.732	10	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: CH2M HILL  
 Work Order: N005426  
 Project: PG&E Topock

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6010\_WDPGEPPB

Sample ID: N005426-001BPS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79321						
Client ID: ZZZZZZ	Batch ID: 36401	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 3/3/2011	SeqNo: 1249512						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1077.083	2.0	1000	97.11	98.0	75	125				

Sample ID: N005426-001BPS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 79321						
Client ID: ZZZZZZ	Batch ID: 36401	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 3/3/2011	SeqNo: 1249514						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2529.265	5.0	2500	97.11	97.3	75	125				

**Qualifiers:**

B Analyte detected in the associated Method Blank	E Value above quantitation range	H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits	S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out	Calculations are based on raw values	

## Sample Calculation

**METHOD:** EPA 6020

**TEST NAME:** Heavy Metals by ICP-MS

**MATRIX:** Aqueous

FORMULA:

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

$$\text{Arsenic, ug/L} = A * DF * PF$$

where:

A = ug/L, calculated concentration

DF = dilution factor

PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N005426-001B**, the concentration in ug/L is calculated as follows:

$$\begin{aligned} \text{Arsenic, ug/L} &= 4.452 * 1 * (1) \\ &= 4.452 \text{ ug/L} \end{aligned}$$

Reporting results in two significant figures,

$$\text{Arsenic, ug/L} = 4.5$$

*CG*  
*main*

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Work Order No.: N005426  
Test Method: EPA 6020  
Analysis Date: 03/02/11

Dilution Test Summary

Matrix: Aqueous  
Batch No.: 36388

Instrument ID: ICP-MS #2  
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Jojo Tenorio

Sample ID	Analyte	&Units	Calc.Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N005426-001B-DT 5X	Arsenic	ug/L	4.59610466		4.45171369	3.24%	10

*Sample*

CLIENT: CH2M HILL  
 Work Order: N005426  
 Project: PG&E Topock

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6020\_WD\_AsPGE

Sample ID: N005426-001B-PS	SampType: PS	TestCode: 6020_WD_As	Units: µg/L	Prep Date:	RunNo: 79344						
Client ID: ZZZZZZ	Batch ID: 36388	TestNo: EPA 6020	EPA 3010A	Analysis Date: 3/2/2011	SeqNo: 1249932						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.327	0.20	20.00	4.452	94.4	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DC Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SAMPLE CALCULATION

METHOD: EPA 8260B  
TEST NAME: VOLATILE ORGANIC COMPOUNDS BY GC/MS  
MATRIX: WATER

CALCULATION OF TARGET PARAMETERS

Calculate the target analyte concentrations using internal standard quantitation

$$C_x, \text{ug/L} = \frac{A_x * C_{IS}}{\text{Ave RF} * A_{IS}}$$

where:

- $A_x$  = Area of the TOTAL ion for the compound being measured
- $C_{IS}$  = Concentration of the specific internal standard in ug/L
- $A_{IS}$  = Area of the characteristic ion of the specific internal standard
- $C_x$  = Concentration of the compound being measured in ug/L

N005426-001E

For Dibromofluoromethane the corresponding Internal Standard is Pentafluorobenzene

Ave RF	0.45
Area of Dibromofluoromethane	165701
Area of Internal Standard	413263
Conc of Internal Standard (ug/L)	25.00

$$\text{Conc of Dibromofluoromethane (ug/L)} = \frac{165701 * 25.00 \text{ug/L}}{0.450 * 413263}$$

Conc of Dibromofluoromethane (ug/L) = 22.2754302

Reporting result in three significant figures,

**Concentration of Dibromofluoromethane = 22.3ug/L**

*Aslak*

*CP  
9/1/12*

April 01, 2011

Shawn P. Duffy  
CH2M HILL  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

TEL: (530) 229-3303  
FAX: (530) 339-3303

RE: PG&E Topock

Attention: Shawn P. Duffy

CA-ELAP No.: 2676  
NV Cert. No.: NV-009222007A

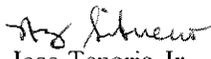
Workorder No.: N005512

Enclosed are the results for sample(s) received on March 18, 2011 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

*for*   
Jose Tenorio Jr.  
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.



**CLIENT:** CH2M HILL  
**Project:** PG&E Topock  
**Lab Order:** N005512

**CASE NARRATIVE**

---

**SAMPLE RECEIVING/GENERAL COMMENTS:**

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

**Analytical Comments for SM 5310C:**

Matrix Spike(MS) and Matrix Spike Duplicate(MSD) were not performed due to limited sample. LCS/LCSD was used instead to measure precision.

**Analytical Comments for EPA 8260B:**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N005512-001EMS and N005512-001EMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

RPD for Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria for Acetone, Acrolein, Acrylonitrile and Styrene ; however, the analytical batch was validated by the Laboratory Control Sample (LCS).



**Advanced Technology Laboratories, Inc.**

Date: 01-Apr-11

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock  
**Lab Order:** N005512  
**Contract No:**

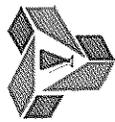
**Work Order Sample Summary**

---

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date</b>	<b>Date Received</b>	<b>Date Reported</b>
N005512-001A	MW-58BR-UPR-160-176	Water	3/18/2011 11:35:00 AM	3/18/2011	
N005512-001B	MW-58BR-UPR-160-176	Water	3/18/2011 11:35:00 AM	3/18/2011	
N005512-001C	MW-58BR-UPR-160-176	Water	3/18/2011 11:35:00 AM	3/18/2011	
N005512-001D	MW-58BR-UPR-160-176	Water	3/18/2011 11:35:00 AM	3/18/2011	
N005512-001E	MW-58BR-UPR-160-176	Water	3/18/2011 11:35:00 AM	3/18/2011	
N005512-002A	TB-Packer-176-01	Water	3/18/2011 8:00:00 AM	3/18/2011	







# Advanced Technology Laboratories, Inc.

Date: 01-Apr-11

**CLIENT:** CH2M HILL  
**Work Order:** N005512  
**Project:** PG&E Topock

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 160.1\_2540C\_W

Sample ID: <b>MB-36510</b>	SampType: <b>MBLK</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>3/23/2011</b>	RunNo: <b>79494</b>						
Client ID: <b>PBW</b>	Batch ID: <b>36510</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>3/23/2011</b>	SeqNo: <b>1252113</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID: <b>LCS-36510</b>	SampType: <b>LCS</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>3/23/2011</b>	RunNo: <b>79494</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>36510</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>3/23/2011</b>	SeqNo: <b>1252114</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	939.000	10	1000	0	93.9	80	120				

Sample ID: <b>N005512-001C-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>3/23/2011</b>	RunNo: <b>79494</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>36510</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>3/23/2011</b>	SeqNo: <b>1252116</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	6730.000	100						6880	2.20	5	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Apr-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005512  
**Project:** PG&E Topock  
**Lab ID:** N005512-001

**Client Sample ID:** MW-58BR-UPR-160-176  
**Collection Date:** 3/18/2011 11:35:00 AM  
**Matrix:** WATER

<u>Analyses</u>	<u>Result</u>	<u>MDL</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
-----------------	---------------	------------	------------	-------------	--------------	-----------	----------------------

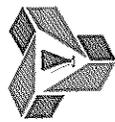
**HEXAVALENT CHROMIUM BY IC**

**EPA 218.6**

RunID: IC1_110323A	QC Batch: R79481	PrepDate:	Analyst: QBM
Hexavalent Chromium	ND 0.70	5.0 ug/L	25 3/23/2011 01:34 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out





CLIENT: CH2M HILL  
Work Order: N005512  
Project: PG&E Topock

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 218.6\_WPGE

Sample ID: <b>MB-R79481</b>	SampType: <b>MBLK</b>	TestCode: <b>218.6_WPGE</b>	Units: <b>ug/L</b>	Prep Date:	RunNo: <b>79481</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R79481</b>	TestNo: <b>EPA 218.6</b>		Analysis Date: <b>3/23/2011</b>	SeqNo: <b>1252015</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: <b>LCS-R79481</b>	SampType: <b>LCS</b>	TestCode: <b>218.6_WPGE</b>	Units: <b>ug/L</b>	Prep Date:	RunNo: <b>79481</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>R79481</b>	TestNo: <b>EPA 218.6</b>		Analysis Date: <b>3/23/2011</b>	SeqNo: <b>1252016</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.925	0.20	5.000	0	98.5	90	110				

Sample ID: <b>N005522-001GMS</b>	SampType: <b>MS</b>	TestCode: <b>218.6_WPGE</b>	Units: <b>ug/L</b>	Prep Date:	RunNo: <b>79481</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R79481</b>	TestNo: <b>EPA 218.6</b>		Analysis Date: <b>3/23/2011</b>	SeqNo: <b>1252018</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.010	0.20	1.000	0	101	90	110				

Sample ID: <b>N005522-001GDUP</b>	SampType: <b>DUP</b>	TestCode: <b>218.6_WPGE</b>	Units: <b>ug/L</b>	Prep Date:	RunNo: <b>79481</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R79481</b>	TestNo: <b>EPA 218.6</b>		Analysis Date: <b>3/23/2011</b>	SeqNo: <b>1252019</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID: <b>N005518-002AMS</b>	SampType: <b>MS</b>	TestCode: <b>218.6_WPGE</b>	Units: <b>ug/L</b>	Prep Date:	RunNo: <b>79481</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R79481</b>	TestNo: <b>EPA 218.6</b>		Analysis Date: <b>3/23/2011</b>	SeqNo: <b>1252022</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	323.563	4.0	100.0	223.5	100	90	110				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

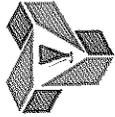
Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691



CLIENT: CH2M HILL  
 Work Order: N005512  
 Project: PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6\_WPGE

Sample ID: N005518-002AMSD	SampType: MSD	TestCode: 218.6_WPGE	Units: ug/L	Prep Date:	RunNo: 79481						
Client ID: ZZZZZZ	Batch ID: R79481	TestNo: EPA 218.6		Analysis Date: 3/23/2011	SeqNo: 1252023						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	322.756	4.0	100.0	223.5	99.3	90	110	323.6	0.249	20	

Sample ID: N005518-001AMS	SampType: MS	TestCode: 218.6_WPGE	Units: ug/L	Prep Date:	RunNo: 79481						
Client ID: ZZZZZZ	Batch ID: R79481	TestNo: EPA 218.6		Analysis Date: 3/23/2011	SeqNo: 1252026						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	120.716	2.0	50.00	72.08	97.3	90	110				

Sample ID: N005512-001AMS	SampType: MS	TestCode: 218.6_WPGE	Units: ug/L	Prep Date:	RunNo: 79481						
Client ID: ZZZZZZ	Batch ID: R79481	TestNo: EPA 218.6		Analysis Date: 3/23/2011	SeqNo: 1252028						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	25.211	5.0	25.00	0	101	90	110				

Sample ID: N005527-001AMS	SampType: MS	TestCode: 218.6_WPGE	Units: ug/L	Prep Date:	RunNo: 79481						
Client ID: ZZZZZZ	Batch ID: R79481	TestNo: EPA 218.6		Analysis Date: 3/23/2011	SeqNo: 1252030						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	189.058	2.0	50.00	141.0	96.0	90	110				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

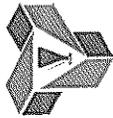
3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691





CLIENT: CH2M HILL  
Work Order: N005512  
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 300\_W\_CLPGE

Sample ID: MB-R79464_CL	SampType: MBLK	TestCode: 300_W_CLPG	Units: mg/L	Prep Date:	RunNo: 79464						
Client ID: PBW	Batch ID: R79464	TestNo: EPA 300.0		Analysis Date: 3/19/2011	SeqNo: 1251683						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID: LCS-R79464_CL	SampType: LCS	TestCode: 300_W_CLPG	Units: mg/L	Prep Date:	RunNo: 79464						
Client ID: LCSW	Batch ID: R79464	TestNo: EPA 300.0		Analysis Date: 3/19/2011	SeqNo: 1251684						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.379	0.50	2.500	0	95.2	90	110				

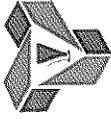
Sample ID: N005512-001CDUP	SampType: DUP	TestCode: 300_W_CLPG	Units: mg/L	Prep Date:	RunNo: 79464						
Client ID: ZZZZZZ	Batch ID: R79464	TestNo: EPA 300.0		Analysis Date: 3/19/2011	SeqNo: 1251686						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3860.000	500						3855	0.130	20	

Sample ID: N005512-001CMS	SampType: MS	TestCode: 300_W_CLPG	Units: mg/L	Prep Date:	RunNo: 79464						
Client ID: ZZZZZZ	Batch ID: R79464	TestNo: EPA 300.0		Analysis Date: 3/19/2011	SeqNo: 1251687						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	6259.000	500	2500	3855	96.2	80	120				

Sample ID: N005512-001CMSD	SampType: MSD	TestCode: 300_W_CLPG	Units: mg/L	Prep Date:	RunNo: 79464						
Client ID: ZZZZZZ	Batch ID: R79464	TestNo: EPA 300.0		Analysis Date: 3/19/2011	SeqNo: 1251688						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	6358.000	500	2500	3855	100	80	120	6259	1.57	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005512  
 Project: PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

TestCode: 300W\_NO3PGE

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: MB-R79464_NO3	SampType: MBLK	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 79464						
Client ID: PBW	Batch ID: R79464	TestNo: EPA 300.0		Analysis Date: 3/19/2011	SeqNo: 1251695						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate as N	ND	0.50									
--------------	----	------	--	--	--	--	--	--	--	--	--

Sample ID: LCS-R79464_NO3	SampType: LCS	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 79464						
Client ID: LCSW	Batch ID: R79464	TestNo: EPA 300.0		Analysis Date: 3/19/2011	SeqNo: 1251695						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate as N	2.412	0.50	2.500	0	96.5	90	110				
--------------	-------	------	-------	---	------	----	-----	--	--	--	--

Sample ID: N005512-001CDUP	SampType: DUP	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 79464						
Client ID: ZZZZZZ	Batch ID: R79464	TestNo: EPA 300.0		Analysis Date: 3/19/2011	SeqNo: 1251698						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate as N	0.764	1.0						0.7560	0	20	
--------------	-------	-----	--	--	--	--	--	--------	---	----	--

Sample ID: N005512-001CMS	SampType: MS	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 79464						
Client ID: ZZZZZZ	Batch ID: R79464	TestNo: EPA 300.0		Analysis Date: 3/19/2011	SeqNo: 1251699						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate as N	5.518	1.0	5.000	0.7560	95.2	80	120				
--------------	-------	-----	-------	--------	------	----	-----	--	--	--	--

Sample ID: N005512-001CMSD	SampType: MSD	TestCode: 300W_NO3P	Units: mg/L	Prep Date:	RunNo: 79464						
Client ID: ZZZZZZ	Batch ID: R79464	TestNo: EPA 300.0		Analysis Date: 3/19/2011	SeqNo: 1251700						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate as N	5.620	1.0	5.000	0.7560	97.3	80	120	5.518	1.83	20	
--------------	-------	-----	-------	--------	------	----	-----	-------	------	----	--

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Apr-11

**CLIENT:** CH2M HILL  
**Lab Order:** N005512  
**Project:** PG&E Topock  
**Lab ID:** N005512-001

**Client Sample ID:** MW-58BR-UPR-160-176  
**Collection Date:** 3/18/2011 11:35:00 AM  
**Matrix:** WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED METALS BY ICP</b>							
	<b>EPA 3010A</b>			<b>EPA 6010B</b>			
RunID: ICP1_110322B	QC Batch: 36504			PrepDate:	3/22/2011	Analyst: KAB	
Chromium	ND	0.22	1.0	ug/L	1	3/22/2011 03:02 PM	

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - H Holding times for preparation or analysis exceeded
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
  - E Value above quantitation range
  - ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified





CLIENT: CH2M HILL
Work Order: N005512
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010\_WDPGEPB

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: MB-36504, MBLK, 6010\_WDPG, ug/L, 3/22/2011, 79476, PBW, 36504, EPA 6010B EPA 3010A, 3/22/2011, 1251860, Chromium, ND, 1.0

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: LCS-36504, LCS, 6010\_WDPG, ug/L, 3/22/2011, 79476, LCSW, 36504, EPA 6010B EPA 3010A, 3/22/2011, 1251861, Chromium, 488.053, 1.0, 500.0, 0, 97.6, 85, 115

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005518-001B-MS, MS, 6010\_WDPG, ug/L, 3/22/2011, 79476, ZZZZZZ, 36504, EPA 6010B EPA 3010A, 3/22/2011, 1251865, Chromium, 547.767, 1.0, 500.0, 71.85, 95.2, 75, 125

Table with 12 columns: Sample ID, SampType, TestCode, Units, Prep Date, RunNo, Client ID, Batch ID, TestNo, Analysis Date, SeqNo, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Row 1: N005518-001B-MSD, MSD, 6010\_WDPG, ug/L, 3/22/2011, 79476, ZZZZZZ, 36504, EPA 6010B EPA 3010A, 3/22/2011, 1251866, Chromium, 549.031, 1.0, 500.0, 71.85, 95.4, 75, 125, 547.8, 0.231, 20

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Apr-11

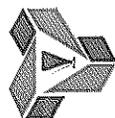
CLIENT: CH2M HILL  
 Lab Order: N005512  
 Project: PG&E Topock  
 Lab ID: N005512-001

Client Sample ID: MW-58BR-UPR-160-176  
 Collection Date: 3/18/2011 11:35:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>DISSOLVED ICP-MS METALS</b>							
	<b>EPA 3010A</b>			<b>EPA 6020</b>			
RunID: ICP7_110325B	QC Batch: 36495			PrepDate:	3/23/2011	Analyst: JT	
Arsenic	1.8	0.0025	0.10	ug/L	1	3/25/2011 06:29 PM	

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - H Holding times for preparation or analysis exceeded
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
  - E Value above quantitation range
  - ND Not Detected at the Reporting Limit
  - Results are wet unless otherwise specified





CLIENT: CH2M HILL  
Work Order: N005512  
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020\_WD\_AsPGE

Sample ID: MB-36495	SampType: MBLK	TestCode: 6020_WD_As	Units: ug/L	Prep Date: 3/23/2011	RunNo: 79509						
Client ID: PBW	Batch ID: 36495	TestNo: EPA 6020	EPA 3010A	Analysis Date: 3/25/2011	SeqNo: 1252664						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.024	0.10									

Sample ID: LCS-36495	SampType: LCS	TestCode: 6020_WD_As	Units: ug/L	Prep Date: 3/23/2011	RunNo: 79509						
Client ID: LCSW	Batch ID: 36495	TestNo: EPA 6020	EPA 3010A	Analysis Date: 3/25/2011	SeqNo: 1252665						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.820	0.10	10.00	0	98.2	85	115				

Sample ID: N005527-001B-MS	SampType: MS	TestCode: 6020_WD_As	Units: ug/L	Prep Date: 3/23/2011	RunNo: 79509						
Client ID: ZZZZZZ	Batch ID: 36495	TestNo: EPA 6020	EPA 3010A	Analysis Date: 3/25/2011	SeqNo: 1252671						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.478	0.10	10.00	2.917	106	75	125				

Sample ID: N005527-001B-MSD	SampType: MSD	TestCode: 6020_WD_As	Units: ug/L	Prep Date: 3/23/2011	RunNo: 79509						
Client ID: ZZZZZZ	Batch ID: 36495	TestNo: EPA 6020	EPA 3010A	Analysis Date: 3/25/2011	SeqNo: 1252672						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.540	0.10	10.00	2.917	106	75	125	13.48	0.458	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Apr-11

CLIENT: CH2M HILL  
 Lab Order: N005512  
 Project: PG&E Topock  
 Lab ID: N005512-001

Client Sample ID: MW-58BR-UPR-160-176  
 Collection Date: 3/18/2011 11:35:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

EPA 8260B

RunID: MS1_110328A	QC Batch: D11VW041	PrepDate:	Analyst: QBM			
1,1,1,2-Tetrachloroethane	ND	0.061	1.0	ug/L	1	3/28/2011 12:35 PM
1,1,1-Trichloroethane	ND	0.068	1.0	ug/L	1	3/28/2011 12:35 PM
1,1,2,2-Tetrachloroethane	ND	0.054	1.0	ug/L	1	3/28/2011 12:35 PM
1,1,2-Trichloroethane	ND	0.083	1.0	ug/L	1	3/28/2011 12:35 PM
1,1-Dichloroethane	ND	0.099	1.0	ug/L	1	3/28/2011 12:35 PM
1,1-Dichloroethene	ND	0.094	1.0	ug/L	1	3/28/2011 12:35 PM
1,1-Dichloropropene	ND	0.082	1.0	ug/L	1	3/28/2011 12:35 PM
1,2,3-Trichlorobenzene	ND	0.10	1.0	ug/L	1	3/28/2011 12:35 PM
1,2,3-Trichloropropane	ND	0.12	1.0	ug/L	1	3/28/2011 12:35 PM
1,2,4-Trichlorobenzene	ND	0.12	1.0	ug/L	1	3/28/2011 12:35 PM
1,2,4-Trimethylbenzene	ND	0.095	1.0	ug/L	1	3/28/2011 12:35 PM
1,2-Dibromo-3-chloropropane	ND	0.15	2.0	ug/L	1	3/28/2011 12:35 PM
1,2-Dibromoethane	ND	0.14	1.0	ug/L	1	3/28/2011 12:35 PM
1,2-Dichlorobenzene	ND	0.070	1.0	ug/L	1	3/28/2011 12:35 PM
1,2-Dichloroethane	ND	0.17	1.0	ug/L	1	3/28/2011 12:35 PM
1,2-Dichloropropane	ND	0.085	1.0	ug/L	1	3/28/2011 12:35 PM
1,3,5-Trimethylbenzene	ND	0.087	1.0	ug/L	1	3/28/2011 12:35 PM
1,3-Dichlorobenzene	ND	0.090	1.0	ug/L	1	3/28/2011 12:35 PM
1,3-Dichloropropane	ND	0.074	1.0	ug/L	1	3/28/2011 12:35 PM
1,4-Dichlorobenzene	ND	0.092	1.0	ug/L	1	3/28/2011 12:35 PM
2,2-Dichloropropane	ND	0.061	1.0	ug/L	1	3/28/2011 12:35 PM
2-Butanone	ND	1.0	10	ug/L	1	3/28/2011 12:35 PM
2-Chlorotoluene	ND	0.080	1.0	ug/L	1	3/28/2011 12:35 PM
4-Chlorotoluene	ND	0.10	1.0	ug/L	1	3/28/2011 12:35 PM
4-Isopropyltoluene	ND	0.080	1.0	ug/L	1	3/28/2011 12:35 PM
4-Methyl-2-pentanone	ND	0.76	10	ug/L	1	3/28/2011 12:35 PM
Acetone	ND	1.6	10	ug/L	1	3/28/2011 12:35 PM
Acrolein	ND	4.3	20	ug/L	1	3/28/2011 12:35 PM
Acrylonitrile	ND	0.61	20	ug/L	1	3/28/2011 12:35 PM
Benzene	ND	0.075	1.0	ug/L	1	3/28/2011 12:35 PM
Bromobenzene	ND	0.082	1.0	ug/L	1	3/28/2011 12:35 PM
Bromochloromethane	ND	0.15	1.0	ug/L	1	3/28/2011 12:35 PM
Bromodichloromethane	ND	0.063	1.0	ug/L	1	3/28/2011 12:35 PM
Bromoform	ND	0.086	1.0	ug/L	1	3/28/2011 12:35 PM
Bromomethane	ND	0.13	1.0	ug/L	1	3/28/2011 12:35 PM
Carbon disulfide	ND	0.054	1.0	ug/L	1	3/28/2011 12:35 PM

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



Advanced Technology Laboratories, Inc.

**ANALYTICAL RESULTS**

Print Date: 01-Apr-11

CLIENT: CH2M HILL  
 Lab Order: N005512  
 Project: PG&E Topock  
 Lab ID: N005512-001

Client Sample ID: MW-58BR-UPR-160-176  
 Collection Date: 3/18/2011 11:35:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS1_110328A	QC Batch: D11VW041	PrepDate:	Analyst: QBM			
Carbon tetrachloride	ND	0.10	1.0	ug/L	1	3/28/2011 12:35 PM
Chlorobenzene	ND	0.092	1.0	ug/L	1	3/28/2011 12:35 PM
Chloroethane	ND	0.14	1.0	ug/L	1	3/28/2011 12:35 PM
Chloroform	ND	0.058	1.0	ug/L	1	3/28/2011 12:35 PM
Chloromethane	ND	0.054	1.0	ug/L	1	3/28/2011 12:35 PM
cis-1,2-Dichloroethene	ND	0.11	1.0	ug/L	1	3/28/2011 12:35 PM
cis-1,3-Dichloropropene	ND	0.10	1.0	ug/L	1	3/28/2011 12:35 PM
Dibromochloromethane	ND	0.061	1.0	ug/L	1	3/28/2011 12:35 PM
Dibromomethane	ND	0.15	1.0	ug/L	1	3/28/2011 12:35 PM
Dichlorodifluoromethane	ND	0.12	1.0	ug/L	1	3/28/2011 12:35 PM
Ethylbenzene	ND	0.051	1.0	ug/L	1	3/28/2011 12:35 PM
Freon-113	ND	0.080	1.0	ug/L	1	3/28/2011 12:35 PM
Hexachlorobutadiene	ND	0.17	1.0	ug/L	1	3/28/2011 12:35 PM
Isopropylbenzene	ND	0.057	1.0	ug/L	1	3/28/2011 12:35 PM
m,p-Xylene	ND	0.17	1.0	ug/L	1	3/28/2011 12:35 PM
Methylene chloride	ND	0.10	5.0	ug/L	1	3/28/2011 12:35 PM
MTBE	ND	0.089	1.0	ug/L	1	3/28/2011 12:35 PM
n-Butylbenzene	ND	0.082	1.0	ug/L	1	3/28/2011 12:35 PM
n-Propylbenzene	ND	0.087	1.0	ug/L	1	3/28/2011 12:35 PM
Naphthalene	ND	0.056	1.0	ug/L	1	3/28/2011 12:35 PM
o-Xylene	ND	0.077	1.0	ug/L	1	3/28/2011 12:35 PM
sec-Butylbenzene	ND	0.098	1.0	ug/L	1	3/28/2011 12:35 PM
Styrene	ND	0.072	1.0	ug/L	1	3/28/2011 12:35 PM
tert-Butylbenzene	ND	0.062	1.0	ug/L	1	3/28/2011 12:35 PM
Tetrachloroethene	ND	0.13	1.0	ug/L	1	3/28/2011 12:35 PM
Toluene	ND	0.12	2.5	ug/L	1	3/28/2011 12:35 PM
trans-1,2-Dichloroethene	ND	0.094	1.0	ug/L	1	3/28/2011 12:35 PM
trans-1,3-Dichloropropene	ND	0.10	1.0	ug/L	1	3/28/2011 12:35 PM
Trichloroethene	ND	0.060	1.0	ug/L	1	3/28/2011 12:35 PM
Trichlorofluoromethane	ND	0.097	1.0	ug/L	1	3/28/2011 12:35 PM
Vinyl chloride	ND	0.12	1.0	ug/L	1	3/28/2011 12:35 PM
Xylenes, Total	ND	1.5	2.0	ug/L	1	3/28/2011 12:35 PM
Surr: 1,2-Dichloroethane-d4	84.6	0	72-119	%REC	1	3/28/2011 12:35 PM
Surr: 4-Bromofluorobenzene	108	0	76-119	%REC	1	3/28/2011 12:35 PM
Surr: Dibromofluoromethane	91.0	0	85-115	%REC	1	3/28/2011 12:35 PM
Surr: Toluene-d8	106	0	81-120	%REC	1	3/28/2011 12:35 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Apr-11

CLIENT: CH2M HILL  
 Lab Order: N005512  
 Project: PG&E Topock  
 Lab ID: N005512-002

Client Sample ID: TB-Packer-176-01  
 Collection Date: 3/18/2011 8:00:00 AM  
 Matrix: WATER

**Analyses Result MDL PQL Qual Units DF Date Analyzed**

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS1_110328A	QC Batch: D11VW041	PrepDate:	Analyst: QBM
1,1,1,2-Tetrachloroethane	ND	0.061	1.0 ug/L 1 3/28/2011 12:59 PM
1,1,1-Trichloroethane	ND	0.068	1.0 ug/L 1 3/28/2011 12:59 PM
1,1,2,2-Tetrachloroethane	ND	0.054	1.0 ug/L 1 3/28/2011 12:59 PM
1,1,2-Trichloroethane	ND	0.083	1.0 ug/L 1 3/28/2011 12:59 PM
1,1-Dichloroethane	ND	0.099	1.0 ug/L 1 3/28/2011 12:59 PM
1,1-Dichloroethene	ND	0.094	1.0 ug/L 1 3/28/2011 12:59 PM
1,1-Dichloropropene	ND	0.082	1.0 ug/L 1 3/28/2011 12:59 PM
1,2,3-Trichlorobenzene	ND	0.10	1.0 ug/L 1 3/28/2011 12:59 PM
1,2,3-Trichloropropane	ND	0.12	1.0 ug/L 1 3/28/2011 12:59 PM
1,2,4-Trichlorobenzene	ND	0.12	1.0 ug/L 1 3/28/2011 12:59 PM
1,2,4-Trimethylbenzene	ND	0.095	1.0 ug/L 1 3/28/2011 12:59 PM
1,2-Dibromo-3-chloropropane	ND	0.15	2.0 ug/L 1 3/28/2011 12:59 PM
1,2-Dibromoethane	ND	0.14	1.0 ug/L 1 3/28/2011 12:59 PM
1,2-Dichlorobenzene	ND	0.070	1.0 ug/L 1 3/28/2011 12:59 PM
1,2-Dichloroethane	ND	0.17	1.0 ug/L 1 3/28/2011 12:59 PM
1,2-Dichloropropane	ND	0.085	1.0 ug/L 1 3/28/2011 12:59 PM
1,3,5-Trimethylbenzene	ND	0.087	1.0 ug/L 1 3/28/2011 12:59 PM
1,3-Dichlorobenzene	ND	0.090	1.0 ug/L 1 3/28/2011 12:59 PM
1,3-Dichloropropane	ND	0.074	1.0 ug/L 1 3/28/2011 12:59 PM
1,4-Dichlorobenzene	ND	0.092	1.0 ug/L 1 3/28/2011 12:59 PM
2,2-Dichloropropane	ND	0.061	1.0 ug/L 1 3/28/2011 12:59 PM
2-Butanone	ND	1.0	10 ug/L 1 3/28/2011 12:59 PM
2-Chlorotoluene	ND	0.080	1.0 ug/L 1 3/28/2011 12:59 PM
4-Chlorotoluene	ND	0.10	1.0 ug/L 1 3/28/2011 12:59 PM
4-Isopropyltoluene	ND	0.080	1.0 ug/L 1 3/28/2011 12:59 PM
4-Methyl-2-pentanone	ND	0.76	10 ug/L 1 3/28/2011 12:59 PM
Acetone	ND	1.6	10 ug/L 1 3/28/2011 12:59 PM
Acrolein	ND	4.3	20 ug/L 1 3/28/2011 12:59 PM
Acrylonitrile	ND	0.61	20 ug/L 1 3/28/2011 12:59 PM
Benzene	ND	0.075	1.0 ug/L 1 3/28/2011 12:59 PM
Bromobenzene	ND	0.082	1.0 ug/L 1 3/28/2011 12:59 PM
Bromochloromethane	ND	0.15	1.0 ug/L 1 3/28/2011 12:59 PM
Bromodichloromethane	ND	0.063	1.0 ug/L 1 3/28/2011 12:59 PM
Bromoform	ND	0.086	1.0 ug/L 1 3/28/2011 12:59 PM
Bromomethane	ND	0.13	1.0 ug/L 1 3/28/2011 12:59 PM
Carbon disulfide	ND	0.054	1.0 ug/L 1 3/28/2011 12:59 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out



**Advanced Technology Laboratories, Inc.**

**ANALYTICAL RESULTS**

Print Date: 01-Apr-11

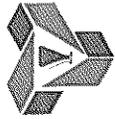
CLIENT: CH2M HILL  
 Lab Order: N005512  
 Project: PG&E Topock  
 Lab ID: N005512-002

Client Sample ID: TB-Packer-176-01  
 Collection Date: 3/18/2011 8:00:00 AM  
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>							
<b>EPA 8260B</b>							
RunID: MS1_110328A	QC Batch: D11VW041				PrepDate:		Analyst: QBM
Carbon tetrachloride	ND	0.10	1.0		ug/L	1	3/28/2011 12:59 PM
Chlorobenzene	ND	0.092	1.0		ug/L	1	3/28/2011 12:59 PM
Chloroethane	ND	0.14	1.0		ug/L	1	3/28/2011 12:59 PM
Chloroform	ND	0.058	1.0		ug/L	1	3/28/2011 12:59 PM
Chloromethane	ND	0.054	1.0		ug/L	1	3/28/2011 12:59 PM
cis-1,2-Dichloroethene	ND	0.11	1.0		ug/L	1	3/28/2011 12:59 PM
cis-1,3-Dichloropropene	ND	0.10	1.0		ug/L	1	3/28/2011 12:59 PM
Dibromochloromethane	ND	0.061	1.0		ug/L	1	3/28/2011 12:59 PM
Dibromomethane	ND	0.15	1.0		ug/L	1	3/28/2011 12:59 PM
Dichlorodifluoromethane	ND	0.12	1.0		ug/L	1	3/28/2011 12:59 PM
Ethylbenzene	ND	0.051	1.0		ug/L	1	3/28/2011 12:59 PM
Freon-113	ND	0.080	1.0		ug/L	1	3/28/2011 12:59 PM
Hexachlorobutadiene	ND	0.17	1.0		ug/L	1	3/28/2011 12:59 PM
Isopropylbenzene	ND	0.057	1.0		ug/L	1	3/28/2011 12:59 PM
m,p-Xylene	ND	0.17	1.0		ug/L	1	3/28/2011 12:59 PM
Methylene chloride	ND	0.10	5.0		ug/L	1	3/28/2011 12:59 PM
MTBE	ND	0.089	1.0		ug/L	1	3/28/2011 12:59 PM
n-Butylbenzene	ND	0.082	1.0		ug/L	1	3/28/2011 12:59 PM
n-Propylbenzene	ND	0.087	1.0		ug/L	1	3/28/2011 12:59 PM
Naphthalene	ND	0.056	1.0		ug/L	1	3/28/2011 12:59 PM
o-Xylene	ND	0.077	1.0		ug/L	1	3/28/2011 12:59 PM
sec-Butylbenzene	ND	0.098	1.0		ug/L	1	3/28/2011 12:59 PM
Styrene	ND	0.072	1.0		ug/L	1	3/28/2011 12:59 PM
tert-Butylbenzene	ND	0.062	1.0		ug/L	1	3/28/2011 12:59 PM
Tetrachloroethene	ND	0.13	1.0		ug/L	1	3/28/2011 12:59 PM
Toluene	ND	0.12	2.5		ug/L	1	3/28/2011 12:59 PM
trans-1,2-Dichloroethene	ND	0.094	1.0		ug/L	1	3/28/2011 12:59 PM
trans-1,3-Dichloropropene	ND	0.10	1.0		ug/L	1	3/28/2011 12:59 PM
Trichloroethene	ND	0.060	1.0		ug/L	1	3/28/2011 12:59 PM
Trichlorofluoromethane	ND	0.097	1.0		ug/L	1	3/28/2011 12:59 PM
Vinyl chloride	ND	0.12	1.0		ug/L	1	3/28/2011 12:59 PM
Xylenes, Total	ND	1.5	2.0		ug/L	1	3/28/2011 12:59 PM
Surr: 1,2-Dichloroethane-d4	80.3	0	72-119		%REC	1	3/28/2011 12:59 PM
Surr: 4-Bromofluorobenzene	106	0	76-119		%REC	1	3/28/2011 12:59 PM
Surr: Dibromofluoromethane	88.6	0	85-115		%REC	1	3/28/2011 12:59 PM
Surr: Toluene-d8	110	0	81-120		%REC	1	3/28/2011 12:59 PM

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
 DO Surrogate Diluted Out





CLIENT: CH2M HILL
Work Order: N005512
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Table with columns: Sample ID, Client ID, Analyte, Result, PQL, SPK value, SPK Ref Val, %REC, LowLimit, HighLimit, RPD Ref Val, %RPD, RPDLimit, Qual. Includes sample details like D110328LCS and various analyte results.

Qualifiers:

- B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference



**CLIENT:** CH2M HILL  
**Work Order:** N005512  
**Project:** PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** 8260\_WP\_LLPGE

Sample ID: <b>D110328LCS</b>	SampType: <b>LCS</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>ug/L</b>	Prep Date:	RunNo: <b>79526</b>
Client ID: <b>LCSW</b>	Batch ID: <b>D11VW041</b>	TestNo: <b>EPA 8260B</b>		Analysis Date: <b>3/28/2011</b>	SeqNo: <b>1253309</b>

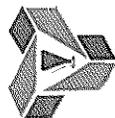
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	24.370	1.0	25.00	0	97.5	76	124				
Bromochloromethane	24.250	1.0	25.00	0	97.0	65	129				
Bromodichloromethane	21.420	1.0	25.00	0	85.7	76	121				
Bromoform	22.360	1.0	25.00	0	89.4	69	128				
Bromomethane	28.080	1.0	25.00	0	112	53	141				
Carbon disulfide	22.600	1.0	25.00	0	90.4	75	125				
Carbon tetrachloride	20.050	1.0	25.00	0	80.2	66	138				
Chlorobenzene	24.480	1.0	25.00	0	97.9	81	122				
Chloroethane	21.930	1.0	25.00	0	87.7	58	133				
Chloroform	24.500	1.0	25.00	0	98.0	69	128				
Chloromethane	24.820	1.0	25.00	0	99.3	56	131				
cis-1,2-Dichloroethene	24.660	1.0	25.00	0	98.6	72	126				
cis-1,3-Dichloropropene	23.280	1.0	25.00	0	93.1	69	131				
Cyclohexanone	25.220	5.0	25.00	0	101	70	130				
Di-isopropyl ether	22.690	1.0	25.00	0	90.8	70	130				
Dibromomethane	25.520	1.0	25.00	0	102	76	125				
Dichlorodifluoromethane	24.200	1.0	25.00	0	96.8	53	153				
Freon-113	21.590	1.0	25.00	0	86.4	75	125				
Hexachlorobutadiene	26.080	1.0	25.00	0	104	67	131				
Isopropylbenzene	24.250	1.0	25.00	0	97.0	75	127				
Methylene chloride	22.640	5.0	25.00	0	90.6	63	137				
MTBE	21.310	1.0	25.00	0	85.2	65	123				
n-Butylbenzene	25.700	1.0	25.00	0	103	69	137				
n-Propylbenzene	24.520	1.0	25.00	0	98.1	72	129				
Naphthalene	25.720	1.0	25.00	0	103	54	138				
o-Xylene	24.790	1.0	25.00	0	99.2	80	121				
sec-Butylbenzene	24.460	1.0	25.00	0	97.8	72	127				
Styrene	25.600	1.0	25.00	0	102	65	134				
Tert-amyl methyl ether	23.740	1.0	25.00	0	95.0	70	130				
Tert-Butanol	96.280	5.0	125.0	0	77.0	70	130				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
  - E Value above quantitation range
  - H Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - R RPD outside accepted recovery limits
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
- Calculations are based on raw values

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691



CLIENT: CH2M HILL  
 Work Order: N005512  
 Project: PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
 Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: D110328LCS	SampType: LCS	TestCode: 8260_WP_LL	Units: ug/L	Prep Date:	RunNo: 79526						
Client ID: LCSW	Batch ID: D11VW041	TestNo: EPA 8260B		Analysis Date: 3/28/2011	SeqNo: 1253309						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	24.700	2.5	25.00	0	98.8	77	122				
trans-1,2-Dichloroethene	24.560	1.0	25.00	0	98.2	63	137				
trans-1,3-Dichloropropene	23.950	1.0	25.00	0	95.8	59	135				
Trichloroethene	23.020	1.0	25.00	0	92.1	70	127				
Trichlorofluoromethane	23.550	1.0	25.00	0	94.2	57	129				
Vinyl acetate	239.020	5.0	250.0	0	95.6	70	130				
Vinyl chloride	22.690	1.0	25.00	0	90.8	50	134				
IS: 1,4-Difluorobenzene	25.000	0	25.00	0	100	70	130				
IS: 1,4-Dichlorobenzene-d4	25.000	0	25.00	0	100	70	130				
Surr: Dibromofluoromethane	25.290		25.00		101	85	115				
Surr: Toluene-d8	25.500		25.00		102	81	120				

Sample ID: N005512-001EMS	SampType: MS	TestCode: 8260_WP_LL	Units: ug/L	Prep Date:	RunNo: 79526						
Client ID: ZZZZZZ	Batch ID: D11VW041	TestNo: EPA 8260B		Analysis Date: 3/28/2011	SeqNo: 1253310						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	25.750	1.0	25.00	0	103	81	129				
1,1,1-Trichloroethane	20.170	1.0	25.00	0	80.7	67	132				
1,1,1,2-Tetrachloroethane	20.280	1.0	25.00	0	81.1	63	128				
1,1,2-Trichloroethane	21.320	1.0	25.00	0	85.3	75	125				
1,1-Dichloroethane	23.690	1.0	25.00	0	94.8	69	133				
1,1-Dichloroethene	25.100	1.0	25.00	0	100	68	130				
1,1-Dichloropropene	23.220	1.0	25.00	0	92.9	73	132				
1,2,3-Trichlorobenzene	25.780	1.0	25.00	0	103	67	137				
1,2,3-Trichloropropane	19.980	1.0	25.00	0	79.9	73	124				
1,2,4-Trichlorobenzene	27.390	1.0	25.00	0	110	66	134				
1,2,4-Trimethylbenzene	25.590	1.0	25.00	0	102	74	132				
1,2-Dibromo-3-chloropropane	20.770	2.0	25.00	0	83.1	50	132				
1,2-Dibromoethane	21.080	1.0	25.00	0	84.3	80	121				
1,2-Dichlorobenzene	24.800	1.0	25.00	0	99.2	71	122				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005512  
 Project: PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

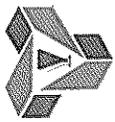
Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: N005512-001EMS	SampType: MS	TestCode: 8260_WP_LL	Units: ug/L	Prep Date:	RunNo: 79526						
Client ID: ZZZZZZ	Batch ID: D11VW041	TestNo: EPA 8260B		Analysis Date: 3/28/2011	SeqNo: 1253310						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloroethane	21.990	1.0	25.00	0	88.0	69	132				
1,2-Dichloropropane	22.130	1.0	25.00	0	88.5	75	125				
1,3,5-Trimethylbenzene	25.800	1.0	25.00	0	103	74	131				
1,3-Dichlorobenzene	26.050	1.0	25.00	0	104	75	124				
1,3-Dichloropropane	21.280	1.0	25.00	0	85.1	73	126				
1,4-Dichlorobenzene	25.510	1.0	25.00	0	102	74	123				
2,2-Dichloropropane	20.280	1.0	25.00	0	81.1	69	137				
2-Butanone	100.320	10	250.0	0	40.1	49	136				S
2-Chlorotoluene	26.910	1.0	25.00	0	108	73	126				
4-Chlorotoluene	25.980	1.0	25.00	0	104	74	128				
4-Isopropyltoluene	27.110	1.0	25.00	0	108	73	130				
4-Methyl-2-pentanone	188.800	10	250.0	0	75.5	58	134				
Acetone	72.390	10	250.0	0	29.0	40	135				S
Acrolein	207.430	20	250.0	0	83.0	75	125				
Acrylonitrile	207.420	20	250.0	0	83.0	75	125				
Benzene	24.270	1.0	25.00	0	97.1	81	122				
Bromobenzene	24.830	1.0	25.00	0	99.3	76	124				
Bromochloromethane	22.620	1.0	25.00	0	90.5	65	129				
Bromodichloromethane	21.010	1.0	25.00	0	84.0	76	121				
Bromoform	19.720	1.0	25.00	0	78.9	69	128				
Bromomethane	29.790	1.0	25.00	0	119	53	141				
Carbon disulfide	22.310	1.0	25.00	0	89.2	75	125				
Carbon tetrachloride	20.640	1.0	25.00	0	82.6	66	138				
Chlorobenzene	25.470	1.0	25.00	0	102	81	122				
Chloroethane	22.000	1.0	25.00	0	88.0	58	133				
Chloroform	24.360	1.0	25.00	0	97.4	69	128				
Chloromethane	25.120	1.0	25.00	0	100	56	131				
cis-1,2-Dichloroethene	24.730	1.0	25.00	0	98.9	72	126				
cis-1,3-Dichloropropene	22.880	1.0	25.00	0	91.5	69	131				
Dibromochloromethane	21.630	1.0	25.00	0	86.5	66	133				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



**CLIENT:** CH2M HILL  
**Work Order:** N005512  
**Project:** PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** 8260\_WP\_LLPGE

Advanced Technology Laboratories, Inc

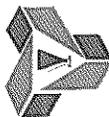
3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

Sample ID: N005512-001EMS	SampType: MS	TestCode: 8260_WP_LL	Units: ug/L	Prep Date:	RunNo: 79526
Client ID: ZZZZZZ	Batch ID: D11VW041	TestNo: EPA 8260B		Analysis Date: 3/28/2011	SeqNo: 1253310

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibromomethane	21.450	1.0	25.00	0	85.8	76	125				
Dichlorodifluoromethane	25.190	1.0	25.00	0	101	53	153				
Ethylbenzene	25.690	1.0	25.00	0	103	73	127				
Freon-113	21.700	1.0	25.00	0	86.8	75	125				
Hexachlorobutadiene	28.440	1.0	25.00	0	114	67	131				
Isopropylbenzene	27.640	1.0	25.00	0	111	75	127				
m,p-Xylene	53.100	1.0	50.00	0.5000	105	76	128				
Methylene chloride	21.660	5.0	25.00	0	86.6	63	137				
MTBE	20.230	1.0	25.00	0	80.9	65	123				
n-Butylbenzene	27.880	1.0	25.00	0	112	69	137				
n-Propylbenzene	26.560	1.0	25.00	0	106	72	129				
Naphthalene	21.340	1.0	25.00	0	85.4	54	138				
o-Xylene	25.260	1.0	25.00	0	101	80	121				
sec-Butylbenzene	26.640	1.0	25.00	0	107	72	127				
Styrene	22.590	1.0	25.00	0	90.4	65	134				
tert-Butylbenzene	26.100	1.0	25.00	0	104	70	129				
Tetrachloroethene	26.240	1.0	25.00	0	105	66	128				
Toluene	25.150	2.5	25.00	0.8500	97.2	77	122				
trans-1,2-Dichloroethene	24.890	1.0	25.00	0	99.6	63	137				
trans-1,3-Dichloropropene	22.180	1.0	25.00	0	88.7	59	135				
Trichloroethene	24.050	1.0	25.00	0	96.2	70	127				
Trichlorofluoromethane	24.650	1.0	25.00	0	98.6	57	129				
Vinyl chloride	23.080	1.0	25.00	0	92.3	50	134				
Xylenes, Total	78.360	2.0	75.00	0	104	75	125				
Surr: 1,2-Dichloroethane-d4	21.630		25.00		86.5	72	119				
Surr: 4-Bromofluorobenzene	24.930		25.00		99.7	76	119				
Surr: Dibromofluoromethane	24.360		25.00		97.4	85	115				
Surr: Toluene-d8	25.190		25.00		101	81	120				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005512  
 Project: PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Advanced Technology  
Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

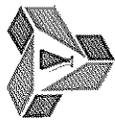
Tel: 702 307-2659

Fax: 702 307-2691

Sample ID: N005512-001EMSD	SampType: MSD	TestCode: 8260_WP_LL	Units: ug/L	Prep Date:	RunNo: 79526						
Client ID: ZZZZZZ	Batch ID: D11VW041	TestNo: EPA 8260B	Analysis Date: 3/28/2011	SeqNo: 1253311							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	25.400	1.0	25.00	0	102	81	129	25.75	1.37	20	
1,1,1-Trichloroethane	19.250	1.0	25.00	0	77.0	67	132	20.17	4.67	20	
1,1,2,2-Tetrachloroethane	20.720	1.0	25.00	0	82.9	63	128	20.28	2.15	20	
1,1,2-Trichloroethane	20.970	1.0	25.00	0	83.9	75	125	21.32	1.66	20	
1,1-Dichloroethane	22.900	1.0	25.00	0	91.6	69	133	23.69	3.39	20	
1,1-Dichloroethene	24.000	1.0	25.00	0	96.0	68	130	25.10	4.48	20	
1,1-Dichloropropene	22.180	1.0	25.00	0	88.7	73	132	23.22	4.58	20	
1,2,3-Trichlorobenzene	25.230	1.0	25.00	0	101	67	137	25.78	2.16	20	
1,2,3-Trichloropropane	20.240	1.0	25.00	0	81.0	73	124	19.98	1.29	20	
1,2,4-Trichlorobenzene	26.610	1.0	25.00	0	106	66	134	27.39	2.89	20	
1,2,4-Trimethylbenzene	22.020	1.0	25.00	0	88.1	74	132	25.59	15.0	20	
1,2-Dibromo-3-chloropropane	21.760	2.0	25.00	0	87.0	50	132	20.77	4.66	20	
1,2-Dibromoethane	21.230	1.0	25.00	0	84.9	80	121	21.08	0.709	20	
1,2-Dichlorobenzene	24.090	1.0	25.00	0	96.4	71	122	24.80	2.90	20	
1,2-Dichloroethane	20.950	1.0	25.00	0	83.8	69	132	21.99	4.84	20	
1,2-Dichloropropane	20.910	1.0	25.00	0	83.6	75	125	22.13	5.67	20	
1,3,5-Trimethylbenzene	23.850	1.0	25.00	0	95.4	74	131	25.80	7.85	20	
1,3-Dichlorobenzene	25.160	1.0	25.00	0	101	75	124	26.05	3.48	20	
1,3-Dichloropropane	20.940	1.0	25.00	0	83.8	73	126	21.28	1.61	20	
1,4-Dichlorobenzene	24.930	1.0	25.00	0	99.7	74	123	25.51	2.30	20	
2,2-Dichloropropane	18.990	1.0	25.00	0	76.0	69	137	20.28	6.57	20	
2-Butanone	82.720	10	250.0	0	33.1	49	136	100.3	19.2	20	S
2-Chlorotoluene	25.540	1.0	25.00	0	102	73	126	26.91	5.22	20	
4-Chlorotoluene	24.910	1.0	25.00	0	99.6	74	128	25.98	4.21	20	
4-Isopropyltoluene	25.520	1.0	25.00	0	102	73	130	27.11	6.04	20	
4-Methyl-2-pentanone	179.870	10	250.0	0	71.9	58	134	188.8	4.84	20	
Acetone	52.520	10	250.0	0	21.0	40	135	72.39	31.8	20	SR
Acrolein	166.440	20	250.0	0	66.6	75	125	207.4	21.9	20	SR
Acrylonitrile	163.520	20	250.0	0	65.4	75	125	207.4	23.7	20	SR
Benzene	23.620	1.0	25.00	0	94.5	81	122	24.27	2.71	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



**CLIENT:** CH2M HILL  
**Work Order:** N005512  
**Project:** PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** 8260\_WP\_LLPGE

Advanced Technology Laboratories, Inc

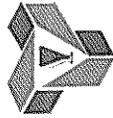
3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

Sample ID: N005512-001EMSD	SampType: MSD	TestCode: 8260_WP_LL	Units: ug/L	Prep Date:	RunNo: 79526
Client ID: ZZZZZZ	Batch ID: D11VW041	TestNo: EPA 8260B		Analysis Date: 3/28/2011	SeqNo: 1253311

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	24.280	1.0	25.00	0	97.1	76	124	24.83	2.24	20	
Bromochloromethane	22.170	1.0	25.00	0	88.7	65	129	22.62	2.01	20	
Bromodichloromethane	20.170	1.0	25.00	0	80.7	76	121	21.01	4.08	20	
Bromoform	19.880	1.0	25.00	0	79.5	69	128	19.72	0.808	20	
Bromomethane	28.930	1.0	25.00	0	116	53	141	29.79	2.93	20	
Carbon disulfide	21.820	1.0	25.00	0	87.3	75	125	22.31	2.22	20	
Carbon tetrachloride	19.930	1.0	25.00	0	79.7	66	138	20.64	3.50	20	
Chlorobenzene	24.980	1.0	25.00	0	99.9	81	122	25.47	1.94	20	
Chloroethane	21.520	1.0	25.00	0	86.1	58	133	22.00	2.21	20	
Chloroform	23.140	1.0	25.00	0	92.6	69	128	24.36	5.14	20	
Chloromethane	24.920	1.0	25.00	0	99.7	56	131	25.12	0.799	20	
cis-1,2-Dichloroethene	23.510	1.0	25.00	0	94.0	72	126	24.73	5.06	20	
cis-1,3-Dichloropropene	22.180	1.0	25.00	0	88.7	69	131	22.88	3.11	20	
Dibromochloromethane	20.960	1.0	25.00	0	83.8	66	133	21.63	3.15	20	
Dibromomethane	21.480	1.0	25.00	0	85.9	76	125	21.45	0.140	20	
Dichlorodifluoromethane	24.800	1.0	25.00	0	99.2	53	153	25.19	1.56	20	
Ethylbenzene	25.350	1.0	25.00	0	101	73	127	25.69	1.33	20	
Freon-113	20.410	1.0	25.00	0	81.6	75	125	21.70	6.13	20	
Hexachlorobutadiene	26.690	1.0	25.00	0	107	67	131	28.44	6.35	20	
Isopropylbenzene	25.430	1.0	25.00	0	102	75	127	27.64	8.33	20	
m,p-Xylene	51.060	1.0	50.00	0.5000	101	76	128	53.10	3.92	20	
Methylene chloride	21.300	5.0	25.00	0	85.2	63	137	21.66	1.68	20	
MTBE	19.240	1.0	25.00	0	77.0	65	123	20.23	5.02	20	
n-Butylbenzene	26.880	1.0	25.00	0	108	69	137	27.88	3.65	20	
n-Propylbenzene	25.690	1.0	25.00	0	103	72	129	26.56	3.33	20	
Naphthalene	20.790	1.0	25.00	0	83.2	54	138	21.34	2.61	20	
o-Xylene	24.550	1.0	25.00	0	98.2	80	121	25.26	2.85	20	
sec-Butylbenzene	25.570	1.0	25.00	0	102	72	127	26.64	4.10	20	
Styrene	17.770	1.0	25.00	0	71.1	65	134	22.59	23.9	20	R
tert-Butylbenzene	25.000	1.0	25.00	0	100	70	129	26.10	4.31	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: CH2M HILL  
 Work Order: N005512  
 Project: PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Sample ID: N005512-001EMSD	SampType: MSD	TestCode: 8260_WP_LL	Units: ug/L	Prep Date:	RunNo: 79526						
Client ID: ZZZZZZ	Batch ID: D11VW041	TestNo: EPA 8260B		Analysis Date: 3/28/2011	SeqNo: 1253311						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tetrachloroethene	26.100	1.0	25.00	0	104	66	128	26.24	0.535	20	
Toluene	24.820	2.5	25.00	0.8500	95.9	77	122	25.15	1.32	20	
trans-1,2-Dichloroethene	23.540	1.0	25.00	0	94.2	63	137	24.89	5.58	20	
trans-1,3-Dichloropropene	21.720	1.0	25.00	0	86.9	59	135	22.18	2.10	20	
Trichloroethene	23.310	1.0	25.00	0	93.2	70	127	24.05	3.13	20	
Trichlorofluoromethane	24.340	1.0	25.00	0	97.4	57	129	24.65	1.27	20	
Vinyl chloride	22.880	1.0	25.00	0	91.5	50	134	23.08	0.870	20	
Xylenes, Total	75.610	2.0	75.00	0	101	75	125	78.36	3.57	20	
Surr: 1,2-Dichloroethane-d4	20.820		25.00		83.3	72	119		0		
Surr: 4-Bromofluorobenzene	24.860		25.00		99.4	76	119		0		
Surr: Dibromofluoromethane	23.880		25.00		95.5	85	115		0		
Surr: Toluene-d8	25.140		25.00		101	81	120		0		

Sample ID: D110328MB2	SampType: MBLK	TestCode: 8260_WP_LL	Units: ug/L	Prep Date:	RunNo: 79526						
Client ID: PBW	Batch ID: D11VW041	TestNo: EPA 8260B		Analysis Date: 3/28/2011	SeqNo: 1253312						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0									
1,1,1-Trichloroethane	ND	1.0									
1,1,2,2-Tetrachloroethane	ND	1.0									
1,1,2-Trichloroethane	ND	1.0									
1,1-Dichloroethane	ND	1.0									
1,1-Dichloroethene	ND	1.0									
1,1-Dichloropropene	ND	1.0									
1,2,3-Trichlorobenzene	ND	1.0									
1,2,3-Trichloropropane	ND	1.0									
1,2,4-Trichlorobenzene	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
1,2-Dibromoethane	ND	1.0									

**Qualifiers:**

- B Analyte detected in the associated Method Blank
  - E Value above quantitation range
  - H Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - R RPD outside accepted recovery limits
  - S Spike/Surrogate outside of limits due to matrix interference
  - DO Surrogate Diluted Out
- Calculations are based on raw values

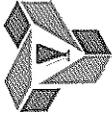
Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

Fax: 702 307-2691



**CLIENT:** CH2M HILL  
**Work Order:** N005512  
**Project:** PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** 8260\_WP\_LLPGE

Sample ID: <b>D110328MB2</b>	SampType: <b>MBLK</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>ug/L</b>	Prep Date:	RunNo: <b>79526</b>						
Client ID: <b>PBW</b>	Batch ID: <b>D11VW041</b>	TestNo: <b>EPA 8260B</b>		Analysis Date: <b>3/28/2011</b>	SeqNo: <b>1253312</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

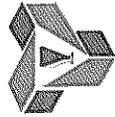
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichlorobenzene	ND	1.0									
1,2-Dichloroethane	ND	1.0									
1,2-Dichloropropane	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,3-Dichloropropane	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
2,2-Dichloropropane	ND	1.0									
2-Butanone	ND	10									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
4-Isopropyltoluene	ND	1.0									
4-Methyl-2-pentanone	ND	10									
Acetone	ND	10									
Acrolein	ND	20									
Acrylonitrile	ND	20									
Benzene	ND	1.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon disulfide	ND	1.0									
Carbon tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	1.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
cis-1,2-Dichloroethene	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691



CLIENT: CH2M HILL  
 Work Order: N005512  
 Project: PG&E Topock

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_WP\_LLPGE

Sample ID: D110328MB2	SampType: MBLK	TestCode: 8260_WP_LL	Units: ug/L	Prep Date:	RunNo: 79526						
Client ID: PBW	Batch ID: D11VW041	TestNo: EPA 8260B		Analysis Date: 3/28/2011	SeqNo: 1253312						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
Dichlorodifluoromethane	ND	1.0									
Ethylbenzene	ND	1.0									
Freon-113	ND	1.0									
Hexachlorobutadiene	ND	1.0									
Isopropylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
Methylene chloride	ND	5.0									
MTBE	ND	1.0									
n-Butylbenzene	ND	1.0									
n-Propylbenzene	ND	1.0									
Naphthalene	ND	1.0									
o-Xylene	ND	1.0									
sec-Butylbenzene	ND	1.0									
Styrene	ND	1.0									
tert-Butylbenzene	ND	1.0									
Tetrachloroethene	ND	1.0									
Toluene	ND	2.5									
trans-1,2-Dichloroethene	ND	1.0									
trans-1,3-Dichloropropene	ND	1.0									
Trichloroethene	ND	1.0									
Trichlorofluoromethane	ND	1.0									
Vinyl chloride	ND	1.0									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	22.090		25.00		88.4	72	119				
Surr: 4-Bromofluorobenzene	26.380		25.00		106	76	119				
Surr: Dibromofluoromethane	22.210		25.00		88.8	85	115				
Surr: Toluene-d8	27.190		25.00		109	81	120				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories, Inc

3151 W. Post Road

Las Vegas, NV 89118

Tel: 702 307-2659

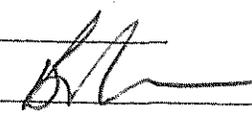
Fax: 702 307-2691

CHAIN OF CUSTODY RECORD

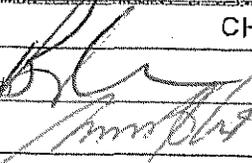
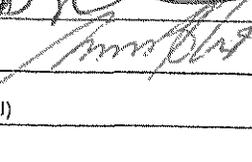
COC Number

TURNAROUND TIME

DATE 3-18-11 PAGE 1 OF 1

COMPANY <u>CH2M Hill</u>				Cr6 E218.6 field Metals 6010 BEE Anions 300.0 NO3-CI TDS SM 2540C VOCs SM 5310C 8260 B	NUMBER OF CONTAINERS	COMMENTS				
PROJECT NAME <u>PG&amp;E Topock</u>										
PHONE <u>(530) 229-3303</u>		FAX <u>(530) 339-3303</u>								
ADDRESS <u>155 Grand Ave Ste 1000</u> <u>Oakland, CA 94612</u>										
P.O. NUMBER _____		TEAM <u>1</u>								
SAMPLERS (SIGNATURE) 										
SAMPLE I.D.	DATE	TIME	DESCRIPTION							
MW-58BR-VPR-160-176	3-18-11	1135	water	X	X	X	X	X	8	NO SSFZ-1
TB-Packer-176-01		0800					X	trip blank	1	Hold NO SSFZ-2

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished) 	Printed Name <u>Barry Colton</u>	Company/ Agency <u>CH2M Hill</u>	Date/ Time <u>3-18-11 1700</u>
Signature (Received) 	Printed Name <u>Indira...</u>	Company/ Agency <u>ATL</u>	Date/ Time <u>3/18/11 1723</u>
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  3.1°C

CUSTODY SEALED YES  NO

SPECIAL REQUIREMENTS:

CHAIN OF CUSTODY RECORD

COC Number \_\_\_\_\_  
 TURNAROUND TIME \_\_\_\_\_  
 DATE 3-18-11 PAGE 1 OF 1

COMPANY CHAM Hill  
 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 \_\_\_\_\_ TEAM 1  
 SAMPLERS (SIGNATURE) [Signature]

Cr6 E218.6  
 Metals 6010 BEE Cr. As  
 Anions 3000 NO3-Cl-  
 TDS SM2540C  
 VOCs SM5310C  
 8260 B

COMMENTS

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6	E218.6	Metals	Anions	TDS	VOCs	NUMBER OF CONTAINERS	COMMENTS
MW-58BR-VPR-160-176	3-18-11	1135	water	X	X	X	X	X	X	8	
TB-Packer-176-01	1	0800	1						X	1	Hold

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished) <u>[Signature]</u>	Printed Name <u>Barry Colborn</u>	Company/ Agency <u>CHAM Hill</u>	Date/ Time <u>3-18-11 1700</u>
Signature (Received) <u>[Signature]</u>	Printed Name <u>[Signature]</u>	Company/ Agency <u>ATL</u>	Date/ Time <u>3/18/11 01703</u>
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  3.1°C F  
 CUSTODY SEALED YES  NO

SPECIAL REQUIREMENTS:

# Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO and/or NA signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

## Sample Receipt Checklist

Cooler Received/Opened On: 3/19/2011 Workorder: N005512  
 Rep sample Temp (Deg C): 2.1 IR Gun ID: 1  
 Temp Blank:  Yes  No  
 Carrier name: ATL  
 Last 4 digits of Tracking No.: na Packing Material Used: Bubble Wrap  
 Cooling process:  Ice  Ice Pack  Dry Ice  Other  None

- |   |   |                             |   |
|---|---|-----------------------------|---|
| 1. Shipping container/cooler in good condition?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present                                     |
| 2. Custody seals intact, signed, dated on shipping container/cooler?                    | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 5. Sampler's name present in COC?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 6. Chain of custody signed when relinquished and received?                              | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 7. Chain of custody agrees with sample labels?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 8. Samples in proper container/bottle?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 9. Sample containers intact?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 10. Sufficient sample volume for indicated test?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 11. All samples received within holding time?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| 12. Temperature of rep sample or Temp Blank within acceptable limit?                    | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/>                     |
| 13. Water - VOA vials have zero headspace?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/>                     |
| 14. Water - pH acceptable upon receipt?<br>Example: pH > 12 for (CN,S); pH<2 for Metals | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/>                     |
| 15. Did the bottle labels indicate correct preservatives used?                          | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/>                     |
| 16. Were there Non-Conformance issues at login?   | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/>          |
| Was Client notified?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/>          |

Comments:

Checklist Completed By MBC 3/19/11

Reviewed By: 3/21/11

## SAMPLE CALCULATION

**METHOD:** SM 2540C

**TEST NAME:** Total Filterable Residue

**MATRIX:** Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B) * 1000000}{C}$$

Where:

A = weight in g of dish + residue after drying

B = weight of dish in g

C = volume of sample used in mL

For **N005512-001C**, TDS concentration in mg/L is calculated as follows:

$$\begin{aligned} \text{TDS, mg/L} &= \frac{(15.8780 - 15.8092) * 1000000}{10} \\ &= 6880 \text{ mg/L} \end{aligned}$$

Reporting result in two significant figures,

$$\text{TDS} = 6900 \text{ mg/L}$$

## Sample Calculation

**METHOD:** EPA 218.6

**TEST NAME:** HEXAVALENT CHROMIUM BY IC

**MATRIX:** Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in  $\mu\text{g/L}$ , in the original sample as follows:

$$\text{Cr}^{+6}, \mu\text{g/L} = A * \text{DF}$$

where:

A =  $\mu\text{g/L}$ , IC  $\text{Cr}^{+6}$  calculated concentration

DF = dilution factor

For N005512-001A, concentration in  $\mu\text{g/L}$  is calculated as follows:

$$\begin{aligned}\text{Cr}^{+6}, \mu\text{g/L} &= 0 * 25 \\ &= 0 \mu\text{g/L}\end{aligned}$$

Reporting results in two significant figures,

$$\text{Cr}^{+6}, \mu\text{g/L} = \text{ND}$$

*Abel*

## Sample Calculation

**METHOD:** EPA 300

**TEST NAME:** INORGANIC ANIONS BY IC

**MATRIX:** WATER

**FORMULA:**

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

$$\text{Chloride, mg/L} = A * DF$$

where:

A = mg/L, IC calculated concentration

DF = dilution factor

For **N005512-001C**, concentration in mg/L are calculated as follows:

$$\begin{aligned} \text{Chloride, mg/L} &= 3.855 * 1000 \\ &= 3855 \text{ mg/L} \end{aligned}$$

Reporting **N005512-001C**, results in two significant figures,

$$\text{Chloride, mg/L} = 3900 \text{ mg/L}$$

*Abel*

### SAMPLE CALCULATION

METHOD: EPA 6010B  
TEST NAME: METALS BY ICP  
MATRIX: WATER

FORMULA:

Calculate the individual metal concentration, in ug/L, in the original sample as follows:

$$M, \text{ ug/L} = \frac{A * C * DF * 1000}{B}$$

where: M= concentration of the metal in ug/L  
A= mg/L, ICP calculated concentration  
B= volume of sample, Liter  
C= final volume of digestate, Liter  
DF= dilution factor

For N005512-001B, concentration in ug/L are calculated as follows:

$$\text{Cr, ug/L} = \frac{-0.00254 \text{ mg/L} * 0.025 \text{ L} * 1 * 1000}{0.025 \text{ L}}$$

$$\text{Cr} = -2.54 \text{ ug/L}$$

Reporting result in two significant figures,  
Result is below the reporting limit therefore,

**Cr =ND**

*JC 3/23/2011*

DILUTION TEST

Analytical Method: EPA 6010B / 200.7  
 Digestion Method: EPA 3010A  
 Date of Analysis: 3/22/2011  
 Digestion Date: 3/22/2011  
 Instrument Name: ICP1  
 Analysts: KB

Matrix: WATER  
 Amount of Sample: 25 mL  
 Units: ug/L

Work Order # : N005518-001B  
 Batch # : 36504

Analyte	A	B	Difference	% D
Chromium	71.85	68.202	3.64800	5.1

FORMULA:

$$\%D = \frac{(A-B)*100}{A}$$

where:

% D = % Difference  
 A= ug/L, ICP calculated concentration of the original sample  
 B= ug/L, ICP calculated concentration @5x dilution

CLIENT: CH2M HILL  
 Work Order: N005512  
 Project: PG&E Topock

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6010\_WDPGEPBB

Sample ID: N005518-001BDT	SampType: DT	TestCode: 6010_WDPG	Units: ug/L	Prep Date:	RunNo: 79476						
Client ID: ZZZZZZ	Batch ID: 36504	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 3/22/2011	SeqNo: 1251869						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	68.202	5.0						71.85	5.21	10	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL  
 Work Order: N005512  
 Project: PG&E Topock

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6010\_WDPGEPPB

Sample ID: N005518-001BPS	SampType: PS	TestCode: 6010_WDPG	Units: ug/L	Prep Date:	RunNo: 79476						
Client ID: ZZZZZZ	Batch ID: 36504	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 3/22/2011	SeqNo: 1251867						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1054.490	2.0	1000	71.85	98.3	75	125				

Sample ID: N005518-001BPS	SampType: PS	TestCode: 6010_WDPG	Units: ug/L	Prep Date:	RunNo: 79476						
Client ID: ZZZZZZ	Batch ID: 36504	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 3/22/2011	SeqNo: 1251868						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2556.379	5.0	2500	71.85	99.4	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

## Sample Calculation

**METHOD:** EPA 6020

**TEST NAME:** Heavy Metals by ICP-MS

**MATRIX:** Aqueous

**FORMULA:**

Calculate the Arsenic concentration, in ug/L, in the original sample as follows:

$$\text{Arsenic, ug/L} = A * DF * PF / 1000$$

where:

A = ug/L, calculated concentration

DF = dilution factor

PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N005512-001B**, the concentration in ug/L is calculated as follows:

$$\begin{aligned} \text{Arsenic, ug/L} &= 1.751 * 1 * (1) \\ &= 1.751 \text{ ug/L} \end{aligned}$$

Reporting results in two significant figures,

$$\text{Arsenic, ug/L} = 1.8$$

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N005512  
Test Method: EPA 6020  
Analysis Date: 03/25/11

Matrix: Aqueous  
Batch No.: 36495

Instrument ID: ICP-MS #2  
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Jojo Tenorio

---

---

---

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N005527-001B-DT 5X	Arsenic	ug/L	2.884358875		2.917101372	-1.12%	10

CLIENT: CH2M HILL  
 Work Order: N005512  
 Project: PG&E Topock

**ANALYTICAL QC SUMMARY REPORT**

TestCode: 6020\_WD\_AsPGE

Sample ID: N005527-001B-PS 2	SampType: PS	TestCode: 6020_WD_As	Units: ug/L	Prep Date:	RunNo: 79509						
Client ID: ZZZZZZ	Batch ID: 36495	TestNo: EPA 6020	EPA 3010A	Analysis Date: 3/25/2011	SeqNo: 1252676						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.397	0.20	20.00	2.917	102	75	125				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

### SAMPLE CALCULATION

METHOD: EPA 8260B  
TEST NAME: VOLATILE ORGANIC COMPOUNDS BY GC/MS  
MATRIX: WATER

#### CALCULATION OF TARGET PARAMETERS

Calculate the target analyte concentrations using internal standard quantitation

$$C_x, \text{ug/L} = \frac{A_x * C_{IS}}{\text{Ave RF} * A_{IS}}$$

where:

$A_x$  = Area of the TOTAL ion for the compound being measured  
 $C_{IS}$  = Concentration of the specific internal standard in ug/L  
 $A_{IS}$  = Area of the characteristic ion of the specific internal standard  
 $C_x$  = Concentration of the compound being measured in ug/L

N005512-001E

For Dibromofluoromethane the corresponding Internal Standard is Pentafluorobenzene

Ave RF	0.391
Area of Dibromofluoromethane	159721
Area of Internal Standard	448591
Conc of Internal Standard (ug/L)	25.00

$$\text{Conc of Dibromofluoromethane (ug/L)} = \frac{159721 * 25.00 \text{ug/L}}{0.391 * 448591}$$

Conc of Dibromofluoromethane (ug/L) = 22.76537013

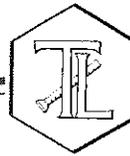
Reporting result in three significant figures,

**Concentration of Dibromofluoromethane = 22.8 ug/L**

*22.8*

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

February 1, 2011

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2011-RMP-173, SURFACEWATER MONITORING  
PROJECT, TLI NO.: 993160

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2011-RMP-173 surfacewater-monitoring project. 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 are under Section 5.

The samples were received and delivered with the chain of custody on January 18, 2011, 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.

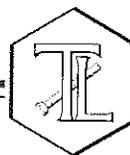
No violations or non-conformance actions occurred for this data package.

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

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

*Mona Nassimi*  
for  
Mona Nassimi  
Manager, Analytical Services

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



## Event 2010-RMP-173 Cr by SW 6020, Surfacewater Samples

Samples field filtered unless otherwise noted

Sample ID	Initial pH	pH adjustment needed?	Amount of additional acid needed	Final pH	Comments
C-BNS-D-173	2.00	No			
C-I-3-D-173	2.00	No			
C-I-3-S-173	2.00	No			
C-MAR-D-173	2.00	No			
C-R22A-D-173	2.00	No			
C-R22A-S-173	2.00	No			
C-R27-D-173	2.00	No			
C-R27-S-173	2.00	No			
C-TAZ-D-173	2.00	No			
C-TAZ-S-173	2.00	No			
R-19-173	2.00	No			
R-28-173	2.00	No			
R63-173	2.00	No			
SW1-173	2.00	No			

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING

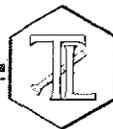


Established 1931

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

## Event 2010-RMP-173 Cr (VI) by EPA 218.6, Surfacewater Samples Samples field filtered unless otherwise noted

Sample ID	Initial pH	pH adjustment needed?	Amount of additional buffer needed	Final pH	Comments
C-BNS-D-173	9.50	No			
C-I-3-D-173	9.50	No			
C-I-3-S-173	9.50	No			
C-MAR-D-173	9.50	No			
C-R22A-D-173	9.50	No			
C-R22A-S-173	9.50	No			
C-R27-D-173	9.50	No			
C-R27-S-173	9.50	No			
C-TAZ-D-173	9.50	No			
C-TAZ-S-173	9.50	No			
R-19-173	9.50	No			
R-28-173	9.50	No			
R63-173	9.50	No			
SW1-173	9.50	No			



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

**Laboratory No.:** 993160  
**Date Received:** January 19, 2011

**Attention:** Shawn Duffy

**Project Name:** PG&E Topock Project  
**Project No.:** 405681.MP.02.RM  
**P.O. No.:** 405681.MP.02.RM

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
993160-001	C-BNS-D-173	E120.1	NONE	1/18/2011	11:36	EC	933	umhos/cm	2.00
993160-001	C-BNS-D-173	E218.6	FLDFLT	1/18/2011	11:36	Chromium, hexavalent	ND	ug/L	0.20
993160-001	C-BNS-D-173	SM4500HB	NONE	1/18/2011	11:36	PH	8.1	pH	4.00
993160-001	C-BNS-D-173	SW6020	FLDFLT	1/18/2011	11:36	Chromium	ND	ug/L	1.0
993160-002	C-I-3-D-173	E120.1	NONE	1/18/2011	9:45	EC	941	umhos/cm	2.00
993160-002	C-I-3-D-173	E218.6	FLDFLT	1/18/2011	9:45	Chromium, hexavalent	ND	ug/L	0.20
993160-002	C-I-3-D-173	SM4500HB	NONE	1/18/2011	9:45	PH	8.14	pH	4.00
993160-002	C-I-3-D-173	SW6020	FLDFLT	1/18/2011	9:45	Chromium	ND	ug/L	1.0
993160-003	C-I-3-S-173	E120.1	NONE	1/18/2011	9:56	EC	952	umhos/cm	2.00
993160-003	C-I-3-S-173	E218.6	FLDFLT	1/18/2011	9:56	Chromium, hexavalent	ND	ug/L	0.20
993160-003	C-I-3-S-173	SM4500HB	NONE	1/18/2011	9:56	PH	8.19	pH	4.00
993160-003	C-I-3-S-173	SW6020	FLDFLT	1/18/2011	9:56	Chromium	ND	ug/L	1.0
993160-004	C-MAR-D-173	E120.1	NONE	1/18/2011	12:53	EC	1470	umhos/cm	2.00
993160-004	C-MAR-D-173	E218.6	FLDFLT	1/18/2011	12:53	Chromium, hexavalent	ND	ug/L	0.20
993160-004	C-MAR-D-173	SM4500HB	NONE	1/18/2011	12:53	PH	7.77	pH	4.00
993160-004	C-MAR-D-173	SW6020	FLDFLT	1/18/2011	12:53	Chromium	ND	ug/L	1.0
993160-005	C-R22A-D-173	E120.1	NONE	1/18/2011	10:40	EC	953	umhos/cm	2.00
993160-005	C-R22A-D-173	E218.6	FLDFLT	1/18/2011	10:40	Chromium, hexavalent	ND	ug/L	0.20
993160-005	C-R22A-D-173	SM4500HB	NONE	1/18/2011	10:40	PH	8.22	pH	4.00
993160-005	C-R22A-D-173	SW6020	FLDFLT	1/18/2011	10:40	Chromium	ND	ug/L	1.0
993160-006	C-R22A-S-173	E120.1	NONE	1/18/2011	10:49	EC	955	umhos/cm	2.00
993160-006	C-R22A-S-173	E218.6	FLDFLT	1/18/2011	10:49	Chromium, hexavalent	ND	ug/L	0.20
993160-006	C-R22A-S-173	SM4500HB	NONE	1/18/2011	10:49	PH	8.24	pH	4.00
993160-006	C-R22A-S-173	SW6020	FLDFLT	1/18/2011	10:49	Chromium	ND	ug/L	1.0

006



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
993160-007	C-R27-D-173	E120.1	NONE	1/18/2011	11:56	EC	951	umhos/cm	2.00
993160-007	C-R27-D-173	E218.6	FLDFLT	1/18/2011	11:56	Chromium, hexavalent	ND	ug/L	0.20
993160-007	C-R27-D-173	SM4500HB	NONE	1/18/2011	11:56	PH	8.18	pH	4.00
993160-007	C-R27-D-173	SW6020	FLDFLT	1/18/2011	11:56	Chromium	ND	ug/L	1.0
993160-008	C-R27-S-173	E120.1	NONE	1/18/2011	12:07	EC	955	umhos/cm	2.00
993160-008	C-R27-S-173	E218.6	FLDFLT	1/18/2011	12:07	Chromium, hexavalent	ND	ug/L	0.20
993160-008	C-R27-S-173	SM4500HB	NONE	1/18/2011	12:07	PH	8.19	pH	4.00
993160-008	C-R27-S-173	SW6020	FLDFLT	1/18/2011	12:07	Chromium	ND	ug/L	1.0
993160-009	C-TAZ-D-173	E120.1	NONE	1/18/2011	9:03	EC	952	umhos/cm	2.00
993160-009	C-TAZ-D-173	E218.6	FLDFLT	1/18/2011	9:03	Chromium, hexavalent	ND	ug/L	0.20
993160-009	C-TAZ-D-173	SM4500HB	NONE	1/18/2011	9:03	PH	8.25	pH	4.00
993160-009	C-TAZ-D-173	SW6020	FLDFLT	1/18/2011	9:03	Chromium	ND	ug/L	1.0
993160-010	C-TAZ-S-173	E120.1	NONE	1/18/2011	9:17	EC	950	umhos/cm	2.00
993160-010	C-TAZ-S-173	E218.6	FLDFLT	1/18/2011	9:17	Chromium, hexavalent	ND	ug/L	0.20
993160-010	C-TAZ-S-173	SM4500HB	NONE	1/18/2011	9:17	PH	8.24	pH	4.00
993160-010	C-TAZ-S-173	SW6020	FLDFLT	1/18/2011	9:17	Chromium	ND	ug/L	1.0
993160-011	R-19-173	E120.1	NONE	1/18/2011	13:13	EC	961	umhos/cm	2.00
993160-011	R-19-173	E218.6	FLDFLT	1/18/2011	13:13	Chromium, hexavalent	ND	ug/L	0.20
993160-011	R-19-173	SM4500HB	NONE	1/18/2011	13:13	PH	8.22	pH	4.00
993160-011	R-19-173	SW6020	FLDFLT	1/18/2011	13:13	Chromium	ND	ug/L	1.0
993160-012	R-28-173	E120.1	NONE	1/18/2011	12:24	EC	959	umhos/cm	2.00
993160-012	R-28-173	E218.6	FLDFLT	1/18/2011	12:24	Chromium, hexavalent	ND	ug/L	0.20
993160-012	R-28-173	SM4500HB	NONE	1/18/2011	12:24	PH	8.24	pH	4.00
993160-012	R-28-173	SW6020	FLDFLT	1/18/2011	12:24	Chromium	ND	ug/L	1.0
993160-013	R63-173	E120.1	NONE	1/18/2011	10:13	EC	951	umhos/cm	2.00
993160-013	R63-173	E218.6	FLDFLT	1/18/2011	10:13	Chromium, hexavalent	ND	ug/L	0.20
993160-013	R63-173	SM4500HB	NONE	1/18/2011	10:13	PH	8.14	pH	4.00
993160-013	R63-173	SW6020	FLDFLT	1/18/2011	10:13	Chromium	ND	ug/L	1.0
993160-014	SW1-173	E120.1	NONE	1/18/2011	14:25	EC	1050	umhos/cm	2.00
993160-014	SW1-173	E218.6	FLDFLT	1/18/2011	14:25	Chromium, hexavalent	ND	ug/L	0.20
993160-014	SW1-173	SM4500HB	NONE	1/18/2011	14:25	PH	7.75	pH	4.00
993160-014	SW1-173	SW6020	FLDFLT	1/18/2011	14:25	Chromium	ND	ug/L	1.0

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.

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

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

## REPORT

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

155 Grand Avenue, Suite 800  
Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 405681.MP.02.RM

Project Number: 405681.MP.02.RM

Laboratory No. 993160

Page 1 of 12

Printed 2/1/2011

Samples Received on 1/18/2011 10:30:00 PM

Field ID	Lab ID	Collected	Matrix
C-BNS-D-173	993160-001	01/18/2011 11:36	Water
C-I-3-D-173	993160-002	01/18/2011 09:45	Water
C-I-3-S-173	993160-003	01/18/2011 09:56	Water
C-MAR-D-173	993160-004	01/18/2011 12:53	Water
C-R22A-D-173	993160-005	01/18/2011 10:40	Water
C-R22A-S-173	993160-006	01/18/2011 10:49	Water
C-R27-D-173	993160-007	01/18/2011 11:56	Water
C-R27-S-173	993160-008	01/18/2011 12:07	Water
C-TAZ-D-173	993160-009	01/18/2011 09:03	Water
C-TAZ-S-173	993160-010	01/18/2011 09:17	Water
R-19-173	993160-011	01/18/2011 13:13	Water
R-28-173	993160-012	01/18/2011 12:24	Water
R63-173	993160-013	01/18/2011 10:13	Water
SW1-173	993160-014	01/18/2011 14:25	Water

### Specific Conductivity - EPA 120.1

Batch 01EC11J

1/19/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993160-001 Specific Conductivity	umhos/cm	01/19/2011	1.00	0.0380	2.00	933.
993160-002 Specific Conductivity	umhos/cm	01/19/2011	1.00	0.0380	2.00	941.
993160-003 Specific Conductivity	umhos/cm	01/19/2011	1.00	0.0380	2.00	952.
993160-004 Specific Conductivity	umhos/cm	01/19/2011	1.00	0.0380	2.00	1470
993160-005 Specific Conductivity	umhos/cm	01/19/2011	1.00	0.0380	2.00	953.
993160-006 Specific Conductivity	umhos/cm	01/19/2011	1.00	0.0380	2.00	955.
993160-007 Specific Conductivity	umhos/cm	01/19/2011	1.00	0.0380	2.00	951.
993160-008 Specific Conductivity	umhos/cm	01/19/2011	1.00	0.0380	2.00	955.
993160-009 Specific Conductivity	umhos/cm	01/19/2011	1.00	0.0380	2.00	952.
993160-010 Specific Conductivity	umhos/cm	01/19/2011	1.00	0.0380	2.00	950.
993160-011 Specific Conductivity	umhos/cm	01/19/2011	1.00	0.0380	2.00	961.

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

009



**TRUESDAIL LABORATORIES, INC.**

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 12

Project Number: 405681.MP.02.RM

Printed 2/1/2011

993160-012 Specific Conductivity	umhos/cm	01/19/2011	1.00	0.0380	2.00	959.
993160-013 Specific Conductivity	umhos/cm	01/19/2011	1.00	0.0380	2.00	951.
993160-014 Specific Conductivity	umhos/cm	01/19/2011	1.00	0.0380	2.00	1050

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 993160-006

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	953.	955.	0.210	0 - 10

Duplicate

Lab ID = 993160-014

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	1050	1050	0.190	0 - 10

Lab Control Sample

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

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	707.	706.	100	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	692.	706.	98.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	997.	999.	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	994.	999.	99.5	90 - 110

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.RM

Page 3 of 12
Printed 2/1/2011

Chrome VI by EPA 218.6

Batch 01CrH11K

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include 993160-001 to 993160-006 Chromium, Hexavalent.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row: Chromium, Hexavalent, ug/L, 1.00, ND.

Duplicate

Lab ID = 993160-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.05, ND, 0.0720, 0, 0 - 20.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.00, 4.98, 5.00, 99.7, 90 - 110.

Matrix Spike

Lab ID = 993160-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 1.12, 1.13(1.06), 98.5, 90 - 110.

Matrix Spike

Lab ID = 993160-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 1.16, 1.11(1.06), 104, 90 - 110.

Matrix Spike

Lab ID = 993160-003

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 1.18, 1.14(1.06), 103, 90 - 110.

Matrix Spike

Lab ID = 993160-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 1.18, 1.14(1.06), 103, 90 - 110.

Matrix Spike

Lab ID = 993160-005

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 1.18, 1.14(1.06), 104, 90 - 110.

Matrix Spike

Lab ID = 993160-006

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 1.17, 1.14(1.06), 103, 90 - 110.

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



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

Project Name: PG&E Topock Project

Page 4 of 12

Project Number: 405681.MP.02.RM

Printed 2/1/2011

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.98	5.00	99.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.61	10.0	96.1	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.85	10.0	98.5	95 - 105

---



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 12

Project Number: 405681.MP.02.RM

Printed 2/1/2011

Chrome VI by EPA 218.6

Batch 01CrH11L

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993160-007 Chromium, Hexavalent	ug/L	01/21/2011 11:45	1.05	0.0210	0.20	ND
993160-008 Chromium, Hexavalent	ug/L	01/21/2011 11:56	1.05	0.0210	0.20	ND
993160-009 Chromium, Hexavalent	ug/L	01/21/2011 12:06	1.05	0.0210	0.20	ND
993160-010 Chromium, Hexavalent	ug/L	01/21/2011 12:17	1.05	0.0210	0.20	ND
993160-011 Chromium, Hexavalent	ug/L	01/21/2011 13:51	1.05	0.0210	0.20	ND
993160-012 Chromium, Hexavalent	ug/L	01/21/2011 14:01	1.05	0.0210	0.20	ND
993160-014 Chromium, Hexavalent	ug/L	01/21/2011 14:22	1.05	0.0210	0.20	ND

Method Blank

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

Duplicate

Lab ID = 993160-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	ND	0.0520	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.05	5.00	101	90 - 110

Matrix Spike

Lab ID = 993159-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.62	1.59(1.06)	103	90 - 110

Matrix Spike

Lab ID = 993160-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.13	1.11(1.06)	102	90 - 110

Matrix Spike

Lab ID = 993160-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.13	1.10(1.06)	103	90 - 110

Matrix Spike

Lab ID = 993160-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.15	1.12(1.06)	103	90 - 110

Matrix Spike

Lab ID = 993160-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.15	1.10(1.06)	105.	90 - 110

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



**TRUESDAIL LABORATORIES, INC.**

Report Continued

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

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

**Page 6 of 12**

**Project Number: 405681.MP.02.RM**

**Printed 2/1/2011**

**Matrix Spike**

Lab ID = 993160-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.18	1.14(1.06)	104	90 - 110

**Matrix Spike**

Lab ID = 993160-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.18	1.11(1.06)	106	90 - 110

**Matrix Spike**

Lab ID = 993160-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.18(1.06)	104	90 - 110

**MRCSS - Secondary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.96	5.00	99.2	90 - 110

**MRCVS - Primary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.4	10.0	104	95 - 105

**MRCVS - Primary**

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

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.RM

Page 7 of 12
Printed 2/1/2011

Chrome VI by EPA 218.6

Batch 01CrH11Q

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 993160-013 Chromium, Hexavalent, ug/L, 01/25/2011 13:35, 1.05, 0.0210, 0.20, ND

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Chromium, Hexavalent, ug/L, 1.00, ND

Duplicate

Lab ID = 993160-013

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.05, 0.122, 0.124, 1.63, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 5.01, 5.00, 100, 90 - 110

Matrix Spike

Lab ID = 993160-013

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.14, 1.18(1.06), 96.3, 90 - 110

Matrix Spike

Lab ID = 993187-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.14, 1.13(1.06), 101, 90 - 110

Matrix Spike

Lab ID = 993187-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.12, 1.18(1.06), 94.2, 90 - 110

Matrix Spike

Lab ID = 993187-003

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.12, 1.18(1.06), 94.2, 90 - 110

Matrix Spike

Lab ID = 993187-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.10, 1.16(1.06), 94.3, 90 - 110

Matrix Spike

Lab ID = 993187-005

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.13, 1.18(1.06), 94.7, 90 - 110

Matrix Spike

Lab ID = 993187-006

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.12, 1.18(1.06), 94.4, 90 - 110

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



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 12

Project Number: 405681.MP.02.RM

Printed 2/1/2011

Matrix Spike							Lab ID = 993187-007
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.06	1.12	1.16(1.06)	95.9	90 - 110	
Matrix Spike							Lab ID = 993187-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.06	1.11	1.19(1.06)	92.7	90 - 110	
Matrix Spike							Lab ID = 993187-009
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.06	1.14	1.18(1.06)	95.8	90 - 110	
Matrix Spike							Lab ID = 993187-010
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.06	1.17	1.25(1.06)	92.4	90 - 110	
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	4.95	5.00	99.1	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	9.84	10.0	98.4	95 - 105	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103	95 - 105	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	10.1	10.0	101.	95 - 105	

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 12

Project Number: 405681.MP.02.RM

Printed 2/1/2011

Metals by EPA 6020A, Dissolved

Batch 012911A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993160-001 Chromium	ug/L	01/29/2011 16:36	5.00	0.0950	1.0	ND
993160-002 Chromium	ug/L	01/29/2011 17:24	5.00	0.0950	1.0	ND
993160-003 Chromium	ug/L	01/29/2011 17:31	5.00	0.0950	1.0	ND
993160-004 Chromium	ug/L	01/29/2011 17:37	5.00	0.0950	1.0	ND
993160-005 Chromium	ug/L	01/29/2011 17:44	5.00	0.0950	1.0	ND
993160-006 Chromium	ug/L	01/29/2011 18:12	5.00	0.0950	1.0	ND
993160-007 Chromium	ug/L	01/29/2011 18:18	5.00	0.0950	1.0	ND
993160-008 Chromium	ug/L	01/29/2011 18:25	5.00	0.0950	1.0	ND
993160-009 Chromium	ug/L	01/29/2011 18:32	5.00	0.0950	1.0	ND
993160-010 Chromium	ug/L	01/29/2011 18:39	5.00	0.0950	1.0	ND
993160-011 Chromium	ug/L	01/29/2011 18:46	5.00	0.0950	1.0	ND
993160-012 Chromium	ug/L	01/29/2011 18:52	5.00	0.0950	1.0	ND
993160-013 Chromium	ug/L	01/29/2011 18:59	5.00	0.0950	1.0	ND
993160-014 Chromium	ug/L	01/29/2011 19:06	5.00	0.0950	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 993160-001

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.7	50.0	93.5	90 - 110

Matrix Spike

Lab ID = 993160-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	215	250.(250.)	86.0	75 - 125

Matrix Spike Duplicate

Lab ID = 993160-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	215	250.(250.)	86.1	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.0	50.0	102	90 - 110

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 10 of 12

Project Number: 405681.MP.02.RM

Printed 2/1/2011

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.1	50.0	92.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.5	50.0	95.0	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	56.6	50.0	113	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.9	50.0	93.8	80 - 120

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



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 11 of 12

Project Number: 405681.MP.02.RM

Printed 2/1/2011

### pH by SM 4500-H B

Batch 01PH11M

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993160-001 pH	pH	01/19/2011 09:20	1.00	0.0250	4.00	8.10
993160-002 pH	pH	01/19/2011 08:33	1.00	0.0250	4.00	8.14
993160-003 pH	pH	01/19/2011 08:36	1.00	0.0250	4.00	8.19
993160-004 pH	pH	01/19/2011 09:23	1.00	0.0250	4.00	7.77
993160-005 pH	pH	01/19/2011 08:39	1.00	0.0250	4.00	8.22
993160-006 pH	pH	01/19/2011 08:42	1.00	0.0250	4.00	8.24
993160-007 pH	pH	01/19/2011 09:26	1.00	0.0250	4.00	8.18
993160-008 pH	pH	01/19/2011 09:29	1.00	0.0250	4.00	8.19
993160-009 pH	pH	01/19/2011 08:45	1.00	0.0250	4.00	8.25
993160-010 pH	pH	01/19/2011 08:48	1.00	0.0250	4.00	8.24
993160-011 pH	pH	01/19/2011 09:32	1.00	0.0250	4.00	8.22
993160-012 pH	pH	01/19/2011 09:35	1.00	0.0250	4.00	8.24
993160-013 pH	pH	01/19/2011 08:51	1.00	0.0250	4.00	8.14
993160-014 pH	pH	01/19/2011 09:38	1.00	0.0250	4.00	7.75

#### Method Blank

Parameter	Unit	DF	Result
pH	pH	1.00	ND

#### Duplicate

Lab ID = 993160-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	8.23	8.24	0.121	0 - 20

#### Duplicate

Lab ID = 993160-014

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	7.79	7.75	0.515	0 - 20

#### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.03	7.00	100	90 - 110

#### Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.03	7.00	100	90 - 110

#### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	6.96	7.00	99.4	90 - 110

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



**TRUESDAIL LABORATORIES, INC.**

*Report Continued*

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

Project Name: PG&E Topock Project

Page 12 of 12

Project Number: 405681.MP.02.RM

Printed 2/1/2011

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**

*for*   
Mona Nassimi  
Manager, Analytical Services

993160

993160

CH2MHILL

CHAIN OF CUSTODY RECORD

1/18/2011 3:04:07 PM

			Container:	3X250 ml Poly	250 Poly	500 ml Poly	2x1Liter Poly	2x1Liter Poly	* Where provided w/3 Cr6 bottles, please analyze 1 + hold 2	PH (SM4500HB)	Number of Containers	COMMENTS
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	4°C	4°C				
			Filtered:	Field	NA	Field	NA	NA				
			Holding Time:	28	28	180	2	2				
			Task Order	Cr6 (E218 6 - river) Field Filtered	Field QC Cr6 (E218 6 - river)	Dissolved Chromium (6010BCRF) Field Filtered Chromium	Specific Conductance (E120.1)					
DATE	TIME	Matrix										
1-1	C-BNS-D-173	1/18/2011 11:36	Water	X		X	X	X	ALERT!! Level III QC		5	
2	C-I-3-D-173	1/18/2011 9:45	Water	X		X	X	X			5	
3	C-I-3-S-173	1/18/2011 9:56	Water	X		X	X	X			5	
4	C-MAR-D-173	1/18/2011 12:53	Water	X		X	X	X			5	
	C-MW-80-173	1/18/2011 10:56	Water		X						1	Hold
	C-MW-81-173	1/18/2011 12:43	Water		X						1	Hold
5	C-R22A-D-173	1/18/2011 10:40	Water	X		X	X	X			5	
6	C-R22A-S-173	1/18/2011 10:49	Water	X		X	X	X			5	
7	C-R27-D-173	1/18/2011 11:56	Water	X		X	X	X			5	
8	C-R27-S-173	1/18/2011 12:07	Water	X		X	X	X			5	
9	C-TAZ-D-173	1/18/2011 9:03	Water	X		X	X	X		5		
10	C-TAZ-S-173	1/18/2011 9:17	Water	X		X	X	X		5		
11	R-19-173	1/18/2011 13:13	Water	X		X	X	X		5		
12	R-28-173	1/18/2011 12:24	Water	X		X	X	X		5		
13	R63-173	1/18/2011 10:13	Water	X		X	X	X		5		

ALERT!!  
Level III QC

For Sample Condition,  
See Form Attached

PH 6.60108

mu=2

Hold  
Hold

mu=2

<b>Signatures</b> Approved by _____ Sampled by _____ Relinquished by _____ Received by _____ Relinquished by _____ Received by _____		<b>Date/Time</b> 1-18-11 1-18-11 16:00 1-18-11 22:30 1/18/11 22:30		<b>Shipping Details</b> Method of Shipment: courier On Ice: yes / no Airbill No: Lab Name: Truesdall Laboratories, Inc. Lab Phone: (714) 730-6239		<b>Special Instructions:</b> ATTN: Jan 18-20, 2011 Sample Custody Report Copy to Shawn Duffy (530) 229-3303	
--	--	--	--	--	--	--	--



Project Name	Location	Project Number	Project Manager	Sample Manager	Task Order	Project	Turnaround Time	Shipping Date	COC Number	Container:	3X250 ml Poly	250 Poly	500 ml Poly	2x1 Liter Poly	2x1 Liter Poly	Number of Containers	COMMENTS
										Preservatives:	(NH4)2SO4 / NH4OH, 4°C	(NH4)2SO4 / NH4OH, 4°C	HNO3, 4°C	4°C	4°C		
										Filtered:	Field	NA	Field	NA	NA		
										Holding Time:	28	28	180	2	2		
										Matrix	Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6 - river)	Dissolved Chromium (6010BCRF) Field Filtered Chromium	Specific Conductance (E120.1)	PH (SM4500HB)		
DATE	TIME	MATRIX															
RMP-AB1-173	1/18/2011	14:10	Water								X					1	Hold
SW1-173	1/18/2011	14:25	Water	X			X	X	X							5	PH=2 6/9/03
															TOTAL NUMBER OF CONTAINERS	73	

\* Where provided w/ 3 Cr6 bottles, please analyze 1 + hold 2

**ALERT !!**  
**Level III QC**

Approved by Sampled by Relinquished by Received by Relinquished by Received by	Signatures  Rafael Davila T.L.F. 1-18-11 16:00 Rafael Davila T.L.F. 1-18-11 22:30 Luda 1/18/11 02:130	Date/Time 1-18-11	Shipping Details Method of Shipment: courier On Ice: yes / no Airbill No: Lab Name: Truesdell Laboratories, Inc. Lab Phone: (714) 730-6239	ATTN: Sample Custody	Special Instructions: Jan 18-20, 2011 Report Copy to Shawn Duffy (530) 229-3303
---	--	----------------------	---	-------------------------	---

## Hexavalent Chromium

### Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
01/14/11	993099-1	9.5	N/A	N/A	N/A	SB
↓	-2	↓	↓	↓	↓	↓
↓	-3	↓	↓	↓	↓	↓
↓	-4	↓	↓	↓	↓	↓
↓	-5	↓	↓	↓	↓	↓
↓	-6	↓	↓	↓	↓	↓
↓	-7	↓	↓	↓	↓	↓
↓	-8	↓	↓	↓	↓	↓
↓	-9	↓	↓	↓	↓	↓
↓	-10	↓	↓	↓	↓	↓
01/14/11	993100	9.5	N/A	N/A	N/A	SB
01/18/11	993130-1	9.5	N/A	N/A	N/A	SB
↓	-2	↓	↓	↓	↓	↓
↓	-3	↓	↓	↓	↓	↓
↓	-4	↓	↓	↓	↓	↓
↓	-5	↓	↓	↓	↓	↓
↓	-6	↓	↓	↓	↓	↓
↓	-7	↓	↓	↓	↓	↓
01/12/11	993043	7.0	5.00	9.5	8:00	SB
01/19/11	993159	7.0	5.00	9.5	7:20	SB
01/19/11	993160-1	9.5	N/A	N/A	N/A	SB
↓	-2	↓	↓	↓	↓	↓
↓	-3	↓	↓	↓	↓	↓
↓	-4	↓	↓	↓	↓	↓
↓	-5	↓	↓	↓	↓	↓
↓	-6	↓	↓	↓	↓	↓
↓	-7	↓	↓	↓	↓	↓
↓	-8	↓	↓	↓	↓	↓
↓	-9	↓	↓	↓	↓	↓
↓	-10	↓	↓	↓	↓	↓
↓	-11	↓	↓	↓	↓	↓

## Hexavalent Chromium

### Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
01/19/11	993160-12	9.5	N/A	N/A	N/A	SB
↓	↓ -13	↓	↓	↓	↓	↓
↓	↓ -14	↓	↓	↓	↓	↓
01/19/11	993161-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
01/20/11	993186-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
01/20/11	993187-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓

*SB*

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
993093	71	22	1/14/11	ES	yes	3010A
993106	71	22	↓	↓	yes	↓
107	71	22	↓	↓	↓	↓
108	↓	↓	↓	↓	↓	↓
110	↓	↓	↓	↓	↓	↓
992957(1-2)	<1	22	1/17/11	KK	-	Y @ 11:30 am
992959(1-3)	<1	22	↓	↓	-	Y @ 11:30 am
993000 (1-B)	<1	22	↓	↓	-	-
993001 (1-B)	<1	22	↓	↓	-	-
993002 (1-12)	<1	22	↓	↓	-	-
993042 (1-2)	<1	22	↓	↓	-	-
993043	<1	22	↓	↓	-	Y @ 12 pm
993008	<1	22	↓	↓	-	-
993097 (1-7)	<1	22	↓	↓	-	-
993098 (1-10)	<1	22	↓	↓	-	-
993099 (1-7-10)	<1	22	↓	↓	-	-
993121	<1	22	1/19/11	KK	NO	-
3122	↓	↓	↓	↓	↓	↓
3127	<1	72	↓	↓	NO	Y @ 2:15 pm
3128	-	-	↓	↓	YES	TTL
3142 (3)	<1	72	↓	↓	NO	Y @ 2:20 pm
3143	↓	22	↓	↓	↓	-
3144	↓	↓	↓	↓	↓	-
3145	↓	↓	↓	↓	↓	-
3146	↓	↓	↓	↓	↓	-
3147	↓	↓	↓	↓	↓	-
3148	↓	↓	↓	↓	↓	-
3149 (3)	71	22	↓	↓	YES	-
992172	<1	22	1/20/11	ES	NO	-
178(1-3)	<1	72	↓	↓	↓	at 12:30 pm
992958	SLUDGE		↓	↓	YES	TTL
992996	<1	22	1/21/11	M.M	NO	Y @ 13:30 pm
993210	Solid		1/21/11	M.M	YES	TTL
993213	Solid		↓	M.M	-	-
993223(1-4)	<1	22	1/21/11	ES	NO	-
993130 (1-7)	<1	22	1/24/11	KK	NO	-
993186(1-10)	<1	22	1/24/11	KK	NO	-
993159	<1	22	1/24/11	KK	NO	Y @ 12:20 pm
993187(1-10)	<1	22	1/24/11	ES	NO	-
993202	<1	22	1/25/11	ES	NO	-
220	↓	↓	↓	↓	↓	-
221	↓	↓	↓	↓	↓	-
254	↓	↓	↓	↓	↓	-
255	↓	↓	↓	↓	↓	-
258	↓	72	↓	↓	↓	Y @ 11:00 a.m
993280 (1-10)	Solid		1/26/11	ES	YES	TTL
993202(1-3)	<1	72	↓	↓	NO	yes at 10:30 a.m
993202-1	<1	21	↓	↓	↓	-
993160 (1-14)	<1	22	↓	↓	↓	-



# Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 993160

Date Delivered: 01/18/11 Time: 22:30 By:  Mail  Field Service  Client

1. Was a Chain of Custody received and signed?  Yes  No  N/A
2. Does Customer require an acknowledgement of the COC?  Yes  No  N/A
3. Are there any special requirements or notes on the COC?  Yes  No  N/A
4. If a letter was sent with the COC, does it match the COC?  Yes  No  N/A
5. Were all requested analyses understood and acceptable?  Yes  No  N/A
6. Were samples received in a chilled condition?  
Temperature (if yes)? 3, 4 °C  Yes  No  N/A
7. Were samples received intact  
(i.e. broken bottles, leaks, air bubbles, etc.)?  Yes  No  N/A
8. Were sample custody seals intact?  Yes  No  N/A
9. Does the number of samples received agree with COC?  Yes  No  N/A
10. Did sample labels correspond with the client ID's?  Yes  No  N/A
11. Did sample labels indicate proper preservation?  
Preserved (if yes) by:  Truesdail  Client  Yes  No  N/A
12. Were samples pH checked? pH = See l.o.c.  Yes  No  N/A
13. Were all analyses within holding time at time of receipt?  
If not, notify Project Manager.  Yes  No  N/A
14. Have Project due dates been checked and accepted?  
Turn Around Time (TAT):  RUSH  Std  Yes  No  N/A
15. **Sample Matrix:**  Liquid  Drinking Water  Ground Water  Waste Water  
 Sludge  Soil  Wipe  Paint  Solid  Other Water

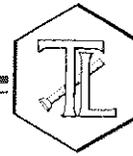
**ALERT!!**  
**Level III QC**

16. Comments: \_\_\_\_\_

17. Sample Check-In completed by **Truesdail!** Log-In/Receiving: Lucia

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

January 28, 2011

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2011-RMP-173, SURFACEWATER MONITORING PROJECT, TLI NO.: 993187

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2011-RMP-173 surfacewater-monitoring project. 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 are under Section 5.

The samples were received and delivered with the chain of custody on January 19, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

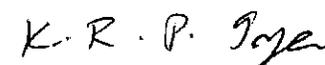
Due to the late arrival and early sampling time of the samples, sample RRB-173 was analyzed past the holding time for pH.

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

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

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

  
for Mona Nassimi  
Manager, Analytical Services

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



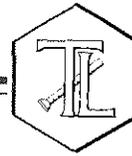
## Event 2010-RMP-173 Cr by SW 6020, Surfacewater Samples

Samples field filtered unless otherwise noted

Sample ID	Initial pH	pH adjustment needed?	Amount of additional acid needed	Final pH	Comments
C-CON-D-173	2.00	No			
C-CON-S-173	2.00	No			
C-NR1-D-173	2.00	No			
C-NR1-S-173	2.00	No			
C-NR3-D-173	2.00	No			
C-NR3-S-173	2.00	No			
C-NR4-D-173	2.00	No			
C-NR4-S-173	2.00	No			
RRB-173	2.00	No			
SW2-173	2.00	No			

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

## Event 2010-RMP-173 Cr (VI) by EPA 218.6, Surfacewater Samples

Samples field filtered unless otherwise noted

Sample ID	Initial pH	pH adjustment needed?	Amount of additional buffer needed	Final pH	Comments
C-CON-D-173	9.50	No			
C-CON-S-173	9.50	No			
C-NR1-D-173	9.50	No			
C-NR1-S-173	9.50	No			
C-NR3-D-173	9.50	No			
C-NR3-S-173	9.50	No			
C-NR4-D-173	9.50	No			
C-NR4-S-173	9.50	No			
RRB-173	9.50	No			
SW2-173	9.50	No			



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

**Attention:** Shawn Duffy

**Laboratory No.:** 993187

**Date Received:** January 19, 2011

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

**Project No.:** 405681.MP.02.RM

**P.O. No.:** 405681.MP.02.RM

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
993187-001	C-CON-D-173	E120.1	NONE	1/19/2011	9:15	EC	952	umhos/cm	2.00
993187-001	C-CON-D-173	E218.6	FLDFLT	1/19/2011	9:15	Chromium, hexavalent	ND	ug/L	0.20
993187-001	C-CON-D-173	SM4500HB	NONE	1/19/2011	9:15	PH	8.25	pH	4.00
993187-001	C-CON-D-173	SW6010B	FLDFLT	1/19/2011	9:15	Chromium	ND	ug/L	1.0
993187-002	C-CON-S-173	E120.1	NONE	1/19/2011	9:29	EC	951	umhos/cm	2.00
993187-002	C-CON-S-173	E218.6	FLDFLT	1/19/2011	9:29	Chromium, hexavalent	ND	ug/L	0.20
993187-002	C-CON-S-173	SM4500HB	NONE	1/19/2011	9:29	PH	8.26	pH	4.00
993187-002	C-CON-S-173	SW6010B	FLDFLT	1/19/2011	9:29	Chromium	ND	ug/L	1.0
993187-003	C-NR1-D-173	E120.1	NONE	1/19/2011	9:54	EC	949	umhos/cm	2.00
993187-003	C-NR1-D-173	E218.6	FLDFLT	1/19/2011	9:54	Chromium, hexavalent	ND	ug/L	0.20
993187-003	C-NR1-D-173	SM4500HB	NONE	1/19/2011	9:54	PH	8.27	pH	4.00
993187-003	C-NR1-D-173	SW6010B	FLDFLT	1/19/2011	9:54	Chromium	ND	ug/L	1.0
993187-004	C-NR1-S-173	E120.1	NONE	1/19/2011	10:08	EC	952	umhos/cm	2.00
993187-004	C-NR1-S-173	E218.6	FLDFLT	1/19/2011	10:08	Chromium, hexavalent	ND	ug/L	0.20
993187-004	C-NR1-S-173	SM4500HB	NONE	1/19/2011	10:08	PH	8.25	pH	4.00
993187-004	C-NR1-S-173	SW6010B	FLDFLT	1/19/2011	10:08	Chromium	ND	ug/L	1.0
993187-005	C-NR3-D-173	E120.1	NONE	1/19/2011	10:38	EC	950	umhos/cm	2.00
993187-005	C-NR3-D-173	E218.6	FLDFLT	1/19/2011	10:38	Chromium, hexavalent	ND	ug/L	0.20
993187-005	C-NR3-D-173	SM4500HB	NONE	1/19/2011	10:38	PH	8.24	pH	4.00
993187-005	C-NR3-D-173	SW6010B	FLDFLT	1/19/2011	10:38	Chromium	ND	ug/L	1.0
993187-006	C-NR3-S-173	E120.1	NONE	1/19/2011	10:51	EC	945	umhos/cm	2.00
993187-006	C-NR3-S-173	E218.6	FLDFLT	1/19/2011	10:51	Chromium, hexavalent	ND	ug/L	0.20
993187-006	C-NR3-S-173	SM4500HB	NONE	1/19/2011	10:51	PH	8.25	pH	4.00
993187-006	C-NR3-S-173	SW6010B	FLDFLT	1/19/2011	10:51	Chromium	ND	ug/L	1.0

900



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
993187-007	C-NR4-D-173	E120.1	NONE	1/19/2011	11:18	EC	948	umhos/cm	2.00
993187-007	C-NR4-D-173	E218.6	FLDFLT	1/19/2011	11:18	Chromium, hexavalent	ND	ug/L	0.20
993187-007	C-NR4-D-173	SM4500HB	NONE	1/19/2011	11:18	PH	8.19	pH	4.00
993187-007	C-NR4-D-173	SW6010B	FLDFLT	1/19/2011	11:18	Chromium	ND	ug/L	1.0
993187-008	C-NR4-S-173	E120.1	NONE	1/19/2011	11:30	EC	951	umhos/cm	2.00
993187-008	C-NR4-S-173	E218.6	FLDFLT	1/19/2011	11:30	Chromium, hexavalent	ND	ug/L	0.20
993187-008	C-NR4-S-173	SM4500HB	NONE	1/19/2011	11:30	PH	8.16	pH	4.00
993187-008	C-NR4-S-173	SW6010B	FLDFLT	1/19/2011	11:30	Chromium	ND	ug/L	1.0
993187-009	RRB-173	E120.1	NONE	1/19/2011	8:35	EC	1100	umhos/cm	2.00
993187-009	RRB-173	E218.6	FLDFLT	1/19/2011	8:35	Chromium, hexavalent	ND	ug/L	0.20
993187-009	RRB-173	SM4500HB	NONE	1/19/2011	8:35	PH	8.10 J	pH	4.00
993187-009	RRB-173	SW6010B	FLDFLT	1/19/2011	8:35	Chromium	ND	ug/L	1.0
993187-010	SW2-173	E120.1	NONE	1/19/2011	12:35	EC	1050	umhos/cm	2.00
993187-010	SW2-173	E218.6	FLDFLT	1/19/2011	12:35	Chromium, hexavalent	ND	ug/L	0.20
993187-010	SW2-173	SM4500HB	NONE	1/19/2011	12:35	PH	7.37	pH	4.00
993187-010	SW2-173	SW6010B	FLDFLT	1/19/2011	12:35	Chromium	ND	ug/L	1.0

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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

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

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

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

## REPORT

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

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 405681.MP.02.RM

Project Number: 405681.MP.02.RM

Laboratory No. 993187

Page 1 of 7

Printed 1/28/2011

Samples Received on 1/19/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
C-CON-D-173	993187-001	01/19/2011 09:15	Water
C-CON-S-173	993187-002	01/19/2011 09:29	Water
C-NR1-D-173	993187-003	01/19/2011 09:54	Water
C-NR1-S-173	993187-004	01/19/2011 10:08	Water
C-NR3-D-173	993187-005	01/19/2011 10:38	Water
C-NR3-S-173	993187-006	01/19/2011 10:51	Water
C-NR4-D-173	993187-007	01/19/2011 11:18	Water
C-NR4-S-173	993187-008	01/19/2011 11:30	Water
RRB-173	993187-009	01/19/2011 08:35	Water
SW2-173	993187-010	01/19/2011 12:35	Water

### Specific Conductivity - EPA 120.1

Batch 01EC11K

1/20/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993187-001 Specific Conductivity	umhos/cm	01/20/2011	1.00	0.0380	2.00	952.
993187-002 Specific Conductivity	umhos/cm	01/20/2011	1.00	0.0380	2.00	951.
993187-003 Specific Conductivity	umhos/cm	01/20/2011	1.00	0.0380	2.00	949.
993187-004 Specific Conductivity	umhos/cm	01/20/2011	1.00	0.0380	2.00	952.
993187-005 Specific Conductivity	umhos/cm	01/20/2011	1.00	0.0380	2.00	950.
993187-006 Specific Conductivity	umhos/cm	01/20/2011	1.00	0.0380	2.00	945.
993187-007 Specific Conductivity	umhos/cm	01/20/2011	1.00	0.0380	2.00	948.
993187-008 Specific Conductivity	umhos/cm	01/20/2011	1.00	0.0380	2.00	951.
993187-009 Specific Conductivity	umhos/cm	01/20/2011	1.00	0.0380	2.00	1100
993187-010 Specific Conductivity	umhos/cm	01/20/2011	1.00	0.0380	2.00	1050

### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

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

009



**TRUESDAIL LABORATORIES, INC.**

Report Continued

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

**Project Name: PG&E Topock Project**  
**Project Number: 405681.MP.02.RM**

**Page 2 of 7**  
**Printed 1/28/2011**

Duplicate

Lab ID = 993187-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	1100	1100	0	0 - 10

Duplicate

Lab ID = 993187-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	1060	1050	0.380	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	714.	706.	101	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	712.	706.	101	90 - 110

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	991.	999.	99.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	994.	999.	99.5	90 - 110

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.RM

Page 3 of 7
Printed 1/28/2011

Chrome VI by EPA 218.6

Batch: 01CrH11Q

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include 993187-001 to 993187-010 Chromium, Hexavalent.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row: Chromium, Hexavalent, ug/L, 1.00, ND.

Duplicate

Lab ID = 993160-013

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.05, 0.122, 0.124, 1.63, 0 - 20.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.00, 5.01, 5.00, 100, 90 - 110.

Matrix Spike

Lab ID = 993160-013

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 1.14, 1.18(1.06), 96.3, 90 - 110.

Matrix Spike

Lab ID = 993187-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 1.14, 1.13(1.06), 101, 90 - 110.

Matrix Spike

Lab ID = 993187-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 1.12, 1.18(1.06), 94.2, 90 - 110.

Matrix Spike

Lab ID = 993187-003

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium, Hexavalent, ug/L, 1.06, 1.12, 1.18(1.06), 94.2, 90 - 110.

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



**TRUESDAIL LABORATORIES, INC.**

Report Continued

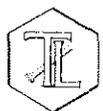
Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project  
Project Number: 405681.MP.02.RM

Page 4 of 7  
Printed 1/28/2011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.10	1.16(1.06)	94.3	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.13	1.18(1.06)	94.7	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.12	1.18(1.06)	94.4	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.12	1.16(1.06)	95.9	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.11	1.19(1.06)	92.7	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.14	1.18(1.06)	95.8	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.17	1.25(1.06)	92.4	90 - 110
MRCCS - Secondary						
Chromium, Hexavalent	ug/L	1.00	4.95	5.00	99.1	90 - 110
MRCVS - Primary						
Chromium, Hexavalent	ug/L	1.00	9.84	10.0	98.4	95 - 105
MRCVS - Primary						
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103	95 - 105
MRCVS - Primary						
Chromium, Hexavalent	ug/L	1.00	10.1	10.0	101.	95 - 105

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 7

Project Number: 405681.MP.02.RM

Printed 1/28/2011

Metals by EPA 6010B, Dissolved

Batch 012611A-Th

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993187-001 Chromium	ug/L	01/26/2011 20:45	1.00	0.325	1.0	ND
993187-002 Chromium	ug/L	01/26/2011 21:01	1.00	0.325	1.0	ND
993187-003 Chromium	ug/L	01/26/2011 21:07	1.00	0.325	1.0	ND
993187-004 Chromium	ug/L	01/26/2011 21:12	1.00	0.325	1.0	ND
993187-005 Chromium	ug/L	01/26/2011 21:34	1.00	0.325	1.0	ND
993187-006 Chromium	ug/L	01/26/2011 21:40	1.00	0.325	1.0	ND
993187-007 Chromium	ug/L	01/26/2011 21:45	1.00	0.325	1.0	ND
993187-008 Chromium	ug/L	01/26/2011 21:51	1.00	0.325	1.0	ND
993187-009 Chromium	ug/L	01/26/2011 21:56	1.00	0.325	1.0	ND
993187-010 Chromium	ug/L	01/26/2011 22:02	1.00	0.325	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 993187-001

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.5	50.0	99.0	90 - 110

Matrix Spike

Lab ID = 993187-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.7	50.0(50.0)	99.4	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.0	50.0	98.0	90 - 110

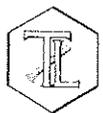
MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.4	50.0	101	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	53.8	50.0	108	90 - 110

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



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 7

Project Number: 405681.MP.02.RM

Printed 1/28/2011

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.2	50.0	98.5	90 - 110

### Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

### Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0		

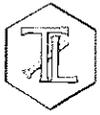
### Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.8	50.0	102	80 - 120

### Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	53.9	50.0	108	80 - 120

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



**TRUESDAIL LABORATORIES, INC.**

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 7

Project Number: 405681.MP.02.RM

Printed 1/28/2011

**pH by SM 4500-H B**

Batch 01PH11M

Parameter	Unit	Analyzed	DF	MDL	RL	Result
993187-001 pH	pH	01/20/2011 08:20	1.00	0.0250	4.00	8.25
993187-002 pH	pH	01/20/2011 08:23	1.00	0.0250	4.00	8.26
993187-003 pH	pH	01/20/2011 08:26	1.00	0.0250	4.00	8.27
993187-004 pH	pH	01/20/2011 08:29	1.00	0.0250	4.00	8.25
993187-005 pH	pH	01/20/2011 08:30	1.00	0.0250	4.00	8.24
993187-006 pH	pH	01/20/2011 08:33	1.00	0.0250	4.00	8.25
993187-007 pH	pH	01/20/2011 08:42	1.00	0.0250	4.00	8.19
993187-008 pH	pH	01/20/2011 08:45	1.00	0.0250	4.00	8.16
993187-009 pH	pH	01/20/2011 08:48	1.00	0.0250	4.00	8.10
993187-010 pH	pH	01/20/2011 08:51	1.00	0.0250	4.00	7.37

J

Duplicate

Lab ID = 993187-006

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	8.25	8.25	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.03	7.00	100	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.07	7.00	101	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.01	7.00	100	90 - 110

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

*Mona Nassimi*  
for Mona Nassimi  
Manager, Analytical Services

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

Rec'd 01/19/11

Lab#: 993187

CHAIN OF CUSTODY RECORD

993187

1/19/2011 1:38:17 PM

CH2MHILL

				Container:	3X250 ml Poly	250 Poly	500 ml Poly	2x1Liter Poly	2x1Liter Poly	PH (SM4500HB)	Number of Containers	COMMENTS		
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	4°C	4°C					
				Filtered:	Field	NA	Field	NA	NA					
				Holding Time:	28	28	180	2	2					
DATE	TIME	Matrix		Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Dissolved Chromium (6010BCREF) Field Filtered Chromium	Specific Conductance (E120.1)							
1-1 C-CON-D-173	1/19/2011	9:15	Water	X		X	X	X	<p>*Where provided w/3 Cr6 bottles, please analyze 1 + hold 2</p> <div style="border: 2px solid black; padding: 5px; text-align: center;"> <p><b>ALERT !!</b></p> <p><b>Level III QC</b></p> </div> <p>Sample Condition: See Form Attached</p>					
1-2 C-CON-S-173	1/19/2011	9:29	Water	X		X	X	X					5	Jmu=2
C-MW-82-173	1/19/2011	9:37	Water		X								1	Hold
C-MW-83-173	1/19/2011	10:15	Water		X								1	Hold
1-3 C-NR1-D-173	1/19/2011	9:54	Water	X		X	X	X					5	} pm=2
1-4 C-NR1-S-173	1/19/2011	10:08	Water	X		X	X	X					5	
1-5 C-NR3-D-173	1/19/2011	10:38	Water	X		X	X	X					5	
1-6 C-NR3-S-173	1/19/2011	10:51	Water	X		X	X	X					5	
1-7 C-NR4-D-173	1/19/2011	11:18	Water	X		X	X	X					5	} pm=2
1-8 C-NR4-S-173	1/19/2011	11:30	Water	X		X	X	X					5	
1-9 RMP-AB2-173	1/19/2011	11:40	Water		X				1	Hold				
1-10 RRB-173	1/19/2011	8:35	Water	X		X	X	X	5	} pm=2				
SW2-173	1/19/2011	12:35	Water	X		X	X	X	5					
TOTAL NUMBER OF CONTAINERS										53				

**Signatures**  
 Approved by: [Signature]  
 Sampled by: [Signature]  
 Relinquished by: Rafael Davila T.L.F. 1-19-11 15:30  
 Received by: Rafael Davila 1-19-11 21:30  
 Relinquished by: [Signature]  
 Received by: Luba 1/19/11 21:30

**Shipping Details**  
 Method of Shipment: FedEx  
 On Ice: yes / no  
 Airbill No:  
 Lab Name: Truesdell Laboratories, Inc.  
 Lab Phone: (714) 730-6239

ATTN:  
 Sample Custody

**Special Instructions:**  
 Jan 18-20, 2011  
 Report Copy to  
 Shawn Duffy  
 (530) 229-3303

## Hexavalent Chromium

### Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
01/19/11	993160-12	9.5	N/A	N/A	N/A	SB
↓	↓ -13	↓	↓	↓	↓	↓
↓	↓ -14	↓	↓	↓	↓	↓
01/19/11	993161-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
01/20/11	993186-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
01/20/11	993187-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓

*ah*

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
993093	71	72	1/14/11	ES	yes	30102
993106	71	72			yes	
107	71	72				
108						
110						
992957(1-2)	<1	72	1/17/11	KK	-	Y @ 11:30 am
992959(1-3)	<1	72			-	Y @ 11:30 am
993000 (1-13)	<1	72			-	-
993001 (1-13)	<1	72			-	-
993002 (1-12)	<1	72			-	-
993042(1-2)	<1	72			-	-
993043	<1	72			-	Y @ 12 pm
993000	<1	72			-	-
993097(1-7)	<1	72			-	-
993098(1-10)	<1	72			-	-
993099(1-7,9-10)	<1	72			-	-
993121	<1	72	1/19/11	KK	NO	-
3122						
3127	<1	72			NO	Y @ 2:15 pm
3128	-	-			YES	TTL
3142 (3)	<1	72			NO	Y @ 2:20 pm
3143		72				-
3144						-
3145						-
3146						-
3147						-
3148						-
3149 (3)	>1	72			YES	-
992174	<1	72	1/20/11	ES	NO	-
178(1-3)	<1	72				Y @ 12:30 pm
992958	SLUDGE				YES	TTL
992996	<1	72	1/21/11	M.M	NO	Y @ 13:30 pm
993210	Solid		1/21/11	M.M	YES	TTL
993213	Solid			M.M	-	-
993223(1-4)	<1	72	1/21/11	ES	NO	-
993130 (1-7)	<1	72	1/24/11	KK	NO	-
993186(1-10)	<1	72	1/24/11	KK	NO	-
993197	<1	72	1/24/11	KK	NO	Y @ 12:20 pm
993187(1-10)	<1	72	1/24/11	ES	NO	-
993202	<1	72	1/25/11	ES	NO	-
220						-
221						-
254						-
255						-
258		72				Y @ 10:00 am
993280 (1-10)	Solid		1/26/11	ES	YES	TTL
993202(1-3)	<1	72			NO	yes @ 10:30 am
993202-1	<1	71				-
993160 (1-14)	<1	72				-



# Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 993187

Date Delivered: 01/19/11 Time: 2:30 By:  Mail  Field Service  Client

1. Was a Chain of Custody received and signed?  Yes  No  N/A
2. Does Customer require an acknowledgement of the COC?  Yes  No  N/A
3. Are there any special requirements or notes on the COC?  Yes  No  N/A
4. If a letter was sent with the COC, does it match the COC?  Yes  No  N/A
5. Were all requested analyses understood and acceptable?  Yes  No  N/A
6. Were samples received in a chilled condition?  
Temperature (if yes)? 4°C  Yes  No  N/A
7. Were samples received intact  
(i.e. broken bottles, leaks, air bubbles, etc.)?  Yes  No  N/A
8. Were sample custody seals intact?  Yes  No  N/A
9. Does the number of samples received agree with COC?  Yes  No  N/A
10. Did sample labels correspond with the client ID's?  Yes  No  N/A
11. Did sample labels indicate proper preservation?  
Preserved (if yes) by:  Truesdail  Client  Yes  No  N/A
12. Were samples pH checked? pH = see c.o.c.  Yes  No  N/A
13. Were all analyses within holding time at time of receipt?  
If not, notify Project Manager.  Yes  No  N/A
14. Have Project due dates been checked and accepted?  
Turn Around Time (TAT):  RUSH  Std  Yes  No  N/A
15. **Sample Matrix:**  Liquid  Drinking Water  Ground Water  Waste Water  
 Sludge  Soil  Wipe  Paint  Solid  Other Water

ALERT !!  
Level III QC

16. Comments: \_\_\_\_\_

17. Sample Check-In completed by **Truesdail!** Log-In/Receiving: Shabunna

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

April 4, 2011

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2011-RMP-176, SURFACEWATER MONITORING PROJECT, TLI NO.: 994094

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2011-RMP-176 surfacewater-monitoring project. 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 are under Section 5.

The samples were received and delivered with the chain of custody on March 11, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Samples for pH analysis by SM 4500-H B were received past the method specified holding time. Mr. Shawn Duffy approved the analysis.

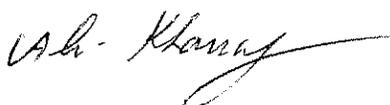
The relative standard deviation for the matrix spike in batch 033011A for Total Dissolved Chromium by SW 6020 was 19.8%. All other QA/QC were within acceptable limits. After discussing the issue with Mr. Shawn Duffy, the data was accepted with his approval.

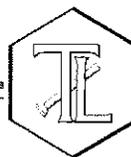
No other violations or non-conformance actions occurred for this data package.

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

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

  
for Mona Nassimi  
Manager, Analytical Services

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



## Event 2010-RMP-176 Cr by SW 6020, Surfacewater Samples

Samples field filtered unless otherwise noted

Sample ID	Initial pH	pH adjustment needed?	Amount of additional acid needed	Final pH	Comments
C-BNS-D-176	2.00	No			
C-I-3-D-176	2.00	No			
C-I-3-S-176	2.00	No			
C-MAR-D-176	2.00	No			
C-MAR-S-176	2.00	No			
C-R22A-D-176	2.00	No			
C-R22A-S-176	2.00	No			
C-R27-D-176	2.00	No			
C-R27-S-176	2.00	No			
C-TAZ-D-176	2.00	No			
C-TAZ-S-176	2.00	No			
R-19-176	2.00	No			
R-28-176	2.00	No			
R63-176	2.00	No			
SW1-176	2.00	No			
SW2-176	2.00	No			
C-CON-D-176	2.00	No			
C-CON-S-176	2.00	No			
C-NR1-D-176	2.00	No			
C-NR1-S-176	2.00	No			
C-NR3-D-176	2.00	No			
C-NR3-S-176	2.00	No			
C-NR4-D-176	2.00	No			
C-NR4-S-176	2.00	No			
RRB-176	2.00	No			



## Event 2010-RMP-176 Cr (VI) by EPA 218.6, Surfacewater Samples

Samples field filtered unless otherwise noted

Sample ID	Initial pH	pH adjustment needed?	Amount of additional buffer needed	Final pH	Comments
C-BNS-D-176	9.50	No			
C-I-3-D-176	9.50	No			
C-I-3-S-176	9.50	No			
C-MAR-D-176	9.50	No			
C-MAR-S-176	9.50	No			
C-R22A-D-176	9.50	No			
C-R22A-S-176	9.50	No			
C-R27-D-176	9.50	No			
C-R27-S-176	9.50	No			
C-TAZ-D-176	9.50	No			
C-TAZ-S-176	9.50	No			
R-19-176	9.50	No			
R-28-176	9.50	No			
R63-176	9.50	No			
SW1-176	9.50	No			
SW2-176	9.50	No			
C-CON-D-176	9.50	No			
C-CON-S-176	9.50	No			
C-NR1-D-176	9.50	No			
C-NR1-S-176	9.50	No			
C-NR3-D-176	9.50	No			
C-NR3-S-176	9.50	No			
C-NR4-D-176	9.50	No			
C-NR4-S-176	9.50	No			
RRB-176	9.50	No			
C-NR3-S-166	9.50	No			
RRB-141	9.50	No			
CON-141	9.50	No			
C-CON-M-141	9.50	No			
C-CON-S-141	9.50	No			

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

**Laboratory No.:** 994094  
**Date Received:** March 11, 2011

**Attention:** Shawn Duffy

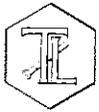
**Project Name:** PG&E Topock Project  
**Project No.:** 405681.MP.02.RM  
**P.O. No.:** 405681.MP.02.RM

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
994094-001	C-BNS-D-176	E120.1	NONE	3/9/2011	11:13	EC	945	umhos/cm	2.00
994094-001	C-BNS-D-176	E218.6	FLDFLT	3/9/2011	11:13	Chromium, hexavalent	ND	ug/L	0.20
994094-001	C-BNS-D-176	SM4500HB	NONE	3/9/2011	11:13	PH	8.25 J	pH	4.00
994094-001	C-BNS-D-176	SW6020	FLDFLT	3/9/2011	11:13	Chromium	ND	ug/L	1.0
994094-002	C-I-3-D-176	E120.1	NONE	3/9/2011	9:27	EC	939	umhos/cm	2.00
994094-002	C-I-3-D-176	E218.6	FLDFLT	3/9/2011	9:27	Chromium, hexavalent	ND	ug/L	0.20
994094-002	C-I-3-D-176	SM4500HB	NONE	3/9/2011	9:27	PH	8.20 J	pH	4.00
994094-002	C-I-3-D-176	SW6020	FLDFLT	3/9/2011	9:27	Chromium	ND	ug/L	1.0
994094-003	C-I-3-S-176	E120.1	NONE	3/9/2011	9:44	EC	937	umhos/cm	2.00
994094-003	C-I-3-S-176	E218.6	FLDFLT	3/9/2011	9:44	Chromium, hexavalent	ND	ug/L	0.20
994094-003	C-I-3-S-176	SM4500HB	NONE	3/9/2011	9:44	PH	8.29 J	pH	4.00
994094-003	C-I-3-S-176	SW6020	FLDFLT	3/9/2011	9:44	Chromium	ND	ug/L	1.0
994094-004	C-MAR-D-176	E120.1	NONE	3/9/2011	13:07	EC	1010	umhos/cm	2.00
994094-004	C-MAR-D-176	E218.6	FLDFLT	3/9/2011	13:07	Chromium, hexavalent	ND	ug/L	0.20
994094-004	C-MAR-D-176	SM4500HB	NONE	3/9/2011	13:07	PH	8.13 J	pH	4.00
994094-004	C-MAR-D-176	SW6020	FLDFLT	3/9/2011	13:07	Chromium	ND	ug/L	1.0
994094-005	C-MAR-S-176	E120.1	NONE	3/9/2011	13:18	EC	1010	umhos/cm	2.00
994094-005	C-MAR-S-176	E218.6	FLDFLT	3/9/2011	13:18	Chromium, hexavalent	ND	ug/L	0.20
994094-005	C-MAR-S-176	SM4500HB	NONE	3/9/2011	13:18	PH	8.12 J	pH	4.00
994094-005	C-MAR-S-176	SW6020	FLDFLT	3/9/2011	13:18	Chromium	ND	ug/L	1.0
994094-006	C-R22A-D-176	E120.1	NONE	3/9/2011	10:30	EC	948	umhos/cm	2.00
994094-006	C-R22A-D-176	E218.6	FLDFLT	3/9/2011	10:30	Chromium, hexavalent	ND	ug/L	0.20
994094-006	C-R22A-D-176	SM4500HB	NONE	3/9/2011	10:30	PH	8.38 J	pH	4.00
994094-006	C-R22A-D-176	SW6020	FLDFLT	3/9/2011	10:30	Chromium	ND	ug/L	1.0

006

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



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
994094-007	C-R22A-S-176	E120.1	NONE	3/9/2011	10:45	EC	951	umhos/cm	2.00
994094-007	C-R22A-S-176	E218.6	FLDFLT	3/9/2011	10:45	Chromium, hexavalent	ND	ug/L	0.20
994094-007	C-R22A-S-176	SM4500HB	NONE	3/9/2011	10:45	PH	8.39 J	pH	4.00
994094-007	C-R22A-S-176	SW6020	FLDFLT	3/9/2011	10:45	Chromium	ND	ug/L	1.0
994094-008	C-R27-D-176	E120.1	NONE	3/9/2011	11:34	EC	948	umhos/cm	2.00
994094-008	C-R27-D-176	E218.6	FLDFLT	3/9/2011	11:34	Chromium, hexavalent	ND	ug/L	0.20
994094-008	C-R27-D-176	SM4500HB	NONE	3/9/2011	11:34	PH	8.41 J	pH	4.00
994094-008	C-R27-D-176	SW6020	FLDFLT	3/9/2011	11:34	Chromium	ND	ug/L	1.0
994094-009	C-R27-S-176	E120.1	NONE	3/9/2011	11:48	EC	947	umhos/cm	2.00
994094-009	C-R27-S-176	E218.6	FLDFLT	3/9/2011	11:48	Chromium, hexavalent	ND	ug/L	0.20
994094-009	C-R27-S-176	SM4500HB	NONE	3/9/2011	11:48	PH	8.42 J	pH	4.00
994094-009	C-R27-S-176	SW6020	FLDFLT	3/9/2011	11:48	Chromium	ND	ug/L	1.0
994094-010	C-TAZ-D-176	E120.1	NONE	3/9/2011	8:40	EC	961	umhos/cm	2.00
994094-010	C-TAZ-D-176	E218.6	FLDFLT	3/9/2011	8:40	Chromium, hexavalent	ND	ug/L	0.20
994094-010	C-TAZ-D-176	SM4500HB	NONE	3/9/2011	8:40	PH	8.46 J	pH	4.00
994094-010	C-TAZ-D-176	SW6020	FLDFLT	3/9/2011	8:40	Chromium	ND	ug/L	1.0
994094-011	C-TAZ-S-176	E120.1	NONE	3/9/2011	8:57	EC	908	umhos/cm	2.00
994094-011	C-TAZ-S-176	E218.6	FLDFLT	3/9/2011	8:57	Chromium, hexavalent	ND	ug/L	0.20
994094-011	C-TAZ-S-176	SM4500HB	NONE	3/9/2011	8:57	PH	8.48 J	pH	4.00
994094-011	C-TAZ-S-176	SW6020	FLDFLT	3/9/2011	8:57	Chromium	ND	ug/L	1.0
994094-012	R-19-176	E120.1	NONE	3/9/2011	12:30	EC	949	umhos/cm	2.00
994094-012	R-19-176	E218.6	FLDFLT	3/9/2011	12:30	Chromium, hexavalent	ND	ug/L	0.20
994094-012	R-19-176	SM4500HB	NONE	3/9/2011	12:30	PH	8.45 J	pH	4.00
994094-012	R-19-176	SW6020	FLDFLT	3/9/2011	12:30	Chromium	ND	ug/L	1.0
994094-013	R-28-176	E120.1	NONE	3/9/2011	12:15	EC	944	umhos/cm	2.00
994094-013	R-28-176	E218.6	FLDFLT	3/9/2011	12:15	Chromium, hexavalent	ND	ug/L	0.20
994094-013	R-28-176	SM4500HB	NONE	3/9/2011	12:15	PH	8.47 J	pH	4.00
994094-013	R-28-176	SW6020	FLDFLT	3/9/2011	12:15	Chromium	ND	ug/L	1.0
994094-014	R63-176	E120.1	NONE	3/9/2011	10:06	EC	948	umhos/cm	2.00
994094-014	R63-176	E218.6	FLDFLT	3/9/2011	10:06	Chromium, hexavalent	ND	ug/L	0.20
994094-014	R63-176	SM4500HB	NONE	3/9/2011	10:06	PH	8.48 J	pH	4.00
994094-014	R63-176	SW6020	FLDFLT	3/9/2011	10:06	Chromium	ND	ug/L	1.0

007



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
994094-015	SW1-176	E120.1	NONE	3/9/2011	14:30	EC	984	umhos/cm	2.00
994094-015	SW1-176	E218.6	FLDFLT	3/9/2011	14:30	Chromium, hexavalent	ND	ug/L	0.20
994094-015	SW1-176	SM4500HB	NONE	3/9/2011	14:30	PH	7.91 J	pH	4.00
994094-015	SW1-176	SW6020	FLDFLT	3/9/2011	14:30	Chromium	ND	ug/L	1.0
994094-016	SW2-176	E120.1	NONE	3/9/2011	15:00	EC	962	umhos/cm	2.00
994094-016	SW2-176	E218.6	FLDFLT	3/9/2011	15:00	Chromium, hexavalent	ND	ug/L	0.20
994094-016	SW2-176	SM4500HB	NONE	3/9/2011	15:00	PH	7.92 J	pH	4.00
994094-016	SW2-176	SW6020	FLDFLT	3/9/2011	15:00	Chromium	ND	ug/L	1.0
994094-017	C-CON-D-176	E120.1	NONE	3/10/2011	9:00	EC	945	umhos/cm	2.00
994094-017	C-CON-D-176	E218.6	FLDFLT	3/10/2011	9:00	Chromium, hexavalent	ND	ug/L	0.20
994094-017	C-CON-D-176	SM4500HB	NONE	3/10/2011	9:00	PH	8.45 J	pH	4.00
994094-017	C-CON-D-176	SW6020	FLDFLT	3/10/2011	9:00	Chromium	ND	ug/L	1.0
994094-018	C-CON-S-176	E120.1	NONE	3/10/2011	9:12	EC	948	umhos/cm	2.00
994094-018	C-CON-S-176	E218.6	FLDFLT	3/10/2011	9:12	Chromium, hexavalent	ND	ug/L	0.20
994094-018	C-CON-S-176	SM4500HB	NONE	3/10/2011	9:12	PH	8.48 J	pH	4.00
994094-018	C-CON-S-176	SW6020	FLDFLT	3/10/2011	9:12	Chromium	ND	ug/L	1.0
994094-019	C-NR1-D-176	E120.1	NONE	3/10/2011	9:38	EC	948	umhos/cm	2.00
994094-019	C-NR1-D-176	E218.6	FLDFLT	3/10/2011	9:38	Chromium, hexavalent	ND	ug/L	0.20
994094-019	C-NR1-D-176	SM4500HB	NONE	3/10/2011	9:38	PH	8.45 J	pH	4.00
994094-019	C-NR1-D-176	SW6020	FLDFLT	3/10/2011	9:38	Chromium	ND	ug/L	1.0
994094-020	C-NR1-S-176	E120.1	NONE	3/10/2011	9:50	EC	950	umhos/cm	2.00
994094-020	C-NR1-S-176	E218.6	FLDFLT	3/10/2011	9:50	Chromium, hexavalent	ND	ug/L	0.20
994094-020	C-NR1-S-176	SM4500HB	NONE	3/10/2011	9:50	PH	8.44 J	pH	4.00
994094-020	C-NR1-S-176	SW6020	FLDFLT	3/10/2011	9:50	Chromium	ND	ug/L	1.0
994094-021	C-NR3-D-176	E120.1	NONE	3/10/2011	10:16	EC	946	umhos/cm	2.00
994094-021	C-NR3-D-176	E218.6	FLDFLT	3/10/2011	10:16	Chromium, hexavalent	ND	ug/L	0.20
994094-021	C-NR3-D-176	SM4500HB	NONE	3/10/2011	10:16	PH	8.43 J	pH	4.00
994094-021	C-NR3-D-176	SW6020	FLDFLT	3/10/2011	10:16	Chromium	ND	ug/L	1.0
994094-022	C-NR3-S-176	E120.1	NONE	3/10/2011	10:28	EC	950	umhos/cm	2.00
994094-022	C-NR3-S-176	E218.6	FLDFLT	3/10/2011	10:28	Chromium, hexavalent	ND	ug/L	0.20
994094-022	C-NR3-S-176	SM4500HB	NONE	3/10/2011	10:28	PH	8.44 J	pH	4.00
994094-022	C-NR3-S-176	SW6020	FLDFLT	3/10/2011	10:28	Chromium	ND	ug/L	1.0

808



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
994094-023	C-NR4-D-176	E120.1	NONE	3/10/2011	11:00	EC	946	umhos/cm	2.00
994094-023	C-NR4-D-176	E218.6	FLDFLT	3/10/2011	11:00	Chromium, hexavalent	ND	ug/L	0.20
994094-023	C-NR4-D-176	SM4500HB	NONE	3/10/2011	11:00	PH	8.42 J	pH	4.00
994094-023	C-NR4-D-176	SW6020	FLDFLT	3/10/2011	11:00	Chromium	ND	ug/L	1.0
994094-024	C-NR4-S-176	E120.1	NONE	3/10/2011	11:10	EC	951	umhos/cm	2.00
994094-024	C-NR4-S-176	E218.6	FLDFLT	3/10/2011	11:10	Chromium, hexavalent	ND	ug/L	0.20
994094-024	C-NR4-S-176	SM4500HB	NONE	3/10/2011	11:10	PH	8.42 J	pH	4.00
994094-024	C-NR4-S-176	SW6020	FLDFLT	3/10/2011	11:10	Chromium	ND	ug/L	1.0
994094-025	RRB-176	E120.1	NONE	3/10/2011	8:25	EC	953	umhos/cm	2.00
994094-025	RRB-176	E218.6	FLDFLT	3/10/2011	8:25	Chromium, hexavalent	ND	ug/L	0.20
994094-025	RRB-176	SM4500HB	NONE	3/10/2011	8:25	PH	8.40 J	pH	4.00
994094-025	RRB-176	SW6020	FLDFLT	3/10/2011	8:25	Chromium	ND	ug/L	1.0

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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

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

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

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

## REPORT

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

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 405681.MP.02.RM

Project Number: 405681.MP.02.RM

Laboratory No. 994094

Page 1 of 16

Printed 4/4/2011

Samples Received on 3/11/2011 3:20:00 PM

Field ID	Lab ID	Collected	Matrix
C-BNS-D-176	994094-001	03/09/2011 11:13	Water
C-I-3-D-176	994094-002	03/09/2011 09:27	Water
C-I-3-S-176	994094-003	03/09/2011 09:44	Water
C-MAR-D-176	994094-004	03/09/2011 13:07	Water
C-MAR-S-176	994094-005	03/09/2011 13:18	Water
C-R22A-D-176	994094-006	03/09/2011 10:30	Water
C-R22A-S-176	994094-007	03/09/2011 10:45	Water
C-R27-D-176	994094-008	03/09/2011 11:34	Water
C-R27-S-176	994094-009	03/09/2011 11:48	Water
C-TAZ-D-176	994094-010	03/09/2011 08:40	Water
C-TAZ-S-176	994094-011	03/09/2011 08:57	Water
R-19-176	994094-012	03/09/2011 12:30	Water
R-28-176	994094-013	03/09/2011 12:15	Water
R63-176	994094-014	03/09/2011 10:06	Water
SW1-176	994094-015	03/09/2011 14:30	Water
SW2-176	994094-016	03/09/2011 15:00	Water
C-CON-D-176	994094-017	03/10/2011 09:00	Water
C-CON-S-176	994094-018	03/10/2011 09:12	Water
C-NR1-D-176	994094-019	03/10/2011 09:38	Water
C-NR1-S-176	994094-020	03/10/2011 09:50	Water
C-NR3-D-176	994094-021	03/10/2011 10:16	Water
C-NR3-S-176	994094-022	03/10/2011 10:28	Water
C-NR4-D-176	994094-023	03/10/2011 11:00	Water
C-NR4-S-176	994094-024	03/10/2011 11:10	Water
RRB-176	994094-025	03/10/2011 08:25	Water

### Specific Conductivity - EPA 120.1

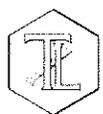
Batch 03EC11E

3/14/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
994094-001 Specific Conductivity	umhos/cm	03/14/2011	1.00	0.0380	2.00	945
994094-002 Specific Conductivity	umhos/cm	03/14/2011	1.00	0.0380	2.00	939

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

013



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.RM

Page 2 of 16
Printed 4/4/2011

Table with 8 columns: ID, Description, Unit, Date, Value 1, Value 2, Value 3, Value 4. Rows 994094-003 to 994094-020.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row: Specific Conductivity, umhos, 1.00, ND

Duplicate

Lab ID = 994094-010

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Specific Conductivity, umhos, 1.00, 961, 961, 0.00, 0 - 10

Duplicate

Lab ID = 994094-020

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Specific Conductivity, umhos, 1.00, 949, 950, 0.105, 0 - 10

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Specific Conductivity, umhos, 1.00, 702, 706, 99.4, 90 - 110

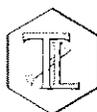
Lab Control Sample Duplicate

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Specific Conductivity, umhos, 1.00, 698, 706, 98.9, 90 - 110

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Specific Conductivity, umhos, 1.00, 704, 706, 99.7, 90 - 110

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 16

Project Number: 405681.MP.02.RM

Printed 4/4/2011

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	1020	996	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	998	996	100.	90 - 110

Specific Conductivity - EPA 120.1

Batch 03EC11F

3/14/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
994094-021 Specific Conductivity	umhos/cm	03/14/2011	1.00	0.0380	2.00	946
994094-022 Specific Conductivity	umhos/cm	03/14/2011	1.00	0.0380	2.00	950
994094-023 Specific Conductivity	umhos/cm	03/14/2011	1.00	0.0380	2.00	946
994094-024 Specific Conductivity	umhos/cm	03/14/2011	1.00	0.0380	2.00	951
994094-025 Specific Conductivity	umhos/cm	03/14/2011	1.00	0.0380	2.00	953

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 994094-025

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	954	953	0.105	0 - 10

Lab Control Sample

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

Lab Control Sample Duplicate

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

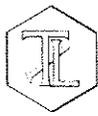
MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	999	996	100.	90 - 110

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.RM

Page 4 of 16
Printed 4/4/2011

Chrome VI by EPA 218.6

Batch 03CrH11H

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Contains 8 rows of Chromium, Hexavalent data.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Shows Chromium, Hexavalent result as ND.

Duplicate

Lab ID = 994094-005

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Shows Chromium, Hexavalent data.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Shows Chromium, Hexavalent data.

Matrix Spike

Lab ID = 994094-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Shows Chromium, Hexavalent data.

Matrix Spike

Lab ID = 994094-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Shows Chromium, Hexavalent data.

Matrix Spike

Lab ID = 994094-003

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Shows Chromium, Hexavalent data.

Matrix Spike

Lab ID = 994094-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Shows Chromium, Hexavalent data.

Matrix Spike

Lab ID = 994094-005

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Shows Chromium, Hexavalent data.

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 16

Project Number: 405681.MP.02.RM

Printed 4/4/2011

Matrix Spike							Lab ID = 994094-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.06	1.22	1.20(1.06)	102.	90 - 110	
Matrix Spike							Lab ID = 994094-007
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.06	1.22	1.21(1.06)	101.	90 - 110	
Matrix Spike							Lab ID = 994094-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.06	1.22	1.20(1.06)	102.	90 - 110	
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	5.14	5.00	103.	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	10.1	10.0	101.	95 - 105	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105	

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 16

Project Number: 405681.MP.02.RM

Printed 4/4/2011

Chrome VI by EPA 218.6

Batch 03CrH11I

Parameter	Unit	Analyzed	DF	MDL	RL	Result
994094-009 Chromium, Hexavalent	ug/L	03/22/2011 08:57	1.05	0.0210	0.20	ND
994094-010 Chromium, Hexavalent	ug/L	03/22/2011 09:18	1.05	0.0210	0.20	ND
994094-011 Chromium, Hexavalent	ug/L	03/22/2011 09:28	1.05	0.0210	0.20	ND
994094-012 Chromium, Hexavalent	ug/L	03/22/2011 09:39	1.05	0.0210	0.20	ND
994094-013 Chromium, Hexavalent	ug/L	03/22/2011 11:02	1.05	0.0210	0.20	ND
994094-014 Chromium, Hexavalent	ug/L	03/22/2011 11:12	1.05	0.0210	0.20	ND
994094-015 Chromium, Hexavalent	ug/L	03/22/2011 12:05	1.05	0.0210	0.20	ND
994094-016 Chromium, Hexavalent	ug/L	03/22/2011 12:15	1.05	0.0210	0.20	ND
994094-017 Chromium, Hexavalent	ug/L	03/22/2011 13:08	1.05	0.0210	0.20	ND
994094-018 Chromium, Hexavalent	ug/L	03/22/2011 14:38	1.05	0.0210	0.20	ND
994094-019 Chromium, Hexavalent	ug/L	03/22/2011 14:48	1.05	0.0210	0.20	ND
994094-020 Chromium, Hexavalent	ug/L	03/22/2011 14:59	1.05	0.0210	0.20	ND
994094-021 Chromium, Hexavalent	ug/L	03/22/2011 15:51	1.05	0.0210	0.20	ND
994094-022 Chromium, Hexavalent	ug/L	03/22/2011 16:01	1.05	0.0210	0.20	ND
994094-023 Chromium, Hexavalent	ug/L	03/22/2011 16:11	1.05	0.0210	0.20	ND

Method Blank

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

Duplicate

Lab ID = 994094-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	0.0830	0.0840	1.20	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.19	5.00	104.	90 - 110

Matrix Spike

Lab ID = 994094-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.21	1.14(1.06)	106.	90 - 110

Matrix Spike

Lab ID = 994094-010

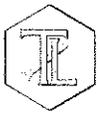
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.21	1.16(1.06)	104.	90 - 110

Matrix Spike

Lab ID = 994094-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.18	1.16(1.06)	102.	90 - 110

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

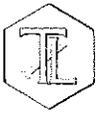
Page 7 of 16

Project Number: 405681.MP.02.RM

Printed 4/4/2011

Matrix Spike							Lab ID = 994094-012
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.06	1.24	1.17(1.06)	106.	90 - 110	
Matrix Spike							Lab ID = 994094-013
Chromium, Hexavalent	ug/L	1.06	1.30	1.22(1.06)	107.	90 - 110	
Matrix Spike							Lab ID = 994094-014
Chromium, Hexavalent	ug/L	1.06	1.25	1.21(1.06)	104.	90 - 110	
Matrix Spike							Lab ID = 994094-015
Chromium, Hexavalent	ug/L	1.06	1.32	1.23(1.06)	109.	90 - 110	
Matrix Spike							Lab ID = 994094-016
Chromium, Hexavalent	ug/L	1.06	1.29	1.23(1.06)	105.	90 - 110	
Matrix Spike							Lab ID = 994094-017
Chromium, Hexavalent	ug/L	1.06	1.24	1.21(1.06)	102.	90 - 110	
Matrix Spike							Lab ID = 994094-018
Chromium, Hexavalent	ug/L	1.06	1.25	1.18(1.06)	106.	90 - 110	
Matrix Spike							Lab ID = 994094-019
Chromium, Hexavalent	ug/L	1.06	1.22	1.16(1.06)	106.	90 - 110	
Matrix Spike							Lab ID = 994094-020
Chromium, Hexavalent	ug/L	1.06	1.26	1.19(1.06)	106.	90 - 110	
Matrix Spike							Lab ID = 994094-021
Chromium, Hexavalent	ug/L	1.06	1.27	1.20(1.06)	107.	90 - 110	
Matrix Spike							Lab ID = 994094-022
Chromium, Hexavalent	ug/L	1.06	1.26	1.20(1.06)	106.	90 - 110	
Matrix Spike							Lab ID = 994094-023
Chromium, Hexavalent	ug/L	1.06	1.25	1.19(1.06)	106.	90 - 110	

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 16

Project Number: 405681.MP.02.RM

Printed 4/4/2011

Chrome VI by EPA 218.6

Batch 03CrH11J

Parameter	Unit	Analyzed	DF	MDL	RL	Result
994094-024 Chromium, Hexavalent	ug/L	03/23/2011 09:22	1.05	0.0210	0.20	ND
994094-025 Chromium, Hexavalent	ug/L	03/23/2011 09:33	1.05	0.0210	0.20	ND

Method Blank

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

Duplicate

Lab ID = 994223-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	380.	384	1.02	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.26	5.00	105.	90 - 110

Matrix Spike

Lab ID = 994094-024

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.21	1.16(1.06)	104.	90 - 110

Matrix Spike

Lab ID = 994094-025

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.19(1.06)	102.	90 - 110

Matrix Spike

Lab ID = 994222-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.40	1.36(1.06)	103.	90 - 110

Matrix Spike

Lab ID = 994222-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.31	1.27(1.06)	104.	90 - 110

Matrix Spike

Lab ID = 994223-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.47	1.50(1.06)	97.3	90 - 110

Matrix Spike

Lab ID = 994223-004

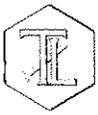
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.12	6.99(5.30)	102.	90 - 110

Matrix Spike

Lab ID = 994259-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.81	5.56(5.25)	105.	90 - 110

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 11 of 16

Project Number: 405681.MP.02.RM

Printed 4/4/2011

Metals by EPA 6020A, Dissolved

Batch 033011A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
994094-001 Chromium	ug/L	03/30/2011 18:11	5.00	0.0950	1.0	ND
994094-002 Chromium	ug/L	03/30/2011 19:05	5.00	0.0950	1.0	ND
994094-003 Chromium	ug/L	03/30/2011 19:19	5.00	0.0950	1.0	ND
994094-004 Chromium	ug/L	03/30/2011 19:53	5.00	0.0950	1.0	ND
994094-005 Chromium	ug/L	03/30/2011 20:06	5.00	0.0950	1.0	ND
994094-006 Chromium	ug/L	03/30/2011 20:20	5.00	0.0950	1.0	ND
994094-007 Chromium	ug/L	03/30/2011 20:33	5.00	0.0950	1.0	ND
994094-008 Chromium	ug/L	03/30/2011 20:47	5.00	0.0950	1.0	ND
994094-009 Chromium	ug/L	03/30/2011 21:00	5.00	0.0950	1.0	ND
994094-010 Chromium	ug/L	03/30/2011 21:14	5.00	0.0950	1.0	ND
994094-011 Chromium	ug/L	03/30/2011 21:27	5.00	0.0950	1.0	ND
994094-012 Chromium	ug/L	03/30/2011 21:41	5.00	0.0950	1.0	ND
994094-013 Chromium	ug/L	03/30/2011 21:55	5.00	0.0950	1.0	ND
994094-014 Chromium	ug/L	03/30/2011 22:29	5.00	0.0950	1.0	ND
994094-015 Chromium	ug/L	03/30/2011 22:42	5.00	0.0950	1.0	ND
994094-016 Chromium	ug/L	03/30/2011 22:56	5.00	0.0950	1.0	ND
994094-017 Chromium	ug/L	03/30/2011 23:09	5.00	0.0950	1.0	ND
994094-018 Chromium	ug/L	03/30/2011 23:23	5.00	0.0950	1.0	ND
994094-019 Chromium	ug/L	03/30/2011 23:36	5.00	0.0950	1.0	ND
994094-020 Chromium	ug/L	03/30/2011 23:50	5.00	0.0950	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 994094-001

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

Lab Control Sample

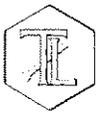
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	54.9	50.0	110.	90 - 110

Matrix Spike

Lab ID = 994094-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	232.	250.(250.)	92.6	75 - 125

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project  
Project Number: 405681.MP.02.RM

Page 12 of 16  
Printed 4/4/2011

Lab ID = 994094-001

Matrix Spike Duplicate

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	212.	250.(250.)	84.8	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	54.4	50.0	109.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.6	50.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	52.2	50.0	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.1	50.0	98.2	90 - 110

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.8	50.0	99.6	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	52.4	50.0	105.	80 - 120

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project  
Project Number: 405681.MP.02.RM

Page 13 of 16  
Printed 4/4/2011

**Metals by EPA 6020A, Dissolved**

Batch 033011B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
994094-021 Chromium	ug/L	03/31/2011 01:38	5.00	0.0950	1.0	ND
994094-022 Chromium	ug/L	03/31/2011 02:32	5.00	0.0950	1.0	ND
994094-023 Chromium	ug/L	03/31/2011 02:46	5.00	0.0950	1.0	ND
994094-024 Chromium	ug/L	03/31/2011 03:20	5.00	0.0950	1.0	ND
994094-025 Chromium	ug/L	03/31/2011 03:33	5.00	0.0950	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 994094-021

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	52.3	50.0	105.	90 - 110

Matrix Spike

Lab ID = 994094-021

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	225.	250.(250.)	90.0	75 - 125

Matrix Spike Duplicate

Lab ID = 994094-021

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	227.	250.(250.)	90.7	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	52.0	50.0	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.2	50.0	102.	90 - 110

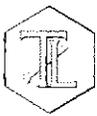
MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.3	50.0	103.	90 - 110

Interference Check Standard A

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

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 15 of 16

Project Number: 405681.MP.02.RM

Printed 4/4/2011

pH by SM 4500-H B

Batch 03PH11J

Parameter	Unit	Analyzed	DF	MDL	RL	Result	
994094-001	pH	03/11/2011 16:40	1.00	0.0250	4.00	8.25	J
994094-002	pH	03/11/2011 16:44	1.00	0.0250	4.00	8.20	J
994094-003	pH	03/11/2011 16:48	1.00	0.0250	4.00	8.29	J
994094-004	pH	03/11/2011 16:52	1.00	0.0250	4.00	8.13	J
994094-005	pH	03/11/2011 16:55	1.00	0.0250	4.00	8.12	J
994094-006	pH	03/11/2011 16:58	1.00	0.0250	4.00	8.38	J
994094-007	pH	03/11/2011 17:01	1.00	0.0250	4.00	8.39	J
994094-008	pH	03/11/2011 17:04	1.00	0.0250	4.00	8.41	J
994094-009	pH	03/11/2011 17:08	1.00	0.0250	4.00	8.42	J
994094-010	pH	03/11/2011 17:12	1.00	0.0250	4.00	8.46	J
994094-011	pH	03/11/2011 17:16	1.00	0.0250	4.00	8.48	J
994094-012	pH	03/11/2011 17:19	1.00	0.0250	4.00	8.45	J
994094-013	pH	03/11/2011 17:23	1.00	0.0250	4.00	8.47	J
994094-014	pH	03/11/2011 17:26	1.00	0.0250	4.00	8.48	J
994094-015	pH	03/11/2011 17:29	1.00	0.0250	4.00	7.91	J
994094-016	pH	03/11/2011 17:33	1.00	0.0250	4.00	7.92	J
994094-017	pH	03/11/2011 17:37	1.00	0.0250	4.00	8.45	J
994094-018	pH	03/11/2011 17:39	1.00	0.0250	4.00	8.48	J

Duplicate

Lab ID = 994094-018

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	8.47	8.48	0.118	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.04	7.00	100.	90 - 110

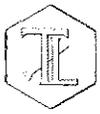
Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.05	7.00	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.06	7.00	101.	90 - 110

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 405681.MP.02.RM

Page 16 of 16
Printed 4/4/2011

pH by SM 4500-H B

Batch 03PH11K

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include pH measurements for samples 994094-019 through 994094-025.

Duplicate

Lab ID = 994094-025

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row for pH duplicate showing result 8.40.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for pH lab control showing result 7.05.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for pH MRCVS showing result 7.06.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Signature of Mona Nassimi
Mona Nassimi
Manager, Analytical Services

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

Rec'd 03/11/11  
 994094

994094

CH2MHILL

CHAIN OF CUSTODY RECORD

3/10/2011 2:13:49 PM

Page 1 OF 3

				Container:	3X250 ml Poly	250 Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	* Where provided w/3 Cr6 bottles, please analyze 1 + hold 2	PH (SM4500HB)	Number of Containers	COMMENTS
				Preservatives:	(NH4)2SO 4/NH4OH, 4°C	(NH4)2SO 4/NH4OH, 4°C	HNO3, 4°C	4°C	4°C				
				Filtered:	Field	NA	Field	NA	NA				
				Holding Time:	28	28	180	2	2				
				Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-River)	Disolved Chromium (6010B/CRF) Field Filtered Chromium	Specific Conductance (E120.1)						
DATE	TIME	Matrix											
1	C-BNS-D-176	3/9/2011 11:13	Water	X		X	X	X				5	
2	C-I-3-D-176	3/9/2011 9:27	Water	X		X	X	X				5	
3	C-I-3-S-176	3/9/2011 9:44	Water	X		X	X	X				5	
4	C-MAR-D-176	3/9/2011 13:07	Water	X		X	X	X				5	
5	C-MAR-S-176	3/9/2011 13:18	Water	X		X	X	X				5	
	C-MW-80-176	3/9/2011 10:20	Water		X							1	Hold
	C-MW-81-176	3/9/2011 11:20	Water		X							1	Hold
6	C-R22A-D-176	3/9/2011 10:30	Water	X		X	X	X				5	
7	C-R22A-S-176	3/9/2011 10:45	Water	X		X	X	X				5	
8	C-R27-D-176	3/9/2011 11:34	Water	X		X	X	X				5	
9	C-R27-S-176	3/9/2011 11:48	Water	X		X	X	X				5	
10	C-TAZ-D-176	3/9/2011 8:40	Water	X		X	X	X				5	
11	C-TAZ-S-176	3/9/2011 8:57	Water	X		X	X	X				5	
12	R-19-176	3/9/2011 12:30	Water	X		X	X	X				5	
13	R-28-176	3/9/2011 12:15	Water	X		X	X	X				5	

ALERT!!  
 Level III QC

For Sample Conditions  
 See Form Attached

M=2  
 6010B

M=2  
 6010B

Signatures  
 Approved by: [Signature]  
 Sampled by: [Signature]  
 Relinquished by: [Signature]  
 Received by: Rafael Davila 3-11-11 8:45  
 Relinquished by: Rafael Davila 3-11-11 15:15  
 Received by: Lida 3/11/11 15:20

Shipping Details  
 Method of Shipment: FedEx  
 On Ice: yes / no  
 Airbill No:  
 Lab Name: Truesdail Laboratories, Inc.  
 Lab Phone: (714) 730-6239

ATTN:  
 Sample Custody

Special Instructions:  
 March 9-11, 2011  
 Report Copy to  
 Shawn Duffy  
 (530) 229-3303

994094

				Container:	3X250 ml Poly	250 Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	* Where provided w/ 3 Cr6 bottles, please analyze 1 + hold 2	Number of Containers	COMMENTS
Project Name PG&E Topock				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	4°C	4°C			
Location Topock				Filtered:	Field	NA	Field	NA	NA			
Project Number 405681.MP.02.RM				Holding Time:	28	28	180	2	2			
Project Manager Jay Piper												
Sample Manager Shawn Duffy												
Task Order					Cr6 (E218-6 - river) Field Filtered	Field QC Cr6 (E218-6- river)	Disolved Chromium (5010BCREF) Field Filtered Chromium	Specific Conductance (E120.1)	PH (SM4500HB)			
Project 2011-RMP-176												
Turnaround Time 10 Days												
Shipping Date:												
COC Number: 999												
OATE	TIME	Matrix										
R63-176	3/9/2011	10:06	Water	X		X	X	X			5	PM=2
RMP-AB1-176	3/9/2011	13:20	Water		X						1	Hold 6010B
SW1-176	3/9/2011	14:30	Water	X		X	X	X			5	
SW2-176	3/9/2011	15:00	Water	X		X	X	X			5	
C-CON-D-176	3/10/2011	9:00	Water	X		X	X	X			5	PM=2
C-CON-S-176	3/10/2011	9:12	Water	X		X	X	X			5	6010B
C-MW-82-176	3/10/2011	9:25	Water		X						1	Hold
C-MW-83-176	3/10/2011	10:45	Water		X						1	Hold
C-NR1-D-176	3/10/2011	9:38	Water	X		X	X	X			5	
C-NR1-S-176	3/10/2011	9:50	Water	X		X	X	X			5	
C-NR3-D-176	3/10/2011	10:16	Water	X		X	X	X			5	
C-NR3-S-176	3/10/2011	10:28	Water	X		X	X	X			5	PM=2
C-NR4-D-176	3/10/2011	11:00	Water	X		X	X	X			5	6010B
C-NR4-S-176	3/10/2011	11:10	Water	X		X	X	X			5	
RMP-AB2-176	3/10/2011	11:15	Water		X						1	Hold

ALERT!!  
Level III QC

<b>Signatures</b> Approved by _____ Sampled by _____ Relinquished by _____ Received by _____ Relinquished by _____ Received by _____		<b>Date/Time</b> 3-10-11 1600 3-11-11 8:45 3/11/11 15:00 3/4/11 15:20		<b>Shipping Details</b> Method of Shipment: FedEx On Ice: yes / no Airbill No: Lab Name: Truesdail Laboratories, Inc. Lab Phone: (714) 730-6239		<b>Special Instructions:</b> ATTN: Sample Custody Report Copy to Shawn Duffy (530) 229-3303	
--	--	---	--	--	--	--	--

994094

				Container:	3X250 ml Poly	250 Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	* Where provided w/ 3 Cr6 bottles, please analyze 1 + hold 2	Number of Containers	COMMENTS
Project Name PG&E Topock				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	4°C	4°C			
Location Topock				Filtered:	Field	NA	Field	NA	NA			
Project Number 405681.MP.02.RM				Holding Time:	28	28	180	2	2			
Project Manager Jay Piper												
Sample Manager Shawn Duffy												
Task Order					Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Dissolved Chromium (6010BCREF) Field Filtered Chromium	Specific Conductance (E120.1)	PH (SM4500HB)			
Project 2011-RMP-176												
Turnaround Time 10 Days												
Shipping Date:												
COC Number: 999												
DATE	TIME	Matrix										
3/10/2011	8:25	Water		X			X	X	X		3	PH=2
TOTAL NUMBER OF CONTAINERS											131	6010B

**ALERT !!**  
**Level III QC**

Approved by	Signatures	Date/Time	Shipping Details	Special Instructions:
Sampled by	<i>[Signature]</i>	3-10-11	Method of Shipment: FedEx	March 9-11, 2011
Relinquished by	<i>[Signature]</i>	1600	On Ice: yes / no	
Received by	<i>Rafael Davila</i>	3-11-11 8:45	Airbill No:	
Relinquished by	<i>Rafael Davila</i>	3/11/11 15:20	Lab Name: Truesdall Laboratories, Inc.	Report Copy to
Received by	<i>Linda</i>	3/11/11 15:20	Lab Phone: (714) 730-6239	Shawn Duffy (530) 229-3303
				ATTN:
				Sample Custody

## Hexavalent Chromium

### Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
03/10/11	994063-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
3/10/11	994069-1	9.5	N/A	N/A	N/A	MG
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
03/11/11	994094-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
↓	↓ -11	↓	↓	↓	↓	↓
↓	↓ -12	↓	↓	↓	↓	↓
↓	↓ -13	↓	↓	↓	↓	↓
↓	↓ -14	↓	↓	↓	↓	↓
↓	↓ -15	↓	↓	↓	↓	↓
↓	↓ -16	↓	↓	↓	↓	↓
↓	↓ -17	↓	↓	↓	↓	↓
↓	↓ -18	↓	↓	↓	↓	↓
↓	↓ -19	↓	↓	↓	↓	↓
↓	↓ -20	↓	↓	↓	↓	↓

*ah*



Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
994062(1-7)	<1	<2	3/11/11	ES	yes	3010 A
994069(1-7)	↓	↓	↓	↓	↓	↓
994071	>1	<2	3/14/11	ES	yes	3010 A
994092	<1	<2	↓	↓	NO	↓
994093	↓	↓	↓	↓	↓	↓
993503	<1	<2	030911	KE	NO	↓
993799	<1	<2	↓	↓	↓	↓
993705	<1	<2	↓	↓	↓	↓
993626 (1-18)	<1	<2	031111	↓	↓	↓
994118	>1	<2	3/15/11	ES	yes	↓
994119	<1	<2	↓	↓	↓	↓
994136	<1	>2	3/17/11	ES	NO	yes @ 1:00 p.m.
994152	<1	<2	↓	↓	NO	↓
994157	<1	<2	↓	↓	yes	3010 A
994158	<1	<2	↓	↓	↓	↓
994161	<1	<2	↓	↓	NO	↓
994174	>1	<2	3/18/11	M.M	yes	3010 A
994175	>1	<2	↓	↓	↓	↓
994176	>1	<2	↓	↓	↓	↓
994180	>1	<2	↓	↓	↓	↓
Total/994063(1-4)	<1	<2	3/21/11	ES	NO	↓
994183(1-3)	<1	>2	↓	↓	no	yes @ 3:00 p.m.
994194	>1	<2	↓	↓	yes	↓
994211	↓	↓	↓	↓	↓	↓
994212	↓	↓	↓	↓	↓	↓
994207	↓	TTC	↓	↓	yes	TTC
994210	>1	>2	↓	↓	NO	↓
211	↓	↓	↓	↓	↓	↓
994208(1-2)	<1	<2	↓	↓	↓	↓
994212(1-2)	>1	<2	↓	↓	yes	↓
213	↓	↓	↓	↓	↓	↓
214(1-2)	↓	↓	↓	↓	↓	↓
215(1-4)	↓	↓	↓	↓	↓	↓
994240	>1	<2	3/22/11	ES	yes	↓
994222(1-2)	<1	<2	↓	↓	yes	↓
994223(1-4)	<1	<2	↓	↓	↓	↓
994241	<1	<2	↓	↓	NO	↓
994242	↓	↓	↓	↓	↓	↓
243	↓	↓	↓	↓	↓	↓
244	↓	↓	↓	↓	↓	↓
245	↓	↓	↓	↓	↓	↓
994257(1-3)	↓	>2	↓	↓	↓	yes @ 3:30 p.m.
994258	>1	<2	↓	↓	yes	↓
994259	<1	>2	3/24/11	ES	N	yes @ 12:30 p.m.
994279	<1	<2	↓	↓	NO	↓
994045	<1	>2	3/27/11	M.M	NO	yes @ 15:50 p.m.
994094(1-2)	<1	<2	3/24/11	M.M	NO	↓
994296	>1	<2	↓	M.M	yes	↓



# Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 994094

Date Delivered: 03/11/11 Time: 15:20 By:  Mail  Field Service  Client

1. Was a Chain of Custody received and signed?  Yes  No  N/A
2. Does Customer require an acknowledgement of the COC?  Yes  No  N/A
3. Are there any special requirements or notes on the COC?  Yes  No  N/A
4. If a letter was sent with the COC, does it match the COC?  Yes  No  N/A
5. Were all requested analyses understood and acceptable?  Yes  No  N/A
6. Were samples received in a chilled condition?  
Temperature (if yes)? 4°C  Yes  No  N/A
7. Were samples received intact  
(i.e. broken bottles, leaks, air bubbles, etc.)?  Yes  No  N/A
8. Were sample custody seals intact?  Yes  No  N/A
9. Does the number of samples received agree with COC?  Yes  No  N/A
10. Did sample labels correspond with the client ID's?  Yes  No  N/A
11. Did sample labels indicate proper preservation?  
Preserved (if yes) by:  Truesdail  Client  Yes  No  N/A
12. Were samples pH checked? pH = Level III QC  Yes  No  N/A
13. Were all analyses within holding time at time of receipt?  
If not, notify Project Manager.  Yes  No  N/A
14. Have Project due dates been checked and accepted?  
Turn Around Time (TAT):  RUSH  Std  Yes  No  N/A
15. **Sample Matrix:**  Liquid  Drinking Water  Ground Water  Waste Water  
 Sludge  Soil  Wipe  Paint  Solid  Other Water

16. Comments: \_\_\_\_\_

17. Sample Check-In completed by Truesdail Log-In/Receiving: Lucia

**Appendix B**  
**Other Groundwater Monitoring Results**

---

Table B-1

Arsenic Results in Monitoring Wells, March 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Dissolved Arsenic (µg/L)
MW-10	SA	11-Mar-10	11.0
		07-Dec-10	7.2
		07-Dec-10 FD	6.9
MW-12	SA	06-Apr-10	63.0
		06-Apr-10 FD	63.0
		06-May-10	64.2
		06-May-10 FD	66.9
		30-Sep-10	53.4
		30-Sep-10 FD	55.4
		16-Dec-10	53.0
10-Feb-11	48.0		
MW-13	SA	07-Dec-10	1.9
MW-16	SA	10-Dec-10	9.7
MW-17	SA	14-Dec-10	1.2
MW-20-130 <sup>b</sup>	DA	10-Feb-11	4.9
MW-22	SA	12-Mar-10	12.1
		07-Dec-10	12.0
MW-23-060	BR-S	14-Dec-10	3.0
MW-23-080	BR-S	14-Dec-10	2.6
MW-25	SA	07-Dec-10	1.5
MW-26	SA	15-Dec-10	1.7
MW-27-20	SA	07-Dec-10	2.9
MW-27-60	MA	07-Dec-10	7.1
MW-27-85	DA	09-Mar-10	1.4
		29-Apr-10	5.6
		01-Oct-10	1.8
		07-Dec-10	1.4
		08-Feb-11	1.3
		08-Feb-11 FD	1.3
MW-28-25	SA	09-Mar-10	2.0
		08-Dec-10	1.7
MW-28-90	DA	09-Mar-10	2.1
		29-Apr-10	2.8
		28-Sep-10	2.3
		08-Dec-10	1.8
		08-Feb-11	1.7
MW-29	SA	11-Mar-10	35.0

Table B-1

Arsenic Results in Monitoring Wells, March 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Dissolved Arsenic (µg/L)
MW-29	SA	14-Dec-10	21.0
MW-30-30	SA	07-Dec-10	1.6
MW-30-50	MA	07-Dec-10	9.7
MW-31-60	SA	15-Dec-10	1.1
MW-31-135	DA	15-Dec-10	3.7
MW-32-20	SA	08-Dec-10	2.6
MW-32-35	SA	09-Mar-10	24.4
		09-Dec-10	22.0
MW-33-40	SA	11-Mar-10	17.7
		30-Apr-10	20.3
		28-Sep-10	19.4
		10-Dec-10	11.0
		09-Feb-11	12.0
MW-33-90	MA	10-Dec-10	1.3
MW-34-55	MA	07-Dec-10	2.5
MW-34-80	DA	10-Mar-10	1.3
		29-Apr-10	2.2
		01-Oct-10	1.5
		07-Dec-10	1.3
		07-Feb-11	1.3
		07-Feb-11 FD	1.2
MW-34-100	DA	10-Mar-10	1.7
		10-Mar-10 FD	1.4
		29-Apr-10	2.2
		29-Apr-10 FD	3.4
		01-Oct-10	1.7
		01-Oct-10 FD	1.7
		09-Nov-10	1.6
		08-Dec-10	1.3
		08-Dec-10 FD	1.3
		11-Jan-11	1.2
		07-Feb-11	1.5
MW-35-135	DA	14-Dec-10	0.9
MW-36-20	SA	07-Dec-10	1.9
MW-36-40	SA	07-Dec-10	4.7
MW-36-50	MA	08-Dec-10	3.6
MW-36-70	MA	07-Dec-10	7.1

Table B-1

Arsenic Results in Monitoring Wells, March 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Dissolved Arsenic (µg/L)
MW-36-90	DA	12-Mar-10	16.4
		08-Dec-10	17.0
		08-Dec-10 FD	18.0
MW-36-100	DA	09-Mar-10	4.5
		15-Dec-10	5.1
MW-37S	MA	10-Dec-10	1.7
MW-39-50	MA	08-Dec-10	8.6
MW-39-60	MA	09-Dec-10	6.0
MW-39-100	DA	14-Dec-10	2.2
MW-40D	DA	15-Dec-10	4.2
MW-41D	DA	08-Dec-10	2.4
MW-41M	DA	08-Dec-10	2.0
MW-41S	SA	08-Dec-10	2.0
		08-Dec-10 FD	1.9
MW-42-30	SA	06-Dec-10	2.2
MW-42-55	MA	09-Mar-10	11.8
		29-Apr-10	14.2
		27-Sep-10	12.5
		06-Dec-10	12.0
		07-Feb-11	12.0
MW-42-65	MA	09-Mar-10	2.1
		29-Apr-10	3.3
		27-Sep-10	3.0
		06-Dec-10	1.8
		07-Feb-11	1.9
MW-43-25	SA	09-Dec-10	19.0
MW-43-75	DA	09-Dec-10	11.0
MW-43-90	DA	09-Dec-10	3.7
MW-44-70	MA	08-Mar-10	3.0
		09-Dec-10	3.1
MW-44-115	DA	09-Dec-10	5.1
		09-Dec-10 FD	5.0
MW-44-125	DA	09-Dec-10	4.0
		09-Dec-10 FD	3.8
MW-45-095a	DA	14-Dec-10	3.6
MW-47-55	SA	13-Dec-10	1.1

Table B-1

Arsenic Results in Monitoring Wells, March 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date		Dissolved Arsenic (µg/L)
MW-47-55	SA	13-Dec-10	FD	1.2
MW-49-135	DA	13-Dec-10		1.6
MW-51	MA	16-Dec-10		3.9
MW-52D	DA	10-Mar-10		3.5
		09-Dec-10		3.3
MW-52M	DA	10-Mar-10		1.4
		09-Dec-10		1.3
MW-52S	MA	10-Mar-10		ND (1.0)
		09-Dec-10		0.35
MW-53D	DA	10-Mar-10		2.7
		09-Dec-10		2.9
MW-53M	DA	10-Mar-10		ND (1.0)
		10-Dec-10		1.0
MW-57-070	BR	15-Dec-10		1.4
		15-Dec-10	FD	1.5
MW-57-185	BR-D	09-Dec-10		11.0
MW-58BR <sup>a</sup>	BR	25-Mar-10		13.0
MW-58BR-LWR	BR	16-Sep-10		3.2
		07-Oct-10		3.2
MW-58BR-LWR-160	BR	10-Feb-11		1.6
MW-58BR-UPR	BR	14-Sep-10		5.9
		06-Oct-10		5.6
MW-58BR-UPR-160	BR	01-Feb-11		1.9
		18-Mar-11		1.8
MW-59-100	SA	16-Dec-10		2.1
MW-60-125	BR-S	16-Dec-10		1.4
		16-Dec-10	FD	1.5
MW-61-110	BR-S	15-Dec-10		3.2
MW-62-065	BR-S	15-Dec-10		0.99
MW-62-110	BR-M	11-Mar-10		10.3
		04-May-10		12.0
		29-Sep-10		19.5
		16-Dec-10		14.0
		09-Feb-11		14.0
MW-62-190	BR-D	11-Mar-10		9.4
		04-May-10		9.4

**Table B-1**

Arsenic Results in Monitoring Wells, March 2010 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Sample Date	Dissolved Arsenic (µg/L)
MW-62-190	BR-D	29-Sep-10	9.5
		16-Dec-10	8.1
		09-Feb-11	8.0
MW-63-065	BR-S	06-Dec-10	1.6
MW-64-150	BR-S	11-Mar-10	12.5
		04-May-10	12.9
		25-Aug-10	10.4
		29-Sep-10	8.2
MW-64-205	BR-D	11-Mar-10	8.5
		04-May-10	8.5
		25-Aug-10	6.3
		29-Sep-10	6.6
MW-64-260	BR-D	11-Mar-10	2.9
		04-May-10	5.2
		25-Aug-10	3.4
		29-Sep-10	2.6
MW-64BR <sup>a</sup>	BR	20-Dec-10	5.3
MW-64BR-LWR-150	BR	24-Feb-11	4.5
MW-64BR-UPR-150	BR	26-Jan-11	2.8
OW-3D	DA	08-Dec-10	2.6

**Table B-1**

Arsenic Results in Monitoring Wells, March 2010 through March 2011  
First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
Groundwater and Surface Water Monitoring Report  
*PG&E Topock Compressor Station, Needles, California*

---

**NOTES:**

µg/L = micrograms per liter

FD = field duplicate

<sup>a</sup> One-time sample collected from an open borehole.

<sup>b</sup> Data collected February 2011 due to field logistical issues.

As a result of a series of storm events in January 2010 the MW-58 cluster (MW-58-115 and MW-58-205) was inundated with flood water. This floodwater destroyed the Flexible Liner Underground Technologies™ well liner that allowed discrete sampling at the 115 feet below ground surface (bgs) and 205 feet bgs depth intervals and was consequently removed from the borehole. The MW-58 bedrock well cluster is now an open borehole. In September 2010 a packer system was installed in the borehole at about 115 ft bgs that divided the open borehole into upper (UPR) and lower (LWR) intervals. In January 2011 the packer was moved to a new location at about 160 ft bgs.

In accordance with DTSC direction, the Flexible Liner Underground Technologies (FLUTE) multi-level monitoring system, which allowed discrete sampling at the 150, 205 and 260 ft bgs depth intervals, was removed from the MW-64BR borehole in December 2010. Following removal of the FLUTE system, the open borehole was developed and a sample of the open borehole was collected on December 20, 2010. At the direction of DTSC, a packer system was installed in January 2011 at about 150 ft bgs.

The California primary drinking water standards Maximum Contaminant Level (MCL) for Arsenic is 10 µg/L. The background level for Arsenic at the site is 24.3 µg/L.

Wells are assigned to separate Aquifer zones for results reporting:

SA: shallow interval of Alluvial Aquifer

MA: mid-depth interval of Alluvial Aquifer

DA: deep interval of Alluvial Aquifer

PA: perched aquifer (unsaturated zone)

BR: well completed in bedrock (Miocene Conglomerate or pre-Tertiary crystalline rock)

BR-S: well completed in shallowest portion of BR

BR-M: well completed in middle portion of BR

BR-D: well completed in deeper portion of BR

Table B-2

Analytical Results for Packer Wells, First Quarter 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Analyte	Method	Units	MW-58BR-LWR-160	MW-58BR-UPR-160		MW-64BR-UPR-150	MW-64BR-LWR-150
			02/10/2011	02/01/2011	03/18/2011	01/26/2011	02/24/2011
<b>Anions</b>							
Chloride	300	mg/L	2,600	3,870	3,900	4,100	5,300
Nitrate (as nitrogen)	300	mg/L	1.2	ND (1.0)	ND (1.0)	2.6	ND (2.5)
<b>General Chemistry</b>							
Total dissolved solids	SM2540C	mg/L	5,200	7,100	6,900	8,300	9,700
<b>Metals</b>							
Arsenic, dissolved	6020A	µg/L	1.6	1.9	1.8	2.8	4.5
Chromium, Hexavalent	218.6	µg/L	140	ND (1.0)	ND (5.0)	220	100
Chromium, total dissolved	6010B/6020A	µg/L	130	ND (1.0)	ND (1.0)	220	97.0
<b>Volatile Organic Compounds</b>							
1,1,1,2-Tetrachloroethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1,1-Trichloroethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1,2,2-Tetrachloroethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1,2-Trichloroethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1,2-Trichlorotrifluoroethane (Freon 113)	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloropropene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2,3-Trichlorobenzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2,3-Trichloropropane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2,4-Trichlorobenzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2,4-Trimethylbenzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0) J
1,2-Dibromo-3-chloropropane	8260	µg/L	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
1,2-Dibromoethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichlorobenzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichloroethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)

Table B-2

Analytical Results for Packer Wells, First Quarter 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Analyte	Method	Units	MW-58BR-LWR-160	MW-58BR-UPR-160		MW-64BR-UPR-150	MW-64BR-LWR-150
			02/10/2011	02/01/2011	03/18/2011	01/26/2011	02/24/2011
<b>Volatile Organic Compounds</b>							
1,2-Dichloropropane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,3,5-Trimethylbenzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,3-Dichlorobenzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,3-Dichloropropane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,4-Dichlorobenzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
2,2-Dichloropropane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
2-Chlorotoluene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
4-Isopropyltoluene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Acetone	8260	µg/L	ND (10) J	ND (10)	ND (10) J	ND (10) J	ND (10) J
Acrolein	8260	µg/L	ND (20)	ND (20)	ND (20) J	ND (20)	ND (20) J
Acrylonitrile	8260	µg/L	ND (20)	ND (20)	ND (20) J	ND (20)	ND (20) J
Benzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Bromobenzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Bromochloromethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Bromodichloromethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Bromoform	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Bromomethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Carbon disulfide	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Carbon tetrachloride	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Chloro benzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Chloroethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Chloroform	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Chloromethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloro ethene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,3-Dichloropropene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Dibromochloromethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)

Table B-2

Analytical Results for Packer Wells, First Quarter 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Analyte	Method	Units	MW-58BR-LWR-160	MW-58BR-UPR-160		MW-64BR-UPR-150	MW-64BR-LWR-150
			02/10/2011	02/01/2011	03/18/2011	01/26/2011	02/24/2011
<b>Volatile Organic Compounds</b>							
Dibromomethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Dichlorodifluoromethane	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Ethylbenzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Hexachlorobutadiene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Isopropylbenzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
m,p-Xylenes	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Methyl ethyl ketone	8260	µg/L	ND (10)	ND (10)	ND (10) J	ND (10) J	ND (10) J
Methyl isobutyl ketone	8260	µg/L	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Methyl tert-butyl ether (MTBE)	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Methylene chloride	8260	µg/L	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Naphthalene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
N-Butylbenzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
N-Propylbenzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
o-Xylene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
p-Chlorotoluene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
sec-Butylbenzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Styrene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0) J
tert-Butylbenzene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Toluene	8260	µg/L	ND (2.5)	57.0	ND (2.5)	18.0	ND (2.5)
trans-1,2-Dichloroethene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
trans-1,3-Dichloropropene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Trichlorofluoromethane (Freon 11)	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl chloride	8260	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Xylenes, total	8260	µg/L	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

**Table B-2**

Analytical Results for Packer Wells, First Quarter 2011  
First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
Groundwater and Surface Water Monitoring Report  
*PG&E Topock Compressor Station, Needles, California*

---

**NOTES:**

ND not detected at listed reporting limit  
ug/L micrograms per liter  
mg/L milligrams per liter  
J concentration or RL estimated by laboratory or data validation

As a results of a series of storm events in January 2010 the MW-58 cluster (MW-58-115 and MW-58-205) was inundated with flood water. This floodwater destroyed the Flexible Liner Underground Technologies™ well liner that allowed discrete sampling at the 115 feet below ground surface (bgs) and 205 feet bgs depth intervals and was consequently removed from the borehole. The MW-58 bedrock well cluster is now an open borehole with a packer system installed. In September 2010 a packer system was installed in the borehole at about 115 ft bgs that divided the open borehole into upper (UPR) and lower (LWR) intervals. In January 2011 the packer was moved to a new location at about 160 ft bgs.

In accordance with DTSC direction, the Flexible Liner Underground Technologies (FLUTe) multi-level monitoring system, which allowed discrete sampling at the 150, 205 and 260 ft bgs depth intervals, was removed from the MW-64BR borehole in December 2010. Following removal of the FLUTe system, the open borehole was developed and a sample of the open borehole was collected on December 20, 2010. At the direction of DTSC, a packer system was installed in January 2011 at about 150 ft bgs.

**Appendix C**  
**Groundwater Monitoring Data for GMP and**  
**Interim Measures Monitoring Wells**

---

Table C-1  
 Chemical Performance Monitoring Analytical Results, March 2005 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
<b>Monitoring Wells</b>														
MW-20-70	10-Mar-05	1940	-7.1	-59.0	740	378	9.98	ND (1.0)	81.7	198	55.4	9.89	431	0.412
	15-Jun-05	1980	-7.0	-60.0	749	388	9.79	ND (1.0)	73.8	189	55.4	10.5	433	0.414
	15-Jun-05 FD	2050	-8.3	-57.0	760	392	9.81	ND (1.0)	71.3	204	60.7	11.4	468	0.445
	11-Oct-05	1950	-7.2	-57.0	737	359	9.48	0.641	69.9	198	49.9	14.6	323	0.402
	15-Dec-05	1830	-7.1	-49.0	645	326	9.90	ND (1.0)	77.8	138	42.3	14.5	267	0.441
	10-Mar-06	1940	-7.2	-54.0	679	358	10.5	ND (0.5)	82.2	161	48.6	9.22	424	0.427
	05-May-06	1750	-8.2	-55.9	696	376	9.86	0.574	74.5	162	49.2	9.55	461	0.476
	03-Oct-06	1890	-8.1	-60.4	677	357	13.0	ND (5.0)	85.0	158	47.6	9.82	472	0.535
	03-Oct-06 FD	1840	-8.1	-60.5	669	352	12.9	ND (5.0)	80.0	154	45.9	9.51	466	0.515
	13-Dec-06	1910	-7.6	-61.2	678	352	12.7	0.699	77.5	149	44.3	9.09	458	0.459
	14-Mar-07	1740	-8.5	-64.3	689	358	13.7	0.641	80.0	139	42.2	8.83	451	0.503
	03-May-07	1750	-8.4	-66.7	697	344	25.1	ND (1.0)	77.5	139	41.2	8.65	390	0.477
	11-Oct-07	1820	-8.2	-63.9	699	367	15.6	ND (1.0)	80.0	130	39.1	11.0	600	0.54
	12-Mar-08	1790	-7.6	-65.2	695	360	22.1	ND (1.0)	77.0	139	41.2	10.7	403	0.51
	07-Oct-08	1900	-8.5	-64.4	650	360	15.0	0.61	83.0	136	37.9	10.5	400	0.608
	12-Mar-09	1900	-7.74	-60.8	670	330	17.0	ND (1.0)	79.0	128	40.2	9.95	496	0.549
	25-Sep-09	1700	-8.7	-66.4	700	310	16.0	ND (2.5)	74.0	130	33.0	9.70	390	0.42
	16-Dec-10	1700	-7.5	-62.3	680	320	16.0	0.51	79.0	130	33.0	12.0	400	0.51
MW-20-100 a	10-Mar-05	2490	-5.2	-49.0	466	511	9.98	ND (1.0)	84.2	133	19.8	8.98	712	0.859
	15-Jun-05	2500	-4.7	-46.0	921	506	9.02	ND (1.0)	84.0	137	21.3	9.06	592	0.713
	11-Oct-05	2400	-5.3	-48.0	887	484	8.87	0.731	82.3	170	23.7	15.2	500	0.718
	15-Dec-05	2340	-5.4	-40.0	813	404	9.65	ND (1.0)	82.7	136	21.4	14.8	406	0.709
	10-Mar-06	2500	-5.6	-50.3	861	475	9.94	ND (0.5)	92.5	171	27.0	7.75	597	0.803
	05-May-06	2260	-5.1	-46.4	927	522	9.99	ND (1.0)	82.5	193	32.0	10.8	577	0.716

Table C-1  
 Chemical Performance Monitoring Analytical Results, March 2005 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
<b>Monitoring Wells</b>														
MW-20-100 <sup>a</sup>	03-Oct-06	2320	-5.8	-51.5	863	456	13.4	ND (5.0)	90.0	202	34.4	10.9 J	568	0.874
	13-Dec-06	1960	-6.2	-54.4	861	459	12.3	0.83	97.5	205	32.2	11.4	579	0.889
	13-Dec-06 FD	2200	-6.2	-54.5	874	457	12.2	0.851	92.5	205	32.2	9.55	575	0.881
	14-Mar-07	2180	-6.8	-57.8	847	477	14.2	0.785	87.5	194	31.7	9.90	521	0.715
	03-May-07	2300	-7.3	-59.2	879	493	23.2	ND (1.0)	87.5	209	36.0	12.0 J	559	0.699
	03-May-07 FD	2330	-6.7	-59.3	888	484	19.7	ND (1.0)	87.5	208	34.6	9.63 J	532	0.686
	10-Oct-07	2160	-7.2	-57.2	858	468	3.25	ND (1.0)	92.0	190	32.0	15.0	560	0.81
	12-Mar-08	2470	-6.9	-58.3	827	442	19.2	ND (1.0)	87.0	218	35.4	11.9	469	0.702
	08-Oct-08	2200	-7.9	-60.2	760	420	16.0	ND (1.0)	90.0	215	36.8	10.3	453	0.669
	13-Mar-09	2200	-7.08	-58.2	770	420	16.0	ND (1.0)	97.0	213	36.4	11.6	543	0.89
	25-Sep-09	2000	-7.67	-62.8	750	400	16.0	ND (2.5)	89.0	200	30.0	12.0	430	0.70
	10-Feb-11	1800	-7.0	-58.8	610	380	15.0	0.57	120	180	28.0	14.0	400	0.81
MW-20-130 <sup>a</sup>	09-Mar-05	5520	-5.8	-56.0	3120	1080	10.9	ND (1.0)	68.9	219	12.1	24.7	2250	1.90
	09-Mar-05 FD	6200	-5.4	-51.0	3080	1080	10.9	ND (1.0)	68.9	231	12.8	25.4	2390	1.99
	15-Jun-05	7790	-5.0	-48.0	3410	1230	11.1	ND (1.0)	68.7	352	23.2	31.3	2980	2.75
	07-Oct-05	7330	-5.0	-47.0	3010	1210	10.9	1.04 J	72.4	349	13.9	38.4	2070	2.41
	16-Dec-05	7860	-5.8	-43.0	3260	1000	10.7	ND (2.5)	63.2	324	16.3	44.4	1780	1.98
	10-Mar-06	8610	-5.5	-48.8	3370	1250	10.6	ND (0.5)	74.5	312	18.9	27.7	2730	2.03
	05-May-06	7700	-5.3	-47.2	3900	1280	8.95	ND (1.0)	69.2	349	20.3	27.7	2810	2.40
	18-Oct-06	8450	-6.3	-51.4	3680	1100	11.5	ND (5.0)	70.0	358	20.9	28.0	2870	2.28
	13-Dec-06	7890	-6.0	-54.9	3970	1250	10.6	0.896	72.5	335	19.7	27.6	2900	2.31
	13-Dec-06 FD	8250	-5.9	-54.4	3950	1260	10.5	1.09	72.5	328	19.1	27.3	2830	2.24
	08-Mar-07	8450	-6.5	-57.7	3930	1240	11.3	1.08	70.0	353	21.3	27.0	2760	2.24
	08-Mar-07 FD	8510	-6.6	-57.4	3900	1210	11.3	1.06	72.5	351	21.3	26.8	2750	2.19

Table C-1  
 Chemical Performance Monitoring Analytical Results, March 2005 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
<b>Monitoring Wells</b>														
MW-20-130	<sup>a</sup> 03-May-07	8150	-7.7	-60.0	4020	1310	9.80 J	ND (1.0)	75.0	338	22.5	27.8	2550	2.49
	03-May-07 FD	8100	-6.9	-60.1	3950	1290	20.4 J	ND (1.0)	72.5	338	21.9	27.3	2550	2.47
	05-Oct-07	7980	-7.0	-57.5	3670	1070	11.6	ND (1.0)	77.0	310	19.0	31.0	2900	2.40
	12-Mar-08	8460	-6.2	-58.7	3690	1220	14.3	ND (1.0)	75.0	342	23.4	47.0	2260	2.07
	08-Oct-08	7800	-7.3	-59.6	3500	1200	12.0	ND (2.5)	81.0	329	22.0	40.1	1990	2.23
	13-Mar-09	8100	-6.58	-56.4	3600	1100	11.0	ND (2.5)	79.0	350	22.7	41.4	2550	2.16
	25-Sep-09	6500	-7.59	-61.7	3500	1100	13.0	ND (2.5)	76.0	280	17.0	33.0	2400	2.00
	10-Feb-11	5900	-6.6	-59.0	3100	1100	13.0	1.00	80.0	310	18.0	50.0	2100	2.20
MW-25	09-Mar-05	877	-8.4	-62.0	247	169	3.64	ND (0.5)	158	77.6	16.1	6.24	211	0.441
	14-Jun-05	942	-8.6	-61.0	289	183	3.89	ND (0.5)	137	93.5	20.0	8.91	253	0.464
	14-Jun-05 FD	980	-7.2	-59.0	294	185	3.94	ND (0.5)	137	100	20.9	9.06	268	0.475
	04-Oct-05	950	-8.2	-68.0	252	171	3.77	ND (0.5)	141	83.3	14.9	9.93	164	0.362
	04-Oct-05 FD	910	-8.3	-60.0	251	171	3.75	ND (0.5)	146	94.6	15.3	10.2	185	0.371
	14-Dec-05	838	-8.4	-55.0	224	158	3.74	ND (0.5)	153	75.5	14.5	9.80	143	0.396
	14-Dec-05 FD	896	-8.4	-50.0	219	155	3.75	ND (0.5)	156	73.0	14.1	9.71	151	0.382
	09-Mar-06	910	-8.4	-64.1	245	164	3.83	ND (0.5)	170	76.4	15.6	6.97	210	0.39
	03-May-06	907	-9.0	-59.4	272	172	3.95	ND (0.5)	150	78.0	17.3	7.38	222	0.418
	03-May-06 FD	924	-9.0	-61.0	274	173	3.94	ND (0.5)	155	79.7	17.8	7.53	245	0.431
	03-Oct-06	892	-8.9	-62.7	222	158	4.09	ND (0.5)	163	73.3	15.0	7.25	206	0.466
	06-Mar-07	843	-9.0	-66.9	221	164	3.95	ND (0.5)	160	72.9	14.4	6.85	203	0.459
	02-Oct-07	796	-9.0	-65.8	189	155	4.58	ND (1.0)	180	66.0	14.0	7.90	200	0.49
	02-Oct-07 FD	758	-9.0	-65.7	195	157	4.40	ND (1.0)	190	63.0	13.0	7.70	220	0.46
	07-Oct-08	740	-9.9	-68.5	170	150	4.30	ND (0.5)	200	59.2	12.9	9.89	143	0.559
	07-Oct-08 FD	730	-10.1	-69.1	170	150	4.40	ND (0.5)	210	58.4	12.9	10.2	144	0.559

Table C-1  
 Chemical Performance Monitoring Analytical Results, March 2005 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
<b>Monitoring Wells</b>														
MW-25	21-Sep-09	660	-8.91	-69.9	180	130	4.30	ND (0.5)	200	64.0	12.0	7.20	180	0.46
	21-Sep-09 FD	650	-8.87	-69.5	180	130	4.30	ND (0.5)	200	64.0	12.0	7.90	190	0.47
	07-Dec-10	780	-9.4	-68.9	220	120	4.80	ND (1.0)	180	74.0	15.0	10.0	180	0.43
MW-26	08-Mar-05	1840	-8.8	-70.0	756	370	4.48	ND (0.5)	98.7	166	41.6	10.7	439	0.557
	08-Mar-05 FD	1800	-8.7	-70.0	708	338	4.45	ND (0.5)	96.1	166	40.9	11.4	438	0.559
	13-Jun-05	2130	-8.2	-65.0	847	371	4.90	ND (0.5)	103	178	44.6	14.0	511	0.663
	04-Oct-05	2120	-7.8	-68.0	779	372	4.88	0.601	109	166	40.4	19.8	352	0.526
	12-Dec-05	2610	-8.5	-55.0	788	372	4.88	0.546	99.7	162	39.9	20.3	349	0.613
	08-Mar-06	2070	-8.6	-60.4	772	324	4.90	ND (0.5)	121	155	38.1	11.7	434 J	0.621
	01-May-06	2130	-8.9	-62.7	927	382	4.87	ND (0.5)	121	165	42.0	12.8	555	0.723
	03-Oct-06	2220	-8.8	-63.0	894	370	6.22	ND (2.5)	105	170	43.9	12.8	510	0.692
	12-Mar-07	2280	-9.0	-67.0	917	387	6.02	0.646	90.0	163	41.6	12.9	621	0.622
	02-Oct-07	2180	-8.6	-66.3	945	391	7.84	ND (1.0)	100	170	42.0	15.0	620	0.66
	12-Mar-08	2500	-8.1	-67.2	908	398	10.7 J	ND (1.0)	103	176	44.1 J	16.2 J	498	0.589
	12-Mar-08 FD	2420	-8.9	-68.2	905	398	7.61 J	ND (1.0)	102	160	32.8 J	12.7 J	462	0.601
	08-Oct-08	2400	-8.7	-66.5	930	440	10.0	ND (1.0)	110	183	45.8	14.6	555	0.591
	10-Mar-09	2300	-8.41	-65.3	870	440 J	9.80	1.40	100	172	47.9	14.8	585	0.604
	10-Mar-09 FD	2300	-8.68	-65.8	860	440 J	9.70	1.50	100	174	46.2	15.6	631	0.65
	22-Sep-09	2200	-9.04	-68.3	870	450	10.0	ND (1.0)	100	170	39.0	14.0	550	0.59
	15-Dec-10	---	---	---	900	480	12.0	---	100	180	40.0	---	560	---
MW-27-20	08-Mar-05	1250	-12	-102.0	190	432	ND (0.5)	ND (0.5)	215	137	56.6	4.89	195	ND (0.2)
	18-Jul-05	---	-11.9	-98.0	81.9	228	ND (0.5)	ND (0.5)	160	96.1	30.1	4.27	94.8	ND (0.2)
	05-Oct-05	742	-11.8	-102.0	91.1	252	ND (0.5)	ND (0.5)	175	88.6	31.4	5.48	81.0	ND (0.2)
	14-Dec-05	1020	-11.7	-91.0	118	347	ND (0.5)	ND (0.5)	216	116	41.8	6.96	116	ND (0.2)

Table C-1  
 Chemical Performance Monitoring Analytical Results, March 2005 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
<b>Monitoring Wells</b>														
MW-27-20	06-Mar-06	664	-12.1	-90.9	89.7	231	ND (0.2)	ND (0.2)	385	89.1	28.8	4.90	103	ND (0.2)
	14-Jun-06	730	-12	-89.8	98.3	272	ND (0.5)	ND (0.5)	195	91.1	28.5	2.79 J	96.9	ND (0.2)
	03-Oct-06	600	-13.1	-96.6	90.8	261	ND (0.5)	ND (0.5)	160	102	34.5	6.45	113	ND (0.2)
	02-Oct-07	802	-12.5	-96.3	102	320	ND (1.0)	ND (1.0)	170	97.0	34.0	5.30	150	0.22
	03-Oct-08	---	---	---	94.0	240	ND (0.5)	---	---	87.9	29.5	---	110	---
	01-Oct-09	---	---	---	88.0	230	ND (0.5)	---	130	84.0	25.0	---	87.0	---
	07-Dec-10	---	---	---	86.0	220	ND (0.5)	---	200	87.0	29.0	---	93.0	---
MW-28-25	10-Mar-05	880	-12.2	-95.0	112	302	ND (0.5)	ND (0.5)	204	129	36.3	3.50	122	ND (0.2)
	15-Jun-05	974	-11.6	-91.0	108	359	ND (0.5)	ND (0.5)	221	133	38.9	6.54	117	ND (0.2)
	06-Oct-05	884	-11.7	-95.0	99.8	300	ND (0.5)	ND (0.5)	197	123	37.0	6.61	88.7	ND (0.2)
	16-Dec-05	1010	-11.4	-90.0	128	348	ND (0.5)	ND (0.5)	212	134	41.5	6.46	107	ND (0.2)
	09-Mar-06	746	-11.5	-93.9	84.4	225	ND (0.5)	ND (0.5)	244	98.5	27.5	4.15 J	88.5	ND (0.2)
	05-May-06	741	-11.4	-90.3	110	302	ND (0.5)	ND (0.5)	216	117	35.7	5.77	118	ND (0.2)
	11-Oct-06	1050	-12.2	-95.0	86.3	247	ND (0.5)	ND (0.5)	225	133	40.8	5.47	132	ND (0.2)
	04-Oct-07	812	-12.1	-98.7	110	307	ND (1.0)	ND (1.0)	230	120	37.0 J	4.80	150	0.26 J
	08-Oct-08	---	---	---	100	280	ND (0.5)	---	220	109	34.7	---	102	---
	24-Sep-09	---	---	---	94.0	240	ND (0.5)	---	200	100	27.0	---	100 J	---
	08-Dec-10	---	---	---	90.0	230	ND (0.5)	---	190	110	31.0	---	95.0	---
MW-30-30	10-Mar-05	38800	-9.8	-79.0	16000	4270	ND (5.0)	7.91	421	1590	1600	95.4	13600	4.97
	07-Oct-05	36400	-8.5	-75.0	17600	4000	ND (0.5)	ND (10)	521	1020	842	93.6	7650	5.20
	15-Dec-05	35700	-8.7	-59.0	19700	4070	ND (1.0)	3.13	504	1060	894	110	8540	6.14
	13-Mar-06	39700 J	-8.8	-70.5	18600	4530	ND (0.5)	ND (50)	650	1050	892	77.2	11300	4.62
	02-May-06	32400	-10.3	-70.7	15400	3300	ND (0.5)	ND (5.0)	756	882	828	59.4	10300	3.95
	10-Oct-06	29400	-9.4	-68.7	17800	4400	ND (2.5)	ND (2.5)	550	729	653	55.0	10200	4.32

Table C-1  
 Chemical Performance Monitoring Analytical Results, March 2005 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
<b>Monitoring Wells</b>														
MW-30-30	08-Oct-07	27400	-9.0	-73.9	13700	3370	ND (1.0)	3.88	800	650	540	56.0	9600	4.50
	24-Sep-09	---	---	---	5800	1700	ND (5.0)	---	550	280	220	---	3800	---
	07-Dec-10	---	---	---	7200	1900	ND (1.0)	---	790	390	290	---	4800	---
MW-30-50	10-Mar-05	6470 J	-8.3	-68.0	4660	672	ND (0.5)	1.03	324	335	107	16.5	2040	1.15
	07-Oct-05	6860	-9.4	-79.0	3060	857	ND (0.5)	0.899 J	252	438	101	37.0	1780	1.27
	16-Dec-05	5850	-10.5	-65.0	2360	578	ND (0.5)	0.645	212	265	77.9	32.9	1260	1.19
	09-Mar-06	5380	-9.8	-83.5	2420	651	ND (0.5)	ND (0.5)	275	226	66.2	14.6	1640	1.18
	02-May-06	5420	-10.4	-73.6	2380	612	ND (0.5)	3.41	261	243	70.3	16.4	1750	1.22
	11-Oct-06	4170	-10.7	-82.2	1980	468	ND (0.5)	ND (0.5)	290	171	48.5	14.0	1370	1.11
	11-Oct-06 FD	3930	-11	-82.6	1810	462	ND (0.5)	ND (0.5)	298	163	46.1	14.1	1340	1.08
	24-Sep-09	---	---	---	---	---	---	---	220	19.0	4.80	---	270	---
	07-Dec-10	---	-12.2	-97.5	140	220	ND (0.5)	---	200	15.0	4.20	---	260	---
MW-31-60	09-Mar-05	1540	-8.6	-63.0	649	210	4.94	ND (0.5)	76.6	108	17.3	5.97	424	0.401
	13-Jun-05	1660	-8.2	-65.0	745	207	4.12	ND (0.5)	70.0	121	18.9	6.57	403	0.388
	06-Oct-05	1660	-8.6	-65.0	691	206	4.01	ND (0.5)	77.3	109	16.5	9.75	308	0.462
	13-Dec-05	1620	-8.7	-54.0	669	199	4.14	ND (0.5)	73.0	87.0	15.4	9.32	275	0.359
	15-Mar-06	1560 J	-8.6	-65.6	661	191	4.37	ND (0.5)	89.3	106	17.5	7.30	403	0.393
	15-Mar-06 FD	1640 J	-8.6	-64.9	662	192	4.34	ND (0.5)	81.9	101	16.8	6.94	391	0.383
	01-May-06	1630	-9.6	-63.2	691	209	4.58	ND (0.5)	79.6	118	20.1	7.78	467	0.449
	05-Oct-06	1620	-9.4	-66.3	687	205	5.00	ND (0.5)	80.0	113	20.6	9.60 J	325	0.464
	12-Mar-07	1750	-9.3	-69.0	757	222	4.93	ND (0.5)	72.5	116	20.3	6.05	454	0.402 J
	04-Oct-07	1720	-9.4	-69.6	799	208	5.15	ND (1.0)	80.0	150	26.0	7.30	580	0.64
	06-Oct-08	2000	-10.2	-72.2	810	240	4.20	ND (1.0)	81.0	150	26.0	9.39	460	0.399
	21-Sep-09	1800	-9.23	-72.1	870	220	3.70	ND (1.0)	75.0	160	26.0	9.60	480	0.43

Table C-1  
 Chemical Performance Monitoring Analytical Results, March 2005 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
<b>Monitoring Wells</b>														
MW-31-60	15-Dec-10	2000	-9.0	-69.3	840	210	3.50	ND (0.5)	78.0	170	27.0	12.0	440	0.43
MW-32-20	09-Mar-05	12500	-7.2	-65.0	6930	1660	ND (0.5)	3.51	123	838	302	36.9	4000	2.76
	17-Jun-05	10200	-9.0	-67.0	4810	690	ND (0.5)	ND (2.5)	676	566	231	23.3	2620	1.75
	04-Oct-05	28800	-7.8	-65.0	14200	2420	ND (5.0)	6.19	733	1380 J	613 J	91.1 J	5400 J	4.75 J
	16-Dec-05	24600	-7.8	-61.0	12200	2140	ND (1.0)	3.48	861	1470	552	90.4	4950	4.16
	10-Mar-06	20900	-8.3	-65.5	10600	1970	ND (0.5)	ND (0.5)	432	1350	530	56.1	6440	3.54
	04-May-06	16900	-8.1	-64.9	9430	1380	ND (0.5)	2.35	218	937	445	46.0	4780	2.87
	02-Oct-06	46200 J	-8.6	-67.1	20200	3190	ND (2.5)	7.30	660	1870	1070	87.0	11300	6.34
	11-Dec-06	37900	-8.0	-67.0	17900	3020	ND (5.0)	7.67	825	1530	785	81.7	8420	4.98
	06-Mar-07	27600	-8.7	-72.7	16200	2210	0.925	5.93	765	1460	635	64.4	7110	3.92
	30-Apr-07	17700	-9.6	-78.1	9820	1310	ND (0.2)	3.78	770	965	484	51.4	5520	3.02
	01-Oct-07	37200	-8.3	-70.1	20600	3160	ND (1.0)	6.44	700	1800	1100	93.0	9900	5.70
	10-Mar-08	26000	-9.4	-72.6	15800	2280	ND (1.0)	5.66	800	1190	710	67.4	11600	2.31
	03-Oct-08	---	---	---	21000	3500	ND (5.0)	---	640	1700	1080	---	9550	---
	10-Mar-09	29000	-8.91	-70.5	15000	2100 J	ND (5.0)	15.0	750	1620	970	96.6	7020	3.53
22-Sep-09	---	---	---	20000	3600	ND (5.0)	---	730	1800	740	---	9300	---	
08-Dec-10	---	---	---	17000	4100	ND (5.0)	---	830	1600	720	---	11000	---	
MW-32-35	09-Mar-05	3560	-8.2	-68.0	1770	465	ND (0.5)	0.845	260	312	85.5	13.0	944	1.07
	17-Jun-05	7550	-9.5	-72.0	3520	787	ND (0.5)	ND (2.5)	223	506	120	14.8	2110	1.18
	04-Oct-05	8340	-8.3	-70.0	3840	765	ND (0.5)	ND (5.0)	208	567	134	29.3	1530	1.26
	16-Dec-05	7660	-8.8	-63.0	3510	710	ND (1.0)	1.02	219	606	128	30.0	1580	1.25
	10-Mar-06	9230	-8.6	-74.0	4210	1010	ND (0.5)	ND (0.5)	234	654	129	19.2	2360	1.13
	04-May-06	9840	-9.1	-67.8	4960	1130	ND (0.5)	ND (0.5)	218	693	148	19.5	2800	1.38
	02-Oct-06	11200	-9.4	-71.4	5430	1050	ND (2.5)	ND (2.5)	290	839	165	23.9	3260	1.48

Table C-1

Chemical Performance Monitoring Analytical Results, March 2005 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
<b>Monitoring Wells</b>														
MW-32-35	11-Dec-06	10400	-9.0	-70.4	5090	1000	ND (0.5)	1.90	338	845	173	22.5	2620	1.43
	06-Mar-07	12600	-10.2	-75.4	6070	1200	ND (0.5)	2.65	360	1080	209	23.5	2910	1.35
	30-Apr-07	12100	-9.9	-78.7	6610	1280	ND (0.2)	2.60	475	1250	273	26.2	3280	1.35
	01-Oct-07	13700	-8.9	-72.7	6830	1120	ND (1.0)	2.62	490	1000	390	29.0	4000	1.70
	03-Oct-08	15000	-9.8	-73.1	7600	1300	ND (2.5)	3.10	550	829	150	52.3	3490	1.49
	22-Sep-09	13000	-9.32	-75.2	6900	1400	ND (2.5)	2.80	530	880	400	53.0	3100	1.70
	09-Dec-10	11000	-10.2	-84.2	5500	1600	ND (2.5)	ND (2.5)	590	750	390 J	51.0 J	3000	1.70 J
MW-34-55	10-Mar-05	6230	-10.8	-82.0	2620	739	ND (0.5)	0.654	240	366	71.3	29.1	1900	1.19
	15-Jul-05	---	-10.3	-84.0	2250	607	ND (0.5)	ND (0.5)	242	247	52.0	16.5	1420	1.02
	05-Oct-05	5150	-10.6	-88.0	2170	619	ND (0.5)	ND (0.5)	232	272	59.1	25.8	1230	1.20
	14-Dec-05	5100	-10.8	-74.0	2150	552	ND (0.5)	0.588	236	217	45.0	27.2	965	0.937
	08-Mar-06	4850	-10.8	-86.8	2080	593	ND (0.5)	ND (0.5)	272	256	54.2	13.5	1640	0.956
	03-May-06	4320	-11.5	-84.3	2070	500	ND (0.5)	ND (0.5)	302	198	44.8	11.1	1360	0.846
	04-Oct-06	1680 J	-12.2	-94.8	443	230	ND (0.5)	ND (0.5)	368	37.6	8.08	4.59	536	0.54
	03-Oct-07	730	-11.3	-96.6	109	266	ND (1.0)	ND (1.0)	190	15.0	3.30	3.30	290	0.26
	07-Oct-08	700	-13	-100.0	100	250	ND (0.5)	---	170	72.4	16.9	5.26	192	0.248
	30-Sep-09	700	-12.3	-101.0	---	---	---	---	160	77.0	17.0	4.40	120	0.15
	07-Dec-10	590	-12.1	-98.8	87.0	230	ND (0.5)	ND (0.5)	140	81.0	19.0	5.10	100	0.10
MW-34-80	08-Mar-05	6940	-10.4	-83.0	4180	1040	ND (0.5)	1.01	304	439	68.1	28.0	2750	1.65
	15-Mar-05	8980	---	---	3920	ND (5.0)	ND (1.0)	---	288	445	65.7	29.7	2990	---
	30-Jun-05	7840	-8.4	-82.0	3910	979	ND (0.5)	ND (0.5)	302	497	76.5	27.7	2670	1.66
	05-Oct-05	10200	-10.1	-85.0	3880	1060	ND (0.5)	ND (0.5)	302	429	72.5	47.4	1660	1.57
	14-Dec-05	8800	-10.2	-71.0	3700	880	ND (0.5)	0.854	297	432	68.3	54.9	1710	1.54
	09-Mar-06	7830	-9.9	-86.8	3520	986	ND (0.5)	ND (0.5)	313	383	65.8	24.0	2420	1.49

Table C-1  
 Chemical Performance Monitoring Analytical Results, March 2005 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
<b>Monitoring Wells</b>														
MW-34-80	03-May-06	7950	-11.7	-77.6	3700	921	ND (0.5)	ND (0.5)	297	425	70.3	23.9	2480	1.38
	04-Oct-06	7080	-11.3	-81.8	3210	786	ND (0.5)	0.737	268	341	65.4	21.1	2170	1.31
	12-Dec-06	6510	-10.5	-80.9	3190	789	ND (0.5)	0.742	288	298	62.9	18.9	2040	1.26
	05-Mar-07	6360 J	-11.5	-85.8	3300	783	ND (0.5)	0.72	205	315	68.3	19.4	2020	1.29
	30-Apr-07	6390	-11.5	-88.9	3320 J	889 J	ND (0.2)	ND (1.0)	245	282	57.0	18.6	2080	1.33
	03-Oct-07	5490	-11.3	-87.8	2630	696	ND (1.0)	ND (1.0)	240	220	53.0	21.0	2000	1.20
	13-Dec-07	5420	-10.9	-88.6	2380	698	ND (1.0)	ND (1.0)	264	193	49.1	25.4	1450	1.09
	12-Mar-08	5500	-11.4	-87.3	2510	739	ND (1.0)	ND (1.0)	238	237	52.6	19.2	2030	1.14
	06-May-08	5820	-11.4	-87.3	2460	753	ND (0.2)	0.525	216	230	49.0	30.0	1600	1.20
	07-Oct-08	5300	-11.8	-87.6	2400	720	ND (2.0)	ND (2.0)	250	223	46.3	22.0	1220	0.765
	10-Dec-08	5300	-11	-93.1	2190	698	ND (1.0)	ND (1.0)	253	147	45.2	20.6	3880	1.11
	10-Mar-09	5100	-10.9	-84.8	2300	700 J	ND (2.5)	ND (2.5)	240	219	46.3	22.2	1480	1.08
	30-Apr-09	5830	-11.5	-85.8	2340	768	ND (1.0)	ND (1.0)	237	219	50.0	24.6	1510	1.11
	30-Sep-09	4000	-10.8	-88.9	2300	710	ND (1.0)	ND (1.0)	230	240	46.0	22.0	1500	0.98
	09-Dec-09	4580	-11.9	-89.1	2200	690	ND (1.0)	ND (1.0)	230	---	---	---	---	---
	10-Mar-10	4900	-12.1	-91.6	2100	660	ND (1.0)	ND (1.0)	240	220 J	41.0	28.0	1400 J	0.93
	07-Dec-10	4600	-11.1	-87.3	2300	700	ND (1.0)	ND (1.0)	220	240	47.0	24.0	1300	1.00
MW-34-100	14-Mar-05	10800	---	---	5010	1210	ND (1.0)	---	175	221	17.4	34.1	3600	---
	21-Jun-05	11300	-9.7	-75.0	5350	1270	1.05	ND (0.5)	179	229	17.4	27.1	3510	2.22
	21-Jun-05 FD	10900 J	-9.5	-77.0	4920	1180	1.03	ND (0.5)	179	243	18.2	32.1	3740	2.36
	05-Oct-05	10400	-9.9	-83.0	4530	1150	1.20	ND (0.5)	172	171	13.8	55.2	2450	2.57
	05-Oct-05 FD	10400	-9.9	-83.0	4680	1200	1.21	ND (0.5)	172	228	14.1	50.9	2730	2.57
	14-Dec-05	---	---	---	---	---	---	---	---	226	14.9	62.9	2530	2.32
	14-Dec-05 FD	---	---	---	---	---	---	---	---	220	15.1	64.2	2530	2.40

Table C-1  
 Chemical Performance Monitoring Analytical Results, March 2005 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
<b>Monitoring Wells</b>														
MW-34-100	08-Mar-06	10000	-11.4	-75.5 J	4720	1180	1.39	---	152	179	12.1	32.5	3580	2.41
	08-Mar-06 FD	10100	-10.1	-102 J	4920	1220	1.39	---	159	182	11.9	36.5	3530	2.46
	30-Apr-07	10600	-10.9	-80.7	5920	1040	1.38	---	123	186	12.0	31.5	3840	2.39
	30-Apr-07 FD	11900	-11.2	-82.1	5880	1050	1.37	---	123	189	12.0	32.1	3920	2.40
	03-Oct-07	10700	-10.2	-78.2	5350	970	1.19	ND (1.0)	120	170	11.0	44.0	4300	2.50
	03-Oct-07 FD	10500	-10.6	-78.4	5360	953	1.03	ND (1.0)	120	160	10.0	43.0	4300	2.40
	07-Oct-08	11000	-10.9	-80.8	5400	1200	ND (2.5)	ND (2.5)	140	158	10.6	54.5	2970 J	2.35
	07-Oct-08 FD	11000	-11	-81.3	5600	1200	ND (2.5)	ND (2.5)	140	184	11.5	56.7	3880 J	2.59
	30-Sep-09	---	---	---	5500	1300	ND (5.0)	---	170	200	11.0	73.0	3800	2.30
	30-Sep-09 FD	---	---	---	5600	1300	ND (5.0)	---	170	---	---	---	---	---
	17-Nov-09	11000	-10.5	-82.4	---	---	---	ND (1.0)	---	---	---	---	---	---
	08-Dec-10	10000	-9.8	-79.5	5800	1300	ND (2.5)	ND (2.5)	140 J	190	9.60	52.0 J	4100	2.60
	08-Dec-10 FD	9900	-10	-80.4	5700	1200	ND (1.0)	ND (1.0)	89.0 J	180	9.80	60.0 J	4000	2.50
MW-50-200 <sup>a</sup>	10-Feb-11	---	---	---	6900	1000	6.40	---	39.0	590	32.0	75.0	4100	---
	10-Feb-11 FD	---	---	---	7000	1100	6.10	---	39.0	570	31.0	73.0	4000	---
PGE-8 <sup>a</sup>	10-Feb-11	---	---	---	6100	2000	ND (2.5)	---	53.0	870	20.0	96.0 J	3800	---
<b>Surface Water Stations</b>														
R-27	07-Mar-05	669	-12.3	-102.0	92.7	244	ND (0.5)	ND (0.5)	136	82.8	31.3	4.72	108	ND (0.2)
	14-Jun-05	686	-11.4	-92.0	90.9	266	ND (0.5)	ND (0.5)	127	81.9	29.8	6.04	98.9	ND (0.2)
	05-Oct-05	678	-11.6	-94.0	85.1	255	ND (0.5)	ND (0.5)	130	101	36.2	6.56	91.2	ND (0.2)
	16-Dec-05	718	-11.7	-87.0	87.9	253	ND (0.5)	ND (0.5)	126	85.5	29.5	5.99	75.6	ND (0.2)
	06-Mar-06	656	-11.8	-92.1	90.6	268	ND (0.5)	ND (0.5)	144	83.5	29.4	5.44 J	101	ND (0.2)
	03-May-06	567	-12.8	-93.9	93.1	267	ND (0.5)	ND (0.5)	139	87.0	31.1	3.12 J	106	ND (0.2)
	04-Oct-06	752 J	-12.2	-94.9	91.5	261	ND (0.5)	ND (0.5)	128	82.9	31.5	6.24 J	98.1	ND (0.2)

Table C-1  
 Chemical Performance Monitoring Analytical Results, March 2005 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
<b>Surface Water Stations</b>														
R-27	20-Dec-06	680	-12.7	-98.1	94.5	266	ND (0.5)	ND (0.5)	138	83.2	30.9	3.64	106	ND (0.2)
	13-Mar-07	750 J	-13	-99.5	96.5	267	0.537	ND (0.5)	130	86.9	31.3	4.73	106	ND (0.2)
	08-May-07	715 J	-12.9	-104.0	92.6	269	ND (0.5)	ND (0.5)	143	84.3	29.8	5.55	100	ND (0.2)
	11-Sep-07	650	-12.5	-101.0	89.4	253	0.336	ND (0.2)	132	74.2	28.9	5.47	86.5	ND (0.2)
	05-Dec-07	---	-11.7	-99.0	94.7	256	ND (1.0)	ND (0.2)	137	89.8	31.7	6.60	93.4	0.157
	02-Apr-08	---	---	---	93.0	267	ND (1.0)	ND (1.0)	136	80.2	30.7	5.50	106	0.432
	17-Jun-08	682	-13	-101.0	91.6	254	ND (1.0)	ND (1.0)	134	76.2	31.8	6.69	89.7	ND (0.2)
R-28	08-Mar-05	651	-12.5	-102.0	90.4	231	ND (13)	ND (0.5)	132	83.7	31.4	5.02	107	ND (0.2)
	14-Jun-05	680	-11.6	-95.0	91.2	268	ND (0.5)	ND (0.5)	127	78.5	28.5	5.08	94.5	ND (0.2)
	05-Oct-05	672	-11.6	-94.0	85.5	255	ND (0.5)	ND (0.5)	122	85.7	30.4	6.30	77.0	ND (0.2)
	16-Dec-05	710	-11.5	-83.0	88.1	254	ND (0.5)	ND (0.5)	126	87.2	29.8	6.11	76.8	ND (0.2)
	06-Mar-06	675	-12.3	-93.4	91.0	270	ND (0.5)	ND (0.5)	146	76.6	26.6	5.22 J	91.5	ND (0.2)
	03-May-06	586	-13	-92.1	93.4	270	ND (0.5)	ND (0.5)	136	88.1	31.4	4.04 J	107	ND (0.2)
	04-Oct-06	644 J	-12.6	-95.3	90.9	259	ND (0.5)	ND (0.5)	133	84.2	32.1	6.17 J	96.5	ND (0.2)
	20-Dec-06	615	-12.4	-99.6	93.3	262	ND (0.5)	ND (0.5)	143	85.7	32.0	4.66	108	ND (0.2)
	14-Mar-07	710	-12.8	-100.0	96.7	268	0.534	ND (0.5)	133	87.9	31.0	5.71	105	ND (0.2)
	09-May-07	690	-13	-102.0	95.8	271	ND (0.5)	ND (0.5)	143	86.1	30.5	5.92	103	ND (0.2)
	12-Sep-07	682	-12.4	-99.4	106	296	0.372	ND (0.2)	122	73.8	29.9	6.36	89.2	ND (0.2)
	06-Dec-07	---	-11.7	-98.6	96.5	258	0.345	ND (0.2)	139	75.7	30.4	6.62	79.4	ND (0.2)
	02-Apr-08	---	---	---	92.5	309	ND (1.0)	ND (1.0)	137	84.7	31.4	5.58	108	0.467
	18-Jun-08	672	-13.2	-102.0	89.4	248	ND (1.0)	ND (1.0)	132	43.3	31.1	6.95	93.9	ND (0.2)
	17-Sep-08	640	---	---	91.4	256	ND (0.5)	ND (0.5)	132	83.4	31.2	6.48	78.0	ND (0.2)
	04-Dec-08	649	-11.9	-97.0	97.4	260	ND (1.0)	ND (1.0)	135	81.7	30.0	5.95	114	0.262
	21-Jan-09	652	-12	-96.7	91.5	253	ND (0.5)	ND (0.5)	134	79.2	27.8	6.01	91.7	ND (0.2)

Table C-1

Chemical Performance Monitoring Analytical Results, March 2005 through March 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
<b>Surface Water Stations</b>														
R-28	09-Apr-09	643	-12.4	-97.8	92.7	250	ND (1.0)	ND (0.5)	138	79.6	28.8	5.44	97.0	ND (0.2)
	08-Jul-09	632	-12.8	-98.6	84.5	239	ND (0.5)	ND (0.5)	131	79.6	27.3	6.17	86.9	ND (0.2)
	09-Sep-09	640	-12.5	-99.1	86.0	236	ND (1.0)	ND (1.0)	131	74.8	26.2	6.01	78.7	ND (0.2)
	14-Dec-09	612	-13	-98.3	89.7	244	ND (1.0)	ND (1.0)	131	73.5	26.7	4.98	88.2	ND (0.2)
	21-Dec-10	602	-12.1	-102.0	91.0	223	ND (0.5)	ND (0.5)	133	69.1	24.8	4.75	87.8	ND (0.2)

## NOTES:

FD = field duplicate sample

ND = parameter not detected at the listed reporting limit

J = concentration or reporting limit estimated by laboratory or data validation

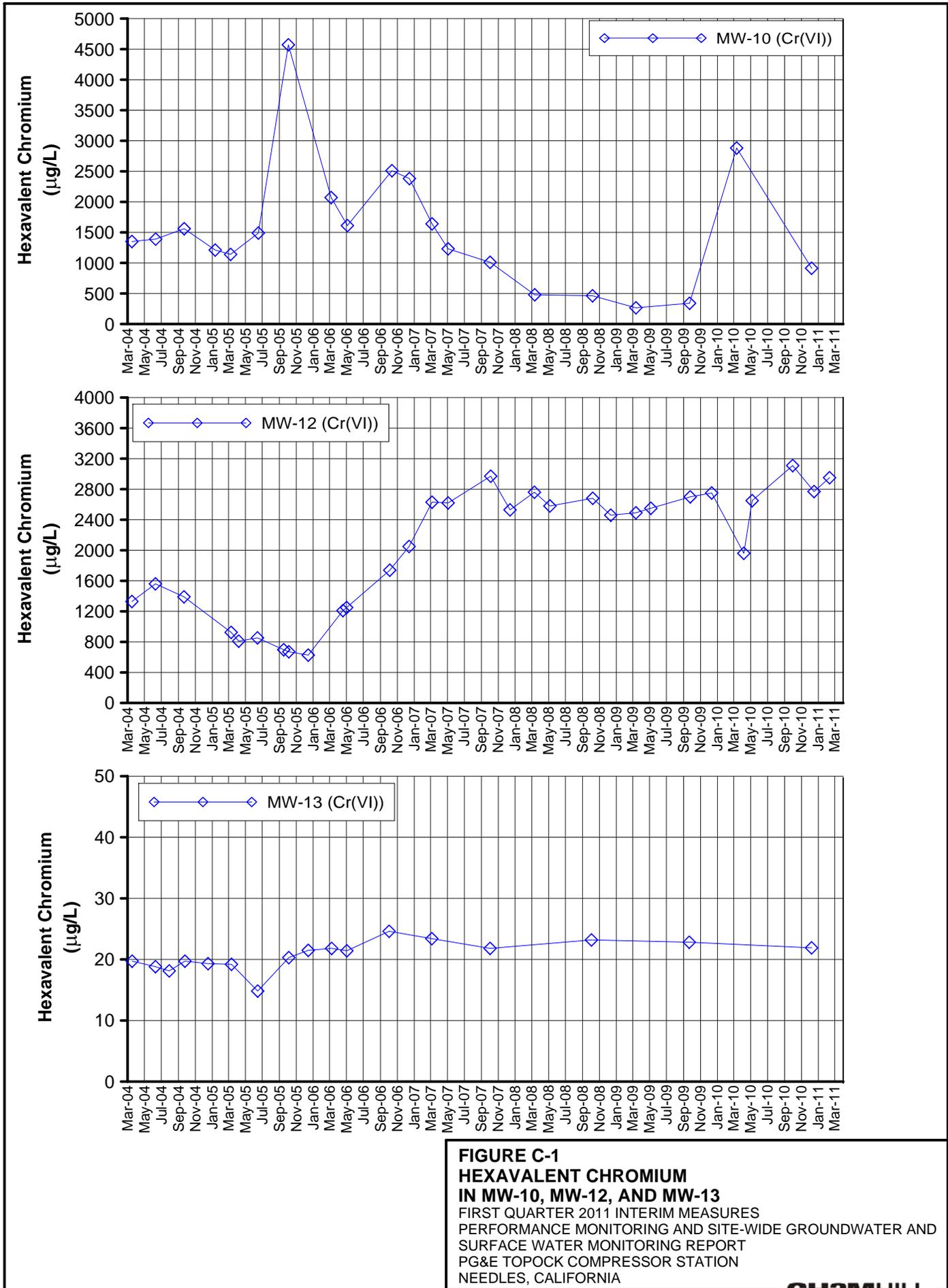
R = result exceeded analytical criteria for precision and accuracy; should not be used for project decisionmaking

--- = data not collected or available

<sup>a</sup> Data collected February 2011 due to field logistical issues.

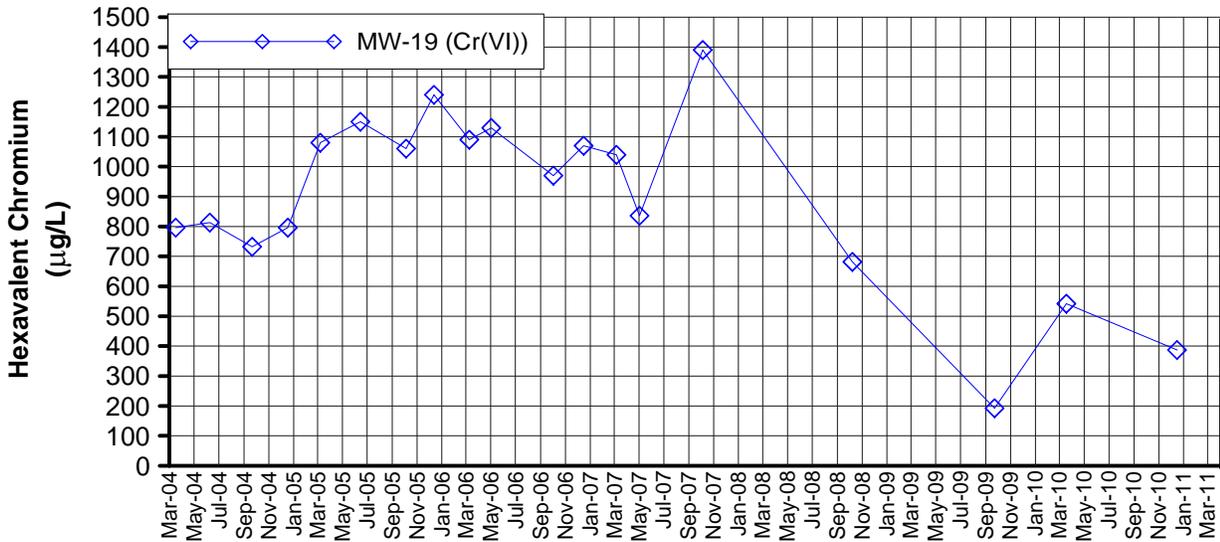
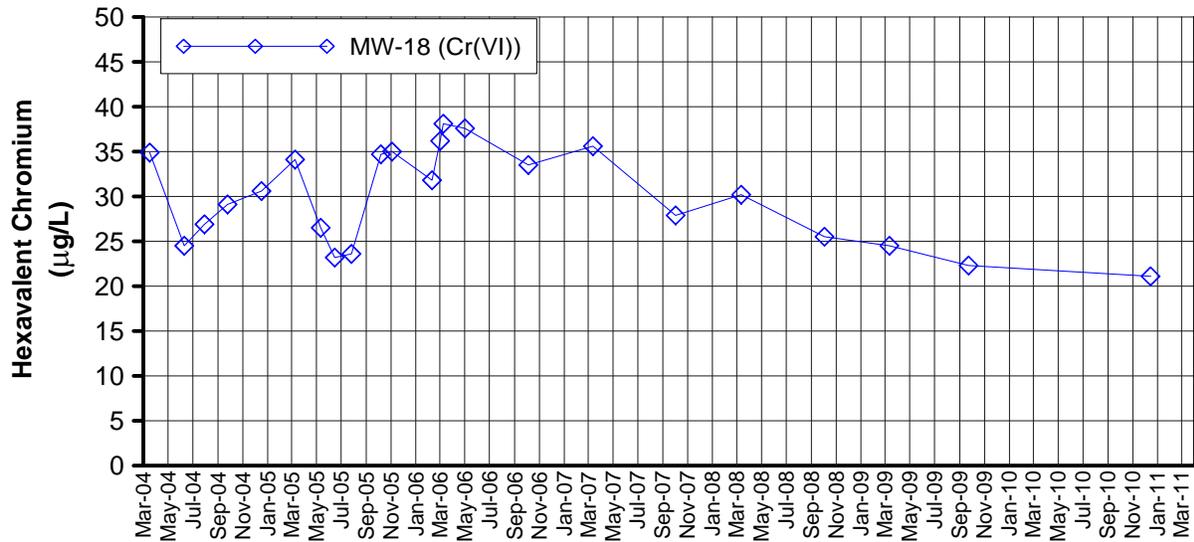
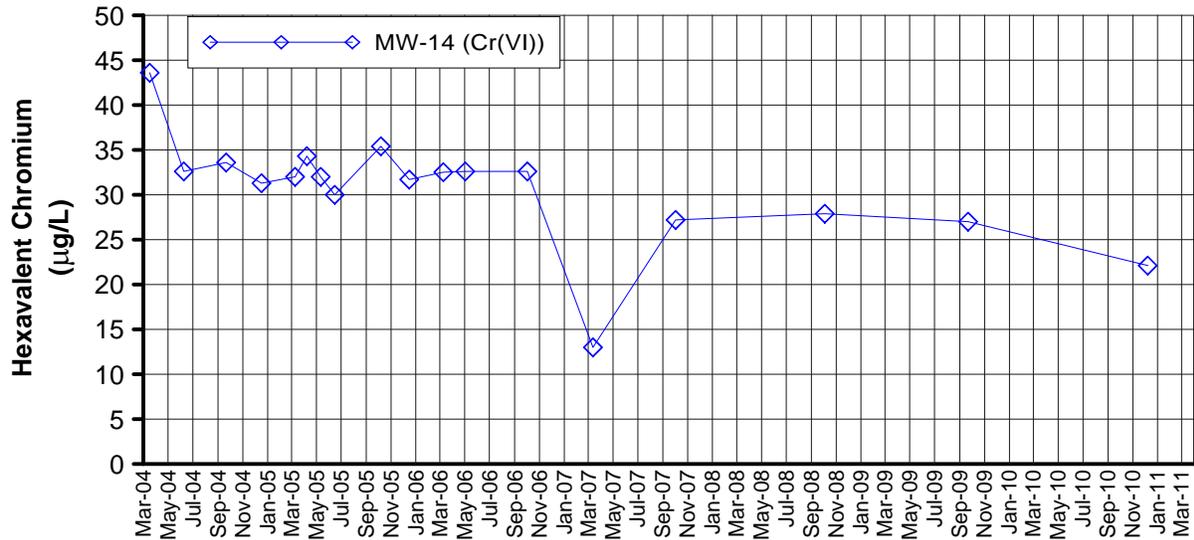
General chemistry results in milligrams per liter (mg/L), except Oxygen-18 and Deuterium, which are expressed as differences from global standards in parts per thousand.

Alkalinity (total) reported as calcium carbonate. Nitrate reported as Nitrogen (N).



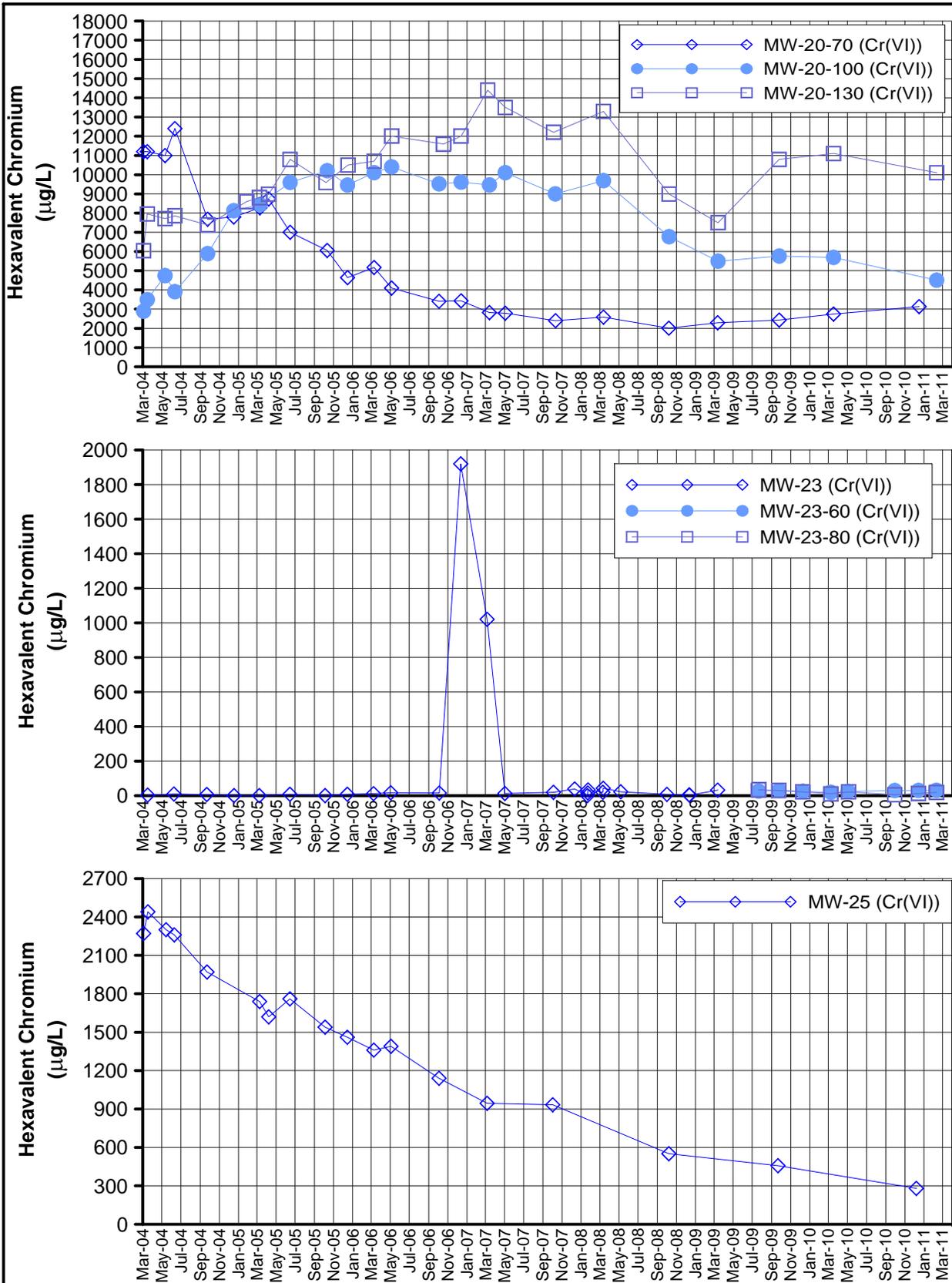
**FIGURE C-1  
HEXAVALENT CHROMIUM  
IN MW-10, MW-12, AND MW-13**  
FIRST QUARTER 2011 INTERIM MEASURES  
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA





**FIGURE C-2**  
**HEXAVALENT CHROMIUM**  
**IN MW-14, MW-18, AND MW-19**  
 FIRST QUARTER 2011 INTERIM MEASURES  
 PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
 SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA

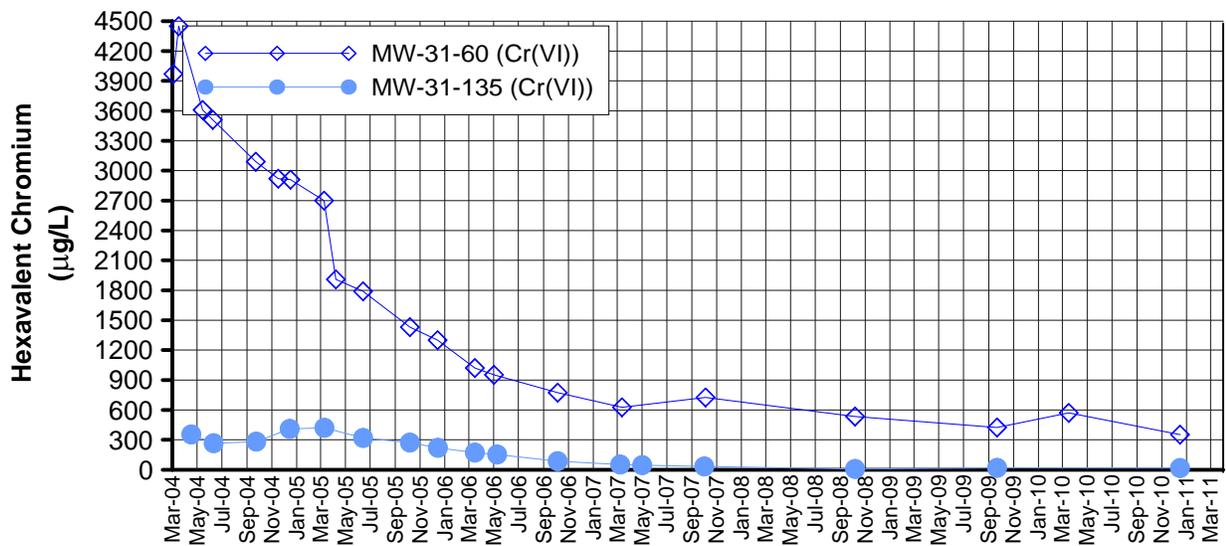
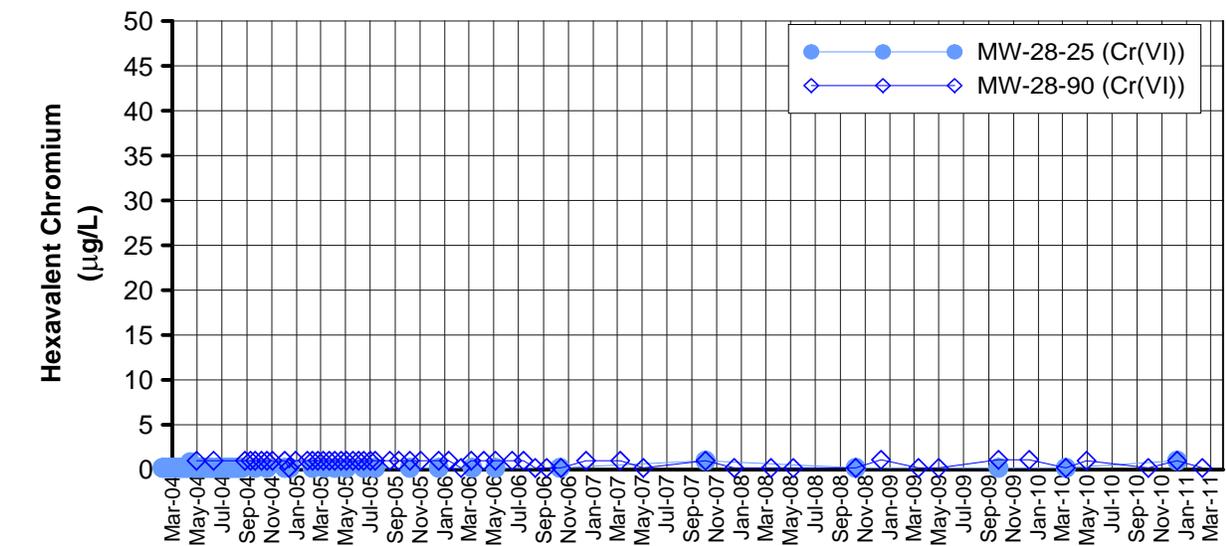
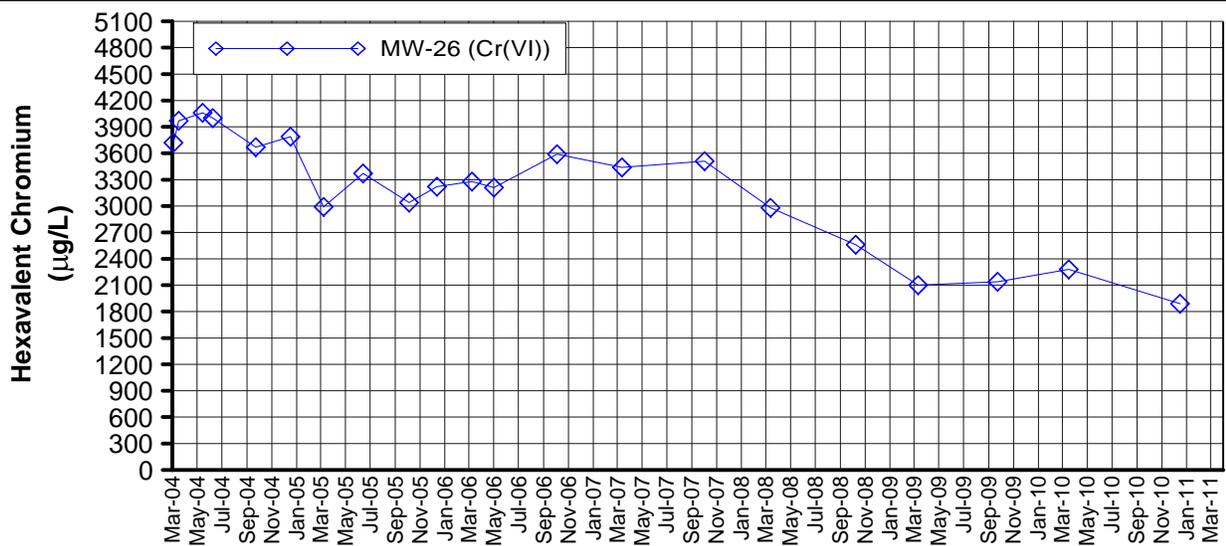




**Notes:**

1) Fourth Quarter 2010 data for MW-20-100 and MW-20-130 collected in February 2011 due to logistical issues.

**FIGURE C-3  
HEXAVALENT CHROMIUM  
IN MW-20, MW-23, AND MW-25 CLUSTERS**  
FIRST QUARTER 2011 INTERIM MEASURES  
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

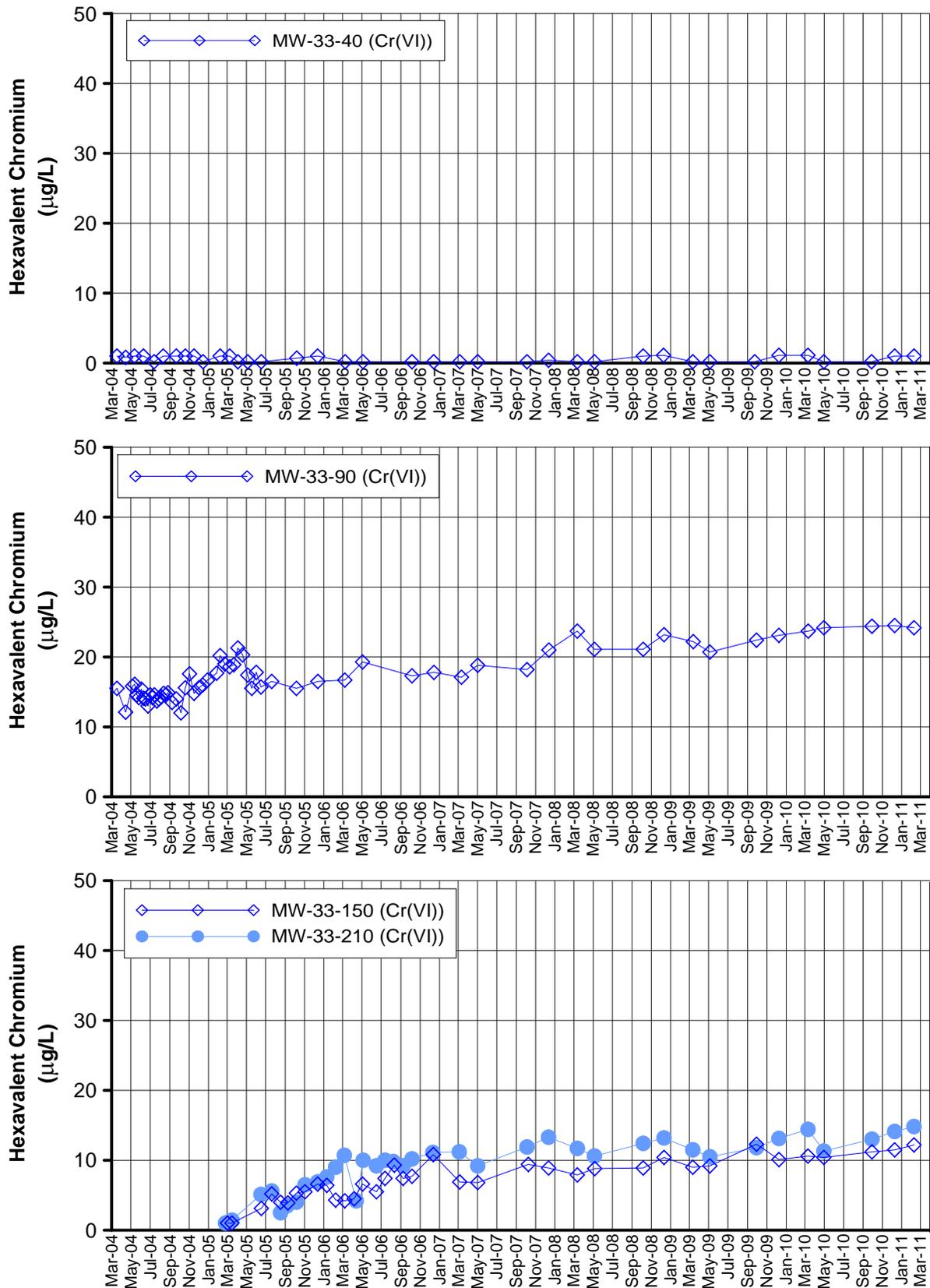


**Notes:**

- 1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
- 2) The trigger level for MW-28-90 is 20 µg/L.

**FIGURE C-4**  
**HEXAVALENT CHROMIUM**  
**IN MW-26, MW-28, AND MW-31 CLUSTERS**  
 FIRST QUARTER 2011 INTERIM MEASURES  
 PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
 SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA





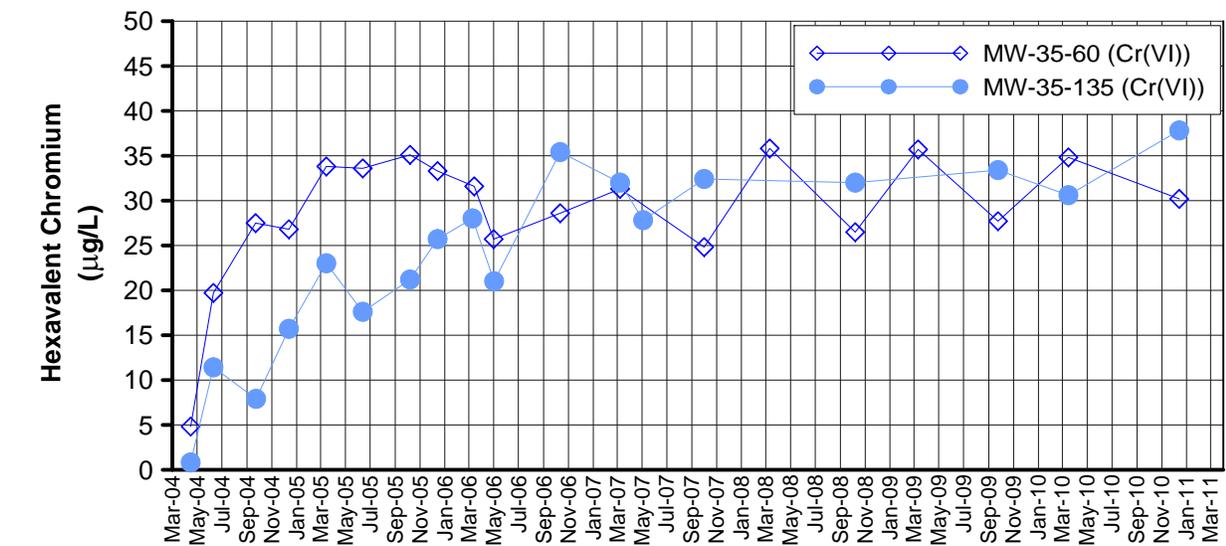
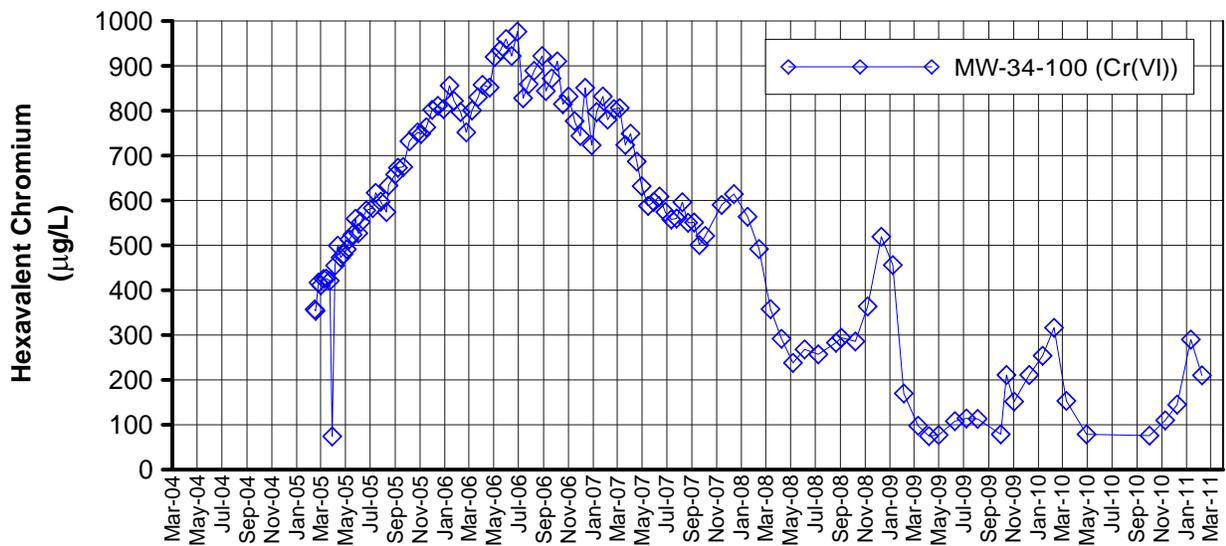
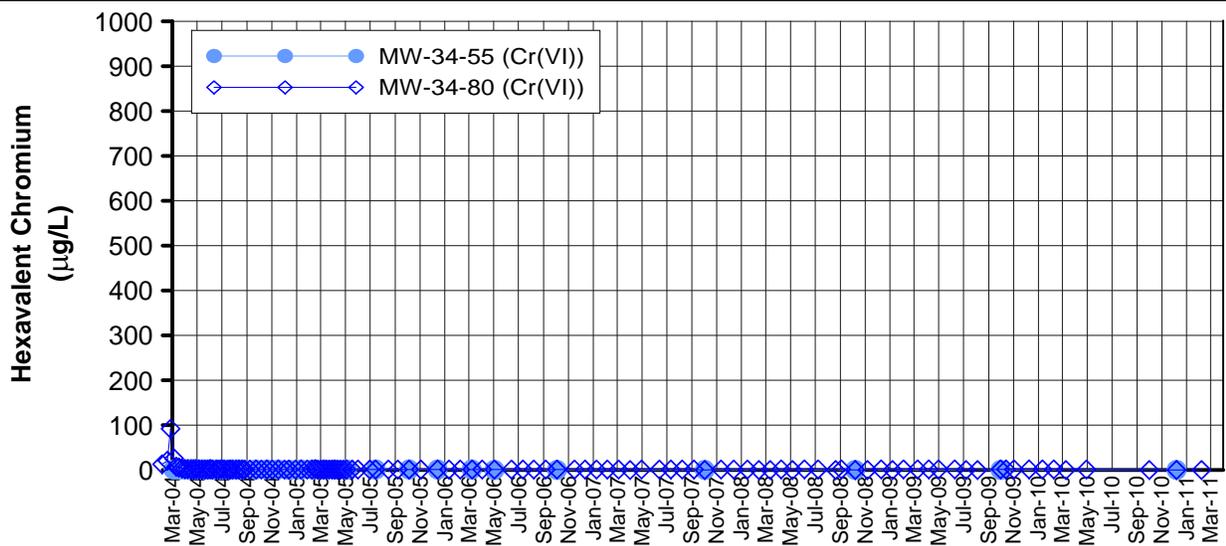
**Notes:**

- 1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
- 2) The trigger level for MW-33-40 is 20 µg/L.
- 3) The trigger level for MW-33-90 is 25 µg/L.
- 4) The trigger level for MW-33-150 is 20 µg/L.
- 5) The trigger level for MW-33-210 is 20 µg/L.

**FIGURE C-5  
HEXAVALENT CHROMIUM  
IN MW-33 CLUSTER**

FIRST QUARTER 2011 INTERIM MEASURES  
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

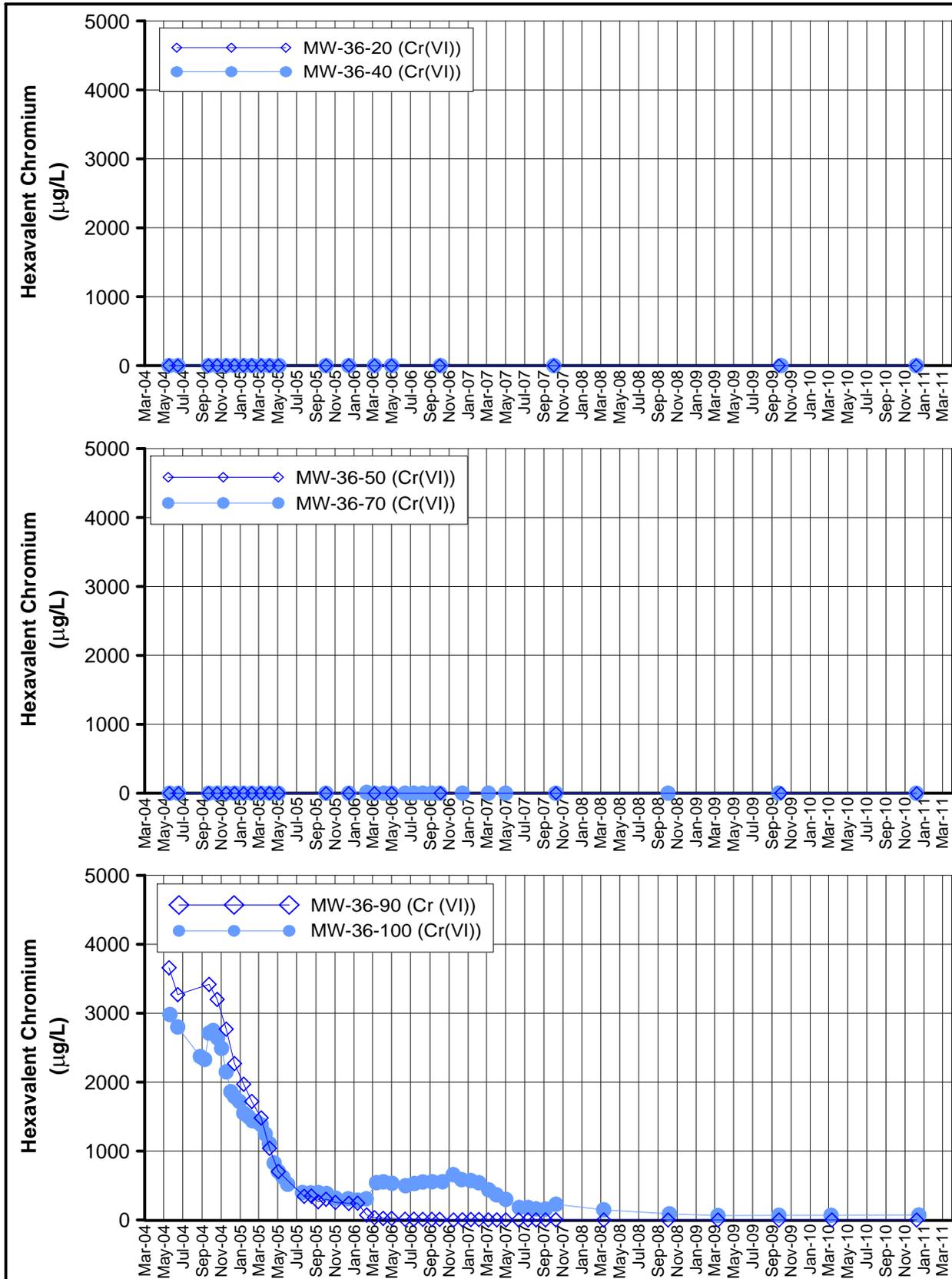




- Notes:**
- 1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
  - 2) The trigger level for MW-34-80 is 20 µg/L.
  - 3) The trigger level for MW-34-100 is 750 µg/L.

**FIGURE C-6  
HEXAVALENT CHROMIUM  
IN MW-34 AND MW-35 CLUSTERS**  
FIRST QUARTER 2011 INTERIM MEASURES  
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

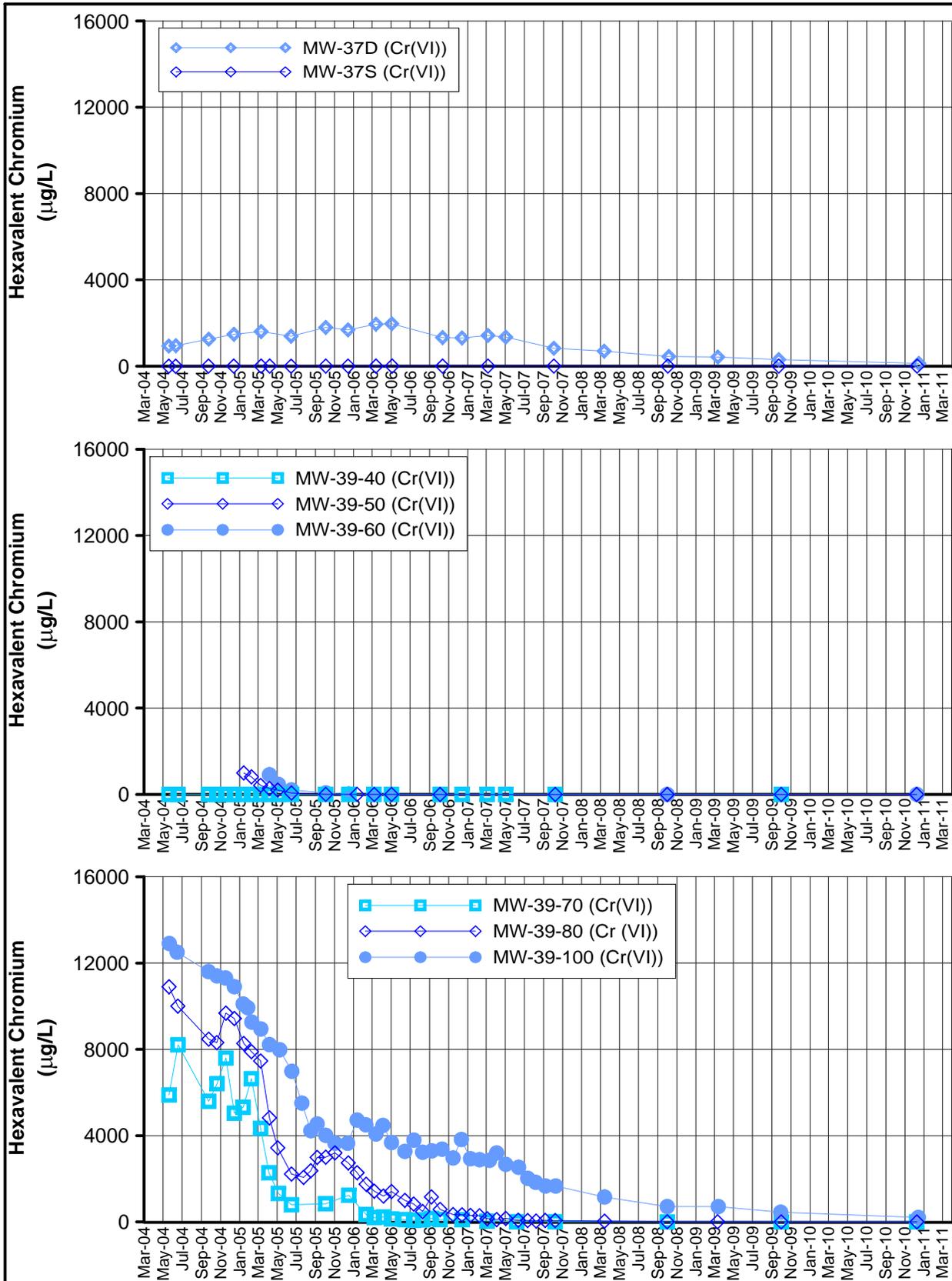




- Notes:**
- 1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
  - 2) The trigger level for MW-36-70 is 20 µg/L.

**FIGURE C-7  
HEXAVALENT CHROMIUM  
IN MW-36 CLUSTER**  
FIRST QUARTER 2011 INTERIM MEASURES  
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

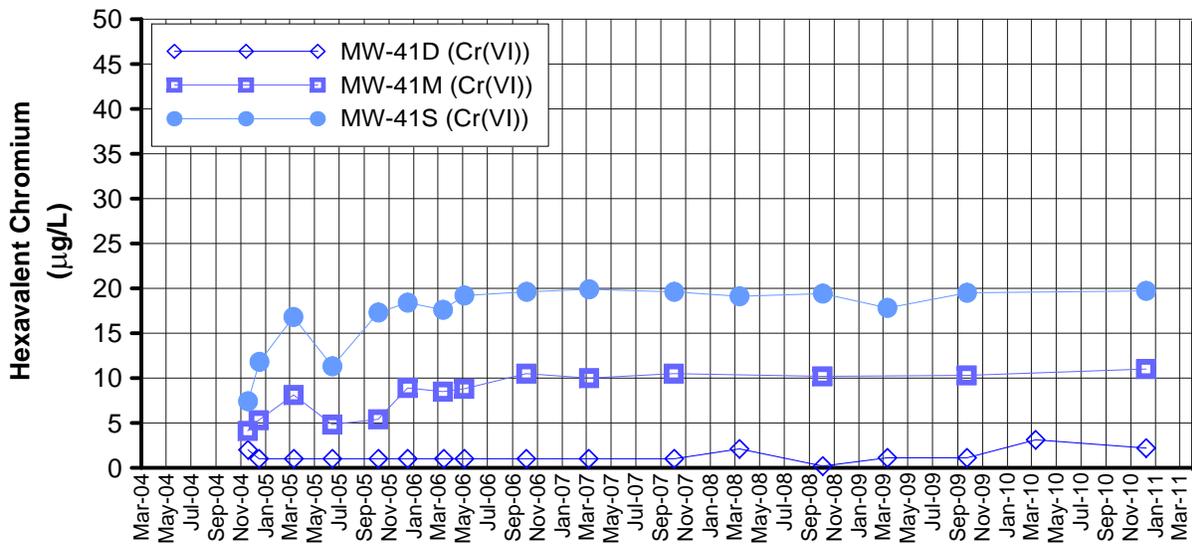
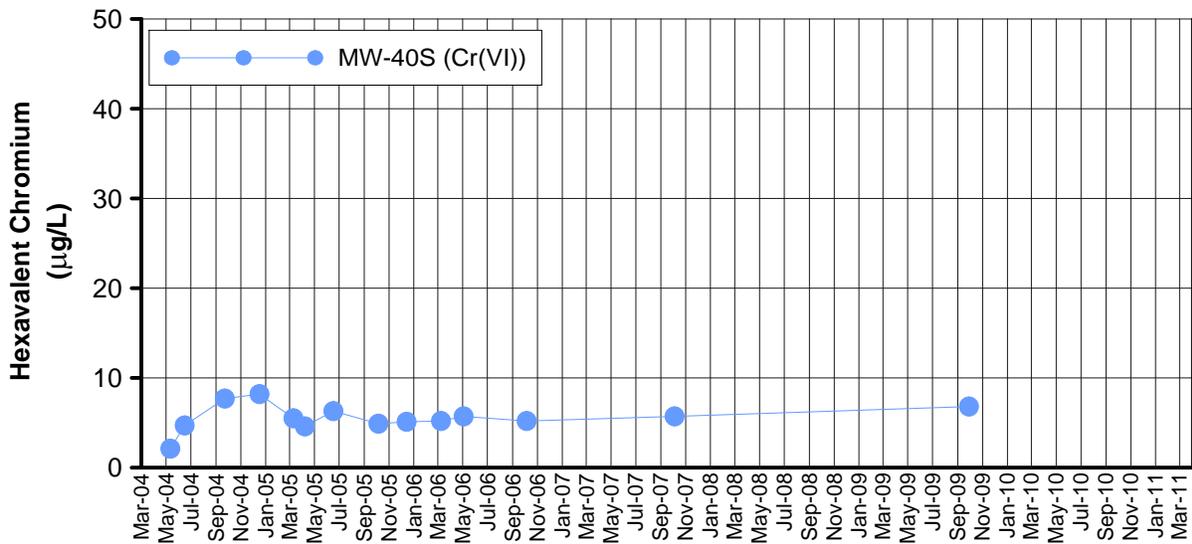
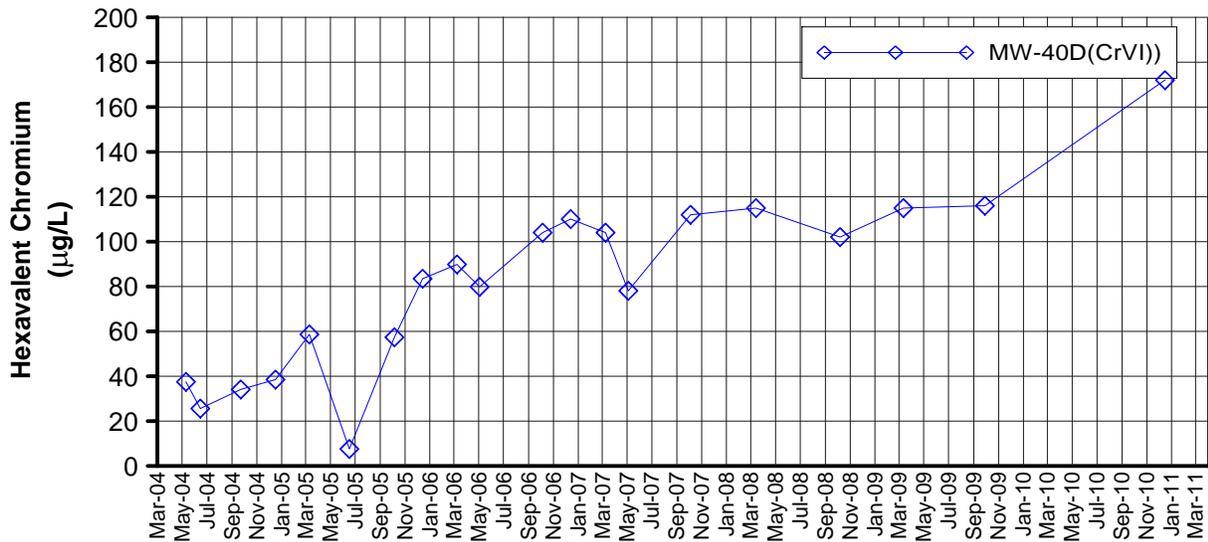




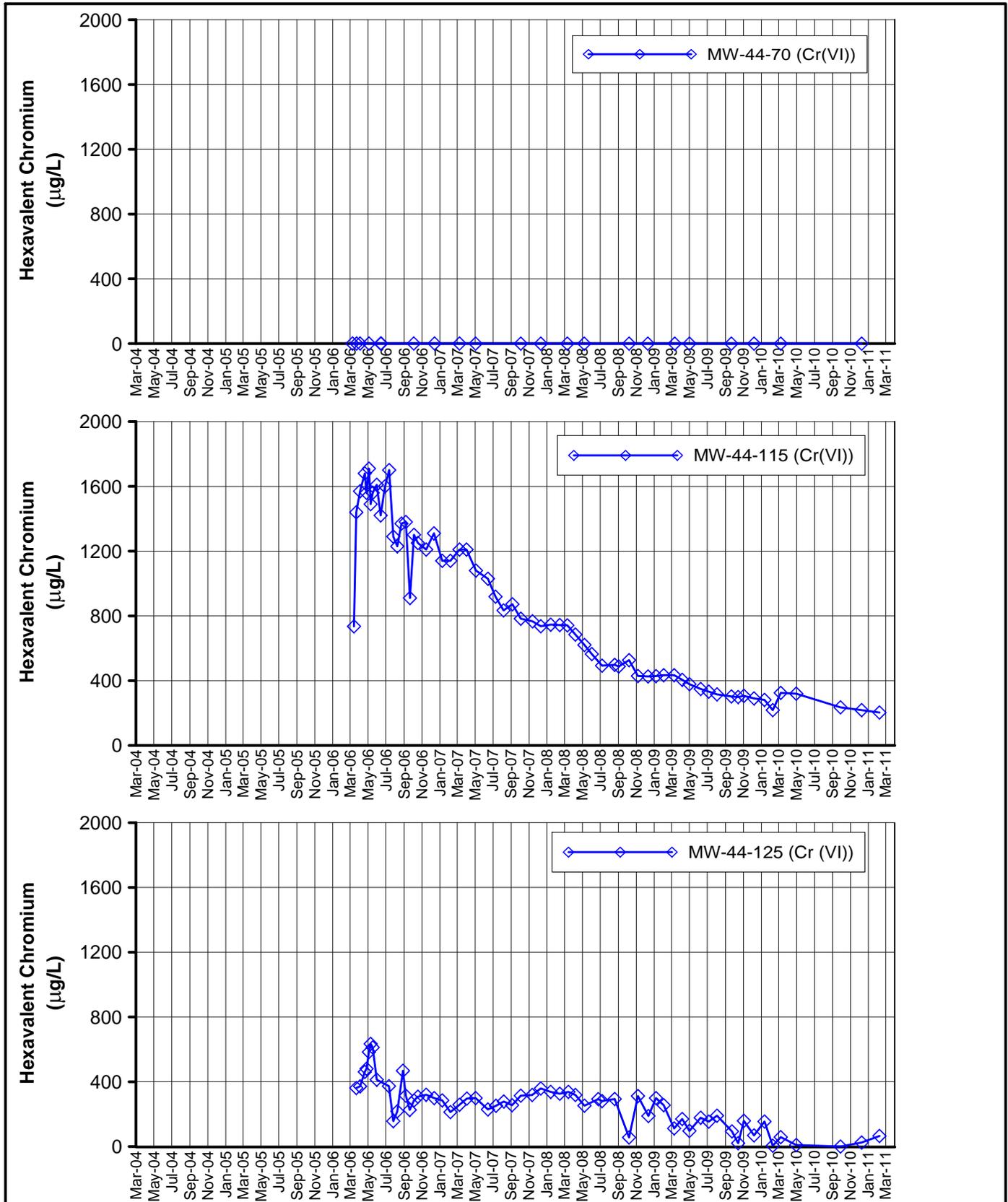
**Notes:**  
 1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).  
 2) The trigger level for MW-39-40 is 20 µg/L.

**FIGURE C-8  
 HEXAVALENT CHROMIUM  
 IN MW-37 AND MW-39 CLUSTERS**  
 FIRSTQUARTER 2011 INTERIM MEASURES  
 PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
 SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA





**FIGURE C-9**  
**HEXAVALENT CHROMIUM**  
**IN MW-40 AND MW-41 CLUSTERS**  
 FIRST QUARTER 2011 INTERIM MEASURES  
 PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
 SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA

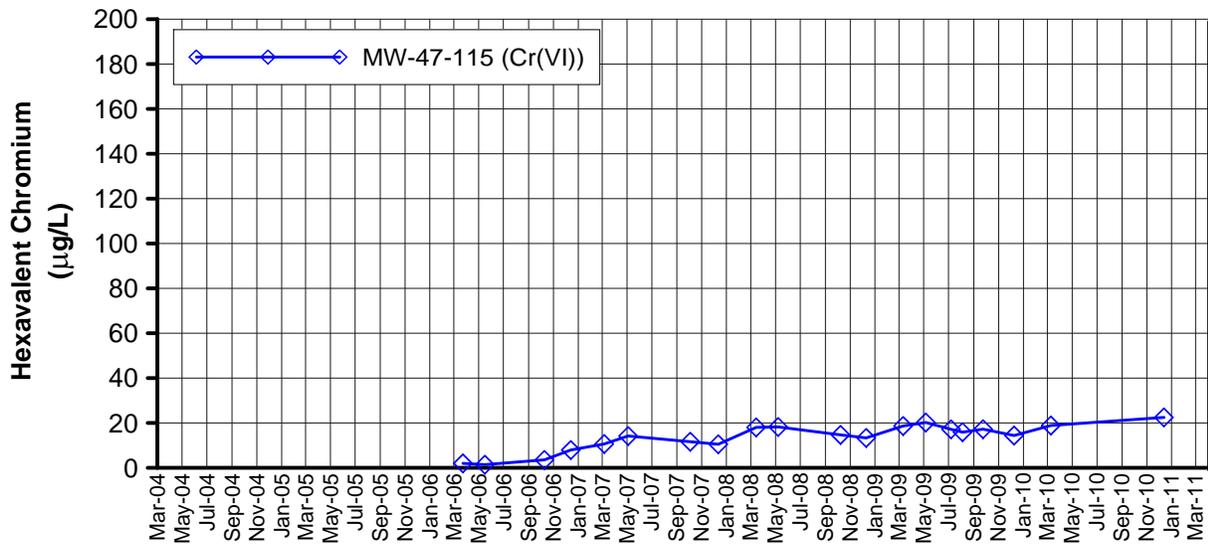
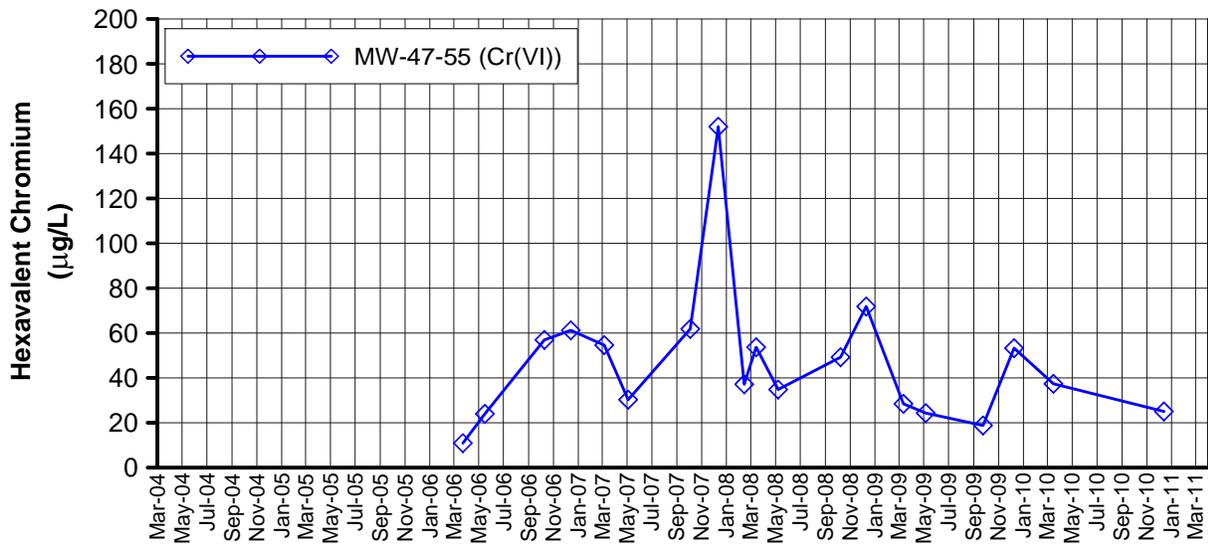
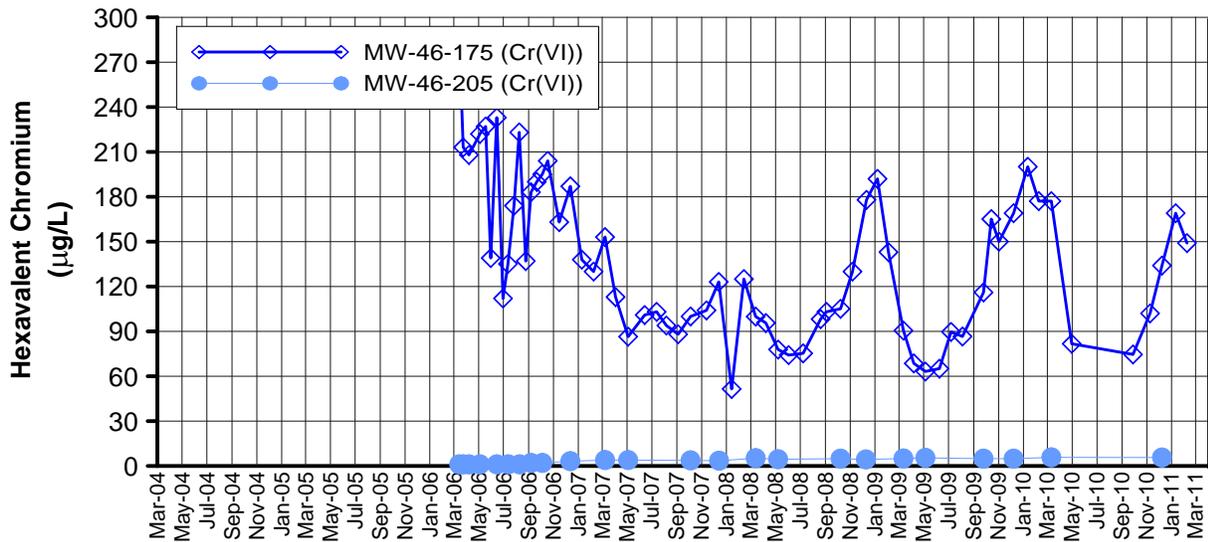


**Notes:**

- 1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
- 2) The trigger level for MW-44-70 is 20 µg/L.
- 3) The trigger level for MW-44-115 is 1,200 µg/L.
- 4) The trigger level for MW-44-125 is 475 µg/L.

**FIGURE C-10  
HEXAVALENT CHROMIUM  
IN MW-44 CLUSTER**

FIRST QUARTER 2011 INTERIM MEASURES  
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

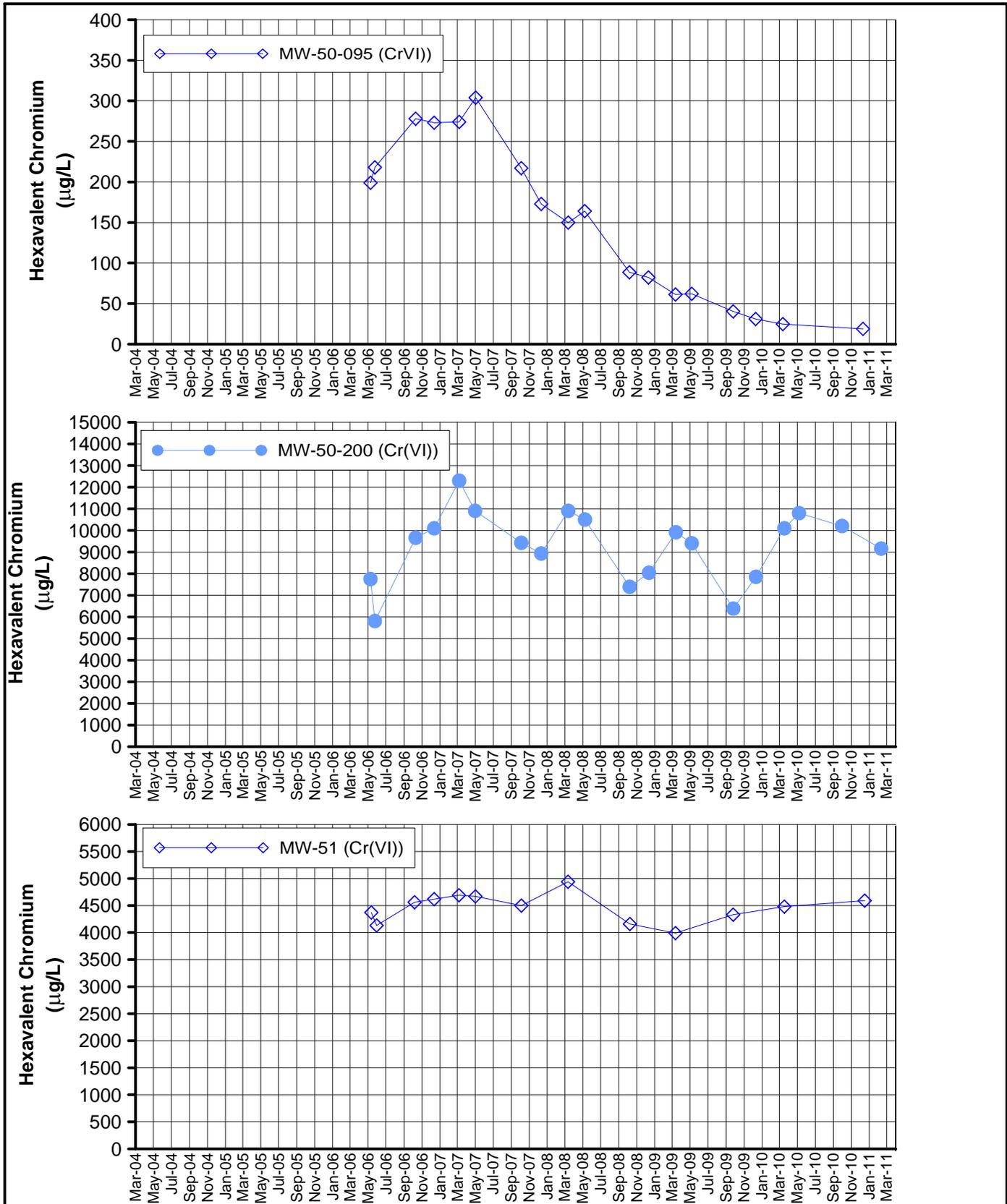


**Notes:**

- 1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
- 2) The trigger level for MW-46-175 is 225 µg/L.
- 3) The trigger level for MW-46-205 is 20 µg/L.
- 4) The trigger level for MW-47-55 is 475 µg/L.
- 5) The trigger level for MW-47-115 is 31 µg/L.

**FIGURE C-11**  
**HEXAVALENT CHROMIUM**  
**IN MW-46 AND MW-47 CLUSTERS**  
 FIRST QUARTER 2011 INTERIM MEASURES  
 PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
 SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA



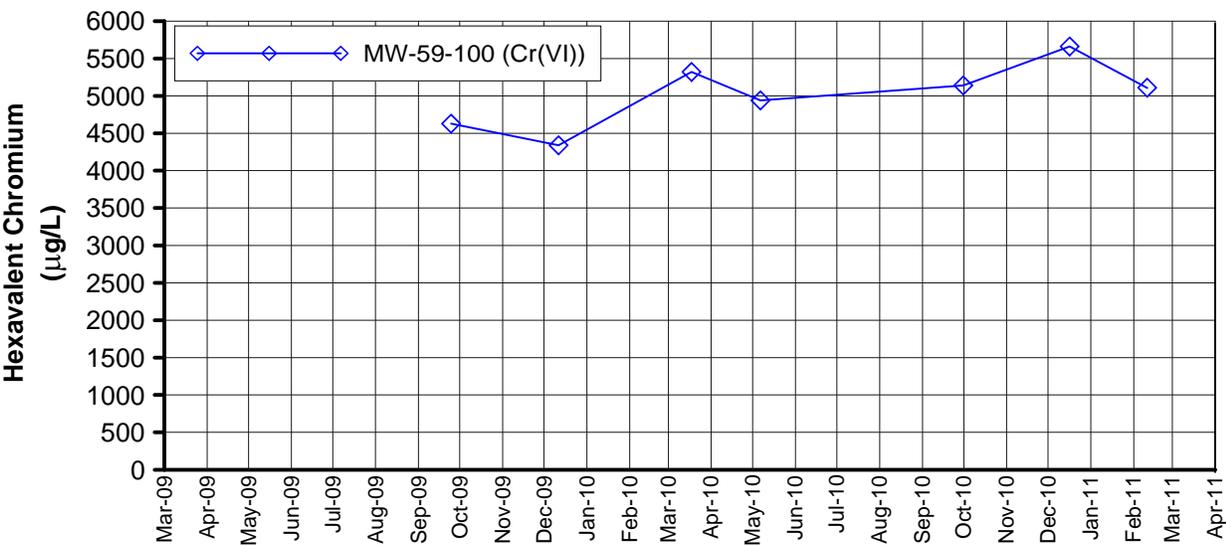
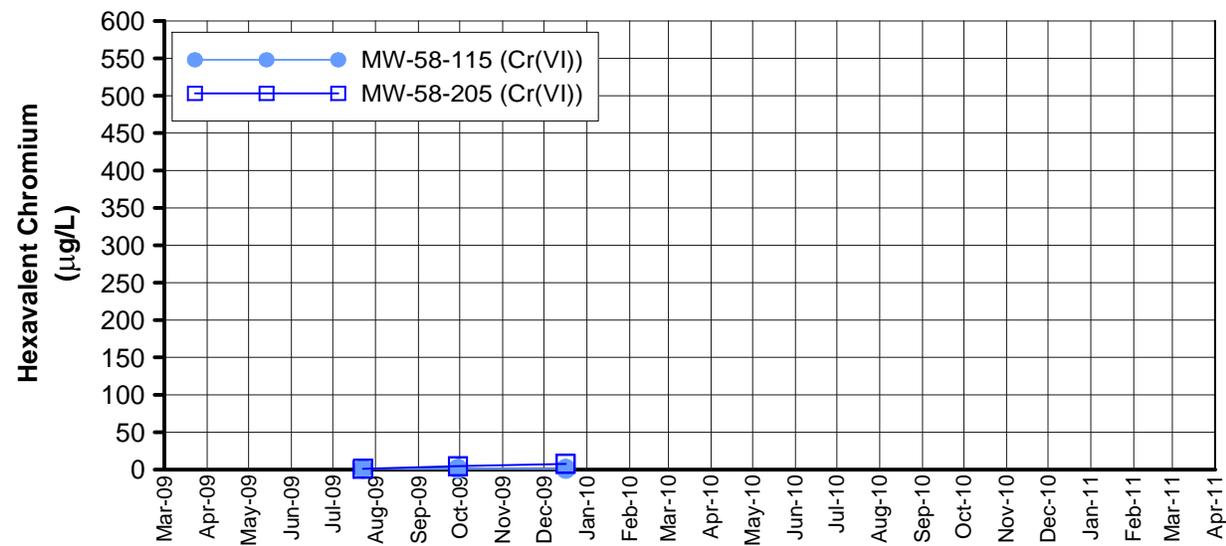
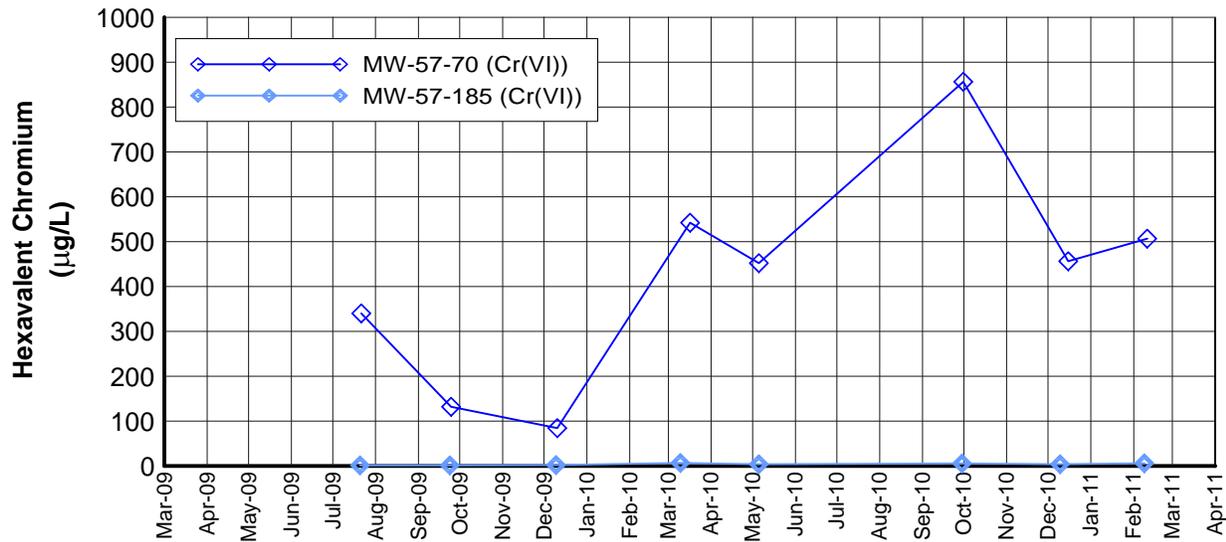


**Notes:**

1) Fourth Quarter 2010 data for MW-50-200 collected in February 2011 due to logistical issues.

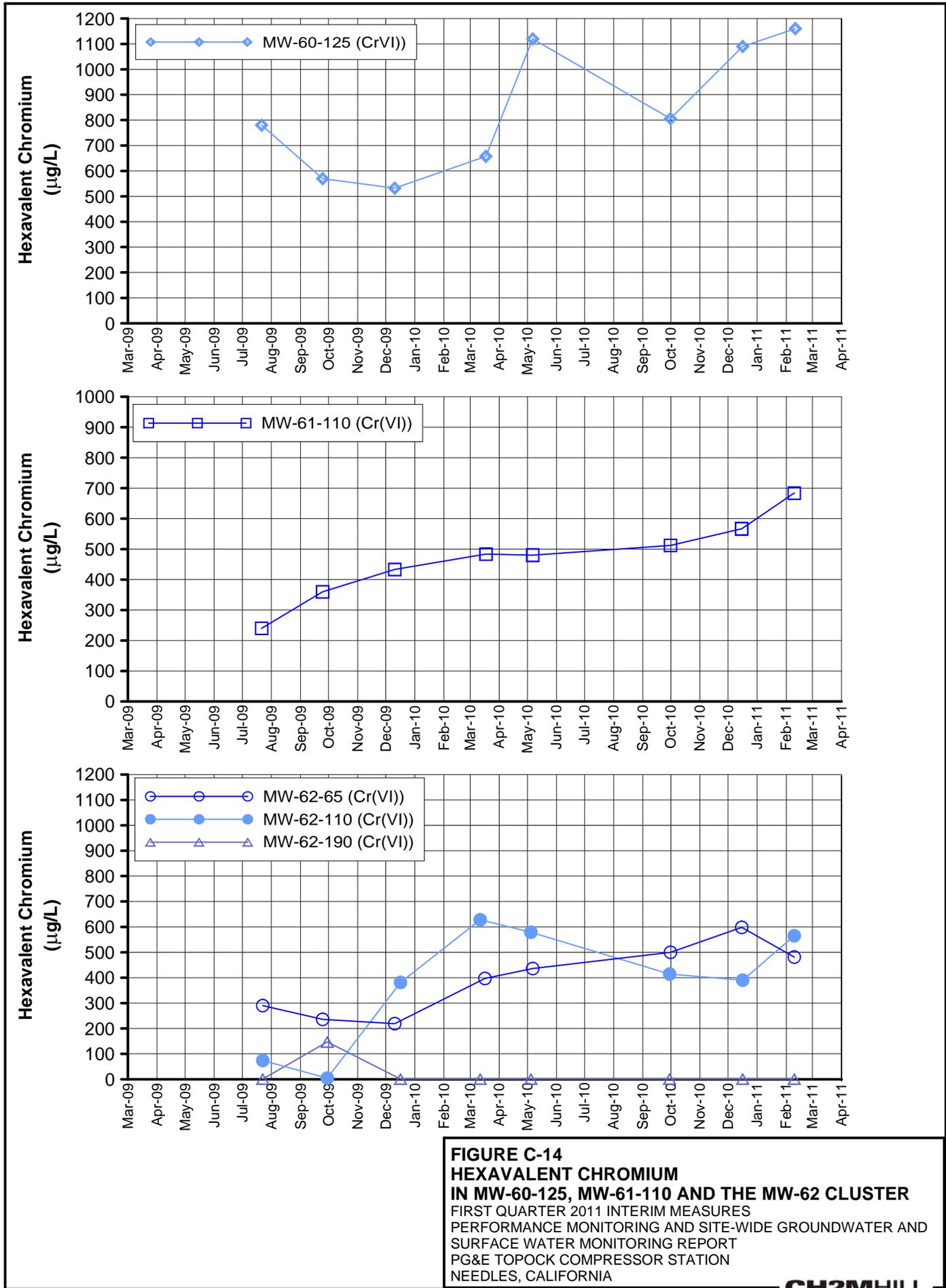
**FIGURE C-12  
HEXAVALENT CHROMIUM  
IN MW-50 AND MW-51 CLUSTERS**  
FIRST QUARTER 2011 INTERIM MEASURES  
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA





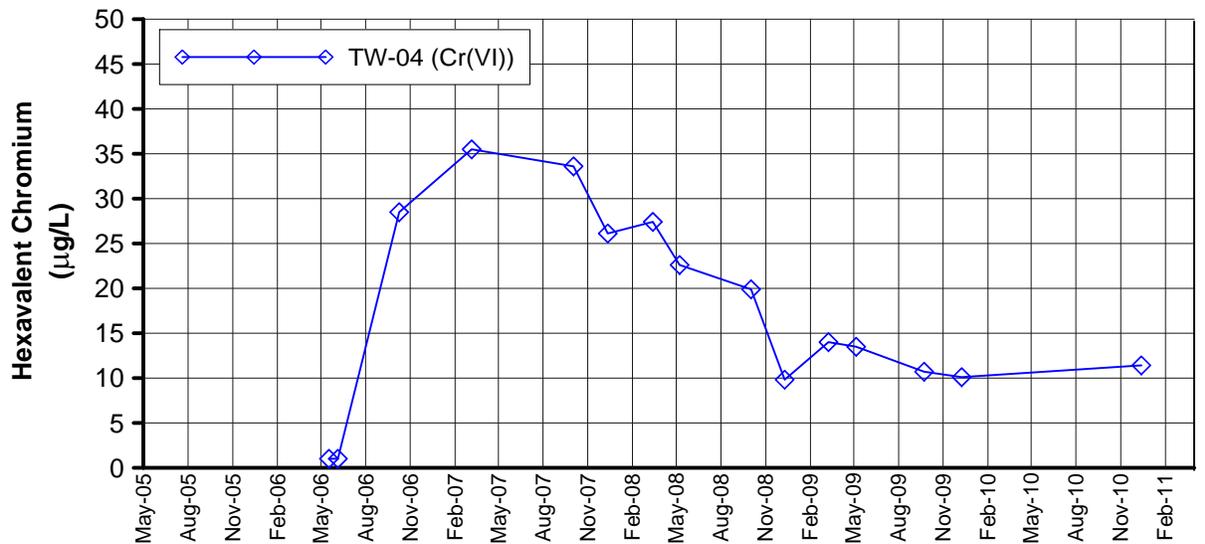
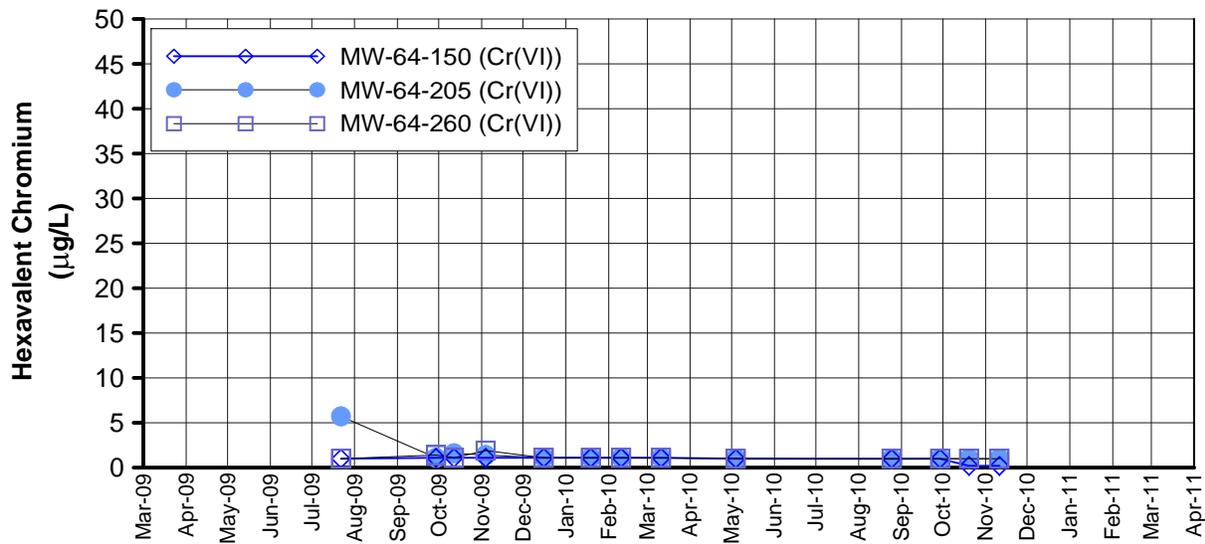
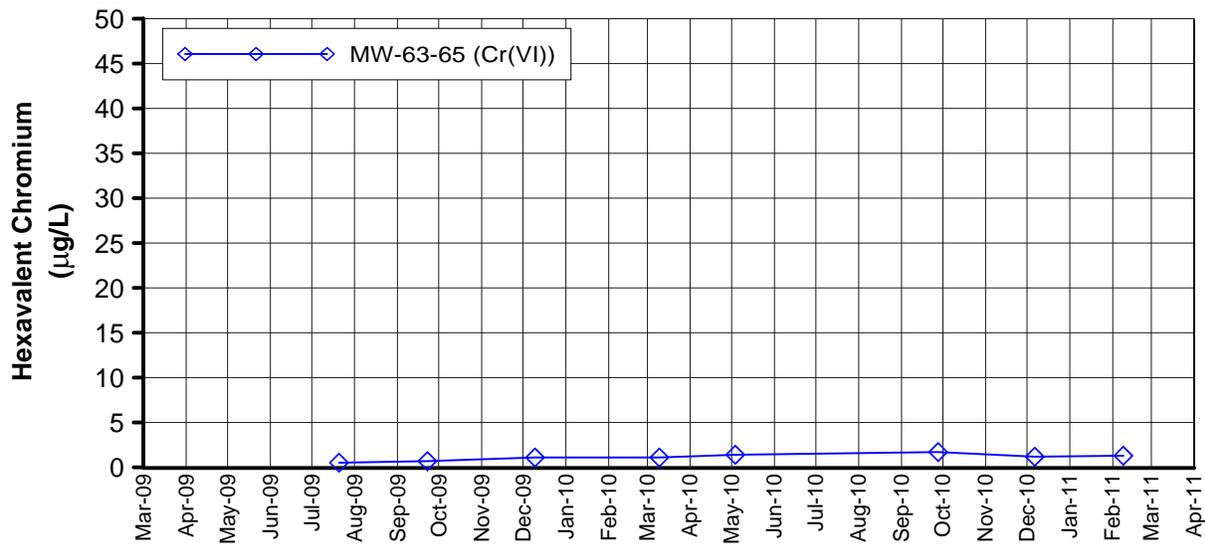
**FIGURE C-13**  
**HEXAVALENT CHROMIUM**  
**IN MW-57, MW-58 and MW-59 CLUSTERS**  
 FIRST QUARTER 2011 INTERIM MEASURES  
 PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
 SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA





**FIGURE C-14**  
**HEXAVALENT CHROMIUM**  
**IN MW-60-125, MW-61-110 AND THE MW-62 CLUSTER**  
 FIRST QUARTER 2011 INTERIM MEASURES  
 PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
 SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA





**FIGURE C-15**  
**HEXAVALENT CHROMIUM**  
**IN MW-63-065, THE MW-64 CLUSTER, AND TW-04**  
 FIRST QUARTER 2011 INTERIM MEASURES  
 PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND  
 SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA

**Appendix D**  
**Interim Measure Extraction System**  
**Operations Log, First Quarter 2011**

---

# Interim Measures Extraction System Operations Log, First Quarter 2011, PG&E Topock Performance Monitoring Program

---

During the First quarter of 2011 (January through March), 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. Extraction wells TW-2D and TW-2S were not operated during the first quarter of 2011. The operational run time for the Interim Measure groundwater extraction system (combined or individual pumping) was approximately 98.4 percent during first quarter 2011.

The Interim Measure Number 3 (IM-3) facility treated approximately 17,100,068 gallons of extracted groundwater during first quarter 2011. The IM-3 facility also treated approximately 5,400 gallons of water generated from the groundwater monitoring program and 32,400 gallons of water from IM-3 injection well development. Three containers of solids from the IM-3 facility were transported offsite during the reporting period.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 1.6 percent of downtime during first quarter 2011) are summarized below. The times shown are in Pacific Standard Time to be consistent with other data collected (e.g., water level data) at the site.

## D.1 January 2011

- **January 5, 2011 (planned):** The extraction well system was offline from 11:26 a.m. to 11:32 a.m., 11:36 a.m. to 11:38 a.m., 11:44 a.m. to 11:48 a.m., 11:52 a.m. to 11:56 a.m. and 2:08 p.m. to 2:12 p.m. due to critical alarm and leak detection system testing. Extraction system downtime was 20 minutes.
- **January 10, 2011 (unplanned):** The extraction well system was offline from 2:32 p.m. to 5:50 p.m. due to cleaning of blockage in T301 pipeline. Extraction system downtime was 3 hours and 18 minutes.
- **January 17, 2011 (unplanned):** The extraction well system was offline from 8:12 p.m. to 9:48 p.m. due to cleaning of blockages in the oxidation system. Extraction system downtime was 1 hour and 36 minutes.
- **January 18, 2011 (planned):** The extraction well system was offline from 6:22 a.m. to 3:58 p.m. and 5:34 p.m. to 6:56 p.m. due to monthly scheduled plant maintenance. Extraction system downtime was 10 hours and 58 minutes.

- **January 26, 2011 (unplanned):** The extraction well system was offline from 9:38 a.m. to 9:42 a.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 4 minutes.

## D.2 February 2011

- **February 4, 2011 (planned):** The extraction well system was offline from 10:56 a.m. to 11:14 a.m., 11:16 a.m. to 11:18 a.m., 12:04 p.m. to 12:06 p.m., 12:12 p.m. to 12:14 p.m. and 12:38 p.m. to 12:42 p.m. due to critical alarm and leak detection system testing. Extraction system downtime was 28 minutes.
- **February 9, 2011 (planned):** The extraction well system was offline from 10:38 a.m. to 12:58 p.m. due to monthly scheduled maintenance. Extraction system downtime was 2 hours and 20 minutes.
- **February 11, 2011 (unplanned):** The extraction well system was offline from 2:26 p.m. to 2:28 p.m. due replacement of meter AIT 201. Extraction system downtime was 2 minutes.
- **February 15, 2011 (planned):** The extraction well system was offline from 12:58 p.m. to 1:04 p.m. due to shut off of circuit breaker to vault alarms during infra red testing. Extraction system downtime was 6 minutes.
- **February 23, 2011 (unplanned):** The extraction well system was offline from 2:36 a.m. to 7:02 p.m. due to polymer pump repair. Extraction system downtime was 4 hours and 26 minutes.

## D.3 March 2011

- **March 2, 2011 (planned):** The extraction well system was offline from 12:58 p.m. to 1:32 p.m. and 2:00 p.m. to 3:06 p.m. due to microfilter maintenance. Extraction system downtime was 1 hour and 40 minutes.
- **March 7, 2011 (planned):** The extraction well system was offline from 7:56 a.m. to 7:58 a.m., 8:06 a.m. to 8:08 a.m., 8:12 a.m. to 8:18 a.m., 8:20 a.m. 8:22 a.m. and 8:24 a.m. to 8:26 a.m. due to critical alarm and leak detection system testing. Extraction system downtime was 14 minutes.
- **March 30, 2011 (planned):** The extraction well system was offline from 7:16 a.m. to 2:50 p.m. due to monthly scheduled maintenance. Extraction system downtime was 7 hours and 34 minutes.
- **March 31, 2011 (planned):** The extraction well system was offline from 10:22 a.m. to 11:56 a.m. due to blower and microfilter maintenance. Extraction system downtime was 1 hour and 34 minutes.
- **March 31, 2011 (planned):** The extraction well system was offline from 12:14 p.m. to 12:56 p.m. due to start up compliance sampling. Extraction system downtime was 42 minutes.

**Appendix E**  
**Hydraulic Data for Interim Measures**  
**Reporting Period**

---

Table E-1

Average Monthly and Quarterly Groundwater Elevations, First Quarter 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	January 2011	February 2011	March 2011	Quarter Average	Days in Quarter Average
I-3	River Station	453.34	454.38	456.22	454.62	87
MW-20-070	Shallow Zone	452.71	453.15	454.18	453.35	88
MW-20-100	Middle Zone	452.20	452.66	453.72	452.86	88
MW-20-130	Deep Wells	451.82	452.30	453.46	452.52	88
MW-22	Shallow Zone	453.93	454.23	455.12	454.41	87
MW-25	Shallow Zone	454.58	454.66	455.27	454.84	88
MW-26	Shallow Zone	454.25	454.34	454.97	454.52	89
MW-27-020	Shallow Zone	453.23	INC	INC	INC	48
MW-27-060	Middle Zone	453.21	454.17	455.84	454.37	87
MW-27-085	Deep Wells	453.29	454.29	455.97	454.48	87
MW-28-025	Shallow Zone	453.27	454.23	455.94	454.46	88
MW-28-090	Deep Wells	453.44	454.32	455.98	454.56	88
MW-30-050	Middle Zone	453.14	453.94	455.44	454.15	88
MW-31-060	Shallow Zone	453.47	454.00	455.12	454.19	88
MW-31-135	Deep Wells	452.84	453.35	454.50	453.56	88
MW-32-035	Shallow Zone	453.35	454.13	455.56	454.31	87
MW-33-040	Shallow Zone	453.55	454.27	455.59	454.45	88
MW-33-090	Middle Zone	453.74	454.48	455.83	454.66	88
MW-33-150	Deep Wells	453.70	454.33	455.61	454.53	88
MW-34-055	Middle Zone	453.33	454.28	455.96	454.48	87
MW-34-080	Deep Wells	453.42	454.31	455.98	454.53	87
MW-34-100	Deep Wells	453.23	454.06	455.66	454.28	87
MW-35-060	Shallow Zone	INC	INC	456.19	INC	42
MW-35-135	Deep Wells	454.47	455.02	456.17	455.21	88
MW-36-020	Shallow Zone	453.36	454.17	455.64	454.37	88
MW-36-040	Shallow Zone	453.20	454.05	455.62	454.27	88
MW-36-050	Middle Zone	453.19	454.05	455.63	454.27	88
MW-36-070	Middle Zone	453.11	453.98	455.57	454.20	88
MW-36-090	Deep Wells	452.46	453.21	454.64	453.42	88
MW-36-100	Deep Wells	452.72	453.52	454.97	453.72	88
MW-39-040	Shallow Zone	453.11	453.89	455.36	454.10	87
MW-39-050	Middle Zone	452.95	453.72	455.16	453.92	87
MW-39-060	Middle Zone	452.80	453.53	454.94	453.74	87
MW-39-070	Middle Zone	452.54	INC	INC	INC	48
MW-39-080	Deep Wells	452.63	453.27	454.59	453.48	87
MW-39-100	Deep Wells	INC	453.65	455.02	INC	56
MW-42-030	Shallow Zone	453.05	453.83	455.29	454.04	87
MW-42-065	Middle Zone	453.33	454.10	455.57	454.31	87
MW-43-025	Shallow Zone	453.23	454.23	455.99	454.46	87
MW-43-090	Deep Wells	453.61	454.63	456.40	454.86	87
MW-44-070	Middle Zone	453.24	454.16	455.82	454.38	88
MW-44-115	Deep Wells	452.99	453.78	455.23	453.98	88
MW-44-125	Deep Wells	453.50	454.27	455.80	454.51	88
MW-45-095a	Deep Wells	452.22	453.06	454.58	453.26	88
MW-46-175	Deep Wells	453.67	454.28	455.68	454.53	88
MW-47-055	Shallow Zone	453.93	454.58	455.82	454.76	88
MW-47-115	Deep Wells	453.98	454.56	455.73	454.74	88
MW-49-135	Deep Wells	453.93	454.67	456.05	454.86	88

Table E-1

Average Monthly and Quarterly Groundwater Elevations, First Quarter 2011  
 First Quarter 2011 Interim Measure Performance Monitoring and Site-Wide  
 Groundwater and Surface Water Monitoring Report  
 PG&E Topock Compressor Station, Needles, California

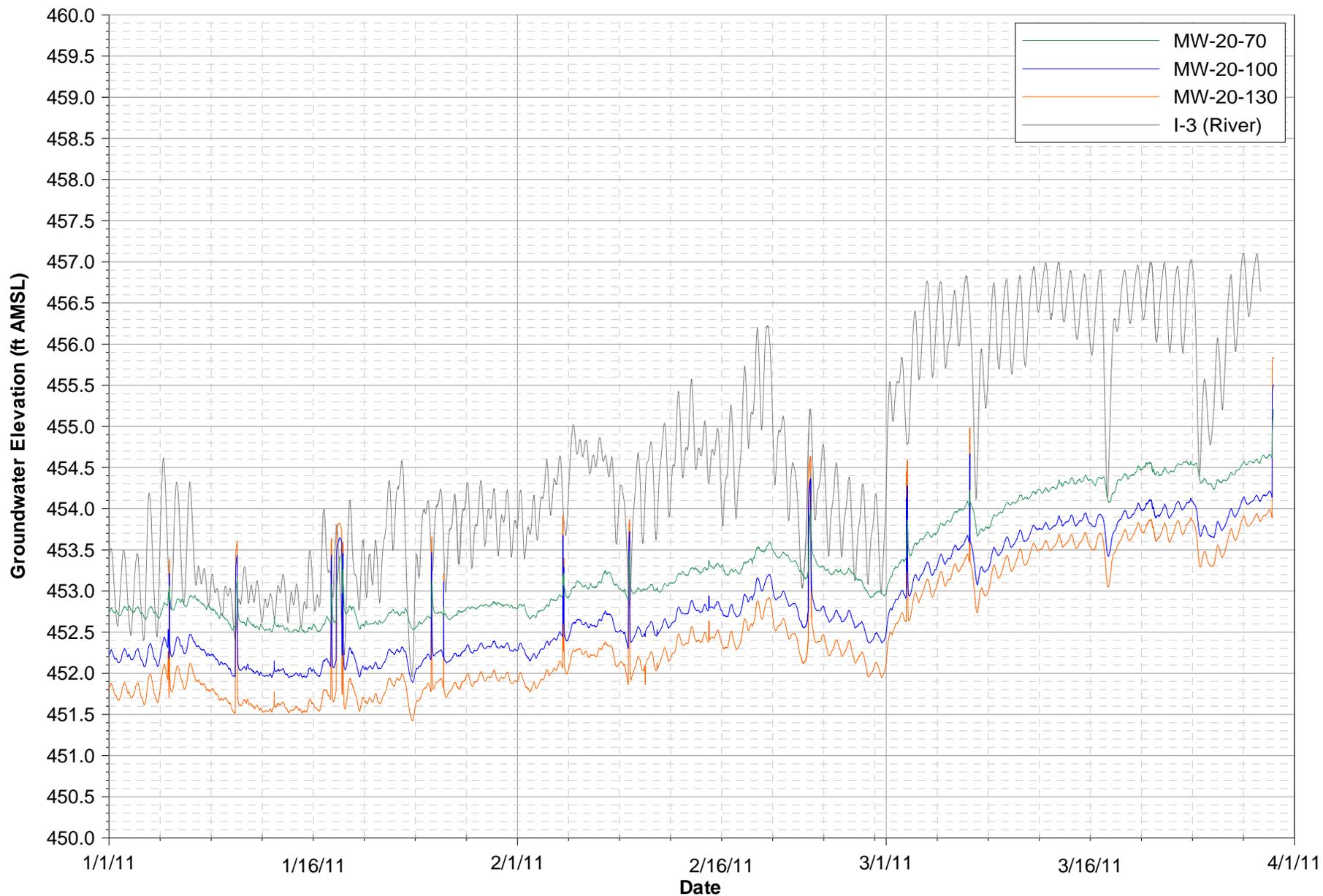
Well ID	Aquifer Zone	January 2011	February 2011	March 2011	Quarter Average	Days in Quarter Average
MW-50-095	Middle Zone	453.79	454.21	455.24	454.41	88
MW-51	Middle Zone	454.27	454.37	455.02	454.55	88
MW-54-085	Deep Wells	453.67	454.62	456.34	454.87	89
MW-54-140	Deep Wells	454.07	454.84	456.29	455.06	89
MW-54-195	Deep Wells	454.44	455.13	456.45	455.33	88
MW-55-045	Middle Zone	455.24	455.65	456.51	455.80	89
MW-55-120	Deep Wells	455.43	455.77	455.80	INC	61
MW-59-100	Shallow Zone	455.80	INC	INC	INC	20
PT2D	Deep Wells	452.26	452.88	454.18	453.09	88
PT5D	Deep Wells	452.51	453.20	454.54	453.40	88
PT6D	Deep Wells	452.77	453.46	454.80	453.66	88
RRB	River Station	454.22	454.70	456.56	INC	65

**NOTES:**

Averages reported in ft AMSL (feet above mean sea level).

Quarterly Average = average of daily averages over reporting period

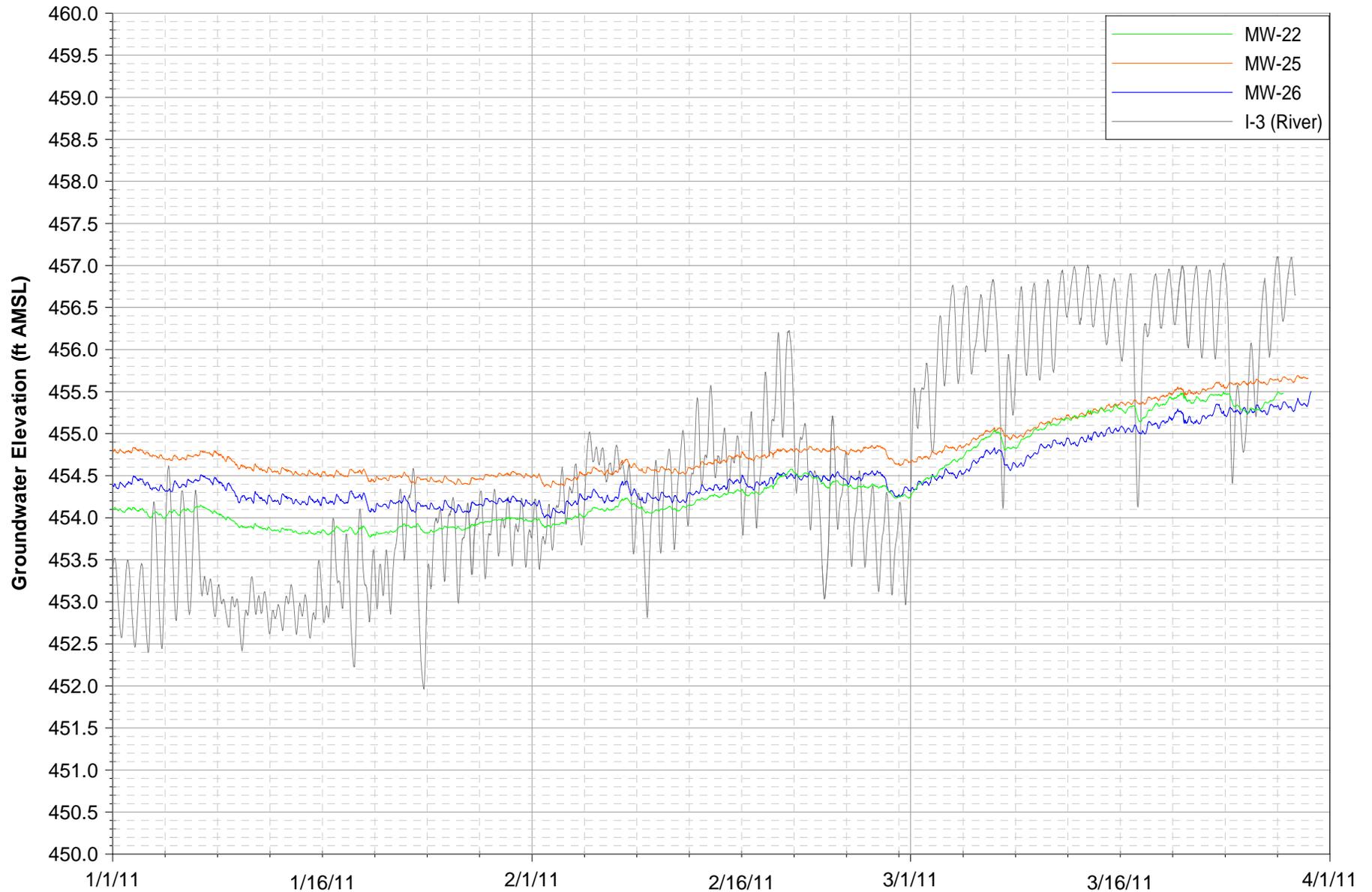
INC = Data incomplete, less than 75% of data available over reporting period due to rejection or field equipment malfunction



Notes:  
Data subject to review.

**FIGURE E-1A**  
**MW-20 CLUSTER HYDROGRAPHS**

FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



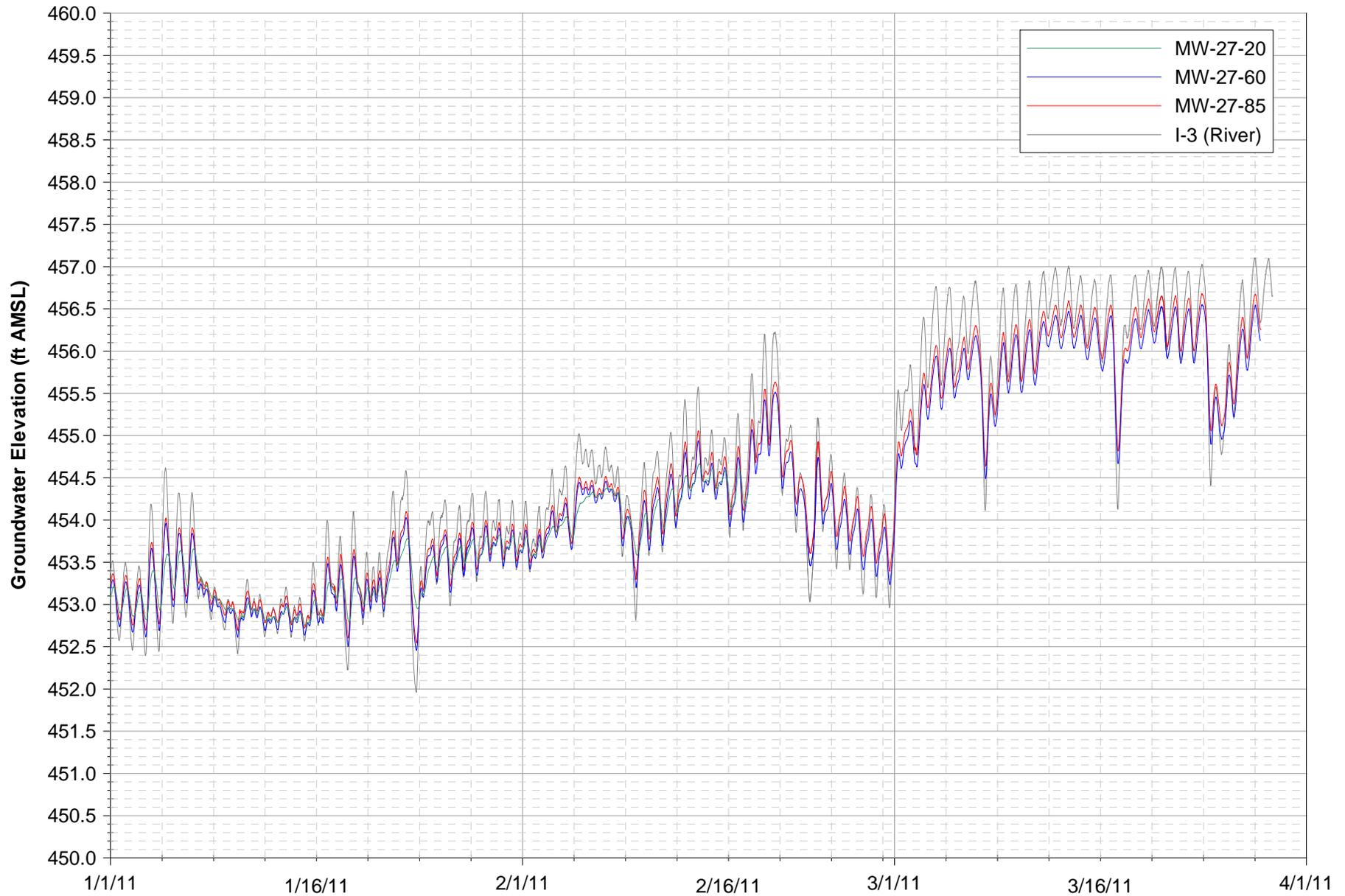
Notes:  
Data subject to review.

Date

**FIGURE E-1B**

**MW-22, MW-25, AND MW-26 HYDROGRAPHS**

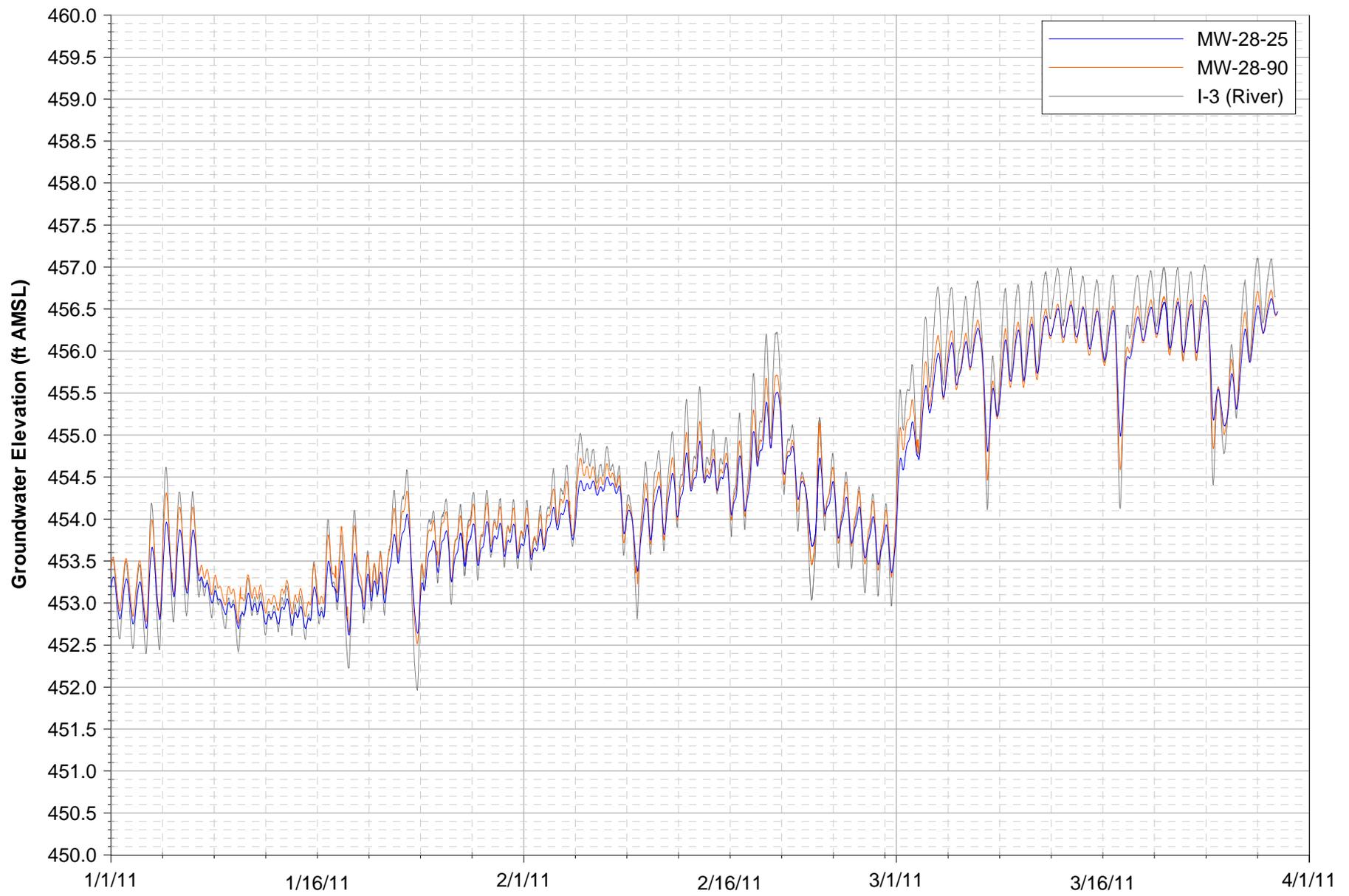
FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:  
 Data subject to review.  
 MW-27-20 data unavailable from February 18, 2011 through March 31, 2011 due to transducer failure.

**FIGURE E-1C**  
**MW-27 CLUSTER HYDROGRAPHS**

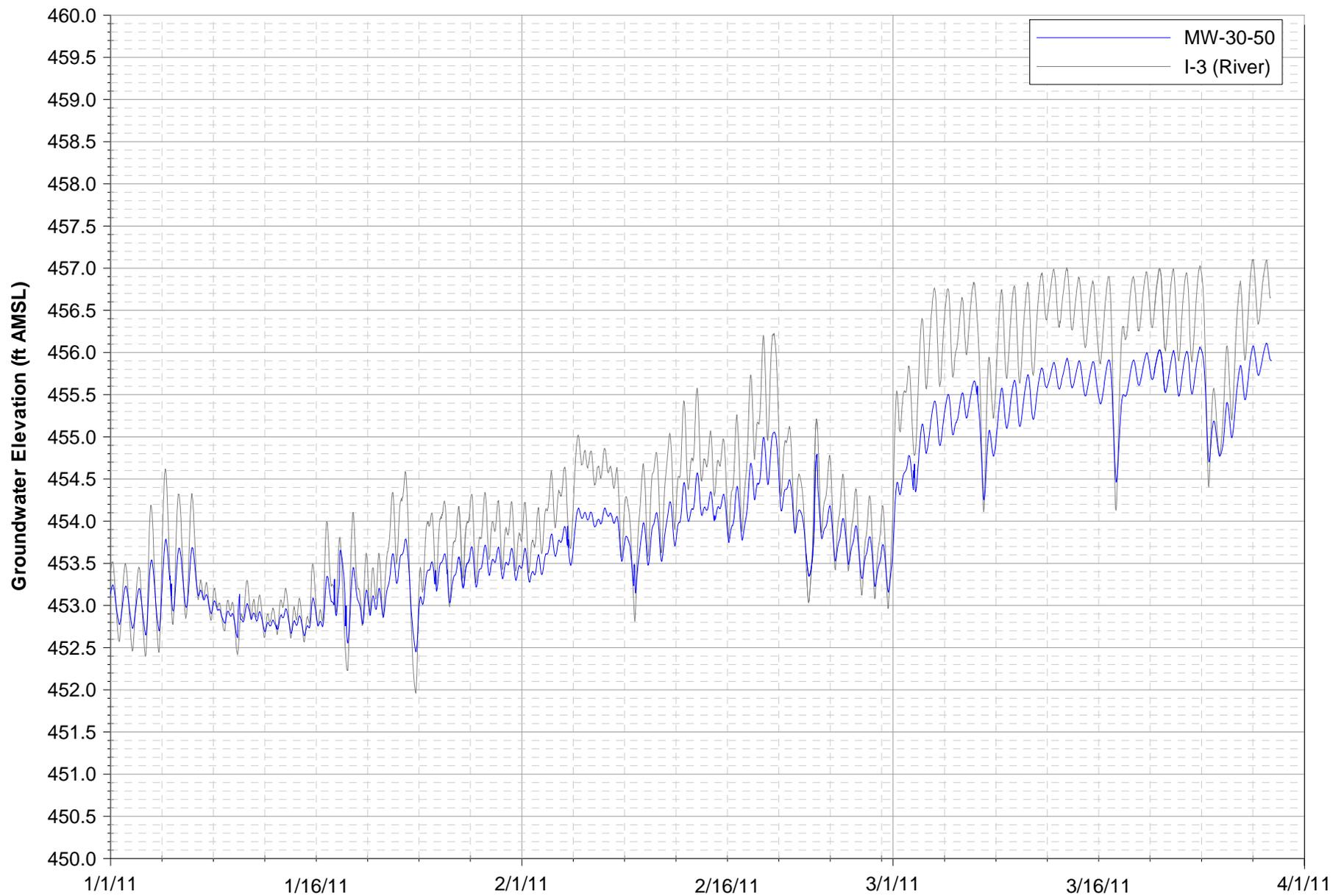
FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
 AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:  
Data subject to review.

Date  
**FIGURE E-1D**  
**MW-28 CLUSTER HYDROGRAPHS**

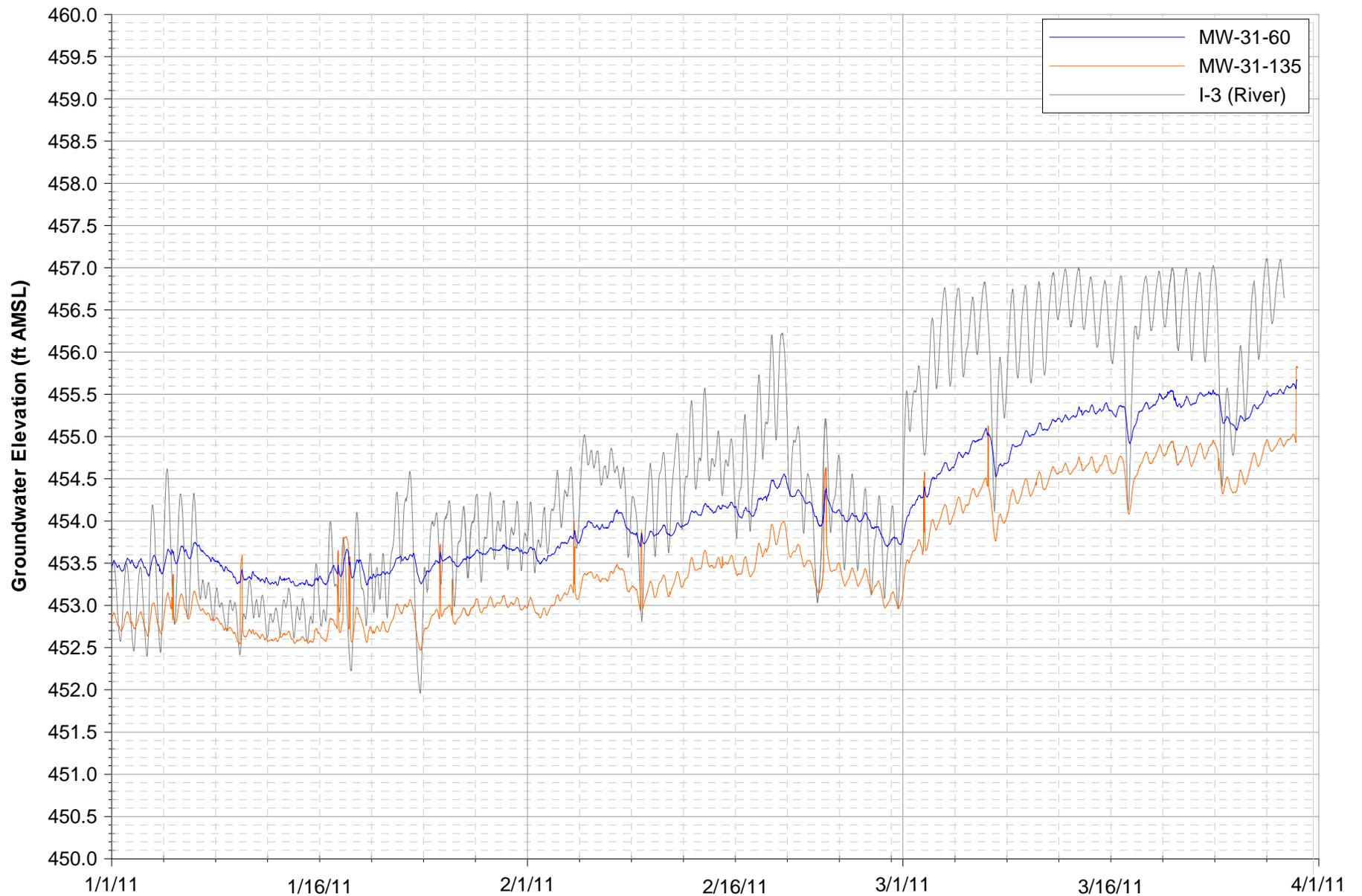
FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:  
Data subject to review.

Date  
**FIGURE E-1E**  
**MW-30-50 HYDROGRAPH**

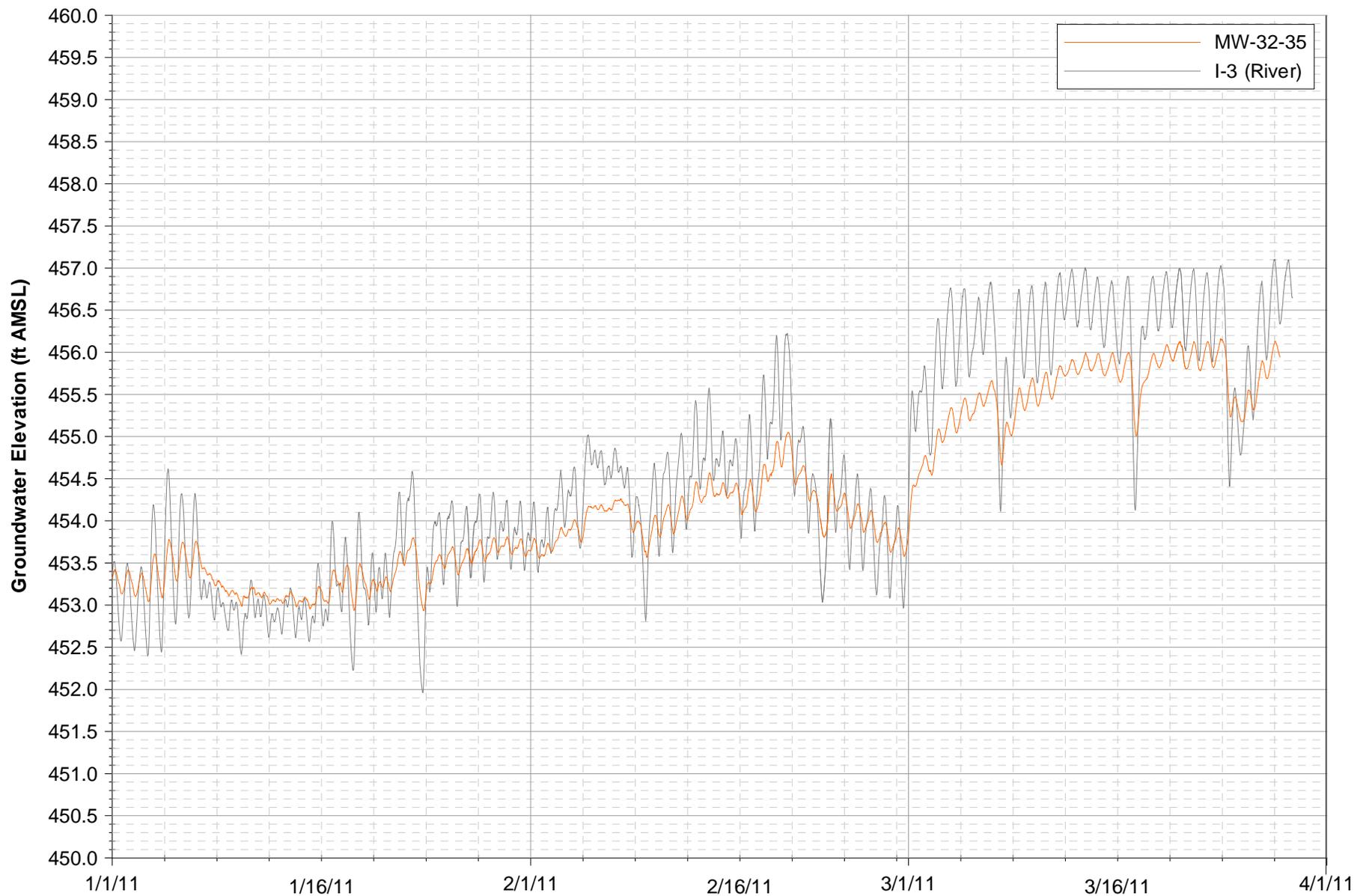
FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:  
Data subject to review.

**FIGURE E-1F**  
**MW-31 CLUSTER HYDROGRAPHS**

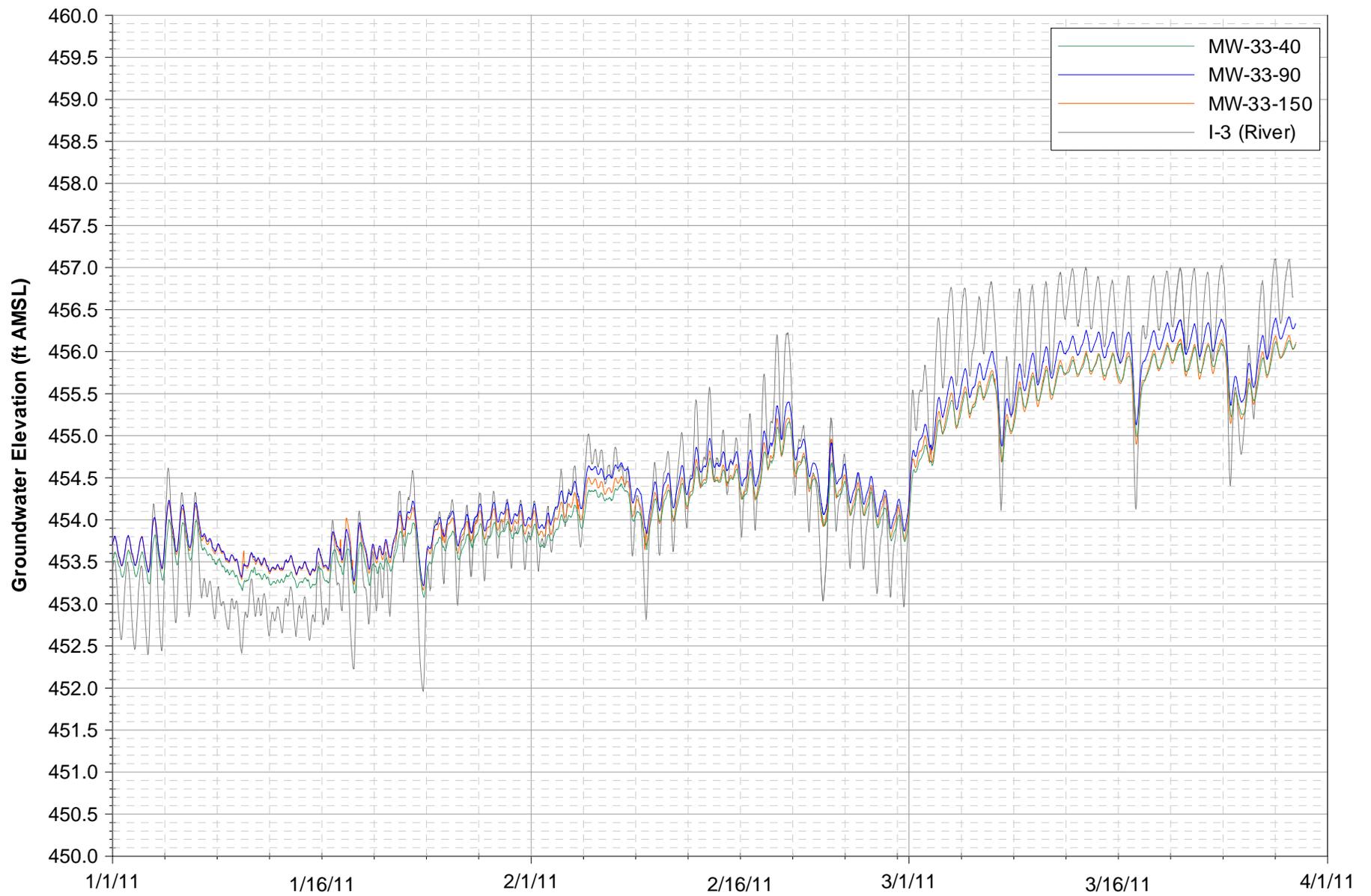
FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:  
Data subject to review.

Date  
**FIGURE E-1G**  
**MW-32 HYDROGRAPH**

FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

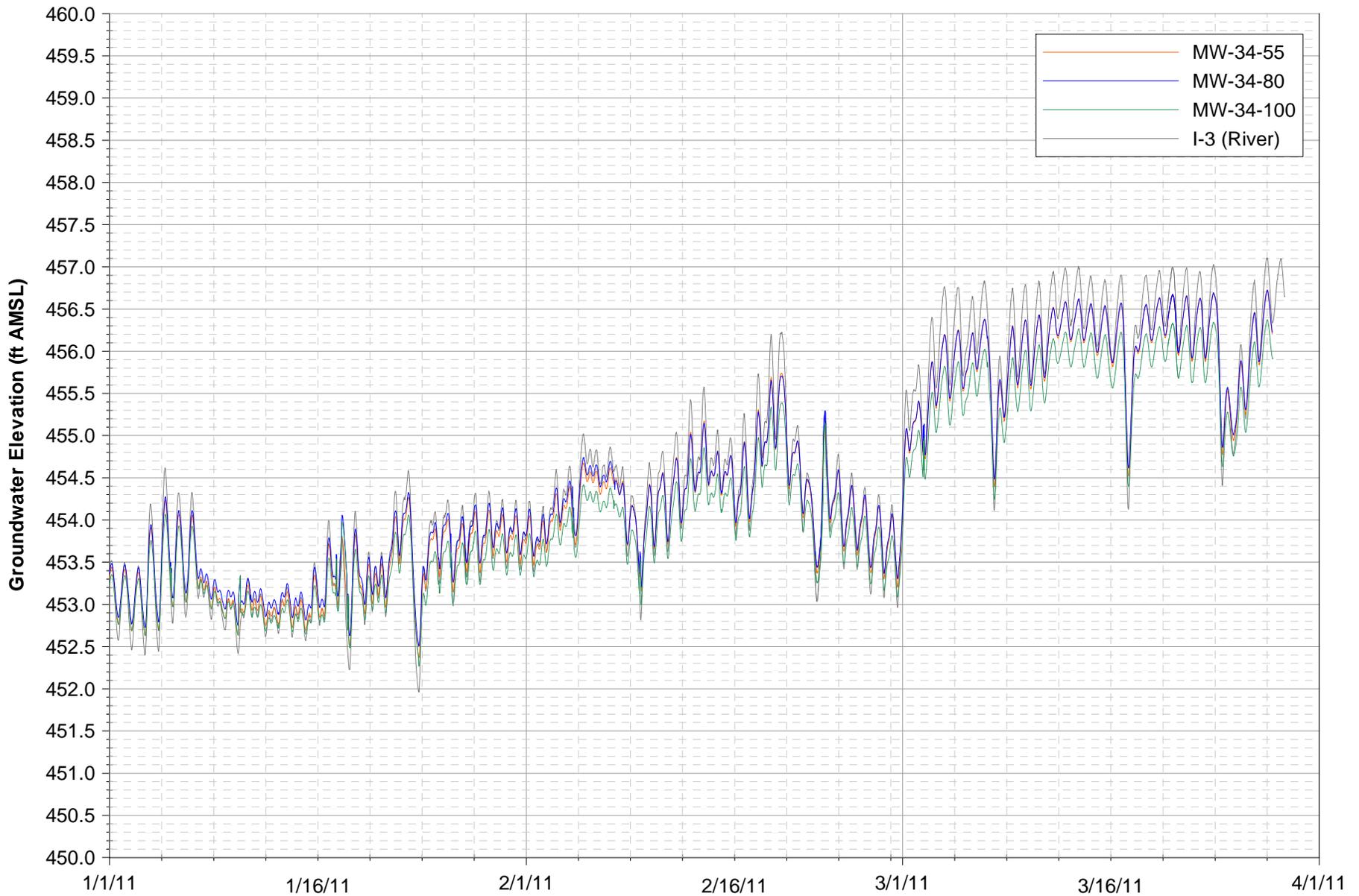


Notes:  
Data subject to review.

Date  
**FIGURE E-1H**

**MW-33 CLUSTER HYDROGRAPHS**

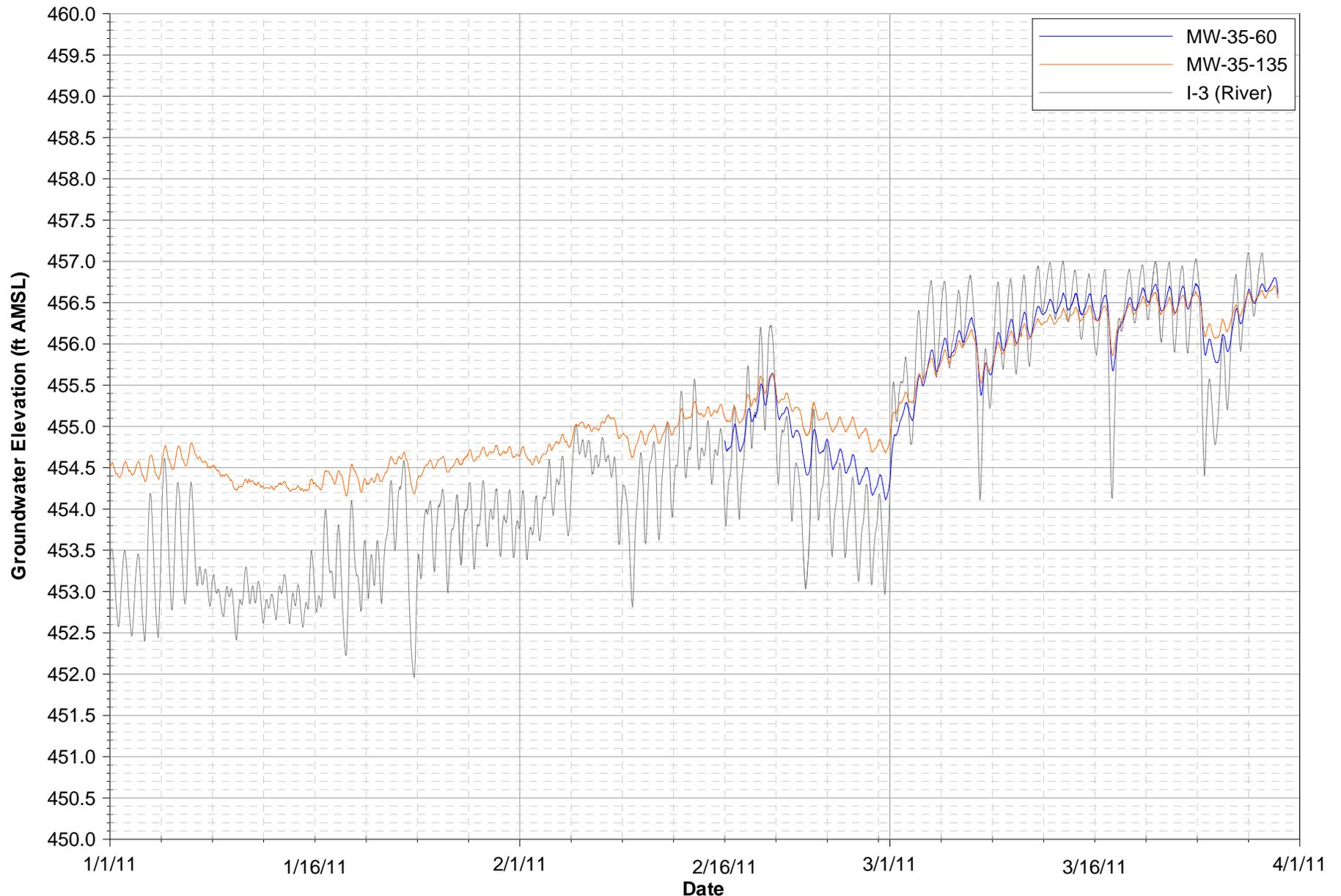
FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:  
Data subject to review.

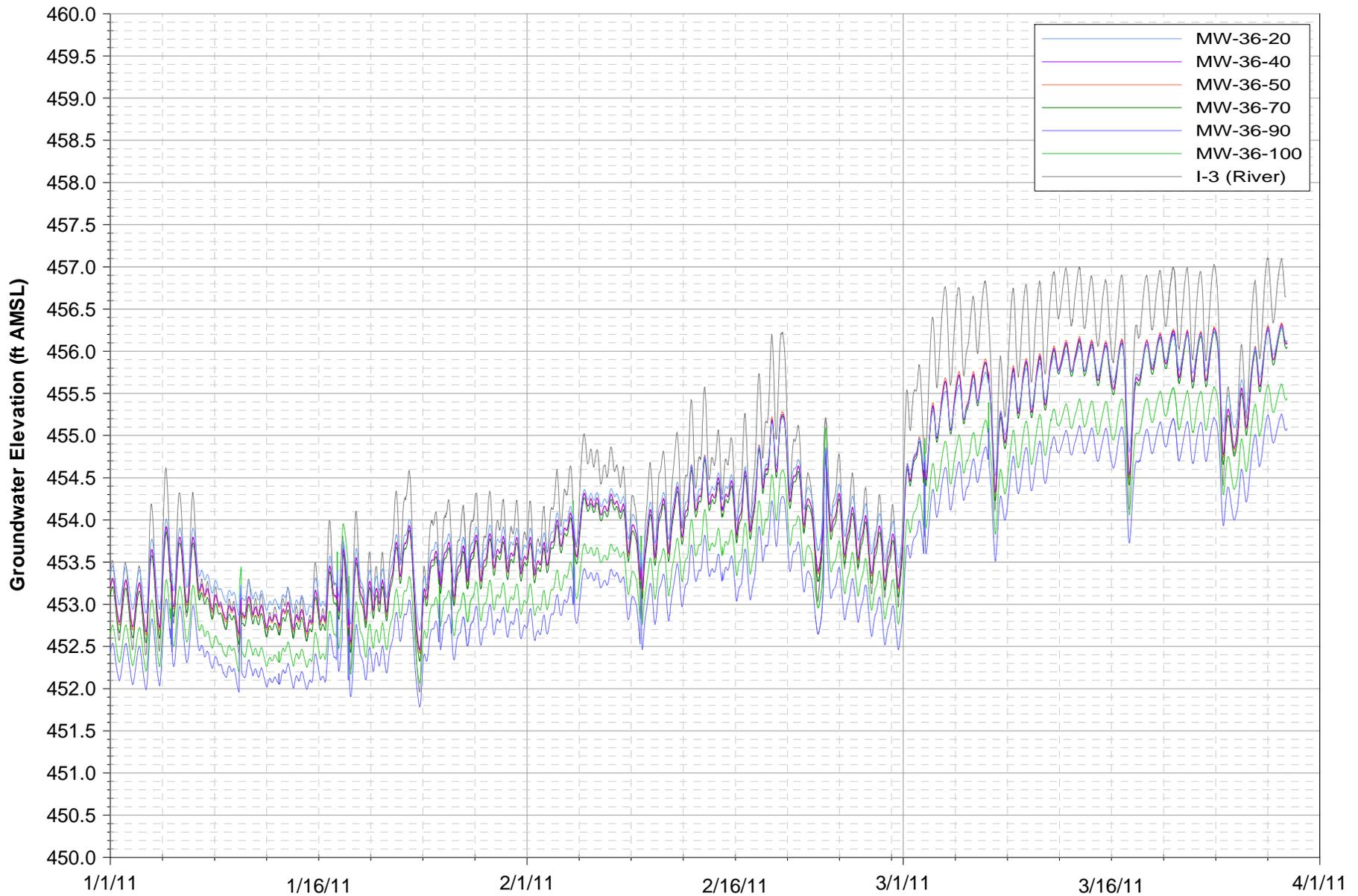
**FIGURE E-11**  
**MW-34 CLUSTER HYDROGRAPHS**

FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:  
 Data subject to review.  
 MW-35-60 data unavailable from January 1, 2011 through February 16, 2011 due to transducer failure.

**FIGURE E-1J**  
**MW-35 CLUSTER HYDROGRAPHS**  
 FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
 AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

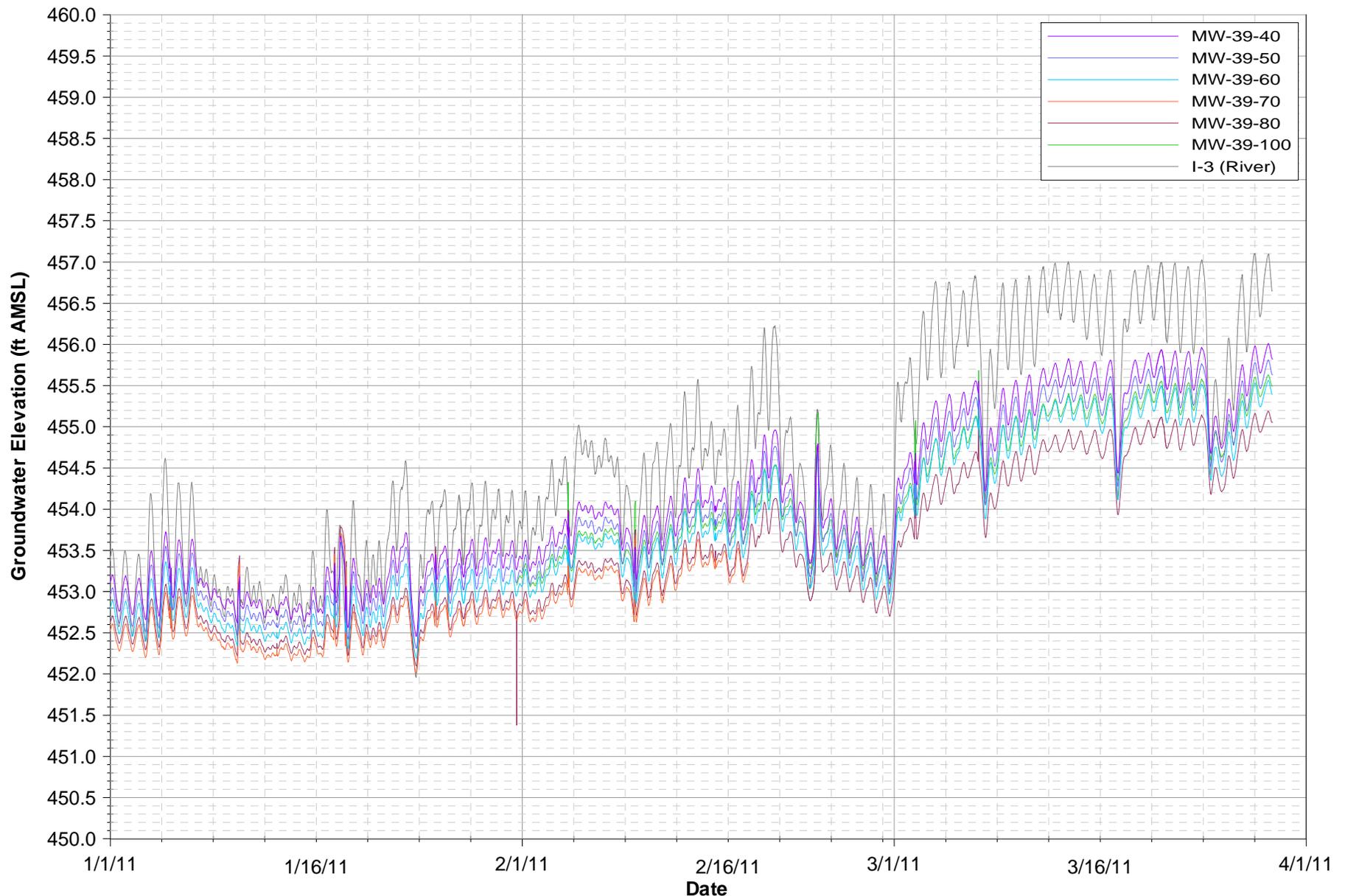


Notes:  
Data subject to review.

Date  
**FIGURE E-1K**

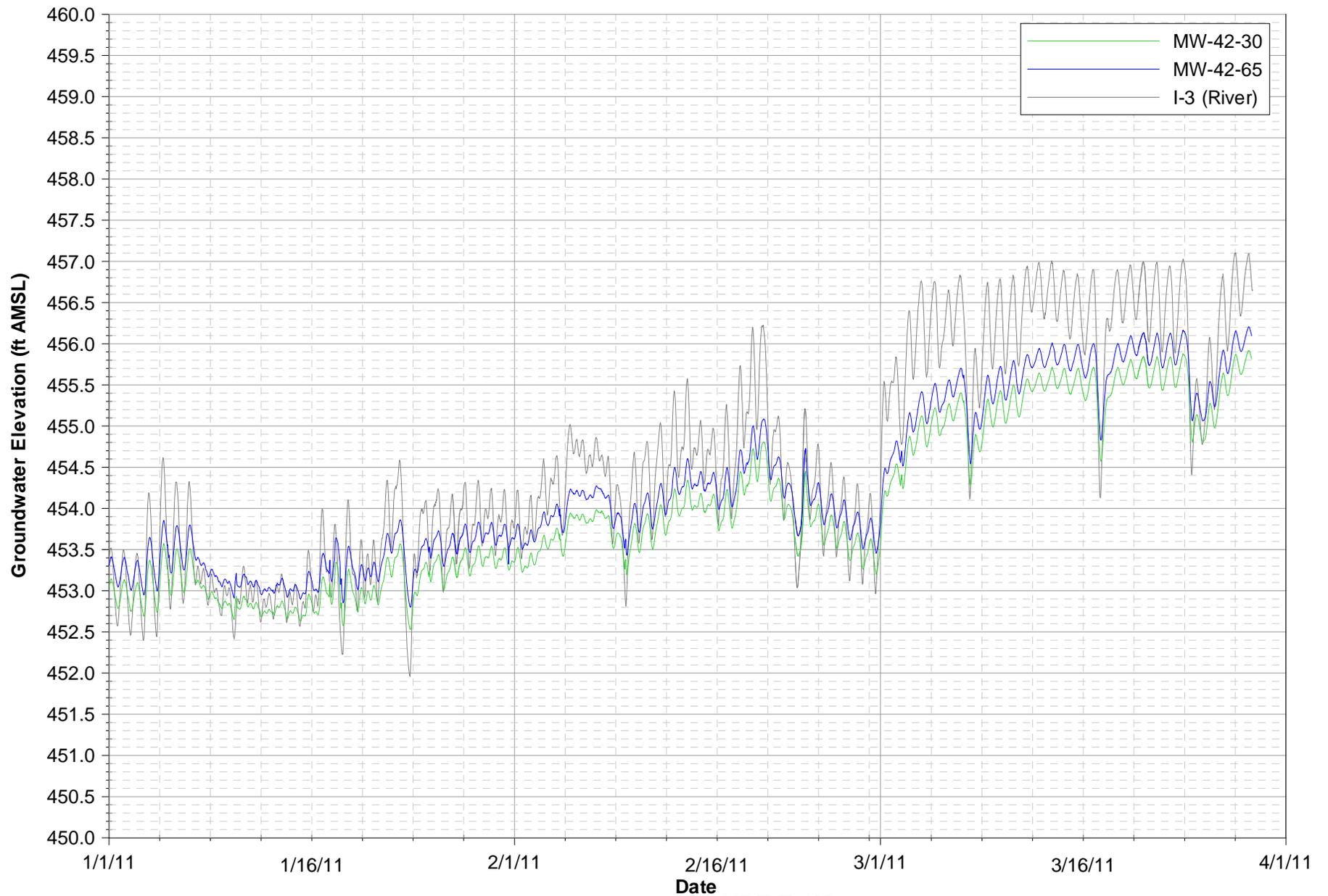
**MW-36 CLUSTER HYDROGRAPHS**

FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



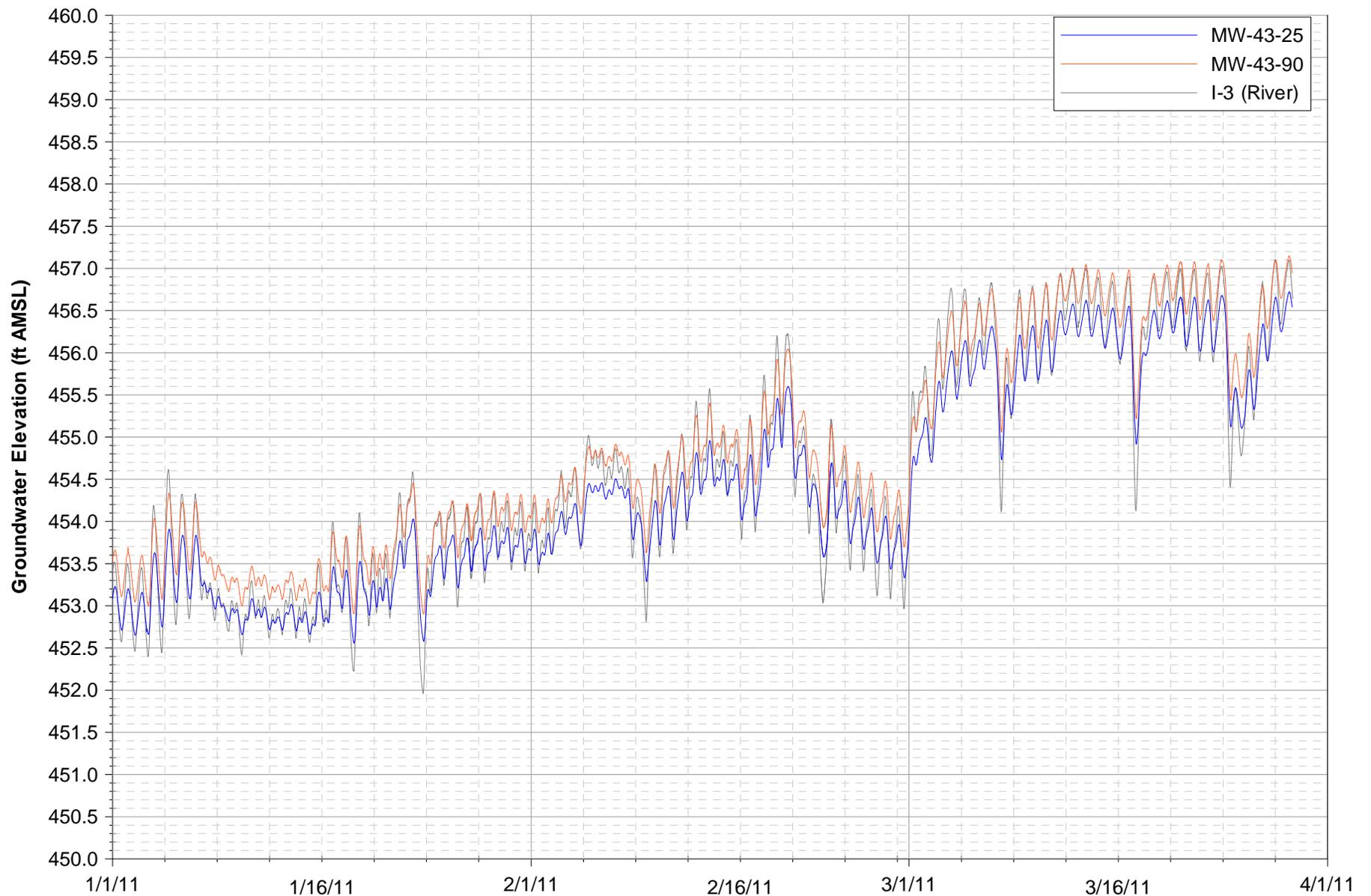
Notes:  
 Data subject to review.  
 MW-39-70 data unavailable from February 18, 2011 through March 31, 2011.  
 MW-39-100 data unavailable from January 1, 2011 through January 31, 2011.

**FIGURE E-1L**  
**MW-39 CLUSTER HYDROGRAPHS**  
 FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
 AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:  
Data subject to review.

**FIGURE E-1M**  
**MW-42 CLUSTER HYDROGRAPHS**  
 FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
 AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
 PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

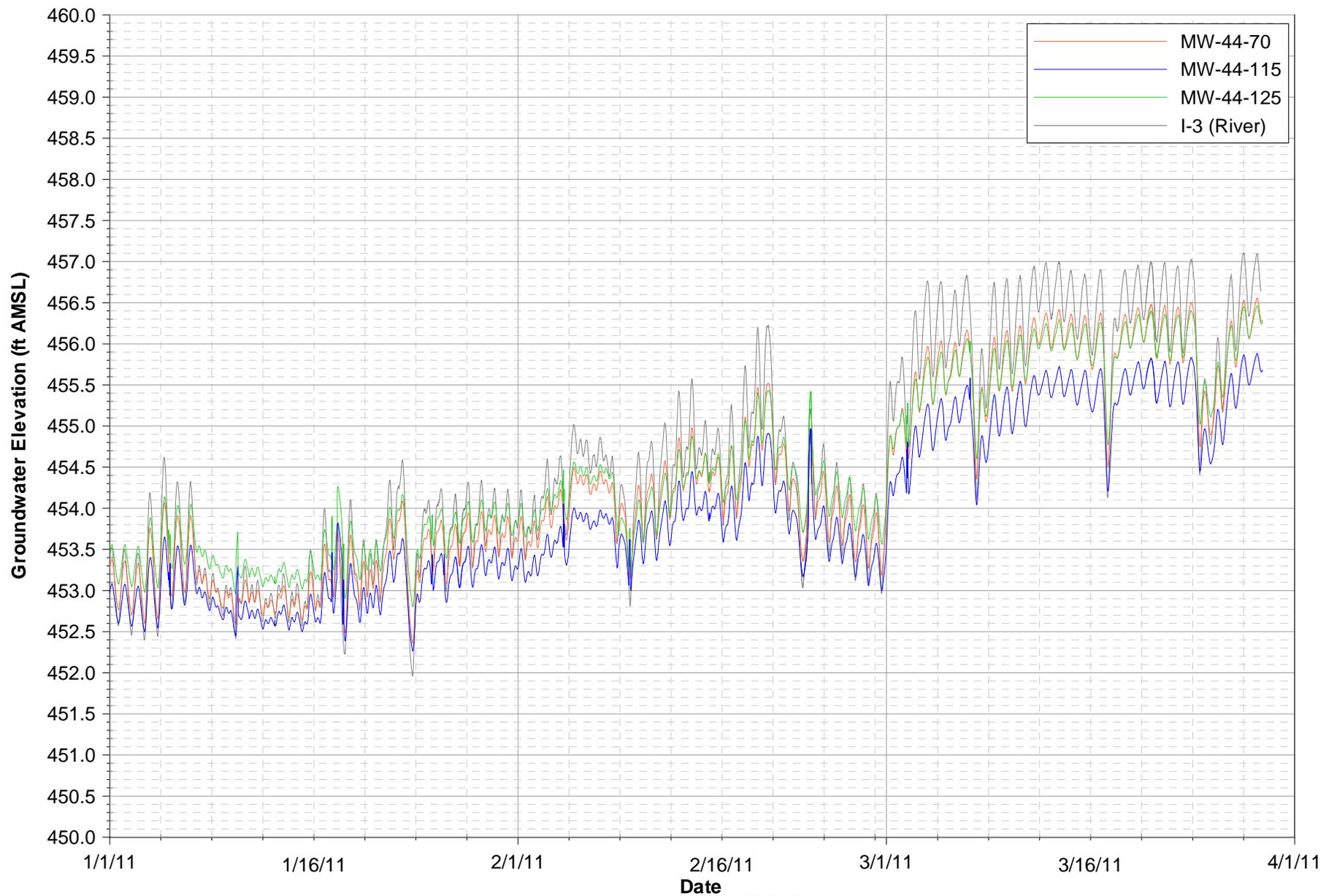


Notes:  
Data subject to review.

**FIGURE E-1N**

**MW-43 CLUSTER HYDROGRAPHS**

FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



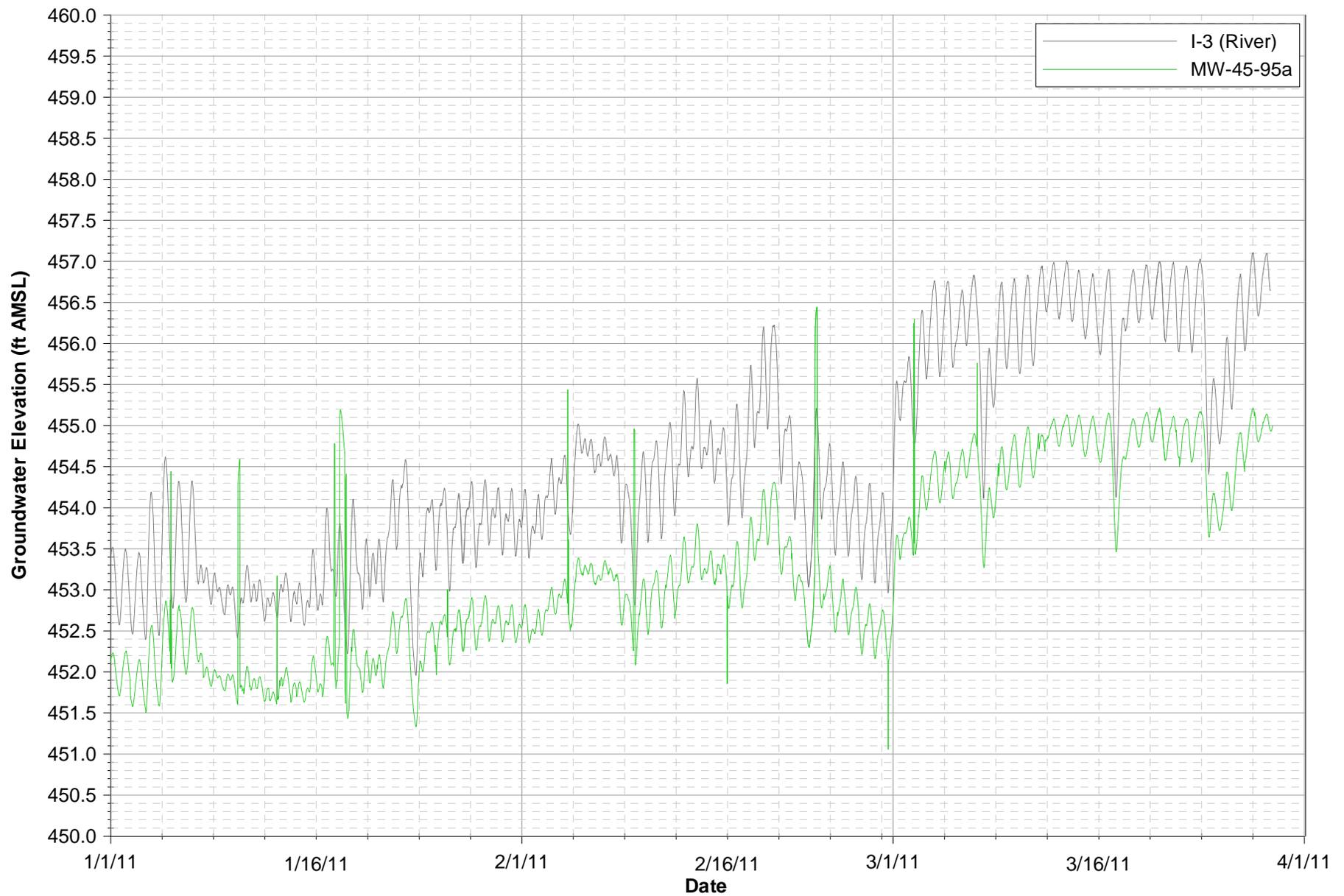
Notes:  
Data subject to review..

Date

**FIGURE E-10**

**MW-44 CLUSTER HYDROGRAPHS**

FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

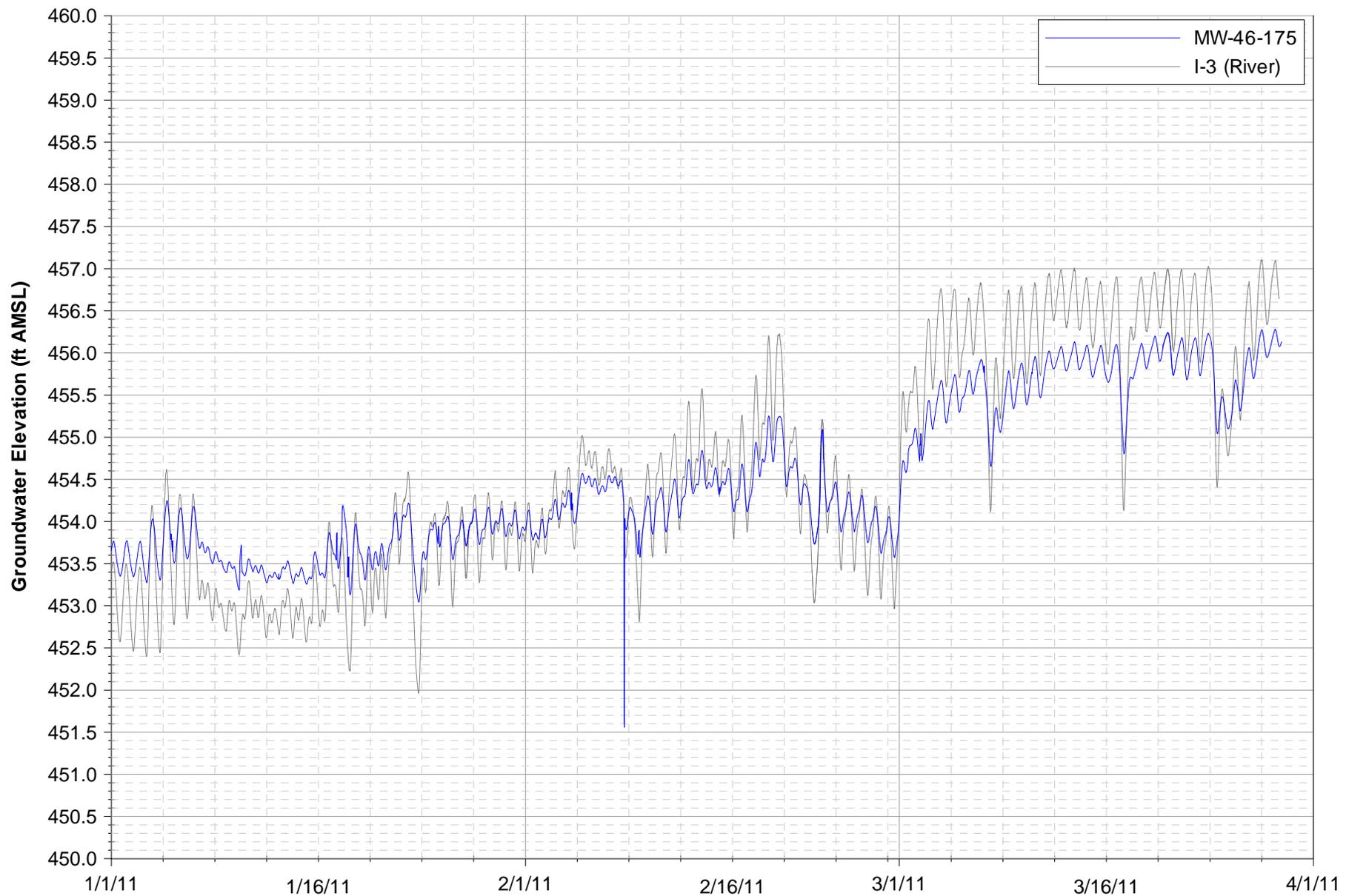


Notes:  
Data subject to review.

Date

**FIGURE E-1P**  
**MW-45-95a HYDROGRAPH**

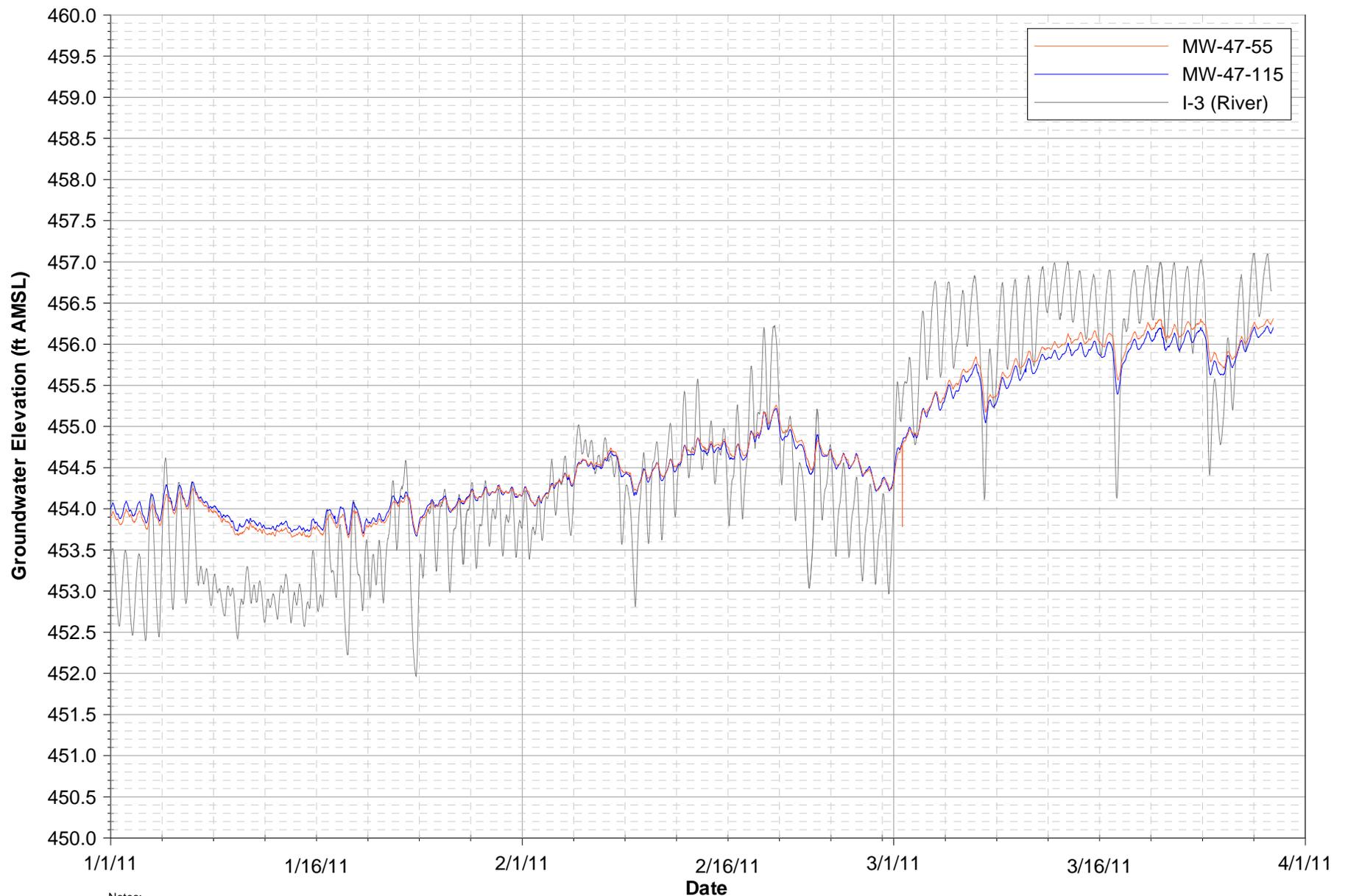
FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:  
Data subject to review.

**FIGURE E-1Q**  
**MW-46 HYDROGRAPH**

FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



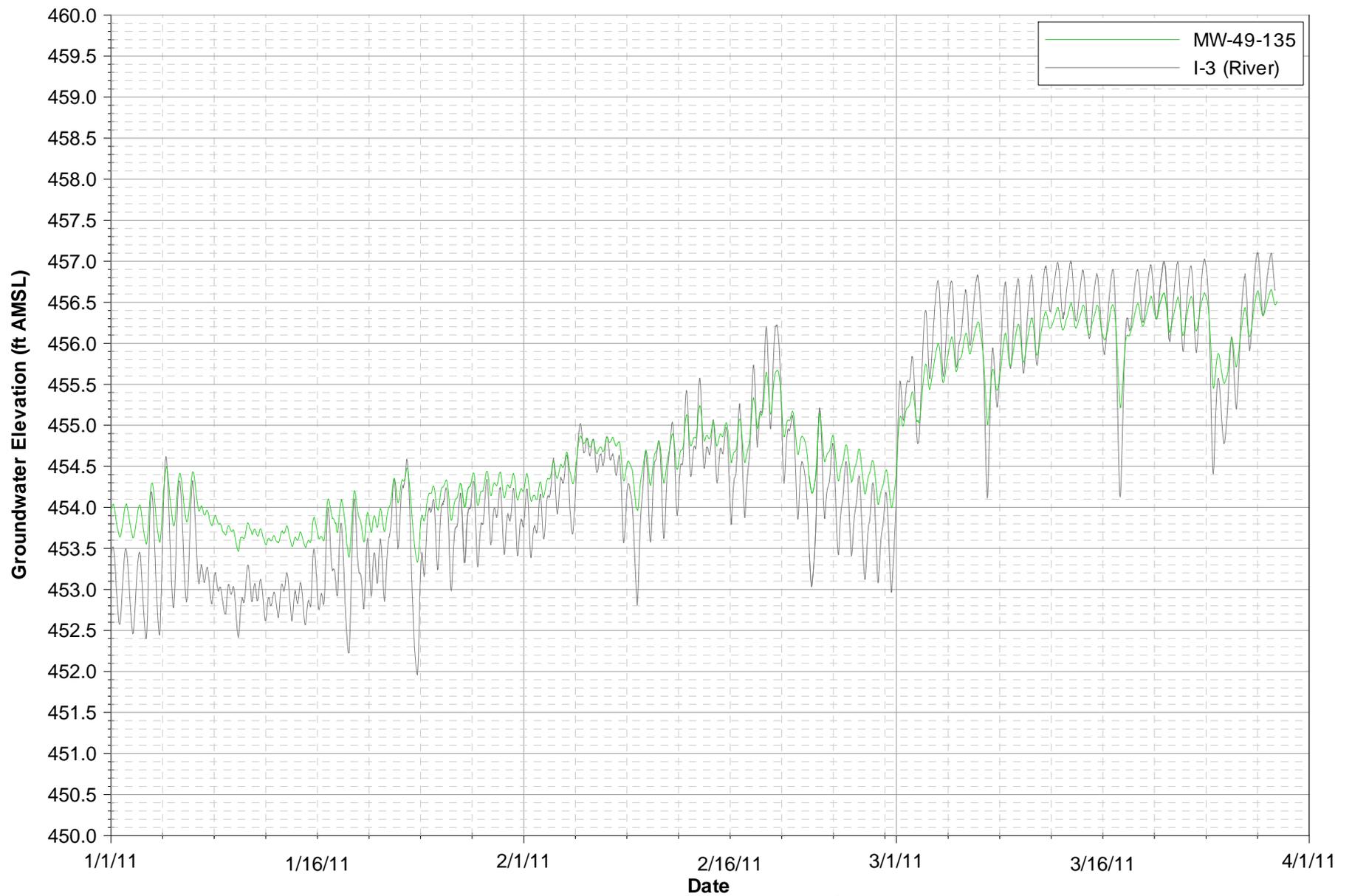
Notes:  
Data subject to review.

Date

**FIGURE E-1R**

**MW-47 CLUSTER HYDROGRAPHS**

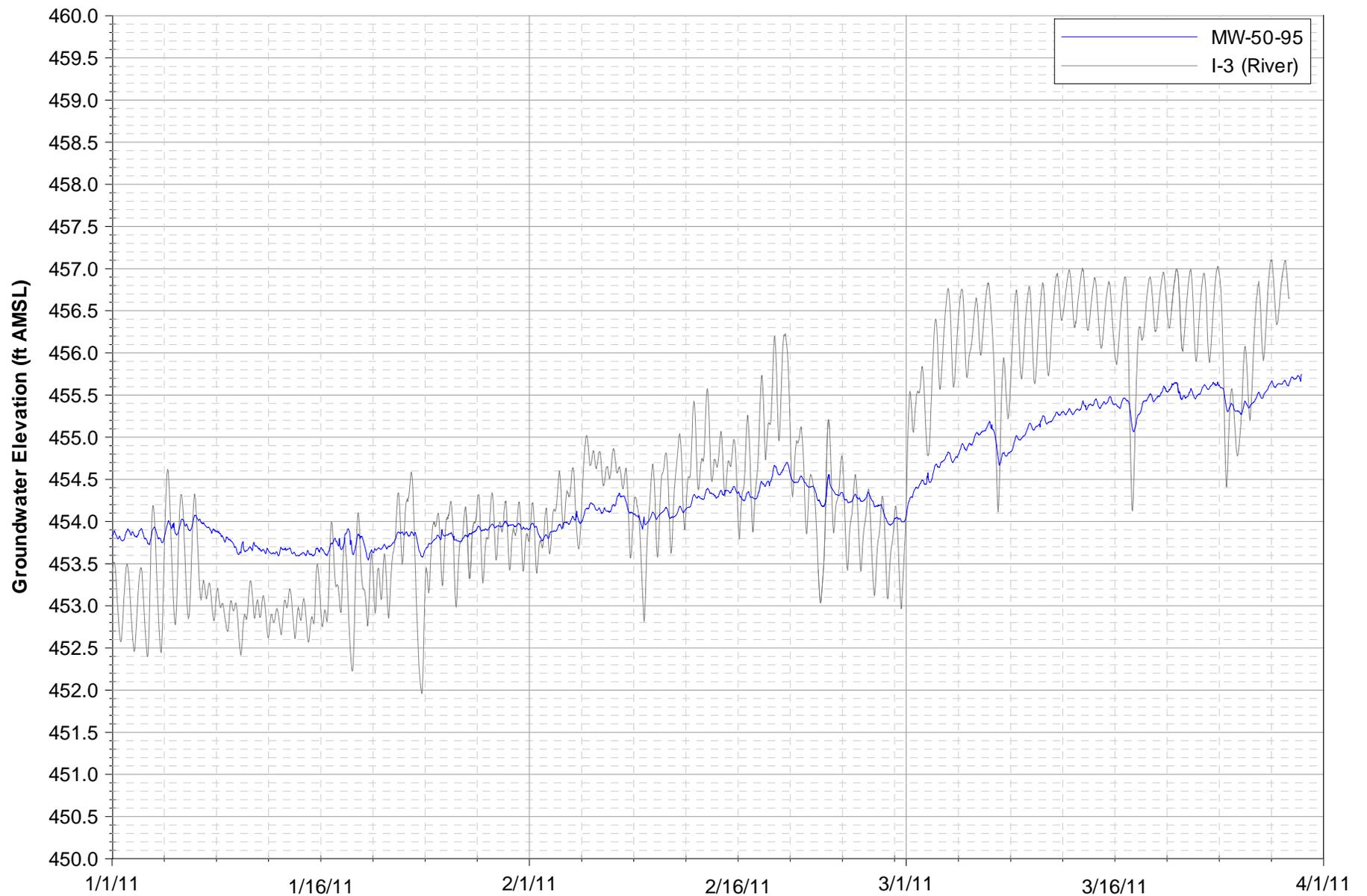
FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:  
Data subject to review.

**FIGURE E-1S**  
**MW-49 HYDROGRAPH**

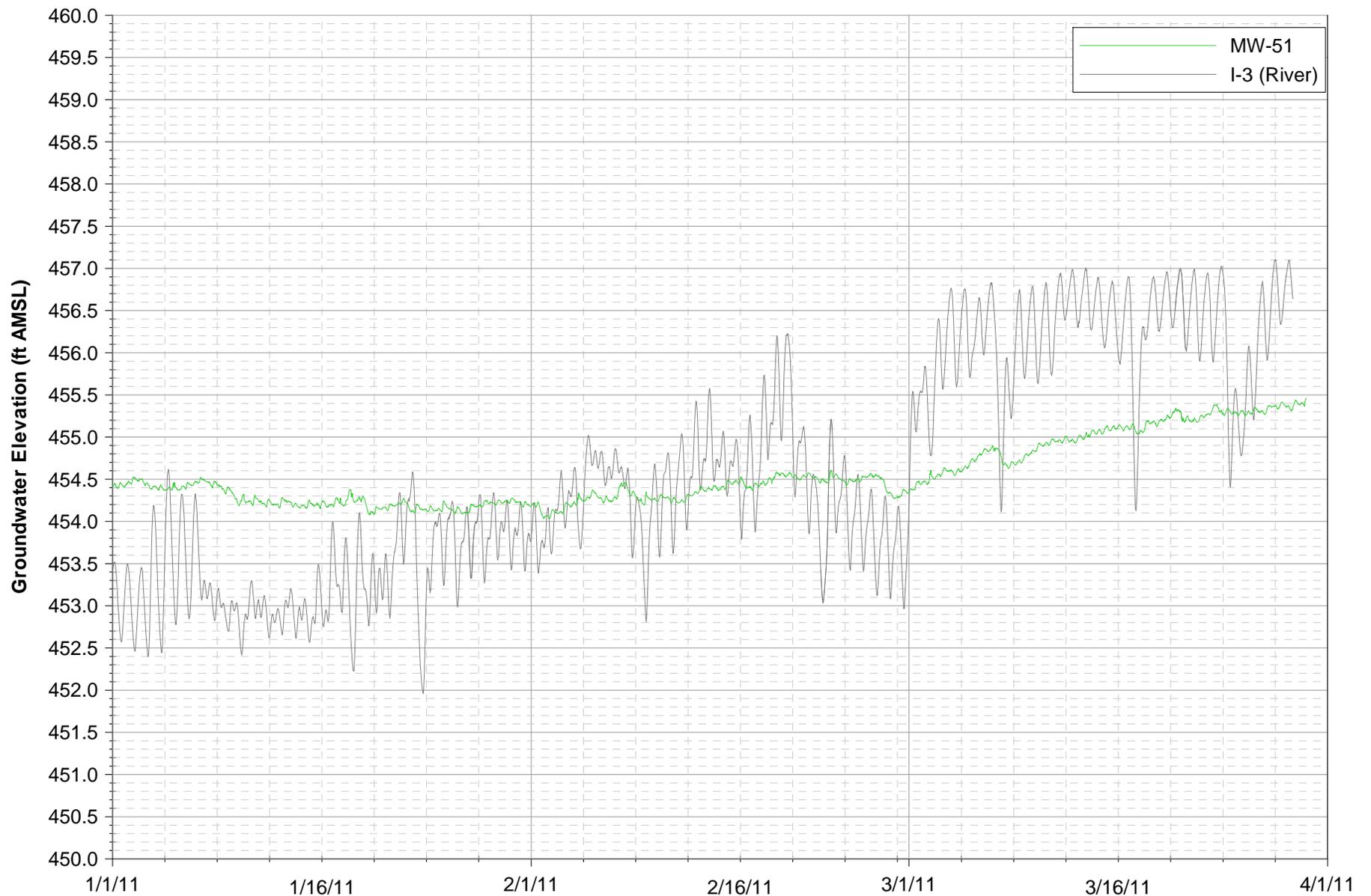
FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:  
Data subject to review.

**FIGURE E-1T**  
**MW-50 HYDROGRAPH**

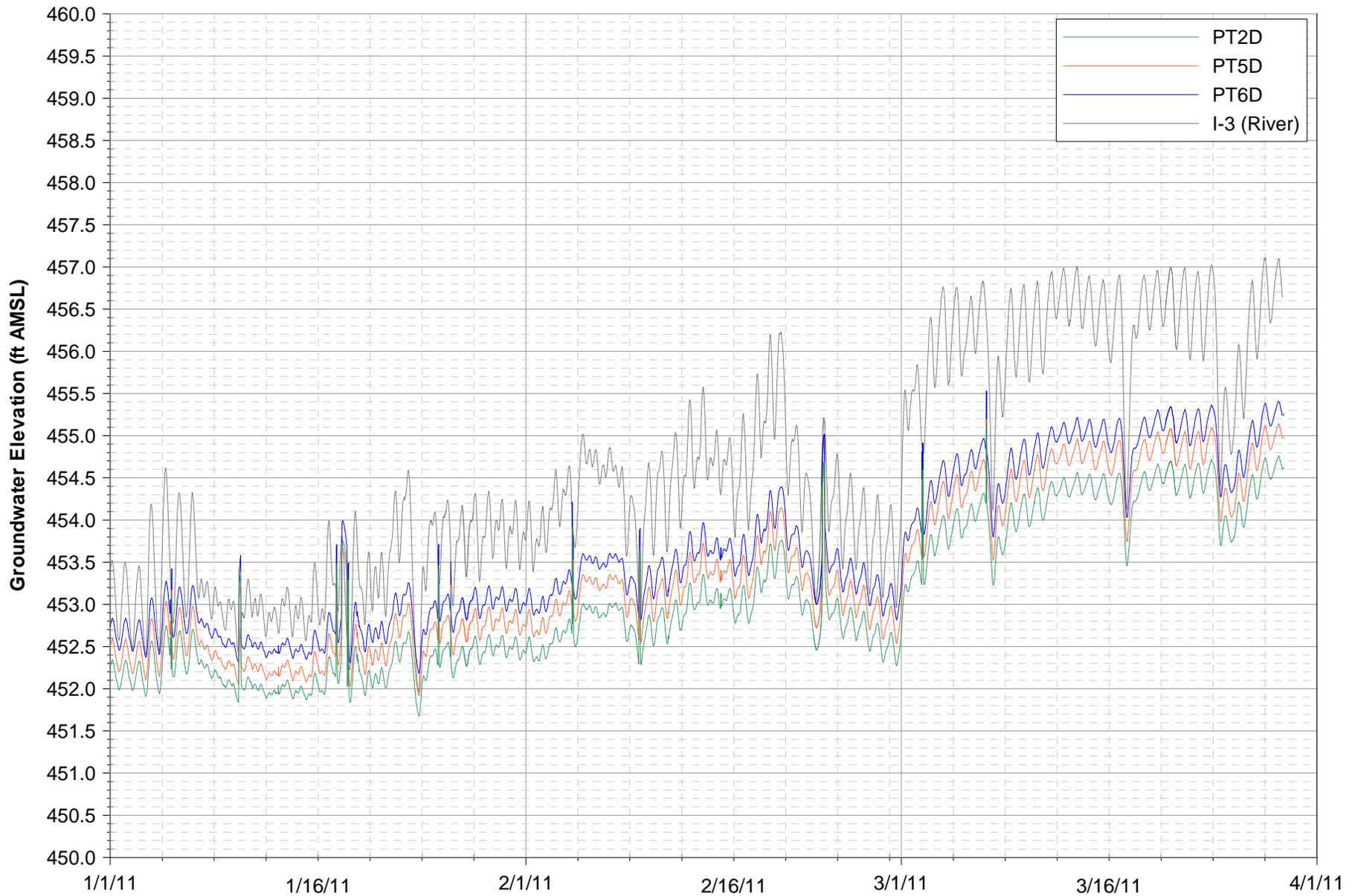
FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:  
Data subject to review.

**FIGURE E-1U**  
**MW-26 & MW-51 HYDROGRAPHS**

FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Note:  
Data subject to review.

Date  
**FIGURE E-1V**

**INSITU PILOT STUDY WELL HYDROGRAPHS**

FIRST QUARTER 2011 INTERIM MEASURES PERFORMANCE MONITORING  
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT  
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA