Topock Project Executive Abstract

Document Title: First Quarter 2012 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Submitting Agency: DTSC

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What does this information pertain to?
☐ Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA)
☐ RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment)
☐ Corrective Measures Study (CMS)/Feasibility Study (FS)
☐ Corrective Measures Implementation (CMI)/Remedial Action
☐ California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR)
☒ Interim Measures
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Is this a Regulatory Requirement?
☒ Yes
☐ No
If no, why is the document needed?

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Report is required to be in compliance with DTSC requirements.

Other Justification/s:
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Brief Summary of attached document:

This quarterly report documents the monitoring activities and performance evaluation of the Interim Measure (IM) hydraulic containment system under the IM Performance Monitoring Program, 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.

Based on the data and evaluation presented in this report, the IM performance standard has been met for First Quarter 2012, which includes the months of January, February, and March 2012. The average pumping rate for the IM extraction system over the first quarter 2012 was 131.0 gallons per minute, and an estimated 37.6 kilograms of chromium were removed.

Written by: Pacific Gas and Electric Company

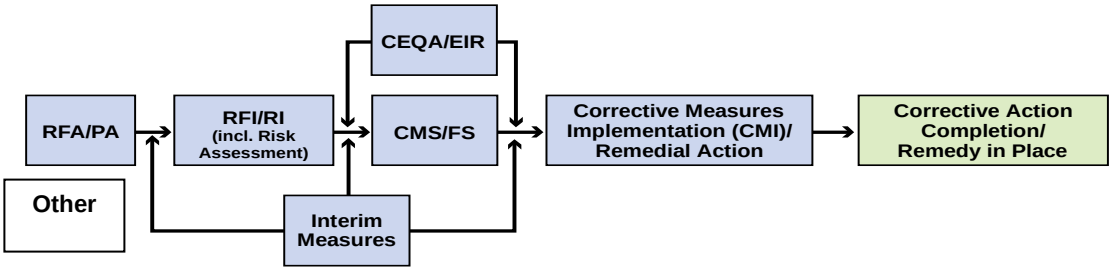
Recommendations:
This report is for information only.

How is this information related to the Final Remedy or Regulatory Requirements:
This report is required by DTSC as part of the Interim Measures Performance Monitoring Program.

Other requirements of this information?
None.

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).



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

Pacific Gas and Electric Company

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April 30, 2012

Mr. Aaron Yue
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Subject: *First Quarter 2012 Interim Measures Performance and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California* (Document ID: PGE20120430A)

Dear Mr. Yue:

Enclosed is the *First Quarter 2012 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California* for Pacific Gas and Electric Company's Interim Measures Performance Monitoring Program, the Groundwater Monitoring Program, and Surface Water Monitoring Program for the Topock project. This report presents First Quarter 2012 (January 2012 through March 2012) performance monitoring results for the Interim Measures (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 First Quarter 2012.

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) 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.

Sincerely,

Yvonne Meeks
Topock Project Manager

Enclosure
First Quarter 2012 Interim Measures Performance and Site-wide Groundwater and Surface Water Monitoring Report

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Final Report

First Quarter 2012 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Document ID: PGE20120430A

Prepared for

California Environmental Protection Agency, Department of Toxic Substances Control

on behalf of

Pacific Gas and Electric Company

April 30, 2012

CH2MHILL®

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Oakland, CA 94612

First Quarter 2012 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 Environmental Protection Agency, Department of Toxic Substances Control

On behalf of

Pacific Gas and Electric Company

April 30, 2012

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

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Acronyms and Abbreviations

µg/L	micrograms per liter
BOR	United States Bureau of Reclamation
CA MCL	California maximum contaminant level
COPC	contaminant of potential concern
Cr(VI)	hexavalent chromium
DTSC	California Environmental Protection Agency, Department of Toxic Substances Control
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
mg/L	milligrams per liter
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
USEPA	United States Environmental Protection Agency

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 on 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).

This report presents the monitoring data from PG&E's GMP, RMP, and PMP collected from January 1, 2012 through March 31, 2012 (hereafter referred to as the reporting period). The data collected as part of the GMP and RMP are presented in Section 3.0. The data collected 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, 2009). On July 23, 2010, DTSC approved a new sampling event timing and reporting schedule for the PMP, GMP, and RMP programs (DTSC, 2010a). See Table 1-1 for the current sampling and reporting schedule.

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 [USEPA] 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 (including well construction details) and descriptions of the current groundwater and surface water sampling, analyses, and monitoring programs, refer to PG&E's *Fourth Quarter 2011 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, 2012 (CH2M HILL, 2012).

In compliance with the requirements for Groundwater and Surface Water Monitoring Program directive of April 2005 (DTSC, 2005a), this document presents the First Quarter 2012 GMP and RMP report for the IM monitoring activities from January 1, 2012 through March 31, 2012.

1.1.1 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 over 100 wells, which monitor the Alluvial Aquifer and the bedrock and consist of:

- One hundred one monitoring wells in California (excluding bedrock wells equipped with packers and newly installed East Ravine/Topock Compressor Station Wells; excluding two dry wells and five wells currently sampled by ARCADIS under the Pilot Test Program).
- 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.

The bedrock boreholes MW-58BR and MW-64BR each have packers set dividing the boreholes into two monitoring zones. Groundwater samples at these locations are currently being monitoring under East Ravine/ Topock Compressor Station Groundwater Investigation (CH2M HILL, 2010a-c; DTSC 2011; United States Department of the Interior, 2011). These wells will be reincorporated into the GMP at the completion of the investigation.

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 February 2005 and in subsequent directives from the DTSC in 2007 (DTSC, 2005b, 2007a-c), this document presents the First Quarter 2012 PMP evaluation report for the IM monitoring activities from January 1, 2012 through March 31, 2012.

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. The IM only monitors the Alluvial Aquifer. 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. At this time, extraction wells PE-1 and TW-3D operate full time. 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 [µg/L] in the floodplain are contained for removal and treatment” (DTSC, 2005b). 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, 2005b-c). 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; and July 23, 2010 (DTSC, 2007a, 2008a-b, 2010a).

1.2.1 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 in service/active during this reporting period 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).
- **Extraction Wells** (TW-2D, TW-3D, TW-2S, and PE-01).

Three extraction wells (TW-2D, TW-3D, and TW-2S) are located on the MW-20 bench. Extraction well PE-1 is located on the floodplain approximately 450 feet east of extraction well TW-3D, as shown in Figure 1-4. As stated earlier, 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 PMP monitors hydrogeologic conditions in the Alluvial Aquifer. 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 Alluvial Aquifer is considered to be hydraulically undivided. The subdivision of the aquifer into three depth intervals is an appropriate construct for presenting and evaluating spatial and temporal distribution of 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 2012 Monitoring Activities

This section provides a summary of the monitoring and sampling activities completed during the reporting period.

2.1 Groundwater Monitoring Program

2.1.1 Monthly

Cr(VI) and chromium samples were collected from the active IM extraction wells (PE-1 and TW-3D) in January, February, and March 2012.

Cr(VI), chromium, and arsenic samples were collected from wells MW-34-100 and MW-46-175 in January, per DTSC direction (DTSC, 2010a).

2.1.2 Quarterly

Following the July 23, 2010 sampling schedule approval (DTSC, 2010a), the first quarter 2012 GMP quarterly groundwater monitoring event was conducted from February 6 through February 23, 2012. Select field parameters recorded during well purging included oxidation-reduction potential and pH. Groundwater samples were analyzed for Cr(VI), chromium, and specific conductance.

In addition, groundwater samples were submitted for laboratory analysis of the following constituents at selected GMP wells during the First Quarter 2012 sampling event, including:

- California Code of Regulations Title 22 metals, which includes arsenic at MW-12.
- Arsenic at 15 GMP wells screened in fluvial sediments.
- Arsenic at 10 bedrock monitoring wells.
- Samples were also analyzed from a subset of wells for contaminants of potential concern (COPCs), including molybdenum, nitrate, and selenium and potential in situ byproducts (manganese and arsenic). In an email dated March 3, 2010, DTSC directed monitoring of these COPCs and potential in situ byproducts (DTSC, 2010d).

2.1.3 Other Monitoring

Groundwater samples were submitted for Title 22 metals analysis from 11 wells that are part of the East Ravine/ Topock Compressor Station groundwater investigation.

2.2 Surface Water Monitoring Program

Quarterly surface water sampling was conducted January 10 through 11, 2012 and from February 28 through 29, 2012 from the complete RMP monitoring network. Samples were analyzed for Cr(VI), chromium, specific conductance, and pH. Samples were also analyzed for COPCs (molybdenum, nitrate, and selenium), in situ byproducts (manganese, iron, and arsenic), and geochemical indicator parameters to develop baseline concentrations for future remedy performance evaluation.

2.3 Performance Monitoring Program

PMP pressure transducers, which monitor the Alluvial Aquifer, are downloaded in the first week of every month (January, February, and March). The transducers in the key monitoring wells (MW-27-085, MW-34-100, and MW-45-095a; see Figure 1-4) are downloaded weekly. The transducers at the MW-33 cluster, including key well MW-33-150, and MW-31-135, are downloaded daily via a cellular telemetry system.

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, laboratory specific conductance, and field pH in groundwater samples collected from the reporting period. During First Quarter 2012, the maximum detected Cr(VI) concentration was 9,080 µg/L at well MW-50-200, consistent with previous results. The laboratory reports for results from First Quarter 2012 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 First Quarter 2012. 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 groundwater sampling events conducted in Fourth Quarter 2011, where a larger number of wells were sampled. 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, 2010d-e, 2011a-d, 2012).

3.2 Other Groundwater Monitoring Results

3.2.1 COPCs and In situ Byproducts

Table 3-2 presents the COPC and in situ byproduct results for groundwater monitoring wells sampled in First Quarter 2012. These results are as follows:

- The maximum detected molybdenum concentration was 200 µg/L, collected from well MW-33-40.
- The maximum nitrate result was 24.0 milligrams per liter (mg/L) nitrate as nitrogen, collected from well TW-1.
- The maximum selenium result was 24.0 µg/L, collected from well TW-1.
- The maximum detected manganese result was 1,700 µg/L, collected from well MW-42-65.
- The maximum fluoride result was 13 mg/L, collected from MW-33-40.
- Arsenic results are discussed in Section 3.2.3.

3.2.2 Title 22 Metals

Table 3-3 presents the Title 22 metals results for the GMP monitoring well MW-12 sampled during First Quarter 2012. In addition to chromium, the trace metals detected in MW-12 were arsenic, barium, molybdenum, selenium, and vanadium. The dissolved concentrations of the trace metals—other than chromium and arsenic—are below the respective federal and California maximum contaminant level (CA MCL) drinking water standards.

3.2.3 Arsenic Sampling in Monitoring Wells

Fifteen Alluvial Aquifer wells were sampled for arsenic in the First Quarter 2012 event. These results are presented in Table B-1 in Appendix B. Three of the monitoring well samples had arsenic concentrations greater than the CA MCL of 10 µg/L (MW-12, MW-33-40, and MW-42-55). The maximum concentration was detected in MW-12 at 47.0 µg/L. The arsenic concentrations are within the previously observed ranges for each well.

Ten bedrock wells were sampled for arsenic in the First Quarter 2012 event. These results are presented in Table B-1 in Appendix B. One of the bedrock monitoring well samples had an arsenic concentration greater than the CA MCL of 10 µg/L (MW-57-185 at 13.0 µg/L).

3.2.4 Other GMP Sample Results

Title 22 metals were collected from 11 wells as part of the East Ravine/Topock Compressor Station groundwater investigation. Results from these wells, are presented in Table B-2 in Appendix B.

3.3 Surface Water Sampling Results

Table 3-4 presents results of Cr(VI), chromium, specific conductance, and lab pH from the two surface water sampling events conducted during this reporting period. Cr(VI) was not detected above the reporting limit at any in-channel, shoreline, or other surface water monitoring locations.

Table 3-5 presents results for the COPCs (molybdenum, nitrate, and selenium), in situ byproducts (manganese, iron, and arsenic), and other geochemical indicator parameters for surface water samples. Molybdenum and selenium results were below laboratory reporting limits, while low arsenic (less than 3 µg/L) concentrations were detected at most sample locations. In situ byproducts and other geochemical indicator results were also all generally very low and near laboratory reporting limits.

3.4 Data Validation and Completeness

Laboratory analytical data from the First Quarter 2012 GMP sampling events were reviewed by project chemists to assess data quality and to identify deviations from analytical requirements.

The following bullets summarize the notable analytical qualifications in the data reported this quarter:

- One sample had matrix spike recoveries that were outside the control limits for Method SW 6010B (copper and cadmium), and one sample had matrix spike recoveries that were outside the control limits for Method SW 6020A (chromium). The associated nondetect results were qualified and flagged “UJ”, and the associated detect results were qualified and flagged “J”.
- One Method SW 6020A (selenium) sample had matrix spike/matrix spike duplicate recoveries with a relative percent difference greater than the upper control limit; the detect sample result was qualified and flagged “J”.
- One field duplicate pair had a relative percent difference greater than the upper control limit for USEPA Method 120.1 (specific conductance). The detect results were qualified and flagged “J”.
- Six USEPA Method 218.6 (hexavalent chromium) results exhibited a matrix interference issue that required a dilution to achieve satisfactory matrix spike recovery, resulting in an elevated reporting limit. The sample results were qualified, but no flags were added.
- Based on the March 2007 USEPA ruling, pH has a 15-minute holding time. As a result, Method SM4500-HB (pH) samples analyzed in a certified lab require qualification. Therefore, all of the pH results for the River Monitoring Program samples were qualified as estimated and flagged “J”.
- One USEPA Method 300.0 (nitrate) sample was analyzed outside the USEPA recommended holding time. The nondetect result was qualified as estimated and flagged “UJ”.

No other significant analytical deficiencies were identified in the First Quarter 2012 GMP and RMP 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 2012. 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 2012 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 on Figure 4-1.[1] Figure 4-2 presents the First Quarter 2012 Cr(VI) results for cross-section B, oriented parallel to the Colorado River. The location of cross-section B is shown on Figure 1-4. The Cr(VI) concentration contours shown for the Alluvial Aquifer on these figures are based on results for groundwater samples collected in Fourth Quarter 2011, where a larger number of wells were sampled.

Figure 4-3 presents Cr(VI) concentration trend graphs for selected deep monitoring wells in the floodplain area through March 2012. 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 on Figure 1-4. Appendix C includes Cr(VI) concentration trend graphs for selected monitoring well clusters through October 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 First Quarter 2012. 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.

Key Cr(VI) and chromium trends for PMP groundwater monitoring wells (see Figure 1-4) sampled during First Quarter 2012 include:

- Cr(VI) concentrations at MW-28-90 have remained below or near the reporting limit since 2004, as presented in Figure C-4 in Appendix C.
- Mid-depth and deep MW-33 cluster Cr(VI) concentrations have shown stable trends since 2008, while shallow well MW-33-40 has remained below or near the reporting limit since 2004, as presented in Figure C-5 in Appendix C.
- Cr(VI) concentrations at MW-34-100 have been variable, but generally declining, since June 2006, as shown on Figure 4-3. In addition to this primary overall downward trend in Cr(VI) concentration, MW-34-100 also shows a secondary seasonal effect in concentration related to high (spring/summer) and low (winter) Colorado River levels. The transitions between high and low river stages are believed to result in relatively small changes in

[1] 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.

the direction of the flow paths around MW-34-100 (both horizontally and/or vertically). Such changes in flowpaths could result in seasonal variations in the concentrations observed in MW-34-100 as groundwater is pulled from areas of higher concentrations and/or lower oxidation-reduction potential.

- The secondary trend of seasonal fluctuation in Cr(VI) is also seen in other monitoring wells; specifically, a stable Cr(VI) seasonal trend is seen at MW-35-60 and MW-46-175. River levels are discussed in Section 4.6.
- Cr(VI) concentrations at MW-44-115 have shown a steady declining trend since the well was constructed in 2006.
- Cr(VI) concentrations at MW-44-125 above 600 µg/L in 2006, shortly after the well was constructed, have steadily declined since late 2008. During First Quarter 2012, Cr(VI) concentrations were at or below laboratory reporting limits.

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; 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 2012 were all below their assigned trigger levels.

4.4 Extraction Systems Operations

Pumping data for the IM-3 groundwater extraction system for the reporting period of January 1through March 31, 2012 are presented in Table 4-1. From January 1 through March 31, 2012, the volume of groundwater extracted and treated by the IM-3 system was 17,165,892 gallons. This resulted in removal of an estimated 82.9 pounds (37.6 kilograms) of chromium from the aquifer during the period from January 1, 2012 through February 29, 2012[2].

During First Quarter 2012, extraction wells TW-3D and PE-1 operated at a combined pumping rate of 131.0 gallons per minute (gpm), including periods of planned and unplanned downtime. The average monthly pumping rates during the reporting period were 132.5 gpm (January 2012), 131.3 gpm (February 2012), and 129.2 gpm (March 2012). Extraction wells TW-2S and TW-2D were not operated during First Quarter 2012. The operational run-time percentage for the IM extraction system was 98.7 percent during this reporting period. The operations log for the extraction system during First Quarter 2012, including planned and unplanned down time, 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. Four containers of solids from the IM-3 facility were disposed of at the Kettleman Hills Chemical Waste Management facility during First Quarter 2012. 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 reporting period, Cr(VI) concentrations in TW-3D remained stable, ranging from a maximum value of 1,040 µg/L in March 2012 to a minimum value of 938 µg/L in January 2012, as shown in Table 4-2. TDS concentrations in TW-3D for this period have remained relatively stable as shown in Table 4-2.

The Cr(VI) concentrations in the extracted groundwater at well PE-1, located on the floodplain, ranged from to 7.9 to 11.6 µg/L during the reporting period, as shown in Table 4-2. TDS concentrations in PE-1 for this period have also remained stable.

[2] Chromium removed this reporting period includes the period of January 1 through February 29, 2012. On July 23, 2010, DTSC approved a revised reporting schedule for this report that included a revised IM-3 sample collection period from January 1, 2012 through February 29, 2012.

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 57 wells in the Alluvial Aquifer 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 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 (that is, adjusted to a common freshwater equivalent), as described in the Performance Monitoring Plan. Groundwater elevation hydrographs for the PMP wells during the 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 2012 groundwater elevations for the shallow, mid-depth, and deep wells are presented and contoured in plan view on 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 higher water levels that are not contoured in the plan view in Figure 4-4c.

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 (CH2M HILL, 2009a, 2009f).

Hydraulic gradients were measured during the 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 First Quarter 2012. 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 0.0049 to 0.0052 feet per foot (ft/ft). This is 4.9 to 5.2 times greater than the required gradient of 0.001 ft/ft. The gradient for the northern well pair ranged from 2.2 to 2.3 times the target gradient of 0.001 ft/ft. For the central well pair, the average landward gradient ranged from 8.9 to 9.7 times the target gradient. The southern well pair gradients averaged 3.6 to 3.9 times the target gradient for the 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 2012 is based on the March 2012 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 on 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 April 2012. 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 projected Davis Dam release for April 2012 (18,300 cubic feet per second) will be more than the actual release in March 2012 (15,134 cubic feet per second). Based on April 2012 BOR predictions, it is anticipated that the Colorado River level at the I-3 gage location in April 2012 will be approximately 1.22 feet higher compared to the actual levels in March 2012. Current projections show that the water levels will increase and then decrease during the next quarterly reporting period (April through June 2012), as shown on Figure 4-7.

4.7 Quarterly PMP Evaluation Summary

The groundwater elevation and hydraulic gradient data from January 2012 through March 2012 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 First Quarter 2012 were 4.9 to 5.2 times the required minimum magnitude. The current gradient well pairs are adequate to define the capture of the Cr(VI) 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 2012 reporting period.

A total of 17,165,892 gallons of groundwater were extracted between January and March 2012 by the IM-3 treatment facility. The average pumping rate for the IM extraction system during First Quarter 2012, including system down time, was 131.0 gpm. An estimated 82.9 pounds (37.6 kilograms) of chromium were removed and treated between January 1 and February 29, 2012.

A review of the groundwater gradient maps for First Quarter 2012 (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 generally oriented towards the TW-3D and PE-1 extraction wells.

Presentation and evaluation of the Cr(VI) trends observed in the performance monitoring area during First Quarter 2012 are discussed in Section 4.2. 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 First Quarter 2012.

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 2012 monitoring report, which will be submitted by August 30, 2012.

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 monitoring event will occur April 9 through May 11, 2012.

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.

5.2 Surface Water Monitoring Program

The Second Quarter 2012 surface water monitoring event will be conducted at locations in the RMP monitoring network and is scheduled to occur on May 22-23, 2012. Results will be reported in the Second Quarter 2012 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 First Quarter 2012, except for periods when planned and unplanned down time occurs. Extracted groundwater treated at the IM-3 facility will be discharged into the IM-3 injection wells in accordance with compliance requirements of the waste discharge ARARs. 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-33-150, MW-34-100, and MW-45-095) will continue to be conducted weekly during Second Quarter 2012 and daily for the MW-33 cluster, including key well MW-33-150 and MW-31-135. Downloads of the remainder of the transducers will occur during the first week of each month during Second Quarter 2012.

6.0 References

ARCADIS. 2011. *Third Quarter 2011 Monitoring Report for the Upland Reductive Zone In-Situ Pilot Test*. October 4.

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." February 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.

_____. 2009. Email. "Re: Request for Combined Reporting of Topock GMP and PMP." May 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.

_____. 2010d. Email. "Topock GMP Monitoring Frequency Modification, Topock Compressor Station, Needles, California." March 3.

_____. 2011. Email. "RE: Topock GMP COPC sampling plan: topic for weekly tech calls." November 18.

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. *Contingency Plan for IM Performance Monitoring, Revision 1*, dated August 2006. Submitted to DTSC via e-mail. August 28

_____. 2008. *Groundwater Background Study, Steps 3 and 4: Final Report of Results, PG&E Topock Compressor Station, Needles, California*. July 23.

_____. 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.

_____. 2009f. *Final Groundwater Corrective Measures Study/Feasibility Study Report for SWMU 1/AOC 1 and AOC 10, PG&E Topock Compressor Station, Needles, California.* December 16.

_____. 2010a. *Implementation Plan for Packer Evaluation of the MW-58BR Borehole, PG&E Topock Compressor Station, Needles, California.* August 11.

_____. 2010b. *Revised Addendum to the Revised Work Plan for East Ravine Groundwater Investigation, PG&E Topock Compressor Station, Needles, California*. December 31.

_____. 2010c. *Revised Implementation Plan for Packer Evaluation of the MW-64BR Borehole, PG&E Topock Compressor Station, Needles, California*. December 14.

_____. 2010d. *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.

_____. 2010e. *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 2010 and Annual Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. March 15.

_____. 2011b. *First Quarter 2011 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. April 29.

_____. 2011c. *Second Quarter 2011 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. August 15.

_____. 2011d. *Third Quarter 2011 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. November 30.

_____. 2012. *Fourth Quarter 2011 and Annual Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California*. March 15.

Pacific Gas and Electric Company (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.

United States Department of the Interior. 2011. Email. "PG&E Topock Compressor Station Remediation Site – *Revised Addendum to the Revised Work Plan for East Ravine Groundwater Investigation, PG&E Topock Compressor Station, Needles, California."* February 4.

Tables

Table 1-1

Topock Monitoring Reporting Schedule
First Quarter 2012 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Program	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Groundwater Monitoring Program	January - March	April - June	July-October	November-December
Surface Water Monitoring Program	January - March	April - June	July-October	November-December
Performance Monitoring Program	January - March	April - June	July-October	November-December
IM-3 Monitoring (Chromium removed)	January - February	March - May	June-September	October-December

Table 3-1
Groundwater Sampling Results, February 2011 through March 2012
First Quarter 2012 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[a] (µS/cm)	Field pH
MW-9	SA	09-Dec-11	299	290	130	2,800	7.3
MW-10	SA	05-May-11	411	384	-15	3,000	7.7
		05-May-11 FD	391	401	FD	3,000	FD
		09-Dec-11	621	622	62	2,600	7.6
MW-12	SA	10-Feb-11	2,950	3,160	180	6,250	8.4
		06-May-11	2,910	2,870	150	6,400	8.2
		06-Oct-11	2,840	3,200	73	6,700	8.3
		09-Dec-11	2,240	2,830	47	6,400	8.2
		09-Feb-12	2,730	3,100	120	7,000	7.6
MW-13	SA	06-Dec-11	21.2	22.6	67	1,900	7.7
MW-14	SA	09-Dec-11	20.1	22.8	7.0	1,500	7.6
MW-15	SA	07-Dec-11	11.5	12.6	54	1,500	7.8
MW-16	SA	02-May-11	10.0	10.6	R	1,100	8.5
		07-Dec-11	11.8	11.3	54	1,100	8.0
MW-17	SA	03-May-11	15.0	15.9	R	1,500	8.0
		07-Dec-11	15.8	14.5	60	1,400	8.0
MW-18	SA	08-Dec-11	21.4	21.6	80	1,300	7.6
MW-19	SA	04-May-11	497	494	-2.1	2,200	7.8
		09-Dec-11	289	295	110	2,000	7.5
MW-20-70	SA	06-May-11	3,570	3,510	150	2,700	7.4
		07-Dec-11	3,570	3,560	130	2,600	7.6
[b] MW-20-100	MA	10-Feb-11	4,500	4,520	210	3,090	7.5
		06-May-11	5,640	5,600	140	3,100	7.1
		08-Dec-11	3,770	3,930	80	2,800	7.3
[b] MW-20-130	DA	10-Feb-11	10,100	10,600	220	12,200	7.6
		06-May-11	12,100	11,500	120	12,000	7.3
		09-Dec-11	11,100	11,500	82	11,000	7.4
MW-21	SA	08-Feb-11	3.3	3.6	190	8,450	7.4
		03-May-11	2.0	2.3	R	9,000	7.6
		29-Sep-11	ND (1.0)	ND (1.0)	23	13,000	7.1
		06-Dec-11	2.1	2.7	200	11,000	7.0
		07-Feb-12	2.1	4.8	77	10,000	7.1

Refer to table footnotes for data qualifier explanation.

Table 3-1
Groundwater Sampling Results, February 2011 through March 2012
First Quarter 2012 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) [a]	Field pH
MW-22	SA	03-May-11	ND (1.0)	ND (1.0)	-64	14,000	8.5
		16-Dec-11	ND (2.1)	1.0	-120	32,000	6.7
MW-23-060	BR	09-Feb-11	31.5	30.8	93	16,900	R
		04-May-11	30.2	31.3	-77	15,000	R
		29-Sep-11	26.8	29.8	-29	16,000	R
		13-Dec-11	29.9	30.6	110	16,000	R
		14-Feb-12	30.2	32.1	67	16,000	R
MW-23-080	BR	09-Feb-11	19.8	20.7	63	17,400	R
		04-May-11	14.1	13.3	-170	15,000	R
		04-May-11 FD	14.4	12.5	FD	16,000	FD
		29-Sep-11	5.6	5.6	-66	16,000	R
		12-Dec-11	8.7	8.8	-43	16,000	R
		12-Dec-11 FD	8.2	8.6	FD	16,000	FD
		14-Feb-12	9.5	10.8	-140	16,000	7.6
MW-24BR	BR	08-Feb-11	ND (1.0)	ND (1.0)	-170	14,900	8.1
		05-May-11	ND (1.0)	ND (1.0)	-130	14,000	8.5
		30-Sep-11	ND (1.0)	8.2 J	-130	14,000	8.3
		09-Dec-11	ND (1.0)	ND (1.0)	-150	14,000	8.2
		09-Dec-11 FD	ND (1.0)	ND (1.0)	FD	14,000	FD
		10-Feb-12	ND (1.0)	ND (1.0)	-240	14,000	8.0
MW-25	SA	15-Dec-11	249	265	130	1,600	7.2
		15-Dec-11 FD	269 J	259	FD	1,500	FD
MW-26	SA	05-May-11	2,010	1,890	63	4,000	7.3
		09-Dec-11	1,840	1,750	5.5	4,000	7.4
MW-27-20	SA	05-Dec-11	ND (0.2)	ND (1.0)	-160	1,000	7.5
MW-27-60	MA	05-Dec-11	ND (0.2)	ND (1.0)	-200	1,100	8.1
		07-Feb-12	ND (0.2)	ND (1.0)	-160	1,100	8.1
MW-27-85	DA	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
		28-Apr-11	ND (1.0)	ND (1.0)	20	13,000	7.4
		28-Apr-11 FD	ND (1.0)	ND (1.0)	FD	13,000	FD
		03-Oct-11	ND (1.0)	ND (1.0)	-83	12,000	7.2
		03-Oct-11 FD	ND (1.0)	ND (1.0)	FD	12,000	FD
		05-Dec-11	ND (1.0)	ND (1.0)	-87	13,000	7.1

Refer to table footnotes for data qualifier explanation.

Table 3-1
Groundwater Sampling Results, February 2011 through March 2012
First Quarter 2012 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) [a]	Field pH
MW-27-85	DA	07-Feb-12	ND (1.0)	ND (1.0)	-53	12,000	7.3
MW-28-25	SA	02-May-11	ND (0.2)	1.2	-8.8	1,000	7.6
		12-Dec-11	ND (0.2)	ND (1.0)	-29	1,200	7.1
MW-28-90	DA	08-Feb-11	ND (0.2)	ND (1.0)	-79	7,730	7.2
		02-May-11	ND (0.2)	ND (1.0)	-70	7,100	8.1
		26-Sep-11	ND (0.2)	ND (1.0)	-140	7,200	7.3
		12-Dec-11	ND (1.0)	ND (1.0)	-120	7,400	7.0
		07-Feb-12	ND (0.2)	ND (1.0)	-100	7,200	7.3
MW-29	SA	29-Apr-11	0.24	ND (1.0)	-120	2,200	7.3
		07-Dec-11	ND (0.2)	ND (1.0)	-110	2,400	7.2
MW-30-30	SA	03-May-11	ND (1.0)	ND (1.0)	-160	12,000	7.4
		07-Dec-11	ND (2.1)	ND (1.0)	-190	33,000	7.3
MW-30-50	MA	08-Dec-11	ND (0.2)	ND (1.0)	-190	1,200	7.7
MW-31-60	SA	04-May-11	331	324	-6.2	3,800	7.8
		06-Dec-11	489	500	55	3,200	7.7
MW-31-135	DA	06-Dec-11	14.4	15.1	1.9	11,000	7.9
MW-32-20	SA	08-Dec-11	ND (2.1)	ND (2.0)	-160	52,000	6.5
MW-32-35	SA	02-May-11	ND (1.0)	ND (1.0)	-230	17,000	7.7
		09-Dec-11	ND (1.0)	ND (1.0)	-170	16,000	6.9
MW-33-40	SA	09-Feb-11	ND (1.0)	1.7	22	10,500	7.7
		02-May-11	ND (0.2)	ND (1.0)	-150	5,900	8.5
		27-Sep-11	ND (1.0)	1.0	-66	12,000	7.8
		12-Dec-11	ND (1.0)	2.6	-45	9,900	7.7
		08-Feb-12	ND (0.2)	1.6	-45	7,000	8.1
MW-33-90	MA	09-Feb-11	24.2	25.3	7.7	10,600	7.4
		04-May-11	20.7	21.3	100	9,600	7.5
		04-Oct-11	16.8	20.2	63	10,000	7.3
		13-Dec-11	21.9	19.8	8.0	10,000	7.3
		09-Feb-12	20.1	23.0	83	10,000	7.4
MW-33-150	DA	09-Feb-11	12.2	12.3	R	17,700	7.5
		04-May-11	11.2	11.4	-93	15,000	7.4
		04-Oct-11	10.4	10.1	110	16,000	7.4
		13-Dec-11	12.7	12.4	42	17,000	7.3

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Table 3-1
Groundwater Sampling Results, February 2011 through March 2012
First Quarter 2012 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[a] (µS/cm)	Field pH
MW-33-150	DA	09-Feb-12	10.6	11.8	110	16,000	7.5
MW-33-210	DA	09-Feb-11	14.8	15.2	61	20,000	7.3
		04-May-11	10.7	11.0	-170	1,700	7.2
		27-Sep-11	12.7	12.9	-84	18,000	7.3
		13-Dec-11	14.5	14.5	9.9	18,000	7.2
		09-Feb-12	12.7	14.4	98	18,000	7.3
MW-34-55	MA	06-Dec-11	ND (0.2)	ND (1.0)	-160	990	7.7
MW-34-80	DA	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
		28-Apr-11	ND (1.0)	ND (1.0)	-19	7,600	7.6
		03-Oct-11	ND (1.0)	ND (1.0)	-92	7,800	7.3
		06-Dec-11	ND (1.0)	ND (1.0)	-83	7,300	7.4
		07-Feb-12	ND (0.2)	ND (1.0)	-27	7,800	7.3
MW-34-100	DA	07-Feb-11	210	201	28	18,400	7.5
		28-Apr-11	15.9	15.8	12	16,000	7.6
		28-Apr-11 FD	16.1	16.8	FD	16,000	FD
		03-Oct-11	55.8	56.9	5.7	17,000	7.4
		03-Oct-11 FD	57.0	61.7	FD	17,000	FD
		09-Nov-11	144	147	74	---	7.6
		06-Dec-11	210	209	-1	17,000	7.6
		06-Dec-11 FD	202	210	FD	17,000	FD
		18-Jan-12	208	217	87	---	7.7
		07-Feb-12	76.6	84.9	33	17,000	7.5
		07-Feb-12 FD	77.8	89.9	FD	17,000	FD
MW-35-60	SA	04-May-11	26.1	26.4	-19	6,700	7.9
		07-Dec-11	26.2	25.9	100	6,700	7.3
		06-Feb-12	24.6	27.7	110	6,900	7.3
MW-35-135	DA	04-May-11	29.4	31.0	-37	9,800	8.1
		07-Dec-11	35.3	36.9	97	9,600	7.6
MW-36-20	SA	14-Dec-11	ND (1.0)	1.1	-140	8,100	7.5
MW-36-40	SA	14-Dec-11	ND (0.2)	ND (1.0)	-150	1,300	7.7
MW-36-50	MA	14-Dec-11	ND (0.2)	ND (1.0)	-100	1,400	7.5
MW-36-70	MA	14-Dec-11	ND (0.2)	ND (1.0)	-77	1,100	7.9

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Table 3-1
Groundwater Sampling Results, February 2011 through March 2012
First Quarter 2012 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[a] (µS/cm)	Field pH
MW-36-90	DA	02-May-11	ND (0.2)	ND (1.0)	-71	1,300	8.9
		14-Dec-11	ND (0.2)	ND (1.0)	-100	1,200	8.3
MW-36-100	DA	03-May-11	56.4	62.5	-140	9,700	7.0
		06-Dec-11	73.3	76.4	-100	10,000	7.1
MW-37S	MA	07-Dec-11	10.1	9.9	-16	5,000	7.7
MW-37D	DA	05-May-11	178	172	90	15,000	7.6
		08-Dec-11	62.5	70.8	-88	15,000	7.7
MW-39-40	SA	15-Dec-11	ND (0.2)	ND (1.0)	-160	2,000	7.9
		15-Dec-11 FD	ND (0.2)	ND (1.0)	FD	2,000	FD
MW-39-50	MA	15-Dec-11	ND (0.2)	ND (1.0)	-97	1,500	8.1
MW-39-60	MA	15-Dec-11	ND (0.2)	ND (1.0)	-60	1,700	7.9
MW-39-70	MA	15-Dec-11	ND (0.2)	ND (1.0)	-4.2	3,500	7.5
MW-39-80	DA	15-Dec-11	ND (1.0)	ND (1.0)	-4.5	1,100	7.0
MW-39-100	DA	14-Dec-11	130	138	18	17,000	6.5
MW-40S	SA	07-Dec-11	7.6	7.8	93	2,300	7.5
MW-40D	DA	05-May-11	140	124	-7.7	14,000	7.4
		07-Dec-11	169	172	9.0	15,000	7.4
MW-41S	SA	07-Dec-11	19.0	19.1	-22	5,000	7.9
		07-Dec-11 FD	19.0	18.5	FD	5,000	FD
MW-41M	DA	05-Dec-11	10.6	12.2	160	15,000	7.6
MW-41D	DA	02-May-11	1.9	2.4	R	18,000	7.8
		05-Dec-11	3.4	4.5	-56	18,000	7.6
MW-42-30	SA	06-Dec-11	0.2	1.3	-240	---	7.9
MW-42-55	MA	07-Feb-11	ND (0.2)	ND (1.0)	-110	8,650	7.4
		29-Apr-11	ND (0.2)	ND (1.0)	-100	7,500	7.3
		26-Sep-11	ND (0.2)	ND (1.0)	-120	6,300	7.4
		06-Dec-11	ND (0.2)	ND (1.0)	-170	5,700	7.5
		07-Feb-12	ND (0.2)	ND (1.0)	-130	5,400	7.6
MW-42-65	MA	07-Feb-11	ND (1.0)	ND (1.0)	-59	11,500	7.1
		29-Apr-11	ND (1.0)	ND (1.0)	-62	9,500	7.1
		26-Sep-11	ND (1.0)	ND (1.0)	-41	9,100	7.2
		06-Dec-11	ND (1.0)	ND (1.0)	-99	9,800	7.2

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Table 3-1
Groundwater Sampling Results, February 2011 through March 2012
First Quarter 2012 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[a] (µS/cm)	Field pH
MW-42-65	MA	07-Feb-12	ND (1.0)	ND (1.0)	-40	9,400	7.2
MW-43-25	SA	29-Apr-11	ND (0.2)	ND (1.0)	-180	1,200	7.4
		09-Dec-11	ND (0.2)	ND (1.0)	-180	1,200	7.4
MW-43-75	DA	09-Dec-11	ND (1.0)	ND (1.0)	-170	12,000 J	7.3
MW-43-90	DA	29-Apr-11	ND (1.0)	ND (1.0)	-92	17,000	6.8
		09-Dec-11	ND (1.0)	ND (1.0)	-100	17,000	6.6
MW-44-70	MA	03-May-11	ND (0.2)	ND (1.0)	-160	2,500	7.4
		08-Dec-11	ND (0.2)	ND (1.0)	-160	2,200	7.4
MW-44-115	DA	08-Feb-11	203	206	-170	9,990	7.8
		03-May-11	184	201	-120	11,000	7.7
		27-Sep-11	144	150	-150	11,000	7.9
		08-Dec-11	129	132	-160	11,000	7.8
		08-Dec-11 FD	128	130	FD	11,000	FD
		08-Feb-12	134	120	-93	12,000	8.0
MW-44-125	DA	08-Feb-11	65.6	71.1	-230	13,300	7.8
		08-Feb-11 FD	65.4	75.1	FD	FD	FD
		03-May-11	ND (0.2)	10.8 J	-320	11,000	7.5
		03-May-11 FD	1.0	14.7 J	FD	10,000	FD
		27-Sep-11	ND (1.0)	6.0	-170	11,000	7.8
		27-Sep-11 FD	ND (1.0)	7.1	FD	12,000	FD
		08-Dec-11	21.5	26.8	-190	11,000	7.7
		08-Dec-11 FD	20.6	27.2	FD	9,800	FD
		08-Feb-12	ND (1.0)	13.5	-200	13,000 J	7.8
		08-Feb-12 FD	ND (1.0)	13.2	FD	7,700 J	FD
MW-45-095a	DA	14-Dec-11	29.6	30.0	65	9,000	7.5
		14-Dec-11 FD	29.8	30.2	FD	9,400	FD
MW-46-175	DA	08-Feb-11	149	151	-65	18,100	8.3
		03-May-11	53.4	55.9	-200	16,000	8.3
		03-May-11 FD	53.2	56.8	FD	16,000	FD
		26-Sep-11	69.4	70.6	-180	17,000	8.3
		09-Nov-11	110	106	-80	---	8.4
		13-Dec-11	121	129	-130	17,000	8.3
		18-Jan-12	93.8	101	-91	---	7.6
		08-Feb-12	76.2	84.1	-93	15,000	8.3

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Table 3-1
Groundwater Sampling Results, February 2011 through March 2012
First Quarter 2012 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 [a] (µS/cm)	Field pH
MW-46-205	DA	04-May-11	5.8	6.6	41	18,000	8.1
		13-Dec-11	4.4	6.5	-67	19,000	8.2
MW-47-55	SA	03-May-11	19.3	19.4	65	4,300	7.5
		08-Dec-11	24.8	23.8	55	4,600	7.6
MW-47-115	DA	03-May-11	22.5	24.4	-40	12,000	7.5
		08-Dec-11	16.9	18.0	18	14,000	7.6
MW-48	BR	09-Feb-11	ND (1.0)	ND (1.0)	160	18,300	7.0
		04-May-11	ND (1.0)	ND (1.0)	-120	16,000	7.3
		30-Sep-11	ND (0.2)	ND (1.0)	31	17,000	7.2
		07-Dec-11	ND (1.0)	1.0	---	17,000	6.8
		08-Feb-12	ND (1.0)	1.6	150	17,000	7.2
MW-49-135	DA	07-Dec-11	ND (1.0)	ND (1.0)	1.1	13,000 J	7.9
MW-49-275	DA	07-Dec-11	ND (1.0)	1.8	-200	28,000	8.1
MW-49-365	DA	07-Dec-11	ND (2.1)	ND (1.0)	-230	42,000	8.0
MW-50-095	MA	03-May-11	18.3	18.9	R	5,000	8.2
		06-Dec-11	14.1	15.6	42	5,100	8.0
[b] MW-50-200	DA	10-Feb-11	9,160	9,350	230	21,800	7.9
		10-Feb-11 FD	9,100	9,240	FD	FD	FD
		06-May-11	9,720	9,080	51	18,000	7.7
		04-Oct-11	7,860	7,350	70	19,000	7.7
		08-Dec-11	8,740	8,730	76	19,000	7.7
		09-Feb-12	9,080	9,530	250	19,000	7.7
MW-51	MA	06-May-11	4,730	4,690	130	10,000	7.4
		07-Dec-11	4,810	4,710	140	10,000	7.3
MW-52S	MA	03-May-11	ND (2.1)	ND (1.0)	-130	10,000	8.8
		15-Dec-11	ND (1.0)	ND (1.0)	-120	7,500	6.9
MW-52M	DA	03-May-11	ND (2.1)	ND (1.0)	-140	15,000	9.0
		15-Dec-11	ND (1.0)	ND (1.0)	-140	11,000	7.8
MW-52D	DA	03-May-11	ND (1.0)	ND (1.0)	-150	18,000	9.3
		15-Dec-11	ND (1.0)	ND (1.0)	-180	16,000	7.9
MW-53M	DA	03-May-11	ND (1.0)	ND (1.0)	-150	18,000	R
		16-Dec-11	ND (1.0)	ND (1.0)	-180	18,000	7.9

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Table 3-1
Groundwater Sampling Results, February 2011 through March 2012
First Quarter 2012 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[a] (µS/cm)	Field pH
MW-53D	DA	03-May-11	6.6 J	ND (1.0)	-150	32,000	R
		03-Oct-11	ND (2.1)	ND (1.0)	-220	33,000	8.3
		03-Oct-11 FD	ND (2.1)	ND (1.0)	FD	33,000	FD
		16-Dec-11	ND (2.1)	ND (1.0)	-220	28,000	8.3
		16-Dec-11 FD	ND (2.1)	1.0	FD	28,000	FD
MW-54-85	DA	05-May-11	ND (0.2)	ND (1.0)	-200	10,100	7.4
		06-Dec-11	ND (1.0)	ND (1.0)	-180	10,100	7.5
MW-54-140	DA	05-May-11	ND (0.2)	ND (1.0)	-40	13,000	8.1
		06-Dec-11	ND (1.0)	ND (1.0)	46	12,300	7.7
MW-54-195	DA	05-May-11	ND (1.0)	ND (1.0) J	-180	20,000	8.9
		05-May-11 FD	ND (1.0)	ND (5.0)	FD	20,000	FD
		06-Dec-11	ND (1.0)	ND (5.0)	-220	18,800	8.1
MW-55-45	MA	06-Dec-11	ND (0.2)	ND (1.0)	-150	1,450	7.6
MW-55-120	DA	06-Dec-11	6.9	7.0	5.0	8,520	7.9
		06-Dec-11 FD	6.8	6.9	FD	8,580	FD
MW-56S	SA	04-May-11	ND (0.2)	ND (1.0)	-150	6,310	7.1
		13-Dec-11	ND (1.0)	ND (1.0)	-160	5,980	7.2
MW-56M	DA	04-May-11	ND (0.2)	ND (1.0) J	-150	14,900	7.1
		13-Dec-11	ND (1.0)	ND (1.0)	-150	14,600	7.2
MW-56D	DA	04-May-11	ND (1.0)	ND (5.0)	-100	21,700	7.6
		13-Dec-11	ND (1.0)	ND (5.0)	-170	21,000	7.7
MW-57-070	BR	10-Feb-11	507	612	130	2,510	7.3
		05-May-11	486	475	58	2,400	7.0
		05-May-11 FD	500	421	FD	2,400	FD
		29-Sep-11	309	352	56	2,400	6.9
		15-Dec-11	291	296	-21	2,500	7.1
		15-Feb-12	454	520	92	2,800	6.4
MW-57-185	BR	08-Feb-11	5.9	6.6	-20	19,200	8.6
		03-May-11	6.3	7.2	R	17,000	8.4
		28-Sep-11	7.0	8.5	-130	17,000	8.5
		13-Dec-11	7.4	7.3	-130	18,000	8.3
		10-Feb-12	7.2	8.5	-170	17,000	8.2
		10-Feb-12 FD	7.3	8.9	FD	17,000	FD

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Table 3-1
Groundwater Sampling Results, February 2011 through March 2012
First Quarter 2012 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) [a]	Field pH
MW-58BR-LWR-160	BR	10-Feb-11	140	130	120	8,950	8.4
		04-Apr-11	100	110	-61	---	7.9
MW-58BR-UPR-160	BR	01-Feb-11	ND (1.0)	ND (1.0)	-110	12,000	7.5
		18-Mar-11	ND (5.0)	ND (1.0)	-120	12,800	7.9
MW-59-100	SA	10-Feb-11	5,090	5,020	210	10,200	7.2
		10-Feb-11 FD	5,110	5,120	FD	FD	FD
		06-May-11	5,240	4,520	120	10,000	6.9
		04-Oct-11	4,330	4,850	120	10,000	6.8
		15-Dec-11	4,600	4,950	1.8	9,000	6.9
		15-Dec-11 FD	4,990	4,890	FD	9,100	FD
		22-Feb-12	4,070	4,690	180	9,100	7.0
MW-60-125	BR	10-Feb-11	1,160	1,170	170	9,330	7.5
		05-May-11	1,040	959	-14	8,700	7.3
		04-Oct-11	715	760	-27	8,200	7.3
		14-Dec-11	901	915	-53	8,100	7.4
		15-Feb-12	918	1,100	110	19,000	7.4
MW-61-110	BR	09-Feb-11	684	653	60	16,300	7.5
		05-May-11	522	531	-31	15,000	7.3
		30-Sep-11	611	698	-30	15,000	7.3
		14-Dec-11	682	722	-46	15,000	7.3
		15-Feb-12	634	680	-29	29,000	7.3
MW-62-065	BR	09-Feb-11	481	475	110	6,430	7.4
		05-May-11	488	472	51	6,000	7.3
		29-Sep-11	457	500	44	6,300	7.4
		13-Dec-11	532	500	30	3,900	7.3
		17-Feb-12	452	530	R	6,500	R
MW-62-110	BR	09-Feb-11	565	540	190	8,850	7.6
		05-May-11	569	531	95	8,500	7.6
		29-Sep-11	598	739	-60	8,700	7.7
		14-Dec-11	1,140	1,300 [c]	-87	8,400	7.9
		16-Feb-12	842	880	160	8,700	7.6
MW-62-190	BR	09-Feb-11	ND (1.0)	ND (1.0)	130	18,100	7.8
		05-May-11	ND (1.0)	ND (1.0)	-110	17,000	7.7
		29-Sep-11	ND (1.0)	ND (1.0)	-88	17,000	7.7
		14-Dec-11	ND (1.0)	ND (1.0)	-110	16,000	7.7

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Table 3-1
Groundwater Sampling Results, February 2011 through March 2012
First Quarter 2012 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 [a] (µS/cm)	Field pH
MW-62-190	BR	16-Feb-12	ND (1.0)	ND (1.0)	-130	16,000	7.8
MW-63-065	BR	08-Feb-11	1.3	1.7	61	7,530	7.2
		03-May-11	1.0	1.7	-120	7,200	7.0
		28-Sep-11	1.6	2.8	4.5	7,500	7.1
		12-Dec-11	1.2	2.1	57	4,600	7.1
		13-Feb-12	ND (0.2)	1.4	28	7,200	7.1
MW-64BR-LWR-150	BR	24-Feb-11	100	97.0	46	17,200	7.6
		20-Apr-11	2.1	3.2	-100	---	7.8
MW-64BR-UPR-150	BR	12-Apr-11	130	140	-50	---	7.5
OW-3S	SA	05-Dec-11	27.9	29.1	67	1,500	7.7
OW-3M	MA	05-Dec-11	17.8	18.7	15	5,600	8.0
OW-3D	DA	06-Dec-11	9.5	11.0	40	8,900	8.1
PE-1	DA	01-Feb-11	15.4	13.4	---	---	---
		01-Mar-11	12.9	15.2	---	---	---
		05-Apr-11	10.5	10.0	---	5,180	---
		02-May-11	9.9	10.5	---	5,240	---
		07-Jun-11	9.5	11.0	---	5,180	---
		05-Jul-11	10.2 J	7.6 J	---	5,140	---
		02-Aug-11	9.0	8.8	---	5,090	---
		06-Sep-11	9.5	9.0	---	5,040	---
		04-Oct-11	11.1	10.1	---	4,930	---
		01-Nov-11	10.3	10.3	---	4,960	---
		06-Dec-11	10.9	10.8	---	4,900	---
		03-Jan-12	11.6	12.3	---	4,960	---
		07-Feb-12	9.2	9.9	---	4,840	---
		06-Mar-12	7.9	9.0	---	4,910	---
PGE-7BR	BR	07-Dec-11	ND (1.0)	ND (1.0)	-310	18,000	7.3
[b] PGE-8	BR	10-Feb-11	ND (1.0)	2.0	-330	20,800	8.0
		08-Dec-11	ND (1.0)	2.1	-320	18,000	8.1
Park Moabi-3	MA	12-Dec-11	6.6	7.0 UF	13	1,400	7.5
Park Moabi-4	MA	12-Dec-11	18.9	18.2 UF	---	1,800	7.7
TW-1	SA-MA-DA	09-Feb-11	3,710	3,620	32	7,440	7.2
		05-May-11	3,700	3,520	R	6,900	7.4

Refer to table footnotes for data qualifier explanation.

Table 3-1
Groundwater Sampling Results, February 2011 through March 2012
First Quarter 2012 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[a] (µS/cm)	Field pH
TW-1	SA-MA-DA	28-Sep-11	3,200	3,040	170	7,000	7.3
		15-Dec-11	3,610	3,510	130	7,400	7.2
		10-Feb-12	3,460	3,680	130	7,200	7.2
TW-2S	SA-MA	12-Dec-11	619	662	140	2,400	7.7
		12-Dec-11 FD	511	680	FD	2,300	FD
TW-2D	DA	12-Dec-11	339	362	190	9,000	7.3
TW-3D	DA	01-Feb-11	1,000	1,100	---	---	---
		01-Mar-11	1,090	1,320	---	---	---
		05-Apr-11	1,130	1,220	---	8,710	---
		02-May-11	1,100	1,070	---	8,620	---
		07-Jun-11	1,030	1,090	---	8,530	---
		05-Jul-11	1,130	953	---	8,460	---
		02-Aug-11	991	948	---	8,440	---
		06-Sep-11	1,000	992	---	8,510	---
		04-Oct-11	991	1,010	---	8,420	---
		01-Nov-11	1,060	1,070	---	8,610	---
		06-Dec-11	1,080	1,150	---	8,430	---
		03-Jan-12	938	1,080	---	8,530	---
		07-Feb-12	987	1,040	---	8,650	---
		06-Mar-12	1,040	1,250	---	8,560	---
TW-4	DA	08-Dec-11	9.0	9.9	29	19,000	7.7
TW-5	DA	06-Dec-11	14.0	14.6	49	15,000	7.9

Refer to table footnotes for data qualifier explanation.

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.

[a] Field Specific Conductance reported through First Quarter 2011; Lab Specific Conductance reported starting in Second Quarter 2011

[b] Fourth Quarter 2010 data collected February 2011 due to field logistical issues.

[c] Higher result than originally reported in the Fourth Quarter 2011 GMP/PMP Report; new value provided by secondary lab.

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, 2011) and are not included in this table.

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. Monitoring continues at this well as part of the East Ravine Investigation as of June 2011. Results will be reported under separate cover at the completion of the East Ravine/Topock Compressor Station groundwater investigation.

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. Monitoring continues at this well as part of the East Ravine Investigation as of June 2011. Results will be reported under separate cover at the completion of the East Ravine/Topock Compressor Station groundwater investigation.

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

Table 3-2
Groundwater COPCs and In Situ Byproducts Sampling Results, First Quarter 2012
First Quarter 2012 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	Arsenic Dissolved (µg/L)	Fluoride Dissolved (mg/L)	Molydenum Dissolved (µg/L)	Selenium Dissolved (µg/L)	Manganese Dissolved (µg/L)	Nitrate as N (mg/L)
MW-12	SA	09-Feb-12	47.0	---	12.0	11.0	---	9.80
MW-23-060	BR	14-Feb-12	3.3	---	9.6	4.5 J	ND (10)	---
MW-23-080	BR	14-Feb-12	3.7	---	31.0	5.3	ND (10)	---
MW-27-60	MA	07-Feb-12	9.6	1.50	5.5	ND (0.5)	40.0	ND (0.5)
MW-27-85	DA	07-Feb-12	1.4	ND (10)	21.0	ND (2.5)	---	ND (2.5)
MW-28-90	DA	07-Feb-12	1.8	3.50	18.0	ND (2.5)	---	ND (1.0) J
MW-33-40	SA	08-Feb-12	15.0	13.0	200	3.2	---	ND (1.0)
MW-33-90	MA	09-Feb-12	---	5.50	20.0	1.3	---	1.60
MW-33-150	DA	09-Feb-12	1.8	ND (10)	39.0	0.62	5.1	ND (2.5)
MW-33-210	DA	09-Feb-12	1.2	ND (10)	17.0	ND (2.5)	5.5	ND (2.5)
MW-34-80	DA	07-Feb-12	1.4	---	---	---	---	---
MW-34-100	DA	18-Jan-12	2.2	---	---	---	---	---
		07-Feb-12	1.6	---	---	---	---	---
		07-Feb-12 FD	1.5	---	---	---	---	---
MW-35-60	SA	06-Feb-12	0.97	---	8.7	ND (2.5)	ND (0.5)	1.90
MW-42-55	MA	07-Feb-12	13.0	---	---	---	---	---
MW-42-65	MA	07-Feb-12	2.4	---	---	---	1700	---
MW-44-115	DA	08-Feb-12	5.5	---	82.0	3.4	2.1	ND (2.5)
MW-44-125	DA	08-Feb-12	4.3	---	160	ND (2.5)	490	ND (2.5)
		08-Feb-12 FD	4.1	---	150	3.4	490	ND (1.0)
MW-46-175	DA	08-Feb-12	---	---	190	ND (12)	---	ND (2.5)
MW-57-070	BR	15-Feb-12	1.2	---	ND (5.0)	3.6	---	---
MW-57-185	BR	10-Feb-12	12.0	---	69.0	ND (2.5)	470	ND (2.5)
		10-Feb-12 FD	13.0	---	72.0	ND (2.5)	500	ND (2.5)
MW-59-100	SA	22-Feb-12	2.0	---	ND (5.0)	3.8	ND (10)	4.10
MW-60-125	BR	15-Feb-12	1.2	---	14.0	5.5	15.0	3.50
MW-61-110	BR	15-Feb-12	3.2	---	16.0	ND (2.5)	220	ND (2.5)
MW-62-065	BR	17-Feb-12	1.5	---	11.0	3.1	---	---
MW-62-110	BR	16-Feb-12	6.3	---	44.0	ND (12)	190	3.20
MW-62-190	BR	16-Feb-12	6.4	---	63.0	ND (12)	840	ND (2.5)
MW-63-065	BR	13-Feb-12	1.2	---	21.0	0.83	44.0	ND (1.0)
TW-1	SA-MA-DA	10-Feb-12	---	---	15.0	24.0	---	24.0

NOTES:

µg/L = micrograms per liter.
mg/L = milligrams per liter.
ND = not detected at listed reporting limit.
FD = field duplicate sample.
--- = data not collected, available, rejected, or field instrument malfunction.
J = concentration or RL estimated by laboratory or data validation mg/L.

The Background Study Upper Tolerance Limit (UTL) for Arsenic is 24.3 µg/L.
The U.S. EPA and California Maximum Contaminant Level for Arsenic is 10 µg/L.
The Background Study Upper Tolerance Limit (UTL) for Molybdenum is 36.3 µg/L.
There is no U.S. EPA and California Maximum Contaminant Level for Molybdenum.
The Background Study Upper Tolerance Limit (UTL) for Selenium is 10.3 µg/L.
The U.S. EPA and California Maximum Contaminant Level for Selenium is 50.0 µg/L.
The secondary U.S. EPA and California Maximum Contaminant Level for Manganese is 50 ug/L.
The Background Study Upper Tolerance Limit (UTL) for Nitrate as N is 5.03 mg/L.
The U.S. EPA and California Maximum Contaminant Level for Nitrate as N is 10 mg/L.
The Background Study Upper Tolerance Limit (UTL) for Fluoride is 7.1 mg/L.
The U.S. EPA and California Maximum Contaminant Level for Fluoride is 4 mg/L.
The secondary U.S. EPA and California Maximum Contaminant Level for Fluoride is 2 mg/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 shallow portion of BR.
BR-M: well completed in middle portion of BR.
BR-D: well completed in deep portion of BR.

Table 3-3
Title 22 Metals Results, First Quarter 2012
First Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
	California MCL:	6	10	1,000	4	5	NE	50	1,000*	15	2	NE	100	50	100*	2	NE	5,000*
MW-12	02/09/2012	ND (10)	47.0	58.0	ND (1.0)	ND (3.0)	ND (3.0)	2,820	ND (5.0)	ND (10)	ND (0.2)	12.0	ND (5.0)	11.0	ND (3.0)	ND (2.5)	15.0	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.

Table 3-4
Surface Water Sampling Results, First Quarter 2012
First Quarter 2012 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
In-channel Locations					
C-BNS-D	01/10/2012	ND (0.2)	ND (1.0)	910	8.03 J
C-BNS-D	02/28/2012	ND (0.2)	ND (1.0)	915	7.98 J
C-CON-S	01/11/2012	ND (0.2)	ND (1.0)	921	7.99 J
C-CON-S	02/29/2012	ND (0.2)	ND (1.0)	914	8.09 J
C-CON-D	01/11/2012	ND (0.2)	ND (1.0)	920	7.97 J
C-CON-D	02/29/2012	ND (0.2)	ND (1.0)	911	8.04 J
C-I-3-S	01/10/2012	ND (0.2)	ND (1.0)	890	8.18 J
C-I-3-S	02/28/2012	ND (0.2)	ND (1.0)	911	8.05 J
C-I-3-D	01/10/2012	ND (0.2)	ND (1.0)	878	8.16 J
C-I-3-D	02/28/2012	ND (0.2)	ND (1.0)	914	7.99 J
C-MAR-S	01/11/2012	ND (0.2)	ND (1.0)	915	8.08 J
C-MAR-S	02/28/2012	ND (0.2)	ND (1.0)	996	7.61 J
C-MAR-D	01/11/2012	ND (0.2)	ND (1.0)	921	8.05 J
C-MAR-D	02/28/2012	ND (0.2)	ND (1.0)	998	7.72 J
C-NR1-S	01/11/2012	ND (0.2)	ND (1.0)	916	8.14 J
C-NR1-S	02/29/2012	ND (0.2)	ND (1.0)	911	8.12 J
C-NR1-D	01/11/2012	ND (0.2)	ND (1.0)	916	8.13 J
C-NR1-D	02/29/2012	ND (0.2)	ND (1.0)	912	8.10 J
C-NR3-S	01/10/2012	ND (0.2)	ND (1.0)	918	8.18 J
C-NR3-S	02/29/2012	ND (0.2)	ND (1.0)	914	8.14 J
C-NR3-D	01/10/2012	ND (0.2)	ND (1.0)	893	8.09 J
C-NR3-D	02/29/2012	ND (0.2)	ND (1.0)	910	8.13 J
C-NR4-S	01/11/2012	ND (0.2)	ND (1.0)	913	8.18 J
C-NR4-S	02/29/2012	ND (0.2)	ND (1.0)	915	8.15 J
C-NR4-D	01/11/2012	ND (0.2)	ND (1.0)	916	8.13 J
C-NR4-D	02/29/2012	ND (0.2)	ND (1.0)	914	8.16 J
C-R22a-S	01/10/2012	ND (0.2)	ND (1.0)	932	8.26 J
C-R22a-S	02/28/2012	ND (0.2)	ND (1.0)	916	8.05 J
C-R22a-D	01/10/2012	ND (0.2)	ND (1.0)	932	8.17 J
C-R22a-D	02/28/2012	ND (0.2)	ND (1.0)	909	8.04 J
C-R27-S	01/10/2012	ND (0.2)	ND (1.0)	921	8.25 J
C-R27-S	02/28/2012	ND (0.2)	ND (1.0)	906	8.09 J
C-R27-D	01/10/2012	ND (0.2)	ND (1.0)	931	8.21 J
C-R27-D	02/28/2012	ND (0.2)	ND (1.0)	915	8.05 J
C-TAZ-S	01/10/2012	ND (0.2)	ND (1.0)	913	8.14 J
C-TAZ-S	02/28/2012	ND (0.2)	ND (1.0)	917	8.12 J
C-TAZ-D	01/10/2012	ND (0.2)	ND (1.0)	913	8.24 J

Table 3-4
Surface Water Sampling Results, First Quarter 2012
First Quarter 2012 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
In-channel Locations					
C-TAZ-D	02/28/2012	ND (0.2)	ND (1.0)	911	8.13 J
Shoreline Samples					
R-19	01/11/2012	ND (0.2)	ND (1.0)	920	8.24 J
R-19	02/29/2012	ND (0.2)	ND (1.0)	915	8.20 J
R-28	01/11/2012	ND (0.2)	ND (1.0)	907	8.34 J
R-28	02/29/2012	ND (0.2)	ND (1.0)	911	8.21 J
R63	01/10/2012	ND (0.2)	ND (1.0)	914	8.22 J
R63	02/28/2012	ND (0.2)	ND (1.0)	913	8.12 J
RRB	01/11/2012	ND (0.2)	ND (1.0)	931	8.00 J
RRB	02/29/2012	ND (0.2)	ND (1.0)	931	8.12 J
Other Surface Water Monitoring Locations					
SW1	01/10/2012	ND (0.2)	ND (1.0)	998	7.65 J
SW1	02/28/2012	ND (0.2)	ND (1.0)	965	7.62 J
SW2	01/10/2012	ND (0.2)	ND (1.0)	928	7.90 J
SW2	02/28/2012	ND (0.2)	ND (1.0)	973	7.52 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.

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.

Table 3-5
COPCs, In Situ Byproducts, and Geochemical Indicator Parameters in Surface Water Samples, First Quarter 2012
First Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Alkalinity, bicarbonate as CaCO3 mg/L	Alkalinity, carbonate as CaCO3 mg/L	Alkalinity, total as CaCO3 mg/L	Arsenic, dissolved µg/L	Iron, Total µg/L	Iron, dissolved µg/L	Manganese, dissolved µg/L	Molybdenum, dissolved µg/L	Nitrate as Nitrogen mg/L	Selenium, dissolved µg/L	Total suspended solids mg/L
In-channel Locations												
C-BNS-D	01/10/2012	140	ND (5)	140	2.5	28.8	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-BNS-D	02/28/2012	132	ND (5)	132	2.4	20	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-CON-S	01/11/2012	127	ND (5)	127	2.5	ND (20)	ND (20)	ND (10)	ND (5)	ND (0.5)	ND (10)	ND (10)
C-CON-S	02/29/2012	131	ND (5)	131	2	ND (20)	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-CON-D	01/11/2012	128	ND (5)	128	2.8	ND (20)	ND (20)	ND (10)	ND (5)	ND (0.5)	ND (10)	ND (10)
C-CON-D	02/29/2012	111	ND (5)	111	2.5	ND (20)	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-I-3-S	01/10/2012	131	ND (5)	131	2.2	ND (20)	ND (20)	ND (10)	ND (10)	0.532	ND (10)	ND (10)
C-I-3-S	02/28/2012	133	ND (5)	133	1.9	ND (20)	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-I-3-D	01/10/2012	124	ND (5)	124	2	20.6	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-I-3-D	02/28/2012	139	ND (5)	139	2.4	ND (20)	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-MAR-S	01/11/2012	115	ND (5)	115	2.6	122	ND (20)	ND (10)	ND (5)	ND (0.5)	ND (10)	ND (10)
C-MAR-S	02/28/2012	139	ND (5)	139	2	760	ND (20)	16.5	ND (10)	ND (0.5)	ND (10)	12.8
C-MAR-D	01/11/2012	132	ND (5)	132	2.9	262	ND (20)	ND (10)	ND (5)	ND (0.5)	ND (10)	ND (10)
C-MAR-D	02/28/2012	144	ND (5)	144	2.1	639	29.1	15.4	ND (10)	ND (0.5)	ND (10)	13.4
C-NR1-S	01/11/2012	124	ND (5)	124	2.5	ND (20)	ND (20)	ND (10)	ND (5)	0.642	ND (10)	ND (10)
C-NR1-S	02/29/2012	123	ND (5)	123	2.6	ND (20)	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-NR1-D	01/11/2012	132	ND (5)	132	2.4	ND (20)	ND (20)	ND (10)	ND (5)	ND (0.5)	ND (10)	ND (10)
C-NR1-D	02/29/2012	120	ND (5)	120	2.3	20.4	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-NR3-S	01/10/2012	137	ND (5)	137	2.2	ND (20)	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-NR3-S	02/29/2012	112	ND (5)	112	2.1	ND (20)	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-NR3-D	01/10/2012	132	ND (5)	132	2.6	ND (20)	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-NR3-D	02/29/2012	122	ND (5)	122	2.1	ND (20)	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-NR4-S	01/11/2012	124	ND (5)	124	2.5	29.2	ND (20)	ND (10)	ND (5)	1.56	ND (10)	ND (10)
C-NR4-S	02/29/2012	116	ND (5)	116	2.1	28	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-NR4-D	01/11/2012	125	ND (5)	125	2.5	ND (20)	ND (20)	ND (10)	ND (5)	ND (0.5)	ND (10)	ND (10)
C-NR4-D	02/29/2012	130	ND (5)	130	2	ND (20)	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-R22a-S	01/10/2012	134	ND (5)	134	2.4	34.6	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-R22a-S	02/28/2012	135	ND (5)	135	2.2	31.9	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-R22a-D	01/10/2012	132	ND (5)	132	2.4	28.2	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-R22a-D	02/28/2012	137	ND (5)	137	2.3	75.6	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-R27-S	01/10/2012	125	ND (5)	125	2.4	ND (20)	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-R27-S	02/28/2012	136	ND (5)	136	2.3	ND (20)	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-R27-D	01/10/2012	135	ND (5)	135	2.4	22.6	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-R27-D	02/28/2012	130	ND (5)	130	2.3	ND (20)	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-TAZ-S	01/10/2012	134	ND (5)	134	2.2	20.8	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-TAZ-S	02/28/2012	135	ND (5)	135	2.1	21.8	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-TAZ-D	01/10/2012	125	ND (5)	125	2.8	25.1	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
C-TAZ-D	02/28/2012	140	ND (5)	140	2.2	ND (20)	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
Shoreline Samples												
R-19	01/11/2012	136	ND (5)	136	2.5	ND (20)	ND (20)	ND (10)	ND (5)	ND (0.5)	ND (10)	ND (10)
R-19	02/29/2012	120	ND (5)	120	2.3	28.2	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
R-28	01/11/2012	127	ND (5)	127	2.4	23.1	ND (20)	ND (10)	ND (5)	ND (0.5)	ND (10)	ND (10)

Table 3-5
COPCs, In Situ Byproducts, and Geochemical Indicator Parameters in Surface Water Samples, First Quarter 2012
First Quarter 2012 Interim Measure Performance Monitoring and Site-wide
Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Alkalinity, bicarbonate as CaCO3 mg/L	Alkalinity, carbonate as CaCO3 mg/L	Alkalinity, total as CaCO3 mg/L	Arsenic, dissolved µg/L	Iron, Total µg/L	Iron, dissolved µg/L	Manganese, dissolved µg/L	Molybdenum, dissolved µg/L	Nitrate as Nitrogen mg/L	Selenium, dissolved µg/L	Total suspended solids mg/L
Shoreline Samples												
R-28	02/29/2012	123	ND (5)	123	2	81.2	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	24.8
R63	01/10/2012	129	ND (5)	129	2.3	22.8	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
R63	02/28/2012	139	ND (5)	139	2	26.2	ND (20)	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)
RRB	01/11/2012	125	ND (5)	125	2.3	25.5	ND (20)	ND (10)	ND (5)	ND (0.5)	ND (10)	ND (10)
RRB	02/29/2012	131	ND (5)	131	2	65.6	26.2	ND (10)	ND (10)	ND (0.5)	ND (10)	ND (10)

Notes:

µg/L micrograms per liter.
mg/L milligrams per liter.
ND not detected at listed reporting limit.
J concentration or reporting limit estimated by laboratory or data validation.

Methods:
Alkalinity - SM2320B.
Metals - SW6010B/SW6020A.
Nitrate - EPA 300.0.
Total Suspended Solids - SM2540D.

TABLE 4-1

Pumping Rate and Extracted Volume for IM System, First Quarter 2012

First Quarter 2012 Interim Measures Performance Monitoring
and Site-wde Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Extraction Well ID	January 2012		February 2012		March 2012		First Quarter 2012	
	Average Pumping Rate [a] (gpm)	Volume Pumped (gal)	Average Pumping Rate [a] (gpm)	Volume Pumped (gal)	Average Pumping Rate [a] (gpm)	Volume Pumped (gal)	Average Pumping Rate [a] (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	106.70	4,763,260	105.71	4,414,359	104.17	4,650,288	105.53	13,827,907
PE-01	25.83	1,153,008	25.55	1,066,772	25.05	1,118,205	25.47	3,337,985
TOTAL	**132.5**	**5,916,268**	**131.3**	**5,481,131**	**129.2**	**5,768,493**	**131.0**	**17,165,892**

Chromium Removed This Quarter (kg)	37.6
Chromium Removed Project to Date (kg)	3,188.1
Chromium Removed This Quarter (lb)	82.9
Chromium Removed Project to Date (lb)	7,028.6

NOTES:

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

[a] The "Average Pumping Rate" is the overall average during the reporting period, including system downtime, based on flow meter readings.

Chromium removed includes the period of January 1, 2012 through February 29, 2012. On July 23, 2010 DTSC approved a revised reporting schedule for this report that included a revised IM-3 sample collection period from January 1, 2012 through February 29, 2012.

Table 4-2
Analytical Results for Extraction Wells, January 2011 through March 2012
First Quarter 2012 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	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
	05-Apr-11	1,220 LF	1,130	5,120
	02-May-11	1,070 LF	1,100	5,080
	07-Jun-11	1,090 LF	1,030	5,120
	05-Jul-11	953 LF	1,130	5,020
	02-Aug-11	948 LF	991	5,120
	06-Sep-11	992 LF	1,000	5,140
	04-Oct-11	1,010 LF	991	5,040
	01-Nov-11	1,070 LF	1,060	4,880
	06-Dec-11	1,150 LF	1,080	4,650
	03-Jan-12	1,080 LF	938	5,040
	07-Feb-12	1,040 LF	987	5,240
	06-Mar-12	1,250 LF	1,040	5,300
PE-1	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
	05-Apr-11	10.0 LF	10.5	2,920
	02-May-11	10.5 LF	9.90	3,100
	07-Jun-11	11.0 LF	9.50	3,190
	05-Jul-11	7.60 J LF	10.2 J	3,120
	02-Aug-11	8.80 LF	9.00	3,060
	06-Sep-11	9.00 LF	9.50	2,860
	04-Oct-11	10.1 LF	11.1	2,900
	01-Nov-11	10.3 LF	10.3	2,790
	06-Dec-11	10.8 LF	10.9	2,930
	03-Jan-12	12.3 LF	11.6	2,960
	07-Feb-12	9.90 LF	9.20	2,840
	06-Mar-12	9.00 LF	7.90	2,960

NOTES:

µg/L = concentration in micrograms per liter.
mg/L = concentration in milligrams per liter.
LF = lab filtered.
J = concentration or reporting limit estimated by laboratory or data validation.

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, First Quarter 2012

First Quarter 2012 Interim Measure Performace Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well Pair [a]	Reporting Period	Mean landward Hydraulic Gradient [b] (feet/foot)	Days in Monthly Average [c]
Overall Average	January	0.0052	NA
	February	0.0052	NA
	March	0.0049	NA
Northern Gradient Pair MW-31-135 / MW-33-150	January	0.0022	31 / 31
	February	0.0022	29 / 29
	March	0.0023	31 / 31
Central Gradient Pair MW-45-95 / MW-34-100	January	0.0097	31 / 31
	February	0.0096	29 / 29
	March	0.0089	31 / 31
Southern Gradient Pair MW-45-95 / MW-27-85	January	0.0038	31 / 31
	February	0.0039	29 / 29
	March	0.0036	31 / 31

NOTES:

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

a Refer to Figure 1-4 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 2012 Interim Measures Performance Monitoring and
Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

	Davis Dam Release			Colorado River Elevation at I-3		
Month	Projected (cfs)	Actual (cfs)	Difference (cfs)	Predicted (ft amsl)	Actual (ft amsl)	Difference (feet)
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	17,595	305	456.9	457.02	0.2
May 2011	16,400	15,437	963	456.6	456.40	-0.2
June 2011	16,100	16,024	76	456.5	456.75	0.2
July 2011	15,500	15,333	167	456.3	456.30	0.1
August 2011	13,300	13,368	-68	455.4	455.67	0.3
September 2011	12,700	12,052	648	455.2	455.25	0.1
October 2011	9,200	9,934	-734	453.9	454.30	0.4
November 2011	8,600	7,838	762	453.7	453.61	-0.1
December 2011	6,600	6,262	338	452.6	452.49	-0.1
January 2012	9,800	10,378	-578	453.7	453.99	0.3
Febraury 2012	12,300	12,614	-314	454.8	455.25	0.4
March 2012	14,800	15,134	-334	455.8	455.88	0.1
April 2012	18,300			457.1		

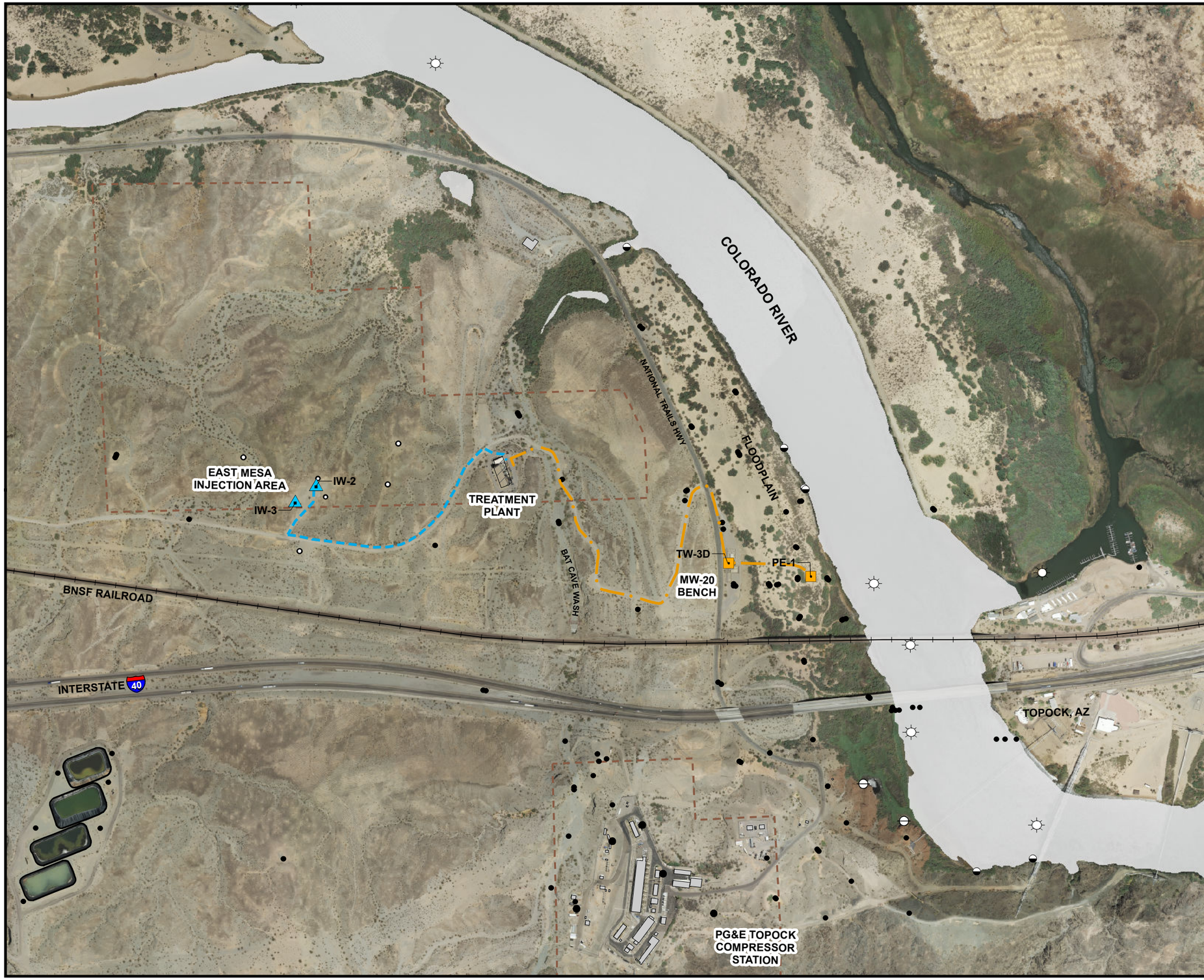
NOTES:
cfs = cubic feet per second; ft amsl = feet above mean sea level.

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 2012 USBR projections. These data are reported monthly by the US Department of Interior, at http://www.usbr.gov/lc/region/g4000/24mo.pdf.

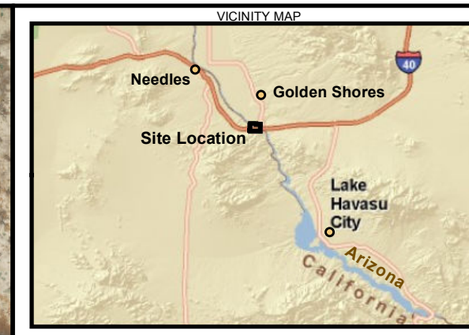
The difference in I-3 elevation is the difference between the I-3 elevation predicted and the actual elevation measured at I-3. The source of this difference is differences between BOR projections and actual dam releases/Havasu reservoir levels, rather than the multiple regression error.

For data prior to 2009 please see: *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 (CH2MHILL, 2011a)

Figures



VICINITY MAP



LEGEND

- IM-3 Extraction Well (Active)
- IM-3 Injection Well
- Monitoring Well in Site-Wide Groundwater Monitoring Program (GMP)
- Monitoring Well in IM-3 Compliance Monitoring Program
- Shoreline Surface Water Monitoring Location
- River Channel Surface Water Monitoring Location
- Other Surface Water Monitoring Location
- Groundwater Extraction/Influent Pipeline
- Treatment Plant Effluent Pipeline
- Property Line

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.

N

0 600 1,200 Feet

FIGURE 1-1
LOCATIONS OF IM-3 FACILITIES AND MONITORING LOCATIONS
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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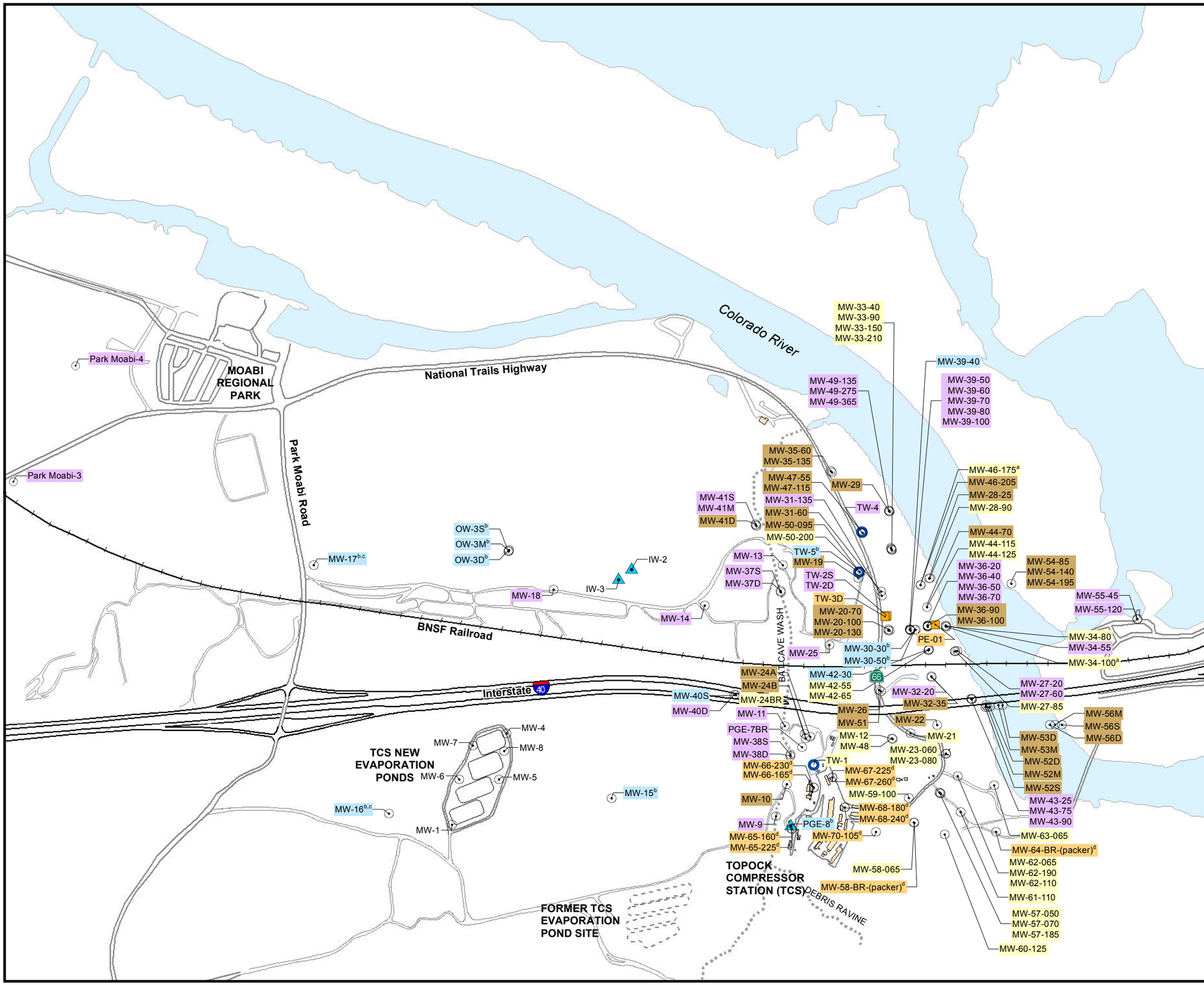

LEGEND

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

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:

[a] Monthly sampling November through February, otherwise quarterly.

[b] These wells required to be sampled biennially, will be sampled annually for the water quality snapshot.

[c] Background metals collected semiannually.

[d] Planned to be reincorporated/incorporated into GMP Monitoring Program at the completion of the East Ravine/Topock Compressor Station groundwater investigation.

N

0 500 1,000 Feet

California State Plane NAD83 Zone 5 US Feet

FIGURE 1-2
MONITORING LOCATIONS AND SAMPLING FREQUENCY FOR GMP

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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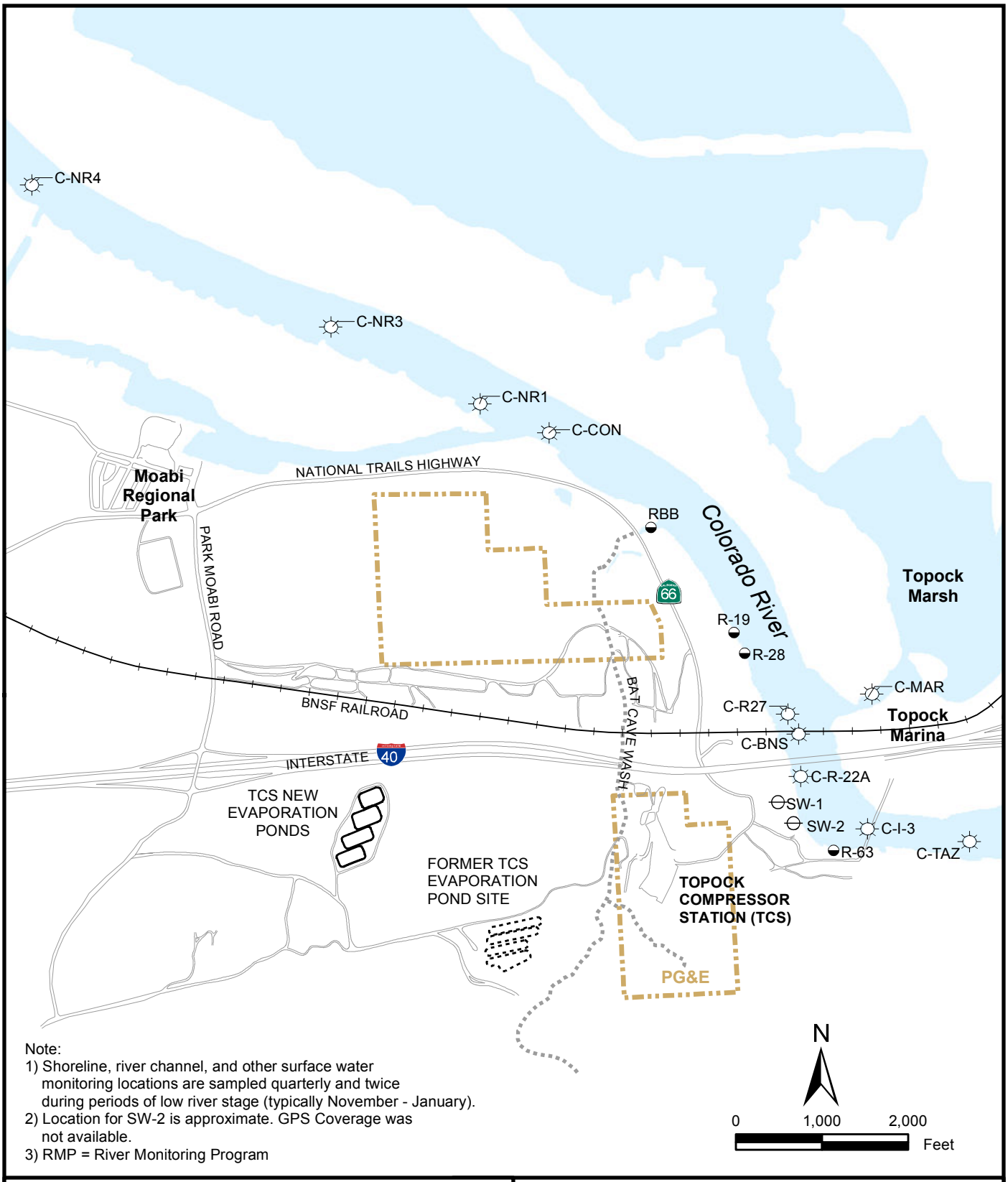

Note:
1) Shoreline, river channel, and other surface water monitoring locations are sampled quarterly and twice during periods of low river stage (typically November - January).
2) Location for SW-2 is approximate. GPS Coverage was not available.
3) RMP = River Monitoring Program

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 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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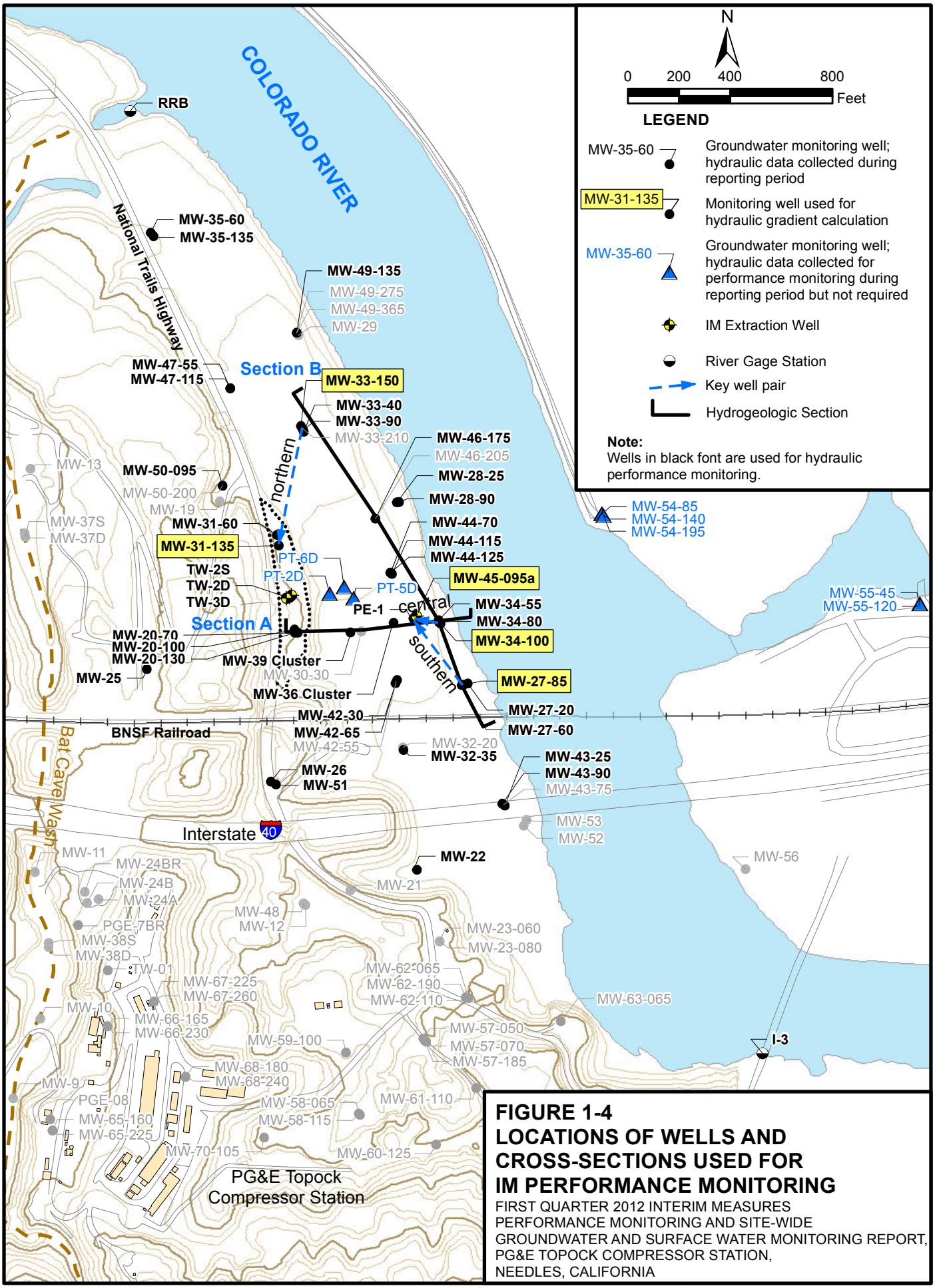

FIGURE 1-4
LOCATIONS OF WELLS AND CROSS-SECTIONS USED FOR IM PERFORMANCE MONITORING

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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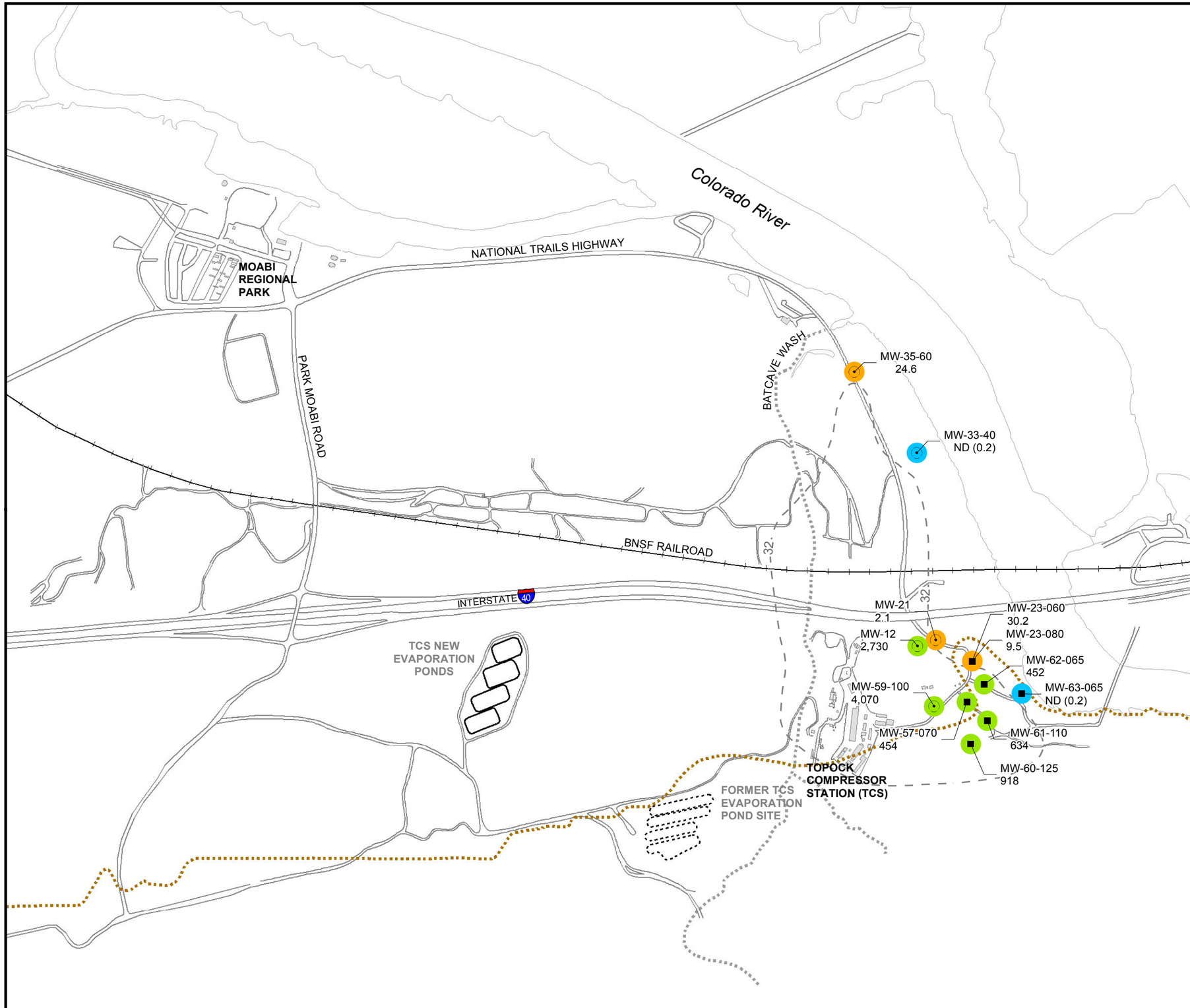

LEGEND

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 2012

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 2011 groundwater sampling results where a larger number of wells were sampled.

Approximate bedrock contact at 455 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. Long screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

N

0 500 1,000 Feet

FIGURE 3-1a
Cr(VI) SAMPLING RESULTS, SHALLOW WELLS IN ALLUVIAL AQUIFER AND BEDROCK, FIRST QUARTER 2012

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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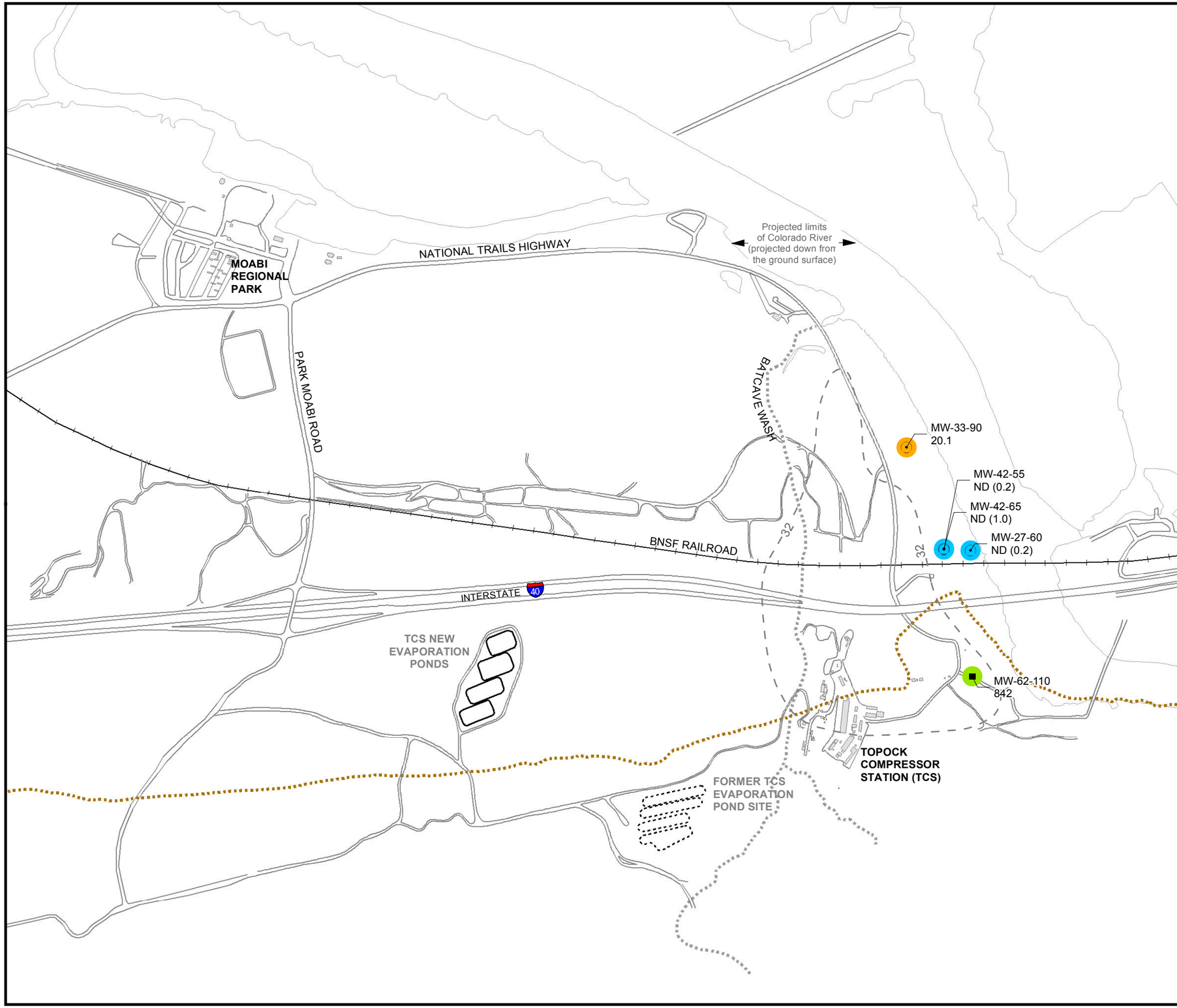

LEGEND

- 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 2012

- 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 2011 groundwater sampling results where a larger number of wells were sampled.

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.
2. Long screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

N

0 500 1,000 Feet

FIGURE 3-1b
Cr(VI) SAMPLING RESULTS MID-DEPTH WELLS IN ALLUVIAL AQUIFER AND BEDROCK, FIRST QUARTER 2012

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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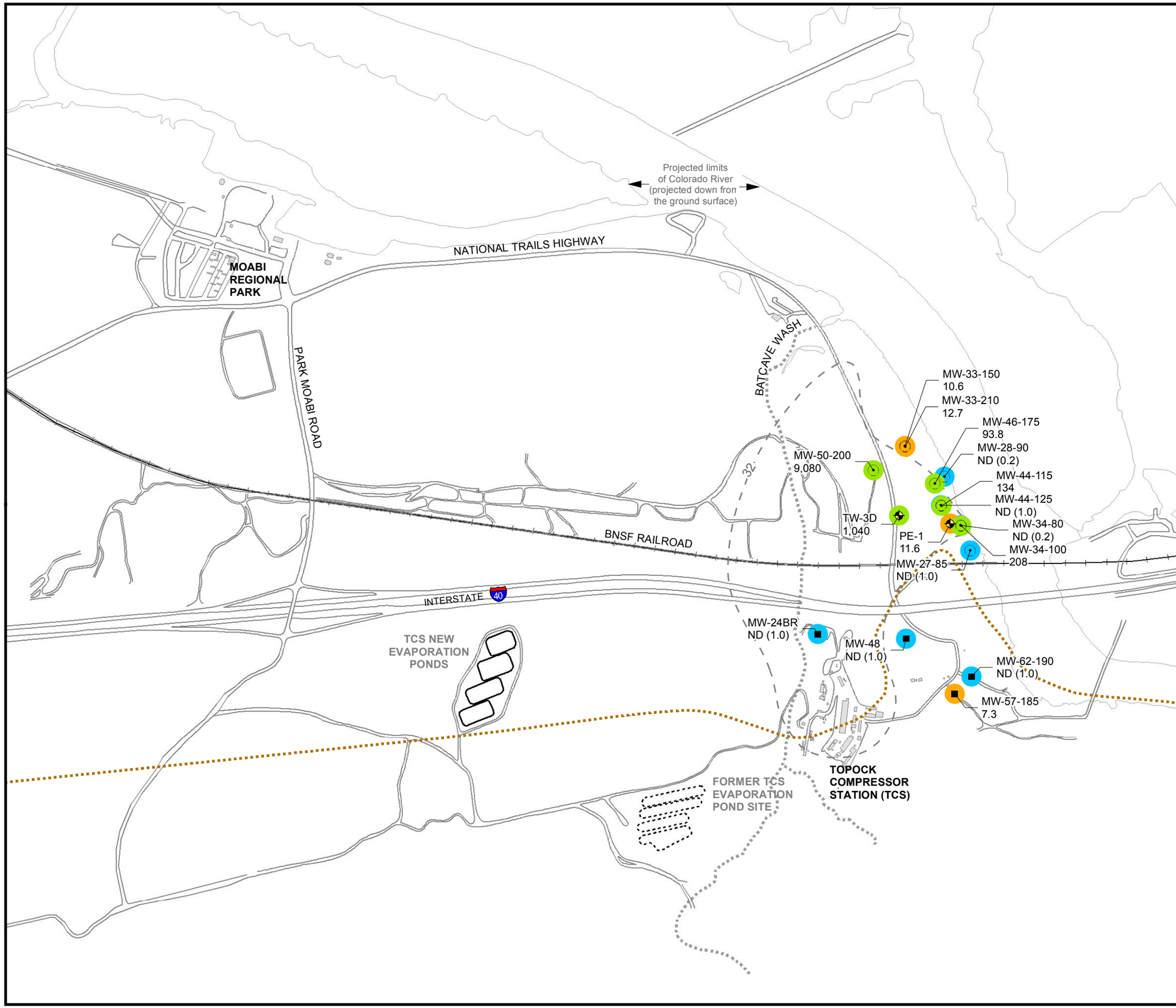

LEGEND

- Extraction well sampled during sampling event
- 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 2012

- 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 2011 groundwater sampling results where a larger number of wells were sampled. Data from the Second Quarter 2011 East Ravine Groundwater Investigation was also used to develop contours near the compressor station.

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.
3. Long screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

N

0 500 1,000 Feet

FIGURE 3-1c
Cr(VI) SAMPLING RESULTS, DEEP WELLS IN ALLUVIAL AQUIFER AND BEDROCK, FIRST QUARTER 2012

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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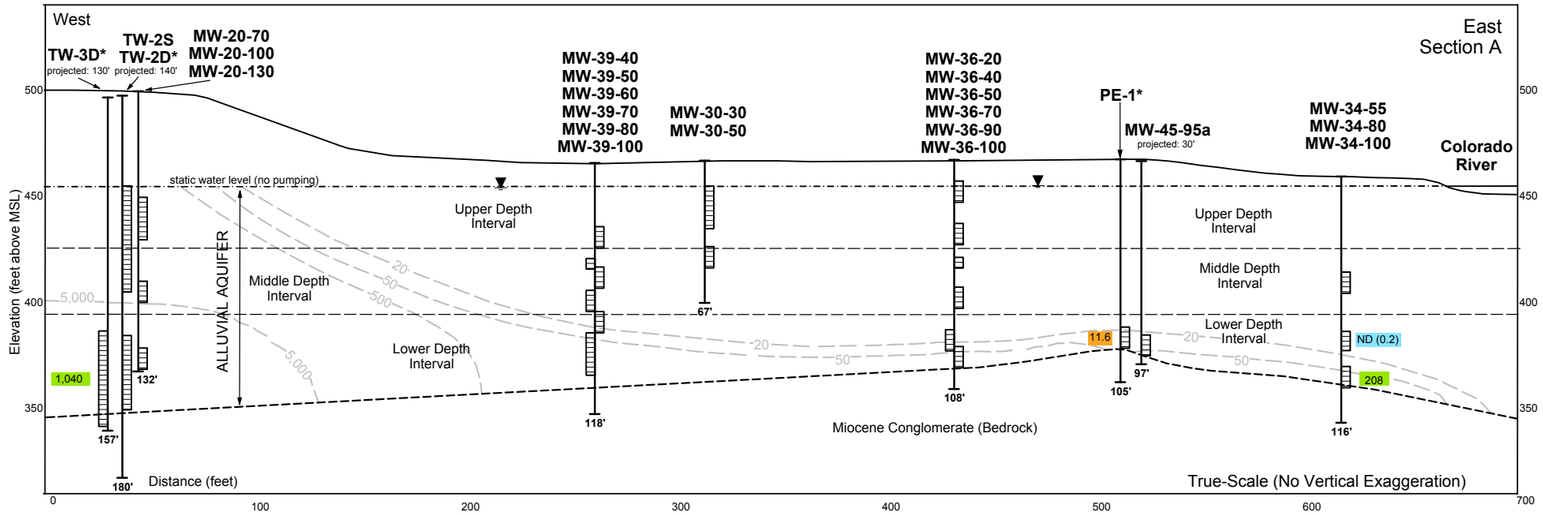
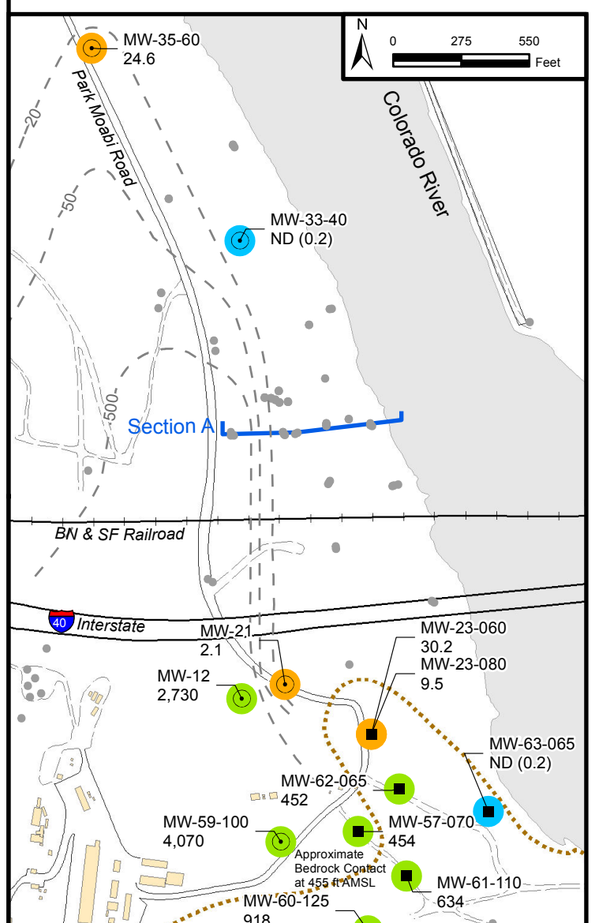
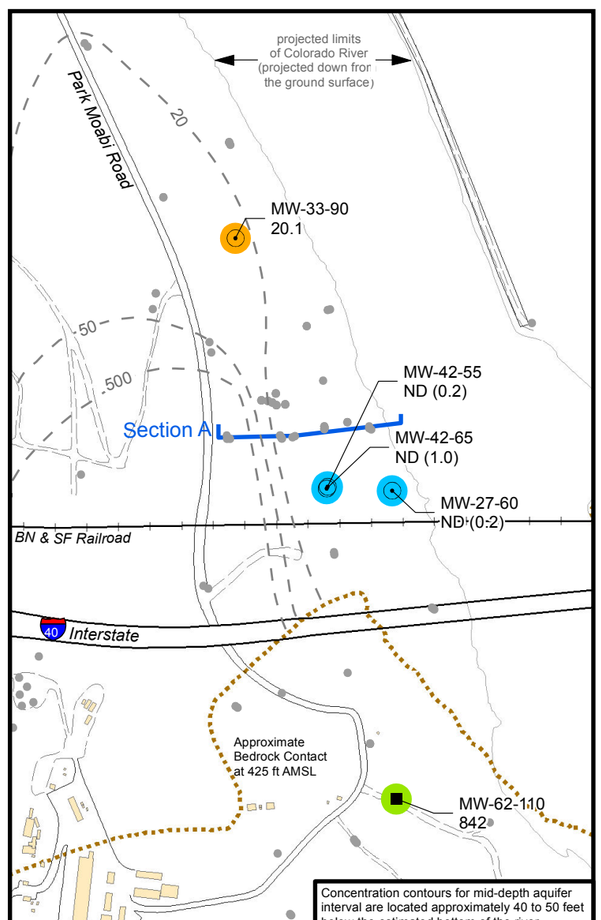
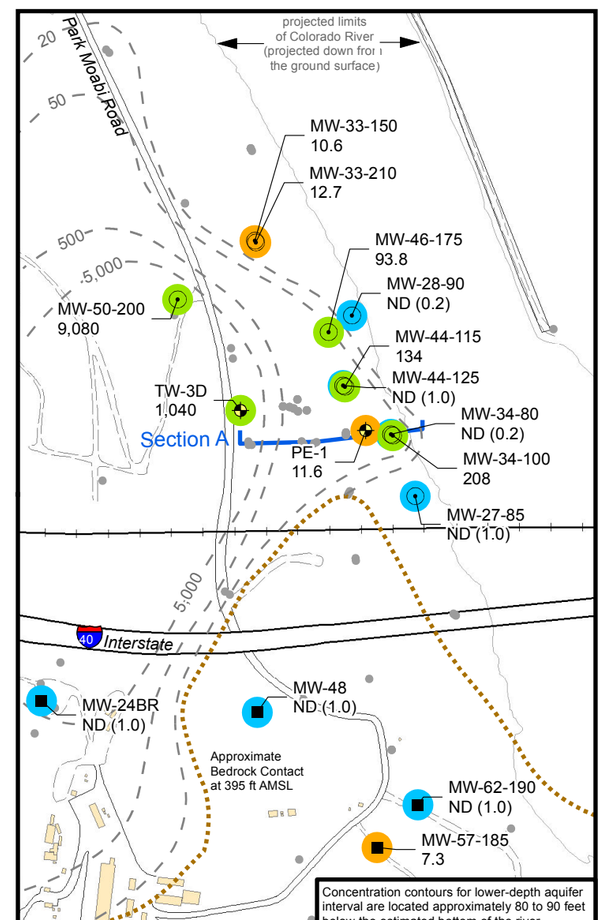




Shallow Wells (Upper Depth Interval)



Mid-Depth Wells (Middle-Depth Interval)



Deep Wells (Lower Depth Interval)

LEGEND

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled 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 2012

- 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 Quarter 2011 groundwater sampling results where a larger number of wells were sampled.

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 ug/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, TW-2D 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. Long screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

FIGURE 4-1
MAXIMUM Cr(VI) CONCENTRATIONS IN ALLUVIAL AQUIFER AND BEDROCK, FIRST QUARTER 2012

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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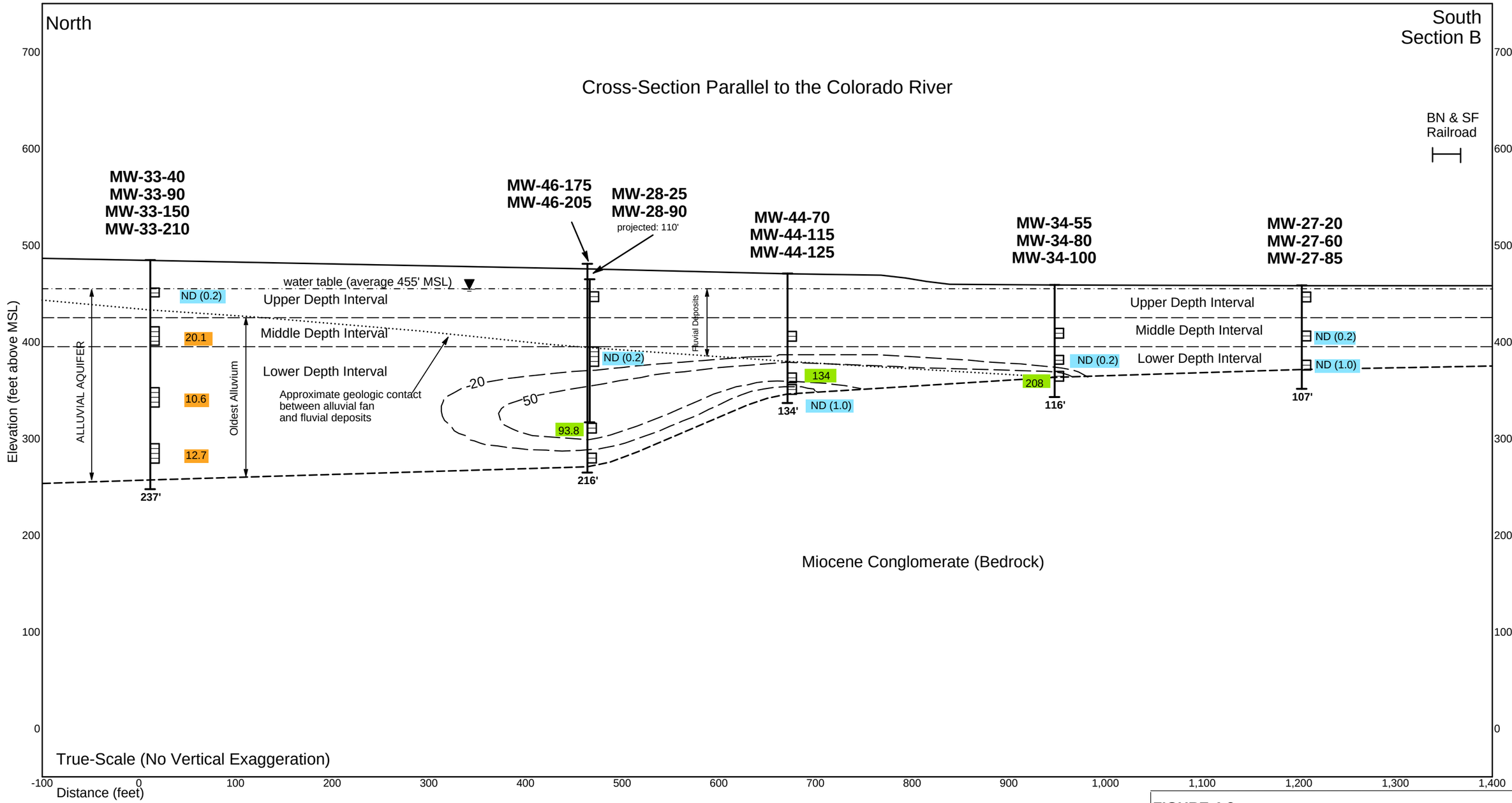


Notes:
ND = Not detected at listed reporting limit.

See Table 3-1 for additional sampling data and prior results for wells on this figure.

See Figure 1-4 for location of this cross-section.

water level

well screen 3,810

boring depth (feet) 103'

-— —- 50 -— —-

Inferred hexavalent chromium contours (ppb) in Alluvial Aquifer from Fourth Quarter 2011 where a larger number of wells were sampled and First Quarter 2012.

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

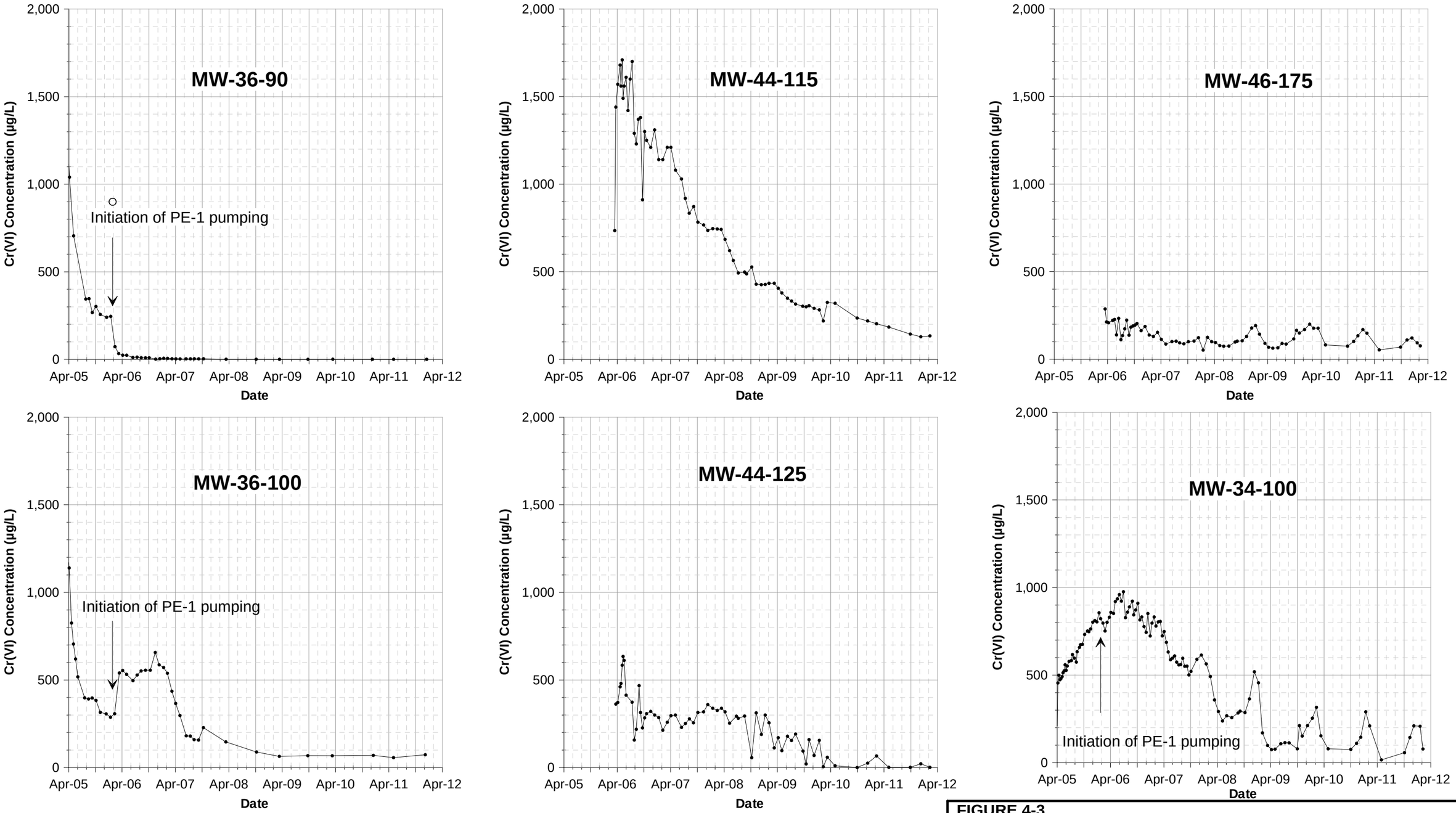
ND (0.2)	Not detected at listed reporting limit (ppb)
24.2	Less than 32 µg/L
203	Greater than 32 µg/L

FIGURE 4-2
Cr(VI) CONCENTRATIONS
FLOODPLAIN CROSS-SECTION B,
FIRST QUARTER 2012

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

C:\USERS\E2USER\DOCUMENTS\TOPOCK\GINT\2012_1Q\FIGURE_4-2_XSECB_CR.GDW;



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 2012
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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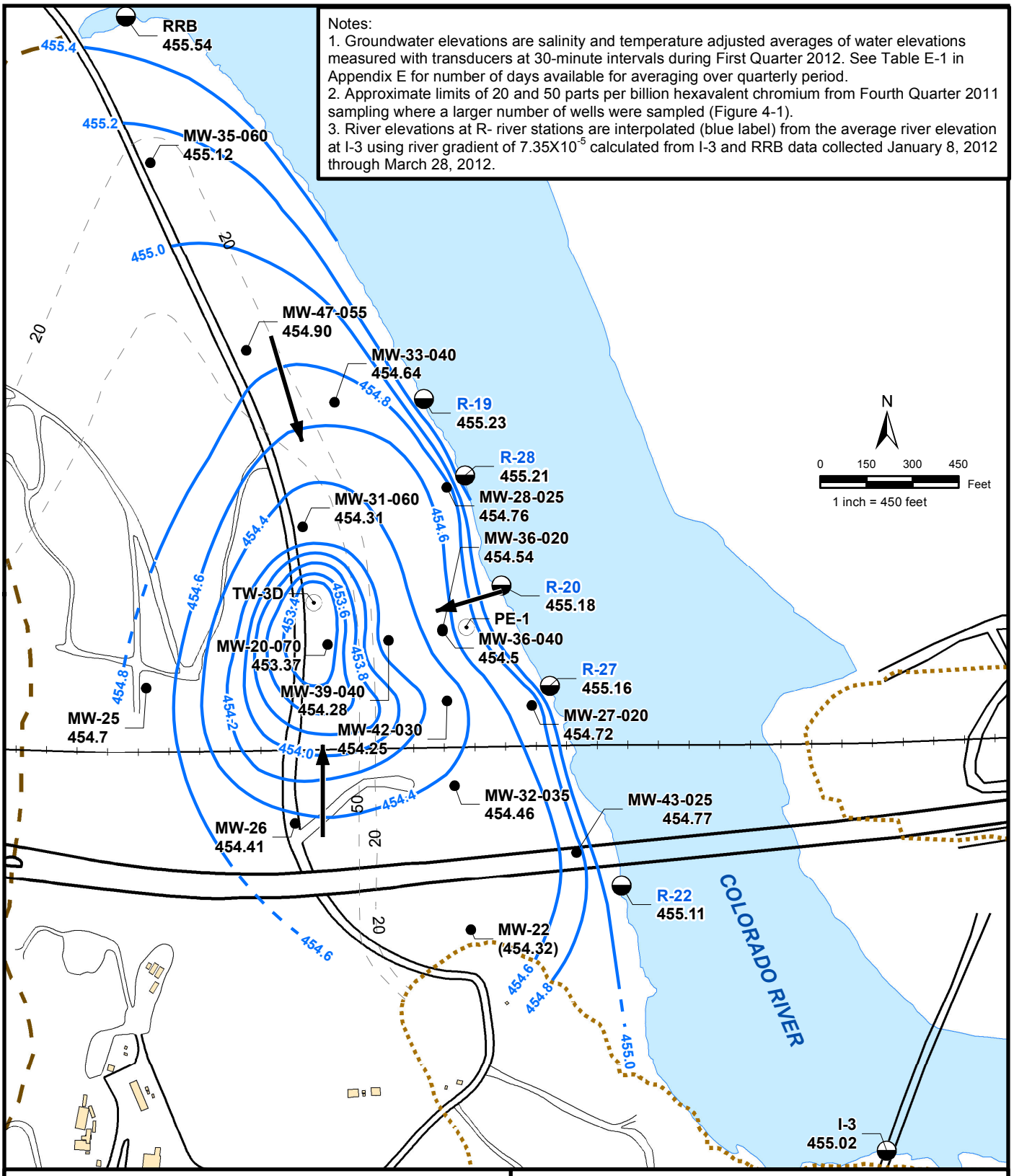

FIGURE 4-4a
AVERAGE GROUNDWATER ELEVATIONS IN SHALLOW WELLS AND RIVER ELEVATIONS, FIRST QUARTER 2012

FIRST QUARTER 2012 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNA

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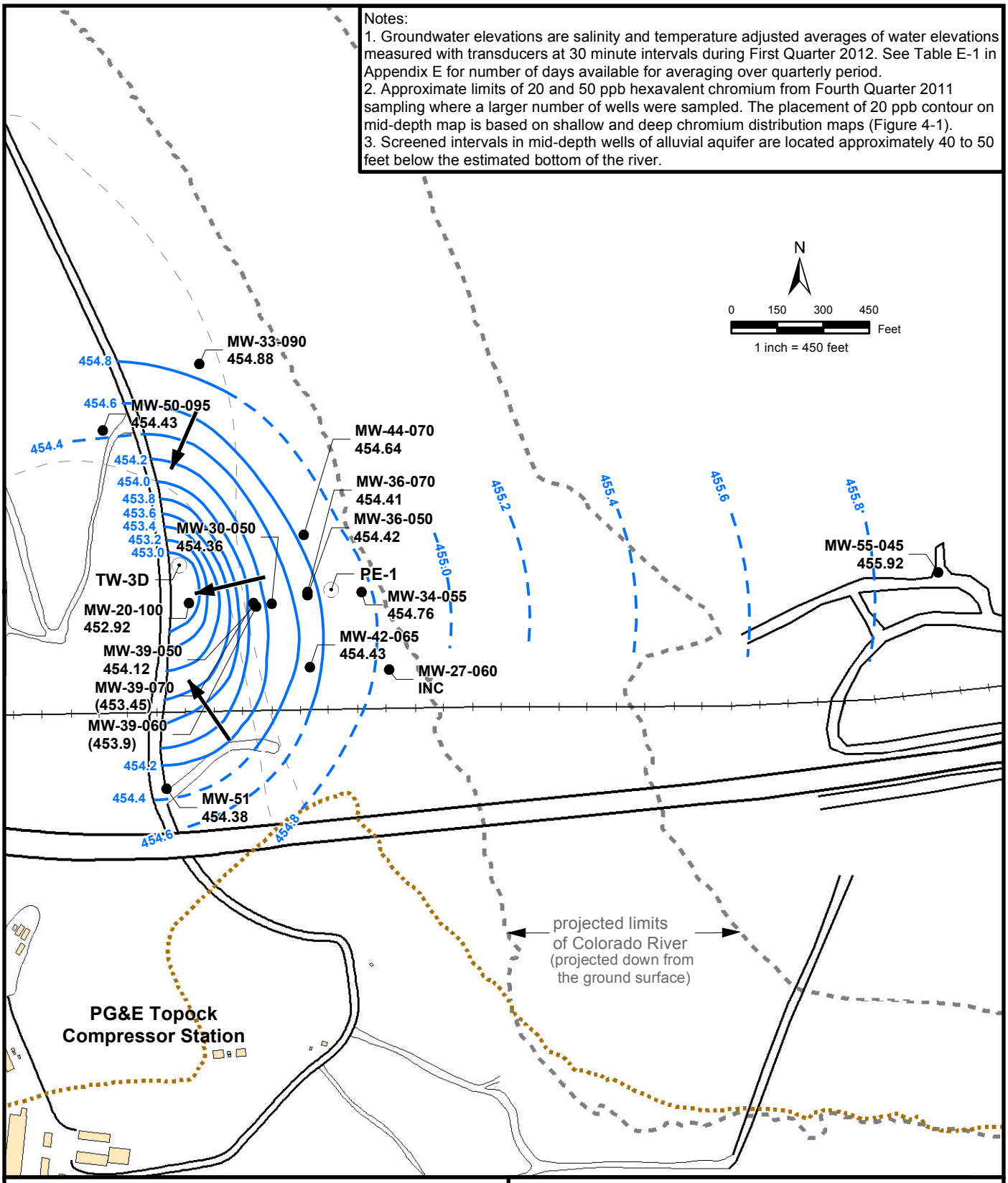
Notes:
1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30 minute intervals during First Quarter 2012. See Table E-1 in Appendix E for number of days available for averaging over quarterly period.
2. Approximate limits of 20 and 50 ppb hexavalent chromium from Fourth Quarter 2011 sampling where a larger number of wells were sampled. 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)
MW-29 (455.85)	Average Groundwater Elevation at Monitoring Station (ft AMSL) Not Used for Contouring
	Interpreted Groundwater Flow Direction
	Bedrock Contact at 425 ft elevation
	Monitoring Well
	Extraction Well
	Groundwater Elevation Contour 0.2 ft (dashed where inferred)
INC	Data incomplete for reporting period

FIGURE 4-4b
AVERAGE GROUNDWATER ELEVATIONS IN MID-DEPTH WELLS, FIRST QUARTER 2012

FIRST QUARTER 2012 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNA

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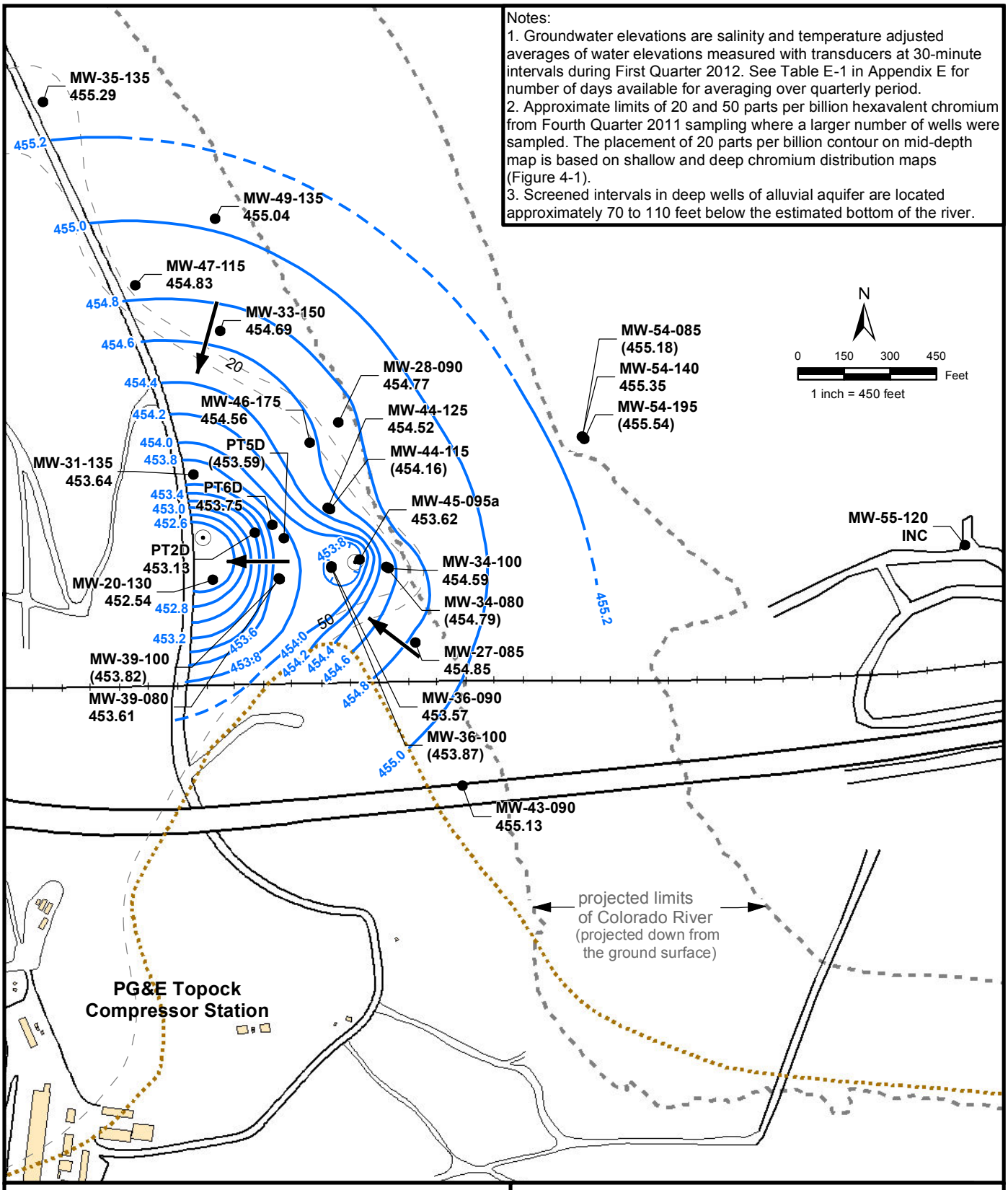
Notes:
1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30-minute intervals during First Quarter 2012. See Table E-1 in Appendix E for number of days available for averaging over quarterly period.
2. Approximate limits of 20 and 50 parts per billion hexavalent chromium from Fourth Quarter 2011 sampling where a larger number of wells were sampled. The placement of 20 parts per billion contour on mid-depth map is based on shallow and deep chromium distribution maps (Figure 4-1).
3. Screened intervals in deep wells of alluvial aquifer are located approximately 70 to 110 feet below the estimated bottom of the river.



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

Interpreted Groundwater Flow Direction

Bedrock Contact at 395 ft elevation

Monitoring Well

Extraction Well

Groundwater Elevation Contour 0.2 ft (dashed where inferred)

INC — Data incomplete for reporting period

FIGURE 4-4c
AVERAGE GROUNDWATER ELEVATIONS IN DEEP WELLS, FIRST QUARTER 2012

FIRST QUARTER 2012 INTERIM MEASURE PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNA

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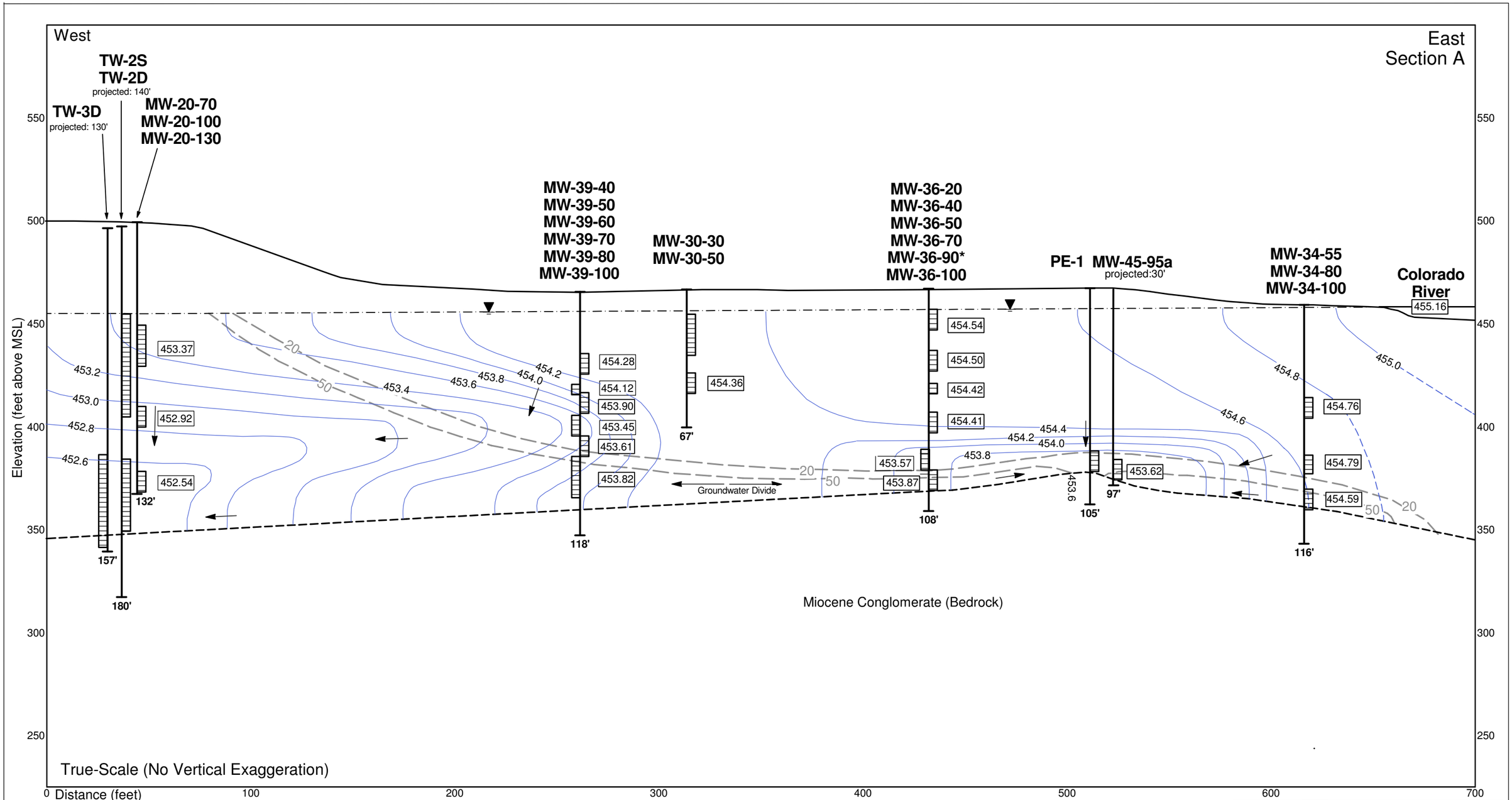

Notes:
Results show average groundwater elevations for First Quarter 2012 measured with transducers at 30 minute intervals, see Table E-1 in Appendix E for available data.

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

Legend:

MW-30-50 — well screen

Inferred water table

455.23 — Average groundwater head (ft AMSL)

103 — boring depth (feet)

20 — Inferred hexavalent chromium contour (ppb) from Fourth Quarter 2011 sampling.

453.5 — Groundwater head contour

453.5 — Inferred groundwater head contour

Interpreted groundwater flow direction

FIGURE 4-5
AVERAGE GROUNDWATER ELEVATIONS IN WELLS IN FLOODPLAIN CROSS-SECTION A FIRST QUARTER 2012

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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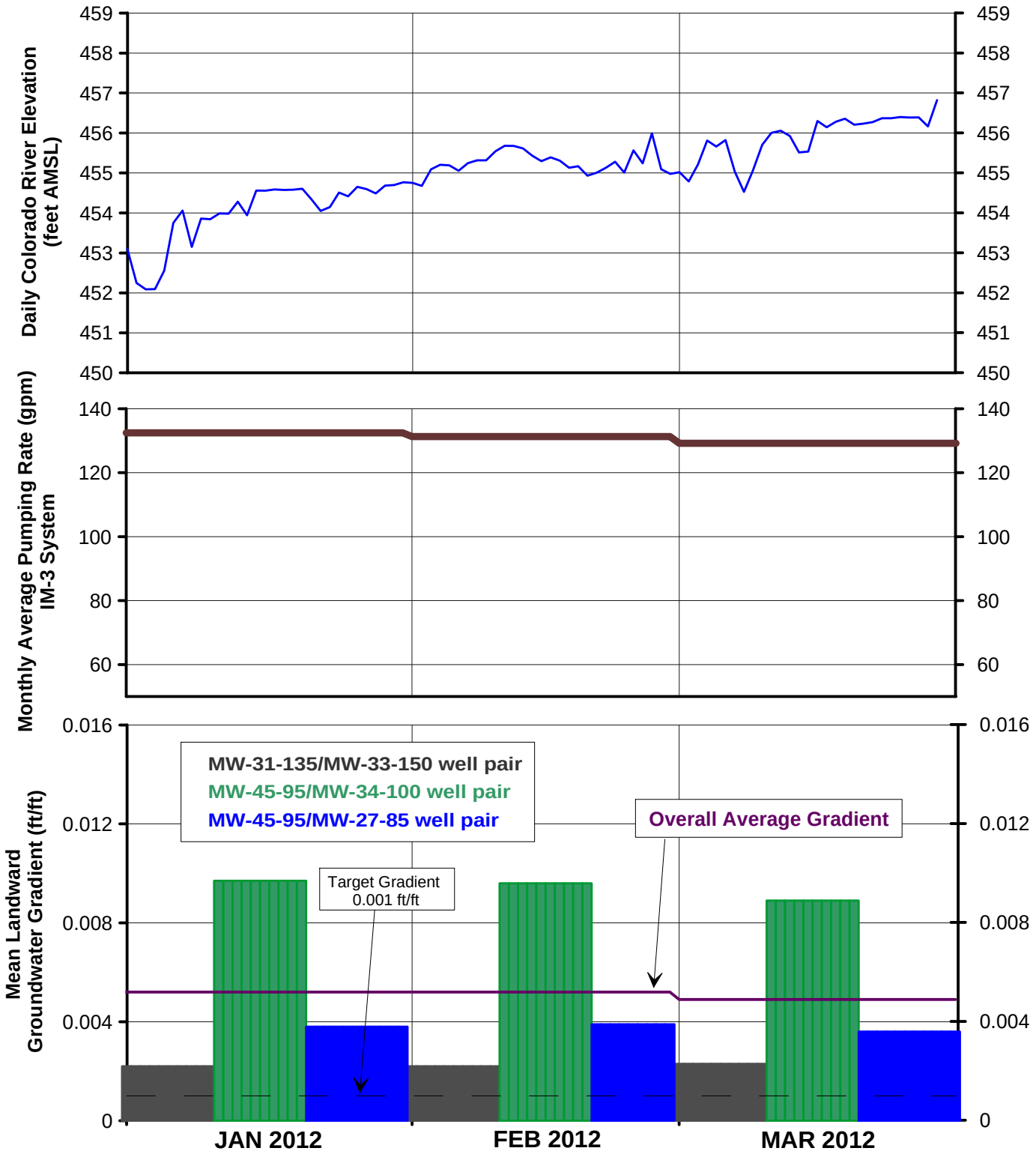
C:\USERS\E2USER\DOCUMENTS\GINT\2012\1Q\FIGURE_4-5_XSECA_GW.GDW;



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 2012

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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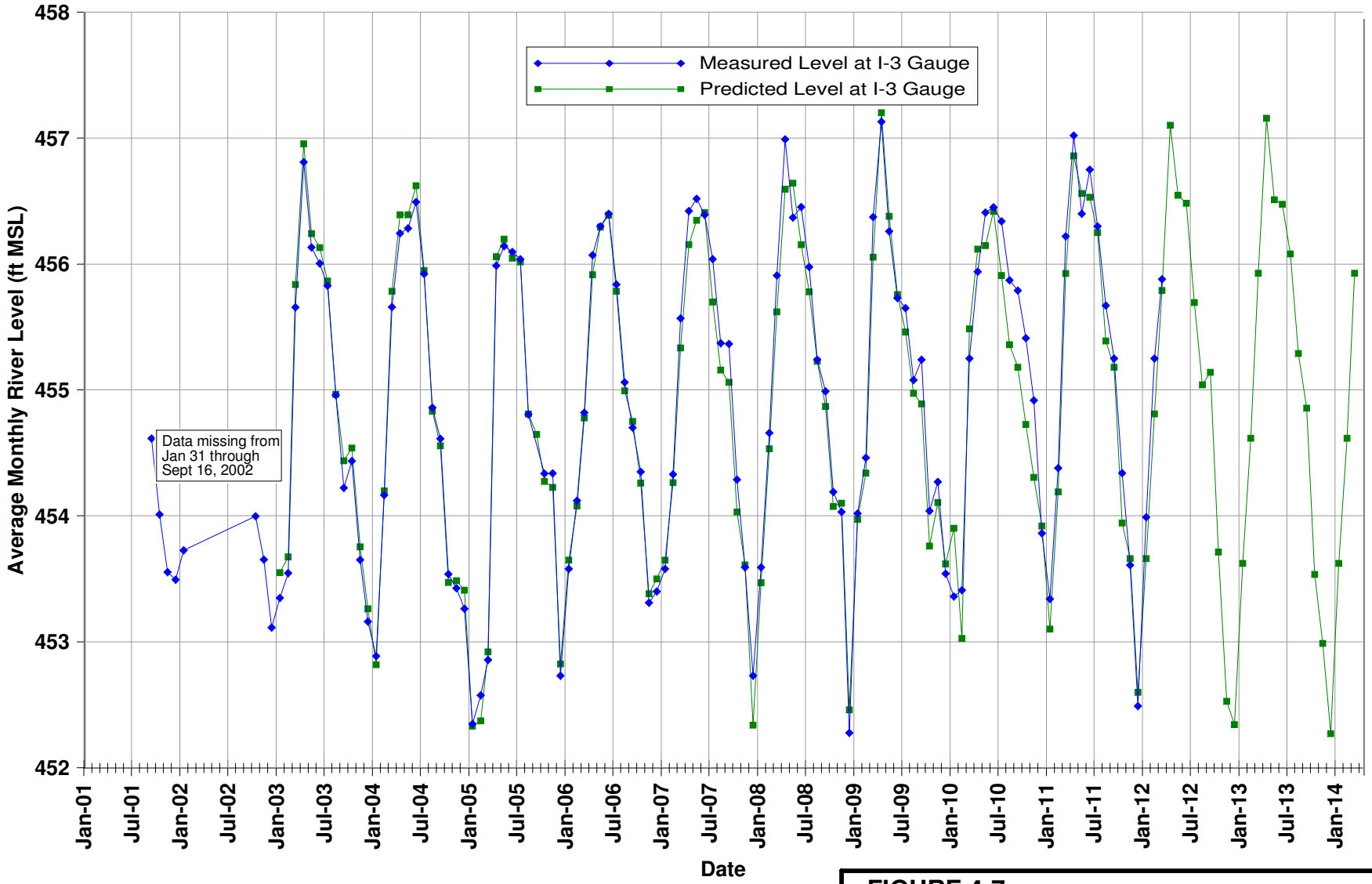

Note:
Projected river level for each month in the past is calculated based on the preceding months USBR projections of Davis Dam release and stage in Lake Havasu. Future projections of river level at I-3 are based upon April 2012 USBR projections. These data are reported monthly by the US Department 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 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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Appendix A
Lab Reports, First Quarter 2012

(Provided on CD-ROM with hardcopy submittal)

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 6, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-EASTRAVINE-GWINV-009, GROUNDWATER MONITORING PROJECT, TLI NO.: 800024

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-EASTRAVINE-GWINV-009 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 16, 2012, 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

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.
EXCELLENCE IN INDEPENDENT TESTING

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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.: 800024
Date Received: February 16, 2012

Project Name: PG&E Topock Project
Project No.: 417981.ER.02.DM
P.O. No.: 417981.ER.02.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800024-001	MW-57-070-009	E218.6	FLDFLT	2/15/2012	8:20	Chromium, hexavalent	454	ug/L	5.0
800024-001	MW-57-070-009	SW6020	FLDFLT-digested	2/15/2012	8:20	Chromium	455	ug/L	1.0
800024-002	MW-60-125-009	E218.6	FLDFLT	2/15/2012	13:31	Chromium, hexavalent	918	ug/L	10.0
800024-002	MW-60-125-009	SW6020	FLDFLT-digested	2/15/2012	13:31	Chromium	944	ug/L	1.0
800024-003	MW-61-110-009	E218.6	FLDFLT	2/15/2012	9:30	Chromium, hexavalent	634	ug/L	10.0
800024-003	MW-61-110-009	SW6020	FLDFLT-digested	2/15/2012	9:30	Chromium	680	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.

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TUSTIN, CALIFORNIA 92780-7008
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REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project Number: 417981.ER.02.DM
P.O. Number: 417981.ER.02.DM
Release Number:

Laboratory No. 800024

Printed 3/6/2012

Samples Received on 2/16/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
MW-57-070-009	800024-001	02/15/2012 08:20	Water
MW-60-125-009	800024-002	02/15/2012 13:31	Water
MW-61-110-009	800024-003	02/15/2012 09:30	Water

Chrome VI by EPA 218.6 Batch 02CrH12AA

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800024-001 Chromium, Hexavalent	ug/L	02/28/2012 10:47	25.0	0.650	5.0	454.
800024-002 Chromium, Hexavalent	ug/L	02/28/2012 10:57	50.0	1.30	10.0	918.
800024-003 Chromium, Hexavalent	ug/L	02/28/2012 11:08	50.0	1.30	10.0	634.

Method Blank

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

Duplicate — Lab ID = 800152-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.82	1.82	0.104	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.220	0.200	110.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.89	5.00	97.9	90 - 110

Matrix Spike — Lab ID = 800024-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	930.	954(500.)	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.

Matrix Spike — Lab ID = 800024-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1880	1920(1000)	96.6	90 - 110

Matrix Spike — Lab ID = 800024-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1390	1380(750.)	101.	90 - 110

Matrix Spike — Lab ID = 800057-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.46	1.43(1.06)	103.	90 - 110

Matrix Spike — Lab ID = 800057-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.31	1.28(1.06)	103.	90 - 110

Matrix Spike — Lab ID = 800057-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.54	1.50(1.06)	103.	90 - 110

Matrix Spike — Lab ID = 800057-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.68	6.47(5.30)	104.	90 - 110

Matrix Spike — Lab ID = 800057-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	16.4	16.8(10.6)	95.9	90 - 110

Matrix Spike — Lab ID = 800057-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.09	1.08(1.06)	101.	90 - 110

Matrix Spike — Lab ID = 800093-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1840	1840(1000)	99.7	90 - 110

Matrix Spike — Lab ID = 800093-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.14	5.00(5.00)	103.	90 - 110

Matrix Spike — Lab ID = 800093-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110

Matrix Spike — Lab ID = 800152-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.95	6.82(5.00)	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.

Metals by EPA 6020A, Dissolved

Batch 022012A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800024-001 Chromium	ug/L	02/20/2012 18:13	5.00	0.110	1.0	455.
800024-002 Chromium	ug/L	02/20/2012 19:03	5.00	0.110	1.0	944.
800024-003 Chromium	ug/L	02/20/2012 19:11	5.00	0.110	1.0	680.

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 800024-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	449	455	1.33	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.216	0.200	108.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	100.	100.	100.	85 - 115

Matrix Spike — Lab ID = 800024-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	546.	555(100.)	91.1	75 - 125

Matrix Spike Duplicate — Lab ID = 800024-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	576.	555(100.)	120.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.3	10.0	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.90	10.0	99.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.00	10.0	100.0	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 417981.ER.02.DM Printed 3/6/2012

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.77	10.0	97.7	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	10.0	10.0	100.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.70	10.0	97.0	80 - 120

Serial Dilution — Lab ID = 900147-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	1620	1690	3.98	0 - 10

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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CH2MHILL

CHAIN OF CUSTODY RECORD 800024

2/16/2012 2:57:57 PM

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/16/2012
COC Number: 7

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

	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Metals (SW6010B/SW6020Adis) Field Filtered Chromium		Number of Containers	COMMENTS
MW-94-009	2/14/2012	16:16	Water	X			1	Hold
1 MW-57-070-009	2/15/2012	8:20	Water	X	X		2	
2 MW-60-125-009	2/15/2012	13:31	Water	X	X		2	pH=2
3 MW-61-110-009	2/15/2012	9:30	Water	X	X		2	6020A/ 6010B
MW-95-009	2/15/2012	16:35	Water	X			1	Hold
MW-96-009	2/16/2012	8:45	Water	X			1	Hold
						TOTAL NUMBER OF CONTAINERS	9	

Sample Conditions
See Form Attached

ALERT !!
Level III QC

	Signatures	Date/Time
Approved by		
Sampled by		2-16-12 1600
Relinquished by		
Received by	Rafael Davila	2-16-12 16:00
Relinquished by	Rafael Davila	2-16-12 21:30
Received by	Linda Shabunina	2/16/12 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:
February, 2012

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
2/15/12	900180	7	5mL	9.5	9 Am	[illegible]
	900186-1	7	5mL	9.5	11 Am	[illegible]
	-3				11:10 Am	
	900187-1				11:20 Am	
	-3				11:30 Am	
2/17/12	800023-15	7	5mL	9.5	10:00 Am	[illegible]
	-16				10:10 Am	
	-17				10:15 Am	
2/17/12	800024-1	9.5	N/A	N/A	N/A	[illegible]
	-2					
	-3					
2/17/12	800025-1	9.5	N/A	N/A	N/A	[illegible]
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
2/21/12	800057-1	7	5mL	9.5	8:30 Am	[illegible]
	-2				8:40 Am	
	-3				8:45 Am	
	-4				8:50 Am	
	-5				8:55 Am	
	-6				9:05 Am	
	-7				9:15 Am	
	-8				9:25 Am	
	-9				9:30 Am	
	-10				9:35 Am	
	-11				9:40 Am	
2/22/12	800092	7	5mL	9.5	9 Am	[illegible]

[illegible]
3-5-12

[illegible]

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
999950	>1	<2	02/03/12	M.M	Yes	3010A
999977	↓	↓	↓	↓	↓	–
999978	↓	↓	↓	↓	↓	–
999951 (1-2)	↓	↓	↓	↓	Yes	–
999911	<1	<2	02-06-12	MF/BE	NO	–
999951-(1)	>1	>2	↓	↓	Yes	Y 2/6/12
-2	<1	>2	↓	↓	NO	–
pm ~~02/06/12~~	~~<1~~					
900015 (1-7)	<1	<2	02-06-12	M.M	Yes	–
900016 (1-5)	↓	↓	↓	↓	↓	–
900017 (1-3,5-9)	↓	↓	↓	↓	↓	–
900033 (1-5)	<1	<2	02-07-12	M.M	Yes	–
900055 (1-2)	<1	>2	02-08-12	M.M	Yes	Yes
900056 (1-2)	<1	>2	↓	↓	↓	–
900057 (1-6)	<1	~~<2 >2~~ M.M 3/11	↓	↓	↓	–
900043	>1	<2	2/8/12	ES	yes	3010A
900014	>1	<2	2/8/12	M.M	Yes	3010A
900040	↓	↓	↓	↓	↓	–
T+D 900079 (1-6)	>1	<2	2/9/12	MM	Yes	3010A
900075 (1-2)	>1	<2	2/9/2	M.M	Yes	3010A
900039 (1-3)	<1	>2	2/9/12	ES	No	yes @ 1:00 pm
041 (16,23	↓	↓	↓	↓	↓	↓
052-1	↓	↓	↓	↓	↓	↓
068 (10-12)	↓	↓	↓	↓	↓	↓
076 (1-3)	↓	↓	↓	↓	↓	↓
900147 (1-5)	<1	<2	2/14/12	M.M	Yes	3010A
900148 (1-4,6-11,	↓	↓	↓	↓	↓	↓
13-17,19,21)	↓	↓	↓	↓	↓	↓
900180	<1	>2	2/16/12	M.M	Yes	3010A
900181 (1,2,8	<1	<2	↓	↓	↓	↓
-11-11-5	>1	<2	↓	↓	↓	↓
900182 (1-6)	<1	<2	↓	↓	↓	↓
800000 (1-4)	↓	↓	↓	↓	↓	↓
800001	<1	<2	2/16/12	ES	NO	NO
800018 (1-4)	<1	<2	↓	↓	↓	↓
800015	<1	<2	↓	↓	↓	↓
800019	<1	<2	↓	↓	↓	↓
900106 (1-4)	>2	<2	↓	↓	yes	3010A
900127	↓	↓	↓	↓	↓	↓
900135	↓	↓	↓	↓	↓	↓
900162	↓	↓	↓	↓	↓	↓
900163	↓	↓	↓	↓	↓	↓
900202	↓	↓	↓	↓	↓	↓
900203	↓	↓	↓	↓	↓	↓
900204	↓	↓	↓	↓	NO	–
800026	<1	>2	2/17/12	MF	NO	2/17 9:30 am Y
800027 (15-17)	<1	>2	2/17/12	M.M	Yes	3010A
800024	↓	<2	↓	↓	↓	↓
800025 (1-8)	↓	↓	↓	↓	↓	↓

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 800024

Date Delivered: 02/16/12 **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? ☒Yes ☐No ☐N/A
   Temperature (if yes)? 3 °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
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L. Shabunina

ALERT Level III

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 6, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-EASTRAVINE-GWINV-009, GROUNDWATER MONITORING PROJECT, TLI NO.: 800093

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-EASTRAVINE-GWINV-009 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 21, 2012, 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

Michael Ngo
Quality Assurance/Quality Control Officer

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

Laboratory No.: 800093
Date Received: February 21, 2012

Project Name: PG&E Topock Project
Project No.: 417981.ER.02.DM
P.O. No.: 417981.ER.02.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800093-001	MW-62-110-009	E218.6	FLDFLT	2/16/2012	15:25	Chromium, hexavalent	842	ug/L	10.0
800093-001	MW-62-110-009	SW6020	FLDFLT-digested	2/16/2012	15:25	Chromium	821	ug/L	2.0
800093-002	MW-62-190-009	E218.6	FLDFLT	2/16/2012	15:30	Chromium, hexavalent	ND	ug/L	1.0
800093-002	MW-62-190-009	SW6020	FLDFLT-digested	2/16/2012	15:30	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.

004

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REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project Number: 417981.ER.02.DM
P.O. Number: 417981.ER.02.DM
Release Number:

Laboratory No. 800093

Printed 3/6/2012

Samples Received on 2/21/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
MW-62-110-009	800093-001	02/16/2012 15:25	Water
MW-62-190-009	800093-002	02/16/2012 15:30	Water

Chrome VI by EPA 218.6 Batch 02CrH12AA

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800093-001 Chromium, Hexavalent	ug/L	02/28/2012 18:16	50.0	1.30	10.0	842.
800093-002 Chromium, Hexavalent	ug/L	02/28/2012 20:21	5.00	0.130	1.0	ND

Method Blank

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

Duplicate — Lab ID = 800152-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.82	1.82	0.104	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.220	0.200	110.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.89	5.00	97.9	90 - 110

Matrix Spike — Lab ID = 800024-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	930.	954(500.)	95.3	90 - 110

Matrix Spike — Lab ID = 800024-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1880	1920(1000)	96.6	90 - 110

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Matrix Spike — Lab ID = 800024-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1390	1380(750.)	101.	90 - 110

Matrix Spike — Lab ID = 800057-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.46	1.43(1.06)	103.	90 - 110

Matrix Spike — Lab ID = 800057-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.31	1.28(1.06)	103.	90 - 110

Matrix Spike — Lab ID = 800057-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.54	1.50(1.06)	103.	90 - 110

Matrix Spike — Lab ID = 800057-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.68	6.47(5.30)	104.	90 - 110

Matrix Spike — Lab ID = 800057-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	16.4	16.8(10.6)	95.9	90 - 110

Matrix Spike — Lab ID = 800057-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.09	1.08(1.06)	101.	90 - 110

Matrix Spike — Lab ID = 800093-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1840	1840(1000)	99.7	90 - 110

Matrix Spike — Lab ID = 800093-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.14	5.00(5.00)	103.	90 - 110

Matrix Spike — Lab ID = 800093-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110

Matrix Spike — Lab ID = 800152-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.95	6.82(5.00)	103.	90 - 110

Matrix Spike — Lab ID = 800152-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.70	7.61(5.00)	102.	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 030112A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800093-001 Chromium	ug/L	03/01/2012 17:20	10.0	0.220	2.0	821
800093-002 Chromium	ug/L	03/01/2012 18:25	5.00	0.110	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 800093-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	10.0	835.	821	1.64	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.213	0.200	106.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.4	100.	99.4	85 - 115

Matrix Spike — Lab ID = 800093-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	1780	1820(1000)	96.1	75 - 125

Matrix Spike Duplicate — Lab ID = 800093-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	1790	1820(1000)	96.9	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.32	10.0	93.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.52	10.0	95.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.57	10.0	95.7	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 417981.ER.02.DM Printed 3/6/2012

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.05	10.0	90.5	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	9.67	10.0	96.7	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.15	10.0	91.5	80 - 120

Serial Dilution Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	822.	840.	2.15	0 - 10

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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CH2MHILL

CHAIN OF CUSTODY RECORD

800093

2/17/2012 7:57:32 AM

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/21/2012
COC Number: 10

				Container:	250 ml Poly	500 ml Poly			
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C			
				Filtered:	Field	Field	For Sample Conditions See Form Attached		
				Holding Time:	28	180			
	DATE	TIME	Matrix		Cr6 (E218.6) Field Filtered	Metals (SW6010B/SW6020Adis) Field Filtered Chromium		Number of Containers	COMMENTS
-1	MW-62-110-009	2/16/2012	15:25	Water	X	X		2	pH=2
2	MW-62-190-009	2/16/2012	15:30	Water	X	X		2	pH=2
	MW-97-009	2/16/2012	13:30	Water	X			1	Hold
	MW-99-009	2/16/2012	17:10	Water	X			1	Hold
							TOTAL NUMBER OF CONTAINERS	6	

pH for 6020A/6010B

ALERT!! Level III QC

	Signatures	Date/Time
Approved by		2-21-12
Sampled by		1330
Relinquished by		
Received by	Rafael Davila	2-21-12 15:30
Relinquished by	Rafael Davila	2-21-12 21:30
Received by	Linda Shakemune	2/21/12 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:
February, 2012

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
2/22/12	800093-1	9.5	N/A	N/A	N/A	MVG
↓	↓ -2	↓	↓	↓	↓	↓

MVG

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
800046	<1	>2	2-17-12	B.E	NO	yes 2/17-12 18:20
800050 (1-15)	<1	>2				
800051 (1-12						
800078	<1	<2	2/21/12	ES	NO	—
ES ~~800026~~ 800055						—
2/21/12 ~~800~~ 800021					yes	—
800002-1	<1	>2			NN	yes @ 9:00
800061-1	<1	>2		BE	NO	yes @ 2-21-12 14:00
2samples -2						
2samples -4						
800057 (1-11)	>1	>2	2/21/12	M.M	yes	yes @ 16:00
800092	<1	>2	2/22/12	M.M	yes	3010A
800093 (1-2	<1	<2				
800077 (1-10)	<1	>2	2/22/12	ES	NO	yes @ 3:00 p.m
800078 (1-26)						
800079 (1-24)						
800080 (1-28)						
800081	<1	<2	2/22/12	ES	NO	—
800109						
800110						
800111						
800112						
800113						
800021	>2	<1	2/23/12	ES	yes	3010A
800103						
800110						
800120						
800085 (1-2)	<1	>2	2/23/12	ES	NO	yes @ 4:00 p.m
800118 (10-12)						
800122-2						
800129 (1-3)						
800143 (1-3)						
800150 (1-10)	<1	<2	2/24/12	M.M	yes	3010A
800151 (1-8)						
800152 (1-6)						
800175 (1, 3-8)	<1	<2	2/27/12	M.M	yes	3010A
800176 (1-6)						
800177 (1-2)	>1	<2	2/28/12	ES	yes	3010A
800178						
800179						
800181						
800180	<1	<2	2/28/12	ES	NO	—
800190						—
800165 (1-10)	<1	>2				yes @ 9:00 am
800200 (1-3)	>1	<2	2/28/12	ES	yes	3010A
800213						
800187	<1	>2			NO	yes @ 1:00 p.m
800196 (1-7,4)						
800238 (T)	<1	>2 (pH6)	2/29/12	ES	yes	3010A pH6

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E 2 **Lab #** 800093

Date Delivered: 02/21/12 **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? ☒Yes ☐No ☐N/A
   Temperature (if yes)? 4.6° 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
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L Shabunina

ALERT !! Level III QC

C:\Users\Test\Desktop\Forms A - D\Discrp. FormBlank.doc

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 13, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-EASTRAVINE-GWINV-009, GROUNDWATER MONITORING PROJECT, TLI NO.: 800239

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-EASTRAVINE-GWINV-009 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 28, 2012, 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

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.
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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.: 800239
Date Received: February 28, 2012

Project Name: PG&E Topock Project
Project No.: 417981.ER.02.DM
P.O. No.: 417981.ER.02.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800239-001	MW-62-065-009	E218.6	FLDFLT	2/17/2012	10:46	Chromium, hexavalent	452	ug/L	5.0
800239-001	MW-62-065-009	SW6020	FLDFLT-digested	2/17/2012	10:46	Chromium	530	ug/L	2.0
800239-002	MW-59-100-009	E218.6	FLDFLT	2/22/2012	8:55	Chromium, hexavalent	4070	ug/L	50.0
800239-002	MW-59-100-009	SW6020	FLDFLT-digested	2/22/2012	8:55	Chromium	4690	ug/L	10.0

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.

004

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TRUESDAIL LABORATORIES, INC.

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

REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project Number: 417981.ER.02.DM
P.O. Number: 417981.ER.02.DM
Release Number:

Laboratory No. 800239

Printed 3/13/2012

Samples Received on 2/28/2012 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
MW-62-065-009	800239-001	02/17/2012 10:46	Water
MW-59-100-009	800239-002	02/22/2012 08:55	Water

Chrome VI by EPA 218.6 Batch 03CrH12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800239-001 Chromium, Hexavalent	ug/L	03/02/2012 10:09	25.0	0.650	5.0	452.
800239-002 Chromium, Hexavalent	ug/L	03/02/2012 10:20	250	6.50	50.0	4070

Method Blank

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

Duplicate — Lab ID = 800258-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0440	0.0423	3.94	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.231	0.200	115.	70 - 130

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.230	0.200	115.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.84	5.00	96.7	90 - 110

Matrix Spike — Lab ID = 800239-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	944.	952(500.)	98.3	90 - 110

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Matrix Spike — Lab ID = 800239-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	250	9350	9070(5000)	106.	90 - 110

Matrix Spike — Lab ID = 800258-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.06	1.04(1.00)	102.	90 - 110

Matrix Spike — Lab ID = 800258-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.04(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 800258-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.04(1.00)	99.8	90 - 110

Matrix Spike — Lab ID = 800258-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.04(1.00)	98.2	90 - 110

Matrix Spike — Lab ID = 800258-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.04(1.00)	98.4	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.85	5.00	97.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.82	10.0	98.2	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.82	10.0	98.2	95 - 105

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 417981.ER.02.DM Printed 3/13/2012

Metals by EPA 6020A, Dissolved

Batch 030612C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800239-001 Chromium	ug/L	03/06/2012 23:55	10.0	0.220	2.0	530.
800239-002 Chromium	ug/L	03/07/2012 01:30	50.0	1.10	10.0	4690

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 800239-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	10.0	539.	530.	1.66	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.171	0.200	85.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.5	100.	99.5	85 - 115

Matrix Spike — Lab ID = 800239-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	1510	1530(1000)	98.0	75 - 125

Matrix Spike Duplicate — Lab ID = 800239-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	1510	1530(1000)	98.0	75 - 125

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	9.74	10.0	97.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.55	10.0	95.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.75	10.0	97.5	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	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	10.3	10.0	103.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.6	10.0	106.	80 - 120

Serial Dilution Lab ID = 800239-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	488.	530.	8.31	0 - 10

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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800239

CH2MHILL CHAIN OF CUSTODY RECORD 2/22/2012 2:10:15 PM Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/21/2012
COC Number: 12

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

ALERT !! Level III QC

	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Metals (SW6010B/SW6020Adis) Field Filtered Chromium		Number of Containers	COMMENTS
-1 MW-62-065-009	2/17/2012	10:46	Water	X	X		2	pH=2
~~MW-99-009~~ 36C MW-99A-009	2/17/2012	12:10	Water	X			1	Hold
MW-98-009	2/21/2012	16:05	Water	X			1	Hold
-2 MW-59-100-009	2/22/2012	8:55	Water	X	X		2	pH=2
~~MW-94-009~~ MW-94A-009	2/22/2012	14:00	Water	X			1	Hold
						TOTAL NUMBER OF CONTAINERS	7	

pH fo. 6020A/ 6010B

For Sample Conditions See Form Attached

	Signatures	Date/Time
Approved by		2-28-12
Sampled by		1600
Relinquished by	[signature]	
Received by	Hipolito	2-28-12 16:00
Relinquished by	Hipolito	2-28-12 21:00
Received by	Linda Shabunina	2/28/12 21:00

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: February, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

024

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
2/29/12	800238	7	5mL	9.5	10 Am	[illegible]
2/29/12	800240-1	9.5	N/A	N/A	N/A	[illegible]
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-12					
	-13					
	-14					
2/29/12	800239-1	9.5	N/A	N/A	N/A	[illegible]
	-2					

C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

3-5-12

Turbidity/pH Check

	Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
Dis	800239 (1-2)	<1	<2	2/29/12	ES	yes	3010 A
T	800240 (1-12)	<1	<2	↓	↓	↓	↓
D	800240 (1-14)	↓	↓	↓	↓	↓	↓
	800257	<1	<2	3/2/12		NO	—
	800284	↓	↓	↓	↓	↓	—
	800286	↓	↓	↓		↓	—
	800287 (1-3	>1	>2	3/2/12		yes	3010A
	800285	↓	↓	↓	↓	↓	↓
	800262						
	800275	↓	↓	↓	↓	↓	↓
	800289	<1	>2	3/2/12	ES	NO	—
	800294 (1,2,4)	<1	>2	3/5/12	BE	NO	yes 15:15
	800186	Solid	—	3/6/12	M.M	yes	TTLC
	800303	↓	—	↓	↓	↓	↓
D	800348 (1-2)	<1	>2	3/8/12	M.M	yes	3010A
T	800349 (1-2	<1	<2	3/8/12	M.M	yes	3010A
	800298	>1	<2	3/8/12	M.M	yes	3010A
	800321	↓	↓	↓	↓	↓	↓
	800377	↓	↓	↓	↓	↓	↓
	800376	>1	<2	3/8/12	ES	yes	3010A
	800358-13	↓	↓	↓	↓	↓	↓
	800394	>1	<2	3/8/12	MM	yes	3010A
	800320-16,-23	<1	>2	3/9/12	KK	NO	yes @ 11:25 am
	800337	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800339 (1-3)	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800351 (-7-9)	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800358-2	<1	>2	3/9/12	KK	NO	yes @ 11:35 am
	~~800372 (10-12)~~	KK 3/9/12					
	800372 (10-12)	<1	>2	3/9/12	KK	NO	yes @ 11:35 am
	800391 (1-10)	<1	>2	3/9/12	KK	NO	yes @ 11:40 am
	800392 (1-10)	<1	>2	3/9/12	KK	No	yes @ 12 pm
	800395	<1	>2	3/9/12	KK	NO	yes @ 12 pm
	800411 (1-4)	<1	>2	3/9/12	KK	NO	yes @ 12 pm
	800419 (1-20)	<1	>2	3/12/12	BE	NO	yes 12:35 pm
	800419 (1-3)	<1	>2	↓	↓	↓	↓
	800421 (-1)	<1	<2	3/11/12	M.M	yes	3010 A
	800427 (1,2,4)	<1	>2	3/12/12	BB	NO	yes 13:35

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 800239

Date Delivered: 2 / 28 / 12 **Time:** 21:00 **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)? 3.8 °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
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L. Shabunina

ALERT III Level III

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-RMP-185, SURFACEWATER MONITORING PROJECT, TLI NO.: 800240

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-RMP-185 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 February 28, 2012, 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 early sampling time and late arrival of the samples, samples 800240-1, 800240-2, 800240-3 and 800240-6 through 800240-12 for pH analysis by SM 4500-H B were analyzed past the method specified holding time. Mr. Shawn Duffy approved the analysis.

Due to the discrepancy between the Total Dissolved Chromium (1.3 ug/L) and Hexavalent Chromium (ND<0.20 ug/L) results for sample C-BNS-D-185, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers were digested and analyzed for Total Dissolved Chromium. The results were both ND<1.0 ug/L. The original digestate was re-analyzed for confirmation and also yielded a result of ND<1.0 ug/L. The result from the re-digested Total Dissolved Chromium was reported as it more closely matched the Hexavalent Chromium result.

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

Michael Ngo
Quality Assurance/Quality Control Officer

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Event 2012-RMP-185 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-185	2.00	No			
C-I-3-D-185	2.00	No			
C-I-3-S-185	2.00	No			
C-MAR-D-185	2.00	No			
C-MAR-S-185	2.00	No			
C-R22A-D-185	2.00	No			
C-R22A-S-185	2.00	No			
C-R27-D-185	2.00	No			
C-R27-S-185	2.00	No			
C-TAZ-D-185	2.00	No			
C-TAZ-S-185	2.00	No			
R63-185	2.00	No			
SW1-185	2.00	No			
SW2-185	2.00	No			

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Event 2012-RMP-185 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-185	9.50	No			
C-I-3-D-185	9.50	No			
C-I-3-S-185	9.50	No			
C-MAR-D-185	9.50	No			
C-MAR-S-185	9.50	No			
C-R22A-D-185	9.50	No			
C-R22A-S-185	9.50	No			
C-R27-D-185	9.50	No			
C-R27-S-185	9.50	No			
C-TAZ-D-185	9.50	No			
C-TAZ-S-185	9.50	No			
R63-185	9.50	No			
SW1-185	9.50	No			
SW2-185	9.50	No			

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

Laboratory No.: 800240
Date Received: February 28, 2012

Project Name: PG&E Topock Project
Project No.: 423575.MP.02.RM
P.O. No.: 423575.MP.02.RM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800240-001	C-BNS-D-185	E120.1	NONE	2/28/2012	11:07	EC	915	umhos/cm	2.00
800240-001	C-BNS-D-185	E218.6	FLDFLT	2/28/2012	11:07	Chromium, hexavalent	ND	ug/L	0.20
800240-001	C-BNS-D-185	E300	NONE	2/28/2012	11:07	Nitrate as N	ND	mg/L	0.500
800240-001	C-BNS-D-185	SM2320B	NONE	2/28/2012	11:07	Alkalinity	132	mg/L	5.00
800240-001	C-BNS-D-185	SM2320B	NONE	2/28/2012	11:07	Bicarbonate	132	mg/L	5.00
800240-001	C-BNS-D-185	SM2320B	NONE	2/28/2012	11:07	Carbonate	ND	mg/L	5.00
800240-001	C-BNS-D-185	SM2540D	NONE	2/28/2012	11:07	Total Suspended Solids	ND	mg/L	10.0
800240-001	C-BNS-D-185	SM4500HB	NONE	2/28/2012	11:07	PH	7.98 J	pH	4.00
800240-001	C-BNS-D-185	SW6010B	NONE-digested	2/28/2012	11:07	Iron	20.0	ug/L	20.0
800240-001	C-BNS-D-185	SW6010B	FLDFLT-digested	2/28/2012	11:07	Iron	ND	ug/L	20.0
800240-001	C-BNS-D-185	SW6010B	FLDFLT-digested	2/28/2012	11:07	Molybdenum	ND	ug/L	10.0
800240-001	C-BNS-D-185	SW6010B	FLDFLT-digested	2/28/2012	11:07	Selenium	ND	ug/L	10.0
800240-001	C-BNS-D-185	SW6020	FLDFLT-digested	2/28/2012	11:07	Arsenic	2.4	ug/L	1.0
800240-001	C-BNS-D-185	SW6020	FLDFLT-digested	2/28/2012	11:07	Chromium	ND	ug/L	1.0
800240-001	C-BNS-D-185	SW6020	FLDFLT-digested	2/28/2012	11:07	Manganese	ND	ug/L	10.0
800240-002	C-I-3-D-185	E120.1	NONE	2/28/2012	9:28	EC	914	umhos/cm	2.00
800240-002	C-I-3-D-185	E218.6	FLDFLT	2/28/2012	9:28	Chromium, hexavalent	ND	ug/L	0.20
800240-002	C-I-3-D-185	E300	NONE	2/28/2012	9:28	Nitrate as N	ND	mg/L	0.500
800240-002	C-I-3-D-185	SM2320B	NONE	2/28/2012	9:28	Alkalinity	139	mg/L	5.00
800240-002	C-I-3-D-185	SM2320B	NONE	2/28/2012	9:28	Bicarbonate	139	mg/L	5.00
800240-002	C-I-3-D-185	SM2320B	NONE	2/28/2012	9:28	Carbonate	ND	mg/L	5.00
800240-002	C-I-3-D-185	SM2540D	NONE	2/28/2012	9:28	Total Suspended Solids	ND	mg/L	10.0
800240-002	C-I-3-D-185	SM4500HB	NONE	2/28/2012	9:28	PH	7.99 J	pH	4.00

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800240-002	C-I-3-D-185	SW6010B	NONE-digested	2/28/2012	9:28	Iron	ND	ug/L	20.0
800240-002	C-I-3-D-185	SW6010B	FLDFLT-digested	2/28/2012	9:28	Iron	ND	ug/L	20.0
800240-002	C-I-3-D-185	SW6010B	FLDFLT-digested	2/28/2012	9:28	Molybdenum	ND	ug/L	10.0
800240-002	C-I-3-D-185	SW6010B	FLDFLT-digested	2/28/2012	9:28	Selenium	ND	ug/L	10.0
800240-002	C-I-3-D-185	SW6020	FLDFLT-digested	2/28/2012	9:28	Arsenic	2.4	ug/L	1.0
800240-002	C-I-3-D-185	SW6020	FLDFLT-digested	2/28/2012	9:28	Chromium	ND	ug/L	1.0
800240-002	C-I-3-D-185	SW6020	FLDFLT-digested	2/28/2012	9:28	Manganese	ND	ug/L	10.0
800240-003	C-I-3-S-185	E120.1	NONE	2/28/2012	9:42	EC	911	umhos/cm	2.00
800240-003	C-I-3-S-185	E218.6	FLDFLT	2/28/2012	9:42	Chromium, hexavalent	ND	ug/L	0.20
800240-003	C-I-3-S-185	E300	NONE	2/28/2012	9:42	Nitrate as N	ND	mg/L	0.500
800240-003	C-I-3-S-185	SM2320B	NONE	2/28/2012	9:42	Alkalinity	133	mg/L	5.00
800240-003	C-I-3-S-185	SM2320B	NONE	2/28/2012	9:42	Bicarbonate	133	mg/L	5.00
800240-003	C-I-3-S-185	SM2320B	NONE	2/28/2012	9:42	Carbonate	ND	mg/L	5.00
800240-003	C-I-3-S-185	SM2540D	NONE	2/28/2012	9:42	Total Suspended Solids	ND	mg/L	10.0
800240-003	C-I-3-S-185	SM4500HB	NONE	2/28/2012	9:42	PH	8.05 J	pH	4.00
800240-003	C-I-3-S-185	SW6010B	NONE-digested	2/28/2012	9:42	Iron	ND	ug/L	20.0
800240-003	C-I-3-S-185	SW6010B	FLDFLT-digested	2/28/2012	9:42	Iron	ND	ug/L	20.0
800240-003	C-I-3-S-185	SW6010B	FLDFLT-digested	2/28/2012	9:42	Molybdenum	ND	ug/L	10.0
800240-003	C-I-3-S-185	SW6010B	FLDFLT-digested	2/28/2012	9:42	Selenium	ND	ug/L	10.0
800240-003	C-I-3-S-185	SW6020	FLDFLT-digested	2/28/2012	9:42	Arsenic	1.9	ug/L	1.0
800240-003	C-I-3-S-185	SW6020	FLDFLT-digested	2/28/2012	9:42	Chromium	ND	ug/L	1.0
800240-003	C-I-3-S-185	SW6020	FLDFLT-digested	2/28/2012	9:42	Manganese	ND	ug/L	10.0
800240-004	C-MAR-D-185	E120.1	NONE	2/28/2012	12:11	EC	998	umhos/cm	2.00
800240-004	C-MAR-D-185	E218.6	FLDFLT	2/28/2012	12:11	Chromium, hexavalent	ND	ug/L	0.20
800240-004	C-MAR-D-185	E300	NONE	2/28/2012	12:11	Nitrate as N	ND	mg/L	0.500
800240-004	C-MAR-D-185	SM2320B	NONE	2/28/2012	12:11	Alkalinity	144	mg/L	5.00
800240-004	C-MAR-D-185	SM2320B	NONE	2/28/2012	12:11	Bicarbonate	144	mg/L	5.00
800240-004	C-MAR-D-185	SM2320B	NONE	2/28/2012	12:11	Carbonate	ND	mg/L	5.00
800240-004	C-MAR-D-185	SM2540D	NONE	2/28/2012	12:11	Total Suspended Solids	13.4	mg/L	10.0
800240-004	C-MAR-D-185	SM4500HB	NONE	2/28/2012	12:11	PH	7.72	pH	4.00
800240-004	C-MAR-D-185	SW6010B	NONE-digested	2/28/2012	12:11	Iron	639	ug/L	20.0
800240-004	C-MAR-D-185	SW6010B	FLDFLT-digested	2/28/2012	12:11	Iron	29.1	ug/L	20.0
800240-004	C-MAR-D-185	SW6010B	FLDFLT-digested	2/28/2012	12:11	Molybdenum	ND	ug/L	10.0
800240-004	C-MAR-D-185	SW6010B	FLDFLT-digested	2/28/2012	12:11	Selenium	ND	ug/L	10.0
800240-004	C-MAR-D-185	SW6020	FLDFLT-digested	2/28/2012	12:11	Arsenic	2.1	ug/L	1.0
800240-004	C-MAR-D-185	SW6020	FLDFLT-digested	2/28/2012	12:11	Chromium	ND	ug/L	1.0
800240-004	C-MAR-D-185	SW6020	FLDFLT-digested	2/28/2012	12:11	Manganese	15.4	ug/L	10.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800240-005	C-MAR-S-185	E120.1	NONE	2/28/2012	12:24	EC	996	umhos/cm	2.00
800240-005	C-MAR-S-185	E218.6	FLDFLT	2/28/2012	12:24	Chromium, hexavalent	ND	ug/L	0.20
800240-005	C-MAR-S-185	E300	NONE	2/28/2012	12:24	Nitrate as N	ND	mg/L	0.500
800240-005	C-MAR-S-185	SM2320B	NONE	2/28/2012	12:24	Alkalinity	139	mg/L	5.00
800240-005	C-MAR-S-185	SM2320B	NONE	2/28/2012	12:24	Bicarbonate	139	mg/L	5.00
800240-005	C-MAR-S-185	SM2320B	NONE	2/28/2012	12:24	Carbonate	ND	mg/L	5.00
800240-005	C-MAR-S-185	SM2540D	NONE	2/28/2012	12:24	Total Suspended Solids	12.8	mg/L	10.0
800240-005	C-MAR-S-185	SM4500HB	NONE	2/28/2012	12:24	PH	7.61	pH	4.00
800240-005	C-MAR-S-185	SW6010B	NONE-digested	2/28/2012	12:24	Iron	760	ug/L	20.0
800240-005	C-MAR-S-185	SW6010B	FLDFLT-digested	2/28/2012	12:24	Iron	ND	ug/L	20.0
800240-005	C-MAR-S-185	SW6010B	FLDFLT-digested	2/28/2012	12:24	Molybdenum	ND	ug/L	10.0
800240-005	C-MAR-S-185	SW6010B	FLDFLT-digested	2/28/2012	12:24	Selenium	ND	ug/L	10.0
800240-005	C-MAR-S-185	SW6020	FLDFLT-digested	2/28/2012	12:24	Arsenic	2.0	ug/L	1.0
800240-005	C-MAR-S-185	SW6020	FLDFLT-digested	2/28/2012	12:24	Chromium	ND	ug/L	1.0
800240-005	C-MAR-S-185	SW6020	FLDFLT-digested	2/28/2012	12:24	Manganese	16.5	ug/L	10.0
800240-006	C-R22A-D-185	E120.1	NONE	2/28/2012	10:27	EC	909	umhos/cm	2.00
800240-006	C-R22A-D-185	E218.6	FLDFLT	2/28/2012	10:27	Chromium, hexavalent	ND	ug/L	0.20
800240-006	C-R22A-D-185	E300	NONE	2/28/2012	10:27	Nitrate as N	ND	mg/L	0.500
800240-006	C-R22A-D-185	SM2320B	NONE	2/28/2012	10:27	Alkalinity	137	mg/L	5.00
800240-006	C-R22A-D-185	SM2320B	NONE	2/28/2012	10:27	Bicarbonate	137	mg/L	5.00
800240-006	C-R22A-D-185	SM2320B	NONE	2/28/2012	10:27	Carbonate	ND	mg/L	5.00
800240-006	C-R22A-D-185	SM2540D	NONE	2/28/2012	10:27	Total Suspended Solids	ND	mg/L	10.0
800240-006	C-R22A-D-185	SM4500HB	NONE	2/28/2012	10:27	PH	8.04 J	pH	4.00
800240-006	C-R22A-D-185	SW6010B	NONE-digested	2/28/2012	10:27	Iron	75.6	ug/L	20.0
800240-006	C-R22A-D-185	SW6010B	FLDFLT-digested	2/28/2012	10:27	Iron	ND	ug/L	20.0
800240-006	C-R22A-D-185	SW6010B	FLDFLT-digested	2/28/2012	10:27	Molybdenum	ND	ug/L	10.0
800240-006	C-R22A-D-185	SW6010B	FLDFLT-digested	2/28/2012	10:27	Selenium	ND	ug/L	10.0
800240-006	C-R22A-D-185	SW6020	FLDFLT-digested	2/28/2012	10:27	Arsenic	2.3	ug/L	1.0
800240-006	C-R22A-D-185	SW6020	FLDFLT-digested	2/28/2012	10:27	Chromium	ND	ug/L	1.0
800240-006	C-R22A-D-185	SW6020	FLDFLT-digested	2/28/2012	10:27	Manganese	ND	ug/L	10.0
800240-007	C-R22A-S-185	E120.1	NONE	2/28/2012	10:40	EC	916	umhos/cm	2.00
800240-007	C-R22A-S-185	E218.6	FLDFLT	2/28/2012	10:40	Chromium, hexavalent	ND	ug/L	0.20
800240-007	C-R22A-S-185	E300	NONE	2/28/2012	10:40	Nitrate as N	ND	mg/L	0.500
800240-007	C-R22A-S-185	SM2320B	NONE	2/28/2012	10:40	Alkalinity	135	mg/L	5.00
800240-007	C-R22A-S-185	SM2320B	NONE	2/28/2012	10:40	Bicarbonate	135	mg/L	5.00
800240-007	C-R22A-S-185	SM2320B	NONE	2/28/2012	10:40	Carbonate	ND	mg/L	5.00

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800240-007	C-R22A-S-185	SM2540D	NONE	2/28/2012	10:40	Total Suspended Solids	ND	mg/L	10.0
800240-007	C-R22A-S-185	SM4500HB	NONE	2/28/2012	10:40	PH	8.05 J	pH	4.00
800240-007	C-R22A-S-185	SW6010B	NONE-digested	2/28/2012	10:40	Iron	31.9	ug/L	20.0
800240-007	C-R22A-S-185	SW6010B	FLDFLT-digested	2/28/2012	10:40	Iron	ND	ug/L	20.0
800240-007	C-R22A-S-185	SW6010B	FLDFLT-digested	2/28/2012	10:40	Molybdenum	ND	ug/L	10.0
800240-007	C-R22A-S-185	SW6010B	FLDFLT-digested	2/28/2012	10:40	Selenium	ND	ug/L	10.0
800240-007	C-R22A-S-185	SW6020	FLDFLT-digested	2/28/2012	10:40	Arsenic	2.2	ug/L	1.0
800240-007	C-R22A-S-185	SW6020	FLDFLT-digested	2/28/2012	10:40	Chromium	ND	ug/L	1.0
800240-007	C-R22A-S-185	SW6020	FLDFLT-digested	2/28/2012	10:40	Manganese	ND	ug/L	10.0
800240-008	C-R27-D-185	E120.1	NONE	2/28/2012	11:34	EC	915	umhos/cm	2.00
800240-008	C-R27-D-185	E218.6	FLDFLT	2/28/2012	11:34	Chromium, hexavalent	ND	ug/L	0.20
800240-008	C-R27-D-185	E300	NONE	2/28/2012	11:34	Nitrate as N	ND	mg/L	0.500
800240-008	C-R27-D-185	SM2320B	NONE	2/28/2012	11:34	Alkalinity	130	mg/L	5.00
800240-008	C-R27-D-185	SM2320B	NONE	2/28/2012	11:34	Bicarbonate	130	mg/L	5.00
800240-008	C-R27-D-185	SM2320B	NONE	2/28/2012	11:34	Carbonate	ND	mg/L	5.00
800240-008	C-R27-D-185	SM2540D	NONE	2/28/2012	11:34	Total Suspended Solids	ND	mg/L	10.0
800240-008	C-R27-D-185	SM4500HB	NONE	2/28/2012	11:34	PH	8.05 J	pH	4.00
800240-008	C-R27-D-185	SW6010B	NONE-digested	2/28/2012	11:34	Iron	ND	ug/L	20.0
800240-008	C-R27-D-185	SW6010B	FLDFLT-digested	2/28/2012	11:34	Iron	ND	ug/L	20.0
800240-008	C-R27-D-185	SW6010B	FLDFLT-digested	2/28/2012	11:34	Molybdenum	ND	ug/L	10.0
800240-008	C-R27-D-185	SW6010B	FLDFLT-digested	2/28/2012	11:34	Selenium	ND	ug/L	10.0
800240-008	C-R27-D-185	SW6020	FLDFLT-digested	2/28/2012	11:34	Arsenic	2.3	ug/L	1.0
800240-008	C-R27-D-185	SW6020	FLDFLT-digested	2/28/2012	11:34	Chromium	ND	ug/L	1.0
800240-008	C-R27-D-185	SW6020	FLDFLT-digested	2/28/2012	11:34	Manganese	ND	ug/L	10.0
800240-009	C-R27-S-185	E120.1	NONE	2/28/2012	11:47	EC	906	umhos/cm	2.00
800240-009	C-R27-S-185	E218.6	FLDFLT	2/28/2012	11:47	Chromium, hexavalent	ND	ug/L	0.20
800240-009	C-R27-S-185	E300	NONE	2/28/2012	11:47	Nitrate as N	ND	mg/L	0.500
800240-009	C-R27-S-185	SM2320B	NONE	2/28/2012	11:47	Alkalinity	136	mg/L	5.00
800240-009	C-R27-S-185	SM2320B	NONE	2/28/2012	11:47	Bicarbonate	136	mg/L	5.00
800240-009	C-R27-S-185	SM2320B	NONE	2/28/2012	11:47	Carbonate	ND	mg/L	5.00
800240-009	C-R27-S-185	SM2540D	NONE	2/28/2012	11:47	Total Suspended Solids	ND	mg/L	10.0
800240-009	C-R27-S-185	SM4500HB	NONE	2/28/2012	11:47	PH	8.09 J	pH	4.00

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800240-009	C-R27-S-185	SW6010B	NONE-digested	2/28/2012	11:47	Iron	ND	ug/L	20.0
800240-009	C-R27-S-185	SW6010B	FLDFLT-digested	2/28/2012	11:47	Iron	ND	ug/L	20.0
800240-009	C-R27-S-185	SW6010B	FLDFLT-digested	2/28/2012	11:47	Molybdenum	ND	ug/L	10.0
800240-009	C-R27-S-185	SW6010B	FLDFLT-digested	2/28/2012	11:47	Selenium	ND	ug/L	10.0
800240-009	C-R27-S-185	SW6020	FLDFLT-digested	2/28/2012	11:47	Arsenic	2.3	ug/L	1.0
800240-009	C-R27-S-185	SW6020	FLDFLT-digested	2/28/2012	11:47	Chromium	ND	ug/L	1.0
800240-009	C-R27-S-185	SW6020	FLDFLT-digested	2/28/2012	11:47	Manganese	ND	ug/L	10.0
800240-010	C-TAZ-D-185	E120.1	NONE	2/28/2012	8:45	EC	911	umhos/cm	2.00
800240-010	C-TAZ-D-185	E218.6	FLDFLT	2/28/2012	8:45	Chromium, hexavalent	ND	ug/L	0.20
800240-010	C-TAZ-D-185	E300	NONE	2/28/2012	8:45	Nitrate as N	ND	mg/L	0.500
800240-010	C-TAZ-D-185	SM2320B	NONE	2/28/2012	8:45	Alkalinity	140	mg/L	5.00
800240-010	C-TAZ-D-185	SM2320B	NONE	2/28/2012	8:45	Bicarbonate	140	mg/L	5.00
800240-010	C-TAZ-D-185	SM2320B	NONE	2/28/2012	8:45	Carbonate	ND	mg/L	5.00
800240-010	C-TAZ-D-185	SM2540D	NONE	2/28/2012	8:45	Total Suspended Solids	ND	mg/L	10.0
800240-010	C-TAZ-D-185	SM4500HB	NONE	2/28/2012	8:45	PH	8.13 J	pH	4.00
800240-010	C-TAZ-D-185	SW6010B	NONE-digested	2/28/2012	8:45	Iron	ND	ug/L	20.0
800240-010	C-TAZ-D-185	SW6010B	FLDFLT-digested	2/28/2012	8:45	Iron	ND	ug/L	20.0
800240-010	C-TAZ-D-185	SW6010B	FLDFLT-digested	2/28/2012	8:45	Molybdenum	ND	ug/L	10.0
800240-010	C-TAZ-D-185	SW6010B	FLDFLT-digested	2/28/2012	8:45	Selenium	ND	ug/L	10.0
800240-010	C-TAZ-D-185	SW6020	FLDFLT-digested	2/28/2012	8:45	Arsenic	2.2	ug/L	1.0
800240-010	C-TAZ-D-185	SW6020	FLDFLT-digested	2/28/2012	8:45	Chromium	ND	ug/L	1.0
800240-010	C-TAZ-D-185	SW6020	FLDFLT-digested	2/28/2012	8:45	Manganese	ND	ug/L	10.0
800240-011	C-TAZ-S-185	E120.1	NONE	2/28/2012	9:02	EC	917	umhos/cm	2.00
800240-011	C-TAZ-S-185	E218.6	FLDFLT	2/28/2012	9:02	Chromium, hexavalent	ND	ug/L	0.20
800240-011	C-TAZ-S-185	E300	NONE	2/28/2012	9:02	Nitrate as N	ND	mg/L	0.500
800240-011	C-TAZ-S-185	SM2320B	NONE	2/28/2012	9:02	Alkalinity	135	mg/L	5.00
800240-011	C-TAZ-S-185	SM2320B	NONE	2/28/2012	9:02	Bicarbonate	135	mg/L	5.00
800240-011	C-TAZ-S-185	SM2320B	NONE	2/28/2012	9:02	Carbonate	ND	mg/L	5.00
800240-011	C-TAZ-S-185	SM2540D	NONE	2/28/2012	9:02	Total Suspended Solids	ND	mg/L	10.0
800240-011	C-TAZ-S-185	SM4500HB	NONE	2/28/2012	9:02	PH	8.12 J	pH	4.00
800240-011	C-TAZ-S-185	SW6010B	NONE-digested	2/28/2012	9:02	Iron	21.8	ug/L	20.0
800240-011	C-TAZ-S-185	SW6010B	FLDFLT-digested	2/28/2012	9:02	Iron	ND	ug/L	20.0
800240-011	C-TAZ-S-185	SW6010B	FLDFLT-digested	2/28/2012	9:02	Molybdenum	ND	ug/L	10.0
800240-011	C-TAZ-S-185	SW6010B	FLDFLT-digested	2/28/2012	9:02	Selenium	ND	ug/L	10.0
800240-011	C-TAZ-S-185	SW6020	FLDFLT-digested	2/28/2012	9:02	Arsenic	2.1	ug/L	1.0
800240-011	C-TAZ-S-185	SW6020	FLDFLT-digested	2/28/2012	9:02	Chromium	ND	ug/L	1.0
800240-011	C-TAZ-S-185	SW6020	FLDFLT-digested	2/28/2012	9:02	Manganese	ND	ug/L	10.0

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Revision 1; March 16, 2012

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800240-012	R63-185	E120.1	NONE	2/28/2012	10:01	EC	913	umhos/cm	2.00
800240-012	R63-185	E218.6	FLDFLT	2/28/2012	10:01	Chromium, hexavalent	ND	ug/L	0.20
800240-012	R63-185	E300	NONE	2/28/2012	10:01	Nitrate as N	ND	mg/L	0.500
800240-012	R63-185	SM2320B	NONE	2/28/2012	10:01	Alkalinity	139	mg/L	5.00
800240-012	R63-185	SM2320B	NONE	2/28/2012	10:01	Bicarbonate	139	mg/L	5.00
800240-012	R63-185	SM2320B	NONE	2/28/2012	10:01	Carbonate	ND	mg/L	5.00
800240-012	R63-185	SM2540D	NONE	2/28/2012	10:01	Total Suspended Solids	ND	mg/L	10.0
800240-012	R63-185	SM4500HB	NONE	2/28/2012	10:01	PH	8.12 J	pH	4.00
800240-012	R63-185	SW6010B	NONE-digested	2/28/2012	10:01	Iron	26.2	ug/L	20.0
800240-012	R63-185	SW6010B	FLDFLT-digested	2/28/2012	10:01	Iron	ND	ug/L	20.0
800240-012	R63-185	SW6010B	FLDFLT-digested	2/28/2012	10:01	Molybdenum	ND	ug/L	10.0
800240-012	R63-185	SW6010B	FLDFLT-digested	2/28/2012	10:01	Selenium	ND	ug/L	10.0
800240-012	R63-185	SW6020	FLDFLT-digested	2/28/2012	10:01	Arsenic	2.0	ug/L	1.0
800240-012	R63-185	SW6020	FLDFLT-digested	2/28/2012	10:01	Chromium	ND	ug/L	1.0
800240-012	R63-185	SW6020	FLDFLT-digested	2/28/2012	10:01	Manganese	ND	ug/L	10.0
800240-013	SW1-185	E120.1	NONE	2/28/2012	14:25	EC	965	umhos/cm	2.00
800240-013	SW1-185	E218.6	FLDFLT	2/28/2012	14:25	Chromium, hexavalent	ND	ug/L	0.20
800240-013	SW1-185	SM4500HB	NONE	2/28/2012	14:25	PH	7.62	pH	4.00
800240-013	SW1-185	SW6020	FLDFLT-digested	2/28/2012	14:25	Chromium	ND	ug/L	1.0
800240-014	SW2-185	E120.1	NONE	2/28/2012	14:55	EC	973	umhos/cm	2.00
800240-014	SW2-185	E218.6	FLDFLT	2/28/2012	14:55	Chromium, hexavalent	ND	ug/L	0.20
800240-014	SW2-185	SM4500HB	NONE	2/28/2012	14:55	PH	7.52	pH	4.00
800240-014	SW2-185	SW6020	FLDFLT-digested	2/28/2012	14:55	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.

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TRUESDAIL LABORATORIES, INC.

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REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project Number: 423575.MP.02.RM
P.O. Number: 423575.MP.02.RM
Release Number:

Laboratory No. 800240

Printed 3/14/2012

Samples Received on 2/28/2012 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
C-BNS-D-185	800240-001	02/28/2012 11:07	Water
C-I-3-D-185	800240-002	02/28/2012 09:28	Water
C-I-3-S-185	800240-003	02/28/2012 09:42	Water
C-MAR-D-185	800240-004	02/28/2012 12:11	Water
C-MAR-S-185	800240-005	02/28/2012 12:24	Water
C-R22A-D-185	800240-006	02/28/2012 10:27	Water
C-R22A-S-185	800240-007	02/28/2012 10:40	Water
C-R27-D-185	800240-008	02/28/2012 11:34	Water
C-R27-S-185	800240-009	02/28/2012 11:47	Water
C-TAZ-D-185	800240-010	02/28/2012 08:45	Water
C-TAZ-S-185	800240-011	02/28/2012 09:02	Water
R63-185	800240-012	02/28/2012 10:01	Water
SW1-185	800240-013	02/28/2012 14:25	Water
SW2-185	800240-014	02/28/2012 14:55	Water

Anions By I.C. - EPA 300.0 Batch 02AN12X

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800240-001 Nitrate as Nitrogen	mg/L	02/29/2012 10:43	1.00	0.0270	0.500	ND
800240-002 Nitrate as Nitrogen	mg/L	02/29/2012 10:54	1.00	0.0270	0.500	ND
800240-003 Nitrate as Nitrogen	mg/L	02/29/2012 11:06	1.00	0.0270	0.500	ND
800240-004 Nitrate as Nitrogen	mg/L	02/29/2012 11:17	1.00	0.0270	0.500	ND
800240-005 Nitrate as Nitrogen	mg/L	02/29/2012 11:28	1.00	0.0270	0.500	ND
800240-006 Nitrate as Nitrogen	mg/L	02/29/2012 11:40	1.00	0.0270	0.500	ND
800240-007 Nitrate as Nitrogen	mg/L	02/29/2012 11:51	1.00	0.0270	0.500	ND
800240-008 Nitrate as Nitrogen	mg/L	02/29/2012 12:03	1.00	0.0270	0.500	ND
800240-009 Nitrate as Nitrogen	mg/L	02/29/2012 13:00	1.00	0.0270	0.500	ND
800240-010 Nitrate as Nitrogen	mg/L	02/29/2012 13:11	1.00	0.0270	0.500	ND
800240-011 Nitrate as Nitrogen	mg/L	02/29/2012 13:23	1.00	0.0270	0.500	ND

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800240-012 Nitrate as Nitrogen		mg/L	02/29/2012 13:34	1.00	0.0270	0.500	ND

Method Blank

Parameter	Unit	DF	Result
Nitrate as Nitrogen	mg/L	1.00	ND

Duplicate — Lab ID = 800240-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	ND	0.488	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	4.05	4.00	101.	90 - 110

Matrix Spike — Lab ID = 800240-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.48	2.49(2.00)	99.6	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	4.04	4.00	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.99	3.00	99.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.98	3.00	99.5	90 - 110

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Alkalinity by SM 2320B Batch 02ALK12I

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800240-001 Alkalinity as CaCO3	mg/L	02/29/2012	1.00	1.68	5.00	132
Bicarbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	132
Carbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	ND
800240-002 Alkalinity as CaCO3	mg/L	02/29/2012	1.00	1.68	5.00	139
Bicarbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	139
Carbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	ND
800240-003 Alkalinity as CaCO3	mg/L	02/29/2012	1.00	1.68	5.00	133
Bicarbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	133
Carbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	ND
800240-004 Alkalinity as CaCO3	mg/L	02/29/2012	1.00	1.68	5.00	144
Bicarbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	144
Carbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	ND
800240-005 Alkalinity as CaCO3	mg/L	02/29/2012	1.00	1.68	5.00	139
Bicarbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	139
Carbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	ND
800240-006 Alkalinity as CaCO3	mg/L	02/29/2012	1.00	1.68	5.00	137
Bicarbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	137
Carbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	ND
800240-007 Alkalinity as CaCO3	mg/L	02/29/2012	1.00	1.68	5.00	135
Bicarbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	135
Carbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	ND
800240-008 Alkalinity as CaCO3	mg/L	02/29/2012	1.00	1.68	5.00	130.
Bicarbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	130.
Carbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	ND
800240-009 Alkalinity as CaCO3	mg/L	02/29/2012	1.00	1.68	5.00	136
Bicarbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	136
Carbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	ND
800240-010 Alkalinity as CaCO3	mg/L	02/29/2012	1.00	1.68	5.00	140.
Bicarbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	140.
Carbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	ND
800240-011 Alkalinity as CaCO3	mg/L	02/29/2012	1.00	1.68	5.00	135
Bicarbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	135
Carbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	ND
800240-012 Alkalinity as CaCO3	mg/L	02/29/2012	1.00	1.68	5.00	139

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800240-012 Bicarbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	139
Carbonate (Calculated)	mg/L	02/29/2012	1.00	1.68	5.00	ND

Method Blank

Parameter	Unit	DF	Result
Alkalinity as CaCO3	mg/L	1.00	ND

Duplicate — Lab ID = 800240-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	139	140.	0.717	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	95.0	100.	95.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	97.0	100.	97.0	90 - 110

Matrix Spike — Lab ID = 800240-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	222	240.(100.)	82.0	75 - 125

Matrix Spike Duplicate — Lab ID = 800240-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	224	240.(100.)	84.0	75 - 125

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project

Project Number: 423575.MP.02.RM Printed 3/16/2012

Revised

Specific Conductivity - EPA 120.1

Batch 03EC12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800240-001 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	915
800240-002 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	914
800240-003 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	911
800240-004 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	998
800240-005 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	996
800240-006 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	909
800240-007 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	916
800240-008 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	915
800240-009 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	906
800240-010 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	911
800240-011 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	917
800240-012 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	913
800240-013 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	965
800240-014 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	973

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 800240-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	914	915	0.109	0 - 10

Duplicate — Lab ID = 800240-014

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	972	973	0.103	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	690.	706	97.7	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	696	706	98.6	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	681	706	96.4	90 - 110

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Metals by EPA 6010B, Total Batch 030212A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800240-001 Iron	ug/L	03/02/2012 11:57	1.00	1.34	20.0	20.0
800240-002 Iron	ug/L	03/02/2012 12:21	1.00	1.34	20.0	ND
800240-003 Iron	ug/L	03/02/2012 12:27	1.00	1.34	20.0	ND
800240-004 Iron	ug/L	03/02/2012 12:33	1.00	1.34	20.0	639.
800240-005 Iron	ug/L	03/02/2012 12:39	1.00	1.34	20.0	760.
800240-006 Iron	ug/L	03/02/2012 12:45	1.00	1.34	20.0	75.6
800240-007 Iron	ug/L	03/02/2012 12:51	1.00	1.34	20.0	31.9
800240-008 Iron	ug/L	03/02/2012 12:57	1.00	1.34	20.0	ND
800240-009 Iron	ug/L	03/02/2012 13:03	1.00	1.34	20.0	ND
800240-010 Iron	ug/L	03/02/2012 13:09	1.00	1.34	20.0	ND
800240-011 Iron	ug/L	03/02/2012 13:15	1.00	1.34	20.0	21.8
800240-012 Iron	ug/L	03/02/2012 13:42	1.00	1.34	20.0	26.2

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate — Lab ID = 800238-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	113.	100.	113.	85 - 115

Matrix Spike — Lab ID = 800238-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	99.2	100.(100.)	99.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5170	5000	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4830	5000	96.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4840	5000	96.9	90 - 110

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Chrome VI by EPA 218.6 Batch 03CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800240-001 Chromium, Hexavalent	ug/L	03/01/2012 12:58	1.00	0.0260	0.20	ND
800240-002 Chromium, Hexavalent	ug/L	03/01/2012 13:08	1.00	0.0260	0.20	ND
800240-003 Chromium, Hexavalent	ug/L	03/01/2012 13:19	1.00	0.0260	0.20	ND
800240-004 Chromium, Hexavalent	ug/L	03/01/2012 13:29	1.00	0.0260	0.20	ND
800240-005 Chromium, Hexavalent	ug/L	03/01/2012 13:40	1.00	0.0260	0.20	ND
800240-006 Chromium, Hexavalent	ug/L	03/01/2012 13:50	1.00	0.0260	0.20	ND
800240-007 Chromium, Hexavalent	ug/L	03/01/2012 14:00	1.00	0.0260	0.20	ND
800240-008 Chromium, Hexavalent	ug/L	03/01/2012 14:42	1.00	0.0260	0.20	ND
800240-009 Chromium, Hexavalent	ug/L	03/01/2012 14:52	1.00	0.0260	0.20	ND
800240-010 Chromium, Hexavalent	ug/L	03/01/2012 15:03	1.00	0.0260	0.20	ND
800240-011 Chromium, Hexavalent	ug/L	03/01/2012 15:13	1.00	0.0260	0.20	ND
800240-012 Chromium, Hexavalent	ug/L	03/01/2012 15:24	1.00	0.0260	0.20	ND
800240-013 Chromium, Hexavalent	ug/L	03/01/2012 15:34	1.00	0.0260	0.20	ND
800240-014 Chromium, Hexavalent	ug/L	03/01/2012 15:44	1.00	0.0260	0.20	ND

Method Blank

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

Duplicate — Lab ID = 800240-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0386	0.0407	5.30	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.228	0.200	114.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.88	5.00	97.6	90 - 110

Matrix Spike — Lab ID = 800240-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.04(1.00)	99.1	90 - 110

Matrix Spike — Lab ID = 800240-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.04(1.00)	99.2	90 - 110

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Matrix Spike — Lab ID = 800240-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.05(1.00)	99.7	90 - 110

Matrix Spike — Lab ID = 800240-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.03(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 800240-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.03(1.00)	99.8	90 - 110

Matrix Spike — Lab ID = 800240-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.04(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 800240-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.04(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 800240-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.06	1.05(1.00)	101.	90 - 110

Matrix Spike — Lab ID = 800240-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.04(1.00)	101.	90 - 110

Matrix Spike — Lab ID = 800240-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.06	1.04(1.00)	102.	90 - 110

Matrix Spike — Lab ID = 800240-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.04(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 800240-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.06	1.05(1.00)	101.	90 - 110

Matrix Spike — Lab ID = 800240-013

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.04(1.00)	101.	90 - 110

Matrix Spike — Lab ID = 800240-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.03(1.00)	100.	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 030812A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800240-001 Chromium	ug/L	03/08/2012 21:25	5.00	0.110	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 800240-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.198	0.200	99.2	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	96.2	100.	96.2	85 - 115

Matrix Spike — Lab ID = 800240-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	93.4	100.(100.)	93.4	75 - 125

Matrix Spike Duplicate — Lab ID = 800240-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	95.8	100.(100.)	95.8	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.38	10.0	93.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.39	10.0	93.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.37	10.0	93.7	90 - 110

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Metals by EPA 6020A, Dissolved Batch 030612C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800240-002 Chromium	ug/L	03/07/2012 01:59	5.00	0.110	1.0	ND
800240-003 Chromium	ug/L	03/07/2012 02:28	5.00	0.110	1.0	ND
800240-004 Chromium	ug/L	03/07/2012 02:35	5.00	0.110	1.0	ND
800240-005 Chromium	ug/L	03/07/2012 02:42	5.00	0.110	1.0	ND
800240-006 Chromium	ug/L	03/07/2012 02:49	5.00	0.110	1.0	ND
800240-007 Chromium	ug/L	03/07/2012 02:57	5.00	0.110	1.0	ND
800240-008 Chromium	ug/L	03/07/2012 03:11	5.00	0.110	1.0	ND
800240-009 Chromium	ug/L	03/07/2012 03:48	5.00	0.110	1.0	ND
800240-010 Chromium	ug/L	03/07/2012 03:55	5.00	0.110	1.0	ND
800240-011 Chromium	ug/L	03/07/2012 04:02	5.00	0.110	1.0	ND
800240-012 Chromium	ug/L	03/07/2012 04:31	5.00	0.110	1.0	ND
800240-013 Chromium	ug/L	03/07/2012 04:46	5.00	0.110	1.0	ND
800240-014 Chromium	ug/L	03/07/2012 05:00	5.00	0.110	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 800239-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	10.0	539.	530.	1.66	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.171	0.200	85.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.5	100.	99.5	85 - 115

Matrix Spike — Lab ID = 800239-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	1510	1530(1000)	98.0	75 - 125

Matrix Spike Duplicate — Lab ID = 800239-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	1510	1530(1000)	98.0	75 - 125

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project

Project Number: 423575.MP.02.RM Printed 3/16/2012

Revised

Metals by EPA 6020A, Dissolved

Batch 030812A

Parameter		Unit	Analyzed	DF	MDL	RL	Result
800240-001	Arsenic	ug/L	03/08/2012 15:42	5.00	0.285	1.0	2.4
	Manganese	ug/L	03/08/2012 15:42	5.00	0.285	10.0	ND
800240-002	Arsenic	ug/L	03/08/2012 17:12	5.00	0.285	1.0	2.4
	Manganese	ug/L	03/08/2012 17:12	5.00	0.285	10.0	ND
800240-003	Arsenic	ug/L	03/08/2012 15:56	5.00	0.285	1.0	1.9
	Manganese	ug/L	03/08/2012 15:56	5.00	0.285	10.0	ND
800240-004	Arsenic	ug/L	03/08/2012 16:03	5.00	0.285	1.0	2.1
	Manganese	ug/L	03/08/2012 16:03	5.00	0.285	10.0	15.4
800240-005	Arsenic	ug/L	03/08/2012 16:11	5.00	0.285	1.0	2.0
	Manganese	ug/L	03/08/2012 16:11	5.00	0.285	10.0	16.5
800240-006	Arsenic	ug/L	03/08/2012 16:18	5.00	0.285	1.0	2.3
	Manganese	ug/L	03/08/2012 16:18	5.00	0.285	10.0	ND
800240-007	Arsenic	ug/L	03/08/2012 19:22	5.00	0.285	1.0	2.2
	Manganese	ug/L	03/08/2012 19:22	5.00	0.285	10.0	ND
800240-008	Arsenic	ug/L	03/08/2012 17:48	5.00	0.285	1.0	2.3
	Manganese	ug/L	03/08/2012 17:48	5.00	0.285	10.0	ND
800240-009	Arsenic	ug/L	03/08/2012 17:55	5.00	0.285	1.0	2.3
	Manganese	ug/L	03/08/2012 17:55	5.00	0.285	10.0	ND
800240-010	Arsenic	ug/L	03/08/2012 18:02	5.00	0.285	1.0	2.2
	Manganese	ug/L	03/08/2012 18:02	5.00	0.285	10.0	ND
800240-011	Arsenic	ug/L	03/08/2012 18:17	5.00	0.285	1.0	2.1
	Manganese	ug/L	03/08/2012 18:17	5.00	0.285	10.0	ND
800240-012	Arsenic	ug/L	03/08/2012 18:24	5.00	0.285	1.0	2.0
	Manganese	ug/L	03/08/2012 18:24	5.00	0.285	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.209	0.200	104.	70 - 130
Manganese	ug/L	1.00	0.188	0.200	94.0	70 - 130

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Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	91.1	100.	91.1	85 - 115
Manganese	ug/L	5.00	92.8	100.	92.8	85 - 115

Matrix Spike — Lab ID = 800239-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	101.	102.(100.)	98.9	75 - 125
Manganese	ug/L	5.00	99.2	107.(100.)	92.2	75 - 125

Matrix Spike Duplicate — Lab ID = 800239-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	100.	102.(100.)	98.6	75 - 125
Manganese	ug/L	5.00	99.5	107.(100.)	92.5	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.67	10.0	96.7	90 - 110
Manganese	ug/L	1.00	9.78	10.0	97.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.55	10.0	95.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.19	10.0	91.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.1	10.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.50	10.0	95.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.18	10.0	91.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.23	10.0	92.3	90 - 110

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Metals by EPA 6010B, Dissolved Batch 030612A

Parameter		Unit	Analyzed	DF	MDL	RL	Result
800240-001	Iron	ug/L	03/06/2012 12:09	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/06/2012 12:09	1.00	4.02	10.0	ND
	Selenium	ug/L	03/06/2012 12:09	1.00	3.22	10.0	ND
800240-002	Iron	ug/L	03/06/2012 12:15	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/06/2012 12:15	1.00	4.02	10.0	ND
	Selenium	ug/L	03/06/2012 12:15	1.00	3.22	10.0	ND
800240-003	Iron	ug/L	03/06/2012 12:21	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/06/2012 12:21	1.00	4.02	10.0	ND
	Selenium	ug/L	03/06/2012 12:21	1.00	3.22	10.0	ND
800240-004	Iron	ug/L	03/06/2012 12:27	1.00	1.34	20.0	29.1
	Molybdenum	ug/L	03/06/2012 12:27	1.00	4.02	10.0	ND
	Selenium	ug/L	03/06/2012 12:27	1.00	3.22	10.0	ND
800240-005	Iron	ug/L	03/06/2012 12:33	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/06/2012 12:33	1.00	4.02	10.0	ND
	Selenium	ug/L	03/06/2012 12:33	1.00	3.22	10.0	ND
800240-006	Iron	ug/L	03/06/2012 13:01	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/06/2012 13:01	1.00	4.02	10.0	ND
	Selenium	ug/L	03/06/2012 13:01	1.00	3.22	10.0	ND
800240-007	Iron	ug/L	03/06/2012 13:07	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/06/2012 13:07	1.00	4.02	10.0	ND
	Selenium	ug/L	03/06/2012 13:07	1.00	3.22	10.0	ND
800240-008	Iron	ug/L	03/06/2012 13:13	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/06/2012 13:13	1.00	4.02	10.0	ND
	Selenium	ug/L	03/06/2012 13:13	1.00	3.22	10.0	ND
800240-009	Iron	ug/L	03/06/2012 13:19	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/06/2012 13:19	1.00	4.02	10.0	ND
	Selenium	ug/L	03/06/2012 13:19	1.00	3.22	10.0	ND
800240-010	Iron	ug/L	03/06/2012 13:25	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/06/2012 13:25	1.00	4.02	10.0	ND
	Selenium	ug/L	03/06/2012 13:25	1.00	3.22	10.0	ND
800240-011	Iron	ug/L	03/06/2012 13:30	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/06/2012 13:30	1.00	4.02	10.0	ND
	Selenium	ug/L	03/06/2012 13:30	1.00	3.22	10.0	ND
800240-012	Iron	ug/L	03/06/2012 13:36	1.00	1.34	20.0	ND

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800240-012 Molybdenum	ug/L	03/06/2012 13:36	1.00	4.02	10.0	ND
Selenium	ug/L	03/06/2012 13:36	1.00	3.22	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND
Selenium	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

Duplicate — Lab ID = 800239-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20
Selenium	ug/L	1.00	ND	0.00	0	0 - 20
Molybdenum	ug/L	1.00	14.7	14.4	2.06	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	114.	100.	114.	85 - 115
Selenium	ug/L	1.00	99.6	100.	99.6	85 - 115
Molybdenum	ug/L	1.00	98.1	100.	98.1	85 - 115

Matrix Spike — Lab ID = 800239-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	108.	100.(100.)	108	75 - 125
Selenium	ug/L	1.00	102.	100.(100.)	102.	75 - 125
Molybdenum	ug/L	1.00	114.	114.(100.)	100.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5110	5000	102.	90 - 110
Selenium	ug/L	1.00	4870	5000	97.4	90 - 110
Molybdenum	ug/L	1.00	4660	5000	93.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5030	5000	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4980	5000	99.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4890	5000	97.9	90 - 110

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pH by SM 4500-H B Batch 02PH12R

Parameter	Unit	Analyzed	DF	MDL	RL	Result	
800240-001 pH	pH	02/29/2012 11:20	1.00	0.0593	4.00	7.98	J
800240-002 pH	pH	02/29/2012 11:22	1.00	0.0593	4.00	7.99	J
800240-003 pH	pH	02/29/2012 11:25	1.00	0.0593	4.00	8.05	J
800240-004 pH	pH	02/29/2012 11:27	1.00	0.0593	4.00	7.72	
800240-005 pH	pH	02/29/2012 12:05	1.00	0.0593	4.00	7.61	
800240-006 pH	pH	02/29/2012 12:15	1.00	0.0593	4.00	8.04	J
800240-007 pH	pH	02/29/2012 12:17	1.00	0.0593	4.00	8.05	J
800240-008 pH	pH	02/29/2012 12:20	1.00	0.0593	4.00	8.05	J
800240-009 pH	pH	02/29/2012 12:22	1.00	0.0593	4.00	8.09	J
800240-010 pH	pH	02/29/2012 12:25	1.00	0.0593	4.00	8.13	J
800240-011 pH	pH	02/29/2012 12:27	1.00	0.0593	4.00	8.12	J
800240-012 pH	pH	02/29/2012 12:30	1.00	0.0593	4.00	8.12	J
800240-013 pH	pH	02/29/2012 12:32	1.00	0.0593	4.00	7.62	
800240-014 pH	pH	02/29/2012 12:35	1.00	0.0593	4.00	7.52	

Duplicate — Lab ID = 800240-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	7.63	7.61	0.262	0 - 20

Duplicate — Lab ID = 800240-014

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	7.54	7.52	0.266	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	7.03	7.00	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.07	7.00	101	90 - 110

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Total Suspended Solids by SM 2540 D Batch 03TSS12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800240-001 Total Suspended Solids	mg/L	03/05/2012	1.00	0.217	10.0	ND
800240-002 Total Suspended Solids	mg/L	03/05/2012	1.00	0.217	10.0	ND
800240-003 Total Suspended Solids	mg/L	03/05/2012	1.00	0.217	10.0	ND
800240-004 Total Suspended Solids	mg/L	03/05/2012	1.00	0.217	10.0	13.4
800240-005 Total Suspended Solids	mg/L	03/05/2012	1.00	0.217	10.0	12.8
800240-006 Total Suspended Solids	mg/L	03/05/2012	1.00	0.217	10.0	ND
800240-007 Total Suspended Solids	mg/L	03/05/2012	1.00	0.217	10.0	ND
800240-008 Total Suspended Solids	mg/L	03/05/2012	1.00	0.217	10.0	ND
800240-009 Total Suspended Solids	mg/L	03/05/2012	1.00	0.217	10.0	ND
800240-010 Total Suspended Solids	mg/L	03/05/2012	1.00	0.217	10.0	ND
800240-011 Total Suspended Solids	mg/L	03/05/2012	1.00	0.217	10.0	ND
800240-012 Total Suspended Solids	mg/L	03/05/2012	1.00	0.217	10.0	ND

Method Blank

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

Duplicate — Lab ID = 800240-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Suspended Solids	mg/L	1.00	ND	0.00	0	0 - 5

Duplicate — Lab ID = 800240-012

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Suspended Solids	mg/L	1.00	ND	0.00	0	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Suspended Solids	mg/L	1.00	101	100.	101	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Suspended Solids	mg/L	1.00	102	100.	102	90 - 110

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Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

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.

E2 SC

TRUESDAIL LABORATORIES INC.

Total Suspended Solids by SM 2540 D

Calculations

Batch: 03TSS12C

Date Analyzed: 03/05/12

Dish Number	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
D11	BLANK	1000	1.3921	1.3921	1.3921	0.0000	No	0.0000	0.0	2.5	ND
D29	800240-1	900	1.4009	1.4016	1.4016	0.0000	No	0.0007	0.8	2.8	ND
D30	800240-2	900	1.3959	1.3962	1.3962	0.0000	No	0.0003	0.3	2.8	ND
D31	800240-3	900	1.3925	1.3934	1.3934	0.0000	No	0.0009	1.0	2.8	ND
D32	800240-4	900	1.3968	1.4089	1.4089	0.0000	No	0.0121	13.4	2.8	13.4
D33	800240-5	900	1.4031	1.4146	1.4146	0.0000	No	0.0115	12.8	2.8	12.8
D34	800240-6	900	1.4043	1.4056	1.4056	0.0000	No	0.0013	1.4	2.8	ND
D35	800240-7	900	1.4023	1.4033	1.4033	0.0000	No	0.0010	1.1	2.8	ND
D36	800240-8	900	1.3976	1.3983	1.3983	0.0000	No	0.0007	0.8	2.8	ND
D37	800240-8D	900	1.3991	1.3998	1.3998	0.0000	No	0.0007	0.8	2.8	ND
D38	800240-9	900	1.3956	1.3963	1.3963	0.0000	No	0.0007	0.8	2.8	ND
D39	800240-10	900	1.4110	1.4124	1.4124	0.0000	No	0.0014	1.6	2.8	ND
D40	800240-11	900	1.4052	1.4061	1.4061	0.0000	No	0.0009	1.0	2.8	ND
D41	800240-12	900	1.4161	1.4172	1.4172	0.0000	No	0.0011	1.2	2.8	ND
D42	800240-12D	900	1.4116	1.4128	1.4128	0.0000	No	0.0012	1.3	2.8	ND
D12	LCS-1	100	1.4045	1.4146	1.4146	0.0000	No	0.0101	101.0	25.0	101.0
D13	LCS-2	100	1.4012	1.4114	1.4114	0.0000	No	0.0102	102.0	25.0	102.0

Calculation as follows:

Non- Filterable residue (TSS), mg/L = $\left(\frac{A-B}{C}\right) x\ 1\ 0^6$

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)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	101	100	101.0%	90-110%	Yes
LCSD	102	100	102.0%	90-110%	Yes

LCS Recovery

$$P = \left(\frac{LC}{LT}\right) x\ 100$$

$$\%\ Difference = \frac{|A\ or\ B - C|}{C}\ x\ 100$$

$$where \quad C = \frac{A+B}{2}$$

A = Weght of the first sample in (g).
B = Weght of the second sample in (g).
C = Average weight in (g).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
800240-8	0.0007	0.0007	0.0%	≤5%	Yes
800240-12	0.0011	0.0012	4.3%	5%	Yes

Gautam S.
Analyst Printed Name

Analyst Signature

Hope T.
Reviewer Printed Name

Reviewer Signature

TRUESDAIL LABORATORIES, INC.

E2 SC

Alkalinity by SM 2320B

Calculations

Date of Analysis: 2/29/12

Analytical Batch: 02ALK121
Matrix: Water
Date Calculated: 2/29/12

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO3	RL, ppm	Total Alkalinity Reported Value	HCO3 Conc. as $CaCO_3$ (ppm)	CO3 Alkalinity as $CaCO_3$ (ppm)	OH Alkalinity as $CaCO_3$ (ppm)	Low Alkalinity as $CaCO_3$ (<20ppm)
BLANK	6.99	50	0.02		0.0	0.05		1.0	5	ND	ND	ND	ND	
800240-1	8.03	50	0.02		0.0	6.60		132.0	5	132.0	132.0	ND	ND	
800240-2	8.13	50	0.02		0.0	6.95		139.0	5	139.0	139.0	ND	ND	
800240-3	8.17	50	0.02		0.0	6.65		133.0	5	133.0	133.0	ND	ND	
800240-4	7.86	50	0.02		0.0	7.20		144.0	5	144.0	144.0	ND	ND	
800240-5	7.77	50	0.02		0.0	6.95		139.0	5	139.0	139.0	ND	ND	
800240-6	8.20	50	0.02		0.0	6.85		137.0	5	137.0	137.0	ND	ND	
800240-7	8.22	50	0.02		0.0	6.75		135.0	5	135.0	135.0	ND	ND	
800240-8	8.21	50	0.02		0.0	6.50		130.0	5	130.0	130.0	ND	ND	
800240-9	8.20	50	0.02		0.0	6.80		136.0	5	136.0	136.0	ND	ND	
800240-10	8.26	50	0.02		0.0	7.00		140.0	5	140.0	140.0	ND	ND	
800240-10D	8.25	50	0.02		0.0	6.95		139.0	5	139.0	139.0	ND	ND	
800240-10MS	8.42	50	0.02	2.3	46.0	11.10		222.0	5	222.0	130.0	92	ND	
800240-10MSD	9.44	50	0.02	2.4	48.0	11.20		224.0	5	224.0	128.0	96	ND	
800240-11	8.26	50	0.02		0.0	6.75		135.0	5	135.0	135.0	ND	ND	
800240-12	8.24	50	0.02		0.0	6.95		139.0	5	139.0	139.0	ND	ND	
LCS	10.00	50	0.02	2.2	44.0	4.75		95.0	5	95.0	7.0	88	ND	
LCSD	10.45	50	0.02	2.3	46.0	4.85		97.0	5	97.0	5.0	92	ND	

Calculations as follows:

$$T \text{ or } P = \left(\frac{A \times N \times 50000}{mL\ sample} \right)$$

Where:

T = Total Alkalinity, mg CaCO3/L
P = Phenolphthalein Alkalinity, mg CaCO3/L
A = mL standard acid used
N = normality of standard acid

Low Alkalinity: as mg/L CaCO3 $= \frac{(2 \times B - C) \times N \times 50000}{\text{mL sample}}$

Where:
B = mL titrant to first recorded pH
C = Total mL titrant to reach pH 0.3 unit lower
N = Normality of standard acid

LCS = Laboratory Control Standard/Duplicate
MS/MSD = Matrix Spike/Duplicate
ND = Not Detected (below the reporting limit)

Blank Summary

Reporting Limit, RL	Measured Value, ppm	Accept Limit	QC Within Control?
5 ppm	0.9	<5	Yes

Laboratory Control Sample (LCS/LCSD) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	%Recovery	Accetance Limit	QC Within Control?
LCS	95	100	95.0%	90-110	Yes
LCSD	97	100	97.0%	90-110	Yes

Duplicate Determination Difference Summary

QC Std I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Accetance Limit	QC Within Control?
800240-10	140	139	0.7%	≤20%	Yes

Sample Matrix Spike (MS/MSD) Summary

Lab Number	Conc of Unspk spl	Dil Factor	Added Spk Conc	MS/MSD Amt	Measrd Conc of Spk Spl	Theor Conc of Spk Spl	MS/MSD %Rec	MS Accept Limit	QC Within Control?	RPD	RPD Accept Limit	QC Within Control?
800240-10	140	1	100	100	222	240.00	82%	75-125	Yes	0.4%	≤20%	Yes
	140	1	100	100	224	240.00	84%		Yes			

Alk_2012.xls Kim Marga

Hope T.

050

Rec'd 2/28/12
s 800240

800240

CH2MHILL

CHAIN OF CUSTODY RECORD

2/28/2012 3:20:51 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.RM
Task Order
Project 2012-RMP-185
Turnaround Time 10 Days
Shipping Date: 2/28/2012
COC Number: 1

			Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C			
			Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	2	2	2	2	2			
	DATE	TIME	Matrix	Cr6 (E218.6 – river) Field Filtered	Field QC Cr6 (E218.6–river)	Metals (6010B) Total Fe	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo	Metals (6020AFF) Field Filtered Chromium	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	PH (SM4500HB)	Alkalinity (SM2320B)	TSS (SM2540)	Number of Containers	COMMENTS
-1 C-BNS-D-185	2/28/2012	11:07	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-2 C-I-3-D-185	2/28/2012	9:28	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-3 C-I-3-S-185	2/28/2012	9:42	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-4 C-MAR-D-185	2/28/2012	12:11	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-5 C-MAR-S-185	2/28/2012	12:24	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
C-MW-80-185	2/28/2012	11:00	Water		X									1	hold
C-MW-81-185	2/28/2012	12:05	Water		X									1	hold
-6 C-R22A-D-185	2/28/2012	10:27	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-7 C-R22A-S-185	2/28/2012	10:40	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-8 C-R27-D-185	2/28/2012	11:34	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-9 C-R27-S-185	2/28/2012	11:47	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-10 C-TAZ-D-185	2/28/2012	8:45	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-11 C-TAZ-S-185	2/28/2012	9:02	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-12 R63-185	2/28/2012	10:01	Water	X		X	X	X	X	X	X	X	X	~~10~~	9

Where provided w/multiple bottles for Cr6 + diss. metals please analyze 1 + hold 2

ALERT !!
Level III QC

For Sample Conditions See Form Attached

PH fs. 6020A/6010B

PH-2

PH-2

BEL

	Signatures	Date/Time
Approved by		2-28-12
Sampled by		1555
Relinquished by	[signature]	
Received by	Hipolito	2-28-12 1555
Relinquished by	Hipolito	2-28-12 2100
Received by	Linda Shabacina	2/28/12 21:00

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 28-March 1, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

800240

CH2MHILL

CHAIN OF CUSTODY RECORD

2/28/2012 3:20:52 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.RM
Task Order
Project 2012-RMP-185
Turnaround Time 10 Days
Shipping Date: 2/28/2012
COC Number: 1

			Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C			
			Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	2	2	2	2	2			
	DATE	TIME	Matrix	Cr6 (E218.6 – river) Field Filtered	Field QC Cr6 (E218.6–river)	Metals (6010B) Total Fe	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo	Metals (6020AFF) Field Filtered Chromium	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	PH (SM4500HB)	Alkalinity (SM2320B)	TSS (SM2540)		Number of Containers	COMMENTS
RMP-AB1-185	2/28/2012	8:15	Water		X										1	hold
SW1-185	2/28/2012	14:25	Water	X				X	X		X				~~6~~	7
SW2-185	2/28/2012	14:55	Water	X				X	X		X				~~6~~	7
														TOTAL NUMBER OF CONTAINERS	135	

Where provided w/ multiple bottles for Cr6 + diss. metals please analyze 1 + hold 2

ALERT !!
Level III QC

pH for 6020A 6010B

pH=2

	Signatures	Date/Time
Approved by		2-28-12
Sampled by		1555
Relinquished by		
Received by	Hipolito	2-28-12 1555
Relinquished by	Hipolito	2-28-12 21:00
Received by	Linda Shalmine	2/28/12 21:00

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 28-March 1, 2012

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
2/29/12	800238	7	5mL	9.5	10 Am	[illegible]
2/29/12	800240-1	9.5	N/A	N/A	N/A	[illegible]
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-12					
	-13					
	-14					
2/29/12	800239-1	9.5	N/A	N/A	N/A	[illegible]
	-2					

C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

MA 3-5-12

Turbidity/pH Check

	Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
D,S	800239 (1-2)	<1	<2	2/29/12	ES	yes	3010A
T	800240 (1-12)	<1	<2	↓	↓	↓	↓
D	800240 (1-14)	↓	↓	↓	↓	↓	↓
	800257	<1	<2	3/2/12		NO	—
	800284	↓	↓	↓	↓	↓	—
	800286	↓	↓	↓	↓	↓	—
	800287 (1-3	>1	>2	3/2/12		yes	3010A
	800285	↓	↓	↓	↓	↓	↓
	800262	↓	↓	↓	↓	↓	↓
	800275	↓	↓	↓	↓	↓	↓
	800289	<1	>2	3/2/12	ES	NO	—
	800294 (1,2,4)	<1	>2	3/5/12	BE	No	yes 15:15
	800186	Solid	—	3/6/12	M.M	Yes	TTLC
	800303	↓	—	↓	↓	↓	↓
D	800348 (1-2)	<1	>2	3/8/12	M.M	yes	3010A
T	800349 (1-2	<1	<2	3/8/12	M.M	yes	3010A
	800298	>1	<2	3/8/12	M.M	yes	3010A
	800321	↓	↓	↓	↓	↓	↓
	800377	↓	↓	↓	↓	↓	↓
	800376	>1	<2	3/8/12	ES	yes	3010A
	800358-10	↓	↓	↓	↓	↓	↓
	800394	>1	<2	3/8/12	MM	yes	3010A
	800320-16, -23	<1	>2	3/9/12	KK	NO	yes @ 11:25 am
	800359	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800339 (1-3)	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800351 (-7-9)	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800358-2	<1	>2	3/9/12	KK	NO	yes @ 11:35 am
	~~800372 (10-12)~~	KK 3/9/12					
	800372 (10-12)	<1	>2	3/9/12	KK	NO	yes @ 11:35 am
	800391 (1-10)	<1	>2	3/9/12	KK	NO	yes @ 11:40 am
	800392 (1-10)	<1	>2	3/9/12	KK	No	yes @ 12 pm
	800395	<1	>2	3/9/12	KK	NO	yes @ 12 pm
	800411 (1-4)	<1	>2	3/9/12	KK	NO	yes @ 12 pm
	800419 (1-20)	<1	>2	3/12/12	BE	NO	yes 12:35 pm
	800419 (1-3)	<1	>2	↓	↓	↓	↓
	800421 (1-1)	<1	<2	3/11/12	M.M	yes	3010A
	800427 (1,2,4)	<1	>2	3/12/12	BB	NO	yes 13:35

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 800240

Date Delivered: 02 / 28 / 12 **Time:** 21:00 **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)? 3.8 °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
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: Linda Shabmina

ALERT !! Level III QC

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-RMP-185, SURFACEWATER MONITORING PROJECT, TLI NO.: 800258

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-RMP-185 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 February 29, 2012, 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 early sampling time and late arrival of the samples, sample R-28-185 for pH analysis by SM 4500-H B was analyzed just past the method specified holding time. Mr. Shawn Duffy approved the analysis.

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

If you bave 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

Michael Ngo
Quality Assurance/Quality Control Officer

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Event 2012-RMP-185 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-185	2.00	No			
C-CON-S-185	2.00	No			
C-NR1-D-185	2.00	No			
C-NR1-S-185	2.00	No			
C-NR3-D-185	2.00	No			
C-NR3-S-185	2.00	No			
C-NR4-D-185	2.00	No			
C-NR4-S-185	2.00	No			
R-19-185	2.00	No			
R-28-185	2.00	No			
RRB-185	2.00	No			

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Event 2012-RMP-185 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-185	9.50	No			
C-CON-S-185	9.50	No			
C-NR1-D-185	9.50	No			
C-NR1-S-185	9.50	No			
C-NR3-D-185	9.50	No			
C-NR3-S-185	9.50	No			
C-NR4-D-185	9.50	No			
C-NR4-S-185	9.50	No			
R-19-185	9.50	No			
R-28-185	9.50	No			
RRB-185	9.50	No			

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

Laboratory No.: 800258
Date Received: February 29, 2012

Project Name: PG&E Topock Project
Project No.: 423575.MP.02.RM
P.O. No.: 423575.MP.02.RM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800258-001	C-CON-D-185	E120.1	NONE	2/29/2012	11:18	EC	911	umhos/cm	2.00
800258-001	C-CON-D-185	E218.6	FLDFLT	2/29/2012	11:18	Chromium, hexavalent	ND	ug/L	0.20
800258-001	C-CON-D-185	E300	NONE	2/29/2012	11:18	Nitrate as N	ND	mg/L	0.500
800258-001	C-CON-D-185	SM2320B	NONE	2/29/2012	11:18	Alkalinity	111	mg/L	5.00
800258-001	C-CON-D-185	SM2320B	NONE	2/29/2012	11:18	Bicarbonate	111	mg/L	5.00
800258-001	C-CON-D-185	SM2320B	NONE	2/29/2012	11:18	Carbonate	ND	mg/L	5.00
800258-001	C-CON-D-185	SM2540D	NONE	2/29/2012	11:18	Total Suspended Solids	ND	mg/L	10.0
800258-001	C-CON-D-185	SM4500HB	NONE	2/29/2012	11:18	PH	8.04	pH	4.00
800258-001	C-CON-D-185	SW6010B	FLDFLT-digested	2/29/2012	11:18	Iron	ND	ug/L	20.0
800258-001	C-CON-D-185	SW6010B	NONE-digested	2/29/2012	11:18	Iron	ND	ug/L	20.0
800258-001	C-CON-D-185	SW6010B	FLDFLT-digested	2/29/2012	11:18	Molybdenum	ND	ug/L	10.0
800258-001	C-CON-D-185	SW6010B	FLDFLT-digested	2/29/2012	11:18	Selenium	ND	ug/L	10.0
800258-001	C-CON-D-185	SW6020	FLDFLT-digested	2/29/2012	11:18	Arsenic	2.5	ug/L	1.0
800258-001	C-CON-D-185	SW6020	FLDFLT-digested	2/29/2012	11:18	Chromium	ND	ug/L	1.0
800258-001	C-CON-D-185	SW6020	FLDFLT-digested	2/29/2012	11:18	Manganese	ND	ug/L	10.0
800258-002	C-CON-S-185	E120.1	NONE	2/29/2012	11:33	EC	914	umhos/cm	2.00
800258-002	C-CON-S-185	E218.6	FLDFLT	2/29/2012	11:33	Chromium, hexavalent	ND	ug/L	0.20
800258-002	C-CON-S-185	E300	NONE	2/29/2012	11:33	Nitrate as N	ND	mg/L	0.500
800258-002	C-CON-S-185	SM2320B	NONE	2/29/2012	11:33	Alkalinity	131	mg/L	5.00
800258-002	C-CON-S-185	SM2320B	NONE	2/29/2012	11:33	Bicarbonate	131	mg/L	5.00
800258-002	C-CON-S-185	SM2320B	NONE	2/29/2012	11:33	Carbonate	ND	mg/L	5.00
800258-002	C-CON-S-185	SM2540D	NONE	2/29/2012	11:33	Total Suspended Solids	ND	mg/L	10.0
800258-002	C-CON-S-185	SM4500HB	NONE	2/29/2012	11:33	PH	8.09	pH	4.00

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800258-002	C-CON-S-185	SW6010B	FLDFLT-digested	2/29/2012	11:33	Iron	ND	ug/L	20.0
800258-002	C-CON-S-185	SW6010B	NONE-digested	2/29/2012	11:33	Iron	ND	ug/L	20.0
800258-002	C-CON-S-185	SW6010B	FLDFLT-digested	2/29/2012	11:33	Molybdenum	ND	ug/L	10.0
800258-002	C-CON-S-185	SW6010B	FLDFLT-digested	2/29/2012	11:33	Selenium	ND	ug/L	10.0
800258-002	C-CON-S-185	SW6020	FLDFLT-digested	2/29/2012	11:33	Arsenic	2.0	ug/L	1.0
800258-002	C-CON-S-185	SW6020	FLDFLT-digested	2/29/2012	11:33	Chromium	ND	ug/L	1.0
800258-002	C-CON-S-185	SW6020	FLDFLT-digested	2/29/2012	11:33	Manganese	ND	ug/L	10.0
800258-003	C-NR1-D-185	E120.1	NONE	2/29/2012	12:09	EC	912	umhos/cm	2.00
800258-003	C-NR1-D-185	E218.6	FLDFLT	2/29/2012	12:09	Chromium, hexavalent	ND	ug/L	0.20
800258-003	C-NR1-D-185	E300	NONE	2/29/2012	12:09	Nitrate as N	ND	mg/L	0.500
800258-003	C-NR1-D-185	SM2320B	NONE	2/29/2012	12:09	Alkalinity	120	mg/L	5.00
800258-003	C-NR1-D-185	SM2320B	NONE	2/29/2012	12:09	Bicarbonate	120	mg/L	5.00
800258-003	C-NR1-D-185	SM2320B	NONE	2/29/2012	12:09	Carbonate	ND	mg/L	5.00
800258-003	C-NR1-D-185	SM2540D	NONE	2/29/2012	12:09	Total Suspended Solids	ND	mg/L	10.0
800258-003	C-NR1-D-185	SM4500HB	NONE	2/29/2012	12:09	PH	8.10	pH	4.00
800258-003	C-NR1-D-185	SW6010B	FLDFLT-digested	2/29/2012	12:09	Iron	ND	ug/L	20.0
800258-003	C-NR1-D-185	SW6010B	NONE-digested	2/29/2012	12:09	Iron	20.4	ug/L	20.0
800258-003	C-NR1-D-185	SW6010B	FLDFLT-digested	2/29/2012	12:09	Molybdenum	ND	ug/L	10.0
800258-003	C-NR1-D-185	SW6010B	FLDFLT-digested	2/29/2012	12:09	Selenium	ND	ug/L	10.0
800258-003	C-NR1-D-185	SW6020	FLDFLT-digested	2/29/2012	12:09	Arsenic	2.3	ug/L	1.0
800258-003	C-NR1-D-185	SW6020	FLDFLT-digested	2/29/2012	12:09	Chromium	ND	ug/L	1.0
800258-003	C-NR1-D-185	SW6020	FLDFLT-digested	2/29/2012	12:09	Manganese	ND	ug/L	10.0
800258-004	C-NR1-S-185	E120.1	NONE	2/29/2012	12:25	EC	911	umhos/cm	2.00
800258-004	C-NR1-S-185	E218.6	FLDFLT	2/29/2012	12:25	Chromium, hexavalent	ND	ug/L	0.20
800258-004	C-NR1-S-185	E300	NONE	2/29/2012	12:25	Nitrate as N	ND	mg/L	0.500
800258-004	C-NR1-S-185	SM2320B	NONE	2/29/2012	12:25	Alkalinity	123	mg/L	5.00
800258-004	C-NR1-S-185	SM2320B	NONE	2/29/2012	12:25	Bicarbonate	123	mg/L	5.00
800258-004	C-NR1-S-185	SM2320B	NONE	2/29/2012	12:25	Carbonate	ND	mg/L	5.00
800258-004	C-NR1-S-185	SM2540D	NONE	2/29/2012	12:25	Total Suspended Solids	ND	mg/L	10.0
800258-004	C-NR1-S-185	SM4500HB	NONE	2/29/2012	12:25	PH	8.12	pH	4.00
800258-004	C-NR1-S-185	SW6010B	FLDFLT-digested	2/29/2012	12:25	Iron	ND	ug/L	20.0
800258-004	C-NR1-S-185	SW6010B	NONE-digested	2/29/2012	12:25	Iron	ND	ug/L	20.0
800258-004	C-NR1-S-185	SW6010B	FLDFLT-digested	2/29/2012	12:25	Molybdenum	ND	ug/L	10.0
800258-004	C-NR1-S-185	SW6010B	FLDFLT-digested	2/29/2012	12:25	Selenium	ND	ug/L	10.0
800258-004	C-NR1-S-185	SW6020	FLDFLT-digested	2/29/2012	12:25	Arsenic	2.6	ug/L	1.0
800258-004	C-NR1-S-185	SW6020	FLDFLT-digested	2/29/2012	12:25	Chromium	ND	ug/L	1.0
800258-004	C-NR1-S-185	SW6020	FLDFLT-digested	2/29/2012	12:25	Manganese	ND	ug/L	10.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800258-005	C-NR3-D-185	E120.1	NONE	2/29/2012	13:02	EC	910	umhos/cm	2.00
800258-005	C-NR3-D-185	E218.6	FLDFLT	2/29/2012	13:02	Chromium, hexavalent	ND	ug/L	0.20
800258-005	C-NR3-D-185	E300	NONE	2/29/2012	13:02	Nitrate as N	ND	mg/L	0.500
800258-005	C-NR3-D-185	SM2320B	NONE	2/29/2012	13:02	Alkalinity	122	mg/L	5.00
800258-005	C-NR3-D-185	SM2320B	NONE	2/29/2012	13:02	Bicarbonate	122	mg/L	5.00
800258-005	C-NR3-D-185	SM2320B	NONE	2/29/2012	13:02	Carbonate	ND	mg/L	5.00
800258-005	C-NR3-D-185	SM2540D	NONE	2/29/2012	13:02	Total Suspended Solids	ND	mg/L	10.0
800258-005	C-NR3-D-185	SM4500HB	NONE	2/29/2012	13:02	PH	8.13	pH	4.00
800258-005	C-NR3-D-185	SW6010B	FLDFLT-digested	2/29/2012	13:02	Iron	ND	ug/L	20.0
800258-005	C-NR3-D-185	SW6010B	NONE-digested	2/29/2012	13:02	Iron	ND	ug/L	20.0
800258-005	C-NR3-D-185	SW6010B	FLDFLT-digested	2/29/2012	13:02	Molybdenum	ND	ug/L	10.0
800258-005	C-NR3-D-185	SW6010B	FLDFLT-digested	2/29/2012	13:02	Selenium	ND	ug/L	10.0
800258-005	C-NR3-D-185	SW6020	FLDFLT-digested	2/29/2012	13:02	Arsenic	2.1	ug/L	1.0
800258-005	C-NR3-D-185	SW6020	FLDFLT-digested	2/29/2012	13:02	Chromium	ND	ug/L	1.0
800258-005	C-NR3-D-185	SW6020	FLDFLT-digested	2/29/2012	13:02	Manganese	ND	ug/L	10.0
800258-006	C-NR3-S-185	E120.1	NONE	2/29/2012	13:18	EC	914	umhos/cm	2.00
800258-006	C-NR3-S-185	E218.6	FLDFLT	2/29/2012	13:18	Chromium, hexavalent	ND	ug/L	0.20
800258-006	C-NR3-S-185	E300	NONE	2/29/2012	13:18	Nitrate as N	ND	mg/L	0.500
800258-006	C-NR3-S-185	SM2320B	NONE	2/29/2012	13:18	Alkalinity	112	mg/L	5.00
800258-006	C-NR3-S-185	SM2320B	NONE	2/29/2012	13:18	Bicarbonate	112	mg/L	5.00
800258-006	C-NR3-S-185	SM2320B	NONE	2/29/2012	13:18	Carbonate	ND	mg/L	5.00
800258-006	C-NR3-S-185	SM2540D	NONE	2/29/2012	13:18	Total Suspended Solids	ND	mg/L	10.0
800258-006	C-NR3-S-185	SM4500HB	NONE	2/29/2012	13:18	PH	8.14	pH	4.00
800258-006	C-NR3-S-185	SW6010B	FLDFLT-digested	2/29/2012	13:18	Iron	ND	ug/L	20.0
800258-006	C-NR3-S-185	SW6010B	NONE-digested	2/29/2012	13:18	Iron	ND	ug/L	20.0
800258-006	C-NR3-S-185	SW6010B	FLDFLT-digested	2/29/2012	13:18	Molybdenum	ND	ug/L	10.0
800258-006	C-NR3-S-185	SW6010B	FLDFLT-digested	2/29/2012	13:18	Selenium	ND	ug/L	10.0
800258-006	C-NR3-S-185	SW6020	FLDFLT-digested	2/29/2012	13:18	Arsenic	2.1	ug/L	1.0
800258-006	C-NR3-S-185	SW6020	FLDFLT-digested	2/29/2012	13:18	Chromium	ND	ug/L	1.0
800258-006	C-NR3-S-185	SW6020	FLDFLT-digested	2/29/2012	13:18	Manganese	ND	ug/L	10.0
800258-007	C-NR4-D-185	E120.1	NONE	2/29/2012	13:50	EC	914	umhos/cm	2.00
800258-007	C-NR4-D-185	E218.6	FLDFLT	2/29/2012	13:50	Chromium, hexavalent	ND	ug/L	0.20
800258-007	C-NR4-D-185	E300	NONE	2/29/2012	13:50	Nitrate as N	ND	mg/L	0.500
800258-007	C-NR4-D-185	SM2320B	NONE	2/29/2012	13:50	Alkalinity	130	mg/L	5.00
800258-007	C-NR4-D-185	SM2320B	NONE	2/29/2012	13:50	Bicarbonate	130	mg/L	5.00
800258-007	C-NR4-D-185	SM2320B	NONE	2/29/2012	13:50	Carbonate	ND	mg/L	5.00

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800258-007	C-NR4-D-185	SM2540D	NONE	2/29/2012	13:50	Total Suspended Solids	ND	mg/L	10.0
800258-007	C-NR4-D-185	SM4500HB	NONE	2/29/2012	13:50	PH	8.16	pH	4.00
800258-007	C-NR4-D-185	SW6010B	FLDFLT-digested	2/29/2012	13:50	Iron	ND	ug/L	20.0
800258-007	C-NR4-D-185	SW6010B	NONE-digested	2/29/2012	13:50	Iron	ND	ug/L	20.0
800258-007	C-NR4-D-185	SW6010B	FLDFLT-digested	2/29/2012	13:50	Molybdenum	ND	ug/L	10.0
800258-007	C-NR4-D-185	SW6010B	FLDFLT-digested	2/29/2012	13:50	Selenium	ND	ug/L	10.0
800258-007	C-NR4-D-185	SW6020	FLDFLT-digested	2/29/2012	13:50	Arsenic	2.0	ug/L	1.0
800258-007	C-NR4-D-185	SW6020	FLDFLT-digested	2/29/2012	13:50	Chromium	ND	ug/L	1.0
800258-007	C-NR4-D-185	SW6020	FLDFLT-digested	2/29/2012	13:50	Manganese	ND	ug/L	10.0
800258-008	C-NR4-S-185	E120.1	NONE	2/29/2012	14:05	EC	915	umhos/cm	2.00
800258-008	C-NR4-S-185	E218.6	FLDFLT	2/29/2012	14:05	Chromium, hexavalent	ND	ug/L	0.20
800258-008	C-NR4-S-185	E300	NONE	2/29/2012	14:05	Nitrate as N	ND	mg/L	0.500
800258-008	C-NR4-S-185	SM2320B	NONE	2/29/2012	14:05	Alkalinity	116	mg/L	5.00
800258-008	C-NR4-S-185	SM2320B	NONE	2/29/2012	14:05	Bicarbonate	116	mg/L	5.00
800258-008	C-NR4-S-185	SM2320B	NONE	2/29/2012	14:05	Carbonate	ND	mg/L	5.00
800258-008	C-NR4-S-185	SM2540D	NONE	2/29/2012	14:05	Total Suspended Solids	ND	mg/L	10.0
800258-008	C-NR4-S-185	SM4500HB	NONE	2/29/2012	14:05	PH	8.15	pH	4.00
800258-008	C-NR4-S-185	SW6010B	FLDFLT-digested	2/29/2012	14:05	Iron	ND	ug/L	20.0
800258-008	C-NR4-S-185	SW6010B	NONE-digested	2/29/2012	14:05	Iron	28.0	ug/L	20.0
800258-008	C-NR4-S-185	SW6010B	FLDFLT-digested	2/29/2012	14:05	Molybdenum	ND	ug/L	10.0
800258-008	C-NR4-S-185	SW6010B	FLDFLT-digested	2/29/2012	14:05	Selenium	ND	ug/L	10.0
800258-008	C-NR4-S-185	SW6020	FLDFLT-digested	2/29/2012	14:05	Arsenic	2.1	ug/L	1.0
800258-008	C-NR4-S-185	SW6020	FLDFLT-digested	2/29/2012	14:05	Chromium	ND	ug/L	1.0
800258-008	C-NR4-S-185	SW6020	FLDFLT-digested	2/29/2012	14:05	Manganese	ND	ug/L	10.0
800258-009	R-19-185	E120.1	NONE	2/29/2012	10:25	EC	915	umhos/cm	2.00
800258-009	R-19-185	E218.6	FLDFLT	2/29/2012	10:25	Chromium, hexavalent	ND	ug/L	0.20
800258-009	R-19-185	E300	NONE	2/29/2012	10:25	Nitrate as N	ND	mg/L	0.500
800258-009	R-19-185	SM2320B	NONE	2/29/2012	10:25	Alkalinity	120	mg/L	5.00
800258-009	R-19-185	SM2320B	NONE	2/29/2012	10:25	Bicarbonate	120	mg/L	5.00
800258-009	R-19-185	SM2320B	NONE	2/29/2012	10:25	Carbonate	ND	mg/L	5.00
800258-009	R-19-185	SM2540D	NONE	2/29/2012	10:25	Total Suspended Solids	ND	mg/L	10.0
800258-009	R-19-185	SM4500HB	NONE	2/29/2012	10:25	PH	8.20	pH	4.00

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800258-009	R-19-185	SW6010B	FLDFLT-digested	2/29/2012	10:25	Iron	ND	ug/L	20.0
800258-009	R-19-185	SW6010B	NONE-digested	2/29/2012	10:25	Iron	28.2	ug/L	20.0
800258-009	R-19-185	SW6010B	FLDFLT-digested	2/29/2012	10:25	Molybdenum	ND	ug/L	10.0
800258-009	R-19-185	SW6010B	FLDFLT-digested	2/29/2012	10:25	Selenium	ND	ug/L	10.0
800258-009	R-19-185	SW6020	FLDFLT-digested	2/29/2012	10:25	Arsenic	2.3	ug/L	1.0
800258-009	R-19-185	SW6020	FLDFLT-digested	2/29/2012	10:25	Chromium	ND	ug/L	1.0
800258-009	R-19-185	SW6020	FLDFLT-digested	2/29/2012	10:25	Manganese	ND	ug/L	10.0
800258-010	R-28-185	E120.1	NONE	2/29/2012	10:02	EC	911	umhos/cm	2.00
800258-010	R-28-185	E218.6	FLDFLT	2/29/2012	10:02	Chromium, hexavalent	ND	ug/L	0.20
800258-010	R-28-185	E300	NONE	2/29/2012	10:02	Nitrate as N	ND	mg/L	0.500
800258-010	R-28-185	SM2320B	NONE	2/29/2012	10:02	Alkalinity	123	mg/L	5.00
800258-010	R-28-185	SM2320B	NONE	2/29/2012	10:02	Bicarbonate	123	mg/L	5.00
800258-010	R-28-185	SM2320B	NONE	2/29/2012	10:02	Carbonate	ND	mg/L	5.00
800258-010	R-28-185	SM2540D	NONE	2/29/2012	10:02	Total Suspended Solids	24.8	mg/L	10.0
800258-010	R-28-185	SM4500HB	NONE	2/29/2012	10:02	PH	8.21 J	pH	4.00
800258-010	R-28-185	SW6010B	FLDFLT-digested	2/29/2012	10:02	Iron	ND	ug/L	20.0
800258-010	R-28-185	SW6010B	NONE-digested	2/29/2012	10:02	Iron	81.2	ug/L	20.0
800258-010	R-28-185	SW6010B	FLDFLT-digested	2/29/2012	10:02	Molybdenum	ND	ug/L	10.0
800258-010	R-28-185	SW6010B	FLDFLT-digested	2/29/2012	10:02	Selenium	ND	ug/L	10.0
800258-010	R-28-185	SW6020	FLDFLT-digested	2/29/2012	10:02	Arsenic	2.0	ug/L	1.0
800258-010	R-28-185	SW6020	FLDFLT-digested	2/29/2012	10:02	Chromium	ND	ug/L	1.0
800258-010	R-28-185	SW6020	FLDFLT-digested	2/29/2012	10:02	Manganese	ND	ug/L	10.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800258-011	RRB-185	E120.1	NONE	2/29/2012	10:48	EC	931	umhos/cm	2.00
800258-011	RRB-185	E218.6	FLDFLT	2/29/2012	10:48	Chromium, hexavalent	ND	ug/L	0.20
800258-011	RRB-185	E300	NONE	2/29/2012	10:48	Nitrate as N	ND	mg/L	0.500
800258-011	RRB-185	SM2320B	NONE	2/29/2012	10:48	Alkalinity	131	mg/L	5.00
800258-011	RRB-185	SM2320B	NONE	2/29/2012	10:48	Bicarbonate	131	mg/L	5.00
800258-011	RRB-185	SM2320B	NONE	2/29/2012	10:48	Carbonate	ND	mg/L	5.00
800258-011	RRB-185	SM2540D	NONE	2/29/2012	10:48	Total Suspended Solids	ND	mg/L	10.0
800258-011	RRB-185	SM4500HB	NONE	2/29/2012	10:48	PH	8.12	pH	4.00
800258-011	RRB-185	SW6010B	FLDFLT-digested	2/29/2012	10:48	Iron	26.2	ug/L	20.0
800258-011	RRB-185	SW6010B	NONE-digested	2/29/2012	10:48	Iron	65.6	ug/L	20.0
800258-011	RRB-185	SW6010B	FLDFLT-digested	2/29/2012	10:48	Molybdenum	ND	ug/L	10.0
800258-011	RRB-185	SW6010B	FLDFLT-digested	2/29/2012	10:48	Selenium	ND	ug/L	10.0
800258-011	RRB-185	SW6020	FLDFLT-digested	2/29/2012	10:48	Arsenic	2.0	ug/L	1.0
800258-011	RRB-185	SW6020	FLDFLT-digested	2/29/2012	10:48	Chromium	ND	ug/L	1.0
800258-011	RRB-185	SW6020	FLDFLT-digested	2/29/2012	10:48	Manganese	ND	ug/L	10.0

ND: Non Datected (below reporting limit)

mg/L: Milligrams per liter.

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

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

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

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

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REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project Number: 423575.MP.02.RM
P.O. Number: 423575.MP.02.RM
Release Number:

Laboratory No. 800258

Printed 3/14/2012

Samples Received on 2/29/2012 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
C-CON-D-185	800258-001	02/29/2012 11:18	Water
C-CON-S-185	800258-002	02/29/2012 11:33	Water
C-NR1-D-185	800258-003	02/29/2012 12:09	Water
C-NR1-S-185	800258-004	02/29/2012 12:25	Water
C-NR3-D-185	800258-005	02/29/2012 13:02	Water
C-NR3-S-185	800258-006	02/29/2012 13:18	Water
C-NR4-D-185	800258-007	02/29/2012 13:50	Water
C-NR4-S-185	800258-008	02/29/2012 14:05	Water
R-19-185	800258-009	02/29/2012 10:25	Water
R-28-185	800258-010	02/29/2012 10:02	Water
RRB-185	800258-011	02/29/2012 10:48	Water

Anions By I.C. - EPA 300.0 Batch 03AN12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800258-001 Nitrate as Nitrogen	mg/L	03/01/2012 12:09	1.00	0.0270	0.500	ND
800258-002 Nitrate as Nitrogen	mg/L	03/01/2012 12:20	1.00	0.0270	0.500	ND
800258-003 Nitrate as Nitrogen	mg/L	03/01/2012 12:32	1.00	0.0270	0.500	ND
800258-004 Nitrate as Nitrogen	mg/L	03/01/2012 12:43	1.00	0.0270	0.500	ND
800258-005 Nitrate as Nitrogen	mg/L	03/01/2012 12:55	1.00	0.0270	0.500	ND
800258-006 Nitrate as Nitrogen	mg/L	03/01/2012 15:00	1.00	0.0270	0.500	ND
800258-007 Nitrate as Nitrogen	mg/L	03/01/2012 15:12	1.00	0.0270	0.500	ND
800258-008 Nitrate as Nitrogen	mg/L	03/01/2012 15:23	1.00	0.0270	0.500	ND
800258-009 Nitrate as Nitrogen	mg/L	03/01/2012 15:34	1.00	0.0270	0.500	ND
800258-010 Nitrate as Nitrogen	mg/L	03/02/2012 08:48	1.00	0.0270	0.500	ND
800258-011 Nitrate as Nitrogen	mg/L	03/02/2012 08:59	1.00	0.0270	0.500	ND

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Method Blank

Parameter	Unit	DF	Result
Nitrate as Nitrogen	mg/L	1.00	ND

Duplicate — Lab ID = 800258-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	ND	0.469	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	4.07	4.00	102.	90 - 110

Matrix Spike — Lab ID = 800258-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.54	2.47(2.00)	104.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	4.04	4.00	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.98	3.00	99.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.99	3.00	99.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.98	3.00	99.5	90 - 110

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Alkalinity by SM 2320B Batch 03ALK12A

Parameter		Unit	Analyzed	DF	MDL	RL	Result
800258-001	Alkalinity as CaCO3	mg/L	03/01/2012	1.00	1.68	5.00	111
	Bicarbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	111
	Carbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	ND
800258-002	Alkalinity as CaCO3	mg/L	03/01/2012	1.00	1.68	5.00	131
	Bicarbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	131
	Carbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	ND
800258-003	Alkalinity as CaCO3	mg/L	03/01/2012	1.00	1.68	5.00	120.
	Bicarbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	120.
	Carbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	ND
800258-004	Alkalinity as CaCO3	mg/L	03/01/2012	1.00	1.68	5.00	123
	Bicarbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	123
	Carbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	ND
800258-005	Alkalinity as CaCO3	mg/L	03/01/2012	1.00	1.68	5.00	122
	Bicarbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	122
	Carbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	ND
800258-006	Alkalinity as CaCO3	mg/L	03/01/2012	1.00	1.68	5.00	112
	Bicarbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	112
	Carbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	ND
800258-007	Alkalinity as CaCO3	mg/L	03/01/2012	1.00	1.68	5.00	130.
	Bicarbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	130.
	Carbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	ND
800258-008	Alkalinity as CaCO3	mg/L	03/01/2012	1.00	1.68	5.00	116
	Bicarbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	116
	Carbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	ND
800258-009	Alkalinity as CaCO3	mg/L	03/01/2012	1.00	1.68	5.00	120.
	Bicarbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	120.
	Carbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	ND
800258-010	Alkalinity as CaCO3	mg/L	03/01/2012	1.00	1.68	5.00	123
	Bicarbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	123
	Carbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	ND
800258-011	Alkalinity as CaCO3	mg/L	03/01/2012	1.00	1.68	5.00	131
	Bicarbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	131
	Carbonate (Calculated)	mg/L	03/01/2012	1.00	1.68	5.00	ND

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Method Blank

Parameter	Unit	DF	Result
Alkalinity as CaCO3	mg/L	1.00	ND

Duplicate — Lab ID = 800258-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	122	123	0.816	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	97.0	100.	97.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	95.0	100.	95.0	90 - 110

Matrix Spike — Lab ID = 800258-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	218	223(100.)	95.0	75 - 125

Matrix Spike Duplicate — Lab ID = 800258-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	220.	223(100.)	97.0	75 - 125

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Specific Conductivity - EPA 120.1 Batch 03EC12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800258-001 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	911
800258-002 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	914
800258-003 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	912
800258-004 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	911
800258-005 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	910.
800258-006 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	914
800258-007 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	914
800258-008 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	915
800258-009 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	915
800258-010 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	911
800258-011 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	931

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 800258-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	910.	911	0.110	0 - 10

Duplicate — Lab ID = 800258-011

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	930.	931	0.107	0 - 10

Lab Control Sample

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

Lab Control Sample Duplicate

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

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	682	706	96.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	950.	998	95.2	90 - 110

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Metals by EPA 6010B, Total

Batch 030812C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800258-001 Iron	ug/L	03/08/2012 20:32	1.00	1.34	20.0	ND
800258-002 Iron	ug/L	03/08/2012 21:17	1.00	1.34	20.0	ND
800258-003 Iron	ug/L	03/08/2012 21:23	1.00	1.34	20.0	20.4
800258-004 Iron	ug/L	03/08/2012 21:30	1.00	1.34	20.0	ND
800258-005 Iron	ug/L	03/08/2012 21:36	1.00	1.34	20.0	ND
800258-006 Iron	ug/L	03/08/2012 21:42	1.00	1.34	20.0	ND
800258-007 Iron	ug/L	03/08/2012 21:48	1.00	1.34	20.0	ND
800258-008 Iron	ug/L	03/08/2012 21:54	1.00	1.34	20.0	28.0
800258-009 Iron	ug/L	03/08/2012 22:00	1.00	1.34	20.0	28.2
800258-010 Iron	ug/L	03/08/2012 22:07	1.00	1.34	20.0	81.2

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate — Lab ID = 800258-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	15.7	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	104.	100.	104.	85 - 115

Matrix Spike — Lab ID = 800258-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	119.	116.(100.)	103.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5180	5000	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4820	5000	96.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4770	5000	95.4	90 - 110

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Metals by EPA 6010B, Total Batch 031312A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800258-011 Iron	ug/L	03/13/2012 13:07	1.00	1.34	20.0	65.6

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate — Lab ID = 800258-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	14.6	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	102.	100.	102.	85 - 115

Matrix Spike — Lab ID = 800258-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	125.	115.(100.)	111.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5320	5000	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5470	5000	109.	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2200	2000	110.	80 - 120

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2320	2000	116.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2250	2000	112.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2340	2000	117.	80 - 120

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Chrome VI by EPA 218.6

Batch 03CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800258-001 Chromium, Hexavalent	ug/L	03/01/2012 15:55	1.00	0.0260	0.20	ND
800258-002 Chromium, Hexavalent	ug/L	03/01/2012 16:05	1.00	0.0260	0.20	ND
800258-003 Chromium, Hexavalent	ug/L	03/01/2012 16:16	1.00	0.0260	0.20	ND
800258-004 Chromium, Hexavalent	ug/L	03/01/2012 16:47	1.00	0.0260	0.20	ND
800258-005 Chromium, Hexavalent	ug/L	03/01/2012 16:57	1.00	0.0260	0.20	ND
800258-006 Chromium, Hexavalent	ug/L	03/01/2012 17:08	1.00	0.0260	0.20	ND

Method Blank

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

Duplicate — Lab ID = 800240-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0386	0.0407	5.30	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.228	0.200	114.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.88	5.00	97.6	90 - 110

Matrix Spike — Lab ID = 800240-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.04(1.00)	99.1	90 - 110

Matrix Spike — Lab ID = 800240-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.04(1.00)	99.2	90 - 110

Matrix Spike — Lab ID = 800240-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.05(1.00)	99.7	90 - 110

Matrix Spike — Lab ID = 800240-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.03(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 800240-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.03(1.00)	99.8	90 - 110

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Matrix Spike — Lab ID = 800240-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.04(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 800240-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.04(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 800240-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.06	1.05(1.00)	101.	90 - 110

Matrix Spike — Lab ID = 800240-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.04(1.00)	101.	90 - 110

Matrix Spike — Lab ID = 800240-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.06	1.04(1.00)	102.	90 - 110

Matrix Spike — Lab ID = 800240-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.04(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 800240-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.06	1.05(1.00)	101.	90 - 110

Matrix Spike — Lab ID = 800240-013

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.04(1.00)	101.	90 - 110

Matrix Spike — Lab ID = 800240-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.03(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 800258-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.04(1.00)	99.3	90 - 110

Matrix Spike — Lab ID = 800258-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.04(1.00)	98.9	90 - 110

Matrix Spike — Lab ID = 800258-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.04(1.00)	101.	90 - 110

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Matrix Spike — Lab ID = 800258-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.04(1.00)	99.2	90 - 110

Matrix Spike — Lab ID = 800258-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.04(1.00)	101.	90 - 110

Matrix Spike — Lab ID = 800258-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.04(1.00)	98.8	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00	97.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.96	10.0	99.6	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.91	10.0	99.1	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	10.0	10.0	100.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.94	10.0	99.4	95 - 105

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Chrome VI by EPA 218.6

Batch 03CrH12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800258-007 Chromium, Hexavalent	ug/L	03/01/2012 23:20	1.00	0.0260	0.20	ND
800258-008 Chromium, Hexavalent	ug/L	03/01/2012 23:51	1.00	0.0260	0.20	ND
800258-009 Chromium, Hexavalent	ug/L	03/02/2012 00:02	1.00	0.0260	0.20	ND
800258-010 Chromium, Hexavalent	ug/L	03/02/2012 00:12	1.00	0.0260	0.20	ND
800258-011 Chromium, Hexavalent	ug/L	03/02/2012 00:22	1.00	0.0260	0.20	ND

Method Blank

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

Duplicate — Lab ID = 800258-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0440	0.0423	3.94	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.231	0.200	115.	70 - 130

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.230	0.200	115.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.84	5.00	96.7	90 - 110

Matrix Spike — Lab ID = 800239-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	944.	952(500.)	98.3	90 - 110

Matrix Spike — Lab ID = 800239-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	250	9350	9070(5000)	106.	90 - 110

Matrix Spike — Lab ID = 800258-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.06	1.04(1.00)	102.	90 - 110

Matrix Spike — Lab ID = 800258-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.04(1.00)	100.	90 - 110

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Matrix Spike — Lab ID = 800258-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.04(1.00)	99.8	90 - 110

Matrix Spike — Lab ID = 800258-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.04(1.00)	98.2	90 - 110

Matrix Spike — Lab ID = 800258-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.04(1.00)	98.4	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.85	5.00	97.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.82	10.0	98.2	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.82	10.0	98.2	95 - 105

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Metals by EPA 6020A, Dissolved Batch 030512B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800258-001 Chromium	ug/L	03/05/2012 21:24	5.00	0.110	1.0	ND
800258-002 Chromium	ug/L	03/05/2012 21:31	5.00	0.110	1.0	ND
800258-003 Chromium	ug/L	03/05/2012 21:39	5.00	0.110	1.0	ND
800258-004 Chromium	ug/L	03/05/2012 21:46	5.00	0.110	1.0	ND
800258-005 Chromium	ug/L	03/05/2012 21:53	5.00	0.110	1.0	ND
800258-006 Chromium	ug/L	03/05/2012 22:00	5.00	0.110	1.0	ND
800258-007 Chromium	ug/L	03/05/2012 22:07	5.00	0.110	1.0	ND
800258-008 Chromium	ug/L	03/05/2012 22:15	5.00	0.110	1.0	ND
800258-009 Chromium	ug/L	03/05/2012 22:22	5.00	0.110	1.0	ND
800258-010 Chromium	ug/L	03/05/2012 22:29	5.00	0.110	1.0	ND
800258-011 Chromium	ug/L	03/05/2012 22:58	5.00	0.110	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 800150-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	1.86	1.72	7.98	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.179	0.200	89.4	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	104.	100.	104.	85 - 115

Matrix Spike — Lab ID = 800150-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	108.	102.(100.)	106.	75 - 125

Matrix Spike Duplicate — Lab ID = 800150-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	103.	102.(100.)	101.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 030812B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800258-001 Arsenic	ug/L	03/09/2012 01:09	5.00	0.285	1.0	2.5
Manganese	ug/L	03/09/2012 01:09	5.00	0.285	10.0	ND
800258-002 Arsenic	ug/L	03/09/2012 09:31	5.00	0.285	1.0	2.0
Manganese	ug/L	03/09/2012 09:31	5.00	0.285	10.0	ND
800258-003 Manganese	ug/L	03/09/2012 01:45	5.00	0.285	10.0	ND
800258-004 Arsenic	ug/L	03/09/2012 01:52	5.00	0.285	1.0	2.6
Manganese	ug/L	03/09/2012 01:52	5.00	0.285	10.0	ND
800258-005 Manganese	ug/L	03/09/2012 01:59	5.00	0.285	10.0	ND
800258-006 Arsenic	ug/L	03/09/2012 02:07	5.00	0.285	1.0	2.1
Manganese	ug/L	03/09/2012 02:07	5.00	0.285	10.0	ND
800258-007 Manganese	ug/L	03/09/2012 02:14	5.00	0.285	10.0	ND
800258-008 Arsenic	ug/L	03/09/2012 02:21	5.00	0.285	1.0	2.1
Manganese	ug/L	03/09/2012 02:21	5.00	0.285	10.0	ND
800258-009 Arsenic	ug/L	03/09/2012 10:36	5.00	0.285	1.0	2.3
Manganese	ug/L	03/09/2012 10:36	5.00	0.285	10.0	ND
800258-010 Arsenic	ug/L	03/09/2012 12:03	5.00	0.285	1.0	2.0
Manganese	ug/L	03/09/2012 12:03	5.00	0.285	10.0	ND
800258-011 Arsenic	ug/L	03/09/2012 02:43	5.00	0.285	1.0	2.0
Manganese	ug/L	03/09/2012 02:43	5.00	0.285	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.184	0.200	92.2	70 - 130
Manganese	ug/L	1.00	0.197	0.200	98.3	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	105.	100.	105.	85 - 115
Manganese	ug/L	5.00	98.6	100.	98.6	85 - 115

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Metals by EPA 6020A, Dissolved

Batch 030912A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800258-003 Arsenic	ug/L	03/09/2012 16:46	5.00	0.285	1.0	2.3
800258-005 Arsenic	ug/L	03/09/2012 17:07	5.00	0.285	1.0	2.1
800258-007 Arsenic	ug/L	03/10/2012 01:49	5.00	0.285	1.0	2.0

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.181	0.200	90.4	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	102.	100.	102.	85 - 115

Matrix Spike — Lab ID = 800150-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	108.	102.(100.)	106.	75 - 125

Matrix Spike Duplicate — Lab ID = 800150-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	99.8	102.(100.)	97.7	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.68	10.0	96.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.77	10.0	97.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.67	10.0	96.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.1	10.0	101.	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	ND	0.00		

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Metals by EPA 6010B, Dissolved Batch 030812B

Parameter		Unit	Analyzed	DF	MDL	RL	Result
800258-001	Iron	ug/L	03/08/2012 17:46	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/08/2012 17:46	1.00	4.02	10.0	ND
	Selenium	ug/L	03/08/2012 17:46	1.00	3.22	10.0	ND
800258-002	Iron	ug/L	03/08/2012 17:52	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/08/2012 17:52	1.00	4.02	10.0	ND
	Selenium	ug/L	03/08/2012 17:52	1.00	3.22	10.0	ND
800258-003	Iron	ug/L	03/08/2012 17:58	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/08/2012 17:58	1.00	4.02	10.0	ND
	Selenium	ug/L	03/08/2012 17:58	1.00	3.22	10.0	ND
800258-004	Iron	ug/L	03/08/2012 18:04	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/08/2012 18:04	1.00	4.02	10.0	ND
	Selenium	ug/L	03/08/2012 18:04	1.00	3.22	10.0	ND
800258-005	Iron	ug/L	03/08/2012 18:10	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/08/2012 18:10	1.00	4.02	10.0	ND
	Selenium	ug/L	03/08/2012 18:10	1.00	3.22	10.0	ND
800258-006	Iron	ug/L	03/08/2012 18:16	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/08/2012 18:16	1.00	4.02	10.0	ND
	Selenium	ug/L	03/08/2012 18:16	1.00	3.22	10.0	ND
800258-007	Iron	ug/L	03/08/2012 18:22	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/08/2012 18:22	1.00	4.02	10.0	ND
	Selenium	ug/L	03/08/2012 18:22	1.00	3.22	10.0	ND
800258-008	Iron	ug/L	03/08/2012 18:28	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/08/2012 18:28	1.00	4.02	10.0	ND
	Selenium	ug/L	03/08/2012 18:28	1.00	3.22	10.0	ND
800258-009	Iron	ug/L	03/08/2012 18:34	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/08/2012 18:34	1.00	4.02	10.0	ND
	Selenium	ug/L	03/08/2012 18:34	1.00	3.22	10.0	ND
800258-010	Iron	ug/L	03/08/2012 18:41	1.00	1.34	20.0	ND
	Molybdenum	ug/L	03/08/2012 18:41	1.00	4.02	10.0	ND
	Selenium	ug/L	03/08/2012 18:41	1.00	3.22	10.0	ND
800258-011	Iron	ug/L	03/08/2012 19:05	1.00	1.34	20.0	26.2
	Molybdenum	ug/L	03/08/2012 19:05	1.00	4.02	10.0	ND
	Selenium	ug/L	03/08/2012 19:05	1.00	3.22	10.0	ND

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Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND
Selenium	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

Duplicate — Lab ID = 800150-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	15.7	0	0 - 20
Selenium	ug/L	1.00	ND	0.00	0	0 - 20
Molybdenum	ug/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	102.	100.	102.	85 - 115
Selenium	ug/L	1.00	95.1	100.	95.1	85 - 115
Molybdenum	ug/L	1.00	91.5	100.	91.5	85 - 115

Matrix Spike — Lab ID = 800150-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	114.	116.(100.)	98.0	75 - 125
Selenium	ug/L	1.00	103.	100.(100.)	103.	75 - 125
Molybdenum	ug/L	1.00	97.9	100.(100.)	97.9	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5300	5000	106.	90 - 110
Selenium	ug/L	1.00	4980	5000	99.5	90 - 110
Molybdenum	ug/L	1.00	4790	5000	95.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5040	5000	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4940	5000	98.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4950	5000	99.0	90 - 110

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pH by SM 4500-H B Batch 03PH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result	
800258-001 pH	pH	03/01/2012 10:00	1.00	0.0593	4.00	8.04	
800258-002 pH	pH	03/01/2012 10:02	1.00	0.0593	4.00	8.09	
800258-003 pH	pH	03/01/2012 10:05	1.00	0.0593	4.00	8.10	
800258-004 pH	pH	03/01/2012 10:07	1.00	0.0593	4.00	8.12	
800258-005 pH	pH	03/01/2012 10:10	1.00	0.0593	4.00	8.13	
800258-006 pH	pH	03/01/2012 10:12	1.00	0.0593	4.00	8.14	
800258-007 pH	pH	03/01/2012 10:15	1.00	0.0593	4.00	8.16	
800258-008 pH	pH	03/01/2012 10:20	1.00	0.0593	4.00	8.15	
800258-009 pH	pH	03/01/2012 10:22	1.00	0.0593	4.00	8.20	
800258-010 pH	pH	03/01/2012 10:30	1.00	0.0593	4.00	8.21	J
800258-011 pH	pH	03/01/2012 10:32	1.00	0.0593	4.00	8.12	

Duplicate — Lab ID = 800258-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	8.21	8.20	0.122	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.00	7.00	100.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.02	7.00	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.03	7.00	100.	90 - 110

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Total Suspended Solids by SM 2540 D Batch 03TSS12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800258-001 Total Suspended Solids	mg/L	03/06/2012	1.00	0.217	10.0	ND
800258-002 Total Suspended Solids	mg/L	03/06/2012	1.00	0.217	10.0	ND
800258-003 Total Suspended Solids	mg/L	03/06/2012	1.00	0.217	10.0	ND
800258-004 Total Suspended Solids	mg/L	03/06/2012	1.00	0.217	10.0	ND
800258-005 Total Suspended Solids	mg/L	03/06/2012	1.00	0.217	10.0	ND
800258-006 Total Suspended Solids	mg/L	03/06/2012	1.00	0.217	10.0	ND
800258-007 Total Suspended Solids	mg/L	03/06/2012	1.00	0.217	10.0	ND
800258-008 Total Suspended Solids	mg/L	03/06/2012	1.00	0.217	10.0	ND
800258-009 Total Suspended Solids	mg/L	03/06/2012	1.00	0.217	10.0	ND
800258-010 Total Suspended Solids	mg/L	03/06/2012	1.00	0.217	10.0	24.8
800258-011 Total Suspended Solids	mg/L	03/06/2012	1.00	0.217	10.0	ND

Method Blank

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

Duplicate — Lab ID = 800258-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Suspended Solids	mg/L	1.00	ND	0.00	0	0 - 5

Duplicate — Lab ID = 800258-011

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Suspended Solids	mg/L	1.00	ND	0.00	0	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Suspended Solids	mg/L	1.00	98.0	100.	98.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Suspended Solids	mg/L	1.00	96.0	100.	96.0	90 - 110

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Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for - Mona Nassimi
Manager, Analytical Services

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E2 SC

TRUESDAIL LABORATORIES INC.

Total Suspended Solids by SM 2540 D

Calculations

Batch: 03TSS12D

Date Analyzed: 03/06/12

Dish Number	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
D44	BLANK	1000	1.4086	1.4086	1.4086	0.0000	No	0.0000	0.0	2.5	ND
D47	800268-1	800	1.4132	1.4134	1.4134	0.0000	No	0.0002	0.2	3.1	ND
D48	-2	800	1.4069	1.4070	1.407	0.0000	No	0.0001	0.1	3.1	ND
D49	-3	800	1.4140	1.4142	1.4142	0.0000	No	0.0002	0.2	3.1	ND
D50	800269	1000	1.4146	1.4292	1.4292	0.0000	No	0.0146	14.6	2.5	14.6
D51	800271	300	1.4077	1.4524	1.4524	0.0000	No	0.0447	149.0	8.3	149.0
D52	800272-1	300	1.4146	1.5770	1.577	0.0000	No	0.1624	541.3	8.3	541.3
D53	-2	900	1.4113	1.4501	1.4501	0.0000	No	0.0388	43.1	2.8	43.1
D54	800258-1	900	1.4139	1.4144	1.4144	0.0000	No	0.0005	0.6	2.8	ND
D55	800258-2	900	1.4099	1.4101	1.4101	0.0000	No	0.0002	0.2	2.8	ND
D56	800258-3	900	1.4143	1.4147	1.4147	0.0000	No	0.0004	0.4	2.8	ND
D57	800258-4	900	1.4087	1.4090	1.409	0.0000	No	0.0003	0.3	2.8	ND
D58	800258-5	900	1.4075	1.4078	1.4078	0.0000	No	0.0003	0.3	2.8	ND
D59	800258-6	900	1.4080	1.4087	1.4087	0.0000	No	0.0007	0.8	2.8	ND
D60	800258-7	900	1.4100	1.4100	1.41	0.0000	No	0.0000	0.0	2.8	ND
D61	800258-8	900	1.3977	1.3981	1.3981	0.0000	No	0.0004	0.4	2.8	ND
D62	800258-8D	900	1.3978	1.3982	1.3982	0.0000	No	0.0004	0.4	2.8	ND
D63	800258-9	900	1.4028	1.4032	1.4032	0.0000	No	0.0004	0.4	2.8	ND
D64	800258-10	900	1.4107	1.4330	1.433	0.0000	No	0.0223	24.8	2.8	24.8
D65	800258-11	900	1.4073	1.4082	1.4082	0.0000	No	0.0009	1.0	2.8	ND
D66	800258-11D	900	1.4016	1.4025	1.4025	0.0000	No	0.0009	1.0	2.8	ND
D45	LCS-1	100	1.4048	1.4146	1.4146	0.0000	No	0.0098	98.0	25.0	98.0
D46	LCS-2	100	1.4120	1.4216	1.4216	0.0000	No	0.0096	96.0	25.0	96.0

Calculation as follows:

Non- Filterable residue (TSS), mg/L = $\left(\frac{A-B}{C}\right) x\ 1\ 0^6$

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)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	98	100	98.0%	90-110%	Yes
LCSD	96	100	96.0%	90-110%	Yes

LCS Recovery

$$P = \left(\frac{LC}{LT}\right) x\ 100$$

$$\%\ Difference = \frac{|A\ or\ B - C|}{C}\ x\ 100$$

$$where \quad C = \frac{A+B}{2}$$

A = Weght of the first sample in (g).
B = Weght of the second sample in (g).
C = Average weight in (g).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
800258-8	0.0004	0.0004	0.0%	≤5%	Yes
800258-11	0.0009	0.0009	0.0%	5%	Yes

GAUTAM
Analyst Printed Name

Analyst Signature

Hope T.
Reviewer Printed Name

Reviewer Signature

TRUESDAIL LABORATORIES, INC.

E2 SC

Alkalinity by SM 2320B

Calculations

Date of Analysis: 3/1/12

Analytical Batch: 03ALK12A
Matrix: Water
Date Calculated: 3/1/12

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO3	RL, ppm	Total Alkalinity Reported Value	HCO3 Conc. as $CaCO_3$ (ppm)	CO3 Alkalinity as $CaCO_3$ (ppm)	OH Alkalinity as $CaCO_3$ (ppm)	Low Alkalinity as $CaCO_3$ (<20ppm)
BLANK	7.00	50	0.02		0.0	0.04		0.8	5	ND	ND	ND	ND	
800258-1	7.02	50	0.02		0.0	5.55		111.0	5	111.0	111.0	ND	ND	
800258-2	8.19	50	0.02		0.0	6.55		131.0	5	131.0	131.0	ND	ND	
800258-3	8.20	50	0.02		0.0	6.00		120.0	5	120.0	120.0	ND	ND	
800258-4	8.21	50	0.02		0.0	6.15		123.0	5	123.0	123.0	ND	ND	
800258-5	8.20	50	0.02		0.0	6.10		122.0	5	122.0	122.0	ND	ND	
800258-6	8.23	50	0.02		0.0	5.60		112.0	5	112.0	112.0	ND	ND	
800258-7	8.21	50	0.02		0.0	6.50		130.0	5	130.0	130.0	ND	ND	
800258-8	8.21	50	0.02		0.0	5.80		116.0	5	116.0	116.0	ND	ND	
800258-9	8.25	50	0.02		0.0	6.00		120.0	5	120.0	120.0	ND	ND	
800258-10	8.23	50	0.02		0.0	6.15		123.0	5	123.0	123.0	ND	ND	
800258-10D	8.22	50	0.02		0.0	6.10		122.0	5	122.0	122.0	ND	ND	
800258-10MS	9.46	50	0.02	2.1	42.0	10.90		218.0	5	218.0	134.0	84	ND	
800258-10MSD	9.67	50	0.02	2.2	43.0	11.00		220.0	5	220.0	134.0	86	ND	
800258-11	8.08	50	0.02		0.0	6.55		131.0	5	131.0	131.0	ND	ND	
LCS	10.37	50	0.02	2.2	43.0	4.85		97.0	5	97.0	11.0	86	ND	
LCSD	10.00	50	0.02	2.2	44.0	4.75		95.0	5	95.0	7.0	88	ND	

Calculations as follows:

$$T \text{ or } P = \left(\frac{A \times N \times 50000}{mL \ sample} \right)$$

Where:

T = Total Alkalinity, mg CaCO3/L
P = Phenolphthalein Alkalinity, mg CaCO3/L
A = mL standard acid used
N = normality of standard acid

Low Alkalinity: as mg/L CaCO3 = $\frac{(2 \times B - C) \times N \times 50000}{\text{mL sample}}$

Where:
B = mL titrant to first recorded pH
C = Total mL titrant to reach pH 0.3 unit lower
N = Normality of standard acid

LCS = Laboratory Control Standard/Duplicate
MS/MSD = Matrix Spike/Duplicate
ND = Not Detected (below the reporting limit)

Blank Summary

Reporting Limit, RL	Measured Value, ppm	Accept Limit	QC Within Control?
5 ppm	0.8	<5	Yes

Laboratory Control Sample (LCS/LCSD) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	%Recovery	Accetance Limit	QC Within Control?
LCS	97	100	97.0%	90-110	Yes
LCSD	95	100	95.0%	90-110	Yes

Duplicate Determination Difference Summary

QC Std I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Accetance Limit	QC Within Control?
800258-10	123	122	0.8%	≤20%	Yes

Sample Matrix Spike (MS/MSD) Summary

Lab Number	Conc of Unspk spl	Dil Factor	Added Spk Conc	MS/MSD Amt	Measrd Conc of Spk Spl	Theor Conc of Spk Spl	MS/MSD %Rec	MS Accept Limit	QC Within Control?	RPD	RPD Accept Limit	QC Within Control?
800240-10	123	1	100	100	218	223.00	95%	75-125	Yes	0.5%	≤20%	Yes
	123	1	100	100	220	223.00	97%		Yes			

Alk_2012.xls Kim Hazza

Hope T.

054

RMP-185 TLI #2

800258

CH2MHILL

CHAIN OF CUSTODY RECORD

2/29/2012 3:08:11 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.RM
Task Order
Project 2012-RMP-185
Turnaround Time 10 Days
Shipping Date: 2/23/2012
COC Number: RMP-185

	Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter
	Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C
	Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA	NA
	Holding Time:	28	28	180	180	180	2	2	2	2	2
		Cr6 (E218.6 – river) Field Filtered	Field QC Cr6 (E218.6–river)	Metals (6010B) Total Fe	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo	Metals (6020AFF) Field Filtered Chromium	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	PH (SM4500HB)	Alkalinity (SM2320B)	TSS (SM2540)

*Where provided with multiple bottles for Cr6 + diss. metals, please analyze 1 + hold 2

	DATE	TIME	Matrix	Cr6 (E218.6 – river) Field Filtered	Field QC Cr6 (E218.6–river)	Metals (6010B) Total Fe	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo	Metals (6020AFF) Field Filtered Chromium	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	PH (SM4500HB)	Alkalinity (SM2320B)	TSS (SM2540)	Number of Containers	pH fo - 6020A/6010B COMMENTS
-1 C-CON-D-185	2/29/2012	11:18	Water	X		X	X	X	X	X	X	X	X	~~10~~	9 BW
-2 C-CON-S-185	2/29/2012	11:33	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
C-MW-82-185	2/29/2012	10:18	Water		X									1	Hold
C-MW-83-185	2/29/2012	12:02	Water		X									1	Hold
-3 C-NR1-D-185	2/29/2012	12:09	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-4 C-NR1-S-185	2/29/2012	12:25	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-5 C-NR3-D-185	2/29/2012	13:02	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-6 C-NR3-S-185	2/29/2012	13:18	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-7 C-NR4-D-185	2/29/2012	13:50	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-8 C-NR4-S-185	2/29/2012	14:05	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-9 R-19-185	2/29/2012	10:25	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
-10 R-28-185	2/29/2012	10:02	Water	X		X	X	X	X	X	X	X	X	~~10~~	9
RMP-AB2-185	2/29/2012	9:55	Water		X									1	Hold
11 RRB-185	2/29/2012	10:48	Water	X		X	X	X	X	X	X	X	X	~~10~~	9

pu=2

pu=2

pu=2

For Sample Conditions See Form Attached

ALERT !! Level III QC

	Signatures	Date/Time
Approved by		2-29-12
Sampled by		1530
Relinquished by	[signature]	2-29-12
Received by	B. Dayag	1530
Relinquished by	B. Dayag	2000
Received by	[signature]	2/29/12 21:00

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: Feb 28-March 1, 2012

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
3/1/12	800258-1	9.5	N/A	N/A	N/A	[illegible]
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
3/2/12	800290-1	7	5 mL	9.5	3:30 pm	[illegible]

C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

Turbidity/pH Check

	Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
DS	800239 (1-2)	<1	<2	2/29/12	ES	yes	3010 A
T	800240 (1-12)	<1	<2	↓	↓	↓	↓
D	800240 (1-14)	↓	↓	↓	↓	↓	↓
	800257	<1	<2	3/2/12		NO	—
	800284	↓	↓	↓	↓	↓	—
	800286	↓	↓	↓	↓	↓	—
	800287 (1-3	>1	>2	3/2/12		yes	3010A
	800285	↓	↓	↓	↓	↓	↓
	800262	↓	↓	↓	↓	↓	↓
	800275	↓	↓	↓	↓	↓	↓
	800289	<1	>2	3/2/12	ES	NO	—
	800294 (1,2,4)	<1	>2	3/5/12	BE	No	yes 15:15
	800186	Solid	—	3/6/12	M.M	yes	TTLC
	800303	↓	—	↓	↓	↓	↓
D	800348 (1-2)	<1	>2	3/8/12	M.M	yes	3010A
T	800349 (1-2	<1	<2	3/8/12	M.M	yes	3010A
	800298	>1	<2	3/8/12	M.M	yes	3010A
	800321	↓	↓	↓	↓	↓	↓
	800377	↓	↓	↓	↓	↓	↓
	800376	>1	<2	3/8/12	ES	yes	3010A
	800358-10	↓	↓	↓	↓	↓	↓
	800394	>1	<2	3/8/12	MM	yes	3010A
	800320-10, -23	<1	>2	3/9/12	KK	NO	yes @ 11:25 am
	800337	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800339 (1-3)	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800351 (-7-9)	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800358-2	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	~~800372 (10-12)~~	KK 3/9/12					
	800372 (10-12)	<1	>2	3/9/12	KK	NO	yes @ 11:35 am
	800391 (1-10)	<1	>2	3/9/12	KK	NO	yes @ 11:40 am
	800392 (1-10)	<1	>2	3/9/12	KK	No	yes @ 12 pm
	800395	<1	>2	3/9/12	KK	NO	yes @ 12 pm
	800411 (1-4)	<1	>2	3/9/12	KK	NO	yes @ 12 pm
	800419 (1-20)	<1	>2	3/12/12	BE	NO	yes 12:35 pm
	800419 (1-3)	<1	>2	↓	↓	↓	↓
	800421 (-1)	<1	<2	3/11/12	M.M	yes	3010 A
	800427 (1,2,4)	<1	>2	3/12/12	BE	NO	yes 13:35
T	800258 (1-11)	<1	<2	3/12/12	BE	yes	3010 A
D	800258 (1-11)	<1	<2	↓	↓	↓	↓
	800458 (1-6)	<1	<2	3/14/12	BE	↓	↓
T	800460	<1	<2	↓	↓	↓	↓
	800476-5	<1	>2	3/14/12	ES	No	—
	800462	<1	<2			↓	—
	800463	>1	↓	↓	↓	yes	3010A
	800465	↓	↓	↓	↓	↓	↓
	800486 (1-11, 12)	<1	>2	3/14/12	BE	NO	yes 15 pm

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 1202258

Date Delivered: 02 / 29 12 **Time:** 21:00 **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)? 3.3 °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
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: Lidda

ALERT !! Level III QC

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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 20, 2012

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-192, GROUNDWATER MONITORING PROJECT, TLI NO.: 800348

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-192 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 6, 2012, 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.

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

Michael Ngo
Quality Assurance/Quality Control Officer

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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.: 424973.01.DM

Laboratory No.: 800348
Date: March 20, 2012
Collected: March 6, 2012
Received: March 6, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 200.8	Total Dissolved Chromium	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	George Wahba
SM 3500-CrB	Hexavalent Chromium	Jenny Tankunakorn

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

Laboratory No.: 800348
Date Received: March 6, 2012

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800348-001	PE-01-192	E120.1	NONE	3/6/2012	13:21	EC	4910	umhos/cm	2.00
800348-001	PE-01-192	E200.8	LABFLT-digested	3/6/2012	13:21	Chromium	9.0	ug/L	1.0
800348-001	PE-01-192	E218.6	LABFLT	3/6/2012	13:21	Chromium, hexavalent	7.9	ug/L	0.20
800348-001	PE-01-192	SM2540C	NONE	3/6/2012	13:21	Total Dissolved Solids	2960	mg/L	125
800348-002	TW-03D-192	E120.1	NONE	3/6/2012	13:26	EC	8560	umhos/cm	2.00
800348-002	TW-03D-192	E200.8	LABFLT-digested	3/6/2012	13:26	Chromium	1250	ug/L	2.0
800348-002	TW-03D-192	SM2540C	NONE	3/6/2012	13:26	Total Dissolved Solids	5300	mg/L	250
800348-002	TW-03D-192	SM3500-CrB	LABFLT	3/6/2012	13:26	Chromium, hexavalent	1040	ug/L	262

ND: Non Detected (below reporting limit)

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

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REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project Number: 424973.01.DM
P.O. Number: 424973.01.DM
Release Number:

Laboratory No. 800348

Printed 3/21/2012
Revised

Samples Received on 3/6/2012 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-192	800348-001	03/06/2012 13:21	Water
TW-03D-192	800348-002	03/06/2012 13:26	Water

Specific Conductivity - EPA 120.1 Batch 03EC12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800348-001 Specific Conductivity	umhos/cm	03/09/2012	1.00	0.0950	2.00	4910
800348-002 Specific Conductivity	umhos/cm	03/09/2012	1.00	0.0950	2.00	8560

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7830	7830	0.00	0 - 10

Lab Control Sample

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	699	706	99.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	1000	998	100.	90 - 110

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Chrome VI by EPA 218.6 Batch 03CrH12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800348-001 Chromium, Hexavalent	ug/L	03/07/2012 13:20	1.05	0.0260	0.20	7.9

Method Blank

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

Duplicate — Lab ID = 800332-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	1.12	1.13	0.577	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.213	0.200	106.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.84	5.00	96.7	90 - 110

Matrix Spike — Lab ID = 800332-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.55	6.43(5.30)	102.	90 - 110

Matrix Spike — Lab ID = 800348-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	18.2	18.5(10.6)	97.8	90 - 110

Matrix Spike — Lab ID = 800349-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.16	5.42(5.25)	95.2	90 - 110

Matrix Spike — Lab ID = 800349-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.10	1.19(1.06)	91.7	90 - 110

Matrix Spike — Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	52.5	1800	1860(1050)	94.7	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.84	5.00	96.8	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.99	10.0	99.9	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.81	10.0	98.1	95 - 105

Chromium, Hexavalent by SM 3500-Cr B

Batch 03CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800348-002 Chromium, Hexavalent	ug/L	03/09/2012 12:28	26.2	39.3	262	1040

Method Blank

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

Duplicate — Lab ID = 800348-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	1040	1040	0.385	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	99.7	100.	99.7	90 - 110

Matrix Spike — Lab ID = 800348-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	3660	3660(2620)	100.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	58.8	60.0	98.0	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	58.8	60.0	98.0	90 - 110

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Printed 3/21/2012
Revised

Total Dissolved Solids by SM 2540 C

Batch 03TDS12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800348-001 Total Dissolved Solids	mg/L	03/07/2012	1.00	0.400	125	2960
800348-002 Total Dissolved Solids	mg/L	03/07/2012	1.00	0.400	250.	5300

Method Blank

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

Duplicate

Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4620	4710	1.93	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	495	500.	99.0	90 - 110

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Metals by EPA 200.8, Dissolved Batch 031312A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800348-001 Chromium	ug/L	03/13/2012 16:28	5.00	0.110	1.0	9.0
800348-002 Chromium	ug/L	03/13/2012 17:33	10.0	0.220	2.0	1250

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Duplicate — Lab ID = 800348-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	8.92	9.00	0.915	0 - 20
Manganese	ug/L	5.00	40.1	39.5	1.58	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.229	0.200	114.	70 - 130
Manganese	ug/L	1.00	0.214	0.200	107.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	97.7	100.	97.7	85 - 115
Manganese	ug/L	5.00	93.2	100.	93.2	85 - 115

Matrix Spike — Lab ID = 800348-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	108.	109(100.)	99.5	75 - 125
Manganese	ug/L	5.00	133.	140.(100.)	93.5	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.88	10.0	98.8	90 - 110
Manganese	ug/L	1.00	9.56	10.0	95.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.52	10.0	95.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.26	10.0	92.6	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.98	10.0	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.15	10.0	91.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.53	10.0	95.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.24	10.0	92.4	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 A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.59	10.0	95.9	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.96	10.0	99.6	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.64	10.0	96.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.70	10.0	97.0	80 - 120

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Printed 3/21/2012
Revised

Serial Dilution

Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	802.	811	1.09	0 - 10

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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E2 SC

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 03TDS12C

Date Calculated: 3/9/12

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	110.3671	110.3673	110.3671	0.0002	No	0.0000	0.0	25.0	ND	1
800320-16	50	50.5020	50.5299	50.5295	0.0004	No	0.0275	550.0	50.0	550.0	1
800330-10	100	75.7663	75.8215	75.8211	0.0004	No	0.0548	548.0	25.0	548.0	1
800330-11	100	76.5136	76.5685	76.5681	0.0004	No	0.0545	545.0	25.0	545.0	1
800351-5	100	72.5001	72.5318	72.5318	0.0000	No	0.0317	317.0	25.0	317.0	1
800348-1	20	47.5312	47.5903	47.5903	0.0000	No	0.0591	2955.0	125.0	2955.0	1
800348-2	10	75.3043	75.3577	75.3573	0.0004	No	0.0530	5300.0	250.0	5300.0	1
800349-1	10	49.2576	49.3026	49.3022	0.0004	No	0.0446	4460.0	250.0	4460.0	1
800349-2	10	48.0118	48.059	48.0589	0.0001	No	0.0471	4710.0	250.0	4710.0	1
800349-2D	10	49.6834	49.7299	49.7296	0.0003	No	0.0462	4620.0	250.0	4620.0	1
LCS	100	111.1855	111.2352	111.235	0.0002	No	0.0495	495.0	25.0	495.0	1

Calculation as follows:

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

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

WetChem TDS_0810.xls

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 03TDS12C

Date Calculated: 3/9/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
800320-16	1008	0.55	655.2	0.84
800330-10	922	0.59	599.3	0.91
800330-11	904	0.60	587.6	0.93
800351-5	571	0.56	371.15	0.85
800348-1	4900	0.60	3185	0.93
800348-2	8560	0.62	5564	0.95
800349-1	7560	0.59	4914	0.91
800349-2	7870	0.60	5115.5	0.92
800349-2D	7870	0.59	5115.5	0.90
LCS				

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CHAIN OF CUSTODY RECORD

[IM3Plant-EW-192] 800348

COC Number
TURNAROUND TIME 10 Days
DATE 03/06/12 PAGE 1 OF 1

COMPANY CH2M HILL /E2
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 424973.01.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
1 PE-01-192	03/06/12	13:21	Ground water	X		X	X	X	4	pH=6 (200.7)
2 TW-03D-192	03/06/12	13:26	Ground water	X	X	X	X		4	
									8	TOTAL NUMBER OF CONTAINERS

ALERT !! Level III QC

For Sample Conditions See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD

Signature	Printed Name	Company/ Agency	Date/ Time
(Relinquished) C.Knight	C.KNIGHT	CH2MHILL	3-6-12 15:17
(Received) [signature]	Hipolito	TLI	3-6-12 15:17
(Relinquished) [signature]	Hipolito	TLI	3-6-12 21:00
(Received) Linda	Shalamina	TLI	3/6/12 21:00
(Relinquished)			
(Received)			

SAMPLE CONDITIONS
RECEIVED COOL ☑ WARM ☐ 3.8°C
CUSTODY SEALED YES ☐ NO ☒

SPECIAL REQUIREMENTS:

038

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
3/1/12	800258-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
3/2/12	800290-1	7	5 mL	9.5	3:30 pm	GW
3/6/12	800332-1	7	5mL	9.5	4:00 pm	GW
	-3				4:10 pm	
	-4				4:15 pm	
	-5				4:25 pm	
3/7/12	800348-1	7	5 mL	9.5	9:30 Am	GW
	-2				9:40 Am	
3/7/12	800349-1	7	5 mL	9.5	11:30 Am	GW
	-2				11:40 Am	
3/7/12	800374-1	7	5 mL	9.5	4:30 pm	GW
	-3				4:40 pm	
3/8/12	800396-1	7	5 mL	9.5	3:30 pm	GW
3/9/12	800421-1	9.5	N/A	N/A	N/A	GW
	-2					
3/13/12	800443-1	7	5 mL	9.5	3:55 pm	GW
	-3				4:05 pm	
3/14/12	800460	7	5 mL	9.5	9 Am	GW

GW

Turbidity/pH Check

	Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
Dis	800239 (1-2)	<1	<2	2/29/12	ES	yes	3010 A
T	800240 (1-12)	<1	<2	↓	↓	↓	↓
D	800240 (1-14)	↓	↓	↓	↓	↓	↓
	800257	<1	<2	3/2/12		NO	—
	800284	↓	↓	↓	↓	↓	—
	800286	↓	↓	↓	↓	↓	—
	800287 (1-3	>1	>2	3/2/12		yes	3010A
	800285	↓	↓	↓	↓	↓	↓
	800262	↓	↓	↓	↓	↓	↓
	800275	↓	↓	↓	↓	↓	↓
	800289	<1	>2	3/2/12	ES	NO	—
	800294 (1,2,4)	<1	>2	3/5/12	BE	No	yes 15:15
	800186	Solid	—	3/6/12	M.M	yes	TTLC
	800303	↓	—	↓	↓	↓	↓
D	800348 (1-2)	<1	>2	3/8/12	M.M	yes	3010A
T	800349 (1-2	<1	<2	3/8/12	M.M	yes	3010A
	800298	>1	<2	3/8/12	M.M	yes	3010A
	800321	↓	↓	↓	↓	↓	↓
	800377	↓	↓	↓	↓	↓	↓
	800376	>1	<2	3/8/12	ES	yes	3010A
	800358-10	↓	↓	↓	↓	↓	↓
	800394	>1	<2	3/8/12	MM	yes	3010A
	800320-16,-23	<1	>2	3/9/12	KK	NO	yes @ 11:25 am
	800337	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800339 (1-3)	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800351 (-7-9)	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800358-2	<1	>2	3/9/12	KK	NO	yes @ 11:35 am
	~~800372 (10-12)~~	KK 3/9/12					
	800372 (10-12)	<1	>2	3/9/12	KK	NO	yes @ 11:35 am
	800391 (1-10)	<1	>2	3/9/12	KK	NO	yes @ 11:40 am
	800392 (1-10)	<1	>2	3/9/12	KK	No	yes @ 12 pm
	800395	<1	>2	3/9/12	KK	NO	yes @ 12 pm
	800411 (1-4)	<1	>2	3/9/12	KK	NO	yes @ 12 pm
	800419 (1-20)	<1	>2	3/12/12	BE	NO	yes 12:35 pm
	800419 (1-3)	<1	>2	↓	↓	↓	↓
	800421 (-1)	<1	<2	3/11/12	M.M	yes	3010 A
	800427 (1,2,4)	<1	>2	3/12/12	BB	NO	yes 13:35

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 800348

Date Delivered: 03/06/12 **Time:** 21:00 **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)? 3.8 °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_____
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L. Shabunina

ALERT !! Level III QC

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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March 6, 2012

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

Dear Mr. Duffy:

SUBJECT: REVISED CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-191, GROUNDWATER MONITORING PROJECT, TLI NO.: 900055

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-191 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 7, 2012, 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.

Due to analyst error, the results for Total Dissolved Solids by SM 2540C were reported incorrectly. It was determined that the analyst inadvertently switched the sample I.D.s during the analysis. The sample I.D.s and results have been corrected and the revised report pages and raw data are attached.

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

Michael Ngo
Quality Assurance/Quality Control Officer

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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.: 424973.01.DM

Laboratory No.: 900055
Date: February 29, 2012
Collected: February 7, 2012
Received: February 7, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 200.8	Total Dissolved Chromium	Bita Emami
EPA 218.6	Hexavalent Chromium	George Wahba / Maksim Gorbunov
SM 3500-CrB	Hexavalent Chromium	Jenny Tankunakorn

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

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 900055
Date Received: February 7, 2012
Revision 1; March 6, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
900055-001	PE-01-191	E200.8	LABFLT-digested	2/7/2012	8:40	Chromium	9.9	ug/L	1.0
900055-001	PE-01-191	E218.6	LABFLT	2/7/2012	8:40	Chromium, hexavalent	9.2	ug/L	0.20
900055-001	PE-01-191	E120.1	NONE	2/7/2012	8:40	EC	4840	umhos/cm	2.00
900055-001	PE-01-191	SM2540C	NONE	2/7/2012	8:40	Total Dissolved Solids	2840	mg/L	125
900055-002	TW-03D-191	E200.8	LABFLT-digested	2/7/2012	8:40	Chromium	1040	ug/L	5.0
900055-002	TW-03D-191	SM3500-CrB	LABFLT	2/7/2012	8:40	Chromium, hexavalent	987	ug/L	250
900055-002	TW-03D-191	E120.1	NONE	2/7/2012	8:40	EC	8650	umhos/cm	2.00
900055-002	TW-03D-191	SM2540C	NONE	2/7/2012	8:40	Total Dissolved Solids	5240	mg/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.

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.

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REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project Number: 424973.01.DM
P.O. Number: 424973.01.DM
Release Number:

Laboratory No. 900055

Printed 3/6/2012
Revised

Samples Received on 2/7/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-191	900055-001	02/07/2012 08:40	Water
TW-03D-191	900055-002	02/07/2012 08:40	Water

Specific Conductivity - EPA 120.1

Batch 02EC12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900055-001 Specific Conductivity	umhos/cm	02/09/2012	1.00	0.0950	2.00	4840
900055-002 Specific Conductivity	umhos/cm	02/09/2012	1.00	0.0950	2.00	8650

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 900055-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	4830	4840	0.207	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	690.	706	97.7	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	695	706	98.4	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	673	706	95.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	935	997	93.8	90 - 110

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Printed 3/6/2012
Revised

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	940.	997	94.3	90 - 110

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Chrome VI by EPA 218.6

Batch 02CrH12I

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900055-001 Chromium, Hexavalent	ug/L	02/09/2012 13:59	1.00	0.0260	0.20	9.2

Method Blank

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

Duplicate — Lab ID = 999943-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	2.52	2.71	7.07	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.215	0.200	108.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.14	5.00	103.	90 - 110

Matrix Spike — Lab ID = 900055-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	19.0	19.3(10.0)	97.4	90 - 110

Matrix Spike — Lab ID = 999943-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.86	1.94(1.00)	91.4	90 - 110

Matrix Spike — Lab ID = 999943-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.98	6.47(5.00)	90.2	90 - 110

Matrix Spike — Lab ID = 999943-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.78	7.71(5.00)	101.	90 - 110

Matrix Spike — Lab ID = 999943-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.87	6.14(5.00)	94.6	90 - 110

Matrix Spike — Lab ID = 999943-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.23	6.72(5.00)	90.1	90 - 110

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Matrix Spike — Lab ID = 999943-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.50	6.43(5.00)	101.	90 - 110

Matrix Spike — Lab ID = 999943-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.09	7.06(5.00)	100.	90 - 110

Matrix Spike — Lab ID = 999943-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.91	6.04(5.00)	97.4	90 - 110

Matrix Spike — Lab ID = 999943-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.00	1.03(1.00)	97.5	90 - 110

Matrix Spike — Lab ID = 999946-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.19	7.40(5.00)	95.9	90 - 110

Matrix Spike — Lab ID = 999946-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.41	7.57(5.00)	96.8	90 - 110

Matrix Spike — Lab ID = 999946-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.50	1.57(1.00)	93.9	90 - 110

Matrix Spike — Lab ID = 999946-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.06	9.44(5.00)	92.4	90 - 110

Matrix Spike — Lab ID = 999946-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.90	6.04(5.00)	97.1	90 - 110

Matrix Spike — Lab ID = 999946-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.23	6.23(5.00)	100.	90 - 110

Matrix Spike — Lab ID = 999946-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.04(1.00)	96.9	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.81	5.00	96.1	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project

Project Number: 424973.01.DM Printed 3/6/2012
Revised

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.70	10.0	97.0	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.56	10.0	95.6	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.94	10.0	99.4	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.54	10.0	95.4	95 - 105

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Chromium, Hexavalent by SM 3500-Cr B

Batch 02Cr612A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900055-002 Chromium, Hexavalent	ug/L	02/17/2012 18:48	25.0	37.5	250.	987.

Method Blank

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

Duplicate — Lab ID = 900148-021

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	3520	3460	1.67	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	97.3	100.	97.3	90 - 110

Matrix Spike — Lab ID = 900148-021

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	5930	5960(2500)	98.8	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	58.8	60.0	98.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	57.6	60.0	96.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	57.6	60.0	96.0	90 - 110

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Printed 3/6/2012
Revised

Total Dissolved Solids by SM 2540 C

Batch 02TDS12H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900055-001 Total Dissolved Solids	mg/L	02/08/2012	1.00	0.400	125	2840
900055-002 Total Dissolved Solids	mg/L	02/08/2012	1.00	0.400	250.	5240

Method Blank

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

Duplicate

Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4910	4700	4.37	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	490.	500.	98.0	90 - 110

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Metals by EPA 200.8, Dissolved Batch 021712A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900055-001 Chromium	ug/L	02/17/2012 23:02	5.00	0.110	1.0	9.9
900055-002 Chromium	ug/L	02/17/2012 23:30	25.0	0.550	5.0	1040

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Duplicate — Lab ID = 900055-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	10.2	9.90	2.89	0 - 20
Manganese	ug/L	5.00	38.5	37.7	2.05	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.212	0.200	106.	70 - 130
Manganese	ug/L	1.00	0.978	1.00	97.8	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	104.	100.	104.	85 - 115
Manganese	ug/L	5.00	100.0	100.	100.0	85 - 115

Matrix Spike — Lab ID = 900055-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	115.	110.(100.)	105.	75 - 125
Manganese	ug/L	5.00	140.	138.(100.)	103.	75 - 125

Matrix Spike Duplicate — Lab ID = 900055-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	115.	110.(100.)	105.	75 - 125
Manganese	ug/L	5.00	138.	138.(100.)	99.9	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.4	10.0	104.	90 - 110
Manganese	ug/L	1.00	9.84	10.0	98.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.72	10.0	97.2	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.97	10.0	99.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.92	10.0	99.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.80	10.0	98.0	90 - 110
Manganese	ug/L	1.00	9.72	10.0	97.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.72	10.0	97.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.83	10.0	98.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.59	10.0	95.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.86	10.0	98.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.61	10.0	96.1	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 424973.01.DM Printed 3/6/2012
Revised

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.67	10.0	96.7	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 A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.73	10.0	97.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.88	10.0	98.8	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.63	10.0	96.3	80 - 120

Serial Dilution Lab ID = 900055-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	125	1070	1040	3.03	0 - 10

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Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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Total Dissolved Solids by SM 2540 C

Revised 3/6/12

Calculations

Batch: 02TDS12H

Date Calculated: 2/16/12

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	76.5513	76.5515	76.5514	0.0001	No	0.0001	1.0	25.0	ND	1
900015-4	50	47.9650	48.0267	48.0264	0.0003	No	0.0614	1228.0	50.0	1228.0	1
900015-5	20	50.9623	51.0314	51.0313	0.0001	No	0.0690	3450.0	125.0	3450.0	1
900015-6	50	49.2606	49.2964	49.296	0.0004	No	0.0354	708.0	50.0	708.0	1
900033-1	50	68.3188	68.351	68.3506	0.0004	No	0.0318	636.0	50.0	636.0	1
900033-2	100	76.5547	76.5833	76.583	0.0003	No	0.0283	283.0	25.0	283.0	1
900033-3	100	65.7030	65.7341	65.734	0.0001	No	0.0310	310.0	25.0	310.0	1
900055-2	10	47.9054	47.9579	47.9578	0.0001	No	0.0524	5240.0	250.0	5240.0	1
900055-1	20	49.5260	49.5831	49.5828	0.0003	No	0.0568	2840.0	125.0	2840.0	1
900056-1	10	51.4348	51.4761	51.4758	0.0003	No	0.0410	4100.0	250.0	4100.0	1
900056-2	10	51.0760	51.1234	51.1230	0.0004	No	0.0470	4700.0	250.0	4700.0	1
900056-2D	10	49.4725	49.5216	49.5216	0.0000	No	0.0491	4910.0	250.0	4910.0	1
LCS	100	111.1885	111.2377	111.2375	0.0002	No	0.0490	490.0	25.0	490.0	1
900039-1	100	71.0907	71.1445	71.1444	0.0001	No	0.0537	537.0	25.0	537.0	1
900039-2	100	68.5659	68.6231	68.6227	0.0004	No	0.0568	568.0	25.0	568.0	1
900039-3	50	50.5032	50.5332	50.5328	0.0004	No	0.0296	592.0	50.0	592.0	1
900042-10	100	66.7206	66.7774	66.7774	0.0000	No	0.0568	568.0	25.0	568.0	1
900042-11	100	69.3459	69.4032	69.4031	0.0001	No	0.0572	572.0	25.0	572.0	1
900066	100	74.9427	74.9773	74.9772	0.0001	No	0.0345	345.0	25.0	345.0	1
900090	490	105.2884	105.2931	105.2928	0.0003	No	0.0044	9.0	5.1	9.0	1
900095	100	67.7914	67.8490	67.8490	0.0000	No	0.0576	576.0	25.0	576.0	1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A-B}{C}\right) x\ 1\ 0^6$$

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

WelChem TDS_0810.xls

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Revised 3/6/12

Batch: 02TDS12H

Date Calculated: 2/16/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.55)	Measured TDS / Calc TDS <1.3
900015-4	1795	0.68	1166.75	1.05
900015-5	4740	0.73	3081	1.12
900015-6	1131	0.63	735.15	0.96
900033-1	1040	0.61	676	0.94
900033-2	438	0.65	284.7	0.99
900033-3	428	0.72	278.2	1.11
900055-2	8630	0.61	5609.5	0.93
900055-1	4890	0.58	3178.5	0.89
900056-1	7150	0.57	4647.5	0.88
900056-2	7870	0.60	5115.5	0.92
900056-2D	7870	0.62	5115.5	0.96
LCS				
900039-1	931	0.58	605.15	0.89
900039-2	931	0.61	605.15	0.94
900039-3	1019	0.58	662.35	0.89
900042-10	914	0.62	594.1	0.96
900042-11	920	0.62	598	0.96
900066	623	0.55	404.95	0.85
900090	16.4	0.55	10.66	0.84
900095	985	0.58	640.25	0.90

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-191]

900055

COC Number

TURNAROUND TIME 10 Days

DATE 02/07/12 PAGE 1 OF 1

COMPANY CH2M HILL /E2

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 424973.01.DM

SAMPLERS (SIGNATURE [signature]

ALERT !! Level III QC

	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-01-191	02/07/12	8:40	Ground water	X		X	X	X	4	pH = 6 300.7
-2	TW-03D-191	02/07/12	8:40	Ground water	X	X	X	X		4	
										8	TOTAL NUMBER OF CONTAINERS

For Sample Conditions See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD

	Signature	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	[signature]	[signature]	OMI	2-7-12 15:00
Signature (Received)	Rafael Davila	Rafael	T.L.I	2-7-12 15:00
Signature (Relinquished)	Rafael Davila	Rafael	T.L.I	2-7-12 21:30
Signature (Received)	[signature]	Shabunina	TLI	2/7/12 21:30
Signature (Relinquished)				
Signature (Received)				

SAMPLE CONDITIONS

RECEIVED COOL ☑ WARM ☐ 3.5°C °F

CUSTODY SEALED YES ☐ NO ☑

SPECIAL REQUIREMENTS:

042

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
2/2/12	999968-1	9.5	N/A	N/A	N/A	MG
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-12					
	999969-1					
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
2/8/12	900055-1	7	5 mL	9.5	8:10 AM	[illegible]
	900056-1	7	5 mL	9.5	8:15 AM	
	900056-2	7	5 mL	9.5	8:20 AM	

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
999950	>1	<2	02/03/12	M.M	Yes	3010A
999977						—
999978						—
999951 (1-2)					Yes	—
999911	<1	<2	02-06-12	LT/BE	NO	—
999951-(1)	>1	>2			Yes	Y 2/6/12
-2	<1	>2			NO	—
~~02/06/12~~	~~<1~~					
900015 (1-7)	<1	<2	02-06-12	M.M	Yes	—
900016 (1-5)						—
900017 (1-3,5-9)						—
900033 (1-5)	<1	<2	02-08-12	M.M	Yes	—
900055 (1-2)	<1	>2	02-08-12	M.M	Yes	Yes
900056 (1-2)	<1	>2				—
900057 (1-6)	<1	>2				—
900043	>1	<2	2/8/12	ES	yes	3010A
900014	>1	<2	2/8/12	M.M	Yes	3010A
900040						—
900079	>1	<2	2/9/12	MM	Yes	3010A
900075 (1-2)	>1	<2	2/9/12	M.M	Yes	3010A
900039 (1-3)	<1	>2	2/9/12	ES	No	yes @ 1:00 pm
041 (16,23						
052-1						
068 (10-12)						
076 (1-3)						
900147 (1-5)	<1	<2	2/14/12	M.M	Yes	3010A
900148 (1-4,6-11,						
13-17,19,21)						
900180	<1	>2	2/16/12	M.M	Yes	3010A
900181 (1,2,8	<1	<2				
-4-11-5	>1	<2				
900182 (1-6)	<1	<2				
800000 (1-4)						
800001	<1	<2	2/16/12	ES	NO	NO
800018 (1-4)	<1	<2				
800015	<1	<2				
800019	<1	<2				
900106 (1-4)	>2	<2			yes	3010A
900127						
900135						
900162						
900163						
900202						
900203						
900204					NO	—
800026	<1	>2	2/17/12	LT	NO	2/17 9:30 am Y
800023 (15-17)	<1	>2	2/17/12	M.M	Yes	3010A
800024		<2				
800025 (1-8)						

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 900055

Date Delivered: 02/07/12 **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? ☑Yes ☐No ☐N/A
   Temperature (if yes)? 3.5°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_____
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L. Skabunina

ALERT II Level III QC

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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

March 1, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-GMP-185-Q1, GROUNDWATER MONITORING PROJECT, TLI NO.: 900057

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-GMP-185-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 7, 2012, 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 discrepancy between the Total Dissolved Chromium (1.2 ug/L) and Hexavalent Chromium (ND<0.20 ug/L) results for sample MW-27-060-185, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers were digested and analyzed for Total Dissolved Chromium. The results were both ND<1.0 ug/L. The original digestate was re-analyzed for confirmation and yielded a result of ND<1.0 ug/L. The result from the re-digested Total Dissolved Chromium was reported as it more closely matched the Hexavalent Chromium result.

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

Michael Ngo
Quality Assurance/Quality Control Officer

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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.: 900057
Date Received: February 7, 2012

Project Name: PG&E Topock Project
Project No.: 423575.MP.02.GM
P.O. No.: 423575.MP.02.GM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
900057-001	MW-35-060-185	E218.6	FLDFLT	2/6/2012	15:01	Chromium, hexavalent	24.6	ug/L	1.0
900057-001	MW-35-060-185	SW6020	FLDFLT-digested	2/6/2012	15:01	Chromium	27.7	ug/L	1.0
900057-002	MW-101-185	E218.6	FLDFLT	2/7/2012	10:15	Chromium, hexavalent	77.8	ug/L	1.0
900057-002	MW-101-185	SW6020	FLDFLT-digested	2/7/2012	10:15	Chromium	89.9	ug/L	1.0
900057-003	MW-27-060-185	E218.6	FLDFLT	2/7/2012	12:25	Chromium, hexavalent	ND	ug/L	0.20
900057-003	MW-27-060-185	SW6020	FLDFLT-digested	2/7/2012	12:25	Chromium	ND	ug/L	1.0
900057-004	MW-27-085-185	E218.6	FLDFLT	2/7/2012	11:29	Chromium, hexavalent	ND	ug/L	1.0
900057-004	MW-27-085-185	SW6020	FLDFLT-digested	2/7/2012	11:29	Chromium	ND	ug/L	1.0
900057-005	MW-34-080-185	E218.6	FLDFLT	2/7/2012	9:18	Chromium, hexavalent	ND	ug/L	0.20
900057-005	MW-34-080-185	SW6020	FLDFLT-digested	2/7/2012	9:18	Chromium	ND	ug/L	1.0
900057-006	MW-34-100-185	E218.6	FLDFLT	2/7/2012	10:16	Chromium, hexavalent	76.6	ug/L	1.0
900057-006	MW-34-100-185	SW6020	FLDFLT-digested	2/7/2012	10:16	Chromium	84.9	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.

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TRUESDAIL LABORATORIES, INC.
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REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project Number: 423575.MP.02.GM
P.O. Number: 423575.MP.02.GM
Release Number:

Laboratory No. 900057

Printed 3/1/2012

Samples Received on 2/7/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
MW-35-060-185	900057-001	02/06/2012 15:01	Water
MW-101-185	900057-002	02/07/2012 10:15	Water
MW-27-060-185	900057-003	02/07/2012 12:25	Water
MW-27-085-185	900057-004	02/07/2012 11:29	Water
MW-34-080-185	900057-005	02/07/2012 09:18	Water
MW-34-100-185	900057-006	02/07/2012 10:16	Water

Chrome VI by EPA 218.6

Batch 02CrH12S

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900057-003 Chromium, Hexavalent	ug/L	02/18/2012 20:24	1.00	0.0260	0.20	ND
900057-005 Chromium, Hexavalent	ug/L	02/18/2012 20:44	1.00	0.0260	0.20	ND

Method Blank

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

Duplicate — Lab ID = 900033-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	3.11	3.16	1.57	0 - 20

Duplicate — Lab ID = 900033-006

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0133	0.0122	8.63	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.188	0.200	94.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.11	5.00	102.	90 - 110

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Matrix Spike — Lab ID = 900033-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.21	8.16(5.00)	101.	90 - 110

Matrix Spike — Lab ID = 900033-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.83	1.80(1.00)	103.	90 - 110

Matrix Spike — Lab ID = 900033-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.68	1.68(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 900033-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.75	1.72(1.00)	102.	90 - 110

Matrix Spike — Lab ID = 900033-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.13	8.00(5.00)	103.	90 - 110

Matrix Spike — Lab ID = 900033-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.01(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 900056-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.18	5.12(5.00)	101.	90 - 110

Matrix Spike — Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1800	1860(1000)	94.1	90 - 110

Matrix Spike — Lab ID = 900057-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.01(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 900057-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.906	1.00(1.00)	90.6	90 - 110

Matrix Spike — Lab ID = 900057-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.956	1.00(1.00)	95.6	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

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Chrome VI by EPA 218.6

Batch 02CrH12W

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900057-001 Chromium, Hexavalent	ug/L	02/23/2012 14:29	5.00	0.130	1.0	24.6
900057-002 Chromium, Hexavalent	ug/L	02/23/2012 14:39	5.00	0.130	1.0	77.8
900057-004 Chromium, Hexavalent	ug/L	02/23/2012 17:05	5.00	0.130	1.0	ND
900057-006 Chromium, Hexavalent	ug/L	02/23/2012 17:26	5.00	0.130	1.0	76.6

Method Blank

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

Duplicate — Lab ID = 900181-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0431	0.0449	4.09	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.217	0.200	108.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.93	5.00	98.7	90 - 110

Matrix Spike — Lab ID = 900057-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	51.2	49.6(25.0)	106.	90 - 110

Matrix Spike — Lab ID = 900057-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	178.	178.(100.)	99.8	90 - 110

Matrix Spike — Lab ID = 900057-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.92	5.00(5.00)	98.4	90 - 110

Matrix Spike — Lab ID = 900057-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.88	5.00(5.00)	97.7	90 - 110

Matrix Spike — Lab ID = 900057-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	176.	177.(100.)	99.9	90 - 110

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Metals by EPA 6020A, Dissolved Batch 022412A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900057-003 Chromium	ug/L	02/24/2012 16:49	5.00	0.110	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 800057-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	2.03	1.89	7.14	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.193	0.200	96.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	106.	100.	106.	85 - 115

Matrix Spike — Lab ID = 800057-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	108.	102.(100.)	106.	75 - 125

Matrix Spike Duplicate — Lab ID = 800057-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	106	102.(100.)	104.	75 - 125

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	10.5	10.0	105.	90 - 110

MRCVS - Primary

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	10.0	10.0	100.	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 021712A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900057-001 Chromium	ug/L	02/18/2012 00:57	5.00	0.110	1.0	27.7
900057-002 Chromium	ug/L	02/18/2012 01:04	5.00	0.110	1.0	89.9
900057-004 Chromium	ug/L	02/18/2012 01:41	5.00	0.110	1.0	ND
900057-005 Chromium	ug/L	02/18/2012 01:48	5.00	0.110	1.0	ND
900057-006 Chromium	ug/L	02/18/2012 01:55	5.00	0.110	1.0	84.9

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 900055-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	10.2	9.90	2.89	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.212	0.200	106.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	104.	100.	104.	85 - 115

Matrix Spike — Lab ID = 900055-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	115.	110.(100.)	105.	75 - 125

Matrix Spike Duplicate — Lab ID = 900055-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	115.	110.(100.)	105.	75 - 125

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	9.72	10.0	97.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	90 - 110

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Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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900057

CH2MHILL

CHAIN OF CUSTODY RECORD

2/7/2012 2:24:05 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/7/2012
COC Number: 2

Container:	250 ml Poly	2x250 ml Poly	2x500 ml Poly	500 ml Poly
Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C
Filtered:	Field	Field	Field	Field
Holding Time:	28	28	180	180

* Where provided w/multiple containers for the same analyte, please analyze one + hold one

ALERT !!
Level III QC

	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Metals (6020AFF) Field Filtered Chromium	Metals (6020AFF) Field Filtered Chromium		Number of Containers	COMMENTS
-1 MW-35-060-185	2/6/2012	15:01	Water	X			X		2	pH=2
MW-80-185	2/6/2012	15:50	Water	X					1	Hold
-2 MW-101-185	2/7/2012	10:15	Water	X			X		2	pH=2
-3 MW-27-060-185	2/7/2012	12:25	Water		X	X			4	* pH=2
MW-27-060-185-EB	2/7/2012	11:47	Water	X			X		2	
-4 MW-27-085-185	2/7/2012	11:29	Water		X	X			4	* pH=2
MW-27-085-185-EB	2/7/2012	10:45	Water	X			X		2	
-5 MW-34-080-185	2/7/2012	9:18	Water		X	X			4	* pH=2
MW-34-080-185-EB	2/7/2012	7:50	Water	X			X		2	
-6 MW-34-100-185	2/7/2012	10:16	Water	X			X		2	pH=2
								TOTAL NUMBER OF CONTAINERS	25	

pH for 6020A

Or Sample Conditions
See Form Attached

	Signatures	Date/Time
Approved by		2-7-12 1500
Sampled by		
Relinquished by		
Received by	Rafael Davila	2-7-12 15:00
Relinquished by	Rafael Davila	2-7-12 21:30
Received by	Linda Shaguning	2/7/12 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 6-22, 2012

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
2/8/12	900057-1	9.5	N/A	N/A	N/A	MG
	-2					
	-3					
	-4					
	-5					
	-6					

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
999950	>1	<2	02/03/12	M.M	Yes	3010A
999977	↓	↓	↓	↓	↓	– ↓
999978						–
999511 (1-2)	↓	↓	↓	↓	Yes	–
999911	<1	<2	02-06-12	LT/BE	NO	–
999951-(1-4)	>1	>2	|	|	Yes	Y 2/6/12
-2	<1	>2			NO	–
~~02/06/12~~	~~<1~~					
900015 (1-7)	<1	<2	02-06-12	M.M	yes	–
900016 (1-5)	↓	↓	↓	↓	↓	–
900017 (1-3,5-9)	↓	↓	↓	↓	↓	–
900033 (1-5)	<1	<2	02-08-12	M.M	Yes	–
900055 (1-2)	<1	>2	02-08-12	M.M	Yes	Yes
900056 (1-2)	<1	>2	↓	↓	↓	–
900057 (1-6)	<1	~~<2 >2~~ M.M 3/11	↓	↓	↓	–
900043	>1	<2	2/8/12	ES	yes	3010A
900014	>1	<2	2/8/12	M.M	Yes	3010A
900040	↓	↓	↓	↓	↓	–
T+D 900079 (1-6)	>1	<2	2/9/12	MM	Yes	3010A
900075 (1-2)	>1	<2	2/9/12	M.M	Yes	3010A
900039 (1-3)	<1	>2	2/9/12	ES	No	yes @ 1:00 p.m
041 (16,23	↓	↓	↓	↓	↓	↓
052-1						
068 (10-12)						
076 (1-3)						
900147 (1-5)	<1	<2	2/14/12	M.M	Yes	3010A
900148 (1-4,6-11,	↓	↓	↓	↓	↓	↓
13-17,19,21)						
900180	<1	>2	2/16/12	M.M	Yes	3010A
900181 (1,2,7,8	<1	<2	↓	↓	↓	↓
-11-11-5	>1	<2				
900182 (1-6)	<1	<2				
800000 (1-4)	↓	↓	↓	↓	↓	↓
800001	<1	<2	2/16/12	ES	NO	NO
800018 (1-4)	<1	<2	↓	↓	↓	↓
800015	<1	<2				
800019	<1	<2				
900106 (1-4)	>2	<2			yes	3010A
900127	↓	↓	↓	↓	↓	↓
900135						
900162						
900163						
900202						
900203						
900204	↓	↓	↓	↓	NO	–
800026	<1	>2	2/17/12	LT	NO	2/17 9:30 am Y
800023 (15-17)	<1	>2	2/17/12	M.M	Yes	3010A
800024	↓	<2	↓	↓	↓	↓
800025 (1-8)	↓	↓	↓	↓	↓	↓

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 900057

Date Delivered: 02/07/12 **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? ☒ Yes ☐ No ☐ N/A
   Temperature (if yes)? 3.5°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
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L. Shabunina

ALERT II Level III

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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 1, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-GMP-185-Q1, GROUNDWATER MONITORING PROJECT, TLI NO.: 900148

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-GMP-185-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 13, 2012, 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 discrepancy between the Total Dissolved Chromium and Hexavalent Chromium results for samples MW-21-185, MW-102-185, MW-33-040-185, MW-44-125-185, and MW-48-185, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers were digested and analyzed for Total Dissolved Chromium. The original digestate was also re-analyzed for confirmation. The results from the original run were reported. See the attached table for the sample results from the various runs.

Due to the discrepancy between the Total Dissolved Chromium (1.5 ug/L) and Hexavalent Chromium (ND<1.0 ug/L) results for sample MW-24BR-185, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers were digested and analyzed for Total Dissolved Chromium. The results were both ND<1.0 ug/L. The original digestate was re-analyzed for confirmation and also yielded a result of ND<1.0 ug/L. The result from the re-digested Total Dissolved Chromium was reported as it more closely matched the Hexavalent Chromium result.

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

Michael Ngo
Quality Assurance/Quality Control Officer

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Total Dissolved Chromium and Hexavalent Chromium Discrepancy Summary

Laboratory Number	Sample ID	Cr ICP/MS Original Run	Cr re-digested & re-run	Original Cr re-analysis	Cr from Cr6 Bottle	Cr6
9000148-1	MW-21-185	4.8	4.2	5.7	1.2	2.1
9000148-6	MW-102-185	13.2	13.1	12.0	5.7	ND<1.0
9000148-7	MW-33-040-185	1.6	1.7	1.4	1.9	ND<0.20
9000148-9	MW-44-125-185	13.5	12.6	13.0	5.9	ND<1.0
9000148-11	MW-48-185	1.6	1.6	1.4	ND<1.0	ND<1.0
9000148-19	MW-24BR-185	1.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0

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

Laboratory No.: 900148
Date Received: February 13, 2012

Project Name: PG&E Topock Project
Project No.: 423575.MP.02.GM
P.O. No.: 423575.MP.02.GM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
900148-001	MW-21-185	E218.6	FLDFLT	2/7/2012	13:04	Chromium, hexavalent	2.1	ug/L	1.0
900148-001	MW-21-185	SW6020	FLDFLT-digested	2/7/2012	13:04	Chromium	4.8	ug/L	1.0
900148-002	MW-28-090-185	E218.6	FLDFLT	2/7/2012	16:21	Chromium, hexavalent	ND	ug/L	0.20
900148-002	MW-28-090-185	SW6020	FLDFLT-digested	2/7/2012	16:21	Chromium	ND	ug/L	1.0
900148-003	MW-42-055-185	E218.6	FLDFLT	2/7/2012	14:17	Chromium, hexavalent	ND	ug/L	0.20
900148-003	MW-42-055-185	SW6020	FLDFLT-digested	2/7/2012	14:17	Chromium	ND	ug/L	1.0
900148-004	MW-42-065-185	E218.6	FLDFLT	2/7/2012	15:00	Chromium, hexavalent	ND	ug/L	1.0
900148-004	MW-42-065-185	SW6020	FLDFLT-digested	2/7/2012	15:00	Chromium	ND	ug/L	1.0
900148-005	MW-81-185	E218.6	FLDFLT	2/7/2012	16:39	Chromium, hexavalent	ND	ug/L	0.20
900148-006	MW-102-185	E218.6	FLDFLT	2/8/2012	11:16	Chromium, hexavalent	ND	ug/L	1.0
900148-006	MW-102-185	SW6020	FLDFLT-digested	2/8/2012	11:16	Chromium	13.2	ug/L	1.0
900148-007	MW-33-040-185	E218.6	FLDFLT	2/8/2012	15:08	Chromium, hexavalent	ND	ug/L	0.20
900148-007	MW-33-040-185	SW6020	FLDFLT-digested	2/8/2012	15:08	Chromium	1.6	ug/L	1.0
900148-008	MW-44-115-185	E218.6	FLDFLT	2/8/2012	12:08	Chromium, hexavalent	134	ug/L	2.0
900148-008	MW-44-115-185	SW6020	FLDFLT-digested	2/8/2012	12:08	Chromium	120	ug/L	1.0
900148-009	MW-44-125-185	E218.6	FLDFLT	2/8/2012	11:15	Chromium, hexavalent	ND	ug/L	1.0
900148-009	MW-44-125-185	SW6020	FLDFLT-digested	2/8/2012	11:15	Chromium	13.5	ug/L	1.0
900148-010	MW-46-175-185	E218.6	FLDFLT	2/8/2012	14:05	Chromium, hexavalent	76.2	ug/L	1.0
900148-010	MW-46-175-185	SW6020	FLDFLT-digested	2/8/2012	14:05	Chromium	84.1	ug/L	1.0
900148-011	MW-48-185	E218.6	FLDFLT	2/8/2012	15:51	Chromium, hexavalent	ND	ug/L	1.0
900148-011	MW-48-185	SW6020	FLDFLT-digested	2/8/2012	15:51	Chromium	1.6	ug/L	1.0
900148-012	MW-82-185	E218.6	FLDFLT	2/8/2012	16:20	Chromium, hexavalent	ND	ug/L	0.20

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
900148-013	MW-12-185	SM3500-CrB	FLDFLT	2/9/2012	14:31	Chromium, hexavalent	2730	ug/L	250
900148-013	MW-12-185	SW6020	FLDFLT-digested	2/9/2012	14:31	Chromium	2820	ug/L	20.0
900148-014	MW-33-090-185	E218.6	FLDFLT	2/9/2012	11:02	Chromium, hexavalent	20.1	ug/L	1.0
900148-014	MW-33-090-185	SW6020	FLDFLT-digested	2/9/2012	11:02	Chromium	23.0	ug/L	1.0
900148-015	MW-33-150-185	E218.6	FLDFLT	2/9/2012	8:07	Chromium, hexavalent	10.6	ug/L	1.0
900148-015	MW-33-150-185	SW6020	FLDFLT-digested	2/9/2012	8:07	Chromium	11.8	ug/L	1.0
900148-016	MW-33-210-185	E218.6	FLDFLT	2/9/2012	9:21	Chromium, hexavalent	12.7	ug/L	1.0
900148-016	MW-33-210-185	SW6020	FLDFLT-digested	2/9/2012	9:21	Chromium	14.4	ug/L	1.0
900148-017	MW-50-200-185	SM3500-CrB	FLDFLT	2/9/2012	15:28	Chromium, hexavalent	9080	ug/L	500
900148-017	MW-50-200-185	SW6020	FLDFLT-digested	2/9/2012	15:28	Chromium	9530	ug/L	20.0
900148-018	MW-83-185	E218.6	FLDFLT	2/9/2012	16:10	Chromium, hexavalent	ND	ug/L	0.20
900148-019	MW-24BR-185	E218.6	FLDFLT	2/10/2012	7:43	Chromium, hexavalent	ND	ug/L	1.0
900148-019	MW-24BR-185	SW6020	FLDFLT-digested	2/10/2012	7:43	Chromium	ND	ug/L	1.0
900148-020	MW-84-185	E218.6	FLDFLT	2/10/2012	10:53	Chromium, hexavalent	ND	ug/L	0.20
900148-021	TW-01-185	SM3500-CrB	FLDFLT	2/10/2012	10:00	Chromium, hexavalent	3460	ug/L	250
900148-021	TW-01-185	SW6020	FLDFLT-digested	2/10/2012	10:00	Chromium	3680	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.

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REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project Number: 423575.MP.02.GM
P.O. Number: 423575.MP.02.GM
Release Number:

Laboratory No. 900148

Printed 3/1/2012

Samples Received on 2/13/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
MW-21-185	900148-001	02/07/2012 13:04	Water
MW-28-090-185	900148-002	02/07/2012 16:21	Water
MW-42-055-185	900148-003	02/07/2012 14:17	Water
MW-42-065-185	900148-004	02/07/2012 15:00	Water
MW-81-185	900148-005	02/07/2012 16:39	Water
MW-102-185	900148-006	02/08/2012 11:16	Water
MW-33-040-185	900148-007	02/08/2012 15:08	Water
MW-44-115-185	900148-008	02/08/2012 12:08	Water
MW-44-125-185	900148-009	02/08/2012 11:15	Water
MW-46-175-185	900148-010	02/08/2012 14:05	Water
MW-48-185	900148-011	02/08/2012 15:51	Water
MW-82-185	900148-012	02/08/2012 16:20	Water
MW-12-185	900148-013	02/09/2012 14:31	Water
MW-33-090-185	900148-014	02/09/2012 11:02	Water
MW-33-150-185	900148-015	02/09/2012 08:07	Water
MW-33-210-185	900148-016	02/09/2012 09:21	Water
MW-50-200-185	900148-017	02/09/2012 15:28	Water
MW-83-185	900148-018	02/09/2012 16:10	Water
MW-24BR-185	900148-019	02/10/2012 07:43	Water
MW-84-185	900148-020	02/10/2012 10:53	Water
TW-01-185	900148-021	02/10/2012 10:00	Water

Chrome VI by EPA 218.6

Batch 02CrH12U

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900148-001 Chromium, Hexavalent	ug/L	02/21/2012 15:45	5.00	0.130	1.0	2.1
900148-002 Chromium, Hexavalent	ug/L	02/21/2012 14:42	1.00	0.0260	0.20	ND
900148-003 Chromium, Hexavalent	ug/L	02/21/2012 14:53	1.00	0.0260	0.20	ND
900148-004 Chromium, Hexavalent	ug/L	02/21/2012 18:42	5.00	0.130	1.0	ND
900148-005 Chromium, Hexavalent	ug/L	02/21/2012 03:14	1.00	0.0260	0.20	ND
900148-006 Chromium, Hexavalent	ug/L	02/21/2012 17:18	5.00	0.130	1.0	ND

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900148-007	Chromium, Hexavalent	ug/L	02/21/2012 17:39	1.00	0.0260	0.20	ND
900148-008	Chromium, Hexavalent	ug/L	02/21/2012 17:50	10.0	0.260	2.0	134.
900148-009	Chromium, Hexavalent	ug/L	02/21/2012 21:25	5.00	0.130	1.0	ND
900148-010	Chromium, Hexavalent	ug/L	02/21/2012 18:31	5.00	0.130	1.0	76.2
900148-011	Chromium, Hexavalent	ug/L	02/21/2012 22:25	5.00	0.130	1.0	ND
900148-012	Chromium, Hexavalent	ug/L	02/21/2012 19:13	1.00	0.0260	0.20	ND
900148-014	Chromium, Hexavalent	ug/L	02/21/2012 21:35	5.00	0.130	1.0	20.1
900148-015	Chromium, Hexavalent	ug/L	02/21/2012 21:45	5.00	0.130	1.0	10.6
900148-016	Chromium, Hexavalent	ug/L	02/21/2012 21:56	5.00	0.130	1.0	12.7
900148-018	Chromium, Hexavalent	ug/L	02/21/2012 19:54	1.00	0.0260	0.20	ND
900148-019	Chromium, Hexavalent	ug/L	02/21/2012 00:27	5.00	0.130	1.0	ND
900148-020	Chromium, Hexavalent	ug/L	02/21/2012 22:51	1.00	0.0260	0.20	ND

Method Blank

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

Duplicate — Lab ID = 900148-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	2.09	2.15	2.73	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.212	0.200	106	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.14	5.00	103.	90 - 110

Matrix Spike — Lab ID = 900148-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	7.34	7.15(5.00)	104.	90 - 110

Matrix Spike — Lab ID = 900148-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.979	1.00(1.00)	97.9	90 - 110

Matrix Spike — Lab ID = 900148-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.02(1.00)	100.0	90 - 110

Matrix Spike — Lab ID = 900148-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.18	5.12(5.00)	101.	90 - 110

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Matrix Spike — Lab ID = 900148-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.970	1.00(1.00)	97.0	90 - 110

Matrix Spike — Lab ID = 900148-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.02(1.00)	99.7	90 - 110

Matrix Spike — Lab ID = 900148-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.21	5.62(5.00)	91.7	90 - 110

Matrix Spike — Lab ID = 900148-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.09	1.09(1.00)	100.	90 - 110

Matrix Spike — Lab ID = 900148-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	286.	284(150.)	102.	90 - 110

Matrix Spike — Lab ID = 900148-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.78	5.63(5.00)	103.	90 - 110

Matrix Spike — Lab ID = 900148-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	174.	176.(100.)	98.1	90 - 110

Matrix Spike — Lab ID = 900148-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.45	5.33(5.00)	102.	90 - 110

Matrix Spike — Lab ID = 900148-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110

Matrix Spike — Lab ID = 900148-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.02(1.00)	103.	90 - 110

Matrix Spike — Lab ID = 900148-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	45.8	45.1(25.0)	103.	90 - 110

Matrix Spike — Lab ID = 900148-015

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	35.6	35.6(25.0)	100.	90 - 110

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Matrix Spike — Lab ID = 900148-016

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	37.7	37.7(25.0)	100.	90 - 110

Matrix Spike — Lab ID = 900148-018

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.17	1.14(1.00)	103.	90 - 110

Matrix Spike — Lab ID = 900148-019

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.04	5.05(5.00)	99.9	90 - 110

Matrix Spike — Lab ID = 900148-019

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110

Matrix Spike — Lab ID = 900148-020

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.03(1.00)	103.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.13	5.00	102.	90 - 110

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	10.0	10.0	100.	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	10.2	10.0	102.	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

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Metals by EPA 6020A, Dissolved Batch 022012B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900148-001 Chromium	ug/L	02/21/2012 01:05	5.00	0.110	1.0	4.8
900148-002 Chromium	ug/L	02/21/2012 01:55	5.00	0.110	1.0	ND
900148-003 Chromium	ug/L	02/21/2012 02:02	5.00	0.110	1.0	ND
900148-004 Chromium	ug/L	02/21/2012 02:09	5.00	0.110	1.0	ND
900148-006 Chromium	ug/L	02/21/2012 02:17	5.00	0.110	1.0	13.2
900148-007 Chromium	ug/L	02/21/2012 02:24	5.00	0.110	1.0	1.6
900148-008 Chromium	ug/L	02/21/2012 02:38	5.00	0.110	1.0	120.
900148-009 Chromium	ug/L	02/21/2012 02:53	5.00	0.110	1.0	13.5
900148-010 Chromium	ug/L	02/21/2012 03:00	5.00	0.110	1.0	84.1
900148-011 Chromium	ug/L	02/21/2012 03:58	5.00	0.110	1.0	1.6
900148-013 Chromium	ug/L	02/21/2012 04:05	100	2.20	20.0	2820
900148-014 Chromium	ug/L	02/21/2012 04:12	5.00	0.110	1.0	23.0
900148-015 Chromium	ug/L	02/21/2012 04:19	5.00	0.110	1.0	11.8
900148-016 Chromium	ug/L	02/21/2012 04:34	5.00	0.110	1.0	14.4
900148-017 Chromium	ug/L	02/21/2012 05:10	100	2.20	20.0	9530
900148-021 Chromium	ug/L	02/21/2012 05:31	25.0	0.550	5.0	3680

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 900148-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	4.66	4.82	3.44	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.218	0.200	109.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	105.	100.	105.	85 - 115

Matrix Spike — Lab ID = 900148-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	115.	105.(100.)	110.	75 - 125

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Matrix Spike Duplicate — Lab ID = 900148-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	113.	105.(100.)	108.	75 - 125

MRCCS - Secondary

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	10.1	10.0	101	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	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	10.2	10.0	102.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.75	10.0	97.5	80 - 120

Serial Dilution — Lab ID = 900148-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	114.	120.	4.86	0 - 10

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Metals by EPA 6020A, Dissolved

Batch 022412B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900148-019 Chromium	ug/L	02/25/2012 04:48	5.00	0.110	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 900148-006

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	11.9	13.1	9.35	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.216	0.200	108.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	103.	100.	103.	85 - 115

Matrix Spike — Lab ID = 900148-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	121	113.(100.)	108.	75 - 125

Matrix Spike Duplicate — Lab ID = 900148-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	114.	113.(100.)	101.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.6	10.0	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.5	10.0	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.6	10.0	106.	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 423575.MP.02.GM Printed 3/1/2012

Chromium, Hexavalent by SM 3500-Cr B Batch 02Cr612A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900148-013 Chromium, Hexavalent	ug/L	02/17/2012 18:49	25.0	37.5	250.	2730
900148-017 Chromium, Hexavalent	ug/L	02/17/2012 18:50	50.0	75.0	500.	9080
900148-021 Chromium, Hexavalent	ug/L	02/17/2012 18:57	25.0	37.5	250.	3460

Method Blank

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

Duplicate — Lab ID = 900148-021

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	3520	3460	1.67	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	97.3	100.	97.3	90 - 110

Matrix Spike — Lab ID = 900148-021

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	5930	5960(2500)	98.8	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	58.8	60.0	98.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	57.6	60.0	96.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	57.6	60.0	96.0	90 - 110

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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GMP-185 TLI #2

900148

CH2MHILL CHAIN OF CUSTODY RECORD 2/10/2012 11:19:24 AM Page 1 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/14/2012
COC Number: 5

Rec'd 02/13/12
900148

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

	Container:	250 ml Poly	250 ml Poly	2x250 ml Poly	2x500 ml Poly	500 ml Poly			
	Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C			
	Filtered:	Field	Field	Field	Field	Field			
	Holding Time:	28	28	28	180	180			
		Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Cr6 (E218.6R) Field Filtered	Metals (6020AFF) Field Filtered Chromium	Metals (6020AFF) Field Filtered Chromium		Number of Containers	pH for 6020A COMMENTS
	MW-21-185-EB	2/6/2012	12:21	Water	x				x	2	
-1	MW-21-185	2/7/2012	13:04	Water			x	x		4	pH=2
-2	MW-28-090-185	2/7/2012	16:21	Water			x	x		4	
	MW-28-090-185-EB	2/7/2012	15:34	Water	x				x	2	
-3	MW-42-055-185	2/7/2012	14:17	Water			x	x		4	pH=2
	MW-42-055-185-EB	2/7/2012	13:38	Water	x				x	2	
-4	MW-42-065-185	2/7/2012	15:00	Water			x	x		4	pH=2
	MW-42-065-185-EB	2/7/2012	13:38	Water	x				x	2	
-5	MW-81-185	2/7/2012	16:39	Water	x					1	
-6	MW-102-185	2/8/2012	11:16	Water	x				x	2	pH=2
-7	MW-33-040-185	2/8/2012	15:08	Water			x	x		4	
	MW-33-040-185-EB	2/8/2012	12:40	Water	x				x	2	
-8	MW-44-115-185	2/8/2012	12:08	Water	x				x	2	pH=2
-9	MW-44-125-185	2/8/2012	11:15	Water	x				x	2	

	Signatures	Date/Time
Approved by		2-13-12
Sampled by		1530
Relinquished by	[signature]	
Received by	Rafael Davila	2/13/12 15:30
Relinquished by	Rafael Davila	2-13/12 21:30
Received by	Linda Shakemine	2/13/12 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 6-22, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

GMP-185 TLI # 2 900148

CH2MHILL CHAIN OF CUSTODY RECORD 2/10/2012 11:19:25 AM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/14/2012
COC Number: 5

ALERT !! Level III QC

	Container:	250 ml Poly	250 ml Poly	2x250 ml Poly	2x500 ml Poly	500 ml Poly			
	Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C			
	Filtered:	Field	Field	Field	Field	Field			
	Holding Time:	28	28	28	180	180			
		Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Cr6 (E218.6R) Field Filtered	Metals (6020AFF) Field Filtered Chromium	Metals (6020AFF) Field Filtered Chromium		Number of Containers	pH for 6020A COMMENTS
	DATE / TIME / Matrix								
-10 MW-46-175-185	2/8/2012 14:05 Water	X				X		2	pH=2
-11 MW-48-185	2/8/2012 15:51 Water	X				X		2	
-12 MW-82-185	2/8/2012 16:20 Water	X						1	
-13 MW-12-185	2/9/2012 14:31 Water		X			X		2	pH=2
-14 MW-33-090-185	2/9/2012 11:02 Water	X				X		2	
-15 MW-33-150-185	2/9/2012 8:07 Water	X				X		2	
-16 MW-33-210-185	2/9/2012 9:21 Water	X				X		2	
-17 MW-50-200-185	2/9/2012 15:28 Water		X			X		2	
-18 MW-83-185	2/9/2012 16:10 Water	X						1	
-19 MW-24BR-185	2/10/2012 7:43 Water	X				X		2	pH=2
-20 MW-84-185	2/10/2012 10:53 Water	X						1	
-21 TW-01-185	2/10/2012 10:00 Water		X			X		2	pH=2
							TOTAL NUMBER OF CONTAINERS	58	

	Signatures	Date/Time
Approved by		2-13-12
Sampled by	[signature]	1530
Relinquished by		
Received by	Rafael Davila	2-13-12 15:30
Relinquished by	Rafael Davila	2-13-12
Received by	Linda Shakunna	2/13/12 21:30 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 6-22, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

034

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
2/14/12	900448 -1	9.5	N/A	N/A	N/A	MS
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-12					
	-14					
	-15					
	-16					
	-18					
	-19					
	-20					

C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
999950	>1	<2	02/03/12	M.M	Yes	3010A
999977	↓	↓	↓	↓	↓	– ↓
999978						–
999511 (1-2)	↓	↓	↓	↓	Yes	– ↓
999911	<1	<2	02-06-12	LT/BE	NO	–
999951-(1)*	>1	>2	↓	↓	Yes	Y 2/6/12
-2	<1	>2			NO	–
MM ~~02/06/12~~	~~<1~~					
900015 (1-7)	<1	<2	02-06-12	M.M	yes	–
900016 (1-5)	↓	↓	↓	↓	↓	–
900017 (1-3,5-9)	↓	↓	↓	↓	↓	–
900033 (1-5)	<1	<2	02-08-12	M.M	Yes	–
900055 (1-2)	<1	>2	02-08-12	M.M	yes	Yes
900056 (1-2)	<1	>2	↓	↓	↓	–
900057 (1-6)	<1	~~<2 >2~~ M.M 3/11	↓	↓	↓	–
900043	>1	<2	2/8/12	ES	yes	3010A
900014	>1	<2	2/8/12	M.M	yes	3010A
900040	↓	↓	↓	↓	↓	–
T+D 900079 (1-6)	>1	<2	2/9/12	MM	Yes	3010A
900075 (1-2)	>1	<2	2/9/12	M.M	Yes	3010A
900039 (1-3)	<1	>2	2/9/12	ES	NO	yes @ (1-10) p.m
041 (16,23	↓	↓	↓	↓	↓	↓
052-1						
068 (10-12)						
076 (1-3)	↓	↓	↓	↓	↓	↓
900147 (1-5)	<1	<2	2/14/12	M.M	Yes	3010A
900148 (1-4,6-11,	↓	↓	↓	↓	↓	↓
13-17,19,21)	↓	↓	↓	↓	↓	↓
900180	<1	>2	2/16/12	M.M	yes	3010A
900181 (1,2,8	<1	<2	↓	↓	↓	↓
-11-11-5	>1	<2				
900182 (1-6)	<1	<2				
800000 (1-4)	↓	↓	↓	↓	↓	↓
800001	<1	<2	2/16/12	ES	NO	NO
800018 (1-4)	<1	<2	↓	↓	↓	↓
800015	<1	<2				
800019	<1	<2				
900106 (1-4)	>2	<2			yes	3010A
900127	↓	↓	↓	↓	↓	↓
900135						
900162						
900163						
900202						
900203					↓	↓
900204	↓	↓	↓	↓	NO	–
800026	<1	>2	2/17/12	LT	NO	2/17 9:30 am Y
800027 (15-17)	<1	>2	2/17/12	M.M	yes	3010A
800024	↓	<2	↓	↓	↓	↓
800025 (1-8)	↓	↓	↓	↓	↓	↓

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 900148

Date Delivered: 02/13/12 **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? ☒Yes ☐No ☐N/A
   Temperature (if yes)? 3.5°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
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L. Shabunine

ALERT Level III

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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 6, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-EASTRAVINE-GWINV-009, GROUNDWATER MONITORING PROJECT, TLI NO.: 900181

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-EASTRAVINE-GWINV-009 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 14, 2012, 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.

For sample MW-63-065-009, solids were observed in both the Hexavalent Chromium and Total Dissolved Chromium sample containers. Mr. Shawn Duffy was notified and he advised to proceed with the analysis. The Total Dissolved Chromium and Hexavalent Chromium results were 94.0 ug/L and ND<1.0 ug/L, respectively. Sample from the Hexavalent Chromium sample container was filtered, digested, and analyzed for Total Dissolved Chromium and yielded a result of 1.4 ug/L. The original digestate was re-analyzed for confirmation and yielded a result of 95.0 ug/L. The Total Dissolved Chromium result from the Hexavalent Chromium sample container that was filtered and digested was reported after discussing the results with Mr. Duffy.

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

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.
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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.: 900181
Date Received: February 14, 2012

Project Name: PG&E Topock Project
Project No.: 417981.ER.02.DM
P.O. No.: 417981.ER.02.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
900181-001	MW-112-009	E218.6	FLDFLT	2/10/2012	12:49	Chromium, hexavalent	7.3	ug/L	1.0
900181-001	MW-112-009	SW6020	FLDFLT-digested	2/10/2012	12:49	Chromium	8.9	ug/L	1.0
900181-002	MW-57-185-009	E218.6	FLDFLT	2/10/2012	12:47	Chromium, hexavalent	7.2	ug/L	1.0
900181-002	MW-57-185-009	SW6020	FLDFLT-digested	2/10/2012	12:47	Chromium	8.5	ug/L	1.0
900181-003	MW-91-009	E218.6	FLDFLT	2/10/2012	10:51	Chromium, hexavalent	ND	ug/L	0.20
900181-004	MW-92-009	E218.6	FLDFLT	2/10/2012	13:20	Chromium, hexavalent	ND	ug/L	0.20
900181-005	MW-63-065-009	E218.6	FLDFLT	2/13/2012	15:13	Chromium, hexavalent	ND	ug/L	0.20
900181-005	MW-63-065-009	SW6020	FLDFLT-digested	2/13/2012	15:13	Chromium	1.4	ug/L	1.0
900181-006	MW-93-009	E218.6	FLDFLT	2/13/2012	16:00	Chromium, hexavalent	ND	ug/L	0.20
900181-007	MW-23-060-009	E218.6	FLDFLT	2/14/2012	9:34	Chromium, hexavalent	30.2	ug/L	1.0
900181-007	MW-23-060-009	SW6020	FLDFLT-digested	2/14/2012	9:34	Chromium	32.1	ug/L	1.0
900181-008	MW-23-080-009	E218.6	FLDFLT	2/14/2012	10:58	Chromium, hexavalent	9.5	ug/L	1.0
900181-008	MW-23-080-009	SW6020	FLDFLT-digested	2/14/2012	10:58	Chromium	10.8	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.

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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
Project Number: 417981.ER.02.DM
P.O. Number: 417981.ER.02.DM
Release Number:

Laboratory No. 900181

Printed 3/6/2012

Samples Received on 2/14/2012 10:00:00 PM

Field ID	Lab ID	Collected	Matrix
MW-112-009	900181-001	02/10/2012 12:49	Water
MW-57-185-009	900181-002	02/10/2012 12:47	Water
MW-91-009	900181-003	02/10/2012 10:51	Water
MW-92-009	900181-004	02/10/2012 13:20	Water
MW-63-065-009	900181-005	02/13/2012 15:13	Water
MW-93-009	900181-006	02/13/2012 16:00	Water
MW-23-060-009	900181-007	02/14/2012 09:34	Water
MW-23-080-009	900181-008	02/14/2012 10:58	Water

Chrome VI by EPA 218.6 Batch 02CrH12W

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900181-001 Chromium, Hexavalent	ug/L	02/23/2012 12:54	5.00	0.130	1.0	7.3
900181-002 Chromium, Hexavalent	ug/L	02/23/2012 13:04	5.00	0.130	1.0	7.2
900181-003 Chromium, Hexavalent	ug/L	02/23/2012 15:00	1.00	0.0260	0.20	ND
900181-004 Chromium, Hexavalent	ug/L	02/23/2012 12:23	1.00	0.0260	0.20	ND
900181-005 Chromium, Hexavalent	ug/L	02/23/2012 12:33	1.00	0.0260	0.20	ND
900181-006 Chromium, Hexavalent	ug/L	02/23/2012 12:43	1.00	0.0260	0.20	ND
900181-007 Chromium, Hexavalent	ug/L	02/23/2012 14:08	5.00	0.130	1.0	30.2
900181-008 Chromium, Hexavalent	ug/L	02/23/2012 16:23	5.00	0.130	1.0	9.5

Method Blank

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

Duplicate — Lab ID = 900181-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0431	0.0449	4.09	0 - 20

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Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.217	0.200	108.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.93	5.00	98.7	90 - 110

Matrix Spike — Lab ID = 900057-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	51.2	49.6(25.0)	106.	90 - 110

Matrix Spike — Lab ID = 900057-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	178.	178.(100.)	99.8	90 - 110

Matrix Spike — Lab ID = 900057-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.92	5.00(5.00)	98.4	90 - 110

Matrix Spike — Lab ID = 900057-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.88	5.00(5.00)	97.7	90 - 110

Matrix Spike — Lab ID = 900057-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	176.	177.(100.)	99.9	90 - 110

Matrix Spike — Lab ID = 900181-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	32.9	32.3(25.0)	102.	90 - 110

Matrix Spike — Lab ID = 900181-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	32.9	32.2(25.0)	103.	90 - 110

Matrix Spike — Lab ID = 900181-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.04(1.00)	102.	90 - 110

Matrix Spike — Lab ID = 900181-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.04(1.00)	101.	90 - 110

Matrix Spike — Lab ID = 900181-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.12	1.10(1.00)	102.	90 - 110

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Matrix Spike — Lab ID = 900181-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.06	1.05(1.00)	101.	90 - 110

Matrix Spike — Lab ID = 900181-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	79.4	80.2(50.0)	98.5	90 - 110

Matrix Spike — Lab ID = 900181-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	35.4	34.5(25.0)	104.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00	98.0	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	10.0	10.0	100.	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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103.	95 - 105

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 417981.ER.02.DM

Metals by EPA 6020A, Dissolved

Batch 022312A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900181-001 Chromium	ug/L	02/23/2012 14:59	5.00	0.110	1.0	8.9
900181-002 Chromium	ug/L	02/23/2012 15:28	5.00	0.110	1.0	8.5
900181-007 Chromium	ug/L	02/23/2012 15:42	5.00	0.110	1.0	32.1
900181-008 Chromium	ug/L	02/23/2012 15:50	5.00	0.110	1.0	10.8

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 900181-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	8.61	8.91	3.40	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.235	0.200	118.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.0	100.	99.0	85 - 115

Matrix Spike — Lab ID = 900181-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	112.	109.(100.)	103.	75 - 125

Matrix Spike Duplicate — Lab ID = 900181-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	110.	109.(100.)	101.	75 - 125

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	9.76	10.0	97.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.71	10.0	97.1	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 417981.ER.02.DM Printed 3/6/2012

Metals by EPA 6020A, Dissolved

Batch 022812A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900181-005 Chromium	ug/L	02/28/2012 18:09	5.00	0.110	1.0	1.4

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 800175-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	1.18	1.31	10.2	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.160	0.200	80.2	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.6	100.	99.6	85 - 115

Matrix Spike — Lab ID = 800175-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	104.	101.(100.)	102.	75 - 125

Matrix Spike Duplicate — Lab ID = 800175-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.7	101.(100.)	98.4	75 - 125

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	9.43	10.0	94.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.60	10.0	96.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.23	10.0	92.3	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.30	10.0	93.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.22	10.0	92.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.05	10.0	90.5	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	10.6	10.0	106.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.4	10.0	104.	80 - 120

Serial Dilution — Lab ID = 900182-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	332.	341	2.82	0 - 10

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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ER/TCS -009 TLI #1

900181

CH2MHILL

CHAIN OF CUSTODY RECORD

2/14/2012 3:43:16 PM

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/14/2012
COC Number: 2

ALERT !!
Level III QC
For Sample Conditions
See Form Attached

	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Metals (SW6010B/SW6020A dis) Field Filtered Chromium	Number of Containers	COMMENTS
Container:				250 ml Poly	500 ml Poly		pH for 6010B/6020A
Preservatives:				(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C		
Filtered:				Field	Field		
Holding Time:				28	180		
-1 MW-112-009	2/10/2012	12:49	Water	X	X	2	pH=2
-2 MW-57-185-009	2/10/2012	12:47	Water	X	X	2	
-3 MW-91-009	2/10/2012	10:51	Water	X		1	
-4 MW-92-009	2/10/2012	13:20	Water	X		1	
-5 MW-63-065-009	2/13/2012	15:13	Water	X	X	2	pH=2
-6 MW-93-009	2/13/2012	16:00	Water	X		1	
-7 MW-23-060-009	2/14/2012	9:34	Water	X	X	2	pH=2
-8 MW-23-080-009	2/14/2012	10:58	Water	X	X	2	pH=2
					TOTAL NUMBER OF CONTAINERS	13	

	Signatures	Date/Time
Approved by		
Sampled by		2-14-12 1600
Relinquished by		
Received by	Rafael Davila	2-14-12 16:00
Relinquished by	Rafael Davila	2-14-12 22:00
Received by	L. Shakuning	2/14/12 22:00

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:
February, 2012

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
2/15/12	900181-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
2/15/12	900182-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6	8	5 mL	9.5	10 Am	

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
999950	>1	<2	02/03/12	M.M	Yes	3010A
999977						—
999978						—
999511 (1-2)					Yes	—
999911	<1	<2	02-06-12	LT/BE	NO	—
999951-(1)	>1	>2			Yes	Y 2/6/12
-2	<1	>2			NO	—
pm ~~02/06/12~~	~~<1~~					
900015 (1-7)	<1	<2	02-06-12	M.M	yes	—
900016 (1-5)						—
900017 (1-3,5-9)						—
900033 (1-5)	<1	<2	02-07-12	M.M	Yes	—
900055 (1-2)	<1	>2	02-08-12	M.M	Yes	Yes
900056 (1-2)	<1	>2				—
900057 (1-6)	<1	~~<2 >2~~ M.M 3/14				—
900043	>1	<2	2/8/12	ES	yes	3010A
900014	>1	<2	2/8/12	M.M	Yes	3010A
900040						—
T+D 900079 (1-6)	>1	<2	2/9/12	MM	Yes	3010A
900075 (1-2)	>1	<2	2/9/12	M.M	Yes	3010A
900039 (1-3)	<1	>2	2/9/12	ES	NO	yes @ 1:00 pm
041 (16,23						
052-1						
068 (10-12)						
076 (1-3)						
900147 (1-5)	<1	<2	2/14/12	M.M	Yes	3010A
900148 (1-4,6-11,						
13-17, 19,21)						
900180	<1	>2	2/16/12	M.M	Yes	3010A
900181 (1,2,7,8	<1	<2				
-11-11-5	>1	<2				
900182 (1-6)	<1	<2				
800000 (1-4)						
800001	<1	<2	2/16/12	ES	NO	NO
800018 (1-4)	<1	<2				
800015	<1	<2				
800019	<1	<2				
900106 (1-4)	>2	<2			yes	3010A
900127						
900135						
900162						
900163						
900202						
900203						
900204					NO	—
800026	<1	>2	2/17/12	LT	NO	2/17 9:30 am Y
800023 (15-17)	<1	>2	2/13/12	M.M	Yes	3010A
800024		<2				
800025 (1-8)						

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 900181

Date Delivered: 02/14/12 **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? ☒Yes ☐No ☐N/A
   Temperature (if yes)? 3.8° 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
16. Comments:
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L. Shabmine

ALERT II Level III

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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 3, 2012

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-190, GROUNDWATER MONITORING PROJECT, TLI NO.: 999360

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-190 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 3, 2012, 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.

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

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.
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(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Two (2) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 424973.01.DM

Laboratory No.: 999360
Date: February 3, 2012
Collected: January 3, 2012
Received: January 3, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Kim Luck
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 200.8	Total Dissolved Chromium	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	George Wahba / Maksim Gorbunov
SM 3500-CrB	Hexavalent Chromium	Jenny Tankunakorn

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

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

Laboratory No.: 999360
Date Received: January 3, 2012

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999360-001	PE-01-190	E120.1	NONE	1/3/2012	13:30	EC	4960	umhos/cm	2.00
999360-001	PE-01-190	E200.8	LABFLT-digested	1/3/2012	13:30	Chromium	12.3	ug/L	1.0
999360-001	PE-01-190	E218.6	LABFLT	1/3/2012	13:30	Chromium, hexavalent	11.6	ug/L	0.20
999360-001	PE-01-190	SM2540C	NONE	1/3/2012	13:30	Total Dissolved Solids	2960	mg/L	125
999360-002	TW-03D-190	E120.1	NONE	1/3/2012	13:30	EC	8530	umhos/cm	2.0
999360-002	TW-03D-190	E200.8	LABFLT-digested	1/3/2012	13:30	Chromium	1080	ug/L	2.0
999360-002	TW-03D-190	SM2540C	NONE	1/3/2012	13:30	Total Dissolved Solids	5040	mg/L	250
999360-002	TW-03D-190	SM3500-CrB	LABFLT	1/3/2012	13:30	Chromium, hexavalent	938	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

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TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
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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
Project Number: 424973.01.DM
P.O. Number: 424973.01.DM
Release Number:

Laboratory No. 999360

Printed 2/3/2012

Samples Received on 1/3/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-190	999360-001	01/03/2012 13:30	Water
TW-03D-190	999360-002	01/03/2012 13:30	Water

Specific Conductivity - EPA 120.1 Batch 01EC12A 1/5/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999360-001 Specific Conductivity	umhos/cm	01/05/2012	1.00	0.0950	2.00	4960
999360-002 Specific Conductivity	umhos/cm	01/05/2012	1.00	0.0950	2.00	8530

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 999360-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	4950	4960	0.202	0 - 10

Lab Control Sample

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

Lab Control Sample Duplicate

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

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	682	706	96.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	950.	997	95.3	90 - 110

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Chrome VI by EPA 218.6

Batch 01CrH12Q

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999360-001 Chromium, Hexavalent	ug/L	01/27/2012 18:41	1.05	0.0260	0.20	11.6

Method Blank

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

Duplicate — Lab ID = 999852-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	2.30	2.36	2.70	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.198	0.200	98.8	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.87	5.00	97.3	90 - 110

Matrix Spike — Lab ID = 999360-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.09	27.6	28.0(16.4)	97.8	90 - 110

Matrix Spike — Lab ID = 999362-001

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 = 999362-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.56	5.25(5.25)	106.	90 - 110

Matrix Spike — Lab ID = 999362-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.5	11.2	11.6(10.5)	95.5	90 - 110

Matrix Spike — Lab ID = 999362-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.13	5.25(5.25)	97.8	90 - 110

Matrix Spike — Lab ID = 999362-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.04	1.06(1.06)	98.4	90 - 110

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Chromium, Hexavalent by SM 3500-Cr B

Batch 01CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999360-002 Chromium, Hexavalent	ug/L	01/13/2012 16:58	25.0	37.5	250.	938.

Method Blank

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

Duplicate — Lab ID = 999360-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	970.	938	3.33	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 = 999360-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	3550	3440(2500)	104.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	60.2	60.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	62.7	60.0	104.	90 - 110

Total Dissolved Solids by SM 2540 C

Batch 01TDS12A 1/5/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999360-001 Total Dissolved Solids	mg/L	01/03/2012	1.00	0.400	125	2960
999360-002 Total Dissolved Solids	mg/L	01/03/2012	1.00	0.400	250.	5040

Method Blank

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

Duplicate — Lab ID = 999359-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	8020	8160	1.73	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	503	500.	101.	90 - 110

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Metals by EPA 200.8, Dissolved

Batch 010512A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999360-001 Chromium	ug/L	01/05/2012 14:46	5.00	0.110	1.0	12.3
999360-002 Chromium	ug/L	01/05/2012 16:34	10.0	0.220	2.0	1080

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 999360-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	12.2	12.3	0.898	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.197	0.200	98.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	108.	100.	108.	85 - 115

Matrix Spike — Lab ID = 999360-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	114.	112.(100.)	102.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.18	10.0	91.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.36	10.0	93.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.63	10.0	96.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.66	10.0	96.6	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.84	10.0	98.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.81	10.0	98.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.77	10.0	97.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.91	10.0	99.1	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	10.1	10.0	101.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.67	10.0	96.7	80 - 120

Serial Dilution Lab ID = 999091-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	24.3	25.5	4.90	0 - 10

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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E2 Sam

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 01TDS12A
Date Calculated: 1/9/12

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	74.7564	74.7569	74.7568	0.0001	No	0.0004	4.0	25.0	ND	1
999340	480	112.1715	112.1732	112.173	0.0002	No	0.0015	3.1	5.2	ND	1
999347	50	74.5475	74.5758	74.5758	0.0000	No	0.0283	566.0	50.0	566.0	1
999359-1	100	66.7168	66.7747	66.7744	0.0003	No	0.0576	576.0	25.0	576.0	1
* 999359-2	5	50.6070	50.6478	50.6478	0.0000	No	0.0408	8160.0	500.0	8160.0	1
999360-1	20	72.9979	73.0575	73.0571	0.0004	No	0.0592	2960.0	125.0	2960.0	1
999360-2	10	51.4230	51.4737	51.4734	0.0003	No	0.0504	5040.0	250.0	5040.0	1
999362-1	10	49.0287	49.0719	49.0715	0.0004	No	0.0428	4280.0	250.0	4280.0	1
999362-2	10	49.3076	49.355	49.3548	0.0002	No	0.0472	4720.0	250.0	4720.0	1
999362-3	2	51.0842	51.1503	51.1502	0.0001	No	0.0660	33000.0	1250.0	33000.0	1
999366-5	100	73.4967	73.5225	73.5225	0.0000	No	0.0258	258.0	25.0	258.0	1
999359-2D	5	51.4364	51.4765	51.4765	0.0000	No	0.0401	8020.0	500.0	8020.0	1
LCS	100	74.6860	74.7363	74.7363	0.0000	No	0.0503	503.0	25.0	503.0	1
999389	100	74.7505	74.7735	74.7735	0.0000	No	0.0230	230.0	25.0	230.0	1
999416	100	76.1955	76.2364	76.2363	0.0001	No	0.0408	408.0	25.0	408.0	1

Calculation as follows:

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

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

To: PM
* Pls check historical data, we did a dup & passed RPD but TDS/EC ratio failed ~~with~~ with. Might be because of soil matrix.

WetChem TDS_0810.xls

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 01TDS12A
Date Calculated: 1/9/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
999340	0.81	ND	0.5265	ND
999347	1004	0.56	652.6	0.87
999359-1	909	0.63	590.85	0.97
999359-2	27500	0.30	17875	0.46
999360-1	4960	0.60	3224	0.92
999360-2	8530	0.59	5544.5	0.91
999362-1	7190	0.60	4673.5	0.92
999362-2	7840	0.60	5096	0.93
999362-3	44200	0.75	28730	1.15
999366-5	450	0.57	292.5	0.88
999359-2D	27500	0.29	17875	0.45
LCS				
999389	407	0.57	264.55	0.87
999416	630	0.65	409.5	1.00

Rec'd 01/03/12
~~sd~~ 999360

999360

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CHAIN OF CUSTODY RECORD

[IM3Plant-EW-190]

COC Number

TURNAROUND TIME 10 Days

DATE 01/03/12 PAGE 1 OF 1

COMPANY: CH2M HILL /E2

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: 424973.01.DM

SAMPLERS (SIGNATURE:

	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-01-190	01/03/12	1330	Ground water	X		X	X	X	4	
-2	TW-03D-190	01/03/12	1330	Ground water	X	X	X	X		4	
										8	TOTAL NUMBER OF CONTAINERS

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD

	Signature	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)		Ron Phillips	OMI	1-3-12 1530
Signature (Received)	Rafael Davila	Rafael	T.L.I	01-03-12 15:30
Signature (Relinquished)	Rafael Davila	Rafael	T.L.I	01-03-12 21:30
Signature (Received)		Alex	TLI	1-3-12 21:30
Signature (Relinquished)				
Signature (Received)				

SAMPLE CONDITIONS

RECEIVED COOL ☑ WARM ☐ 4.1°C

CUSTODY SEALED YES ☐ NO ☑

SPECIAL REQUIREMENTS:

038

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
12/28/11	999308	7	5 mL	9.5	8:30 AM	[illegible]
1/3/12	999359-1	7	5mL	9.5	18:00	MG
↓	↓ -2	9.5	N/A	N/A	N/A	MG
1/4/12	999360-1	7	5mL	9.5	10:45 AM	[illegible]
↓	↓ -2	7	5mL	↓	10:50 AM	[illegible]
1/4/12	999362-1	7	5mL	9.5	11:00 AM	[illegible]
	-2				11:05 AM	
	-3				11:10 AM	
1/4/12	999389	7	5ml	9.5	5:15pm	[illegible]
1/5/12	999416	7	5mL	9.5	11:45pm	MG
1/9/12	999460	7	5mL	9.5	6:45pm	MG
1/10/12	999462	9.5	N/A	N/A	N/A	[illegible]
1/11/12	999512-1	9.5	N/A	N/A	N/A	[illegible]
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
1/11/12	999513-1	9.5	N/A	N/A	N/A	[illegible]
	-2					
	-3					
	-4					
	-6					
	-11					
1/11/12	999511	7	5mL	9.5	8:50 AM	[illegible]
1/11/12	DI Water + Buffer	9.5	N/A	N/A	N/A	[illegible]
1/11/12	999553	7	5ml	9.5	5pm	[illegible]
1/11/12	999513-11	9.5	N/A	N/A	N/A	[illegible]

ah

Metals Samples Logbook

~~Turbidity/pH Check~~

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
998901 (7-8)	<1	~~>2~~ >2	12/09/	M.M	Yes	Yes
~~998945 (1-2)~~		M.M				-//-
~~998946 (1-2)~~		12/09/				-//-
998947 (1-5,9-24)						-//-
998996 (1-6)						-//-
999016 (1-6)	<1	<2	12/12/11	M.M	Yes	-//-
999052	>1	<2	12/14/11	M.M	Yes	-
999056				-	-	-
999059 (1-3)				-	-	-
999038 (1-2)	<1	<2	12/14/11	M.M	Yes	-
999039 (12-5)			14:00			-
999084 (1-6)						-
999086 (1-6)						-
999087 (1-2)						-
999088						-
999089 (1-5)						-
999091 (1-24)	<1	<2	12/15/	M.M	Yes	-
999090 (1-19)						-
999092 (1-16)						-
999117 (1-2)						-
999118						-
999121 (1-4)						-
999154 (1-9)	<1	<2	12/16/11	M.M	Yes	-
999155 (1-2)						-
999156						-
999047-1	>1	<2	12/16/11	M.M	Yes	-
999067 (1-2)						-
999124						-
999125 (1-4)						-
999148						-
999149						-
999151						-
999167						-
999178 (1-8)	<1	<2	12/19/11	M.M	Yes	-
999179 (1-8)						-
999180 (1-26)						-
999028 (1-2)	Solid	-	12/19/11	M.M	Yes	TTLC
999175 (1-2)						
999191						
998731 (12,45)	<1	<2	11/23/11	M.M	Yes	-
999227	<1	<2	12/21/11	M.M	Yes	-
998732 (1-13)	<1	<2	11/30/11	M.M	Yes	-
998802	<1	<2	11/30/11	M.M	Yes	-
999241	>1	>2	12/21/11	M.M	Yes	-
998777 (1-7)	<1	<2	11/30/11	M.M	Yes	-
998778 (1-9)	<1	<2				-
999308	<1	<2	01/01/12	M.M	Yes	-
999360 (1,2)		>2			Yes	Yes
999362 (1,3)		>2				

2/3/12 M.M

01/11/1 M.M

TRUESDAIL LABORATORIES, INC.

ALERT !!
Level III QC

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 999360

Date Delivered: 01/03/11 **Time:** 2130 **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)? 4.1 °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 = _____ ☐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_____
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: _____

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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 30, 2012

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 2012-RMP-184, SURFACEWATER MONITORING PROJECT, TLI NO.: 999512

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-RMP-184 surfacewater-monitoring project for Hexavalent 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 on January 10, 2012, 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.

On January 11, 2012, Mr. Shawn Duffy requested that sample C-MW-81-184 from SDG 999513 be analyzed and reported for Hexavalent Chromium by EPA 218.6 here in SDG 999512 (999512-8). All other samples from SDG 999513 were analyzed and reported in SDG 999513.

Samples 999512-5, 999512-6, and 999512-7, which were analyzed on January 11, 2012 at 12:20, 13:04, and 13:14, respectively, were filtered and preserved in the lab. All other samples were filtered and preserved in the field.

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

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.
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Event 2010-RMP-184 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-NR3-S-184	9.50	No			
C-R22A-S-184	9.50	No			
C-R27-D-184	9.50	No			
C-TAZ-D-184	9.50	No			
R63-184	9.50	No			
SW1-184	9.50	No			
SW2-184	9.50	No			
C-MW-81-184	9.50	No			
R63-184	7.00	Yes	5 mL	9.50	
SW1-184	7.00	Yes	5 mL	9.50	
SW2-184	7.00	Yes	5 mL	9.50	

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

Laboratory No.: 999512
Date Received: January 10, 2012
Revision 1; January 30, 2012

Project Name: PG&E Topock Project
Project No.: 423575.MP.02.RM
P.O. No.: 423575.MP.02.RM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999512-001	C-NR3-S-184	E218.6	FLDFLT	1/10/2012	13:32	Chromium, hexavalent	ND	ug/L	0.20
999512-002	C-R22A-S-184	E218.6	FLDFLT	1/10/2012	11:25	Chromium, hexavalent	ND	ug/L	0.20
999512-003	C-R27-D-184	E218.6	FLDFLT	1/10/2012	12:27	Chromium, hexavalent	ND	ug/L	0.20
999512-004	C-TAZ-D-184	E218.6	FLDFLT	1/10/2012	8:50	Chromium, hexavalent	ND	ug/L	0.20
999512-005	R63-184	E218.6	FLDFLT	1/10/2012	10:30	Chromium, hexavalent	ND	ug/L	0.20
999512-005	R63-184	E218.6	LABFLT	1/10/2012	10:30	Chromium, hexavalent	ND	ug/L	0.20
999512-006	SW1-184	E218.6	FLDFLT	1/10/2012	14:50	Chromium, hexavalent	ND	ug/L	0.20
999512-006	SW1-184	E218.6	LABFLT	1/10/2012	14:50	Chromium, hexavalent	ND	ug/L	0.20
999512-007	SW2-184	E218.6	FLDFLT	1/10/2012	15:15	Chromium, hexavalent	ND	ug/L	0.20
999512-007	SW2-184	E218.6	LABFLT	1/10/2012	15:15	Chromium, hexavalent	ND	ug/L	0.20
999512-008	C-MW-81-184	E218.6	FLDFLT	1/10/2012	12:18	Chromium, hexavalent	ND	ug/L	0.20

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.

005

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.

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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: 423575.MP.02.RM
Project Number: 423575.MP.02.RM

Laboratory No. 999512

Printed 1/30/2012
Revised

Samples Received on 1/10/2012 11:30:00 PM

Field ID	Lab ID	Collected	Matrix
C-NR3-S-184	999512-001	01/10/2012 13:32	Water
C-R22A-S-184	999512-002	01/10/2012 11:25	Water
C-R27-D-184	999512-003	01/10/2012 12:27	Water
C-TAZ-D-184	999512-004	01/10/2012 08:50	Water
R63-184	999512-005	01/10/2012 10:30	Water
SW1-184	999512-006	01/10/2012 14:50	Water
SW2-184	999512-007	01/10/2012 15:15	Water
C-MW-81-184	999512-008	01/10/2012 12:18	Water

Chrome VI by EPA 218.6 Batch 01CrH12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999512-001 Chromium, Hexavalent	ug/L	01/11/2012 13:25	1.05	0.0260	0.20	ND
999512-002 Chromium, Hexavalent	ug/L	01/11/2012 13:35	1.05	0.0260	0.20	ND
999512-003 Chromium, Hexavalent	ug/L	01/11/2012 13:46	1.05	0.0260	0.20	ND
999512-004 Chromium, Hexavalent	ug/L	01/11/2012 13:56	1.05	0.0260	0.20	ND
999512-005 Chromium, Hexavalent	ug/L	01/11/2012 12:20	1.05	0.0260	0.20	ND
Chromium, Hexavalent	ug/L	01/11/2012 14:06	1.05	0.0260	0.20	ND
999512-006 Chromium, Hexavalent	ug/L	01/11/2012 13:04	1.05	0.0260	0.20	ND
Chromium, Hexavalent	ug/L	01/11/2012 14:17	1.05	0.0260	0.20	ND
999512-007 Chromium, Hexavalent	ug/L	01/11/2012 13:14	1.05	0.0260	0.20	ND
Chromium, Hexavalent	ug/L	01/11/2012 14:27	1.05	0.0260	0.20	ND
999512-008 Chromium, Hexavalent	ug/L	01/11/2012 16:40	1.05	0.0260	0.20	ND

Method Blank

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

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 423575.MP.02.RM

Printed 1/30/2012
Revised

Duplicate — Lab ID = 999462-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	0.978	0.979	0.0511	0 - 0

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.198	0.200	98.8	70 - 120

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.81	5.00	96.2	90 - 110

Matrix Spike — Lab ID = 999462-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.98	2.04(1.06)	94.8	90 - 110

Matrix Spike — Lab ID = 999512-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.08	1.15(1.06)	92.9	90 - 110

Matrix Spike — Lab ID = 999512-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.07	1.15(1.06)	93.0	90 - 110

Matrix Spike — Lab ID = 999512-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.07	1.14(1.06)	93.6	90 - 110

Matrix Spike — Lab ID = 999512-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.07	1.14(1.06)	93.4	90 - 110

Matrix Spike — Lab ID = 999512-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.06	1.13(1.06)	93.7	90 - 110

Matrix Spike — Lab ID = 999512-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.10	1.16(1.06)	94.4	90 - 110

Matrix Spike — Lab ID = 999512-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.06	1.14(1.06)	92.3	90 - 110

Matrix Spike — Lab ID = 999512-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.04	1.10(1.06)	94.8	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 423575.MP.02.RM

Printed 1/30/2012
Revised

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.84	5.00	96.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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CH2MHILL

CHAIN OF CUSTODY RECORD

999512

1/10/2012 4:18:43 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.RM
Task Order
Project 2012-RMP-184
Turnaround Time 2 Days
Shipping Date: 1/6/2012
COC Number: RMP184_2TAT

Container:	3X250 ml Poly	250ml
Preservatives:	(NH4)2SO4/NH4OH, 4°C	Ø
Filtered:	Field	NO
Holding Time:	28	1

* Where provided w/ 3 Cr6 bottles, please analyze 1 + hold 2

RUSH

ALERT !!
Level III QC

	DATE	TIME	Matrix	Cr6 (E218.6 - river) Field Filtered	Cr6 unpreserved	Number of Containers	COMMENTS
-1 C-NR3-S-184	1/10/2012	13:32	Water	X		3	
-2 C-R22A-S-184	1/10/2012	11:25	Water	X		3	
-3 C-R27-D-184	1/10/2012	12:27	Water	X		3	
-4 C-TAZ-D-184	1/10/2012	8:50	Water	X		3	
-5 R63-184	1/10/2012	10:30	Water	X	X	~~3~~	4
-6 SW1-184	1/10/2012	14:50	Water	X	X	~~3~~	4
-7 SW2-184	1/10/2012	15:15	Water	X	X	~~3~~	4
					TOTAL NUMBER OF CONTAINERS	21	

For Sample Conditions See Form Attached

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by		1-10-12 4:45
Received by	Rafael Davila	1-10-12 4:45
Relinquished by	Rafael Davila	1-10-12 11:30
Received by	Linda Shaimmirc	1/10/12 11:30 pm

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: Jan 10-11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Rec'd 1/10/12 999512 ~~999513~~

CH2MHILL

CHAIN OF CUSTODY RECORD

1/10/2012 4:18:17 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.RM
Task Order
Project 2012-RMP-184
Turnaround Time 10 Days
Shipping Date: 1/10/2012
COC Number: 1

			Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter			
			Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C			
			Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA	NA			
			Holding Time:	28	28	180	180	180	2	2	2	2	2			
	DATE	TIME	Matrix	Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Metals (6010B) Total Fe	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo	Metals (6020AFF) Field Filtered Chromium	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	PH (SM4500HB)	Alkalinity (SM2320B)	TSS (SM2540)		Number of Containers	COMMENTS
C-BNS-D-184	1/10/2012	12:00	Water	X		X	X	X	X	X	X	X	X		9	
C-I-3-D-184	1/10/2012	9:50	Water	X		X	X	X	X	X	X	X	X		9	pH=2
C-I-3-S-184	1/10/2012	10:07	Water	X		X	X	X	X	X	X	X	X		9	
C-MW-80-184	1/10/2012	11:45	Water		X										1	Hold
C-MW-81-184	1/10/2012	12:18	Water		X										1	Hold
C-NR3-D-184	1/10/2012	13:17	Water	X		X	X	X	X	X	X	X	X		9	
C-NR3-S-184	1/10/2012	13:32	Water			X	X	X	X	X	X	X	X		6	
C-R22A-D-184	1/10/2012	11:10	Water	X		X	X	X	X	X	X	X	X		9	
C-R22A-S-184	1/10/2012	11:25	Water			X	X	X	X	X	X	X	X		6	
C-R27-D-184	1/10/2012	12:27	Water			X	X	X	X	X	X	X	X		6	pH=2
C-R27-S-184	1/10/2012	12:45	Water	X		X	X	X	X	X	X	X	X		9	
C-TAZ-D-184	1/10/2012	8:50	Water			X	X	X	X	X	X	X	X		6	
C-TAZ-S-184	1/10/2012	9:15	Water	X		X	X	X	X	X	X	X	X		9	
R63-184	1/10/2012	10:30	Water			X	X	X	X	X	X	X	X		6	

* Where provided w/3 Cr6 + CrT bottles, please analyze 1 + hold 2

ALERT !! Level III QC

	Signatures	Date/Time
Approved by		1-10-12 4:45
Sampled by		
Relinquished by		
Received by	Rafael Davila	1-10-12 4:45
Relinquished by	Rafael Davila	1-10-12 11:30
Received by	Linda Shabbuzzum	1/10/12 11:30 pm

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:
Jan 10-11, 2012

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
12/28/11	999308	7	5 mL	9.5	8:30 Am	GW
1/3/12	999359-1	7	5mL	9.5	18:00	MG
↓	↓ -2	9.5	N/A	N/A	N/A	MG
1/4/12	999360-1	7	5mL	9.5	10:45 Am	GW
↓	↓ -2	7	5mL	↓	10:50 Am	GW
1/4/12	999362-1	7	5mL	9.5	11:00 Am	GW
	-2				11:05 Am	
	-3				11:10 Am	
1/4/12	999389	7	5ml	9.5	5:15pm	GW
1/5/12	999416	7	5mL	9.5	11:45pm	MG
1/9/12	999460	7	5mL	9.5	6:45pm	MG
1/10/12	999462	9.5	N/A	N/A	N/A	GW
1/11/12	999512-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
1/11/12	999513-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-6					
	-11					
1/11/12	999511	7	5mL	9.5	8:50 Am	GW
1/11/12	DI Water + Buffer	9.5	N/A	N/A	N/A	GW
1/11/12	999553	7	5ml	9.5	5pm	GW
1/11/12	999513-11	9.5	N/A	N/A	N/A	GW

al

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
1/10/12	999512-5	7.5	5mL	9.5	5:00 pm	[illegible]
↓	↓ -6	↓	↓	↓	5:10 pm	↓
↓	↓ -7	↓	↓	↓	5:15pm	↓
1/11/12	999512-8	9.5	N/A	N/A	N/A	[illegible]

C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

TRUESDAIL LABORATORIES, INC.

ALERT !!
Level III QC

Sample Integrity & Analysis Discrepancy Form

Client: EZ **Lab #** 999512

Date Delivered: 01 / 10 / 11 **Time:** 11:30 pm **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)? 4.2°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 = _____ ☐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
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: _____

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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 3, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-RMP-184, SURFACEWATER MONITORING PROJECT, TLI NO.: 999513

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-RMP-184 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 10, 2012, 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.

Mr. Shawn Duffy requested that the hold be removed from sample RMP-AB1-184 on January 11, 2012.

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

Michael Ngo
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
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Event 2012-RMP-184 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-184	2.00	No			
C-I-3-D-184	2.00	No			
C-I-3-S-184	2.00	No			
C-NR3-D-184	2.00	No			
C-NR3-S-184	2.00	No			
C-R22A-D-184	2.00	No			
C-R22A-S-184	2.00	No			
C-R27-D-184	2.00	No			
C-R27-S-184	2.00	No			
C-TAZ-D-184	2.00	No			
C-TAZ-S-184	2.00	No			
R63-184	2.00	No			
SW1-184	2.00	No			
SW2-184	2.00	No			
RMP-AB1-184	2.00	No			

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Event 2012-RMP-184 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-184	9.50	No			
C-I-3-D-184	9.50	No			
C-I-3-S-184	9.50	No			
C-NR3-D-184	9.50	No			
C-NR3-S-184	9.50	No			
C-R22A-D-184	9.50	No			
C-R22A-S-184	9.50	No			
C-R27-D-184	9.50	No			
C-R27-S-184	9.50	No			
C-TAZ-D-184	9.50	No			
C-TAZ-S-184	9.50	No			
R63-184	9.50	No			
SW1-184	9.50	No			
SW2-184	9.50	No			
RMP-AB1-184	9.50	No			

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

Laboratory No.: 999513
Date Received: January 10, 2012

Project Name: PG&E Topock Project
Project No.: 423575.MP.02.RM
P.O. No.: 423575.MP.02.RM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999513-001	C-BNS-D-184	E120.1	NONE	1/10/2012	12:00	EC	910	umhos/cm	2.00
999513-001	C-BNS-D-184	E218.6	FLDFLT	1/10/2012	12:00	Chromium, hexavalent	ND	ug/L	0.20
999513-001	C-BNS-D-184	E300	NONE	1/10/2012	12:00	Nitrate as N	ND	mg/L	0.500
999513-001	C-BNS-D-184	SM2320B	NONE	1/10/2012	12:00	Alkalinity	140	mg/L	5.00
999513-001	C-BNS-D-184	SM2320B	NONE	1/10/2012	12:00	Bicarbonate	140	mg/L	5.00
999513-001	C-BNS-D-184	SM2320B	NONE	1/10/2012	12:00	Carbonate	ND	mg/L	5.00
999513-001	C-BNS-D-184	SM2540D	NONE	1/10/2012	12:00	Total Suspended Solids	ND	mg/L	10.0
999513-001	C-BNS-D-184	SM4500HB	NONE	1/10/2012	12:00	PH	8.03	pH	4.00
999513-001	C-BNS-D-184	SW6010B	FLDFLT-digested	1/10/2012	12:00	Iron	ND	ug/L	20.0
999513-001	C-BNS-D-184	SW6010B	NONE-digested	1/10/2012	12:00	Iron	28.8	ug/L	20.0
999513-001	C-BNS-D-184	SW6020	FLDFLT-digested	1/10/2012	12:00	Arsenic	2.5	ug/L	1.0
999513-001	C-BNS-D-184	SW6020	FLDFLT-digested	1/10/2012	12:00	Chromium	ND	ug/L	1.0
999513-001	C-BNS-D-184	SW6020	FLDFLT-digested	1/10/2012	12:00	Manganese	ND	ug/L	10.0
999513-001	C-BNS-D-184	SW6020	FLDFLT-digested	1/10/2012	12:00	Molybdenum	ND	ug/L	10.0
999513-001	C-BNS-D-184	SW6020	FLDFLT-digested	1/10/2012	12:00	Selenium	ND	ug/L	10.0
999513-002	C-I-3-D-184	E120.1	NONE	1/10/2012	9:50	EC	878	umhos/cm	2.00
999513-002	C-I-3-D-184	E218.6	FLDFLT	1/10/2012	9:50	Chromium, hexavalent	ND	ug/L	0.20
999513-002	C-I-3-D-184	E300	NONE	1/10/2012	9:50	Nitrate as N	ND	mg/L	0.500
999513-002	C-I-3-D-184	SM2320B	NONE	1/10/2012	9:50	Alkalinity	124	mg/L	5.00
999513-002	C-I-3-D-184	SM2320B	NONE	1/10/2012	9:50	Bicarbonate	124	mg/L	5.00
999513-002	C-I-3-D-184	SM2320B	NONE	1/10/2012	9:50	Carbonate	ND	mg/L	5.00
999513-002	C-I-3-D-184	SM2540D	NONE	1/10/2012	9:50	Total Suspended Solids	ND	mg/L	10.0
999513-002	C-I-3-D-184	SM4500HB	NONE	1/10/2012	9:50	PH	8.16	pH	4.00

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999513-002	C-I-3-D-184	SW6010B	FLDFLT-digested	1/10/2012	9:50	Iron	ND	ug/L	20.0
999513-002	C-I-3-D-184	SW6010B	NONE-digested	1/10/2012	9:50	Iron	20.6	ug/L	20.0
999513-002	C-I-3-D-184	SW6020	FLDFLT-digested	1/10/2012	9:50	Arsenic	2.0	ug/L	1.0
999513-002	C-I-3-D-184	SW6020	FLDFLT-digested	1/10/2012	9:50	Chromium	ND	ug/L	1.0
999513-002	C-I-3-D-184	SW6020	FLDFLT-digested	1/10/2012	9:50	Manganese	ND	ug/L	10.0
999513-002	C-I-3-D-184	SW6020	FLDFLT-digested	1/10/2012	9:50	Molybdenum	ND	ug/L	10.0
999513-002	C-I-3-D-184	SW6020	FLDFLT-digested	1/10/2012	9:50	Selenium	ND	ug/L	10.0
999513-003	C-I-3-S-184	E120.1	NONE	1/10/2012	10:07	EC	890	umhos/cm	2.00
999513-003	C-I-3-S-184	E218.6	FLDFLT	1/10/2012	10:07	Chromium, hexavalent	ND	ug/L	0.20
999513-003	C-I-3-S-184	E300	NONE	1/10/2012	10:07	Nitrate as N	0.532	mg/L	0.500
999513-003	C-I-3-S-184	SM2320B	NONE	1/10/2012	10:07	Alkalinity	131	mg/L	5.00
999513-003	C-I-3-S-184	SM2320B	NONE	1/10/2012	10:07	Bicarbonate	131	mg/L	5.00
999513-003	C-I-3-S-184	SM2320B	NONE	1/10/2012	10:07	Carbonate	ND	mg/L	5.00
999513-003	C-I-3-S-184	SM2540D	NONE	1/10/2012	10:07	Total Suspended Solids	ND	mg/L	10.0
999513-003	C-I-3-S-184	SM4500HB	NONE	1/10/2012	10:07	PH	8.18	pH	4.00
999513-003	C-I-3-S-184	SW6010B	FLDFLT-digested	1/10/2012	10:07	Iron	ND	ug/L	20.0
999513-003	C-I-3-S-184	SW6010B	NONE-digested	1/10/2012	10:07	Iron	ND	ug/L	20.0
999513-003	C-I-3-S-184	SW6020	FLDFLT-digested	1/10/2012	10:07	Arsenic	2.2	ug/L	1.0
999513-003	C-I-3-S-184	SW6020	FLDFLT-digested	1/10/2012	10:07	Chromium	ND	ug/L	1.0
999513-003	C-I-3-S-184	SW6020	FLDFLT-digested	1/10/2012	10:07	Manganese	ND	ug/L	10.0
999513-003	C-I-3-S-184	SW6020	FLDFLT-digested	1/10/2012	10:07	Molybdenum	ND	ug/L	10.0
999513-003	C-I-3-S-184	SW6020	FLDFLT-digested	1/10/2012	10:07	Selenium	ND	ug/L	10.0
999513-004	C-NR3-D-184	E120.1	NONE	1/10/2012	13:17	EC	893	umhos/cm	2.00
999513-004	C-NR3-D-184	E218.6	FLDFLT	1/10/2012	13:17	Chromium, hexavalent	ND	ug/L	0.20
999513-004	C-NR3-D-184	E300	NONE	1/10/2012	13:17	Nitrate as N	ND	mg/L	0.500
999513-004	C-NR3-D-184	SM2320B	NONE	1/10/2012	13:17	Alkalinity	132	mg/L	5.00
999513-004	C-NR3-D-184	SM2320B	NONE	1/10/2012	13:17	Bicarbonate	132	mg/L	5.00
999513-004	C-NR3-D-184	SM2320B	NONE	1/10/2012	13:17	Carbonate	ND	mg/L	5.00
999513-004	C-NR3-D-184	SM2540D	NONE	1/10/2012	13:17	Total Suspended Solids	ND	mg/L	10.0
999513-004	C-NR3-D-184	SM4500HB	NONE	1/10/2012	13:17	PH	8.09	pH	4.00
999513-004	C-NR3-D-184	SW6010B	FLDFLT-digested	1/10/2012	13:17	Iron	ND	ug/L	20.0
999513-004	C-NR3-D-184	SW6010B	NONE-digested	1/10/2012	13:17	Iron	ND	ug/L	20.0
999513-004	C-NR3-D-184	SW6020	FLDFLT-digested	1/10/2012	13:17	Arsenic	2.6	ug/L	1.0
999513-004	C-NR3-D-184	SW6020	FLDFLT-digested	1/10/2012	13:17	Chromium	ND	ug/L	1.0
999513-004	C-NR3-D-184	SW6020	FLDFLT-digested	1/10/2012	13:17	Manganese	ND	ug/L	10.0
999513-004	C-NR3-D-184	SW6020	FLDFLT-digested	1/10/2012	13:17	Molybdenum	ND	ug/L	10.0
999513-004	C-NR3-D-184	SW6020	FLDFLT-digested	1/10/2012	13:17	Selenium	ND	ug/L	10.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999513-005	C-NR3-S-184	E120.1	NONE	1/10/2012	13:32	EC	918	umhos/cm	2.00
999513-005	C-NR3-S-184	E300	NONE	1/10/2012	13:32	Nitrate as N	ND	mg/L	0.500
999513-005	C-NR3-S-184	SM2320B	NONE	1/10/2012	13:32	Alkalinity	137	mg/L	5.00
999513-005	C-NR3-S-184	SM2320B	NONE	1/10/2012	13:32	Bicarbonate	137	mg/L	5.00
999513-005	C-NR3-S-184	SM2320B	NONE	1/10/2012	13:32	Carbonate	ND	mg/L	5.00
999513-005	C-NR3-S-184	SM2540D	NONE	1/10/2012	13:32	Total Suspended Solids	ND	mg/L	10.0
999513-005	C-NR3-S-184	SM4500HB	NONE	1/10/2012	13:32	PH	8.18	pH	4.00
999513-005	C-NR3-S-184	SW6010B	FLDFLT-digested	1/10/2012	13:32	Iron	ND	ug/L	20.0
999513-005	C-NR3-S-184	SW6010B	NONE-digested	1/10/2012	13:32	Iron	ND	ug/L	20.0
999513-005	C-NR3-S-184	SW6020	FLDFLT-digested	1/10/2012	13:32	Arsenic	2.2	ug/L	1.0
999513-005	C-NR3-S-184	SW6020	FLDFLT-digested	1/10/2012	13:32	Chromium	ND	ug/L	1.0
999513-005	C-NR3-S-184	SW6020	FLDFLT-digested	1/10/2012	13:32	Manganese	ND	ug/L	10.0
999513-005	C-NR3-S-184	SW6020	FLDFLT-digested	1/10/2012	13:32	Molybdenum	ND	ug/L	10.0
999513-005	C-NR3-S-184	SW6020	FLDFLT-digested	1/10/2012	13:32	Selenium	ND	ug/L	10.0
999513-006	C-R22A-D-184	E120.1	NONE	1/10/2012	11:10	EC	932	umhos/cm	2.00
999513-006	C-R22A-D-184	E218.6	FLDFLT	1/10/2012	11:10	Chromium, hexavalent	ND	ug/L	0.20
999513-006	C-R22A-D-184	E300	NONE	1/10/2012	11:10	Nitrate as N	ND	mg/L	0.500
999513-006	C-R22A-D-184	SM2320B	NONE	1/10/2012	11:10	Alkalinity	132	mg/L	5.00
999513-006	C-R22A-D-184	SM2320B	NONE	1/10/2012	11:10	Bicarbonate	132	mg/L	5.00
999513-006	C-R22A-D-184	SM2320B	NONE	1/10/2012	11:10	Carbonate	ND	mg/L	5.00
999513-006	C-R22A-D-184	SM2540D	NONE	1/10/2012	11:10	Total Suspended Solids	ND	mg/L	10.0
999513-006	C-R22A-D-184	SM4500HB	NONE	1/10/2012	11:10	PH	8.17	pH	4.00
999513-006	C-R22A-D-184	SW6010B	FLDFLT-digested	1/10/2012	11:10	Iron	ND	ug/L	20.0
999513-006	C-R22A-D-184	SW6010B	NONE-digested	1/10/2012	11:10	Iron	28.2	ug/L	20.0
999513-006	C-R22A-D-184	SW6020	FLDFLT-digested	1/10/2012	11:10	Arsenic	2.4	ug/L	1.0
999513-006	C-R22A-D-184	SW6020	FLDFLT-digested	1/10/2012	11:10	Chromium	ND	ug/L	1.0
999513-006	C-R22A-D-184	SW6020	FLDFLT-digested	1/10/2012	11:10	Manganese	ND	ug/L	10.0
999513-006	C-R22A-D-184	SW6020	FLDFLT-digested	1/10/2012	11:10	Molybdenum	ND	ug/L	10.0
999513-006	C-R22A-D-184	SW6020	FLDFLT-digested	1/10/2012	11:10	Selenium	ND	ug/L	10.0
999513-007	C-R22A-S-184	E120.1	NONE	1/10/2012	11:25	EC	932	umhos/cm	2.00
999513-007	C-R22A-S-184	E300	NONE	1/10/2012	11:25	Nitrate as N	ND	mg/L	0.500
999513-007	C-R22A-S-184	SM2320B	NONE	1/10/2012	11:25	Alkalinity	134	mg/L	5.00
999513-007	C-R22A-S-184	SM2320B	NONE	1/10/2012	11:25	Bicarbonate	134	mg/L	5.00
999513-007	C-R22A-S-184	SM2320B	NONE	1/10/2012	11:25	Carbonate	ND	mg/L	5.00
999513-007	C-R22A-S-184	SM2540D	NONE	1/10/2012	11:25	Total Suspended Solids	ND	mg/L	10.0
999513-007	C-R22A-S-184	SM4500HB	NONE	1/10/2012	11:25	PH	8.26	pH	4.00

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999513-007	C-R22A-S-184	SW6010B	FLDFLT-digested	1/10/2012	11:25	Iron	ND	ug/L	20.0
999513-007	C-R22A-S-184	SW6010B	NONE-digested	1/10/2012	11:25	Iron	34.6	ug/L	20.0
999513-007	C-R22A-S-184	SW6020	FLDFLT-digested	1/10/2012	11:25	Arsenic	2.4	ug/L	1.0
999513-007	C-R22A-S-184	SW6020	FLDFLT-digested	1/10/2012	11:25	Chromium	ND	ug/L	1.0
999513-007	C-R22A-S-184	SW6020	FLDFLT-digested	1/10/2012	11:25	Manganese	ND	ug/L	10.0
999513-007	C-R22A-S-184	SW6020	FLDFLT-digested	1/10/2012	11:25	Molybdenum	ND	ug/L	10.0
999513-007	C-R22A-S-184	SW6020	FLDFLT-digested	1/10/2012	11:25	Selenium	ND	ug/L	10.0
999513-008	C-R27-D-184	E120.1	NONE	1/10/2012	12:27	EC	931	umhos/cm	2.00
999513-008	C-R27-D-184	E300	NONE	1/10/2012	12:27	Nitrate as N	ND	mg/L	0.500
999513-008	C-R27-D-184	SM2320B	NONE	1/10/2012	12:27	Alkalinity	135	mg/L	5.00
999513-008	C-R27-D-184	SM2320B	NONE	1/10/2012	12:27	Bicarbonate	135	mg/L	5.00
999513-008	C-R27-D-184	SM2320B	NONE	1/10/2012	12:27	Carbonate	ND	mg/L	5.00
999513-008	C-R27-D-184	SM2540D	NONE	1/10/2012	12:27	Total Suspended Solids	ND	mg/L	10.0
999513-008	C-R27-D-184	SM4500HB	NONE	1/10/2012	12:27	PH	8.21	pH	4.00
999513-008	C-R27-D-184	SW6010B	FLDFLT-digested	1/10/2012	12:27	Iron	ND	ug/L	20.0
999513-008	C-R27-D-184	SW6010B	NONE-digested	1/10/2012	12:27	Iron	22.6	ug/L	20.0
999513-008	C-R27-D-184	SW6020	FLDFLT-digested	1/10/2012	12:27	Arsenic	2.4	ug/L	1.0
999513-008	C-R27-D-184	SW6020	FLDFLT-digested	1/10/2012	12:27	Chromium	ND	ug/L	1.0
999513-008	C-R27-D-184	SW6020	FLDFLT-digested	1/10/2012	12:27	Manganese	ND	ug/L	10.0
999513-008	C-R27-D-184	SW6020	FLDFLT-digested	1/10/2012	12:27	Molybdenum	ND	ug/L	10.0
999513-008	C-R27-D-184	SW6020	FLDFLT-digested	1/10/2012	12:27	Selenium	ND	ug/L	10.0
999513-009	C-R27-S-184	E120.1	NONE	1/10/2012	12:45	EC	921	umhos/cm	2.00
999513-009	C-R27-S-184	E218.6	FLDFLT	1/10/2012	12:45	Chromium, hexavalent	ND	ug/L	0.20
999513-009	C-R27-S-184	E300	NONE	1/10/2012	12:45	Nitrate as N	ND	mg/L	0.500
999513-009	C-R27-S-184	SM2320B	NONE	1/10/2012	12:45	Alkalinity	125	mg/L	5.00
999513-009	C-R27-S-184	SM2320B	NONE	1/10/2012	12:45	Bicarbonate	125	mg/L	5.00
999513-009	C-R27-S-184	SM2320B	NONE	1/10/2012	12:45	Carbonate	ND	mg/L	5.00
999513-009	C-R27-S-184	SM2540D	NONE	1/10/2012	12:45	Total Suspended Solids	ND	mg/L	10.0
999513-009	C-R27-S-184	SM4500HB	NONE	1/10/2012	12:45	PH	8.25	pH	4.00
999513-009	C-R27-S-184	SW6010B	FLDFLT-digested	1/10/2012	12:45	Iron	ND	ug/L	20.0
999513-009	C-R27-S-184	SW6010B	NONE-digested	1/10/2012	12:45	Iron	ND	ug/L	20.0
999513-009	C-R27-S-184	SW6020	FLDFLT-digested	1/10/2012	12:45	Arsenic	2.4	ug/L	1.0
999513-009	C-R27-S-184	SW6020	FLDFLT-digested	1/10/2012	12:45	Chromium	ND	ug/L	1.0
999513-009	C-R27-S-184	SW6020	FLDFLT-digested	1/10/2012	12:45	Manganese	ND	ug/L	10.0
999513-009	C-R27-S-184	SW6020	FLDFLT-digested	1/10/2012	12:45	Molybdenum	ND	ug/L	10.0
999513-009	C-R27-S-184	SW6020	FLDFLT-digested	1/10/2012	12:45	Selenium	ND	ug/L	10.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999513-010	C-TAZ-D-184	E120.1	NONE	1/10/2012	8:50	EC	913	umhos/cm	2.00
999513-010	C-TAZ-D-184	E300	NONE	1/10/2012	8:50	Nitrate as N	ND	mg/L	0.500
999513-010	C-TAZ-D-184	SM2320B	NONE	1/10/2012	8:50	Alkalinity	125	mg/L	5.00
999513-010	C-TAZ-D-184	SM2320B	NONE	1/10/2012	8:50	Bicarbonate	125	mg/L	5.00
999513-010	C-TAZ-D-184	SM2320B	NONE	1/10/2012	8:50	Carbonate	ND	mg/L	5.00
999513-010	C-TAZ-D-184	SM2540D	NONE	1/10/2012	8:50	Total Suspended Solids	ND	mg/L	10.0
999513-010	C-TAZ-D-184	SM4500HB	NONE	1/10/2012	8:50	PH	8.24	pH	4.00
999513-010	C-TAZ-D-184	SW6010B	FLDFLT-digested	1/10/2012	8:50	Iron	ND	ug/L	20.0
999513-010	C-TAZ-D-184	SW6010B	NONE-digested	1/10/2012	8:50	Iron	25.1	ug/L	20.0
999513-010	C-TAZ-D-184	SW6020	FLDFLT-digested	1/10/2012	8:50	Arsenic	2.8	ug/L	1.0
999513-010	C-TAZ-D-184	SW6020	FLDFLT-digested	1/10/2012	8:50	Chromium	ND	ug/L	1.0
999513-010	C-TAZ-D-184	SW6020	FLDFLT-digested	1/10/2012	8:50	Manganese	ND	ug/L	10.0
999513-010	C-TAZ-D-184	SW6020	FLDFLT-digested	1/10/2012	8:50	Molybdenum	ND	ug/L	10.0
999513-010	C-TAZ-D-184	SW6020	FLDFLT-digested	1/10/2012	8:50	Selenium	ND	ug/L	10.0
999513-011	C-TAZ-S-184	E120.1	NONE	1/10/2012	9:15	EC	913	umhos/cm	2.00
999513-011	C-TAZ-S-184	E218.6	FLDFLT	1/10/2012	9:15	Chromium, hexavalent	ND	ug/L	0.20
999513-011	C-TAZ-S-184	E300	NONE	1/10/2012	9:15	Nitrate as N	ND	mg/L	0.500
999513-011	C-TAZ-S-184	SM2320B	NONE	1/10/2012	9:15	Alkalinity	134	mg/L	5.00
999513-011	C-TAZ-S-184	SM2320B	NONE	1/10/2012	9:15	Bicarbonate	134	mg/L	5.00
999513-011	C-TAZ-S-184	SM2320B	NONE	1/10/2012	9:15	Carbonate	ND	mg/L	5.00
999513-011	C-TAZ-S-184	SM2540D	NONE	1/10/2012	9:15	Total Suspended Solids	ND	mg/L	10.0
999513-011	C-TAZ-S-184	SM4500HB	NONE	1/10/2012	9:15	PH	8.14	pH	4.00
999513-011	C-TAZ-S-184	SW6010B	FLDFLT-digested	1/10/2012	9:15	Iron	ND	ug/L	20.0
999513-011	C-TAZ-S-184	SW6010B	NONE-digested	1/10/2012	9:15	Iron	20.8	ug/L	20.0
999513-011	C-TAZ-S-184	SW6020	FLDFLT-digested	1/10/2012	9:15	Arsenic	2.2	ug/L	1.0
999513-011	C-TAZ-S-184	SW6020	FLDFLT-digested	1/10/2012	9:15	Chromium	ND	ug/L	1.0
999513-011	C-TAZ-S-184	SW6020	FLDFLT-digested	1/10/2012	9:15	Manganese	ND	ug/L	10.0
999513-011	C-TAZ-S-184	SW6020	FLDFLT-digested	1/10/2012	9:15	Molybdenum	ND	ug/L	10.0
999513-011	C-TAZ-S-184	SW6020	FLDFLT-digested	1/10/2012	9:15	Selenium	ND	ug/L	10.0

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Report Continued

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999513-012	R63-184	E120.1	NONE	1/10/2012	10:30	EC	914	umhos/cm	2.00
999513-012	R63-184	E300	NONE	1/10/2012	10:30	Nitrate as N	ND	mg/L	0.500
999513-012	R63-184	SM2320B	NONE	1/10/2012	10:30	Alkalinity	129	mg/L	5.00
999513-012	R63-184	SM2320B	NONE	1/10/2012	10:30	Bicarbonate	129	mg/L	5.00
999513-012	R63-184	SM2320B	NONE	1/10/2012	10:30	Carbonate	ND	mg/L	5.00
999513-012	R63-184	SM2540D	NONE	1/10/2012	10:30	Total Suspended Solids	ND	mg/L	10.0
999513-012	R63-184	SM4500HB	NONE	1/10/2012	10:30	PH	8.22	pH	4.00
999513-012	R63-184	SW6010B	FLDFLT-digested	1/10/2012	10:30	Iron	ND	ug/L	20.0
999513-012	R63-184	SW6010B	NONE-digested	1/10/2012	10:30	Iron	22.8	ug/L	20.0
999513-012	R63-184	SW6020	FLDFLT-digested	1/10/2012	10:30	Arsenic	2.3	ug/L	1.0
999513-012	R63-184	SW6020	FLDFLT-digested	1/10/2012	10:30	Chromium	ND	ug/L	1.0
999513-012	R63-184	SW6020	FLDFLT-digested	1/10/2012	10:30	Manganese	ND	ug/L	10.0
999513-012	R63-184	SW6020	FLDFLT-digested	1/10/2012	10:30	Molybdenum	ND	ug/L	10.0
999513-012	R63-184	SW6020	FLDFLT-digested	1/10/2012	10:30	Selenium	ND	ug/L	10.0
999513-013	SW1-184	E120.1	NONE	1/10/2012	14:50	EC	998	umhos/cm	2.00
999513-013	SW1-184	SM4500HB	NONE	1/10/2012	14:50	PH	7.65	pH	4.00
999513-013	SW1-184	SW6020	FLDFLT-digested	1/10/2012	14:50	Chromium	ND	ug/L	1.0
999513-014	SW2-184	E120.1	NONE	1/10/2012	15:15	EC	928	umhos/cm	2.00
999513-014	SW2-184	SM4500HB	NONE	1/10/2012	15:15	PH	7.90	pH	4.00
999513-014	SW2-184	SW6020	FLDFLT-digested	1/10/2012	15:15	Chromium	ND	ug/L	1.0
999513-015	RMP-AB1-184	E218.6	FLDFLT	1/10/2012	13:32	Chromium, hexavalent	ND	ug/L	0.20

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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

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

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

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TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project Number: 423575.MP.02.RM
P.O. Number: 423575.MP.02.RM
Release Number:

Laboratory No. 999513

Printed 2/3/2012

Samples Received on 1/10/2012 11:30:00 PM

Field ID	Lab ID	Collected	Matrix
C-BNS-D-184	999513-001	01/10/2012 12:00	Water
C-I-3-D-184	999513-002	01/10/2012 09:50	Water
C-I-3-S-184	999513-003	01/10/2012 10:07	Water
C-NR3-D-184	999513-004	01/10/2012 13:17	Water
C-NR3-S-184	999513-005	01/10/2012 13:32	Water
C-R22A-D-184	999513-006	01/10/2012 11:10	Water
C-R22A-S-184	999513-007	01/10/2012 11:25	Water
C-R27-D-184	999513-008	01/10/2012 12:27	Water
C-R27-S-184	999513-009	01/10/2012 12:45	Water
C-TAZ-D-184	999513-010	01/10/2012 08:50	Water
C-TAZ-S-184	999513-011	01/10/2012 09:15	Water
R63-184	999513-012	01/10/2012 10:30	Water
SW1-184	999513-013	01/10/2012 14:50	Water
SW2-184	999513-014	01/10/2012 15:15	Water
RMP-AB1-184	999513-015	01/10/2012 13:32	Water

Anions By I.C. - EPA 300.0 Batch 01AN12F

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999513-001 Nitrate as Nitrogen	mg/L	01/11/2012 13:31	1.00	0.0270	0.500	ND
999513-002 Nitrate as Nitrogen	mg/L	01/11/2012 13:43	1.00	0.0270	0.500	ND
999513-003 Nitrate as Nitrogen	mg/L	01/11/2012 13:54	1.00	0.0270	0.500	0.532
999513-004 Nitrate as Nitrogen	mg/L	01/11/2012 16:22	1.00	0.0270	0.500	ND
999513-005 Nitrate as Nitrogen	mg/L	01/11/2012 16:45	1.00	0.0270	0.500	ND
999513-006 Nitrate as Nitrogen	mg/L	01/11/2012 16:56	1.00	0.0270	0.500	ND
999513-007 Nitrate as Nitrogen	mg/L	01/11/2012 17:08	1.00	0.0270	0.500	ND
999513-008 Nitrate as Nitrogen	mg/L	01/11/2012 17:42	1.00	0.0270	0.500	ND
999513-009 Nitrate as Nitrogen	mg/L	01/11/2012 17:53	1.00	0.0270	0.500	ND
999513-010 Nitrate as Nitrogen	mg/L	01/11/2012 18:05	1.00	0.0270	0.500	ND

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999513-011 Nitrate as Nitrogen	mg/L	01/11/2012 18:16	1.00	0.0270	0.500	ND
999513-012 Nitrate as Nitrogen	mg/L	01/11/2012 18:27	1.00	0.0270	0.500	ND

Method Blank

Parameter	Unit	DF	Result
Nitrate as Nitrogen	mg/L	1.00	ND

Duplicate — Lab ID = 999513-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	0.530	0.532	0.377	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	3.96	4.00	99.1	90 - 110

Matrix Spike — Lab ID = 999513-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.70	2.53(2.00)	108.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	3.93	4.00	98.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.98	3.00	99.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	3.07	3.00	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	3.02	3.00	101.	90 - 110

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Alkalinity by SM 2320B Batch 01ALK12B 1/12/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999513-001 Alkalinity as CaCO3	mg/L	01/12/2012	1.00	1.68	5.00	140.
Bicarbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	140.
Carbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	ND
999513-002 Alkalinity as CaCO3	mg/L	01/12/2012	1.00	1.68	5.00	124
Bicarbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	124
Carbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	ND
999513-003 Alkalinity as CaCO3	mg/L	01/12/2012	1.00	1.68	5.00	131
Bicarbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	131
Carbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	ND
999513-004 Alkalinity as CaCO3	mg/L	01/12/2012	1.00	1.68	5.00	132
Bicarbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	132
Carbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	ND
999513-005 Alkalinity as CaCO3	mg/L	01/12/2012	1.00	1.68	5.00	137
Bicarbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	137
Carbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	ND
999513-006 Alkalinity as CaCO3	mg/L	01/12/2012	1.00	1.68	5.00	132
Bicarbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	132
Carbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	ND
999513-007 Alkalinity as CaCO3	mg/L	01/12/2012	1.00	1.68	5.00	134
Bicarbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	134
Carbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	ND
999513-008 Alkalinity as CaCO3	mg/L	01/12/2012	1.00	1.68	5.00	135
Bicarbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	135
Carbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	ND
999513-009 Alkalinity as CaCO3	mg/L	01/12/2012	1.00	1.68	5.00	125
Bicarbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	125
Carbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	ND
999513-010 Alkalinity as CaCO3	mg/L	01/12/2012	1.00	1.68	5.00	125
Bicarbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	125
Carbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	ND
999513-011 Alkalinity as CaCO3	mg/L	01/12/2012	1.00	1.68	5.00	134
Bicarbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	134
Carbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	ND
999513-012 Alkalinity as CaCO3	mg/L	01/12/2012	1.00	1.68	5.00	129

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999513-012 Bicarbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	129
Carbonate (Calculated)	mg/L	01/12/2012	1.00	1.68	5.00	ND

Method Blank

Parameter	Unit	DF	Result
Alkalinity as CaCO3	mg/L	1.00	ND

Duplicate — Lab ID = 999513-012

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	128	129	0.778	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	97.0	100.	97.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	96.0	100.	96.0	90 - 110

Matrix Spike — Lab ID = 999513-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	205	229(100.)	76.0	75 - 125

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Specific Conductivity - EPA 120.1 Batch 01EC12E 1/17/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999513-001 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	910.
999513-002 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	878
999513-003 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	890.
999513-004 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	893
999513-005 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	918
999513-006 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	932
999513-007 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	932
999513-008 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	931
999513-009 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	921
999513-010 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	913
999513-011 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	913
999513-012 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	914
999513-013 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	998
999513-014 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	928

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	912	910.	0.220	0 - 10

Duplicate — Lab ID = 999513-014

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	929	928	0.108	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	688	706	97.4	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	681	706	96.4	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	687	706	97.3	90 - 110

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Metals by EPA 6010B, Total Batch 011912B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999513-001 Iron	ug/L	01/19/2012 18:19	1.00	1.34	20.0	28.8
999513-002 Iron	ug/L	01/19/2012 19:09	1.00	1.34	20.0	20.6
999513-003 Iron	ug/L	01/19/2012 19:15	1.00	1.34	20.0	ND
999513-004 Iron	ug/L	01/19/2012 19:21	1.00	1.34	20.0	ND
999513-005 Iron	ug/L	01/19/2012 19:27	1.00	1.34	20.0	ND
999513-006 Iron	ug/L	01/19/2012 19:33	1.00	1.34	20.0	28.2
999513-007 Iron	ug/L	01/19/2012 19:39	1.00	1.34	20.0	34.6
999513-008 Iron	ug/L	01/19/2012 19:44	1.00	1.34	20.0	22.6
999513-009 Iron	ug/L	01/19/2012 19:50	1.00	1.34	20.0	ND
999513-010 Iron	ug/L	01/19/2012 20:17	1.00	1.34	20.0	25.1
999513-011 Iron	ug/L	01/19/2012 20:23	1.00	1.34	20.0	20.8
999513-012 Iron	ug/L	01/19/2012 20:29	1.00	1.34	20.0	22.8

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate — Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	28.6	28.8	0.697	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	106.	100.	106	85 - 115

Matrix Spike — Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	117.	129.(100.)	87.8	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5150	5000	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5230	5000	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5500	5000	110.	90 - 110

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Chrome VI by EPA 218.6

Batch 01CrH12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999513-001 Chromium, Hexavalent	ug/L	01/12/2012 09:23	1.00	0.0260	0.20	ND
999513-002 Chromium, Hexavalent	ug/L	01/12/2012 09:33	1.00	0.0260	0.20	ND
999513-003 Chromium, Hexavalent	ug/L	01/12/2012 09:44	1.00	0.0260	0.20	ND
999513-004 Chromium, Hexavalent	ug/L	01/12/2012 09:54	1.00	0.0260	0.20	ND
999513-006 Chromium, Hexavalent	ug/L	01/12/2012 10:04	1.00	0.0260	0.20	ND
999513-009 Chromium, Hexavalent	ug/L	01/12/2012 10:15	1.00	0.0260	0.20	ND
999513-011 Chromium, Hexavalent	ug/L	01/12/2012 10:25	1.00	0.0260	0.20	ND
999513-015 Chromium, Hexavalent	ug/L	01/12/2012 10:36	1.00	0.0260	0.20	ND

Method Blank

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

Duplicate — Lab ID = 999513-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0216	0.0192	11.8	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.208	0.200	104.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00	97.9	90 - 110

Matrix Spike — Lab ID = 999511-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.14	5.25(5.25)	97.9	90 - 110

Matrix Spike — Lab ID = 999511-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	0.995	1.06(1.06)	93.8	90 - 110

Matrix Spike — Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.989	1.02(1.00)	96.6	90 - 110

Matrix Spike — Lab ID = 999513-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.980	1.02(1.00)	96.1	90 - 110

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Matrix Spike — Lab ID = 999513-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.978	1.02(1.00)	95.7	90 - 110

Matrix Spike — Lab ID = 999513-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.03(1.00)	99.0	90 - 110

Matrix Spike — Lab ID = 999513-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.997	1.02(1.00)	97.4	90 - 110

Matrix Spike — Lab ID = 999513-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.00	1.02(1.00)	98.0	90 - 110

Matrix Spike — Lab ID = 999513-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.969	1.02(1.00)	94.5	90 - 110

Matrix Spike — Lab ID = 999513-015

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.984	1.02(1.00)	96.9	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.89	5.00	97.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103.	95 - 105

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Metals by EPA 6020A, Dissolved Batch 011812B

Parameter		Unit	Analyzed	DF	MDL	RL	Result
999513-001	Chromium	ug/L	01/19/2012 03:28	5.00	0.110	1.0	ND
	Manganese	ug/L	01/19/2012 03:28	5.00	0.285	10.0	ND
	Molybdenum	ug/L	01/19/2012 03:28	5.00	0.270	10.0	ND
	Selenium	ug/L	01/19/2012 03:28	5.00	0.340	10.0	ND
999513-002	Chromium	ug/L	01/19/2012 04:18	5.00	0.110	1.0	ND
	Manganese	ug/L	01/19/2012 04:18	5.00	0.285	10.0	ND
	Molybdenum	ug/L	01/19/2012 04:18	5.00	0.270	10.0	ND
	Selenium	ug/L	01/19/2012 04:18	5.00	0.340	10.0	ND
999513-003	Chromium	ug/L	01/19/2012 04:25	5.00	0.110	1.0	ND
	Manganese	ug/L	01/19/2012 04:25	5.00	0.285	10.0	ND
	Molybdenum	ug/L	01/19/2012 04:25	5.00	0.270	10.0	ND
	Selenium	ug/L	01/19/2012 04:25	5.00	0.340	10.0	ND
999513-004	Chromium	ug/L	01/19/2012 04:33	5.00	0.110	1.0	ND
	Manganese	ug/L	01/19/2012 04:33	5.00	0.285	10.0	ND
	Molybdenum	ug/L	01/19/2012 04:33	5.00	0.270	10.0	ND
	Selenium	ug/L	01/19/2012 04:33	5.00	0.340	10.0	ND
999513-005	Chromium	ug/L	01/19/2012 04:40	5.00	0.110	1.0	ND
	Manganese	ug/L	01/19/2012 04:40	5.00	0.285	10.0	ND
	Molybdenum	ug/L	01/19/2012 04:40	5.00	0.270	10.0	ND
	Selenium	ug/L	01/19/2012 04:40	5.00	0.340	10.0	ND
999513-006	Chromium	ug/L	01/19/2012 04:47	5.00	0.110	1.0	ND
	Manganese	ug/L	01/19/2012 04:47	5.00	0.285	10.0	ND
	Molybdenum	ug/L	01/19/2012 04:47	5.00	0.270	10.0	ND
	Selenium	ug/L	01/19/2012 04:47	5.00	0.340	10.0	ND
999513-007	Chromium	ug/L	01/19/2012 04:54	5.00	0.110	1.0	ND
	Manganese	ug/L	01/19/2012 04:54	5.00	0.285	10.0	ND
	Molybdenum	ug/L	01/19/2012 04:54	5.00	0.270	10.0	ND
	Selenium	ug/L	01/19/2012 04:54	5.00	0.340	10.0	ND
999513-008	Chromium	ug/L	01/19/2012 05:01	5.00	0.110	1.0	ND
	Manganese	ug/L	01/19/2012 05:01	5.00	0.285	10.0	ND
	Molybdenum	ug/L	01/19/2012 05:01	5.00	0.270	10.0	ND
	Selenium	ug/L	01/19/2012 05:01	5.00	0.340	10.0	ND
999513-009	Chromium	ug/L	01/19/2012 05:08	5.00	0.110	1.0	ND
	Manganese	ug/L	01/19/2012 05:08	5.00	0.285	10.0	ND

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999513-009	Molybdenum	ug/L	01/19/2012 05:08	5.00	0.270	10.0	ND
	Selenium	ug/L	01/19/2012 05:08	5.00	0.340	10.0	ND
999513-010	Chromium	ug/L	01/19/2012 05:15	5.00	0.110	1.0	ND
	Manganese	ug/L	01/19/2012 05:15	5.00	0.285	10.0	ND
	Molybdenum	ug/L	01/19/2012 05:15	5.00	0.270	10.0	ND
	Selenium	ug/L	01/19/2012 05:15	5.00	0.340	10.0	ND
999513-011	Chromium	ug/L	01/19/2012 05:23	5.00	0.110	1.0	ND
	Manganese	ug/L	01/19/2012 05:23	5.00	0.285	10.0	ND
	Molybdenum	ug/L	01/19/2012 05:23	5.00	0.270	10.0	ND
	Selenium	ug/L	01/19/2012 05:23	5.00	0.340	10.0	ND
999513-012	Chromium	ug/L	01/19/2012 05:51	5.00	0.110	1.0	ND
	Manganese	ug/L	01/19/2012 05:51	5.00	0.285	10.0	ND
	Molybdenum	ug/L	01/19/2012 05:51	5.00	0.270	10.0	ND
	Selenium	ug/L	01/19/2012 05:51	5.00	0.340	10.0	ND
999513-013	Chromium	ug/L	01/19/2012 05:58	5.00	0.110	1.0	ND
999513-014	Chromium	ug/L	01/19/2012 06:05	5.00	0.110	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND
Selenium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

Duplicate Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Selenium	ug/L	5.00	1.61	0.00	0	0 - 20
Manganese	ug/L	5.00	ND	0.00	0	0 - 20
Molybdenum	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.192	0.200	96.1	70 - 130
Selenium	ug/L	1.00	0.995	1.00	99.5	70 - 130
Manganese	ug/L	1.00	0.999	1.00	99.9	70 - 130
Molybdenum	ug/L	1.00	0.982	1.00	98.2	70 - 130

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Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	107.	100.	107.	85 - 115
Selenium	ug/L	5.00	102.	100.	102.	85 - 115
Manganese	ug/L	5.00	102.	100.	102.	85 - 115
Molybdenum	ug/L	5.00	101.	100.	101.	85 - 115

Matrix Spike — Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	104.	100.(100.)	104.	75 - 125
Selenium	ug/L	5.00	99.0	100.(100.)	99.0	75 - 125
Manganese	ug/L	5.00	99.8	100.(100.)	99.8	75 - 125
Molybdenum	ug/L	5.00	108.	100.(100.)	108.	75 - 125

Matrix Spike Duplicate — Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	104.	100.(100.)	104.	75 - 125
Selenium	ug/L	5.00	104.	100.(100.)	104.	75 - 125
Manganese	ug/L	5.00	100.	100.(100.)	100.	75 - 125
Molybdenum	ug/L	5.00	107	100.(100.)	107	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.4	10.0	104	90 - 110
Selenium	ug/L	1.00	10.4	10.0	104.	90 - 110
Manganese	ug/L	1.00	10.2	10.0	102.	90 - 110
Molybdenum	ug/L	1.00	10.3	10.0	103	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.51	10.0	95.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.32	10.0	93.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.63	10.0	96.3	90 - 110
Selenium	ug/L	1.00	9.78	10.0	97.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Selenium	ug/L	1.00	9.75	10.0	97.5	90 - 110

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Metals by EPA 6020A, Dissolved Batch 011912A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999513-001 Arsenic	ug/L	01/19/2012 18:04	5.00	0.285	1.0	2.5
999513-002 Arsenic	ug/L	01/19/2012 18:47	5.00	0.285	1.0	2.0
999513-003 Arsenic	ug/L	01/19/2012 18:54	5.00	0.285	1.0	2.2
999513-004 Arsenic	ug/L	01/19/2012 19:01	5.00	0.285	1.0	2.6
999513-005 Arsenic	ug/L	01/19/2012 19:08	5.00	0.285	1.0	2.2
999513-006 Arsenic	ug/L	01/19/2012 19:15	5.00	0.285	1.0	2.4
999513-007 Arsenic	ug/L	01/19/2012 20:34	5.00	0.285	1.0	2.4
999513-008 Arsenic	ug/L	01/19/2012 19:29	5.00	0.285	1.0	2.4
999513-009 Arsenic	ug/L	01/19/2012 19:44	5.00	0.285	1.0	2.4
999513-010 Arsenic	ug/L	01/19/2012 20:26	5.00	0.285	1.0	2.8
999513-011 Arsenic	ug/L	01/19/2012 23:08	5.00	0.285	1.0	2.2
999513-012 Arsenic	ug/L	01/19/2012 20:48	5.00	0.285	1.0	2.3

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND

Duplicate — Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	5.00	2.32	2.46	5.68	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.173	0.200	86.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	99.6	100.	99.6	85 - 115

Matrix Spike — Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	105.	102.(100.)	102.	75 - 125

Matrix Spike Duplicate — Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	107.	102.(100.)	104.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.79	10.0	97.9	90 - 110

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Metals by EPA 6010B, Dissolved Batch 012012A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999513-001 Iron	ug/L	01/20/2012 12:50	1.00	1.34	20.0	ND
999513-002 Iron	ug/L	01/20/2012 13:08	1.00	1.34	20.0	ND
999513-003 Iron	ug/L	01/20/2012 13:14	1.00	1.34	20.0	ND
999513-004 Iron	ug/L	01/20/2012 13:20	1.00	1.34	20.0	ND
999513-005 Iron	ug/L	01/20/2012 13:26	1.00	1.34	20.0	ND
999513-006 Iron	ug/L	01/20/2012 13:32	1.00	1.34	20.0	ND
999513-007 Iron	ug/L	01/20/2012 13:58	1.00	1.34	20.0	ND
999513-008 Iron	ug/L	01/20/2012 14:04	1.00	1.34	20.0	ND
999513-009 Iron	ug/L	01/20/2012 14:10	1.00	1.34	20.0	ND
999513-010 Iron	ug/L	01/20/2012 14:16	1.00	1.34	20.0	ND
999513-011 Iron	ug/L	01/20/2012 14:22	1.00	1.34	20.0	ND
999513-012 Iron	ug/L	01/20/2012 14:28	1.00	1.34	20.0	ND

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate — Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	114.	100.	114.	85 - 115

Matrix Spike — Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	101.	100.(100.)	101.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5250	5000	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4890	5000	97.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4970	5000	99.4	90 - 110

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pH by SM 4500-H B Batch 01pH12G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999513-001 pH	pH	01/11/2012 08:32	1.00	0.0590	4.00	8.03
999513-002 pH	pH	01/11/2012 08:34	1.00	0.0590	4.00	8.16
999513-003 pH	pH	01/11/2012 08:36	1.00	0.0590	4.00	8.18
999513-004 pH	pH	01/11/2012 08:38	1.00	0.0590	4.00	8.09
999513-005 pH	pH	01/11/2012 08:40	1.00	0.0590	4.00	8.18
999513-006 pH	pH	01/11/2012 08:42	1.00	0.0590	4.00	8.17
999513-007 pH	pH	01/11/2012 08:44	1.00	0.0590	4.00	8.26
999513-008 pH	pH	01/11/2012 08:46	1.00	0.0590	4.00	8.21
999513-009 pH	pH	01/11/2012 08:48	1.00	0.0590	4.00	8.25
999513-010 pH	pH	01/11/2012 08:50	1.00	0.0590	4.00	8.24
999513-011 pH	pH	01/11/2012 08:56	1.00	0.0590	4.00	8.14
999513-012 pH	pH	01/11/2012 09:00	1.00	0.0590	4.00	8.22
999513-013 pH	pH	01/11/2012 09:02	1.00	0.0590	4.00	7.65
999513-014 pH	pH	01/11/2012 09:04	1.00	0.0590	4.00	7.90

Duplicate Lab ID = 999513-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	8.28	8.24	0.484	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.00	7.00	100.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.02	7.00	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.04	7.00	100.	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 21 of 21
Project Number: 423575.MP.02.RM Printed 2/3/2012

Total Suspended Solids by SM 2540 D Batch 01TSS12D 1/17/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999513-001 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999513-002 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999513-003 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999513-004 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999513-005 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999513-006 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999513-007 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999513-008 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999513-009 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999513-010 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999513-011 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999513-012 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND

Method Blank

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

Duplicate Lab ID = 999598-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Suspended Solids	mg/L	1.00	75.0	74.0	1.34	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Suspended Solids	mg/L	1.00	94.0	100.	94.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Suspended Solids	mg/L	1.00	92.0	100.	92.0	90 - 110

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

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.

E2 SC.

TRUESDAIL LABORATORIES INC.

Total Suspended Solids by SM 2540 D

Calculations

Batch: 01TSS12D

Date Analyzed: 01/17/12

Dish Number	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
J84	BLANK	1000	1.4078	1.4078	1.4078	0.0000	No	0.0000	0.0	2.5	ND
J87	999513-1	900	1.4204	1.4214	1.4214	0.0000	No	0.0010	1.1	2.8	ND
J88	999513-2	950	1.4232	1.4244	1.4244	0.0000	No	0.0012	1.3	2.6	ND
J89	999513-3	900	1.4205	1.4214	1.4214	0.0000	No	0.0009	1.0	2.8	ND
J90	999513-4	950	1.4271	1.4275	1.4275	0.0000	No	0.0004	0.4	2.6	ND
J91	999513-5	950	1.4166	1.4170	1.417	0.0000	No	0.0004	0.4	2.6	ND
J92	999513-6	950	1.4157	1.4167	1.4167	0.0000	No	0.0010	1.1	2.6	ND
J93	999513-7	1000	1.4078	1.4083	1.4083	0.0000	No	0.0005	0.5	2.5	ND
J94	999513-8	950	1.4175	1.4193	1.4193	0.0000	No	0.0018	1.9	2.6	ND
J95	999513-9	950	1.4145	1.4148	1.4148	0.0000	No	0.0003	0.3	2.6	ND
J96	999513-10	950	1.4227	1.4236	1.4236	0.0000	No	0.0009	0.9	2.6	ND
J97	999513-11	950	1.4193	1.4203	1.4203	0.0000	No	0.0010	1.1	2.6	ND
J98	999513-12	950	1.4220	1.4223	1.4223	0.0000	No	0.0003	0.3	2.6	ND
K11	999575	1000	1.4523	1.4826	1.4826	0.0000	No	0.0303	30.3	2.5	30.3
K12	999577	55	1.4600	1.4703	1.4703	0.0000	No	0.0103	187.3	45.5	187.3
K13	999598	100	1.4514	1.4588	1.4588	0.0000	No	0.0074	74.0	25.0	74.0
K14	999600-1	300	1.4554	1.4669	1.4669	0.0000	No	0.0115	38.3	8.3	38.3
K15	999601	1000	1.4554	1.4554	1.4554	0.0000	No	0.0000	0.0	2.5	ND
K16	999598D	100	1.4537	1.4612	1.4612	0.0000	No	0.0075	75.0	25.0	75.0
K17	999615-1	100	1.4511	1.4663	1.4633	0.0030	Yes	0.0122	122.0	25.0	122.0
K18	999615-2	100	1.4494	1.4576	1.4576	0.0000	No	0.0082	82.0	25.0	82.0
K19	999615-3	60	1.4536	1.4802	1.4802	0.0000	No	0.0266	443.3	41.7	443.3
J85	LCS-1	100	1.4156	1.4250	1.425	0.0000	No	0.0094	94.0	25.0	94.0
J86	LCSD	100	1.4127	1.4219	1.4219	0.0000	No	0.0092	92.0	25.0	92.0

Calculation as follows:

Non- Filterable residue (TSS), mg/L = $\left(\frac{A-B}{C}\right) x\ 10^6$

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)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	94	100	94.0%	90-110%	Yes
LCSD	92	100	92.0%	90-110%	Yes

LCS Recovery

$$P = \left(\frac{LC}{LT}\right) x\ 100$$

$$\%\ Difference = \frac{|A\ or\ B - C|}{C}\ x\ 100$$

$$where \quad C = \frac{A+B}{2}$$

A = Weght of the first sample in (g).
B = Weght of the second sample in (g).
C = Average weight in (g).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
999598	0.0074	0.0075	0.7%	≤5%	Yes

LUCK
Analyst Printed Name

Analyst Signature

Hope T.
Reviewer Printed Name

Reviewer Signature

Tss_2011

TRUESDAIL LABORATORIES, INC.

E2 Sem

Alkalinity by SM 2320B
Calculations

Date of Analysis: 1/12/12
Start of Analysis:
Date Sampled:

Analytical Batch: 01ALK12B
Matrix: Water
Date Calculated: 1/12/12

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO3	RL, ppm	Total Alkalinity Reported Value	HCO3 Alkalinity as $CaCO_3$ (ppm)	CO3 Alkalinity as $CaCO_3$ (ppm)	OH Alkalinity as $CaCO_3$ (ppm)	Low Alkalinity as $CaCO_3$ (<20ppm)
BLANK	6.98	50	0.02		0.0	0.05		1.0	5	ND	ND	ND	ND	
999513-1	7.97	50	0.02		0.0	7.00		140.0	5	140.0	140.0	ND	ND	
999513-2	8.13	50	0.02		0.0	6.20		124.0	5	124.0	124.0	ND	ND	
999513-3	8.22	50	0.02		0.0	6.55		131.0	5	131.0	131.0	ND	ND	
999513-4	8.96	50	0.02		0.0	6.60		132.0	5	132.0	132.0	ND	ND	
999513-5	8.12	50	0.02		0.0	6.85		137.0	5	137.0	137.0	ND	ND	
999513-6	8.17	50	0.02		0.0	6.60		132.0	5	132.0	132.0	ND	ND	
999513-7	8.18	50	0.02		0.0	6.70		134.0	5	134.0	134.0	ND	ND	
999513-8	8.16	50	0.02		0.0	6.75		135.0	5	135.0	135.0	ND	ND	
999513-9	8.19	50	0.02		0.0	6.25		125.0	5	125.0	125.0	ND	ND	
999513-10	8.21	50	0.02		0.0	6.25		125.0	5	125.0	125.0	ND	ND	
999513-11	8.23	50	0.02		0.0	6.70		134.0	5	134.0	134.0	ND	ND	
999513-12	8.24	50	0.02		0.0	6.45		129.0	5	129.0	129.0	ND	ND	
999513-12D	8.22	50	0.02		0.0	6.40		128.0	5	128.0	128.0	ND	ND	
999480-20	7.79	50	0.02		0.0	3.15		63.0	5	63.0	63.0	ND	ND	
999513-12MS	9.14	50	0.02	1.1	22.0	10.25		205.0	5	205.0	161.0	44	ND	
LCS1	10.30	50	0.02	2.2	44.0	4.85		97.0	5	97.0	9.0	88	ND	
LCS2	10.25	50	0.02	2.2	44.0	4.80		96.0	5	96.0	8.0	88	ND	

Calculations as follows:

$$T \text{ or } P = \left(\frac{A \times N \times 50000}{mL\ sample} \right)$$

Low Alkalinity: as mg/L CaCO3 $= \dfrac{(2 \times B - C) \times N \times 50000}{\text{mL sample}}$

ND: Not Detected (below the reporting limit)
LCS: Laboratory Control Standard
LCSD: Laboratory Control Standard Duplicate
MS: Matrix Spike
MSD: Matrix Spike Duplicate

Where:
T = Total Alkalinity, mg CaCO3/L
P = Phenolphthalein Alkalinity, mg CaCO3/L
A = mL standard acid used
N = normality of standard acid

Where:
B = mL titrant to first recorded pH
C = total mL titrant to reach pH 0.3 unit lower
N = normality of standard acid

LUCU
Analyst Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

044

Alk_10c1/16/12, by HT

Rec'd 1/10/12
s 999513

999513

CH2MHILL

CHAIN OF CUSTODY RECORD

1/10/2012 4:18:17 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.RM
Task Order
Project 2012-RMP-184
Turnaround Time 10 Days
Shipping Date: 1/10/2012
COC Number: 1

				Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter			
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C			
				Filtered:	Field	NA	NA	Field	Field	NA	NA	NA	NA	NA			
				Holding Time:	28	28	180	180	180	2	2	2	2	2			
		DATE	TIME	Matrix	Cr6 (E218.6 – river) Field Filtered	Field QC Cr6 (E218.6–river)	Metals (6010B) Total Fe	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo	Metals (6020AFF) Field Filtered Chromium	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	PH (SM4500HB)	Alkalinity (SM2320B)	TSS (SM2540)		Number of Containers	COMMENTS
-1	C-BNS-D-184	1/10/2012	12:00	Water	x		x	x	x	x	x	x	x	x		9	pH 6, 6020A/6010B
-2	C-I-3-D-184	1/10/2012	9:50	Water	x		x	x	x	x	x	x	x	x		9	pH=2
-3	C-I-3-S-184	1/10/2012	10:07	Water	x		x	x	x	x	x	x	x	x		9	
	C-MW-80-184	1/10/2012	11:45	Water		x										1	Hold
	C-MW-81-184	1/10/2012	12:18	Water		x										1	Hold
-4	C-NR3-D-184	1/10/2012	13:17	Water	x		x	x	x	x	x	x	x	x		9	
-5	C-NR3-S-184	1/10/2012	13:32	Water			x	x	x	x	x	x	x	x		6	
-6	C-R22A-D-184	1/10/2012	11:10	Water	x		x	x	x	x	x	x	x	x		9	
-7	C-R22A-S-184	1/10/2012	11:25	Water			x	x	x	x	x	x	x	x		6	
-8	C-R27-D-184	1/10/2012	12:27	Water			x	x	x	x	x	x	x	x		6	pH=2
-9	C-R27-S-184	1/10/2012	12:45	Water	x		x	x	x	x	x	x	x	x		9	
10	C-TAZ-D-184	1/10/2012	8:50	Water			x	x	x	x	x	x	x	x		6	
-11	C-TAZ-S-184	1/10/2012	9:15	Water	x		x	x	x	x	x	x	x	x		9	
12	R63-184	1/10/2012	10:30	Water			x	x	x	x	x	x	x	x		6	

* Where provided w/3 Cr6 + CrT bottles, please analyze 1 + hold 2

ALERT !! Level III QC

Signatures

Approved by
Sampled by
Relinquished by
Received by Rafael Davila 1-10-12 4:45
Relinquished by Rafael Davila 1-10-12 11:30
Received by Linda Shabunian 1/10/12 11:30pm

Date/Time 4:45 1-10-12

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: Jan 10-11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

999513

CH2MHILL CHAIN OF CUSTODY RECORD 1/10/2012 4:18:17 PM Page 2 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.RM
Task Order
Project 2012-RMP-184
Turnaround Time 10 Days
Shipping Date: 1/10/2012
COC Number: 1

ALERT !! Level III QC

	DATE	TIME	Matrix	Cr6 (E218.6 ~ river) Field Filtered	Field QC Cr6 (E218.6~river)	Metals (6010B) Total Fe	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo	Metals (6020AFF) Field Filtered Chromium	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	PH (SM4500HB)	Alkalinity (SM2320B)	TSS (SM2540)	Number of Containers	COMMENTS
Container:				3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter		
Preservatives:				(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C		
Filtered:				Field	NA	NA	Field	Field	NA	NA	NA	NA	NA		
Holding Time:				28	28	180	180	180	2	2	2	2	2		
12 RMP-AB1-184	1/10/2012	13:32	Water		X									1	Hold
13 SW1-184	1/10/2012	14:50	Water					X	X		X			3	
14 SW2-184	1/10/2012	15:15	Water					X	X		X			3	JPH=2
													TOTAL NUMBER OF CONTAINERS	102	6020A/ 6010B

Signatures Date/Time 4:45 1-10-12

Approved by
Sampled by
Relinquished by
Received by Rafael Davila 1-10-12 4:45
Relinquished by Rafael Davila 1-10-12 11:30
Received by Linda Shabunina 1/10/12 11:30pm

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: Jan 10-11, 2012

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
12/28/11	999308	7	5 mL	9.5	8:30 Am	GW
1/3/12	999359-1	7	5mL	9.5	18:00	MG
↓	↓ -2	9.5	N/A	N/A	N/A	MG
1/4/12	999360-1	7	5mL	9.5	10:45 Am	GW
↓	↓ -2	7	5mL	↓	10:50 Am	GW
1/4/12	999362-1	7	5mL	9.5	11:00 Am	GW
↓	↓ -2	↓	↓	↓	11:05 Am	↓
↓	↓ -3	↓	↓	↓	11:10 Am	↓
1/4/12	999389	7	5ml	9.5	5:15pm	GW
1/5/12	999416	7	5mL	9.5	11:45pm	MG
1/9/12	999460	7	5mL	9.5	6:45pm	MG
1/10/12	999462	9.5	N/A	N/A	N/A	GW
1/11/12	999512-1	9.5	N/A	N/A	N/A	GW
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
1/11/12	999513-1	9.5	N/A	N/A	N/A	GW
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -11	↓	↓	↓	↓	↓
1/11/12	999511	7	5mL	9.5	8:50 Am	GW
1/11/12	DBW+Buffer	9.5	N/A	N/A	N/A	GW
1/11/12	999553	7	5ml	9.5	5pm	GW
1/11/12	999513-15	9.5	N/A	N/A	N/A	GW
1/12/12	999554-1	9.5	N/A	N/A	N/A	GW
↓	↓	↓	↓	↓	↓	↓
1/11/12	999513-9	9.5	N/A	N/A	N/A	GW

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
999361	Sludge	-	01/01/12	M.M	TTLC	—
999303-2	↓		↓	↓	↓	—
999319(1-2	↓		↓	↓	↓	—
999366(6-8)	<1	>2	1/6/12	ES	NO	yes @ 3:30 pm
999347 (-16,23)	↓	↓	↓	↓	↓	↓
999379 (1-3)	↓	↓	↓	↓	↓	↓
999436	>1	<2	01/03/12	M.M	Yes	—
999402	↓	↓	↓	↓	↓	—
999440	↓	↓	↓	↓	↓	—
999450(1-4)	↓	↓	↓	↓	↓	—
999462T(1)	>1	<2	01/10/12	M.M	Yes	—
999513 (1-14)	<1	<2	01/13/12	M.M	Yes	—
1/13/12 (1-4, 7-14) M.M 999554 (~~1-14~~)	↓	↓	↓	↓	↓	—
999569 (1-4	↓	↓	↓	↓	↓	—
999578 (1-6)	↓	↓	↓	↓	↓	—
999589 (1-7, 9-14)	↓	↓	↓	↓	↓	—
999511	<1	>2 (6)	01/13/2	M.M	Yes	yes
1/13/12 M.M → 999249 (1-2)	<1	<2	12/22/11	M.M	Yes	—
999247	↓	↓	↓	↓	↓	—
999248 (1-3)	↓	↓	↓	↓	↓	—
999250 (1-10)	↓	↓	↓	↓	↓	—
999604 (1-6)	<1	<2 ~~>2~~ M.M	01/16/12	M.M	Yes	—
999605(1-4,6,8)	↓	↓	↓	↓	↓	—
999576	>1	>2	01/16/12	M.M	Yes	—
999577	↓	↓	↓	↓	↓	—
999593	↓	↓	↓	↓	↓	—
999623(1-2)	<1	<2	01/17/12	MM	Yes	—
999624(1-8)	↓	↓	↓	↓	↓	—
998020(1-8)	Plants	-	01/17/12	MM	Yes	TTLC
999635	>1	<2	01/18/12	MM	↓	— ↓
999649	<1	>2	↓	↓	↓	—
999650 (1-10)	↓	<2	↓	↓	↓	—
999651 (1,4,8,9)	↓	↓	↓	↓	Yes	—
999674(1-3)	<1	<2	01/19/12	M.M	Yes	—
999692	>1	<2	01/19/12	↓	Yes	—
999699	↓	↓	↓	↓	↓	—
999700	↓	↓	↓	↓	↓	—
999701	↓	↓	↓	↓	↓	—
999549(1-3)	<1	>2	1/19/12	KK	NO	(Y) 1/19/12 @ 4pm
999639 (1-2)	↓	↓	↓	↓	↓	↓
999689 (1-4)	↓	↓	↓	↓	↓	↓
999708	↓	↓	↓	↓	↓	↓
999709	↓	↓	↓	↓	↓	↓
999710	↓	↓	↓	↓	↓	↓
999711	↓	↓	↓	↓	↓	↓
999712 (3,6,9,12)	↓	↓	↓	↓	↓	↓
999669 (-2,3)	<1	>2	1/19/12	KK	NO	(Y) 1/19/12 @ 5pm
999682 (11,10)	↓	↓	↓	↓	↓	↓

TRUESDAIL LABORATORIES, INC.

ALERT !!
Level III QC

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 999513

Date Delivered: 1 / 10 / 12 **Time:** 11:30 pm **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)? 4.2°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
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: _____

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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 10, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-RMP-184, SURFACEWATER MONITORING PROJECT, TLI NO.: 999554

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-RMP-184 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 11, 2012, 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 early sampling time and late arrival of the samples, samples C-MAR-D-184 and C-MAR-S-184 for pH analysis by SM 4500-H B were analyzed past the method specified holding time. Mr. Shawn Duffy approved the analysis.

Due to the discrepancy between the Total Dissolved Chromium (1.1 ug/L) and Hexavalent Chromium (ND<0.20 ug/L) results for sample RRB-184, Mr. Shawn Duffy was notified. Mr. Duffy requested that sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers be digested and analyzed for Total Dissolved Chromium. The results were both ND<1.0 ug/L. The original digestate was re-analyzed for confirmation and yielded a result of ND<1.0 ug/L. After discussing the results with Mr. Duffy, the result from the re-digested Total Dissolved Chromium was reported as it more closely matched the Hexavalent Chromium result.

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

Michael Ngo
Quality Assurance/Quality Control Officer

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Event 2012-RMP-184 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-184	2.00	No			
C-CON-S-184	2.00	No			
C-MAR-D-184	2.00	No			
C-MAR-S-184	2.00	No			
C-MW-82-184	2.00	No			
C-MW-83-184	2.00	No			
C-NR1-D-184	2.00	No			
C-NR1-S-184	2.00	No			
C-NR4-D-184	2.00	No			
C-NR4-S-184	2.00	No			
R-19-184	2.00	No			
R-28-184	2.00	No			
RMP-AB2-184	2.00	No			
RRB-184	2.00	No			

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Event 2012-RMP-184 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-184	9.50	No			
C-CON-S-184	9.50	No			
C-MAR-D-184	9.50	No			
C-MAR-S-184	9.50	No			
C-MW-82-184	9.50	No			
C-MW-83-184	9.50	No			
C-NR1-D-184	9.50	No			
C-NR1-S-184	9.50	No			
C-NR4-D-184	9.50	No			
C-NR4-S-184	9.50	No			
R-19-184	9.50	No			
R-28-184	9.50	No			
RMP-AB2-184	9.50	No			
RRB-184	9.50	No			

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

Laboratory No.: 999554
Date Received: January 11, 2012

Project Name: PG&E Topock Project
Project No.: 423575.MP.02.RM
P.O. No.: 423575.MP.02.RM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999554-001	C-CON-D-184	E120.1	NONE	1/11/2012	10:41	EC	920	umhos/cm	2.00
999554-001	C-CON-D-184	E218.6	FLDFLT	1/11/2012	10:41	Chromium, hexavalent	ND	ug/L	0.20
999554-001	C-CON-D-184	E300	NONE	1/11/2012	10:41	Nitrate as N	ND	mg/L	0.500
999554-001	C-CON-D-184	SM2320B	NONE	1/11/2012	10:41	Alkalinity	128	mg/L	5.00
999554-001	C-CON-D-184	SM2320B	NONE	1/11/2012	10:41	Bicarbonate	128	mg/L	5.00
999554-001	C-CON-D-184	SM2320B	NONE	1/11/2012	10:41	Carbonate	ND	mg/L	5.00
999554-001	C-CON-D-184	SM2540D	NONE	1/11/2012	10:41	Total Suspended Solids	ND	mg/L	10.0
999554-001	C-CON-D-184	SM4500HB	NONE	1/11/2012	10:41	PH	7.97	pH	4.00
999554-001	C-CON-D-184	SW6010B	FLDFLT-digested	1/11/2012	10:41	Iron	ND	ug/L	20.0
999554-001	C-CON-D-184	SW6010B	NONE-digested	1/11/2012	10:41	Iron	ND	ug/L	20.0
999554-001	C-CON-D-184	SW6020	FLDFLT-digested	1/11/2012	10:41	Arsenic	2.8	ug/L	1.0
999554-001	C-CON-D-184	SW6020	FLDFLT-digested	1/11/2012	10:41	Chromium	ND	ug/L	1.0
999554-001	C-CON-D-184	SW6020	FLDFLT-digested	1/11/2012	10:41	Manganese	ND	ug/L	10.0
999554-001	C-CON-D-184	SW6020	FLDFLT-digested	1/11/2012	10:41	Molybdenum	ND	ug/L	5.0
999554-001	C-CON-D-184	SW6020	FLDFLT-digested	1/11/2012	10:41	Selenium	ND	ug/L	10.0
999554-002	C-CON-S-184	E120.1	NONE	1/11/2012	10:57	EC	921	umhos/cm	2.00
999554-002	C-CON-S-184	E218.6	FLDFLT	1/11/2012	10:57	Chromium, hexavalent	ND	ug/L	0.20
999554-002	C-CON-S-184	E300	NONE	1/11/2012	10:57	Nitrate as N	ND	mg/L	0.500
999554-002	C-CON-S-184	SM2320B	NONE	1/11/2012	10:57	Alkalinity	127	mg/L	5.00
999554-002	C-CON-S-184	SM2320B	NONE	1/11/2012	10:57	Bicarbonate	127	mg/L	5.00
999554-002	C-CON-S-184	SM2320B	NONE	1/11/2012	10:57	Carbonate	ND	mg/L	5.0
999554-002	C-CON-S-184	SM2540D	NONE	1/11/2012	10:57	Total Suspended Solids	ND	mg/L	10.0
999554-002	C-CON-S-184	SM4500HB	NONE	1/11/2012	10:57	PH	7.99	pH	4.00

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999554-002	C-CON-S-184	SW6010B	FLDFLT-digested	1/11/2012	10:57	Iron	ND	ug/L	20.0
999554-002	C-CON-S-184	SW6010B	NONE-digested	1/11/2012	10:57	Iron	ND	ug/L	20.0
999554-002	C-CON-S-184	SW6020	FLDFLT-digested	1/11/2012	10:57	Arsenic	2.5	ug/L	1.0
999554-002	C-CON-S-184	SW6020	FLDFLT-digested	1/11/2012	10:57	Chromium	ND	ug/L	1.0
999554-002	C-CON-S-184	SW6020	FLDFLT-digested	1/11/2012	10:57	Manganese	ND	ug/L	10.0
999554-002	C-CON-S-184	SW6020	FLDFLT-digested	1/11/2012	10:57	Molybdenum	ND	ug/L	5.0
999554-002	C-CON-S-184	SW6020	FLDFLT-digested	1/11/2012	10:57	Selenium	ND	ug/L	10.0
999554-003	C-MAR-D-184	E120.1	NONE	1/11/2012	8:32	EC	921	umhos/cm	2.00
999554-003	C-MAR-D-184	E218.6	FLDFLT	1/11/2012	8:32	Chromium, hexavalent	ND	ug/L	0.20
999554-003	C-MAR-D-184	E300	NONE	1/11/2012	8:32	Nitrate as N	ND	mg/L	0.500
999554-003	C-MAR-D-184	SM2320B	NONE	1/11/2012	8:32	Alkalinity	132	mg/L	5.00
999554-003	C-MAR-D-184	SM2320B	NONE	1/11/2012	8:32	Bicarbonate	132	mg/L	5.00
999554-003	C-MAR-D-184	SM2320B	NONE	1/11/2012	8:32	Carbonate	ND	mg/L	5.00
999554-003	C-MAR-D-184	SM2540D	NONE	1/11/2012	8:32	Total Suspended Solids	ND	mg/L	10.0
999554-003	C-MAR-D-184	SM4500HB	NONE	1/11/2012	8:32	PH	8.05 J	pH	4.00
999554-003	C-MAR-D-184	SW6010B	FLDFLT-digested	1/11/2012	8:32	Iron	ND	ug/L	20.0
999554-003	C-MAR-D-184	SW6010B	NONE-digested	1/11/2012	8:32	Iron	262	ug/L	20.0
999554-003	C-MAR-D-184	SW6020	FLDFLT-digested	1/11/2012	8:32	Arsenic	2.9	ug/L	1.0
999554-003	C-MAR-D-184	SW6020	FLDFLT-digested	1/11/2012	8:32	Chromium	ND	ug/L	1.0
999554-003	C-MAR-D-184	SW6020	FLDFLT-digested	1/11/2012	8:32	Manganese	ND	ug/L	10.0
999554-003	C-MAR-D-184	SW6020	FLDFLT-digested	1/11/2012	8:32	Molybdenum	ND	ug/L	5.0
999554-003	C-MAR-D-184	SW6020	FLDFLT-digested	1/11/2012	8:32	Selenium	ND	ug/L	10.0
999554-004	C-MAR-S-184	E120.1	NONE	1/11/2012	8:49	EC	915	umhos/cm	2.00
999554-004	C-MAR-S-184	E218.6	FLDFLT	1/11/2012	8:49	Chromium, hexavalent	ND	ug/L	0.20
999554-004	C-MAR-S-184	E300	NONE	1/11/2012	8:49	Nitrate as N	ND	mg/L	0.500
999554-004	C-MAR-S-184	SM2320B	NONE	1/11/2012	8:49	Alkalinity	115	mg/L	5.00
999554-004	C-MAR-S-184	SM2320B	NONE	1/11/2012	8:49	Bicarbonate	115	mg/L	5.00
999554-004	C-MAR-S-184	SM2320B	NONE	1/11/2012	8:49	Carbonate	ND	mg/L	5.00
999554-004	C-MAR-S-184	SM2540D	NONE	1/11/2012	8:49	Total Suspended Solids	ND	mg/L	10.0
999554-004	C-MAR-S-184	SM4500HB	NONE	1/11/2012	8:49	PH	8.08 J	pH	4.00
999554-004	C-MAR-S-184	SW6010B	FLDFLT-digested	1/11/2012	8:49	Iron	ND	ug/L	20.0
999554-004	C-MAR-S-184	SW6010B	NONE-digested	1/11/2012	8:49	Iron	122	ug/L	20.0
999554-004	C-MAR-S-184	SW6020	FLDFLT-digested	1/11/2012	8:49	Arsenic	2.6	ug/L	1.0
999554-004	C-MAR-S-184	SW6020	FLDFLT-digested	1/11/2012	8:49	Chromium	ND	ug/L	1.0
999554-004	C-MAR-S-184	SW6020	FLDFLT-digested	1/11/2012	8:49	Manganese	ND	ug/L	10.0
999554-004	C-MAR-S-184	SW6020	FLDFLT-digested	1/11/2012	8:49	Molybdenum	ND	ug/L	5.0
999554-004	C-MAR-S-184	SW6020	FLDFLT-digested	1/11/2012	8:49	Selenium	ND	ug/L	10.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999554-005	C-MW-82-184	E218.6	FLDFLT	1/11/2012	9:10	Chromium, hexavalent	ND	ug/L	0.20
999554-006	C-MW-83-184	E218.6	FLDFLT	1/11/2012	11:15	Chromium, hexavalent	ND	ug/L	0.20
999554-007	C-NR1-D-184	E120.1	NONE	1/11/2012	11:24	EC	916	umhos/cm	2.00
999554-007	C-NR1-D-184	E218.6	FLDFLT	1/11/2012	11:24	Chromium, hexavalent	ND	ug/L	0.20
999554-007	C-NR1-D-184	E300	NONE	1/11/2012	11:24	Nitrate as N	ND	mg/L	0.500
999554-007	C-NR1-D-184	SM2320B	NONE	1/11/2012	11:24	Alkalinity	132	mg/L	5.00
999554-007	C-NR1-D-184	SM2320B	NONE	1/11/2012	11:24	Bicarbonate	132	mg/L	5.00
999554-007	C-NR1-D-184	SM2320B	NONE	1/11/2012	11:24	Carbonate	ND	mg/L	5.00
999554-007	C-NR1-D-184	SM2540D	NONE	1/11/2012	11:24	Total Suspended Solids	ND	mg/L	10.0
999554-007	C-NR1-D-184	SM4500HB	NONE	1/11/2012	11:24	PH	8.13	pH	4.00
999554-007	C-NR1-D-184	SW6010B	FLDFLT-digested	1/11/2012	11:24	Iron	ND	ug/L	20.0
999554-007	C-NR1-D-184	SW6010B	NONE-digested	1/11/2012	11:24	Iron	ND	ug/L	20.0
999554-007	C-NR1-D-184	SW6020	FLDFLT-digested	1/11/2012	11:24	Arsenic	2.4	ug/L	1.0
999554-007	C-NR1-D-184	SW6020	FLDFLT-digested	1/11/2012	11:24	Chromium	ND	ug/L	1.0
999554-007	C-NR1-D-184	SW6020	FLDFLT-digested	1/11/2012	11:24	Manganese	ND	ug/L	10.0
999554-007	C-NR1-D-184	SW6020	FLDFLT-digested	1/11/2012	11:24	Molybdenum	ND	ug/L	5.0
999554-007	C-NR1-D-184	SW6020	FLDFLT-digested	1/11/2012	11:24	Selenium	ND	ug/L	10.0
999554-008	C-NR1-S-184	E120.1	NONE	1/11/2012	11:38	EC	916	umhos/cm	2.00
999554-008	C-NR1-S-184	E218.6	FLDFLT	1/11/2012	11:38	Chromium, hexavalent	ND	ug/L	0.20
999554-008	C-NR1-S-184	E300	NONE	1/11/2012	11:38	Nitrate as N	0.642	mg/L	0.500
999554-008	C-NR1-S-184	SM2320B	NONE	1/11/2012	11:38	Alkalinity	124	mg/L	5.00
999554-008	C-NR1-S-184	SM2320B	NONE	1/11/2012	11:38	Bicarbonate	124	mg/L	5.00
999554-008	C-NR1-S-184	SM2320B	NONE	1/11/2012	11:38	Carbonate	ND	mg/L	5.00
999554-008	C-NR1-S-184	SM2540D	NONE	1/11/2012	11:38	Total Suspended Solids	ND	mg/L	10.0
999554-008	C-NR1-S-184	SM4500HB	NONE	1/11/2012	11:38	PH	8.14	pH	4.00
999554-008	C-NR1-S-184	SW6010B	FLDFLT-digested	1/11/2012	11:38	Iron	ND	ug/L	20.0
999554-008	C-NR1-S-184	SW6010B	NONE-digested	1/11/2012	11:38	Iron	ND	ug/L	20.0
999554-008	C-NR1-S-184	SW6020	FLDFLT-digested	1/11/2012	11:38	Arsenic	2.5	ug/L	1.0
999554-008	C-NR1-S-184	SW6020	FLDFLT-digested	1/11/2012	11:38	Chromium	ND	ug/L	1.0
999554-008	C-NR1-S-184	SW6020	FLDFLT-digested	1/11/2012	11:38	Manganese	ND	ug/L	10.0
999554-008	C-NR1-S-184	SW6020	FLDFLT-digested	1/11/2012	11:38	Molybdenum	ND	ug/L	5.0
999554-008	C-NR1-S-184	SW6020	FLDFLT-digested	1/11/2012	11:38	Selenium	ND	ug/L	10.0
999554-009	C-NR4-D-184	E120.1	NONE	1/11/2012	12:11	EC	916	umhos/cm	2.00
999554-009	C-NR4-D-184	E218.6	FLDFLT	1/11/2012	12:11	Chromium, hexavalent	ND	ug/L	0.20
999554-009	C-NR4-D-184	E300	NONE	1/11/2012	12:11	Nitrate as N	ND	mg/L	0.500

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999554-009	C-NR4-D-184	SM2320B	NONE	1/11/2012	12:11	Alkalinity	125	mg/L	5.00
999554-009	C-NR4-D-184	SM2320B	NONE	1/11/2012	12:11	Bicarbonate	125	mg/L	5.00
999554-009	C-NR4-D-184	SM2320B	NONE	1/11/2012	12:11	Carbonate	ND	mg/L	5.00
999554-009	C-NR4-D-184	SM2540D	NONE	1/11/2012	12:11	Total Suspended Solids	ND	mg/L	10.0
999554-009	C-NR4-D-184	SM4500HB	NONE	1/11/2012	12:11	PH	8.13	pH	4.00
999554-009	C-NR4-D-184	SW6010B	FLDFLT-digested	1/11/2012	12:11	Iron	ND	ug/L	20.0
999554-009	C-NR4-D-184	SW6010B	NONE-digested	1/11/2012	12:11	Iron	ND	ug/L	20.0
999554-009	C-NR4-D-184	SW6020	FLDFLT-digested	1/11/2012	12:11	Arsenic	2.5	ug/L	1.0
999554-009	C-NR4-D-184	SW6020	FLDFLT-digested	1/11/2012	12:11	Chromium	ND	ug/L	1.0
999554-009	C-NR4-D-184	SW6020	FLDFLT-digested	1/11/2012	12:11	Manganese	ND	ug/L	10.0
999554-009	C-NR4-D-184	SW6020	FLDFLT-digested	1/11/2012	12:11	Molybdenum	ND	ug/L	5.0
999554-009	C-NR4-D-184	SW6020	FLDFLT-digested	1/11/2012	12:11	Selenium	ND	ug/L	10.0
999554-010	C-NR4-S-184	E120.1	NONE	1/11/2012	12:25	EC	913	umhos/cm	2.00
999554-010	C-NR4-S-184	E218.6	FLDFLT	1/11/2012	12:25	Chromium, hexavalent	ND	ug/L	0.20
999554-010	C-NR4-S-184	E300	NONE	1/11/2012	12:25	Nitrate as N	1.56	mg/L	0.500
999554-010	C-NR4-S-184	SM2320B	NONE	1/11/2012	12:25	Alkalinity	124	mg/L	5.00
999554-010	C-NR4-S-184	SM2320B	NONE	1/11/2012	12:25	Bicarbonate	124	mg/L	5.00
999554-010	C-NR4-S-184	SM2320B	NONE	1/11/2012	12:25	Carbonate	ND	mg/L	5.00
999554-010	C-NR4-S-184	SM2540D	NONE	1/11/2012	12:25	Total Suspended Solids	ND	mg/L	10.0
999554-010	C-NR4-S-184	SM4500HB	NONE	1/11/2012	12:25	PH	8.18	pH	4.00
999554-010	C-NR4-S-184	SW6010B	FLDFLT-digested	1/11/2012	12:25	Iron	ND	ug/L	20.0
999554-010	C-NR4-S-184	SW6010B	NONE-digested	1/11/2012	12:25	Iron	29.2	ug/L	20.0
999554-010	C-NR4-S-184	SW6020	FLDFLT-digested	1/11/2012	12:25	Arsenic	2.5	ug/L	1.0
999554-010	C-NR4-S-184	SW6020	FLDFLT-digested	1/11/2012	12:25	Chromium	ND	ug/L	1.0
999554-010	C-NR4-S-184	SW6020	FLDFLT-digested	1/11/2012	12:25	Manganese	ND	ug/L	10.0
999554-010	C-NR4-S-184	SW6020	FLDFLT-digested	1/11/2012	12:25	Molybdenum	ND	ug/L	5.0
999554-010	C-NR4-S-184	SW6020	FLDFLT-digested	1/11/2012	12:25	Selenium	ND	ug/L	10.0
999554-011	R-19-184	E120.1	NONE	1/11/2012	9:50	EC	920	umhos/cm	2.00
999554-011	R-19-184	E218.6	FLDFLT	1/11/2012	9:50	Chromium, hexavalent	ND	ug/L	0.20
999554-011	R-19-184	E300	NONE	1/11/2012	9:50	Nitrate as N	ND	mg/L	0.500
999554-011	R-19-184	SM2320B	NONE	1/11/2012	9:50	Alkalinity	136	mg/L	5.00
999554-011	R-19-184	SM2320B	NONE	1/11/2012	9:50	Bicarbonate	136	mg/L	5.00
999554-011	R-19-184	SM2320B	NONE	1/11/2012	9:50	Carbonate	ND	mg/L	5.00
999554-011	R-19-184	SM2540D	NONE	1/11/2012	9:50	Total Suspended Solids	ND	mg/L	10.0
999554-011	R-19-184	SM4500HB	NONE	1/11/2012	9:50	PH	8.24	pH	4.00

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999554-011	R-19-184	SW6010B	FLDFLT-digested	1/11/2012	9:50	Iron	ND	ug/L	20.0
999554-011	R-19-184	SW6010B	NONE-digested	1/11/2012	9:50	Iron	ND	ug/L	20.0
999554-011	R-19-184	SW6020	FLDFLT-digested	1/11/2012	9:50	Arsenic	2.5	ug/L	1.0
999554-011	R-19-184	SW6020	FLDFLT-digested	1/11/2012	9:50	Chromium	ND	ug/L	1.0
999554-011	R-19-184	SW6020	FLDFLT-digested	1/11/2012	9:50	Manganese	ND	ug/L	10.0
999554-011	R-19-184	SW6020	FLDFLT-digested	1/11/2012	9:50	Molybdenum	ND	ug/L	5.0
999554-011	R-19-184	SW6020	FLDFLT-digested	1/11/2012	9:50	Selenium	ND	ug/L	10.0
999554-012	R-28-184	E120.1	NONE	1/11/2012	9:28	EC	907	umhos/cm	2.00
999554-012	R-28-184	E218.6	FLDFLT	1/11/2012	9:28	Chromium, hexavalent	ND	ug/L	0.20
999554-012	R-28-184	E300	NONE	1/11/2012	9:28	Bromide	ND	mg/L	0.500
999554-012	R-28-184	E300	NONE	1/11/2012	9:28	Chloride	80.5	mg/L	5.00
999554-012	R-28-184	E300	NONE	1/11/2012	9:28	Nitrate as N	ND	mg/L	0.500
999554-012	R-28-184	E300	NONE	1/11/2012	9:28	Sulfate	218	mg/L	12.5
999554-012	R-28-184	SM2320B	NONE	1/11/2012	9:28	Alkalinity	127	mg/L	5.00
999554-012	R-28-184	SM2320B	NONE	1/11/2012	9:28	Bicarbonate	127	mg/L	5.00
999554-012	R-28-184	SM2320B	NONE	1/11/2012	9:28	Carbonate	ND	mg/L	5.00
999554-012	R-28-184	SM2540D	NONE	1/11/2012	9:28	Total Suspended Solids	ND	mg/L	10.0
999554-012	R-28-184	SM4500HB	NONE	1/11/2012	9:28	PH	8.34	pH	4.00
999554-012	R-28-184	SW6010B	FLDFLT-digested	1/11/2012	9:28	BORON	ND	ug/L	200
999554-012	R-28-184	SW6010B	FLDFLT-digested	1/11/2012	9:28	Calcium	70.2	mg/L	5.00
999554-012	R-28-184	SW6010B	FLDFLT-digested	1/11/2012	9:28	Iron	ND	ug/L	20.0
999554-012	R-28-184	SW6010B	NONE-digested	1/11/2012	9:28	Iron	23.1	ug/L	20.0
999554-012	R-28-184	SW6010B	FLDFLT-digested	1/11/2012	9:28	Magnesium	27.4	mg/L	5.00
999554-012	R-28-184	SW6010B	FLDFLT-digested	1/11/2012	9:28	Potassium	4.76	mg/L	0.500
999554-012	R-28-184	SW6010B	FLDFLT-digested	1/11/2012	9:28	Sodium	83.7	mg/L	5.00
999554-012	R-28-184	SW6020	FLDFLT-digested	1/11/2012	9:28	Arsenic	2.4	ug/L	1.0
999554-012	R-28-184	SW6020	FLDFLT-digested	1/11/2012	9:28	Chromium	ND	ug/L	1.0
999554-012	R-28-184	SW6020	FLDFLT-digested	1/11/2012	9:28	Manganese	ND	ug/L	10.0
999554-012	R-28-184	SW6020	FLDFLT-digested	1/11/2012	9:28	Molybdenum	ND	ug/L	5.0
999554-012	R-28-184	SW6020	FLDFLT-digested	1/11/2012	9:28	Selenium	ND	ug/L	10.0
999554-013	RMP-AB2-184	E218.6	FLDFLT	1/11/2012	12:35	Chromium, hexavalent	ND	ug/L	0.20

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TRUESDAIL LABORATORIES, INC.

Report Continued

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999554-014	RRB-184	E120.1	NONE	1/11/2012	10:05	EC	931	umhos/cm	2.00
999554-014	RRB-184	E218.6	FLDFLT	1/11/2012	10:05	Chromium, hexavalent	ND	ug/L	0.20
999554-014	RRB-184	E300	NONE	1/11/2012	10:05	Nitrate as N	ND	mg/L	0.500
999554-014	RRB-184	SM2320B	NONE	1/11/2012	10:05	Alkalinity	125	mg/L	5.00
999554-014	RRB-184	SM2320B	NONE	1/11/2012	10:05	Bicarbonate	125	mg/L	5.00
999554-014	RRB-184	SM2320B	NONE	1/11/2012	10:05	Carbonate	ND	mg/L	5.00
999554-014	RRB-184	SM2540D	NONE	1/11/2012	10:05	Total Suspended Solids	ND	mg/L	10.0
999554-014	RRB-184	SM4500HB	NONE	1/11/2012	10:05	PH	8.00	pH	4.00
999554-014	RRB-184	SW6010B	FLDFLT-digested	1/11/2012	10:05	Iron	ND	ug/L	20.0
999554-014	RRB-184	SW6010B	NONE-digested	1/11/2012	10:05	Iron	25.5	ug/L	20.0
999554-014	RRB-184	SW6020	FLDFLT-digested	1/11/2012	10:05	Arsenic	2.3	ug/L	1.0
999554-014	RRB-184	SW6020	FLDFLT-digested	1/11/2012	10:05	Chromium	ND	ug/L	1.0
999554-014	RRB-184	SW6020	FLDFLT-digested	1/11/2012	10:05	Manganese	ND	ug/L	10.0
999554-014	RRB-184	SW6020	FLDFLT-digested	1/11/2012	10:05	Molybdenum	ND	ug/L	5.0
999554-014	RRB-184	SW6020	FLDFLT-digested	1/11/2012	10:05	Selenium	ND	ug/L	10.0

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.

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TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING

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REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project Number: 423575.MP.02.RM
P.O. Number: 423575.MP.02.RM
Release Number:

Laboratory No. 999554

Printed 2/10/2012

Samples Received on 1/11/2012 10:00:00 PM

Field ID	Lab ID	Collected	Matrix
C-CON-D-184	999554-001	01/11/2012 10:41	Water
C-CON-S-184	999554-002	01/11/2012 10:57	Water
C-MAR-D-184	999554-003	01/11/2012 08:32	Water
C-MAR-S-184	999554-004	01/11/2012 08:49	Water
C-MW-82-184	999554-005	01/11/2012 09:10	Water
C-MW-83-184	999554-006	01/11/2012 11:15	Water
C-NR1-D-184	999554-007	01/11/2012 11:24	Water
C-NR1-S-184	999554-008	01/11/2012 11:38	Water
C-NR4-D-184	999554-009	01/11/2012 12:11	Water
C-NR4-S-184	999554-010	01/11/2012 12:25	Water
R-19-184	999554-011	01/11/2012 09:50	Water
R-28-184	999554-012	01/11/2012 09:28	Water
RMP-AB2-184	999554-013	01/11/2012 12:35	Water
RRB-184	999554-014	01/11/2012 10:05	Water

Anions By I.C. - EPA 300.0

Batch 01AN12I

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999554-010 Nitrate as Nitrogen	mg/L	01/13/2012 12:14	1.00	0.0270	0.500	1.56

Method Blank

Parameter	Unit	DF	Result
Bromide	mg/L	1.00	ND
Chloride	mg/L	1.00	ND
Fluoride	mg/L	1.00	ND
Sulfate	mg/L	1.00	ND
Nitrate as Nitrogen	mg/L	1.00	ND

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Duplicate — Lab ID = 999415-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Bromide	mg/L	1.00	ND	0.00	0	0 - 20
Chloride	mg/L	1.00	ND	0.00	0	0 - 20
Fluoride	mg/L	1.00	ND	0.00	0	0 - 20
Sulfate	mg/L	1.00	ND	0.00	0	0 - 20

Duplicate — Lab ID = 999554-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	1.58	1.56	0.957	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Bromide	mg/L	1.00	4.03	4.00	101.	90 - 110
Chloride	mg/L	1.00	3.80	4.00	95.1	90 - 110
Fluoride	mg/L	1.00	4.04	4.00	101.	90 - 110
Sulfate	mg/L	1.00	19.9	20.0	99.6	90 - 110
Nitrate as Nitrogen	mg/L	1.00	3.96	4.00	99.0	90 - 110

Matrix Spike — Lab ID = 999415-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Bromide	mg/L	1.00	1.72	2.00(2.00)	85.8	85 - 115
Chloride	mg/L	1.00	1.79	2.00(2.00)	89.6	85 - 115
Fluoride	mg/L	1.00	1.95	2.00(2.00)	97.4	85 - 115
Sulfate	mg/L	1.00	1.78	2.00(2.00)	89.0	85 - 115

Matrix Spike — Lab ID = 999554-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	4.30	4.56(3.00)	91.4	85 - 115

Matrix Spike Duplicate — Lab ID = 999415-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Bromide	mg/L	1.00	2.05	2.00(2.00)	103.	85 - 115
Chloride	mg/L	1.00	1.98	2.00(2.00)	99.0	85 - 115
Fluoride	mg/L	1.00	2.06	2.00(2.00)	103	85 - 115
Sulfate	mg/L	1.00	1.91	2.00(2.00)	95.7	85 - 115

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Anions By I.C. - EPA 300.0

Batch 01AN12H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999554-001 Nitrate as Nitrogen	mg/L	01/12/2012 13:17	1.00	0.0270	0.500	ND
999554-002 Nitrate as Nitrogen	mg/L	01/12/2012 15:56	1.00	0.0270	0.500	ND
999554-003 Nitrate as Nitrogen	mg/L	01/12/2012 16:31	1.00	0.0270	0.500	ND
999554-004 Nitrate as Nitrogen	mg/L	01/12/2012 16:42	1.00	0.0270	0.500	ND
999554-007 Nitrate as Nitrogen	mg/L	01/12/2012 16:53	1.00	0.0270	0.500	ND
999554-008 Nitrate as Nitrogen	mg/L	01/12/2012 17:05	1.00	0.0270	0.500	0.642
999554-009 Nitrate as Nitrogen	mg/L	01/12/2012 17:16	1.00	0.0270	0.500	ND
999554-011 Nitrate as Nitrogen	mg/L	01/12/2012 17:39	1.00	0.0270	0.500	ND
999554-012 Bromide	mg/L	01/12/2012 12:54	1.00	0.0110	0.500	ND
Chloride	mg/L	01/12/2012 14:14	25.0	0.900	5.00	80.5
Nitrate as Nitrogen	mg/L	01/12/2012 12:54	1.00	0.0270	0.500	ND
Sulfate	mg/L	01/12/2012 14:14	25.0	2.85	12.5	218.
999554-014 Nitrate as Nitrogen	mg/L	01/12/2012 17:50	1.00	0.0270	0.500	ND

Method Blank

Parameter	Unit	DF	Result
Bromide	mg/L	1.00	ND
Chloride	mg/L	1.00	ND
Sulfate	mg/L	1.00	ND
Nitrate as Nitrogen	mg/L	1.00	ND

Duplicate — Lab ID = 999554-012

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Bromide	mg/L	1.00	ND	0.00	0	0 - 20
Chloride	mg/L	25.0	80.3	80.5	0.188	0 - 20
Sulfate	mg/L	25.0	218.	218	0.0692	0 - 20
Nitrate as Nitrogen	mg/L	1.00	ND	0.339	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Bromide	mg/L	1.00	4.34	4.00	108.	90 - 110
Chloride	mg/L	1.00	3.82	4.00	95.6	90 - 110
Sulfate	mg/L	1.00	19.7	20.0	98.4	90 - 110
Nitrate as Nitrogen	mg/L	1.00	3.98	4.00	99.6	90 - 110

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Matrix Spike — Lab ID = 999554-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Bromide	mg/L	1.00	1.98	2.00(2.00)	99.0	85 - 115
Chloride	mg/L	25.0	189.	180.(100.)	109.	85 - 115
Sulfate	mg/L	25.0	473.	468(250.)	102.	85 - 115
Nitrate as Nitrogen	mg/L	1.00	2.40	2.34(2.00)	103.	85 - 115

Matrix Spike Duplicate — Lab ID = 999554-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Bromide	mg/L	1.00	2.02	2.00(2.00)	101.	85 - 115
Nitrate as Nitrogen	mg/L	1.00	2.44	2.34(2.00)	105.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Bromide	mg/L	1.00	4.20	4.00	105.	90 - 110
Chloride	mg/L	1.00	3.82	4.00	95.4	90 - 110
Sulfate	mg/L	1.00	19.9	20.0	99.3	90 - 110
Nitrate as Nitrogen	mg/L	1.00	3.93	4.00	98.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Bromide	mg/L	1.00	3.20	3.00	107.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Bromide	mg/L	1.00	3.19	3.00	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Bromide	mg/L	1.00	3.20	3.00	107.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.89	3.00	96.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.91	3.00	97.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.90	3.00	96.8	90 - 110

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Alkalinity by SM 2320B Batch 01ALK12C 1/16/2012

Parameter		Unit	Analyzed	DF	MDL	RL	Result
999554-001	Alkalinity as CaCO3	mg/L	01/16/2012	1.00	1.68	5.00	128
	Bicarbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	128
	Carbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	ND
999554-002	Alkalinity as CaCO3	mg/L	01/16/2012	1.00	1.68	5.00	127
	Bicarbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	127
	Carbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	ND
999554-003	Alkalinity as CaCO3	mg/L	01/16/2012	1.00	1.68	5.00	132
	Bicarbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	132
	Carbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	ND
999554-004	Alkalinity as CaCO3	mg/L	01/16/2012	1.00	1.68	5.00	115
	Bicarbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	115
	Carbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	ND
999554-007	Alkalinity as CaCO3	mg/L	01/16/2012	1.00	1.68	5.00	132
	Bicarbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	132
	Carbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	ND
999554-008	Alkalinity as CaCO3	mg/L	01/16/2012	1.00	1.68	5.00	124
	Bicarbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	124
	Carbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	ND
999554-009	Alkalinity as CaCO3	mg/L	01/16/2012	1.00	1.68	5.00	125
	Bicarbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	125
	Carbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	ND
999554-010	Alkalinity as CaCO3	mg/L	01/16/2012	1.00	1.68	5.00	124
	Bicarbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	124
	Carbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	ND
999554-011	Alkalinity as CaCO3	mg/L	01/16/2012	1.00	1.68	5.00	136
	Bicarbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	136
	Carbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	ND
999554-012	Alkalinity as CaCO3	mg/L	01/16/2012	1.00	1.68	5.00	127
	Bicarbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	127
	Carbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	ND
999554-014	Alkalinity as CaCO3	mg/L	01/16/2012	1.00	1.68	5.00	125
	Bicarbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	125
	Carbonate (Calculated)	mg/L	01/16/2012	1.00	1.68	5.00	ND

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Method Blank

Parameter	Unit	DF	Result
Alkalinity as CaCO3	mg/L	1.00	ND

Duplicate — Lab ID = 999554-014

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	124	125	0.803	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	95.0	100.	95.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	96.0	100.	96.0	90 - 110

Matrix Spike — Lab ID = 999554-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	216	225(100.)	91.0	75 - 125

Matrix Spike Duplicate — Lab ID = 999554-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	215	225(100.)	90.0	75 - 125

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Specific Conductivity - EPA 120.1 Batch 01EC12F 1/17/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999554-001 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	920.
999554-002 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	921
999554-003 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	921
999554-004 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	915
999554-007 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	916
999554-008 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	916
999554-009 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	916
999554-010 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	913
999554-011 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	920.
999554-012 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	907
999554-014 Specific Conductivity	umhos/cm	01/17/2012	1.00	0.0950	2.00	931

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 999554-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	919	920.	0.109	0 - 10

Duplicate — Lab ID = 999554-014

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	932	931	0.107	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	678	706	96.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	681	706	96.4	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	680.	706	96.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	920.	997	92.3	90 - 110

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Metals by EPA 6010B, Total

Batch 012312B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999554-001 Iron	ug/L	01/23/2012 18:06	1.00	1.34	20.0	ND
999554-002 Iron	ug/L	01/23/2012 18:54	1.00	1.34	20.0	ND
999554-003 Iron	ug/L	01/23/2012 19:00	1.00	1.34	20.0	262.
999554-004 Iron	ug/L	01/23/2012 19:06	1.00	1.34	20.0	122
999554-007 Iron	ug/L	01/23/2012 19:12	1.00	1.34	20.0	ND
999554-008 Iron	ug/L	01/23/2012 19:18	1.00	1.34	20.0	ND
999554-009 Iron	ug/L	01/23/2012 19:24	1.00	1.34	20.0	ND
999554-010 Iron	ug/L	01/23/2012 19:30	1.00	1.34	20.0	29.2
999554-011 Iron	ug/L	01/23/2012 19:36	1.00	1.34	20.0	ND
999554-012 Iron	ug/L	01/23/2012 20:01	1.00	1.34	20.0	23.1
999554-014 Iron	ug/L	01/23/2012 20:07	1.00	1.34	20.0	25.5

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate — Lab ID = 999554-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	16.5	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	112.	100.	112.	85 - 115

Matrix Spike — Lab ID = 999554-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	128.	116.(100.)	111.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5140	5000	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5340	5000	107.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5340	5000	107.	90 - 110

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Chrome VI by EPA 218.6 Batch 01CrH12F

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999554-001 Chromium, Hexavalent	ug/L	01/13/2012 07:57	1.00	0.0260	0.20	ND
999554-002 Chromium, Hexavalent	ug/L	01/13/2012 08:08	1.00	0.0260	0.20	ND
999554-003 Chromium, Hexavalent	ug/L	01/13/2012 08:20	1.00	0.0260	0.20	ND
999554-004 Chromium, Hexavalent	ug/L	01/13/2012 09:10	1.00	0.0260	0.20	ND
999554-005 Chromium, Hexavalent	ug/L	01/13/2012 09:22	1.00	0.0260	0.20	ND
999554-006 Chromium, Hexavalent	ug/L	01/13/2012 10:12	1.00	0.0260	0.20	ND
999554-007 Chromium, Hexavalent	ug/L	01/13/2012 10:24	1.00	0.0260	0.20	ND
999554-008 Chromium, Hexavalent	ug/L	01/13/2012 11:51	1.00	0.0260	0.20	ND
999554-009 Chromium, Hexavalent	ug/L	01/13/2012 12:03	1.00	0.0260	0.20	ND
999554-010 Chromium, Hexavalent	ug/L	01/13/2012 12:16	1.00	0.0260	0.20	ND
999554-011 Chromium, Hexavalent	ug/L	01/13/2012 12:28	1.00	0.0260	0.20	ND
999554-012 Chromium, Hexavalent	ug/L	01/13/2012 12:41	1.00	0.0260	0.20	ND
999554-013 Chromium, Hexavalent	ug/L	01/13/2012 12:53	1.00	0.0260	0.20	ND

Method Blank

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

Duplicate — Lab ID = 998803-012

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	0.153	0.175	13.5	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.196	0.200	97.8	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.87	5.00	97.5	90 - 110

Matrix Spike — Lab ID = 998803-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.20	1.24(1.06)	96.6	90 - 110

Matrix Spike — Lab ID = 998803-013

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.26(1.06)	96.6	90 - 110

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Matrix Spike — Lab ID = 998803-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.28	1.34(1.06)	94.6	90 - 110

Matrix Spike — Lab ID = 998830-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.27	1.28(1.06)	99.2	90 - 110

Matrix Spike — Lab ID = 998830-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.25	1.29(1.06)	96.4	90 - 110

Matrix Spike — Lab ID = 998830-015

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.21	1.26(1.06)	94.9	90 - 110

Matrix Spike — Lab ID = 998830-016

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.28	1.33(1.06)	95.2	90 - 110

Matrix Spike — Lab ID = 999554-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.07(1.00)	97.4	90 - 110

Matrix Spike — Lab ID = 999554-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.06(1.00)	98.0	90 - 110

Matrix Spike — Lab ID = 999554-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.06(1.00)	97.1	90 - 110

Matrix Spike — Lab ID = 999554-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.07(1.00)	96.8	90 - 110

Matrix Spike — Lab ID = 999554-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.04(1.00)	97.7	90 - 110

Matrix Spike — Lab ID = 999554-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.06(1.00)	95.7	90 - 110

Matrix Spike — Lab ID = 999554-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.07(1.00)	96.9	90 - 110

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Matrix Spike — Lab ID = 999554-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.06	1.06(1.00)	99.6	90 - 110

Matrix Spike — Lab ID = 999554-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.08(1.00)	97.4	90 - 110

Matrix Spike — Lab ID = 999554-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.07(1.00)	97.6	90 - 110

Matrix Spike — Lab ID = 999554-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.06	1.07(1.00)	98.4	90 - 110

Matrix Spike — Lab ID = 999554-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.06(1.00)	98.6	90 - 110

Matrix Spike — Lab ID = 999554-013

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.03	1.06(1.00)	96.8	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.88	5.00	97.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	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	10.3	10.0	103.	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	10.3	10.0	103.	95 - 105

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Chrome VI by EPA 218.6

Batch 01CrH12G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999554-014 Chromium, Hexavalent	ug/L	01/13/2012 16:11	1.00	0.0260	0.20	ND

Method Blank

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

Duplicate — Lab ID = 999554-014

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0732	0.0811	10.2	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.224	0.200	112.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.94	5.00	98.9	90 - 110

Matrix Spike — Lab ID = 999554-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.06	1.08(1.00)	97.8	90 - 110

Matrix Spike — Lab ID = 999569-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.86	5.98(5.00)	97.6	90 - 110

Matrix Spike — Lab ID = 999569-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.19	1.20(1.00)	98.7	90 - 110

Matrix Spike — Lab ID = 999569-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.44	1.47(1.00)	97.1	90 - 110

Matrix Spike — Lab ID = 999569-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.43	1.46(1.00)	96.8	90 - 110

Matrix Spike — Lab ID = 999578-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.86	6.97(5.00)	97.7	90 - 110

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Metals by EPA 6020A, Dissolved

Batch 012712C

Parameter		Unit	Analyzed	DF	MDL	RL	Result
999554-001	Chromium	ug/L	01/28/2012 10:04	5.00	0.110	1.0	ND
	Manganese	ug/L	01/28/2012 10:04	5.00	0.285	10.0	ND
999554-002	Chromium	ug/L	01/28/2012 11:01	5.00	0.110	1.0	ND
	Manganese	ug/L	01/28/2012 11:01	5.00	0.285	10.0	ND
999554-003	Chromium	ug/L	01/28/2012 11:08	5.00	0.110	1.0	ND
	Manganese	ug/L	01/28/2012 11:08	5.00	0.285	10.0	ND
999554-004	Chromium	ug/L	01/28/2012 11:16	5.00	0.110	1.0	ND
	Manganese	ug/L	01/28/2012 11:16	5.00	0.285	10.0	ND
999554-007	Chromium	ug/L	01/28/2012 11:23	5.00	0.110	1.0	ND
	Manganese	ug/L	01/28/2012 11:23	5.00	0.285	10.0	ND
999554-008	Chromium	ug/L	01/28/2012 11:30	5.00	0.110	1.0	ND
	Manganese	ug/L	01/28/2012 11:30	5.00	0.285	10.0	ND
999554-009	Chromium	ug/L	01/28/2012 11:37	5.00	0.110	1.0	ND
	Manganese	ug/L	01/28/2012 11:37	5.00	0.285	10.0	ND
999554-010	Chromium	ug/L	01/28/2012 11:44	5.00	0.110	1.0	ND
	Manganese	ug/L	01/28/2012 11:44	5.00	0.285	10.0	ND
999554-011	Chromium	ug/L	01/28/2012 11:52	5.00	0.110	1.0	ND
	Manganese	ug/L	01/28/2012 11:52	5.00	0.285	10.0	ND
999554-012	Chromium	ug/L	01/28/2012 11:59	5.00	0.110	1.0	ND
	Manganese	ug/L	01/28/2012 11:59	5.00	0.285	10.0	ND
999554-014	Manganese	ug/L	01/28/2012 12:06	5.00	0.285	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.182	0.200	91.0	70 - 130
Chromium	ug/L	1.00	0.239	0.200	119.	70 - 130
Manganese	ug/L	1.00	0.159	0.200	79.6	70 - 130

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Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	99.4	100.	99.4	85 - 115
Chromium	ug/L	5.00	105.	100.	105.	85 - 115
Manganese	ug/L	5.00	99.1	100.	99.1	85 - 115

Matrix Spike — Lab ID = 999554-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	106.	103.(100.)	103.	75 - 125
Chromium	ug/L	5.00	104.	100.(100.)	104.	75 - 125
Manganese	ug/L	5.00	98.0	100.(100.)	98.0	75 - 125

Matrix Spike Duplicate — Lab ID = 999554-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	106.	103.(100.)	103.	75 - 125
Chromium	ug/L	5.00	104.	100.(100.)	104.	75 - 125
Manganese	ug/L	5.00	97.6	100.(100.)	97.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.80	10.0	98.0	90 - 110
Chromium	ug/L	1.00	10.1	10.0	101	90 - 110
Manganese	ug/L	1.00	9.58	10.0	95.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.60	10.0	96.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.64	10.0	96.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.48	10.0	94.8	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	10.9	10.0	109.	90 - 110

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Metals by EPA 6020A, Dissolved Batch 012912B

Parameter		Unit	Analyzed	DF	MDL	RL	Result
999554-001	Arsenic	ug/L	01/30/2012 05:26	5.00	0.285	1.0	2.8
	Molybdenum	ug/L	01/30/2012 05:26	5.00	0.270	5.0	ND
	Selenium	ug/L	01/30/2012 05:26	5.00	0.340	10.0	ND
999554-002	Arsenic	ug/L	01/30/2012 06:23	5.00	0.285	1.0	2.5
	Molybdenum	ug/L	01/30/2012 06:23	5.00	0.270	5.0	ND
	Selenium	ug/L	01/30/2012 06:23	5.00	0.340	10.0	ND
999554-003	Arsenic	ug/L	01/30/2012 06:30	5.00	0.285	1.0	2.9
	Molybdenum	ug/L	01/30/2012 06:30	5.00	0.270	5.0	ND
	Selenium	ug/L	01/30/2012 06:30	5.00	0.340	10.0	ND
999554-004	Arsenic	ug/L	01/30/2012 06:38	5.00	0.285	1.0	2.6
	Molybdenum	ug/L	01/30/2012 06:38	5.00	0.270	5.0	ND
	Selenium	ug/L	01/30/2012 06:38	5.00	0.340	10.0	ND
999554-007	Arsenic	ug/L	01/30/2012 06:45	5.00	0.285	1.0	2.4
	Molybdenum	ug/L	01/30/2012 06:45	5.00	0.270	5.0	ND
	Selenium	ug/L	01/30/2012 06:45	5.00	0.340	10.0	ND
999554-008	Arsenic	ug/L	01/30/2012 06:52	5.00	0.285	1.0	2.5
	Molybdenum	ug/L	01/30/2012 06:52	5.00	0.270	5.0	ND
	Selenium	ug/L	01/30/2012 06:52	5.00	0.340	10.0	ND
999554-009	Arsenic	ug/L	01/30/2012 06:59	5.00	0.285	1.0	2.5
	Molybdenum	ug/L	01/30/2012 06:59	5.00	0.270	5.0	ND
	Selenium	ug/L	01/30/2012 06:59	5.00	0.340	10.0	ND
999554-010	Arsenic	ug/L	01/30/2012 07:06	5.00	0.285	1.0	2.5
	Molybdenum	ug/L	01/30/2012 07:06	5.00	0.270	5.0	ND
	Selenium	ug/L	01/30/2012 07:06	5.00	0.340	10.0	ND
999554-011	Arsenic	ug/L	01/30/2012 07:14	5.00	0.285	1.0	2.5
	Molybdenum	ug/L	01/30/2012 07:14	5.00	0.270	5.0	ND
	Selenium	ug/L	01/30/2012 07:14	5.00	0.340	10.0	ND
999554-012	Arsenic	ug/L	01/30/2012 07:21	5.00	0.285	1.0	2.4
	Molybdenum	ug/L	01/30/2012 07:21	5.00	0.270	5.0	ND
	Selenium	ug/L	01/30/2012 07:21	5.00	0.340	10.0	ND
999554-014	Arsenic	ug/L	01/30/2012 07:28	5.00	0.285	1.0	2.3
	Molybdenum	ug/L	01/30/2012 07:28	5.00	0.270	5.0	ND
	Selenium	ug/L	01/30/2012 07:28	5.00	0.340	10.0	ND

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Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Selenium	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.202	0.200	101.	70 - 130
Selenium	ug/L	1.00	0.227	0.200	113.	70 - 130
Molybdenum	ug/L	1.00	0.213	0.200	106.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	103.	100.	103.	85 - 115
Selenium	ug/L	5.00	102.	100.	102.	85 - 115
Molybdenum	ug/L	5.00	100.	100.	100.	85 - 115

Matrix Spike — Lab ID = 999554-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	115.	103.(100.)	112.	75 - 125
Selenium	ug/L	5.00	105.	100.(100.)	105.	75 - 125
Molybdenum	ug/L	5.00	110.	100.(100.)	110.	75 - 125

Matrix Spike Duplicate — Lab ID = 999554-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	116.	103.(100.)	113.	75 - 125
Selenium	ug/L	5.00	105.	100.(100.)	105.	75 - 125
Molybdenum	ug/L	5.00	121.	100.(100.)	121.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.81	10.0	98.1	90 - 110
Selenium	ug/L	1.00	9.95	10.0	99.5	90 - 110
Molybdenum	ug/L	1.00	9.81	10.0	98.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.58	10.0	95.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.91	10.0	99.1	90 - 110

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Metals by EPA 6020A, Dissolved Batch 020612A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999554-014 Chromium	ug/L	02/06/2012 16:24	5.00	0.110	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 999554-014

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.140	0.200	70.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	102.	100.	102.	85 - 115

Matrix Spike — Lab ID = 999554-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	101.	100.(100.)	101.	75 - 125

Matrix Spike Duplicate — Lab ID = 999554-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	96.5	100.(100.)	96.5	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.33	10.0	93.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.04	10.0	90.4	90 - 110

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Metals by EPA 6010B, Dissolved

Batch 012512A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999554-012 Boron	ug/L	01/25/2012 16:00	1.00	1.50	200.	ND
Calcium	mg/L	01/25/2012 13:36	10.0	0.196	5.00	70.2
Magnesium	mg/L	01/25/2012 13:36	10.0	0.619	5.00	27.4
Potassium	mg/L	01/25/2012 16:00	1.00	0.0685	0.500	4.76
Sodium	mg/L	01/25/2012 13:36	10.0	0.586	5.00	83.7

Method Blank

Parameter	Unit	DF	Result
Calcium	mg/L	1.00	ND
Iron	ug/L	1.00	ND
Zinc	ug/L	1.00	ND
Potassium	mg/L	1.00	ND
Sodium	mg/L	1.00	ND
Magnesium	mg/L	1.00	ND
Boron	ug/L	1.00	ND

Duplicate Lab ID = 999579-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Calcium	mg/L	50.0	429.	400.	6.90	0 - 20
Iron	ug/L	1.00	ND	0.00	0	0 - 20
Zinc	ug/L	1.00	ND	0.00	0	0 - 20
Potassium	mg/L	10.0	10.9	10.8	0.646	0 - 20
Sodium	mg/L	50.0	406.	384	5.50	0 - 20
Magnesium	mg/L	10.0	88.1	81.4	7.88	0 - 20
Boron	ug/L	1.00	1220	1160	4.88	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Calcium	mg/L	1.00	1.98	2.00	99.2	85 - 115
Iron	ug/L	1.00	2080	2000	104	85 - 115
Zinc	ug/L	1.00	2100	2000	105.	85 - 115
Potassium	mg/L	1.00	2.14	2.00	107.	85 - 115
Sodium	mg/L	1.00	2.07	2.00	104.	85 - 115
Magnesium	mg/L	1.00	2.08	2.00	104.	85 - 115
Boron	ug/L	1.00	2030	2000	102.	85 - 115

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Metals by EPA 6010B, Dissolved Batch 012412B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999554-001 Iron	ug/L	01/24/2012 18:02	1.00	1.34	20.0	ND
999554-002 Iron	ug/L	01/24/2012 18:51	1.00	1.34	20.0	ND
999554-003 Iron	ug/L	01/24/2012 18:57	1.00	1.34	20.0	ND
999554-004 Iron	ug/L	01/24/2012 19:03	1.00	1.34	20.0	ND
999554-007 Iron	ug/L	01/24/2012 19:09	1.00	1.34	20.0	ND
999554-008 Iron	ug/L	01/24/2012 19:14	1.00	1.34	20.0	ND
999554-009 Iron	ug/L	01/24/2012 19:20	1.00	1.34	20.0	ND
999554-010 Iron	ug/L	01/24/2012 19:26	1.00	1.34	20.0	ND
999554-011 Iron	ug/L	01/24/2012 19:32	1.00	1.34	20.0	ND
999554-012 Iron	ug/L	01/24/2012 19:59	1.00	1.34	20.0	ND
999554-014 Iron	ug/L	01/24/2012 20:05	1.00	1.34	20.0	ND

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate — Lab ID = 999554-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	101.	100.	101.	85 - 115

Matrix Spike — Lab ID = 999554-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	110.	100.(100.)	110.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5420	5000	108.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5100	5000	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5060	5000	101.	90 - 110

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pH by SM 4500-H B Batch 01pH12H

Parameter	Unit	Analyzed	DF	MDL	RL	Result	
999554-001 pH	pH	01/12/2012 09:02	1.00	0.0250	4.00	7.97	
999554-002 pH	pH	01/12/2012 09:04	1.00	0.0250	4.00	7.99	
999554-003 pH	pH	01/12/2012 09:06	1.00	0.0250	4.00	8.05	J
999554-004 pH	pH	01/12/2012 09:08	1.00	0.0250	4.00	8.08	J
999554-007 pH	pH	01/12/2012 09:10	1.00	0.0250	4.00	8.13	
999554-008 pH	pH	01/12/2012 09:12	1.00	0.0250	4.00	8.14	
999554-009 pH	pH	01/12/2012 09:14	1.00	0.0250	4.00	8.13	
999554-010 pH	pH	01/12/2012 09:16	1.00	0.0250	4.00	8.18	
999554-011 pH	pH	01/12/2012 09:18	1.00	0.0250	4.00	8.24	
999554-012 pH	pH	01/12/2012 09:20	1.00	0.0250	4.00	8.34	
999554-014 pH	pH	01/12/2012 09:30	1.00	0.0250	4.00	8.00	

Duplicate — Lab ID = 999554-012

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	8.31	8.34	0.360	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.01	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	7.06	7.00	101.	90 - 110

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Total Suspended Solids by SM 2540 D Batch 01TSS12E 1/17/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999554-001 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999554-002 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999554-003 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999554-004 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999554-007 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999554-008 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999554-009 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999554-010 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999554-011 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999554-012 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND
999554-014 Total Suspended Solids	mg/L	01/17/2012	1.00	0.217	10.0	ND

Method Blank

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

Duplicate Lab ID = 999628-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Suspended Solids	mg/L	1.00	435	450.	3.39	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Suspended Solids	mg/L	1.00	93.0	100.	93.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Suspended Solids	mg/L	1.00	97.0	100.	97.0	90 - 110

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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TRUESDAIL LABORATORIES INC.

Total Suspended Solids by SM 2540 D

Calculations

Batch: 01TSS12E

Date Analyzed: 01/17/12

Dish Number	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
K26	BLANK	1000	1.4450	1.4450	1.445	0.0000	No	0.0000	0.0	2.5	ND
J99	999554-1	800	1.4169	1.4182	1.4182	0.0000	No	0.0013	1.6	3.1	ND
J100	999554-2	800	1.4138	1.4141	1.4141	0.0000	No	0.0003	0.4	3.1	ND
K1	999554-3	800	1.4222	1.4222	1.4222	0.0000	No	0.0000	0.0	3.1	ND
K2	999554-4	850	1.4178	1.4213	1.4213	0.0000	No	0.0035	4.1	2.9	4.1
K3	999554-7	800	1.4203	1.4213	1.4213	0.0000	No	0.0010	1.3	3.1	ND
K4	999554-8	825	1.4223	1.4223	1.4223	0.0000	No	0.0000	0.0	3.0	ND
K5	999554-9	800	1.4201	1.4210	1.421	0.0000	No	0.0009	1.1	3.1	ND
K6	999554-10	800	1.4133	1.4136	1.4136	0.0000	No	0.0003	0.4	3.1	ND
K7	999554-11	800	1.4202	1.4202	1.4202	0.0000	No	0.0000	0.0	3.1	ND
K8	999554-12	800	1.4511	1.4514	1.4514	0.0000	No	0.0003	0.4	3.1	ND
K9	999554-14	700	1.4480	1.4480	1.448	0.0000	No	0.0000	0.0	3.6	ND
K20	999618-1	300	1.4535	1.4609	1.4609	0.0000	No	0.0074	24.7	8.3	24.7
K21	999618-2	300	1.4535	1.4703	1.4703	0.0000	No	0.0168	56.0	8.3	56.0
K22	999619	1000	1.4529	1.4532	1.4532	0.0000	No	0.0003	0.3	2.5	ND
K23	999628	60	1.4540	1.4810	1.481	0.0000	No	0.0270	450.0	41.7	450.0
K24	999642-1	240	1.4513	1.4612	1.4612	0.0000	No	0.0099	41.3	10.4	41.3
K25	999628D	60	1.4487	1.4748	1.4748	0.0000	No	0.0261	435.0	41.7	435.0
K27	LCS	100	1.4507	1.4600	1.46	0.0000	No	0.0093	93.0	25.0	93.0
K28	LCSD	100	1.4508	1.4605	1.4605	0.0000	No	0.0097	97.0	25.0	97.0

Calculation as follows:

Non- Filterable residue (TSS), mg/L = $\left(\frac{A-B}{C}\right) x\ 1\ 0^6$

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)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	93	100	93.0%	90-110%	Yes
LCSD	97	100	97.0%	90-110%	Yes

LCS Recovery

$$P = \left(\frac{LC}{LT}\right) x\ 100$$

$$\%\ Difference = \frac{|A\ or\ B - C|}{C}\ x\ 100$$

$$where \quad C = \frac{A+B}{2}$$

A = Weght of the first sample in (g).
B = Weght of the second sample in (g).
C = Average weight in (g).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
999628	0.027	0.0261	1.7%	≤5%	Yes

LUCK
Analyst Printed Name

Analyst Signature

Hope T.
Reviewer Printed Name

Reviewer Signature

Tss_2011

TRUESDAIL LABORATORIES, INC.

Alkalinity by SM 2320B
Calculations

Date of Analysis: 1/16/12
Start of Analysis:
Date Sampled:

Analytical Batch: 01ALK12c
Matrix: Water
Date Calculated: 1/16/12

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO3	RL, ppm	Total Alkalinity Reported Value	HCO3 Alkalinity as $CaCO_3$ (ppm)	CO3 Alkalinity as $CaCO_3$ (ppm)	OH Alkalinity as $CaCO_3$ (ppm)	Low Alkalinity as $CaCO_3$ (<20ppm)
BLANK	6.99	50	0.02		0.0	0.04		0.8	5	ND	ND	ND	ND	
999554-1	8.22	50	0.02		0.0	6.40		128.0	5	128.0	128.0	ND	ND	
999554-2	8.18	50	0.02		0.0	6.35		127.0	5	127.0	127.0	ND	ND	
999554-3	8.30	50	0.02		0.0	6.60		132.0	5	132.0	132.0	ND	ND	
999554-4	7.95	50	0.02		0.0	5.75		115.0	5	115.0	115.0	ND	ND	
999554-7	8.09	50	0.02		0.0	6.60		132.0	5	132.0	132.0	ND	ND	
999554-8	8.18	50	0.02		0.0	6.20		124.0	5	124.0	124.0	ND	ND	
999554-9	8.19	50	0.02		0.0	6.25		125.0	5	125.0	125.0	ND	ND	
999554-10	8.20	50	0.02		0.0	6.20		124.0	5	124.0	124.0	ND	ND	
999554-11	8.23	50	0.02		0.0	6.80		136.0	5	136.0	136.0	ND	ND	
999554-12	8.29	50	0.02		0.0	6.35		127.0	5	127.0	127.0	ND	ND	
999554-14	8.15	50	0.02		0.0	6.25		125.0	5	125.0	125.0	ND	ND	
999554-14d	8.16	50	0.02		0.0	6.20		124.0	5	124.0	124.0	ND	ND	
999579-1	7.13	50	0.02		0.0	17.75		355.0	5	355.0	355.0	ND	ND	
999579-3	6.95	50	0.02		0.0	9.20		184.0	5	184.0	184.0	ND	ND	
999579-4	6.96	50	0.02		0.0	11.35		227.0	5	227.0	227.0	ND	ND	
999579-5	7.33	50	0.02		0.0	12.15		243.0	5	243.0	243.0	ND	ND	
999554-14ms	9.12	50	0.02	1.0	20.0	10.80		216.0	5	216.0	176.0	40	ND	
999554-14msd	9.11	50	0.02	1.1	22.0	10.75		215.0	5	215.0	171.0	44	ND	
LCS1	10.25	50	0.02	2.2	44.0	4.75		95.0	5	95.0	7.0	88	ND	
LCS2	10.30	50	0.02	2.2	43.0	4.80		96.0	5	96.0	10.0	86	ND	

Calculations as follows:

$$T \text{ or } P = \left(\frac{A \times N \times 50000}{mL \ sample} \right)$$

Where:
T = Total Alkalinity, mg CaCO3/L
P = Phenolphthalein Alkalinity, mg CaCO3/L
A = mL standard acid used
N = normality of standard acid

Low Alkalinity: as mg/L CaCO3 $= \frac{(2 \times B - C) \times N \times 50000}{\text{mL sample}}$

Where: B = mL titrant to first recorded pH
C = total mL titrant to reach pH 0.3 unit lower
N = normality of standard acid

ND: Not Detected (below the reporting limit)
LCS: Laboratory Control Standard
LCSD: Laboratory Control Standard Duplicate
MS: Matrix Spike
MSD: Matrix Spike Duplicate

Analyst Printed Name | Analyst Signature | Reviewer Printed Name | Reviewer Signature

065

Alk_10c2/7/12, by HT

RMP-184 TLI 1-11-12 999554

CH2MHILL

CHAIN OF CUSTODY RECORD

1/11/2012 2:37:39 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.RM
Task Order
Project 2012-RMP-184
Turnaround Time 10 Days
Shipping Date: 1/10/2012
COC Number: 2

ALERT !!
Level III QC

For Sample Conditions See Form Attached

				Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Metals (6010B) Total Fe	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo	Metals (6010BFF) Field Filtered Dissolved Ca,Mg,K,Na,B	Metals (6020AFF) Field Filtered Chromium	Specific Conductance (E120.1)	Anions (E300.0) Br,Cl,SO4,NO3N	Anions (E300.0) Nitrate	PH (SM4500HB)	Alkalinity (SM2320B)	TSS (SM2540)		Number of Containers	COMMENTS
Container:				3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter			
Preservatives:				(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	4°C			
Filtered:				Field	NA	NA	Field	Field	Field	NA	NA	NA	NA	NA	NA			
Holding Time:				28	28	180	180	180	180	2	2	2	2	2	2			
	DATE	TIME	Matrix															
-1 C-CON-D-184	1/11/2012	10:41	Water	X		X	X		X	X		X	X	X	X		9	
-2 C-CON-S-184	1/11/2012	10:57	Water	X		X	X		X	X		X	X	X	X		9	
-3 C-MAR-D-184	1/11/2012	8:32	Water	X		X	X		X	X		X	X	X	X		9	pH=2
-4 C-MAR-S-184	1/11/2012	8:49	Water	X		X	X		X	X		X	X	X	X		9	
-5 C-MW-82-184	1/11/2012	9:10	Water		X												1	
-6 C-MW-83-184	1/11/2012	11:15	Water		X												1	
-7 C-NR1-D-184	1/11/2012	11:24	Water	X		X	X		X	X		X	X	X	X		9	
-8 C-NR1-S-184	1/11/2012	11:38	Water	X		X	X		X	X		X	X	X	X		9	
-9 C-NR4-D-184	1/11/2012	12:11	Water	X		X	X		X	X		X	X	X	X		9	
-10 C-NR4-S-184	1/11/2012	12:25	Water	X		X	X		X	X		X	X	X	X		9	pH=2
-11 R-19-184	1/11/2012	9:50	Water	X		X	X		X	X		X	X	X	X		9	
-12 R-28-184	1/11/2012	9:28	Water	X		X	X	X	X	X	X		X	X	X		10	
-13 RMP-AB2-184	1/11/2012	12:35	Water		X												1	
-14 RRB-184	1/11/2012	10:05	Water	X		X	X		X	X		X	X	X	X		9	pH=2

pH for 6010B/6020A

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by		1-11-12 16:00
Received by	Rafael Davila	1-11-12 16:00
Relinquished by	Rafael Davila	1-11-12 22:00
Received by	Linda Shaburnoa	1/11/12 22:00

T.L.I

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:
Jan 10-11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

RMP-184 TLI 1-11-12 999554

CH2MHILL

CHAIN OF CUSTODY RECORD

1/11/2012 2:37:39 PM

Project Name: PG&E Topock
Location: Topock
Project Manager: Jay Piper
Sample Manager: Shawn Duffy
Project Number: 423575.MP.02.RM
Task Order:
Project: 2012-RMP-184
Turnaround Time: 10 Days
Shipping Date: 1/10/2012
COC Number: 2

Container:	3X250 ml Poly	250 Poly	500 ml Poly	3x500 ml Poly	3x500 ml Poly	3x500 ml Poly	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter	2x1 Liter
Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	4°C
Filtered:	Field	NA	NA	Field	Field	Field	NA	NA	NA	NA	NA	NA
Holding Time:	28	28	180	180	180	180	2	2	2	2	2	2
DATE TIME Matrix	Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Metals (6010B) Total Fe	Metals (SW6010B/SW6020Adis) Field Filtered As,Mn,Fe,Se,Mo	Metals (6010BFF) Field Filtered Dissolved Ca,Mg,K,Na,B	Metals (6020AFF) Field Filtered Chromium	Specific Conductance (E120.1)	Anions (E300.0) Br,Cl,SO4,NO3N	Anions (E300.0) Nitrate	PH (SM4500HB)	Alkalinity (SM2320B)	TSS (SM2540)

ALERT !!
Level III QC

	Number of Containers	COMMENTS
TOTAL NUMBER OF CONTAINERS	103	

	Signatures	Date/Time
Approved by		1-11-12
Sampled by		
Relinquished by		
Received by	Rafael Davila	1-11-12 16:00
Relinquished by	Rafael Davila	1-11-12 22:00
Received by	Shawn Duffy	1/11/12 22:00

T.L.I

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:
Jan 10-11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
999361	Sludge	–	01/01/12	M.M	TTLC	–
999303-2	↓		↓	↓	↓	–
999319(1-2	↓		↓	↓	↓	–
999366(6-8)	<1	>2	1/6/12	ES	NO	yes @ 3:30 pm
999347 (-16,23)	↓	↓	↓	↓	↓	↓
999379 (1-3)						
999436	>1	<2	01/09/12	M.M	Yes	–
999402	↓	↓	↓	↓	↓	–
999440						–
999450(1-4)						–
999462T(1)	>1	<2	01/10/12	M.M	Yes	–
999513 (1-14)	<1	<2	01/13/12	M.M	Yes	–
1/13/12 (1-4,7-14) M.M 999554 (~~1-14~~)	↓	↓	↓	↓	↓	–
999569 (1-4						–
999578 (1-6)						–
999579 (1-7,9-14)						–
999511	<1	>2(6)	01/13/2	M.M	yes	yes
1/13/12 M.M → 999249 (1-2)	<1	<2	12/22/11	M.M	yes	–
999247	↓	↓	↓	↓	↓	–
999248 (1-3)						–
999250 (1-10)						–
999604 (1-6)	<1	<2 ~~>2~~ M.M	01/16/12	M.M	yes	–
999605(1-4,6-8)	↓	↓	↓	↓	↓	–
999576	>1	>2	01/16/12	M.M	yes	–
999577	↓	↓	↓	↓	↓	–
999593						–
999623(1-2)	<1	<2	01/17/12	MM	Yes	–
999624 (1-8)	↓	↓	↓	↓	↓	–
998020(1-8)	Plants	–	01/17/12	MM	Yes	TTLC
999635	>1	<2	01/18/12	MM	↓	– ↓
999649	<1	>2	↓	↓	↓	– Yes
999650 (1-10)	↓	<2	↓	↓	↓	–
999651 (1-4,8,9)	↓	↓	↓	↓	yes	–
999674(1-3)	<1	<2	01/19/12	M.M	Yes	–
999692	>1	<2	01/19/12	↓	yes	–
999699	↓	↓	↓	↓	↓	–
999700						–
999701						–
999559(1-3)	<1	>2	1/19/12	KK	NO	(Y) 1/19/12@4pm
999639(1-2)	↓	↓	↓	↓	↓	↓
999689(1-4)						
999708						
999709						
999710						
999711						
999712 (3,6,9,12)	↓	↓	↓	↓	↓	↓
999669(-2,3)	<1	>2	1/19/12	KK	NO	(Y) 1/19/12@5pm
999668 (11,10)	↓	↓	↓	↓	↓	↓

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
12/28/11	999308	7	5 mL	9.5	8:30 AM	GW
1/3/12	999359-1	7	5mL	9.5	18:00	MG
↓	↓ -2	9.5	N/A	N/A	N/A	MG
1/4/12	999360-1	7	5mL	9.5	10:45 AM	GW
↓	↓ -2	7	5mL	↓	10:50 AM	GW
1/4/12	999362-1	7	5mL	9.5	11:00 AM	GW
	-2				11:05 AM	
	-3				11:10 AM	
1/4/12	999389	7	5ml	9.5	5:15pm	GW
1/5/12	999416	7	5mL	9.5	11:45pm	MG
1/9/12	999460	7	5mL	9.5	6:45pm	MG
1/10/12	999462	9.5	N/A	N/A	N/A	GW
1/11/12	999512-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
1/11/12	999513-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-6					
	-11					
1/11/12	999511	7	5mL	9.5	8:50 AM	GW
1/11/12	Draw + Buffer	9.5	N/A	N/A	N/A	GW
1/11/12	999553	7	5ml	9.5	5pm	GW
1/11/12	999513-15	9.5	N/A	N/A	N/A	GW
1/12/12	999514-1	9.5	N/A	N/A	N/A	GW
↓	↓	↓	↓	↓	↓	↓

al

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
1/12/12	999554-3	9.5	N/A	N/A	N/A	[illegible]
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-12					
	-13					
	-14					
1/13/12	999569-1	9.5	N/A	N/A	N/A	[illegible]
	-2					
	-3					
	-4					
	999578-1					
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	999579-1					
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					

al

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E 2 **Lab #** 999554

Date Delivered: 01/11/12 **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? ☒Yes ☐No ☐N/A
   Temperature (if yes)? 3.5°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
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L. Shabunina

ALERT!! Level III QC

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

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 6, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2012-GMP-184, GROUNDWATER MONITORING PROJECT, TLI NO.: 999811

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2012-GMP-184 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 24, 2012, 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

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.
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(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

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

Laboratory No.: 999811
Date Received: January 24, 2012

Project Name: PG&E Topock Project
Project No.: 423575.MP.02.GM
P.O. No.: 423575.MP.02.GM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999811-001	MW-34-100-184	E218.6	FLDFLT	1/18/2012	12:24	Chromium, hexavalent	208	ug/L	5.0
999811-001	MW-34-100-184	SW6020	FLDFLT-digested	1/18/2012	12:24	Arsenic	2.2	ug/L	1.0
999811-001	MW-34-100-184	SW6020	FLDFLT-digested	1/18/2012	12:24	Chromium	217	ug/L	1.0
999811-002	MW-46-175-184	E218.6	FLDFLT	1/18/2012	15:33	Chromium, hexavalent	93.8	ug/L	1.0
999811-002	MW-46-175-184	SW6020	FLDFLT-digested	1/18/2012	15:33	Chromium	101	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
Project Number: 423575.MP.02.GM
P.O. Number: 423575.MP.02.GM
Release Number:

Laboratory No. 999811

Printed 2/6/2012

Samples Received on 1/24/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
MW-34-100-184	999811-001	01/18/2012 12:24	Water
MW-46-175-184	999811-002	01/18/2012 15:33	Water

Chrome VI by EPA 218.6 Batch 01CrH12P

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999811-001 Chromium, Hexavalent	ug/L	01/27/2012 08:55	25.0	0.650	5.0	208.
999811-002 Chromium, Hexavalent	ug/L	01/27/2012 06:29	5.00	0.130	1.0	93.8

Method Blank

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

Duplicate — Lab ID = 999809-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.86	1.85	0.302	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.192	0.200	96.1	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.88	5.00	97.6	90 - 110

Matrix Spike — Lab ID = 999809-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.74	6.85(5.00)	97.9	90 - 110

Matrix Spike — Lab ID = 999809-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.64	7.84(5.00)	96.0	90 - 110

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Matrix Spike — Lab ID = 999809-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.0	17.4(10.0)	95.4	90 - 110

Matrix Spike — Lab ID = 999810-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.14	5.41(5.25)	94.8	90 - 110

Matrix Spike — Lab ID = 999810-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.13	1.14(1.06)	98.9	90 - 110

Matrix Spike — Lab ID = 999811-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	447.	458(250.)	95.8	90 - 110

Matrix Spike — Lab ID = 999811-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	194.	194.(100.)	100.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.85	5.00	96.9	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	10.1	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
Project Number: 423575.MP.02.GM Printed 2/6/2012

Metals by EPA 6020A, Dissolved

Batch 012812A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999811-001 Chromium	ug/L	01/28/2012 19:35	5.00	0.110	1.0	217.
999811-002 Chromium	ug/L	01/28/2012 19:49	5.00	0.110	1.0	101.

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.257	0.200	129.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	102.	100.	102.	85 - 115

Matrix Spike — Lab ID = 999809-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	107.	102.(100.)	105.	75 - 125

Matrix Spike Duplicate — Lab ID = 999809-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	104.	102.(100.)	102.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.77	10.0	97.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.64	10.0	96.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.63	10.0	96.3	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.

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	9.98	10.0	99.8	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.73	10.0	97.3	80 - 120

Serial Dilution Lab ID = 999811-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	212.	217	2.42	0 - 10

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Metals by EPA 6020A, Dissolved

Batch 012912A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999811-001 Arsenic	ug/L	01/29/2012 20:09	5.00	0.285	1.0	2.2

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.225	0.200	112.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	99.2	100.	99.2	85 - 115

Matrix Spike — Lab ID = 999809-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	108.	101.(100.)	106.	75 - 125

Matrix Spike Duplicate — Lab ID = 999809-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	106.	101.(100.)	105.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.33	10.0	93.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.24	10.0	92.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.51	10.0	95.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.28	10.0	92.8	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	ND	0.00		

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 423575.MP.02.GM Printed 2/6/2012

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.69	10.0	96.9	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.56	10.0	95.6	80 - 120

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

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.

CH2MHILL

CHAIN OF CUSTODY RECORD 999811

1/24/2012 3:10:53 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-184
Turnaround Time 10 Days
Shipping Date: 1/17/2012
COC Number: GMP-184

			Container:	250 ml Poly	3x500 ml Poly	3x500 ml Poly			
			Preservatives:	(NH4)2SO4/NH4OH. 4°C	HNO3, 4°C	HNO3, 4°C			
			Filtered:	Field	Field	Field			
			Holding Time:	28	180	180			
	DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Metals (SW6010B/SW6020Adis) Field Filtered Arsenic,Chromium	Dissolved Chromium (6010BCRF) Field Filtered Chromium		Number of Containers	COMMENTS
-1 MW-34-100-184	1/18/2012	12:24	Water	X	X			2	pH=2
-2 MW-46-175-184	1/18/2012	15:33	Water	X		X		2	
							TOTAL NUMBER OF CONTAINERS	4	6020A

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

	Signatures	Date/Time
Approved by		
Sampled by		1-24-12 1510
Relinquished by		
Received by	Rafael Davila	1-24-12 15:10
Relinquished by	Rafael Davila	1-24-12 21:30
Received by	Linda Shabunina	1/24/12 21:30

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:
Jan 16-18, 2012

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
1/19/12	999703-1	7	5 mL	9.5	5:50 pm	GW
	-2				6:00 pm	
1/25/12	999809-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
1/25/12	999810	7	5mL	9.5	9:30 AM	GW
1/25/12	999811-1	9.5	N/A	N/A	N/A	GW
	-2					
1/27/12	999852-1	9.5	N/A	N/A	N/A	GW
	-2					
1/27/12	999853-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
1/27/12	999360-1	7	5mL	9.5	1 pm	GW
	999362-1				1:10 pm	
	-3				1:15 pm	
1/27/12	999851-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
1/27/12	999854-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					

MW 1/24/12
QA

C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
999675 (1-14)	Solid	–	01/20/12	M.M	Yes	STLC
999739 (1-4)	Solid		01/23/12	M.M	Yes	TTLC
999733 (1-2)	>1	<2	01/23/12	M.M	Yes	–
999734						–
999735 (1-4)						–
999757 (1-2)	>1	<2	01/24/12	M.M	Yes	–
999809 (1-4)	<1	<2	01/25/12	M.M	Yes	–
999810 (1)		>2				Yes
999811 (1-2)		<2				–
999801 (-3-4)	<1	>2	1/27/12	KK	NO	YES @ 11:00 AM
999835 (1-3)						
999836 (-10-12)						
999859						
999860	>1	>2	1/27/12	KK	YES	–
999847 (2 bottles same sample)		<2				–
999851 (1-10)	<1	<2	01/27/12	M.M	Yes	–
999852 (1,2)						–
999853 (1,3,4)						–
999854 (1-5, 8-10)						–
999855 (8,9,10)						–
999856 (1-6)						–
999857 (1-3)						–
999858 (3,5,7,8)						–
999850 (1-5)	Soil		01/30/12	M.M	Yes	STLC (Pure H_2O)
999893 (1-6)	<1	<2				–
999894 (1-3,5-7)						–
999895 (1-7,6,7)						–
999896 (1-10)						–
999906 (1,2,4)	<1	>2	1/31/12	ES	NO	–
999912 (1-6)	<1	<2	1/31/12	M.M	Yes	–
999913 (1,6,8-14)						–
999914 (1-8)						–
999915 (1-8)						–
999920	Solid	–	1/31/12	M.M	Yes	TTLC
999943 (1-9)	<1	<2	02/01/12	M.M	Yes	–
999944 (1,3-9)						–
999945 (1-9)						–
999946 (1-9)						–
999947 (1-5)						–
999948		>2				Yes @ 14:00
999966 (1-11)	<1	<2	02/02/12	M.M	Yes	–
999967 (1-10)						–
999968 (1-7,9-12)						–
999969 (1-8)						–
999996 (1-7)	<1	<2	02/03/12	M.M	Yes	–
999997 (1-11)						–
999995 (1-9)						–
999998 (1-8)						–
999999 (1-3,10,11)						–

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E 2 **Lab #** 999811

Date Delivered: 01/24/12 **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? ☒Yes ☐No ☐N/A
   Temperature (if yes)? 3.8°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
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L. Shabunine

ALERT II Level III QC

C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

January 16, 2012

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.: N007153

RE: PG&E Topock, 423575.MP.02.RM

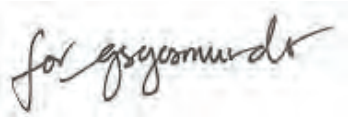
Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on January 11, 2012 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

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CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.RM
Lab Order: N007153

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. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

Date: *16-Jan-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.RM
Lab Order: N007153
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007153-001A	C-MW-80-184b	Water	1/10/2012 11:45:00 AM	1/11/2012	
N007153-002A	C-NR3-S-184b	Water	1/10/2012 1:32:00 PM	1/11/2012	
N007153-002B	C-NR3-S-184b	Water	1/10/2012 1:32:00 PM	1/11/2012	
N007153-002C	C-NR3-S-184b	Water	1/10/2012 1:32:00 PM	1/11/2012	
N007153-003A	C-NR3-S-184b	Water	1/10/2012 1:32:00 PM	1/11/2012	
N007153-003B	C-NR3-S-184b	Water	1/10/2012 1:32:00 PM	1/11/2012	
N007153-003C	C-NR3-S-184b	Water	1/10/2012 1:32:00 PM	1/11/2012	
N007153-004A	C-R22A-S-184b	Water	1/10/2012 11:25:00 AM	1/11/2012	
N007153-004B	C-R22A-S-184b	Water	1/10/2012 11:25:00 AM	1/11/2012	
N007153-004C	C-R22A-S-184b	Water	1/10/2012 11:25:00 AM	1/11/2012	
N007153-005A	C-R22A-S-184b	Water	1/10/2012 11:25:00 AM	1/11/2012	
N007153-005B	C-R22A-S-184b	Water	1/10/2012 11:25:00 AM	1/11/2012	
N007153-005C	C-R22A-S-184b	Water	1/10/2012 11:25:00 AM	1/11/2012	
N007153-006A	C-R27-D-184b	Water	1/10/2012 12:27:00 PM	1/11/2012	
N007153-006B	C-R27-D-184b	Water	1/10/2012 12:27:00 PM	1/11/2012	
N007153-006C	C-R27-D-184b	Water	1/10/2012 12:27:00 PM	1/11/2012	
N007153-007A	C-R27-D-184b	Water	1/10/2012 12:27:00 PM	1/11/2012	
N007153-007B	C-R27-D-184b	Water	1/10/2012 12:27:00 PM	1/11/2012	
N007153-007C	C-R27-D-184b	Water	1/10/2012 12:27:00 PM	1/11/2012	
N007153-008A	C-TAZ-D-184b	Water	1/10/2012 8:50:00 AM	1/11/2012	
N007153-008B	C-TAZ-D-184b	Water	1/10/2012 8:50:00 AM	1/11/2012	
N007153-008C	C-TAZ-D-184b	Water	1/10/2012 8:50:00 AM	1/11/2012	
N007153-009A	C-TAZ-D-184b	Water	1/10/2012 8:50:00 AM	1/11/2012	
N007153-009B	C-TAZ-D-184b	Water	1/10/2012 8:50:00 AM	1/11/2012	
N007153-009C	C-TAZ-D-184b	Water	1/10/2012 8:50:00 AM	1/11/2012	
N007153-010A	R63-184b	Water	1/10/2012 10:30:00 AM	1/11/2012	
N007153-010B	R63-184b	Water	1/10/2012 10:30:00 AM	1/11/2012	
N007153-010C	R63-184b	Water	1/10/2012 10:30:00 AM	1/11/2012	
N007153-011A	R63-184b	Water	1/10/2012 10:30:00 AM	1/11/2012	

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.RM
Lab Order: N007153
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007153-011B	R63-184b	Water	1/10/2012 10:30:00 AM	1/11/2012	
N007153-011C	R63-184b	Water	1/10/2012 10:30:00 AM	1/11/2012	
N007153-012A	RMP-AB1-184b	Water	1/10/2012 1:45:00 PM	1/11/2012	
N007153-013A	SW1-184b	Water	1/10/2012 2:50:00 PM	1/11/2012	
N007153-013B	SW1-184b	Water	1/10/2012 2:50:00 PM	1/11/2012	
N007153-013C	SW1-184b	Water	1/10/2012 2:50:00 PM	1/11/2012	
N007153-014A	SW1-184b	Water	1/10/2012 2:50:00 PM	1/11/2012	
N007153-014B	SW1-184b	Water	1/10/2012 2:50:00 PM	1/11/2012	
N007153-014C	SW1-184b	Water	1/10/2012 2:50:00 PM	1/11/2012	
N007153-015A	SW2-184b	Water	1/10/2012 3:15:00 PM	1/11/2012	
N007153-015B	SW2-184b	Water	1/10/2012 3:15:00 PM	1/11/2012	
N007153-015C	SW2-184b	Water	1/10/2012 3:15:00 PM	1/11/2012	
N007153-016A	SW2-184b	Water	1/10/2012 3:15:00 PM	1/11/2012	
N007153-016B	SW2-184b	Water	1/10/2012 3:15:00 PM	1/11/2012	
N007153-016C	SW2-184b	Water	1/10/2012 3:15:00 PM	1/11/2012	

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *16-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-MW-80-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 11:45:00 AM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC1_120113A**	QC Batch: **R82881**			PrepDate:			Analyst: **QBM**
Hexavalent Chromium	ND	0.014	0.20		µg/L	1	1/13/2012 11:09 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *16-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 1:32:00 PM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC1_120113A**	QC Batch: **R82881**			PrepDate:			Analyst: **QBM**
Hexavalent Chromium	ND	0.014	0.20		µg/L	1	1/13/2012 11:20 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *16-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 11:25:00 AM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC1_120113A**	QC Batch: **R82881**			PrepDate:			Analyst: **QBM**
Hexavalent Chromium	ND	0.014	0.20		µg/L	1	1/13/2012 11:31 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *16-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 12:27:00 PM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC1_120113A**	QC Batch: **R82881**			PrepDate:			Analyst: **QBM**
Hexavalent Chromium	ND	0.014	0.20		µg/L	1	1/13/2012 11:43 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *16-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 8:50:00 AM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC1_120113A**	QC Batch: **R82881**			PrepDate:			Analyst: **QBM**
Hexavalent Chromium	ND	0.014	0.20		µg/L	1	1/13/2012 11:54 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *16-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 10:30:00 AM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC1_120113A**	QC Batch: **R82881**			PrepDate:			Analyst: **QBM**
Hexavalent Chromium	ND	0.014	0.20		µg/L	1	1/13/2012 12:06 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *16-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	RMP-AB1-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 1:45:00 PM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC1_120113A**	QC Batch: **R82881**			PrepDate:			Analyst: **QBM**
Hexavalent Chromium	ND	0.014	0.20		µg/L	1	1/13/2012 12:17 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *16-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW1-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 2:50:00 PM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC1_120113A**	QC Batch: **R82881**			PrepDate:			Analyst: **QBM**
Hexavalent Chromium	ND	0.014	0.20		µg/L	1	1/13/2012 12:28 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *16-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW2-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 3:15:00 PM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC1_120113A**	QC Batch: **R82881**			PrepDate:			Analyst: **QBM**
Hexavalent Chromium	ND	0.014	0.20		µg/L	1	1/13/2012 01:03 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: N007153
Project: PG&E Topock, 423575.MP.02.RM

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R82881** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **82881**
Client ID: **PBW** Batch ID: **R82881** TestNo: **EPA 218.6** Analysis Date: **1/13/2012** SeqNo: **1349549**

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-R82881** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **82881**
Client ID: **LCSW** Batch ID: **R82881** TestNo: **EPA 218.6** Analysis Date: **1/13/2012** SeqNo: **1349550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.980	0.20	5.000	0	99.6	90	110				

Sample ID: **N007153-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **82881**
Client ID: **ZZZZZZ** Batch ID: **R82881** TestNo: **EPA 218.6** Analysis Date: **1/13/2012** SeqNo: **1349562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.981	0.20	1.000	0.01803	96.3	90	110				

Sample ID: **N007153-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **82881**
Client ID: **ZZZZZZ** Batch ID: **R82881** TestNo: **EPA 218.6** Analysis Date: **1/13/2012** SeqNo: **1349563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.020	0.20	1.000	0.05151	96.9	90	110				

Sample ID: **N007153-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **82881**
Client ID: **ZZZZZZ** Batch ID: **R82881** TestNo: **EPA 218.6** Analysis Date: **1/13/2012** SeqNo: **1349564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.017	0.20	1.000	0.05396	96.3	90	110				

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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007153
Project: PG&E Topock, 423575.MP.02.RM

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N007153-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **82881**
Client ID: **ZZZZZZ** Batch ID: **R82881** TestNo: **EPA 218.6** Analysis Date: **1/13/2012** SeqNo: **1349565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.017	0.20	1.000	0.04755	97.0	90	110				

Sample ID: **N007153-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **82881**
Client ID: **ZZZZZZ** Batch ID: **R82881** TestNo: **EPA 218.6** Analysis Date: **1/13/2012** SeqNo: **1349566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.016	0.20	1.000	0.05401	96.2	90	110				

Sample ID: **N007153-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **82881**
Client ID: **ZZZZZZ** Batch ID: **R82881** TestNo: **EPA 218.6** Analysis Date: **1/13/2012** SeqNo: **1349567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.042	0.20	1.000	0.05022	99.2	90	110				

Sample ID: **N007153-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **82881**
Client ID: **ZZZZZZ** Batch ID: **R82881** TestNo: **EPA 218.6** Analysis Date: **1/13/2012** SeqNo: **1349568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.989	0.20	1.000	0.02060	96.8	90	110				

Sample ID: **N007153-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **82881**
Client ID: **ZZZZZZ** Batch ID: **R82881** TestNo: **EPA 218.6** Analysis Date: **1/13/2012** SeqNo: **1349569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.038	0.20	1.000	0.07377	96.4	90	110				

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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007153
Project: PG&E Topock, 423575.MP.02.RM

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N007153-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **82881**
Client ID: **ZZZZZZ** Batch ID: **R82881** TestNo: **EPA 218.6** Analysis Date: **1/13/2012** SeqNo: **1349570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.036	0.20	1.000	0.06746	96.8	90	110				

Sample ID: **N007153-013ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **82881**
Client ID: **ZZZZZZ** Batch ID: **R82881** TestNo: **EPA 218.6** Analysis Date: **1/13/2012** SeqNo: **1349573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.070	0.20						0.07377	0	20	

Sample ID: **N007153-015AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **82881**
Client ID: **ZZZZZZ** Batch ID: **R82881** TestNo: **EPA 218.6** Analysis Date: **1/13/2012** SeqNo: **1349574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	0.06746	95.3	90	110	1.036	1.46	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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

RMP-184b ATL 1-11-12

CH2MHILL

CHAIN OF CUSTODY RECORD

1/11/2012 2:49:05 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.RM
Task Order
Project 2012-RMP-184
Turnaround Time 10 Days
Shipping Date: 1/6/2012
COC Number: RMP184b

				Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river) Field Filtered	Metals (6020AFF) Field Filtered Chromium		Number of Containers	COMMENTS
			Container:	3X250 ml Poly	250 Poly	3x500 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			
	DATE	TIME	Matrix						
C-MW-80-184b	1/10/2012	11:45	Water		X		NW7153 -1	1	
C-NR3-S-184b	1/10/2012	13:32	Water	X			-2	5	
C-NR3-S-184b	1/10/2012	13:32	Water			X	-3	5	
C-R22A-S-184b	1/10/2012	11:25	Water	X			-4	5	
C-R22A-S-184b	1/10/2012	11:25	Water			X	-5	5	
C-R27-D-184b	1/10/2012	12:27	Water	X			-6	5	
C-R27-D-184b	1/10/2012	12:27	Water			X	-7	5	
C-TAZ-D-184b	1/10/2012	8:50	Water	X			-8	5	
C-TAZ-D-184b	1/10/2012	8:50	Water			X	-9	5	
R63-184b	1/10/2012	10:30	Water	X			-10	5	
R63-184b	1/10/2012	10:30	Water			X	-11	5	
RMP-AB1-184b	1/10/2012	13:45	Water		X		-12	1	
SW1-184b	1/10/2012	14:50	Water	X			-13	5	
SW1-184b	1/10/2012	14:50	Water			X	-14	5	
							-15		

	Signatures	Date/Time
Approved by		1-11-12
Sampled by		
Relinquished by		
Received by	NEART W	1/11/12@1624
Relinquished by		
Received by		

Shipping Details

Method of Shipment: FedEx
On Ice: (yes) / no 4-2°C IR#2
Airbill No:
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody and Marlon

Special Instructions:
Jan 10-11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

RMP-184b ATL 1-11-12

CH2MHILL **CHAIN OF CUSTODY RECORD** *1/11/2012 2:49:05 PM* Page 2 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.RM
Task Order
Project 2012-RMP-184
Turnaround Time 2 Days
Shipping Date: 1/6/2012
COC Number: RMP184b

			Container:	3X250 ml Poly	250 Poly	3x500 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			
	DATE	TIME	Matrix	Cr6 (E218.6 – river) Field Filtered	Field QC Cr6 (E218.6–river) Field Filtered	Metals (6020AFF) Field Filtered Chromium		Number of Containers	COMMENTS
SW2-184b	1/10/2012	15:15	Water	x			N007153 - 15	5	
SW2-184b	1/10/2012	15:15	Water			x	↓ - 16	5	
							TOTAL NUMBER OF CONTAINERS	72	

	Signatures	Date/Time
Approved by		1-11-12
Sampled by		
Relinquished by		
Received by	MACKATIN	1/11/12@1624
Relinquished by		
Received by		

Shipping Details
Method of Shipment: FedEx
On Ice: yes / no 4.2°C IR#2
Airbill No:
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Jan 10-11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On:	1/11/2012	Workorder:	N007153
Rep sample Temp (Deg C):	4.2	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 1/12/12

Reviewed By: AHB 1/14/12

RMP-184b ATL 1-11-12

CH2MHILL **CHAIN OF CUSTODY RECORD** 1/11/2012 2:49:05 PM Page 1 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.RM
Task Order
Project 2012-RMP-184
Turnaround Time 10 Days
Shipping Date: 1/6/2012
COC Number: RMP184b

			Container:	3X250 ml Poly	250 Poly	3x500 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			
	DATE	TIME	Matrix	Cr6 (E218.6 – river) Field Filtered	Field QC Cr6 (E218.6–river) Field Filtered	Metals (6020AFF) Field Filtered Chromium		Number of Containers	COMMENTS
C-MW-80-184b	1/10/2012	11:45	Water		X			1	
C-NR3-S-184b	1/10/2012	13:32	Water	X				5	
C-NR3-S-184b	1/10/2012	13:32	Water			X		5	
C-R22A-S-184b	1/10/2012	11:25	Water	X				5	
C-R22A-S-184b	1/10/2012	11:25	Water			X		5	
C-R27-D-184b	1/10/2012	12:27	Water	X				5	
C-R27-D-184b	1/10/2012	12:27	Water			X		5	
C-TAZ-D-184b	1/10/2012	8:50	Water	X				5	
C-TAZ-D-184b	1/10/2012	8:50	Water			X		5	
R63-184b	1/10/2012	10:30	Water	X				5	
R63-184b	1/10/2012	10:30	Water			X		5	
RMP-AB1-184b	1/10/2012	13:45	Water		X			1	
SW1-184b	1/10/2012	14:50	Water	X				5	
SW1-184b	1/10/2012	14:50	Water			X		5	

	Signatures	Date/Time
Approved by		1-11-12
Sampled by		
Relinquished by		
Received by	MCCART M	1/11/12@1624
Relinquished by		
Received by		

Shipping Details
Method of Shipment: FedEx
On Ice: yes / no 4.2°C IR#2
Airbill No:
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Jan 10-11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

RMP-184b ATL 1-11-12

CH2MHILL **CHAIN OF CUSTODY RECORD** *1/11/2012 2:49:05 PM* Page 2 OF 2

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.RM
Task Order
Project 2012-RMP-184
Turnaround Time 2 Days
Shipping Date: 1/6/2012
COC Number: RMP184b

			Container:	3X250 ml Poly	250 Poly	3x500 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			
	DATE	TIME	Matrix	Cr6 (E218.6 – river) Field Filtered	Field QC Cr6 (E218.6–river) Field Filtered	Metals (6020AFF) Field Filtered Chromium		Number of Containers	COMMENTS
SW2-184b	1/10/2012	15:15	Water	x				5	
SW2-184b	1/10/2012	15:15	Water			x		5	
							TOTAL NUMBER OF CONTAINERS	72	

	Signatures	Date/Time
Approved by		1-11-12
Sampled by		
Relinquished by		
Received by	MACARTIN	1/11/12@1624
Relinquished by		
Received by		

Shipping Details
Method of Shipment: FedEx
On Ice: yes / no 4.2°C IR#2
Airbill No:
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Jan 10-11, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = ug/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For N007153-001A, concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.018029 * 1$$

$$= 0.018029 \ \mu g/L$$

Reporting results in two significant figures,
Result is below the reporting limit therefore,

$$Cr^{+6}, \mu g/L = ND$$

January 23, 2012

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.: N007153

RE: PG&E Topock, 423575.MP.02.RM

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on January 11, 2012 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.

This is an addendum report. Please incorporate with documentation previously submitted.

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.

ANALYTICAL RESULTS

Print Date: *23-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-NR3-S-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 1:32:00 PM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120118A**	QC Batch: **38786**			PrepDate:	**1/13/2012**		Analyst: **JT**
Chromium	ND	0.0080	1.0		µg/L	1	1/18/2012 09:01 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.

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *23-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R22A-S-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 11:25:00 AM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120119A**	QC Batch: **38786**			PrepDate:	**1/13/2012**		Analyst: **CEI**
Chromium	ND	0.0080	1.0		µg/L	1	1/19/2012 02:20 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		

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ANALYTICAL RESULTS

Print Date: *23-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-R27-D-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 12:27:00 PM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120118A**	QC Batch: **38786**			PrepDate:	**1/13/2012**		Analyst: **JT**
Chromium	ND	0.0080	1.0		µg/L	1	1/18/2012 10:05 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		

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ANALYTICAL RESULTS

Print Date: *23-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	C-TAZ-D-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 8:50:00 AM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_120118A**	QC Batch: **38786**			PrepDate:	**1/13/2012**		Analyst: **JT**
Chromium	ND	0.0080	1.0		µg/L	1	1/18/2012 10:12 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		

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *23-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	R63-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 10:30:00 AM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120118A**	QC Batch: **38786**			PrepDate:	**1/13/2012**		Analyst: **JT**
Chromium	ND	0.0080	1.0		µg/L	1	1/18/2012 10:19 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		

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *23-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW1-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 2:50:00 PM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120118A**	QC Batch: **38786**			PrepDate:	**1/13/2012**		Analyst: **JT**
Chromium	ND	0.0080	1.0		µg/L	1	1/18/2012 10:26 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		

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *23-Jan-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	SW2-184b
Lab Order:	N007153	**Collection Date:**	1/10/2012 3:15:00 PM
Project:	PG&E Topock, 423575.MP.02.RM	**Matrix:**	WATER
Lab ID:	N007153-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120118A**	QC Batch: **38786**			PrepDate:	**1/13/2012**		Analyst: **JT**
Chromium	ND	0.0080	1.0		µg/L	1	1/18/2012 10:33 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.

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Advanced Technology Laboratories, Inc.

Date: *23-Jan-12*

CLIENT: CH2M HILL
Work Order: N007153
Project: PG&E Topock, 423575.MP.02.RM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **MB-38786** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/13/2012** RunNo: **82913**
Client ID: **PBW** Batch ID: **38786** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/18/2012** SeqNo: **1350499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.012	1.0									

Sample ID: **LCS-38786** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/13/2012** RunNo: **82913**
Client ID: **LCSW** Batch ID: **38786** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/18/2012** SeqNo: **1350501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.520	1.0	10.00	0	105	85	115				

Sample ID: **N007153-003A-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/13/2012** RunNo: **82913**
Client ID: **ZZZZZZ** Batch ID: **38786** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/18/2012** SeqNo: **1350506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.277	1.0	10.00	0	113	75	125				

Sample ID: **N007153-003A-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/13/2012** RunNo: **82913**
Client ID: **ZZZZZZ** Batch ID: **38786** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/18/2012** SeqNo: **1350507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.252	1.0	10.00	0	113	75	125	11.28	0.229	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

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Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, 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 **N007153-003A**, the concentration in ug/L is calculated as follows:

Chromium, ug/L = 0 * 1 * (25/25)

= 0 ug/L

Reporting results in two significant figures,

Chromium, ug/L = 0

Since the reporting limit is 1.0 ug/L, therefore

Chromium, ug/L = ND

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007153
Test Method: EPA 6020
Analysis Date: 01/18/12

Matrix: Water
Batch No.: 38786

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Cr. The calc. values were < 25X the RL. PS @ 2x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007153-003B-DT 5X	Chromium	µg/L	0	NA	0		10

Advanced Technology Laboratories, Inc.

Date: *19-Jan-12*

CLIENT: CH2M HILL
Work Order: N007153
Project: PG&E Topock, 423575.MP.02.RM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N007153-003A-PS 2** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **82913**
Client ID: **ZZZZZZ** Batch ID: **38786** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/18/2012** SeqNo: **1350505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.457	2.0	20.00	0	102	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		

February 20, 2012

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.: N007265

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 06, 2012 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, 423575.MP.02.GM.0
Lab Order: N007265

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. *3151 W. Post Rd. Las Vegas, NV 89118 Tel:702-307-2659 Fax:702-307-2691*

Advanced Technology Laboratories, Inc.

Date: *20-Feb-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007265
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007265-001A	MW-35-060-185	Water	2/6/2012 3:01:00 PM	2/6/2012	2/20/2012
N007265-001B	MW-35-060-185	Water	2/6/2012 3:01:00 PM	2/6/2012	2/20/2012

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *20-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-060-185
Lab Order:	N007265	**Collection Date:**	2/6/2012 3:01:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007265-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120207G**	QC Batch: **R83139**			PrepDate:			Analyst: **KAB**
Specific Conductance	6900	0.10	0.10		umhos/cm	1	2/7/2012

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: *20-Feb-12*

CLIENT: CH2M HILL
Work Order: N007265
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83139** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83139**
Client ID: **LCSW** Batch ID: **R83139** TestNo: **EPA 120.1** Analysis Date: **2/7/2012** SeqNo: **1357832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1405.000	0.10	1410	0	99.6	85	115				

Sample ID: **N007273-002B-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83139**
Client ID: **ZZZZZZ** Batch ID: **R83139** TestNo: **EPA 120.1** Analysis Date: **2/7/2012** SeqNo: **1357836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2480.000	0.20	1410	1140	95.0	75	125				

Sample ID: **N007273-002B-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83139**
Client ID: **ZZZZZZ** Batch ID: **R83139** TestNo: **EPA 120.1** Analysis Date: **2/7/2012** SeqNo: **1357837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2490.000	0.20	1410	1140	95.7	75	125	2480	0.402	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		

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *20-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007265
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007265-001

Client Sample ID: MW-35-060-185
Collection Date: 2/6/2012 3:01:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120207A**	QC Batch: **R83232**			PrepDate:			Analyst: **QBM**
Nitrate as N	1.9	0.024	1.0		mg/L	2	2/7/2012 10:45 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.

Date: *20-Feb-12*

CLIENT: CH2M HILL
Work Order: N007265
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R83232_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83232**
Client ID: **PBW** Batch ID: **R83232** TestNo: **EPA 300.0** Analysis Date: **2/7/2012** SeqNo: **1360513**

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-R83232_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83232**
Client ID: **LCSW** Batch ID: **R83232** TestNo: **EPA 300.0** Analysis Date: **2/7/2012** SeqNo: **1360514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.405	0.50	2.500	0	96.2	90	110				

Sample ID: **N007266-002CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83232**
Client ID: **ZZZZZZ** Batch ID: **R83232** TestNo: **EPA 300.0** Analysis Date: **2/7/2012** SeqNo: **1360527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	18.540	2.5	12.50	6.445	96.8	80	120				

Sample ID: **N007266-002CMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83232**
Client ID: **ZZZZZZ** Batch ID: **R83232** TestNo: **EPA 300.0** Analysis Date: **2/7/2012** SeqNo: **1360528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	18.720	2.5	12.50	6.445	98.2	80	120	18.54	0.966	20	

Sample ID: **N007266-007CDUP** SampType: **DUP** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83232**
Client ID: **ZZZZZZ** Batch ID: **R83232** TestNo: **EPA 300.0** Analysis Date: **2/7/2012** SeqNo: **1360529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	9.845	2.5						10.01	1.61	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		

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *20-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-35-060-185
Lab Order:	N007265	**Collection Date:**	2/6/2012 3:01:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007265-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120218A**	QC Batch: **39077**			PrepDate:		**2/18/2012**	Analyst: **CEI**
Arsenic	0.97	0.0025	0.10		µg/L	1	2/18/2012 10:09 PM
Manganese	ND	0.091	0.50		µg/L	1	2/18/2012 10:09 PM
Molybdenum	8.7	0.070	2.5		µg/L	5	2/18/2012 09:59 PM
Selenium	ND	0.090	2.5		µg/L	5	2/18/2012 09:59 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.

Date: *20-Feb-12*

CLIENT: CH2M HILL
Work Order: N007265
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39077** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **PBW** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.019	0.10									
Manganese	ND	0.50									
Molybdenum	0.037	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-39077** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **LCSW** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.508	0.10	10.00	0	95.1	85	115				
Manganese	96.378	0.50	100.0	0	96.4	85	115				
Molybdenum	9.677	0.50	10.00	0	96.8	85	115				
Selenium	9.314	0.50	10.00	0	93.1	85	115				

Sample ID: **N007265-001A-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.027	2.5	10.00	8.718	103	75	125				
Selenium	10.703	2.5	10.00	1.232	94.7	75	125				

Sample ID: **N007265-001A-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.604	0.10	10.00	0.9739	96.3	75	125				
Manganese	84.718	0.50	100.0	0	84.7	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		

Advanced Technology Laboratories, Inc. 3151 W. Post Rd. Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007265
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007265-001A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.963	2.5	10.00	8.718	112	75	125	19.03	4.80	20	
Selenium	10.587	2.5	10.00	1.232	93.6	75	125	10.70	1.09	20	

Sample ID: **N007265-001A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.772	0.10	10.00	0.9739	98.0	75	125	10.60	1.57	20	
Manganese	84.906	0.50	100.0	0	84.9	75	125	84.72	0.222	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 Rd. Las Vegas, NV 89118 Tel:702-307-2659 Fax:702-307-2691

CH2MHILL

CHAIN OF CUSTODY RECORD

2/6/2012 3:45:58 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/6/2012
COC Number: 1

	DATE	TIME	Matrix	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo.Se.Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COMMENTS
Container:				500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
Preservatives:				HNO3, 4°C	HNO3, 4°C	4°C	4°C			
Filtered:				Field	Field	NA	NA			
Holding Time:				180	180	2	2			
MW-35-060-185	2/6/2012	15:01	Water	X	X	X	X	N007265-1	2	
								TOTAL NUMBER OF CONTAINERS	2	

00014

	Signatures	Date/Time
Approved by		2-6-12
Sampled by		1550
Relinquished by		
Received by	[signature]	2/6/12 @ 1559
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes / no 1.9°C
Airbill No: ICE ID #7
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Feb 6-22, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

2/6/2012 3:45:58 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/6/2012
COC Number: 1

			Container:	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
			Filtered:	Field	Field	NA	NA			
			Holding Time:	180	180	2	2			
	DATE	TIME	Matrix	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COMMENTS
MW-35-060-185	2/6/2012	15:01	Water	X	X	X	X		2	
								TOTAL NUMBER OF CONTAINERS	2	

	Signatures	Date/Time
Approved by		2-6-12
Sampled by		1550
Relinquished by		
Received by	MBCARTON	2/6/12@1559
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes / no 1.9°C
Airbill No: ICE ID#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Feb 6-22, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On:	2/6/2012	Workorder:	N007265
Rep sample Temp (Deg C):	1.9	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	~~Courier~~ ATL MS for 2/6/12		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 2/7/12

Reviewed By: [illegible]

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:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007265-001B**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	0.957 * 2
	=	1.914 mg/L

Reporting **N007265-001B**, results in two significant figures,

Nitrate, mg/L	**=**	**1.9 mg/L**

MS 2/17/12

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:

Arsenic, mg/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 **N007265-001A**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 0.974* 1 * (25/25)

= 0.974 ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 0.97

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007265
Test Method: EPA 6020
Analysis Date: 02/08/12

Matrix: Water
Batch No.: 39077

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to As,Mn, Se & Tl The calc. values were < 25X the RL. PS @ 2x & PS @ 25x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007265-001B-DT 5X	Arsenic	µg/L	1.147919993	NA	0.973880203	-17.87%	10
* N007265-001B-DT 5X	Chromium	µg/L	23.18233101	PASS	22.13897432	-4.71%	10
N007265-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N007265-001B-DT 25X	Molybdenum	µg/L	9.06275605	PASS	8.717839982	-3.96%	10
N007265-001B-DT 25X	Selenium	µg/L	1.117624937	NA	1.232082634	9.29%	10
* N007265-001B-DT 25X	Thallium	µg/L	0	NA	0		10

* Thallium are
* Chromium is not included
MS for 2/10/12

2/20/12

Advanced Technology Laboratories, Inc.

Date: *20-Feb-12*

CLIENT: CH2M HILL
Work Order: N007265
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007265-001A-PS 5** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	65.890	2.5	50.00	8.718	114	75	125				
Selenium	48.142	2.5	50.00	1.232	93.8	75	125				

Sample ID: **N007265-001A-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.383	0.20	20.00	0.9739	102	75	125				
Manganese	183.171	1.0	200.0	0	91.6	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		

001396

February 21, 2012

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.: N007273

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 07, 2012 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, 423575.MP.02.GM.0
Lab Order: N007273

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. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

Date: *21-Feb-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007273
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007273-001A	MW-101-185	Water	2/7/2012 10:15:00 AM	2/7/2012	2/21/2012
N007273-001B	MW-101-185	Water	2/7/2012 10:15:00 AM	2/7/2012	2/21/2012
N007273-002A	MW-27-060-185	Water	2/7/2012 12:25:00 PM	2/7/2012	2/21/2012
N007273-002B	MW-27-060-185	Water	2/7/2012 12:25:00 PM	2/7/2012	2/21/2012
N007273-003A	MW-27-085-185	Water	2/7/2012 11:29:00 AM	2/7/2012	2/21/2012
N007273-003B	MW-27-085-185	Water	2/7/2012 11:29:00 AM	2/7/2012	2/21/2012
N007273-004A	MW-34-080-185	Water	2/7/2012 9:18:00 AM	2/7/2012	2/21/2012
N007273-004B	MW-34-080-185	Water	2/7/2012 9:18:00 AM	2/7/2012	2/21/2012
N007273-005A	MW-34-100-185	Water	2/7/2012 10:16:00 AM	2/7/2012	2/21/2012
N007273-005B	MW-34-100-185	Water	2/7/2012 10:16:00 AM	2/7/2012	2/21/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *21-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007273
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007273-001

Client Sample ID: MW-101-185
Collection Date: 2/7/2012 10:15:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120207G**	QC Batch: **R83139**			PrepDate:			Analyst: **KAB**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	2/7/2012

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: *21-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-060-185
Lab Order:	N007273	**Collection Date:**	2/7/2012 12:25:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007273-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120207G**	QC Batch: **R83139**			PrepDate:			Analyst: **KAB**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	2/7/2012

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: *21-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-185
Lab Order:	N007273	**Collection Date:**	2/7/2012 11:29:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007273-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120207G**	QC Batch: **R83139**			PrepDate:			Analyst: **KAB**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	2/7/2012

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: *21-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-080-185
Lab Order:	N007273	**Collection Date:**	2/7/2012 9:18:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007273-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120207G**	QC Batch: **R83139**			PrepDate:			Analyst: **KAB**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	2/7/2012

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: *21-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007273
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007273-005

Client Sample ID: MW-34-100-185
Collection Date: 2/7/2012 10:16:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120207G**	QC Batch: **R83139**			PrepDate:			Analyst: **KAB**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	2/7/2012

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: *21-Feb-12*

CLIENT: CH2M HILL
Work Order: N007273
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83139** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83139**
Client ID: **LCSW** Batch ID: **R83139** TestNo: **EPA 120.1** Analysis Date: **2/7/2012** SeqNo: **1357832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1405.000	0.10	1410	0	99.6	85	115				

Sample ID: **N007273-002B-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83139**
Client ID: **ZZZZZZ** Batch ID: **R83139** TestNo: **EPA 120.1** Analysis Date: **2/7/2012** SeqNo: **1357836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2480.000	0.20	1410	1140	95.0	75	125				

Sample ID: **N007273-002B-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83139**
Client ID: **ZZZZZZ** Batch ID: **R83139** TestNo: **EPA 120.1** Analysis Date: **2/7/2012** SeqNo: **1357837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2490.000	0.20	1410	1140	95.7	75	125	2480	0.402	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.

ANALYTICAL RESULTS

Print Date: *21-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-060-185
Lab Order:	N007273	**Collection Date:**	2/7/2012 12:25:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007273-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120208B**	QC Batch: **R83279**			PrepDate:			Analyst: **QBM**
Fluoride	1.5	0.0040	0.50		mg/L	1	2/8/2012 08:57 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120208B**	QC Batch: **R83279**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.012	0.50		mg/L	1	2/8/2012 08:57 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: *21-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-185
Lab Order:	N007273	**Collection Date:**	2/7/2012 11:29:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007273-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120208B** QC Batch: **R83279**				PrepDate:			Analyst: **QBM**
Fluoride	ND	0.080	10		mg/L	20	2/8/2012 09:08 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120208B** QC Batch: **R83279**				PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	2/8/2012 09:20 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: *21-Feb-12*

CLIENT: CH2M HILL
Work Order: N007273
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID: **LCS-R83279_F** SampType: **LCS** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83279**
Client ID: **LCSW** Batch ID: **R83279** TestNo: **EPA 300.0** Analysis Date: **2/8/2012** SeqNo: **1361966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.398	0.50	2.500	0	95.9	90	110				

Sample ID: **MB-R83279_F** SampType: **MBLK** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83279**
Client ID: **PBW** Batch ID: **R83279** TestNo: **EPA 300.0** Analysis Date: **2/8/2012** SeqNo: **1361967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.50									

Sample ID: **N007278-003CMS** SampType: **MS** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83279**
Client ID: **ZZZZZZ** Batch ID: **R83279** TestNo: **EPA 300.0** Analysis Date: **2/9/2012** SeqNo: **1361978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.904	0.50	2.500	0.5400	94.6	80	120				

Sample ID: **N007278-003CMSD** SampType: **MSD** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83279**
Client ID: **ZZZZZZ** Batch ID: **R83279** TestNo: **EPA 300.0** Analysis Date: **2/9/2012** SeqNo: **1361979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.901	0.50	2.500	0.5400	94.4	80	120	2.904	0.103	20	

Sample ID: **N007278-006CMS** SampType: **MS** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83279**
Client ID: **ZZZZZZ** Batch ID: **R83279** TestNo: **EPA 300.0** Analysis Date: **2/9/2012** SeqNo: **1361981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.922	0.50	2.500	0.5480	95.0	80	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

00014

CLIENT: CH2M HILL
Work Order: N007273
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **LCS-R83279_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83279**
Client ID: **LCSW** Batch ID: **R83279** TestNo: **EPA 300.0** Analysis Date: **2/8/2012** SeqNo: **1361924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.430	0.50	2.500	0	97.2	90	110				

Sample ID: **MB-R83279_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83279**
Client ID: **PBW** Batch ID: **R83279** TestNo: **EPA 300.0** Analysis Date: **2/8/2012** SeqNo: **1361925**

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: **N007278-003CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83279**
Client ID: **ZZZZZZ** Batch ID: **R83279** TestNo: **EPA 300.0** Analysis Date: **2/9/2012** SeqNo: **1361951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.559	0.50	2.500	0.1500	96.4	80	120				

Sample ID: **N007278-003CMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83279**
Client ID: **ZZZZZZ** Batch ID: **R83279** TestNo: **EPA 300.0** Analysis Date: **2/9/2012** SeqNo: **1361952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.569	0.50	2.500	0.1500	96.8	80	120	2.559	0.390	20	

Sample ID: **N007278-006CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83279**
Client ID: **ZZZZZZ** Batch ID: **R83279** TestNo: **EPA 300.0** Analysis Date: **2/9/2012** SeqNo: **1361954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.403	0.50	2.500	0	96.1	80	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

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *21-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-101-185
Lab Order:	N007273	**Collection Date:**	2/7/2012 10:15:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007273-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120218A**	QC Batch: **39077**			PrepDate:	**2/18/2012**		Analyst: **CEI**
Arsenic	1.5	0.012	0.50		µg/L	5	2/18/2012 10:53 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.

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *21-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-060-185
Lab Order:	N007273	**Collection Date:**	2/7/2012 12:25:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007273-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_120218A**	QC Batch: **39077**			PrepDate:		**2/18/2012**	Analyst: **CEI**
Arsenic	9.6	0.0025	0.10		µg/L	1	2/18/2012 11:13 PM
Manganese	40	0.091	0.50		µg/L	1	2/18/2012 11:13 PM
Molybdenum	5.5	0.014	0.50		µg/L	1	2/18/2012 11:13 PM
Selenium	ND	0.018	0.50		µg/L	1	2/18/2012 11:13 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: *21-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-27-085-185
Lab Order:	N007273	**Collection Date:**	2/7/2012 11:29:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007273-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_120218A**	QC Batch: **39077**			PrepDate:		**2/18/2012**	Analyst: **CEI**
Arsenic	1.4	0.012	0.50		µg/L	5	2/18/2012 11:22 PM
Molybdenum	21	0.070	2.5		µg/L	5	2/18/2012 11:22 PM
Selenium	ND	0.090	2.5		µg/L	5	2/18/2012 11:22 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: *21-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-34-080-185
Lab Order:	N007273	**Collection Date:**	2/7/2012 9:18:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007273-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120218A**	QC Batch: **39077**			PrepDate:	**2/18/2012**		Analyst: **CEI**
Arsenic	1.4	0.0025	0.10		µg/L	1	2/19/2012 12:08 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: *21-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007273
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007273-005

Client Sample ID: MW-34-100-185
Collection Date: 2/7/2012 10:16:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120218A**	QC Batch: **39077**			PrepDate:	**2/18/2012**		Analyst: **CEI**
Arsenic	1.6	0.012	0.50		µg/L	5	2/19/2012 12:18 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		

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Advanced Technology Laboratories, Inc.

Date: *21-Feb-12*

CLIENT: CH2M HILL
Work Order: N007273
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39077** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **PBW** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.019	0.10									
Manganese	ND	0.50									
Molybdenum	0.037	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-39077** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **LCSW** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.508	0.10	10.00	0	95.1	85	115				
Manganese	96.378	0.50	100.0	0	96.4	85	115				
Molybdenum	9.677	0.50	10.00	0	96.8	85	115				
Selenium	9.314	0.50	10.00	0	93.1	85	115				

Sample ID: **N007265-001A-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.027	2.5	10.00	8.718	103	75	125				
Selenium	10.703	2.5	10.00	1.232	94.7	75	125				

Sample ID: **N007265-001A-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.604	0.10	10.00	0.9739	96.3	75	125				
Manganese	84.718	0.50	100.0	0	84.7	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

CLIENT: CH2M HILL
Work Order: N007273
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007265-001A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.963	2.5	10.00	8.718	112	75	125	19.03	4.80	20	
Selenium	10.587	2.5	10.00	1.232	93.6	75	125	10.70	1.09	20	

Sample ID: **N007265-001A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.772	0.10	10.00	0.9739	98.0	75	125	10.60	1.57	20	
Manganese	84.906	0.50	100.0	0	84.9	75	125	84.72	0.222	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

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CH2MHILL

CHAIN OF CUSTODY RECORD

2/7/2012 2:41:21 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy

Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/7/2012
COC Number: 3

			Container:	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
			Filtered:	Field	Field	Field	NA	NA			
			Holding Time:	180	180	180	2	2			
	DATE	TIME	Matrix	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate,Fluoride		Number of Containers	COMMENTS
MW-101-185	2/7/2012	10:15	Water	X			X		N0072273 -1	2	
MW-27-060-185	2/7/2012	12:25	Water	X		X	X	X	-2	2	
MW-27-085-185	2/7/2012	11:29	Water	X	X		X	X	-3	2	
MW-34-080-185	2/7/2012	9:18	Water	X			X		-4	2	
MW-34-100-185	2/7/2012	10:16	Water	X			X		-5	2	
									TOTAL NUMBER OF CONTAINERS	10	

	Signatures	Date/Time
Approved by		
Sampled by		2-7-12 1445
Relinquished by		2.7.12 1447
Received by		2-7-12 1652
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 6.0°C IR#1
Airbill No:
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Feb 6-22, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

2/7/2012 2:41:21 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/7/2012
COC Number: 3

			Container:	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
			Filtered:	Field	Field	Field	NA	NA			
			Holding Time:	180	180	180	2	2			
	DATE	TIME	Matrix	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate,Fluoride		Number of Containers	COMMENTS
MW-101-185	2/7/2012	10:15	Water	X			X			2	
MW-27-060-185	2/7/2012	12:25	Water	X		X	X	X		2	
MW-27-085-185	2/7/2012	11:29	Water	X	X		X	X		2	
MW-34-080-185	2/7/2012	9:18	Water	X			X			2	
MW-34-100-185	2/7/2012	10:16	Water	X			X			2	
									TOTAL NUMBER OF CONTAINERS	10	

	Signatures	Date/Time
Approved by		
Sampled by		2-7-12 1445
Relinquished by		2.7.12 1447
Received by		2-7-12 1652
Relinquished by		2/7/12 1652
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes / no 6.0°C IR#1
Airbill No:
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Feb 6-22, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On:	2/7/2012	Workorder:	N007273
Rep sample Temp (Deg C):	6.0	IR Gun ID:	1
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B NS for 2/8/12

Reviewed By: [illegible]

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Fluoride concentration, in mg/L, in the original sample as follows:

Fluoride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007273-002B**, concentration in mg/L are calculated as follows:

Fluoride, mg/L	=	1.476 * 1
	=	1.476 mg/L

Reporting **N007273-002B**, results in two significant figures,

Fluoride, mg/L	**=**	**1.5 mg/L**

AWS 2/21/12

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:

Arsenic, mg/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 **N007273-001A**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 0.2963* 5 * (25/25)

= 1.4815 ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 1.5

NS for
2/20/12
00065

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007273
Test Method: EPA 6020
Analysis Date: 02/08/12

Matrix: Water
Batch No.: 39077

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to As,Mn, Se & Tl The calc. values were < 25X the RL. PS @ 2x & PS @ 25x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007265-001B-DT 5X	Arsenic	µg/L	1.147919993	NA	0.973880203	-17.87%	10
* N007265-001B-DT 5X	Chromium	µg/L	23.18233101	PASS	22.13897432	-4.71%	10
N007265-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N007265-001B-DT 25X	Molybdenum	µg/L	9.06275605	PASS	8.717839982	-3.96%	10
N007265-001B-DT 25X	Selenium	µg/L	1.117624937	NA	1.232082634	9.29%	10
* N007265-001B-DT 25X	Thallium	µg/L	0	NA	0		10

* Chromium, thallium are not included
vs for 2/20/12

2/20/12

Advanced Technology Laboratories, Inc.

Date: *20-Feb-12*

CLIENT: CH2M HILL
Work Order: N007273
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007265-001A-PS 5** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	65.890	2.5	50.00	8.718	114	75	125				
Selenium	48.142	2.5	50.00	1.232	93.8	75	125				

Sample ID: **N007265-001A-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.383	0.20	20.00	0.9739	102	75	125				
Manganese	183.171	1.0	200.0	0	91.6	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		

00099

February 23, 2012

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.: N007287

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 08, 2012 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, 423575.MP.02.GM.0
Lab Order: N007287

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. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

Date: *23-Feb-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007287
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007287-001A	MW-21-185	Water	2/7/2012 1:04:00 PM	2/8/2012	2/23/2012
N007287-002A	MW-28-090-185	Water	2/7/2012 4:21:00 PM	2/8/2012	2/23/2012
N007287-002B	MW-28-090-185	Water	2/7/2012 4:21:00 PM	2/8/2012	2/23/2012
N007287-003A	MW-42-055-185	Water	2/7/2012 2:17:00 PM	2/8/2012	2/23/2012
N007287-003B	MW-42-055-185	Water	2/7/2012 2:17:00 PM	2/8/2012	2/23/2012
N007287-004A	MW-42-065-185	Water	2/7/2012 3:00:00 PM	2/8/2012	2/23/2012
N007287-004B	MW-42-065-185	Water	2/7/2012 3:00:00 PM	2/8/2012	2/23/2012
N007287-005A	MW-102-185	Water	2/8/2012 11:16:00 AM	2/8/2012	2/23/2012
N007287-005B	MW-102-185	Water	2/8/2012 11:16:00 AM	2/8/2012	2/23/2012
N007287-006A	MW-33-040-185	Water	2/8/2012 3:08:00 PM	2/8/2012	2/23/2012
N007287-006B	MW-33-040-185	Water	2/8/2012 3:08:00 PM	2/8/2012	2/23/2012
N007287-007A	MW-44-115-185	Water	2/8/2012 12:08:00 PM	2/8/2012	2/23/2012
N007287-007B	MW-44-115-185	Water	2/8/2012 12:08:00 PM	2/8/2012	2/23/2012
N007287-008A	MW-44-125-185	Water	2/8/2012 11:15:00 AM	2/8/2012	2/23/2012
N007287-008B	MW-44-125-185	Water	2/8/2012 11:15:00 AM	2/8/2012	2/23/2012
N007287-009A	MW-46-175-185	Water	2/8/2012 2:05:00 PM	2/8/2012	2/23/2012
N007287-009B	MW-46-175-185	Water	2/8/2012 2:05:00 PM	2/8/2012	2/23/2012
N007287-010A	MW-48-185	Water	2/8/2012 3:51:00 PM	2/8/2012	2/23/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-21-185
Lab Order:	N007287	**Collection Date:**	2/7/2012 1:04:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120208C**	QC Batch: **R83169**			PrepDate:			Analyst: **KAB**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	2/8/2012

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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-185
Lab Order:	N007287	**Collection Date:**	2/7/2012 4:21:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120208C**	QC Batch: **R83169**			PrepDate:			Analyst: **KAB**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	2/8/2012

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: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-055-185
Lab Order:	N007287	**Collection Date:**	2/7/2012 2:17:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120208C**	QC Batch: **R83169**			PrepDate:			Analyst: **KAB**
Specific Conductance	5400	0.10	0.10		umhos/cm	1	2/8/2012

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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-065-185
Lab Order:	N007287	**Collection Date:**	2/7/2012 3:00:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120208C**	QC Batch: **R83169**			PrepDate:			Analyst: **KAB**
Specific Conductance	9400	0.10	0.10		umhos/cm	1	2/8/2012

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: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-102-185
Lab Order:	N007287	**Collection Date:**	2/8/2012 11:16:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120208C**	QC Batch: **R83169**			PrepDate:			Analyst: **KAB**
Specific Conductance	7700	0.10	0.10		umhos/cm	1	2/8/2012

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: *23-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007287-006

Client Sample ID: MW-33-040-185
Collection Date: 2/8/2012 3:08:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120208C**	QC Batch: **R83169**			PrepDate:			Analyst: **KAB**
Specific Conductance	7000	0.10	0.10		umhos/cm	1	2/8/2012

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: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-185
Lab Order:	N007287	**Collection Date:**	2/8/2012 12:08:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120208C**	QC Batch: **R83169**			PrepDate:			Analyst: **KAB**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	2/8/2012

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: *23-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007287-008

Client Sample ID: MW-44-125-185
Collection Date: 2/8/2012 11:15:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120208C**	QC Batch: **R83169**			PrepDate:			Analyst: **KAB**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	2/8/2012

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: *23-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007287-009

Client Sample ID: MW-46-175-185
Collection Date: 2/8/2012 2:05:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120208C**	QC Batch: **R83169**			PrepDate:			Analyst: **KAB**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	2/8/2012

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: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-48-185
Lab Order:	N007287	**Collection Date:**	2/8/2012 3:51:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120208C**	QC Batch: **R83169**			PrepDate:			Analyst: **KAB**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	2/8/2012

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: *23-Feb-12*

CLIENT: CH2M HILL
Work Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83169** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83169**
Client ID: **LCSW** Batch ID: **R83169** TestNo: **EPA 120.1** Analysis Date: **2/8/2012** SeqNo: **1359161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	9870.000	0.10	9980	0	98.9	85	115				

Sample ID: **N007287-006B-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83169**
Client ID: **ZZZZZZ** Batch ID: **R83169** TestNo: **EPA 120.1** Analysis Date: **2/8/2012** SeqNo: **1359168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6990.000	0.10						6950	0.574	10	

Sample ID: **N007287-006BMS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83169**
Client ID: **ZZZZZZ** Batch ID: **R83169** TestNo: **EPA 120.1** Analysis Date: **2/8/2012** SeqNo: **1359169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	16900.000	0.20	9980	6950	99.7	75	125				

Sample ID: **N007287-006BMSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83169**
Client ID: **ZZZZZZ** Batch ID: **R83169** TestNo: **EPA 120.1** Analysis Date: **2/8/2012** SeqNo: **1359170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	16890.000	0.20	9980	6950	99.6	75	125	16900	0.0592	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

00016

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *23-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007287-002

Client Sample ID: MW-28-090-185
Collection Date: 2/7/2012 4:21:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Fluoride	3.5	0.020	2.5		mg/L	5	2/10/2012 09:14 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.024	1.0		mg/L	2	2/10/2012 09:26 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-102-185
Lab Order:	N007287	**Collection Date:**	2/8/2012 11:16:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120209B**	QC Batch: **R83308**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.024	1.0		mg/L	2	2/9/2012 09:50 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: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-185
Lab Order:	N007287	**Collection Date:**	2/8/2012 3:08:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Fluoride	13	0.020	2.5		mg/L	5	2/10/2012 09:37 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.024	1.0		mg/L	2	2/10/2012 09:49 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: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-115-185
Lab Order:	N007287	**Collection Date:**	2/8/2012 12:08:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	2/10/2012 10:01 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: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-125-185
Lab Order:	N007287	**Collection Date:**	2/8/2012 11:15:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120209B**	QC Batch: **R83308**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	2/9/2012 10:02 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		

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-185
Lab Order:	N007287	**Collection Date:**	2/8/2012 2:05:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	2/10/2012 10:12 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: N007287
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **LCS-R83308_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83308**
Client ID: **LCSW** Batch ID: **R83308** TestNo: **EPA 300.0** Analysis Date: **2/9/2012** SeqNo: **1363126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.419	0.50	2.500	0	96.8	90	110				

Sample ID: **MB-R83308_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83308**
Client ID: **PBW** Batch ID: **R83308** TestNo: **EPA 300.0** Analysis Date: **2/9/2012** SeqNo: **1363127**

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: **N007291-001CDUP** SampType: **DUP** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83308**
Client ID: **ZZZZZZ** Batch ID: **R83308** TestNo: **EPA 300.0** Analysis Date: **2/9/2012** SeqNo: **1363153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	0.720	0.50						0.6760	6.30	20	

Sample ID: **N007291-001CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83308**
Client ID: **ZZZZZZ** Batch ID: **R83308** TestNo: **EPA 300.0** Analysis Date: **2/9/2012** SeqNo: **1363154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	3.101	0.50	2.500	0.6760	97.0	80	120				

Sample ID: **N007291-002CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83308**
Client ID: **ZZZZZZ** Batch ID: **R83308** TestNo: **EPA 300.0** Analysis Date: **2/9/2012** SeqNo: **1363155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	9.460	1.0	5.000	4.308	103	80	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

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CLIENT: CH2M HILL
Work Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **N007291-002CMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83308**
Client ID: **ZZZZZZ** Batch ID: **R83308** TestNo: **EPA 300.0** Analysis Date: **2/9/2012** SeqNo: **1363156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	9.450	1.0	5.000	4.308	103	80	120	9.460	0.106	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

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CLIENT: CH2M HILL
Work Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R83322_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **PBW** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363850**

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-R83322_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **LCSW** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363851**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.389	0.50	2.500	0	95.6	90	110				

Sample ID: **N007295-009CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	3.348	0.50	2.500	1.022	93.0	80	120				

Sample ID: **N007295-009CMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	3.280	0.50	2.500	1.022	90.3	80	120	3.348	2.05	20	

Sample ID: **N007295-008CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	20.255	2.5	12.50	8.015	97.9	80	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

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Advanced Technology Laboratories, Inc.

Date: *23-Feb-12*

CLIENT: CH2M HILL
Work Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID: **MB-R83322_F** SampType: **MBLK** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **PBW** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.50									

Sample ID: **LCS-R83322_F** SampType: **LCS** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **LCSW** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.345	0.50	2.500	0	93.8	90	110				

Sample ID: **N007295-009CMS** SampType: **MS** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.785	0.50	2.500	0.5030	91.3	80	120				

Sample ID: **N007295-009CMSD** SampType: **MSD** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.679	0.50	2.500	0.5030	87.0	80	120	2.785	3.88	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		

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ANALYTICAL RESULTS

Print Date: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-28-090-185
Lab Order:	N007287	**Collection Date:**	2/7/2012 4:21:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120218A**	QC Batch: **39077**			PrepDate:		**2/18/2012**	Analyst: **CEI**
Arsenic	1.8	0.0025	0.10		µg/L	1	2/19/2012 01:17 AM
Molybdenum	18	0.070	2.5		µg/L	5	2/19/2012 01:12 AM
Selenium	ND	0.090	2.5		µg/L	5	2/19/2012 01:12 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		

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ANALYTICAL RESULTS

Print Date: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-42-055-185
Lab Order:	N007287	**Collection Date:**	2/7/2012 2:17:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED ICP-MS METALS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120218A**	QC Batch: **39077**			PrepDate:	**2/18/2012**		Analyst: **CEI**
Arsenic	13	0.0025	0.10		µg/L	1	2/19/2012 01:31 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *23-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007287-004

Client Sample ID: MW-42-065-185
Collection Date: 2/7/2012 3:00:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_120218A**	QC Batch: **39077**			PrepDate:	**2/18/2012**		Analyst: **CEI**
Arsenic	2.4	0.012	0.50		µg/L	5	2/19/2012 01:41 AM
Manganese	1700	2.3	12		µg/L	25	2/20/2012 12:02 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *23-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007287-005

Client Sample ID: MW-102-185
Collection Date: 2/8/2012 11:16:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120220A**	QC Batch: **39077**			PrepDate:	**2/18/2012**		Analyst: **CEI**
Arsenic	4.1	0.012	0.50		µg/L	5	2/20/2012 12:07 PM
Manganese	490	0.46	2.5		µg/L	5	2/20/2012 12:07 PM
Molybdenum	150	0.35	12		µg/L	25	2/20/2012 12:17 PM
Selenium	3.4	0.090	2.5		µg/L	5	2/20/2012 12:07 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-040-185
Lab Order:	N007287	**Collection Date:**	2/8/2012 3:08:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120220A**	QC Batch: **39077**			PrepDate:		**2/18/2012**	Analyst: **CEI**
Arsenic	15	0.0025	0.10		µg/L	1	2/20/2012 12:27 PM
Molybdenum	200	0.070	2.5		µg/L	5	2/20/2012 12:22 PM
Selenium	3.2	0.090	2.5		µg/L	5	2/20/2012 12:22 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *23-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007287-007

Client Sample ID: MW-44-115-185
Collection Date: 2/8/2012 12:08:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120220A**	QC Batch: **39077**			PrepDate:		**2/18/2012**	Analyst: **CEI**
Arsenic	5.5	0.012	0.50		µg/L	5	2/20/2012 12:36 PM
Manganese	2.1	0.091	0.50		µg/L	1	2/20/2012 12:51 PM
Molybdenum	82	0.070	2.5		µg/L	5	2/20/2012 12:36 PM
Selenium	3.4	0.090	2.5		µg/L	5	2/20/2012 12:36 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-44-125-185
Lab Order:	N007287	**Collection Date:**	2/8/2012 11:15:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120220A**	QC Batch: **39077**				PrepDate:	**2/18/2012**	Analyst: **CEI**
Arsenic	4.3	0.012	0.50		µg/L	5	2/20/2012 01:01 PM
Manganese	490	0.46	2.5		µg/L	5	2/20/2012 01:01 PM
Molybdenum	160	0.070	2.5		µg/L	5	2/20/2012 01:01 PM
Selenium	ND	0.090	2.5		µg/L	5	2/20/2012 01:01 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: *23-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-46-175-185
Lab Order:	N007287	**Collection Date:**	2/8/2012 2:05:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007287-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120220A**	QC Batch: **39077**			PrepDate:	**2/18/2012**		Analyst: **CEI**
Molybdenum	190	0.35	12		µg/L	25	2/20/2012 01:26 PM
Selenium	ND	0.45	12		µg/L	25	2/20/2012 01:26 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: *23-Feb-12*

CLIENT: CH2M HILL
Work Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39077** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **PBW** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.019	0.10									
Manganese	ND	0.50									
Molybdenum	0.037	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-39077** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **LCSW** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.508	0.10	10.00	0	95.1	85	115				
Manganese	96.378	0.50	100.0	0	96.4	85	115				
Molybdenum	9.677	0.50	10.00	0	96.8	85	115				
Selenium	9.314	0.50	10.00	0	93.1	85	115				

Sample ID: **N007265-001A-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.027	2.5	10.00	8.718	103	75	125				
Selenium	10.703	2.5	10.00	1.232	94.7	75	125				

Sample ID: **N007265-001A-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.604	0.10	10.00	0.9739	96.3	75	125				
Manganese	84.718	0.50	100.0	0	84.7	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

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CLIENT: CH2M HILL
Work Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007265-001A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.963	2.5	10.00	8.718	112	75	125	19.03	4.80	20	
Selenium	10.587	2.5	10.00	1.232	93.6	75	125	10.70	1.09	20	

Sample ID: **N007265-001A-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.772	0.10	10.00	0.9739	98.0	75	125	10.60	1.57	20	
Manganese	84.906	0.50	100.0	0	84.9	75	125	84.72	0.222	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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_WD_AsPGE

Sample ID: **MB-39077** SampType: **MBLK** TestCode: **6020_WD_As** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **PBW** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1363579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.019	0.10									

Sample ID: **LCS-39077** SampType: **LCS** TestCode: **6020_WD_As** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **LCSW** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1363580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.508	0.10	10.00	0	95.1	85	115				

Sample ID: **N007265-001A-MS** SampType: **MS** TestCode: **6020_WD_As** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1363587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.604	0.10	10.00	0.9739	96.3	75	125				

Sample ID: **N007265-001A-MSD** SampType: **MSD** TestCode: **6020_WD_As** Units: **µg/L** Prep Date: **2/18/2012** RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1363591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.772	0.10	10.00	0.9739	98.0	75	125	10.60	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

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

00037

CH2MHILL

CHAIN OF CUSTODY RECORD

2/8/2012 4:20:24 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/8/2012
COC Number: 4

			Container:	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C			
			Filtered:	Field	Field	Field	Field	NA	NA	NA			
			Holding Time:	180	180	180	180	2	2	2			
	DATE	TIME	Matrix	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mn	Metals (6020AFF) Field Filtered Mo,Se	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	Anions (E300.0) Nitrate,Fluoride		Number of Containers	COMMENTS
MW-21-185	2/7/2012	13:04	Water					X			H007287-1	1	
MW-28-090-185	2/7/2012	16:21	Water	X		X		X		X	-2	2	
MW-42-055-185	2/7/2012	14:17	Water	X				X			-3	2	
MW-42-065-185	2/7/2012	15:00	Water	X	X			X			-4	2	
MW-102-185	2/8/2012	11:16	Water	X			X	X	X		-5	2	
MW-33-040-185	2/8/2012	15:08	Water	X		X		X		X	-6	2	
MW-44-115-185	2/8/2012	12:08	Water	X			X	X	X		-7	2	
MW-44-125-185	2/8/2012	11:15	Water	X			X	X	X		-8	2	
MW-46-175-185	2/8/2012	14:05	Water			X		X	X		-9	2	
MW-48-185	2/8/2012	15:51	Water					X			-10	1	
											TOTAL NUMBER OF CONTAINERS	18	

	Signatures	Date/Time
Approved by		2-8-12
Sampled by		1625
Relinquished by		
Received by		2/8/12 @ 1641
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 2.6°C
Airbill No: ICE IR#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Feb 6-22, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

5555

CH2MHILL

CHAIN OF CUSTODY RECORD

2/8/2012 4:20:24 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/8/2012
COC Number: 4

			Container:	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C			
			Filtered:	Field	Field	Field	Field	NA	NA	NA			
			Holding Time:	180	180	180	180	2	2	2			
	DATE	TIME	Matrix	Arsenic (6020A) Field Filtered	Metals (6020AFF) Field Filtered Mn	Metals (6020AFF) Field Filtered Mo,Se	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	Anions (E300.0) Nitrate,Fluoride		Number of Containers	COMMENTS
MW-21-185	2/7/2012	13:04	Water					X				1	
MW-28-090-185	2/7/2012	16:21	Water	X		X		X		X		2	
MW-42-055-185	2/7/2012	14:17	Water	X				X				2	
MW-42-065-185	2/7/2012	15:00	Water	X	X			X				2	
MW-102-185	2/8/2012	11:16	Water	X			X	X	X			2	
MW-33-040-185	2/8/2012	15:08	Water	X		X		X		X		2	
MW-44-115-185	2/8/2012	12:08	Water	X			X	X	X			2	
MW-44-125-185	2/8/2012	11:15	Water	X			X	X	X			2	
MW-46-175-185	2/8/2012	14:05	Water			X		X	X			2	
MW-48-185	2/8/2012	15:51	Water					X				1	
											TOTAL NUMBER OF CONTAINERS	18	

	Signatures	Date/Time
Approved by		2-8-12
Sampled by		1625
Relinquished by		
Received by		2/8/12 @ 1641
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 2.6°C
Airbill No: ICE IR#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Feb 6-22, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On:	2/8/2012	Workorder:	N007287
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	Courier		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 2/9/12

Reviewed By:

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: WATER

FORMULA:

Calculate the Fluoride concentration, in mg/L, in the original sample as follows:

Fluoride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007287-002B**, concentration in mg/L are calculated as follows:

Fluoride, mg/L	=	0.702 * 5
	=	3.51 mg/L

Reporting **N007287-002B**, results in two significant figures,

Fluoride, mg/L	**=**	**3.5 mg/L**

ms 2/23/12

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:

Arsenic, mg/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 **N007287-002A**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 1.783* 1 * (25/25)

= 1.783ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 1.8

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007287
Test Method: EPA 6020
Analysis Date: 02/08/12

Matrix: Water
Batch No.: 39077

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to As,Mn, Se & Tl The calc. values were < 25X the RL. PS @ 2x & PS @ 25x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007265-001B-DT 5X	Arsenic	µg/L	1.147919993	NA	0.973880203	-17.87%	10
N007265-001B-DT 5X	Chromium	µg/L	23.18233101	PASS	22.13897432	-4.71%	10
N007265-001B-DT 5X	Manganese	µg/L	0	NA	0		10
N007265-001B-DT 25X	Molybdenum	µg/L	9.06275605	PASS	8.717839982	-3.96%	10
N007265-001B-DT 25X	Selenium	µg/L	1.117624937	NA	1.232082634	9.29%	10
N007265-001B-DT 25X	Thallium	µg/L	0	NA	0		10

Cr, Tl not included
NS for
2/23/12

Advanced Technology Laboratories, Inc.

Date: *23-Feb-12*

CLIENT: CH2M HILL
Work Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007265-001A-PS 5** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	65.890	2.5	50.00	8.718	114	75	125				
Selenium	48.142	2.5	50.00	1.232	93.8	75	125				

Sample ID: **N007265-001A-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1361135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.383	0.20	20.00	0.9739	102	75	125				
Manganese	183.171	1.0	200.0	0	91.6	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		

001118

CLIENT: CH2M HILL
Work Order: N007287
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_WD_AsPGE

Sample ID: **N007265-001A-PS 2** SampType: **PS** TestCode: **6020_WD_As** Units: **µg/L** Prep Date: RunNo: **83254**
Client ID: **ZZZZZZ** Batch ID: **39077** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/18/2012** SeqNo: **1363585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.383	0.20	20.00	0.9739	102	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		

March 13, 2012

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.: N007297

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 09, 2012 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.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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 gsgesmundt

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, 423575.MP.02.GM.0
Lab Order: N007297

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 Cadmium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Chromium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007297
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007297-001A	MW-12-185	Water	2/9/2012 2:31:00 PM	2/9/2012	2/28/2012
N007297-001B	MW-12-185	Water	2/9/2012 2:31:00 PM	2/9/2012	2/28/2012
N007297-002A	MW-33-090-185	Water	2/9/2012 11:02:00 AM	2/9/2012	2/28/2012
N007297-002B	MW-33-090-185	Water	2/9/2012 11:02:00 AM	2/9/2012	2/28/2012
N007297-003A	MW-33-150-185	Water	2/9/2012 8:07:00 AM	2/9/2012	2/28/2012
N007297-003B	MW-33-150-185	Water	2/9/2012 8:07:00 AM	2/9/2012	2/28/2012
N007297-004A	MW-33-210-185	Water	2/9/2012 9:21:00 AM	2/9/2012	2/28/2012
N007297-004B	MW-33-210-185	Water	2/9/2012 9:21:00 AM	2/9/2012	2/28/2012
N007297-005A	MW-50-200-185	Water	2/9/2012 3:28:00 PM	2/9/2012	2/28/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 2:31:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120209D**	QC Batch: **R83170**			PrepDate:			Analyst: **KAB**
Specific Conductance	7000	0.10	0.10		umhos/cm	1	2/9/2012

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-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 11:02:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120209D**	QC Batch: **R83170**			PrepDate:			Analyst: **KAB**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	2/9/2012

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-12*

CLIENT: CH2M HILL
Lab Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007297-003

Client Sample ID: MW-33-150-185
Collection Date: 2/9/2012 8:07:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120209D**	QC Batch: **R83170**			PrepDate:			Analyst: **KAB**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	2/9/2012

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-12*

CLIENT: CH2M HILL
Lab Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007297-004

Client Sample ID: MW-33-210-185
Collection Date: 2/9/2012 9:21:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120209D**	QC Batch: **R83170**			PrepDate:			Analyst: **KAB**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	2/9/2012

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-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-200-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 3:28:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120209D**	QC Batch: **R83170**			PrepDate:			Analyst: **KAB**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	2/9/2012

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: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83170** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83170**
Client ID: **LCSW** Batch ID: **R83170** TestNo: **EPA 120.1** Analysis Date: **2/9/2012** SeqNo: **1359176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	9986.000	0.10	9980	0	100	85	115				

Sample ID: **N007297-001B-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83170**
Client ID: **ZZZZZZ** Batch ID: **R83170** TestNo: **EPA 120.1** Analysis Date: **2/9/2012** SeqNo: **1359181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17220.000	0.20	9986	6960	103	75	125				

Sample ID: **N007297-001B-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83170**
Client ID: **ZZZZZZ** Batch ID: **R83170** TestNo: **EPA 120.1** Analysis Date: **2/9/2012** SeqNo: **1359189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17200.000	0.20	9986	6960	103	75	125	17220	0.116	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

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 2:31:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Nitrate as N	9.8	0.060	2.5		mg/L	5	2/10/2012 10:28 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-12*

CLIENT: CH2M HILL
Lab Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007297-002

Client Sample ID: MW-33-090-185
Collection Date: 2/9/2012 11:02:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Fluoride	5.5	0.040	5.0		mg/L	10	2/10/2012 11:38 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Nitrate as N	1.6	0.024	1.0		mg/L	2	2/10/2012 12:10 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		

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ANALYTICAL RESULTS

Print Date: *28-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007297-003

Client Sample ID: MW-33-150-185
Collection Date: 2/9/2012 8:07:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_120210A** QC Batch: **R83322** PrepDate: Analyst: **QBM**							
Fluoride	ND	0.080	10		mg/L	20	2/10/2012 12:34 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_120210A** QC Batch: **R83322** PrepDate: Analyst: **QBM**							
Nitrate as N	ND	0.060	2.5		mg/L	5	2/10/2012 11:15 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 9:21:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Fluoride	ND	0.080	10		mg/L	20	2/10/2012 12:45 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	2/10/2012 11:26 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.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID: **MB-R83322_F** SampType: **MBLK** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **PBW** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.50									

Sample ID: **LCS-R83322_F** SampType: **LCS** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **LCSW** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.345	0.50	2.500	0	93.8	90	110				

Sample ID: **N007295-009CDUP** SampType: **DUP** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.547	0.50						0.5030	8.38	20	

Sample ID: **N007295-009CMS** SampType: **MS** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.785	0.50	2.500	0.5030	91.3	80	120				

Sample ID: **N007295-009CMSD** SampType: **MSD** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.679	0.50	2.500	0.5030	87.0	80	120	2.785	3.88	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

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00015

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R83322_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **PBW** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363850**

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-R83322_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **LCSW** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363851**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.389	0.50	2.500	0	95.6	90	110				

Sample ID: **N007295-009CDUP** SampType: **DUP** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	1.014	0.50						1.022	0.786	20	

Sample ID: **N007295-009CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	3.348	0.50	2.500	1.022	93.0	80	120				

Sample ID: **N007295-009CMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	3.280	0.50	2.500	1.022	90.3	80	120	3.348	2.05	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

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CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **N007295-008CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	20.255	2.5	12.50	8.015	97.9	80	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

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *28-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007297-001

Client Sample ID: MW-12-185
Collection Date: 2/9/2012 2:31:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_120217C**	QC Batch: **38996**			PrepDate:	**2/15/2012**		Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	2/17/2012 10:02 AM
Barium	58	0.20	3.0		ug/L	1	2/17/2012 10:02 AM
Beryllium	ND	0.090	1.0		ug/L	1	2/17/2012 10:02 AM
Cadmium	ND	0.23	3.0		ug/L	1	2/17/2012 10:02 AM
Cobalt	ND	0.31	3.0		ug/L	1	2/17/2012 10:02 AM
Copper	ND	0.53	5.0		ug/L	1	2/17/2012 10:02 AM
Lead	ND	1.5	10		ug/L	1	2/17/2012 10:02 AM
Molybdenum	12	0.49	5.0		ug/L	1	2/17/2012 10:02 AM
Nickel	ND	1.1	5.0		ug/L	1	2/17/2012 10:02 AM
Silver	ND	0.72	3.0		ug/L	1	2/17/2012 10:02 AM
Vanadium	15	0.19	3.0		ug/L	1	2/20/2012 04:21 PM
Zinc	ND	4.6	10		ug/L	1	2/17/2012 10:02 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

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	ND	3.0									

Sample ID: **LCS-38996** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **LCSW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	9.721	3.0	10.00	0	97.2	85	115				

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.013	3.0	10.00	0	100	75	125				

Sample ID: **N007288-001C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.042	3.0	10.00	0	100	75	125	10.01	0.292	20	

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	0.363	3.0									

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: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	ND	3.0									
Copper	1.080	5.0									
Lead	ND	10									
Molybdenum	3.250	5.0									
Nickel	ND	5.0									
Silver	ND	3.0									
Zinc	ND	10									

Sample ID: **LCS-38996** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **LCSW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.692	10	50.00	0	105	85	115				
Barium	51.478	3.0	50.00	0	103	85	115				
Beryllium	9.786	1.0	10.00	0	97.9	85	115				
Cadmium	10.191	3.0	10.00	0	102	85	115				
Cobalt	9.509	3.0	10.00	0	95.1	85	115				
Copper	11.354	5.0	10.00	0	114	85	115				
Lead	51.138	10	50.00	0	102	85	115				
Molybdenum	50.962	5.0	50.00	0	102	85	115				
Nickel	48.559	5.0	50.00	0	97.1	85	115				
Silver	9.885	3.0	10.00	0	98.9	85	115				
Zinc	47.455	10	50.00	0	94.9	85	115				

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	57.973	10	50.00	0	116	75	125				
Barium	149.431	3.0	50.00	98.27	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

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CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	9.860	1.0	10.00	0.1860	96.7	75	125				
Cadmium	6.209	3.0	10.00	0	62.1	75	125				S
Cobalt	8.424	3.0	10.00	0	84.2	75	125				
Copper	15.959	5.0	10.00	3.836	121	75	125				
Lead	39.526	10	50.00	0	79.1	75	125				
Molybdenum	67.744	5.0	50.00	18.63	98.2	75	125				
Nickel	43.845	5.0	50.00	0	87.7	75	125				
Silver	18.262	3.0	10.00	6.967	113	75	125				
Zinc	186.111	10	50.00	133.8	105	75	125				

Sample ID: **N007288-001C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	56.967	10	50.00	0	114	75	125	57.97	1.75	20	
Barium	148.222	3.0	50.00	98.27	99.9	75	125	149.4	0.812	20	
Beryllium	9.826	1.0	10.00	0.1860	96.4	75	125	9.860	0.345	20	
Cadmium	6.054	3.0	10.00	0	60.5	75	125	6.209	2.53	20	S
Cobalt	8.455	3.0	10.00	0	84.6	75	125	8.424	0.372	20	
Copper	15.726	5.0	10.00	3.836	119	75	125	15.96	1.47	20	
Lead	38.538	10	50.00	0	77.1	75	125	39.53	2.53	20	
Molybdenum	66.999	5.0	50.00	18.63	96.7	75	125	67.74	1.11	20	
Nickel	43.840	5.0	50.00	0	87.7	75	125	43.84	0.00984	20	
Silver	18.080	3.0	10.00	6.967	111	75	125	18.26	0.998	20	
Zinc	184.229	10	50.00	133.8	101	75	125	186.1	1.02	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

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00022

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *13-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007297-001

Client Sample ID: MW-12-185
Collection Date: 2/9/2012 2:31:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120216B**	QC Batch: **39051**			PrepDate:		**2/16/2012**	Analyst: **CEI**
Arsenic	47	0.0025	0.10		µg/L	1	2/16/2012 05:21 PM
Selenium	11	0.018	0.50		µg/L	1	2/16/2012 05:21 PM
Thallium	ND	0.20	2.5		µg/L	5	2/17/2012 12:49 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		

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *28-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007297-002

Client Sample ID: MW-33-090-185
Collection Date: 2/9/2012 11:02:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120216B**	QC Batch: **39051**			PrepDate:	**2/16/2012**		Analyst: **CEI**
Molybdenum	20	0.014	0.50		µg/L	1	2/16/2012 05:34 PM
Selenium	1.3	0.018	0.50		µg/L	1	2/16/2012 05:34 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		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 8:07:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120216B**	QC Batch: **39051**			PrepDate:		**2/16/2012**	Analyst: **CEI**
Arsenic	1.8	0.0025	0.10		µg/L	1	2/16/2012 05:55 PM
Manganese	5.1	0.091	0.50		µg/L	1	2/16/2012 05:55 PM
Molybdenum	39	0.070	2.5		µg/L	5	2/16/2012 06:28 PM
Selenium	0.62	0.018	0.50		µg/L	1	2/16/2012 05:55 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007297-004

Client Sample ID: MW-33-210-185
Collection Date: 2/9/2012 9:21:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120216B**	QC Batch: **39051**			PrepDate:	**2/16/2012**		Analyst: **CEI**
Arsenic	1.2	0.012	0.50		µg/L	5	2/16/2012 06:09 PM
Manganese	5.5	0.091	0.50		µg/L	1	2/16/2012 06:05 PM
Molybdenum	17	0.35	12		µg/L	25	2/16/2012 07:21 PM
Selenium	ND	0.090	2.5		µg/L	5	2/16/2012 06:09 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		

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Advanced Technology Laboratories, Inc.

Date: *13-Mar-12*

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39051** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83237**
Client ID: **PBW** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	ND	0.50									

Sample ID: **LCS-39051** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83237**
Client ID: **LCSW** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.129	0.50	10.00	0	101	85	115				

Sample ID: **N007330-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83237**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.249	0.50	10.00	0	102	75	125				

Sample ID: **N007330-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83237**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.163	0.50	10.00	0	102	75	125	10.25	0.850	20	

Sample ID: **MB-39051** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **PBW** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.015	0.10									
Manganese	ND	0.50									
Molybdenum	0.053	0.50									
Selenium	ND	0.50									

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

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REVISION 1, 03/13/12

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **LCS-39051** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **LCSW** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.830	0.10	10.00	0	98.3	85	115				
Manganese	96.822	0.50	100.0	0	96.8	85	115				
Molybdenum	9.848	0.50	10.00	0	98.5	85	115				
Selenium	9.593	0.50	10.00	0	95.9	85	115				

Sample ID: **N007330-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.845	0.10	10.00	2.805	100	75	125				
Manganese	133.705	0.50	100.0	41.65	92.1	75	125				
Molybdenum	16.548	0.50	10.00	5.852	107	75	125				
Selenium	9.666	0.50	10.00	0.8365	88.3	75	125				

Sample ID: **N007330-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.727	0.10	10.00	2.805	99.2	75	125	12.84	0.926	20	
Manganese	131.139	0.50	100.0	41.65	89.5	75	125	133.7	1.94	20	
Molybdenum	16.328	0.50	10.00	5.852	105	75	125	16.55	1.34	20	
Selenium	9.904	0.50	10.00	0.8365	90.7	75	125	9.666	2.43	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

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REVISION 1, 03/13/12

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 2:31:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120214A**	QC Batch: **39007**			PrepDate:	**2/13/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	2/14/2012

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: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39007** SampType: **LCS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/13/2012** RunNo: **83188**
Client ID: **LCSW** Batch ID: **39007** TestNo: **EPA 7470A** Analysis Date: **2/14/2012** SeqNo: **1364012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.487	0.20	5.000	0	89.7	85	115				

Sample ID: **MB-39007** SampType: **MBLK** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/13/2012** RunNo: **83188**
Client ID: **PBW** Batch ID: **39007** TestNo: **EPA 7470A** Analysis Date: **2/14/2012** SeqNo: **1364014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/13/2012** RunNo: **83188**
Client ID: **ZZZZZZ** Batch ID: **39007** TestNo: **EPA 7470A** Analysis Date: **2/14/2012** SeqNo: **1364022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.403	0.20	5.000	0	88.1	75	125				

Sample ID: **N007288-001C-MSD** SampType: **MSD** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/13/2012** RunNo: **83188**
Client ID: **ZZZZZZ** Batch ID: **39007** TestNo: **EPA 7470A** Analysis Date: **2/14/2012** SeqNo: **1364023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.274	0.20	5.000	0	85.5	75	125	4.403	2.97	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

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CH2MHILL

CHAIN OF CUSTODY RECORD

2/9/2012 3:53:01 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/9/2012
COC Number: 6

			Container:	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C			
			Filtered:	Field	Field	Field	Field	NA	NA	NA			
			Holding Time:	180	180	180	180	2	2	2			
	DATE	TIME	Matrix	Arsenic (6020A) Field Filtered	Metals (6010B/6020A/7470Adis) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	Anions (E300.0) Nitrate,Fluoride		Number of Containers	COMMENTS
MW-12-185	2/9/2012	14:31	Water		X			X	X		N007297-1	2	
MW-33-090-185	2/9/2012	11:02	Water			X		X		X	-2	2	
MW-33-150-185	2/9/2012	8:07	Water	X			X	X		X	-3	2	
MW-33-210-185	2/9/2012	9:21	Water	X			X	X		X	-4	2	
MW-50-200-185	2/9/2012	15:28	Water					X			-5	1	
											TOTAL NUMBER OF CONTAINERS	9	

	Signatures	Date/Time
Approved by		
Sampled by		2-9-12 1639
Relinquished by		
Received by		2/9/12 @ 1639
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes no 2.9°C
Airbill No: 105 1242
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Feb 6-22, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

2/9/2012 3:53:01 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/9/2012
COC Number: 6

			Container:	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C			
			Filtered:	Field	Field	Field	Field	NA	NA	NA			
			Holding Time:	180	180	180	180	2	2	2			
	DATE	TIME	Matrix	Arsenic (6020A) Field Filtered	Metals (6010B/6020A/7470Adis) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	Anions (E300.0) Nitrate,Fluoride		Number of Containers	COMMENTS
MW-12-185	2/9/2012	14:31	Water		X			X	X			2	
MW-33-090-185	2/9/2012	11:02	Water			X		X		X		2	
MW-33-150-185	2/9/2012	8:07	Water	X			X	X		X		2	
MW-33-210-185	2/9/2012	9:21	Water	X			X	X		X		2	
MW-50-200-185	2/9/2012	15:28	Water					X				1	
											TOTAL NUMBER OF CONTAINERS	9	

	Signatures	Date/Time
Approved by		
Sampled by		2-9-12 1639
Relinquished by		
Received by		2/9/12 @ 1639
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes / no 2.9°C
Airbill No: ICE 1242
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Feb 6-22, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On:	2/9/2012	Workorder:	N007297
Rep sample Temp (Deg C):	2.9	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 2/10/12

Reviewed By: [illegible]

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:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007297-001B**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	1.960 * 5
	=	9.8 mg/L

Reporting **N007297-001B**, results in two significant figures,

Nitrate, mg/L	**=**	**9.8 mg/L**

ans 2/23/12

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Aqueous

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Iron, ug/L = A * DF * PF*1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007297-001A**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.05789* 1 * (25/25)*1000

= 57.89ug/L

Reporting results in two significant figures,

Barium, ug/L = 58

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007297
Test Method: EPA 6010
Analysis Date: 02/17/12

Matrix: Water
Batch No.: 38996

Instrument ID: ICP-01/02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007288-001B-DT 5X	Antimony	µg/L	0	NA	0		10
N007288-001B-DT 5X	Barium	µg/L	99.82141	PASS	98.271417	-1.58%	10
N007288-001B-DT 5X	Beryllium	µg/L	0.57934	NA	0.186031		10
N007288-001B-DT 5X	Cadmium	mg/L	0	NA	0		10
N007288-001B-DT 5X	Cobalt	µg/L	0	NA	0		10
N007288-001B-DT 5X	Copper	µg/L	4.058185	PASS	3.835882	-5.80%	10
N007288-001B-DT 5X	Manganese	µg/L	675.007965	PASS	627.727274	-7.53%	10
N007288-001B-DT 5X	Molybdenum	µg/L	22.585575	NA	18.633053	-21.21%	10
N007288-001B-DT 5X	Nickel	µg/L	0	NA	0		10
N007288-001B-DT 5X	Silver	µg/L	5.732825	NA	6.966748	17.71%	10
N007288-001B-DT 5X	Lead	µg/L	0	NA	0		10
N007288-001B-DT 5X	Zinc	µg/L	130.123395	PASS	133.801315	2.75%	10

Note: NA - Not Applicable

Post Spike not Applicable since DT passes criteria.

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007297
Test Method: EPA 6010
Analysis Date: 02/20/12

Matrix: Water
Batch No.: 38996

Instrument ID: ICP-01/02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007288-001B-DT 5X	Vanadium	µg/L	0	NA	0		10

Note: NA - Not Applicable

Post Spike not Applicable since DT passes criteria.

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007288-001C-PS 2** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	1036.157	6.0	1000	0	104	75	125				

Sample ID: **N007288-001C-PS 2** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	275.019	20	250.0	0	110	75	125				
Barium	346.015	6.0	250.0	98.27	99.1	75	125				
Beryllium	243.883	2.0	250.0	0.1860	97.5	75	125				
Cadmium	249.929	6.0	250.0	0	100	75	125				
Cobalt	240.093	6.0	250.0	0	96.0	75	125				
Copper	269.106	10	250.0	3.836	106	75	125				
Lead	221.741	20	250.0	0	88.7	75	125				
Molybdenum	262.293	10	250.0	18.63	97.5	75	125				
Nickel	228.766	10	250.0	0	91.5	75	125				
Silver	263.239	6.0	250.0	6.967	103	75	125				
Zinc	386.723	20	250.0	133.8	101	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

001221

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:

Arsenic, mg/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 **N007297-001A**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 46.8053* 1 * (25/25)

= 46.8053ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 47

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007297
Test Method: EPA 6020
Analysis Date: 2/16/2012 & 2/17/12

Matrix: Water
Batch No.: 39051

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Se & Tl,. The calc. values were < 25X the RL. PS @ 2x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007330-001B-DT 5X	Arsenic	µg/L	2.926333661	PASS	2.805339515	-4.31%	10
	Chromium	µg/L	88.04691078	PASS	84.76378774	-3.87%	10
	Manganese	µg/L	44.14202073	PASS	41.65283997	-5.98%	10
	Molybdenum	µg/L	5.729497484	PASS	5.851525946	2.09%	10
	Selenium	µg/L	0.732718026	NA	0.83645084	12.40%	10
	Thallium	µg/L	0.0000	NA	0.0000		10

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007330-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83237**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	20.838	1.0	20.00	0	104	75	125				

Sample ID: **N007330-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83380**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.963	0.20	20.00	2.805	101	75	125				
Chromium	105.999	1.0	20.00	84.76	106	75	125				
Manganese	232.226	1.0	200.0	41.65	95.3	75	125				
Molybdenum	27.484	1.0	20.00	5.852	108	75	125				
Selenium	19.602	1.0	20.00	0.8365	93.8	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 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:

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 coversion factor.

For Sample **N007297-001A**, the concentration in ug/L is calculated as follows:

Mercury, ug/L	=	0 * 1 * (50/25) * 0.5
	=	0.0 ug/L

Reporting results in two significant figures,

Mercury, ug/L	**=**	**0.0**

Mercury, ug/L	**=**	**ND**

AA1 2/24/2012 5:00:21 PM

March 13, 2012

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.: N007297

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 09, 2012 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.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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 gsgesmundt

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, 423575.MP.02.GM.0
Lab Order: N007297

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 Cadmium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Chromium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007297
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007297-001A	MW-12-185	Water	2/9/2012 2:31:00 PM	2/9/2012	2/28/2012
N007297-001B	MW-12-185	Water	2/9/2012 2:31:00 PM	2/9/2012	2/28/2012
N007297-002A	MW-33-090-185	Water	2/9/2012 11:02:00 AM	2/9/2012	2/28/2012
N007297-002B	MW-33-090-185	Water	2/9/2012 11:02:00 AM	2/9/2012	2/28/2012
N007297-003A	MW-33-150-185	Water	2/9/2012 8:07:00 AM	2/9/2012	2/28/2012
N007297-003B	MW-33-150-185	Water	2/9/2012 8:07:00 AM	2/9/2012	2/28/2012
N007297-004A	MW-33-210-185	Water	2/9/2012 9:21:00 AM	2/9/2012	2/28/2012
N007297-004B	MW-33-210-185	Water	2/9/2012 9:21:00 AM	2/9/2012	2/28/2012
N007297-005A	MW-50-200-185	Water	2/9/2012 3:28:00 PM	2/9/2012	2/28/2012

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 2:31:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120209D**	QC Batch: **R83170**			PrepDate:			Analyst: **KAB**
Specific Conductance	7000	0.10	0.10		umhos/cm	1	2/9/2012

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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 11:02:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120209D**	QC Batch: **R83170**			PrepDate:			Analyst: **KAB**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	2/9/2012

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-12*

CLIENT: CH2M HILL
Lab Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007297-003

Client Sample ID: MW-33-150-185
Collection Date: 2/9/2012 8:07:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120209D**	QC Batch: **R83170**			PrepDate:			Analyst: **KAB**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	2/9/2012

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-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 9:21:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120209D**	QC Batch: **R83170**			PrepDate:			Analyst: **KAB**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	2/9/2012

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		

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-50-200-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 3:28:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120209D**	QC Batch: **R83170**			PrepDate:			Analyst: **KAB**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	2/9/2012

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: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83170** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83170**
Client ID: **LCSW** Batch ID: **R83170** TestNo: **EPA 120.1** Analysis Date: **2/9/2012** SeqNo: **1359176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	9986.000	0.10	9980	0	100	85	115				

Sample ID: **N007297-001B-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83170**
Client ID: **ZZZZZZ** Batch ID: **R83170** TestNo: **EPA 120.1** Analysis Date: **2/9/2012** SeqNo: **1359181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17220.000	0.20	9986	6960	103	75	125				

Sample ID: **N007297-001B-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83170**
Client ID: **ZZZZZZ** Batch ID: **R83170** TestNo: **EPA 120.1** Analysis Date: **2/9/2012** SeqNo: **1359189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17200.000	0.20	9986	6960	103	75	125	17220	0.116	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

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 2:31:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Nitrate as N	9.8	0.060	2.5		mg/L	5	2/10/2012 10:28 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-12*

CLIENT: CH2M HILL
Lab Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007297-002

Client Sample ID: MW-33-090-185
Collection Date: 2/9/2012 11:02:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_120210A** QC Batch: **R83322** PrepDate: Analyst: **QBM**							
Fluoride	5.5	0.040	5.0		mg/L	10	2/10/2012 11:38 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_120210A** QC Batch: **R83322** PrepDate: Analyst: **QBM**							
Nitrate as N	1.6	0.024	1.0		mg/L	2	2/10/2012 12:10 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: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 8:07:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Fluoride	ND	0.080	10		mg/L	20	2/10/2012 12:34 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	2/10/2012 11:15 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-210-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 9:21:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Fluoride	ND	0.080	10		mg/L	20	2/10/2012 12:45 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120210A**	QC Batch: **R83322**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	2/10/2012 11:26 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.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID: **MB-R83322_F** SampType: **MBLK** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **PBW** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.50									

Sample ID: **LCS-R83322_F** SampType: **LCS** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **LCSW** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.345	0.50	2.500	0	93.8	90	110				

Sample ID: **N007295-009CDUP** SampType: **DUP** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.547	0.50						0.5030	8.38	20	

Sample ID: **N007295-009CMS** SampType: **MS** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.785	0.50	2.500	0.5030	91.3	80	120				

Sample ID: **N007295-009CMSD** SampType: **MSD** TestCode: **300_W_FPGE** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.679	0.50	2.500	0.5030	87.0	80	120	2.785	3.88	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

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3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R83322_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **PBW** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363850**

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-R83322_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **LCSW** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363851**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.389	0.50	2.500	0	95.6	90	110				

Sample ID: **N007295-009CDUP** SampType: **DUP** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	1.014	0.50						1.022	0.786	20	

Sample ID: **N007295-009CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	3.348	0.50	2.500	1.022	93.0	80	120				

Sample ID: **N007295-009CMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	3.280	0.50	2.500	1.022	90.3	80	120	3.348	2.05	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: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **N007295-008CMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83322**
Client ID: **ZZZZZZ** Batch ID: **R83322** TestNo: **EPA 300.0** Analysis Date: **2/10/2012** SeqNo: **1363877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	20.255	2.5	12.50	8.015	97.9	80	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

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007297-001

Client Sample ID: MW-12-185
Collection Date: 2/9/2012 2:31:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_120217C**	QC Batch: **38996**			PrepDate:	**2/15/2012**		Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	2/17/2012 10:02 AM
Barium	58	0.20	3.0		ug/L	1	2/17/2012 10:02 AM
Beryllium	ND	0.090	1.0		ug/L	1	2/17/2012 10:02 AM
Cadmium	ND	0.23	3.0		ug/L	1	2/17/2012 10:02 AM
Cobalt	ND	0.31	3.0		ug/L	1	2/17/2012 10:02 AM
Copper	ND	0.53	5.0		ug/L	1	2/17/2012 10:02 AM
Lead	ND	1.5	10		ug/L	1	2/17/2012 10:02 AM
Molybdenum	12	0.49	5.0		ug/L	1	2/17/2012 10:02 AM
Nickel	ND	1.1	5.0		ug/L	1	2/17/2012 10:02 AM
Silver	ND	0.72	3.0		ug/L	1	2/17/2012 10:02 AM
Vanadium	15	0.19	3.0		ug/L	1	2/20/2012 04:21 PM
Zinc	ND	4.6	10		ug/L	1	2/17/2012 10:02 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

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	ND	3.0									

Sample ID: **LCS-38996** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **LCSW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	9.721	3.0	10.00	0	97.2	85	115				

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.013	3.0	10.00	0	100	75	125				

Sample ID: **N007288-001C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.042	3.0	10.00	0	100	75	125	10.01	0.292	20	

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	0.363	3.0									

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: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	ND	3.0									
Copper	1.080	5.0									
Lead	ND	10									
Molybdenum	3.250	5.0									
Nickel	ND	5.0									
Silver	ND	3.0									
Zinc	ND	10									

Sample ID: **LCS-38996** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **LCSW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.692	10	50.00	0	105	85	115				
Barium	51.478	3.0	50.00	0	103	85	115				
Beryllium	9.786	1.0	10.00	0	97.9	85	115				
Cadmium	10.191	3.0	10.00	0	102	85	115				
Cobalt	9.509	3.0	10.00	0	95.1	85	115				
Copper	11.354	5.0	10.00	0	114	85	115				
Lead	51.138	10	50.00	0	102	85	115				
Molybdenum	50.962	5.0	50.00	0	102	85	115				
Nickel	48.559	5.0	50.00	0	97.1	85	115				
Silver	9.885	3.0	10.00	0	98.9	85	115				
Zinc	47.455	10	50.00	0	94.9	85	115				

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	57.973	10	50.00	0	116	75	125				
Barium	149.431	3.0	50.00	98.27	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

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CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	9.860	1.0	10.00	0.1860	96.7	75	125				
Cadmium	6.209	3.0	10.00	0	62.1	75	125				S
Cobalt	8.424	3.0	10.00	0	84.2	75	125				
Copper	15.959	5.0	10.00	3.836	121	75	125				
Lead	39.526	10	50.00	0	79.1	75	125				
Molybdenum	67.744	5.0	50.00	18.63	98.2	75	125				
Nickel	43.845	5.0	50.00	0	87.7	75	125				
Silver	18.262	3.0	10.00	6.967	113	75	125				
Zinc	186.111	10	50.00	133.8	105	75	125				

Sample ID: **N007288-001C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	56.967	10	50.00	0	114	75	125	57.97	1.75	20	
Barium	148.222	3.0	50.00	98.27	99.9	75	125	149.4	0.812	20	
Beryllium	9.826	1.0	10.00	0.1860	96.4	75	125	9.860	0.345	20	
Cadmium	6.054	3.0	10.00	0	60.5	75	125	6.209	2.53	20	S
Cobalt	8.455	3.0	10.00	0	84.6	75	125	8.424	0.372	20	
Copper	15.726	5.0	10.00	3.836	119	75	125	15.96	1.47	20	
Lead	38.538	10	50.00	0	77.1	75	125	39.53	2.53	20	
Molybdenum	66.999	5.0	50.00	18.63	96.7	75	125	67.74	1.11	20	
Nickel	43.840	5.0	50.00	0	87.7	75	125	43.84	0.00984	20	
Silver	18.080	3.0	10.00	6.967	111	75	125	18.26	0.998	20	
Zinc	184.229	10	50.00	133.8	101	75	125	186.1	1.02	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

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *13-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007297-001

Client Sample ID: MW-12-185
Collection Date: 2/9/2012 2:31:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120216B**	QC Batch: **39051**			PrepDate:		**2/16/2012**	Analyst: **CEI**
Arsenic	47	0.0025	0.10		µg/L	1	2/16/2012 05:21 PM
Selenium	11	0.018	0.50		µg/L	1	2/16/2012 05:21 PM
Thallium	ND	0.20	2.5		µg/L	5	2/17/2012 12:49 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		

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-090-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 11:02:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120216B**	QC Batch: **39051**			PrepDate:	**2/16/2012**		Analyst: **CEI**
Molybdenum	20	0.014	0.50		µg/L	1	2/16/2012 05:34 PM
Selenium	1.3	0.018	0.50		µg/L	1	2/16/2012 05:34 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		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-33-150-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 8:07:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120216B**	QC Batch: **39051**			PrepDate:		**2/16/2012**	Analyst: **CEI**
Arsenic	1.8	0.0025	0.10		µg/L	1	2/16/2012 05:55 PM
Manganese	5.1	0.091	0.50		µg/L	1	2/16/2012 05:55 PM
Molybdenum	39	0.070	2.5		µg/L	5	2/16/2012 06:28 PM
Selenium	0.62	0.018	0.50		µg/L	1	2/16/2012 05:55 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007297-004

Client Sample ID: MW-33-210-185
Collection Date: 2/9/2012 9:21:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120216B**	QC Batch: **39051**			PrepDate:	**2/16/2012**		Analyst: **CEI**
Arsenic	1.2	0.012	0.50		µg/L	5	2/16/2012 06:09 PM
Manganese	5.5	0.091	0.50		µg/L	1	2/16/2012 06:05 PM
Molybdenum	17	0.35	12		µg/L	25	2/16/2012 07:21 PM
Selenium	ND	0.090	2.5		µg/L	5	2/16/2012 06:09 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: *13-Mar-12*

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39051**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/16/2012**	RunNo: **83237**
Client ID: **PBW**	Batch ID: **39051**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/17/2012**	SeqNo: **1364315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	ND	0.50									

Sample ID: **LCS-39051**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/16/2012**	RunNo: **83237**
Client ID: **LCSW**	Batch ID: **39051**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/17/2012**	SeqNo: **1364316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.129	0.50	10.00	0	101	85	115				

Sample ID: **N007330-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/16/2012**	RunNo: **83237**
Client ID: **ZZZZZZ**	Batch ID: **39051**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/17/2012**	SeqNo: **1364320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.249	0.50	10.00	0	102	75	125				

Sample ID: **N007330-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/16/2012**	RunNo: **83237**
Client ID: **ZZZZZZ**	Batch ID: **39051**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/17/2012**	SeqNo: **1364321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.163	0.50	10.00	0	102	75	125	10.25	0.850	20	

Sample ID: **MB-39051**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/16/2012**	RunNo: **83380**
Client ID: **PBW**	Batch ID: **39051**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/16/2012**	SeqNo: **1366245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.015	0.10									
Manganese	ND	0.50									
Molybdenum	0.053	0.50									
Selenium	ND	0.50									

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		

REVISION 1, 03/13/12

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **LCS-39051** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **LCSW** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.830	0.10	10.00	0	98.3	85	115				
Manganese	96.822	0.50	100.0	0	96.8	85	115				
Molybdenum	9.848	0.50	10.00	0	98.5	85	115				
Selenium	9.593	0.50	10.00	0	95.9	85	115				

Sample ID: **N007330-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.845	0.10	10.00	2.805	100	75	125				
Manganese	133.705	0.50	100.0	41.65	92.1	75	125				
Molybdenum	16.548	0.50	10.00	5.852	107	75	125				
Selenium	9.666	0.50	10.00	0.8365	88.3	75	125				

Sample ID: **N007330-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.727	0.10	10.00	2.805	99.2	75	125	12.84	0.926	20	
Manganese	131.139	0.50	100.0	41.65	89.5	75	125	133.7	1.94	20	
Molybdenum	16.328	0.50	10.00	5.852	105	75	125	16.55	1.34	20	
Selenium	9.904	0.50	10.00	0.8365	90.7	75	125	9.666	2.43	20	

REVISION 1, 03/13/12

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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-185
Lab Order:	N007297	**Collection Date:**	2/9/2012 2:31:00 PM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007297-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120214A**	QC Batch: **39007**			PrepDate:	**2/13/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	2/14/2012

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.

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39007** SampType: **LCS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/13/2012** RunNo: **83188**
Client ID: **LCSW** Batch ID: **39007** TestNo: **EPA 7470A** Analysis Date: **2/14/2012** SeqNo: **1364012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.487	0.20	5.000	0	89.7	85	115				

Sample ID: **MB-39007** SampType: **MBLK** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/13/2012** RunNo: **83188**
Client ID: **PBW** Batch ID: **39007** TestNo: **EPA 7470A** Analysis Date: **2/14/2012** SeqNo: **1364014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/13/2012** RunNo: **83188**
Client ID: **ZZZZZZ** Batch ID: **39007** TestNo: **EPA 7470A** Analysis Date: **2/14/2012** SeqNo: **1364022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.403	0.20	5.000	0	88.1	75	125				

Sample ID: **N007288-001C-MSD** SampType: **MSD** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/13/2012** RunNo: **83188**
Client ID: **ZZZZZZ** Batch ID: **39007** TestNo: **EPA 7470A** Analysis Date: **2/14/2012** SeqNo: **1364023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.274	0.20	5.000	0	85.5	75	125	4.403	2.97	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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CH2MHILL

CHAIN OF CUSTODY RECORD

2/9/2012 3:53:01 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/9/2012
COC Number: 6

			Container:	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C			
			Filtered:	Field	Field	Field	Field	NA	NA	NA			
			Holding Time:	180	180	180	180	2	2	2			
	DATE	TIME	Matrix	Arsenic (6020A) Field Filtered	Metals (6010B/6020A/7470Adis) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	Anions (E300.0) Nitrate,Fluoride		Number of Containers	COMMENTS
MW-12-185	2/9/2012	14:31	Water		X			X	X		N007297-1	2	
MW-33-090-185	2/9/2012	11:02	Water			X		X		X	-2	2	
MW-33-150-185	2/9/2012	8:07	Water	X			X	X		X	-3	2	
MW-33-210-185	2/9/2012	9:21	Water	X			X	X		X	-4	2	
MW-50-200-185	2/9/2012	15:28	Water					X			-5	1	
											TOTAL NUMBER OF CONTAINERS	9	

	Signatures	Date/Time
Approved by		2-9-12 1639
Sampled by		
Relinquished by		
Received by		2/9/12 @ 1639
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes / no 2.9°C
Airbill No: 105 1242
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Feb 6-22, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

2/9/2012 3:53:01 PM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/9/2012
COC Number: 6

			Container:	500 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C			
			Filtered:	Field	Field	Field	Field	NA	NA	NA			
			Holding Time:	180	180	180	180	2	2	2			
	DATE	TIME	Matrix	Arsenic (6020A) Field Filtered	Metals (6010B/6020A/7470Adis) Field Filtered	Metals (6020AFF) Field Filtered Mo,Se	Metals (6020AFF) Field Filtered Mo,Se,Mn	Specific Conductance (E120.1)	Anions (E300.0) Nitrate	Anions (E300.0) Nitrate,Fluoride		Number of Containers	COMMENTS
MW-12-185	2/9/2012	14:31	Water		X			X	X			2	
MW-33-090-185	2/9/2012	11:02	Water			X		X		X		2	
MW-33-150-185	2/9/2012	8:07	Water	X			X	X		X		2	
MW-33-210-185	2/9/2012	9:21	Water	X			X	X		X		2	
MW-50-200-185	2/9/2012	15:28	Water					X				1	
											TOTAL NUMBER OF CONTAINERS	9	

	Signatures	Date/Time
Approved by		
Sampled by		2-9-12 1639
Relinquished by		
Received by		2/9/12 @ 1639
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes / no 2.9°C
Airbill No: ICE 1242
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
Feb 6-22, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On:	2/9/2012	Workorder:	N007297
Rep sample Temp (Deg C):	2.9	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 2/10/12

Reviewed By: [illegible]

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:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007297-001B**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	1.960 * 5
	=	9.8 mg/L

Reporting **N007297-001B**, results in two significant figures,

Nitrate, mg/L	**=**	**9.8 mg/L**

ms 2/23/12

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Aqueous

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Iron, ug/L = A * DF * PF*1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007297-001A**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.05789* 1 * (25/25)*1000

= 57.89ug/L

Reporting results in two significant figures,

Barium, ug/L = 58

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007297
Test Method: EPA 6010
Analysis Date: 02/17/12

Matrix: Water
Batch No.: 38996

Instrument ID: ICP-01/02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007288-001B-DT 5X	Antimony	µg/L	0	NA	0		10
N007288-001B-DT 5X	Barium	µg/L	99.82141	PASS	98.271417	-1.58%	10
N007288-001B-DT 5X	Beryllium	µg/L	0.57934	NA	0.186031		10
N007288-001B-DT 5X	Cadmium	mg/L	0	NA	0		10
N007288-001B-DT 5X	Cobalt	µg/L	0	NA	0		10
N007288-001B-DT 5X	Copper	µg/L	4.058185	PASS	3.835882	-5.80%	10
N007288-001B-DT 5X	Manganese	µg/L	675.007965	PASS	627.727274	-7.53%	10
N007288-001B-DT 5X	Molybdenum	µg/L	22.585575	NA	18.633053	-21.21%	10
N007288-001B-DT 5X	Nickel	µg/L	0	NA	0		10
N007288-001B-DT 5X	Silver	µg/L	5.732825	NA	6.966748	17.71%	10
N007288-001B-DT 5X	Lead	µg/L	0	NA	0		10
N007288-001B-DT 5X	Zinc	µg/L	130.123395	PASS	133.801315	2.75%	10

Note: NA - Not Applicable

Post Spike not Applicable since DT passes criteria.

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007297
Test Method: EPA 6010
Analysis Date: 02/20/12

Matrix: Water
Batch No.: 38996

Instrument ID: ICP-01/02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007288-001B-DT 5X	Vanadium	µg/L	0	NA	0		10

Note: NA - Not Applicable

Post Spike not Applicable since DT passes criteria.

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007288-001C-PS 2** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	1036.157	6.0	1000	0	104	75	125				

Sample ID: **N007288-001C-PS 2** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	275.019	20	250.0	0	110	75	125				
Barium	346.015	6.0	250.0	98.27	99.1	75	125				
Beryllium	243.883	2.0	250.0	0.1860	97.5	75	125				
Cadmium	249.929	6.0	250.0	0	100	75	125				
Cobalt	240.093	6.0	250.0	0	96.0	75	125				
Copper	269.106	10	250.0	3.836	106	75	125				
Lead	221.741	20	250.0	0	88.7	75	125				
Molybdenum	262.293	10	250.0	18.63	97.5	75	125				
Nickel	228.766	10	250.0	0	91.5	75	125				
Silver	263.239	6.0	250.0	6.967	103	75	125				
Zinc	386.723	20	250.0	133.8	101	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

001121

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:

Arsenic, mg/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 **N007297-001A**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 46.8053* 1 * (25/25)

= 46.8053ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 47

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007297
Test Method: EPA 6020
Analysis Date: 2/16/2012 & 2/17/12

Matrix: Water
Batch No.: 39051

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Se & Tl,. The calc. values were < 25X the RL. PS @ 2x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007330-001B-DT 5X	Arsenic	µg/L	2.926333661	PASS	2.805339515	-4.31%	10
	Chromium	µg/L	88.04691078	PASS	84.76378774	-3.87%	10
	Manganese	µg/L	44.14202073	PASS	41.65283997	-5.98%	10
	Molybdenum	µg/L	5.729497484	PASS	5.851525946	2.09%	10
	Selenium	µg/L	0.732718026	NA	0.83645084	12.40%	10
	Thallium	µg/L	0.0000	NA	0.0000		10

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007297
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007330-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83237**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	20.838	1.0	20.00	0	104	75	125				

Sample ID: **N007330-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83380**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.963	0.20	20.00	2.805	101	75	125				
Chromium	105.999	1.0	20.00	84.76	106	75	125				
Manganese	232.226	1.0	200.0	41.65	95.3	75	125				
Molybdenum	27.484	1.0	20.00	5.852	108	75	125				
Selenium	19.602	1.0	20.00	0.8365	93.8	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		

00154

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:

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 coversion factor.

For Sample **N007297-001A**, the concentration in ug/L is calculated as follows:

Mercury, ug/L	=	0 * 1 * (50/25) * 0.5
	=	0.0 ug/L

Reporting results in two significant figures,

Mercury, ug/L	**=**	**0.0**

Mercury, ug/L	**=**	**ND**

AA1 2/24/2012 5:00:21 PM

February 28, 2012

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.: N007307

RE: PG&E Topock, 417981.ER.02.DM

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 10, 2012 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, 417981.ER.02.DM
Lab Order: N007307

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 Cadmium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Chromium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 417981.ER.02.DM
Lab Order: N007307
Contract No: 2012-EASTRAV

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007307-001A	MW-112-009	Water	2/10/2012 12:49:00 PM	2/10/2012	2/28/2012
N007307-001B	MW-112-009	Water	2/10/2012 12:49:00 PM	2/10/2012	2/28/2012
N007307-001C	MW-112-009	Water	2/10/2012 12:49:00 PM	2/10/2012	2/28/2012
N007307-002A	MW-57-185-009	Water	2/10/2012 12:47:00 PM	2/10/2012	2/28/2012
N007307-002B	MW-57-185-009	Water	2/10/2012 12:47:00 PM	2/10/2012	2/28/2012
N007307-002C	MW-57-185-009	Water	2/10/2012 12:47:00 PM	2/10/2012	2/28/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-112-009
Lab Order:	N007307	**Collection Date:**	2/10/2012 12:49:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007307-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120210C**	QC Batch: **R83244**			PrepDate:			Analyst: **MCS**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	2/10/2012

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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007307
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007307-002

Client Sample ID: MW-57-185-009
Collection Date: 2/10/2012 12:47:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120210C**	QC Batch: **R83244**			PrepDate:			Analyst: **MCS**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	2/10/2012

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: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007307
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83244** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83244**
Client ID: **LCSW** Batch ID: **R83244** TestNo: **EPA 120.1** Analysis Date: **2/10/2012** SeqNo: **1361013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1411.000	0.10	1411	0	100	85	115				

Sample ID: **N007307-001C-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83244**
Client ID: **ZZZZZZ** Batch ID: **R83244** TestNo: **EPA 120.1** Analysis Date: **2/10/2012** SeqNo: **1361015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17150.000	0.10						17160	0.0583	10	

Sample ID: **N007308-001A-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83244**
Client ID: **ZZZZZZ** Batch ID: **R83244** TestNo: **EPA 120.1** Analysis Date: **2/10/2012** SeqNo: **1361018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	26020.000	0.20	9986	13960	121	75	125				

Sample ID: **N007308-001A-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83244**
Client ID: **ZZZZZZ** Batch ID: **R83244** TestNo: **EPA 120.1** Analysis Date: **2/10/2012** SeqNo: **1361019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	25980.000	0.20	9986	13960	120	75	125	26020	0.154	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.

ANALYTICAL RESULTS

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-112-009
Lab Order:	N007307	**Collection Date:**	2/10/2012 12:49:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007307-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120211A**	QC Batch: **R83256**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	2/11/2012 11:15 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-185-009
Lab Order:	N007307	**Collection Date:**	2/10/2012 12:47:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007307-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120211A**	QC Batch: **R83256**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	2/11/2012 11:27 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.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007307
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R83256_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83256**
Client ID: **PBW** Batch ID: **R83256** TestNo: **EPA 300.0** Analysis Date: **2/11/2012** SeqNo: **1361225**

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-R83256_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83256**
Client ID: **LCSW** Batch ID: **R83256** TestNo: **EPA 300.0** Analysis Date: **2/11/2012** SeqNo: **1361226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.424	0.50	2.500	0	97.0	90	110				

Sample ID: **N007305-001DMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83256**
Client ID: **ZZZZZZ** Batch ID: **R83256** TestNo: **EPA 300.0** Analysis Date: **2/11/2012** SeqNo: **1361232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	5.524	1.0	5.000	0.6220	98.0	80	120				

Sample ID: **N007305-001DMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83256**
Client ID: **ZZZZZZ** Batch ID: **R83256** TestNo: **EPA 300.0** Analysis Date: **2/11/2012** SeqNo: **1361233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	5.378	1.0	5.000	0.6220	95.1	80	120	5.524	2.68	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

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007307
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007307-001

Client Sample ID: MW-112-009
Collection Date: 2/10/2012 12:49:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_120217C**	QC Batch: **38996**			PrepDate:		**2/15/2012**	Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	2/17/2012 10:13 AM
Barium	54	0.20	3.0		ug/L	1	2/17/2012 10:13 AM
Beryllium	ND	0.090	1.0		ug/L	1	2/17/2012 10:13 AM
Cadmium	ND	0.23	3.0		ug/L	1	2/17/2012 10:13 AM
Cobalt	ND	0.31	3.0		ug/L	1	2/17/2012 10:13 AM
Copper	ND	0.53	5.0		ug/L	1	2/17/2012 10:13 AM
Lead	ND	1.5	10		ug/L	1	2/17/2012 10:13 AM
Manganese	500	1.7	10		ug/L	1	2/17/2012 10:13 AM
Molybdenum	72	0.49	5.0		ug/L	1	2/17/2012 10:13 AM
Nickel	ND	1.1	5.0		ug/L	1	2/17/2012 10:13 AM
Silver	4.5	0.72	3.0		ug/L	1	2/17/2012 10:13 AM
Vanadium	ND	0.19	3.0		ug/L	1	2/20/2012 04:28 PM
Zinc	ND	4.6	10		ug/L	1	2/17/2012 10:13 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-12*

CLIENT: CH2M HILL
Lab Order: N007307
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007307-002

Client Sample ID: MW-57-185-009
Collection Date: 2/10/2012 12:47:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_120217C**	QC Batch: **38996**			PrepDate:	**2/15/2012**		Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	2/17/2012 10:30 AM
Barium	51	0.20	3.0		ug/L	1	2/17/2012 10:30 AM
Beryllium	ND	0.090	1.0		ug/L	1	2/17/2012 10:30 AM
Cadmium	ND	0.23	3.0		ug/L	1	2/17/2012 10:30 AM
Cobalt	ND	0.31	3.0		ug/L	1	2/17/2012 10:30 AM
Copper	ND	0.53	5.0		ug/L	1	2/17/2012 10:30 AM
Lead	ND	1.5	10		ug/L	1	2/17/2012 10:30 AM
Manganese	470	1.7	10		ug/L	1	2/17/2012 10:30 AM
Molybdenum	69	0.49	5.0		ug/L	1	2/17/2012 10:30 AM
Nickel	ND	1.1	5.0		ug/L	1	2/17/2012 10:30 AM
Silver	4.4	0.72	3.0		ug/L	1	2/17/2012 10:30 AM
Vanadium	ND	0.19	3.0		ug/L	1	2/20/2012 04:40 PM
Zinc	ND	4.6	10		ug/L	1	2/17/2012 10:30 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.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007307
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	ND	3.0									

Sample ID: **LCS-38996** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **LCSW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	9.721	3.0	10.00	0	97.2	85	115				

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.013	3.0	10.00	0	100	75	125				

Sample ID: **N007288-001C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.042	3.0	10.00	0	100	75	125	10.01	0.292	20	

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	0.363	3.0									

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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

0000 11 1

CLIENT: CH2M HILL
Work Order: N007307
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	ND	3.0									
Copper	1.080	5.0									
Lead	ND	10									
Manganese	ND	10									
Molybdenum	3.250	5.0									
Nickel	ND	5.0									
Silver	ND	3.0									
Zinc	ND	10									

Sample ID: **LCS-38996** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **LCSW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.692	10	50.00	0	105	85	115				
Barium	51.478	3.0	50.00	0	103	85	115				
Beryllium	9.786	1.0	10.00	0	97.9	85	115				
Cadmium	10.191	3.0	10.00	0	102	85	115				
Cobalt	9.509	3.0	10.00	0	95.1	85	115				
Copper	11.354	5.0	10.00	0	114	85	115				
Lead	51.138	10	50.00	0	102	85	115				
Manganese	103.499	10	100.0	0	103	85	115				
Molybdenum	50.962	5.0	50.00	0	102	85	115				
Nickel	48.559	5.0	50.00	0	97.1	85	115				
Silver	9.885	3.0	10.00	0	98.9	85	115				
Zinc	47.455	10	50.00	0	94.9	85	115				

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364916**

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	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		

000015

CLIENT: CH2M HILL
Work Order: N007307
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	57.973	10	50.00	0	116	75	125				
Barium	149.431	3.0	50.00	98.27	102	75	125				
Beryllium	9.860	1.0	10.00	0.1860	96.7	75	125				
Cadmium	6.209	3.0	10.00	0	62.1	75	125				S
Cobalt	8.424	3.0	10.00	0	84.2	75	125				
Copper	15.959	5.0	10.00	3.836	121	75	125				
Lead	39.526	10	50.00	0	79.1	75	125				
Manganese	723.154	10	100.0	627.7	95.4	75	125				
Molybdenum	67.744	5.0	50.00	18.63	98.2	75	125				
Nickel	43.845	5.0	50.00	0	87.7	75	125				
Silver	18.262	3.0	10.00	6.967	113	75	125				
Zinc	186.111	10	50.00	133.8	105	75	125				

Sample ID: **N007288-001C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	56.967	10	50.00	0	114	75	125	57.97	1.75	20	
Barium	148.222	3.0	50.00	98.27	99.9	75	125	149.4	0.812	20	
Beryllium	9.826	1.0	10.00	0.1860	96.4	75	125	9.860	0.345	20	
Cadmium	6.054	3.0	10.00	0	60.5	75	125	6.209	2.53	20	S
Cobalt	8.455	3.0	10.00	0	84.6	75	125	8.424	0.372	20	
Copper	15.726	5.0	10.00	3.836	119	75	125	15.96	1.47	20	
Lead	38.538	10	50.00	0	77.1	75	125	39.53	2.53	20	
Manganese	716.915	10	100.0	627.7	89.2	75	125	723.2	0.867	20	
Molybdenum	66.999	5.0	50.00	18.63	96.7	75	125	67.74	1.11	20	
Nickel	43.840	5.0	50.00	0	87.7	75	125	43.84	0.00984	20	
Silver	18.080	3.0	10.00	6.967	111	75	125	18.26	0.998	20	
Zinc	184.229	10	50.00	133.8	101	75	125	186.1	1.02	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

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00016

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-112-009
Lab Order:	N007307	**Collection Date:**	2/10/2012 12:49:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007307-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120216B**	QC Batch: **39051**			PrepDate:		**2/16/2012**	Analyst: **CEI**
Arsenic	13	0.012	0.50		µg/L	5	2/16/2012 07:46 PM
Chromium	4.7	0.040	2.5		µg/L	5	2/16/2012 07:46 PM
Selenium	ND	0.090	2.5		µg/L	5	2/16/2012 07:46 PM
Thallium	ND	0.98	12		µg/L	25	2/17/2012 01:28 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-12*

CLIENT: CH2M HILL
Lab Order: N007307
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007307-002

Client Sample ID: MW-57-185-009
Collection Date: 2/10/2012 12:47:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120216B**	QC Batch: **39051**			PrepDate:	**2/16/2012**		Analyst: **CEI**
Arsenic	12	0.012	0.50		µg/L	5	2/16/2012 08:00 PM
Chromium	4.8	0.040	2.5		µg/L	5	2/16/2012 08:00 PM
Selenium	ND	0.090	2.5		µg/L	5	2/16/2012 08:00 PM
Thallium	ND	0.20	2.5		µg/L	5	2/17/2012 01:33 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.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007307
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39051** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83237**
Client ID: **PBW** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	ND	0.50									

Sample ID: **LCS-39051** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83237**
Client ID: **LCSW** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.129	0.50	10.00	0	101	85	115				

Sample ID: **N007330-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83237**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.249	0.50	10.00	0	102	75	125				

Sample ID: **N007330-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83237**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.163	0.50	10.00	0	102	75	125	10.25	0.850	20	

Sample ID: **MB-39051** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **PBW** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.015	0.10									
Chromium	ND	0.50									
Selenium	ND	0.50									

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

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CLIENT: CH2M HILL
Work Order: N007307
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **LCS-39051** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **LCSW** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.830	0.10	10.00	0	98.3	85	115				
Chromium	9.391	0.50	10.00	0	93.9	85	115				
Selenium	9.593	0.50	10.00	0	95.9	85	115				

Sample ID: **N007330-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.845	0.10	10.00	2.805	100	75	125				
Chromium	94.260	0.50	10.00	84.76	95.0	75	125				
Selenium	9.666	0.50	10.00	0.8365	88.3	75	125				

Sample ID: **N007330-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.727	0.10	10.00	2.805	99.2	75	125	12.84	0.926	20	
Chromium	92.145	0.50	10.00	84.76	73.8	75	125	94.26	2.27	20	S
Selenium	9.904	0.50	10.00	0.8365	90.7	75	125	9.666	2.43	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

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000220

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-112-009
Lab Order:	N007307	**Collection Date:**	2/10/2012 12:49:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007307-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120214A**	QC Batch: **39007**			PrepDate:	**2/13/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	2/14/2012

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-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-185-009
Lab Order:	N007307	**Collection Date:**	2/10/2012 12:47:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007307-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120214A**	QC Batch: **39007**			PrepDate:	**2/13/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	2/14/2012

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: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007307
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39007** SampType: **LCS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/13/2012** RunNo: **83188**
Client ID: **LCSW** Batch ID: **39007** TestNo: **EPA 7470A** Analysis Date: **2/14/2012** SeqNo: **1364012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.487	0.20	5.000	0	89.7	85	115				

Sample ID: **MB-39007** SampType: **MBLK** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/13/2012** RunNo: **83188**
Client ID: **PBW** Batch ID: **39007** TestNo: **EPA 7470A** Analysis Date: **2/14/2012** SeqNo: **1364014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/13/2012** RunNo: **83188**
Client ID: **ZZZZZZ** Batch ID: **39007** TestNo: **EPA 7470A** Analysis Date: **2/14/2012** SeqNo: **1364022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.403	0.20	5.000	0	88.1	75	125				

Sample ID: **N007288-001C-MSD** SampType: **MSD** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/13/2012** RunNo: **83188**
Client ID: **ZZZZZZ** Batch ID: **39007** TestNo: **EPA 7470A** Analysis Date: **2/14/2012** SeqNo: **1364023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.274	0.20	5.000	0	85.5	75	125	4.403	2.97	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

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000025

CH2MHILL

CHAIN OF CUSTODY RECORD

2/10/2012 1:20:13 PM

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/10/2012
COC Number: 1

				Extra (*)	Metals (6010B/6020A/7470Adis) Field Filtered Title 22 metals	Metals (6010BFF) Field Filtered Mn	Specific Conductance (E120.1)	Anions (E300.0) NO3		Number of Containers	COMMENTS
Container:				1Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
Preservatives:				4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
Filtered:				NA	Field	Field	NA	NA			
Holding Time:				30	180	180	2	2			
	DATE	TIME	Matrix								
MW-112-009	2/10/2012	12:49	Water	X	X	X	X	X	N007307-1	4	
MW-57-185-009	2/10/2012	12:47	Water	X	X	X	X	X	↓ -2	4	
									TOTAL NUMBER OF CONTAINERS	8	

	Signatures	Date/Time
Approved by		
Sampled by	Tamara Hart	
Relinquished by		2/10/12 1304
Received by		2/10/12 @ 1550
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes no 1.6°C
Airbill No: ICE IP#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
February, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

2/10/2012 1:20:13 PM

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/10/2012
COC Number: 1

				Extra (*)	Metals (6010B/6020A/7470Adis) Field Filtered Title 22 metals	Metals (6010BFF) Field Filtered Mn	Specific Conductance (E120.1)	Anions (E300.0) NO3		Number of Containers	COMMENTS
Container:				1 Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
Preservatives:				4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
Filtered:				NA	Field	Field	NA	NA			
Holding Time:				30	180	180	2	2			
	DATE	TIME	Matrix								
MW-112-009	2/10/2012	12:49	Water	X	X	X	X	X		4	
MW-57-185-009	2/10/2012	12:47	Water	X	X	X	X	X		4	
									TOTAL NUMBER OF CONTAINERS	8	

	Signatures	Date/Time
Approved by		
Sampled by	Tamara Hart	
Relinquished by		2/10/12 1324
Received by		2/10/12 @ 1550
Relinquished by		
Received by		

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
Marlon

Special Instructions:
February, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On:	2/10/2012	Workorder:	N007307
Rep sample Temp (Deg C):	1.6	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	Courier		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 2/10/12

Reviewed By:

00027

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On:	2/10/2012	Workorder:	N007307
Rep sample Temp (Deg C):	1.6	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	Courier		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 2/10/12

Reviewed By:

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:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007307-001C**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	0.000 * 5
	=	0 mg/L

Since the reporting limit is 2.5 mg/L, therefore

Nitrate, mg/L	**=**	**ND**

ms 2/20/12

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Aqueous

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Iron, ug/L = A * DF * PF*1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007307-001B**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.05385* 1 * (25/25)*1000

= 53.85ug/L

Reporting results in two significant figures,

Barium, ug/L = 54

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007307
Test Method: EPA 6010
Analysis Date: 02/17/12

Matrix: Water
Batch No.: 38996

Instrument ID: ICP-01/02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007288-001B-DT 5X	Antimony	µg/L	0	NA	0		10
N007288-001B-DT 5X	Barium	µg/L	99.82141	PASS	98.271417	-1.58%	10
N007288-001B-DT 5X	Beryllium	µg/L	0.57934	NA	0.186031		10
N007288-001B-DT 5X	Cadmium	mg/L	0	NA	0		10
N007288-001B-DT 5X	Cobalt	µg/L	0	NA	0		10
N007288-001B-DT 5X	Copper	µg/L	4.058185	PASS	3.835882	-5.80%	10
N007288-001B-DT 5X	Manganese	µg/L	675.007965	PASS	627.727274	-7.53%	10
N007288-001B-DT 5X	Molybdenum	µg/L	22.585575	NA	18.633053	-21.21%	10
N007288-001B-DT 5X	Nickel	µg/L	0	NA	0		10
N007288-001B-DT 5X	Silver	µg/L	5.732825	NA	6.966748	17.71%	10
N007288-001B-DT 5X	Lead	µg/L	0	NA	0		10
N007288-001B-DT 5X	Zinc	µg/L	130.123395	PASS	133.801315	2.75%	10

Note: NA - Not Applicable

Post Spike not Applicable since DT passes criteria.

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007307
Test Method: EPA 6010
Analysis Date: 02/20/12

Matrix: Water
Batch No.: 38996

Instrument ID: ICP-01/02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	QQual	SAMPrefval	%DIFF	%DIFFlimit
N007288-001B-DT 5X	Vanadium	µg/L	0	NA	0		10

Note: NA - Not Applicable

Post Spike not Applicable since DT passes criteria.

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007307
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007288-001C-PS 2** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	1036.157	6.0	1000	0	104	75	125				

Sample ID: **N007288-001C-PS 2** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	275.019	20	250.0	0	110	75	125				
Barium	346.015	6.0	250.0	98.27	99.1	75	125				
Beryllium	243.883	2.0	250.0	0.1860	97.5	75	125				
Cadmium	249.929	6.0	250.0	0	100	75	125				
Cobalt	240.093	6.0	250.0	0	96.0	75	125				
Copper	269.106	10	250.0	3.836	106	75	125				
Lead	221.741	20	250.0	0	88.7	75	125				
Manganese	1125.113	20	1000	627.7	49.7	75	125				S
Molybdenum	262.293	10	250.0	18.63	97.5	75	125				
Nickel	228.766	10	250.0	0	91.5	75	125				
Silver	263.239	6.0	250.0	6.967	103	75	125				
Zinc	386.723	20	250.0	133.8	101	75	125				

(S) Dilution Test of Manganese @ 5 x is within acceptance criteria
bs for 2/28/12

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		

00195

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:

Arsenic, mg/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 **N007307-001B**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 2.60372* 5 * (25/25)

= 13.01858ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 13

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007307
Test Method: EPA 6020
Analysis Date: 2/16/2012 & 2/17/12

Matrix: Water
Batch No.: 39051

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Se & Tl,. The calc. values were < 25X the RL. PS @ 2x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007330-001B-DT 5X	Arsenic	µg/L	2.926333661	PASS	2.805339515	-4.31%	10
	Chromium	µg/L	88.04691078	PASS	84.76378774	-3.87%	10
	Selenium	µg/L	0.732718026	NA	0.83645084	12.40%	10
	Thallium	µg/L	0.0000	NA	0.0000		10

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007307
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007330-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83237**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	20.838	1.0	20.00	0	104	75	125				

Sample ID: **N007330-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83380**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.963	0.20	20.00	2.805	101	75	125				
Chromium	105.999	1.0	20.00	84.76	106	75	125				
Selenium	19.602	1.0	20.00	0.8365	93.8	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 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:

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 coversion factor.

For Sample **N007307-001B**, the concentration in ug/L is calculated as follows:

Mercury, ug/L	=	0 * 1 * (50/25) * 0.5
	=	0.0 ug/L

Reporting results in two significant figures,

Mercury, ug/L	**=**	**0.0**

Mercury, ug/L	**=**	**ND**

AA1 2/24/2012 5:00:21 PM

February 28, 2012

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.: N007308

RE: PG&E Topock, 423575.MP.02.GM.0

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 10, 2012 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, 423575.MP.02.GM.0
Lab Order: N007308

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 6020:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Chromium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Advanced Technology Laboratories, Inc. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 423575.MP.02.GM.0
Lab Order: N007308
Contract No: 2012-GMP-185-

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007308-001A	MW-24BR-185	Water	2/10/2012 7:43:00 AM	2/10/2012	2/28/2012
N007308-002A	TW-01-185	Water	2/10/2012 10:00:00 AM	2/10/2012	2/28/2012
N007308-002B	TW-01-185	Water	2/10/2012 10:00:00 AM	2/10/2012	2/28/2012

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007308
Project: PG&E Topock, 423575.MP.02.GM.0
Lab ID: N007308-001

Client Sample ID: MW-24BR-185
Collection Date: 2/10/2012 7:43:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120210C**	QC Batch: **R83244**			PrepDate:			Analyst: **MCS**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	2/10/2012

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-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-01-185
Lab Order:	N007308	**Collection Date:**	2/10/2012 10:00:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007308-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120210C**	QC Batch: **R83244**			PrepDate:			Analyst: **MCS**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	2/10/2012

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: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007308
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83244** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83244**
Client ID: **LCSW** Batch ID: **R83244** TestNo: **EPA 120.1** Analysis Date: **2/10/2012** SeqNo: **1361013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1411.000	0.10	1411	0	100	85	115				

Sample ID: **N007307-001C-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83244**
Client ID: **ZZZZZZ** Batch ID: **R83244** TestNo: **EPA 120.1** Analysis Date: **2/10/2012** SeqNo: **1361015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17150.000	0.10						17160	0.0583	10	

Sample ID: **N007308-001A-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83244**
Client ID: **ZZZZZZ** Batch ID: **R83244** TestNo: **EPA 120.1** Analysis Date: **2/10/2012** SeqNo: **1361018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	26020.000	0.20	9986	13960	121	75	125				

Sample ID: **N007308-001A-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83244**
Client ID: **ZZZZZZ** Batch ID: **R83244** TestNo: **EPA 120.1** Analysis Date: **2/10/2012** SeqNo: **1361019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	25980.000	0.20	9986	13960	120	75	125	26020	0.154	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

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-01-185
Lab Order:	N007308	**Collection Date:**	2/10/2012 10:00:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007308-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120211A**	QC Batch: **R83256**			PrepDate:			Analyst: **QBM**
Nitrate as N	24	0.12	5.0		mg/L	10	2/11/2012 11:38 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.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007308
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R83256_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83256**
Client ID: **PBW** Batch ID: **R83256** TestNo: **EPA 300.0** Analysis Date: **2/11/2012** SeqNo: **1361225**

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-R83256_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83256**
Client ID: **LCSW** Batch ID: **R83256** TestNo: **EPA 300.0** Analysis Date: **2/11/2012** SeqNo: **1361226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.424	0.50	2.500	0	97.0	90	110				

Sample ID: **N007305-001DMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83256**
Client ID: **ZZZZZZ** Batch ID: **R83256** TestNo: **EPA 300.0** Analysis Date: **2/11/2012** SeqNo: **1361232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	5.524	1.0	5.000	0.6220	98.0	80	120				

Sample ID: **N007305-001DMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83256**
Client ID: **ZZZZZZ** Batch ID: **R83256** TestNo: **EPA 300.0** Analysis Date: **2/11/2012** SeqNo: **1361233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	5.378	1.0	5.000	0.6220	95.1	80	120	5.524	2.68	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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *28-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	TW-01-185
Lab Order:	N007308	**Collection Date:**	2/10/2012 10:00:00 AM
Project:	PG&E Topock, 423575.MP.02.GM.0	**Matrix:**	WATER
Lab ID:	N007308-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120217A**	QC Batch: **39051**			PrepDate:	**2/16/2012**		Analyst: **CEI**
Molybdenum	15	0.070	2.5		µg/L	5	2/17/2012 01:45 PM
Selenium	24	0.090	2.5		µg/L	5	2/16/2012 08:25 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: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007308
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39051** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **PBW** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.053	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-39051** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **LCSW** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	9.848	0.50	10.00	0	98.5	85	115				
Selenium	9.593	0.50	10.00	0	95.9	85	115				

Sample ID: **N007330-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	16.548	0.50	10.00	5.852	107	75	125				
Selenium	9.666	0.50	10.00	0.8365	88.3	75	125				

Sample ID: **N007330-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/16/2012** RunNo: **83380**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	16.328	0.50	10.00	5.852	105	75	125	16.55	1.34	20	
Selenium	9.904	0.50	10.00	0.8365	90.7	75	125	9.666	2.43	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

CH2MHILL

CHAIN OF CUSTODY RECORD

2/10/2012 10:51:42 AM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/10/2012
COC Number: 7

				Metals (6020AFF) Field Filtered Mo,Se	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COMMENTS
Container:				500 ml Poly	1 Liter Poly	1 Liter Poly			
Preservatives:				HNO3, 4°C	4°C	4°C			
Filtered:				Field	NA	NA			
Holding Time:				180	2	2			
DATE		TIME	Matrix						
MW-24BR-185	2/10/2012	7:43	Water		X		N007308-1	1	
TW-01-185	2/10/2012	10:00	Water	X	X	X	↓ -2	2	
							TOTAL NUMBER OF CONTAINERS	3	

	Signatures	Date/Time
Approved by		
Sampled by	Jamala Grant	
Relinquished by		2/10/12 1324
Received by		2/10/12 @1550
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes / no 1.6 °C
Airbill No: 1GE 1K#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
Feb 6-22, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

2/10/2012 10:51:42 AM

Project Name PG&E Topock
Location Topock
Project Manager Jay Piper
Sample Manager Shawn Duffy
Project Number 423575.MP.02.GM.0
Task Order
Project 2012-GMP-185-Q1
Turnaround Time 10 Days
Shipping Date: 2/10/2012
COC Number: 7

	DATE	TIME	Matrix	Metals (6020AFF) Field Filtered Mo,Se	Specific Conductance (E120.1)	Anions (E300.0) Nitrate		Number of Containers	COMMENTS
Container:				500 ml Poly	1 Liter Poly	1 Liter Poly			
Preservatives:				HNO3, 4°C	4°C	4°C			
Filtered:				Field	NA	NA			
Holding Time:				180	2	2			
MW-24BR-185	2/10/2012	7:43	Water		X			1	
TW-01-185	2/10/2012	10:00	Water	X	X	X		2	
							TOTAL NUMBER OF CONTAINERS	3	

	Signatures	Date/Time
Approved by		
Sampled by	Jamala Frank	
Relinquished by		2/10/12 1324
Received by	[signature]	2/10/12 @1550
Relinquished by		
Received by		

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
Marlon

Special Instructions:
Feb 6-22, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On:	2/10/2012	Workorder:	N007308
Rep sample Temp (Deg C):	1.6	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	Courier		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 2/10/12

Reviewed By:

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:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

2B Nitrate

For **N007308-0~~01C~~**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	2.350 * 10
	=	23.5 mg/L

2B Nitrate

Reporting **N007308-0~~01C~~**, results in two significant figures,

Nitrate, mg/L	**=**	**24 mg/L**

JMS 2/20/12

Sample Calculation

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Aqueous

FORMULA:

Calculate the Selenium concentration, in ug/L, in the original sample as follows:

Selenium, mg/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 **N007308-002A**, the concentration in ug/L is calculated as follows:

Selenium, ug/L = 4.7508* 5 * (25/25)

= 23.75399ug/L

Reporting results in two significant figures,

Selenium, ug/L = 24

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007308
Test Method: EPA 6020
Analysis Date: 2/16/2012 & 2/17/12

Matrix: Water
Batch No.: 39051

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Se,. The calc. values were < 25X the RL. PS @ 2x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007330-001B-DT 5X	Molybdenum	µg/L	5.729497484	PASS	5.851525946	2.09%	10
N007330-001B-DT 5X	Selenium	µg/L	0.732718026	NA	0.83645084	12.40%	10

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007308
Project: PG&E Topock, 423575.MP.02.GM.0

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007330-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83380**
Client ID: **ZZZZZZ** Batch ID: **39051** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2012** SeqNo: **1366249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	27.484	1.0	20.00	5.852	108	75	125				
Selenium	19.602	1.0	20.00	0.8365	93.8	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		

March 05, 2012

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.: N007319

RE: PG&E Topock, 417981.ER.02.DM

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 13, 2012 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.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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 gsgesmundt

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:** *29-Feb-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 417981.ER.02.DM
Lab Order: N007319

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.

Sample N007319-001D for metals analysis was lab filtered through 0.45 micron filter paper .

Sample N007319-001E for metals analysis was lab filtered through 0.1 micron filter paper .

Analytical Comments for EPA 6010B:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Cadmium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium 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 Selenium ; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Advanced Technology Laboratories, Inc. 3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

Date: *29-Feb-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 417981.ER.02.DM
Lab Order: N007319
Contract No: 2012-EASTRAV

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007319-001A	MW-63-065-009	Water	2/13/2012 3:13:00 PM	2/13/2012	2/29/2012
N007319-001B	MW-63-065-009	Water	2/13/2012 3:13:00 PM	2/13/2012	2/29/2012
N007319-001C	MW-63-065-009	Water	2/13/2012 3:13:00 PM	2/13/2012	2/29/2012
N007319-001D	MW-63-065-009	Water	2/13/2012 3:13:00 PM	2/13/2012	2/29/2012
N007319-001E	MW-63-065-009	Water	2/13/2012 3:13:00 PM	2/13/2012	2/29/2012
N007319-002A	MW-64BR-UPR-150-009	Water	2/13/2012 2:00:00 PM	2/13/2012	2/29/2012
N007319-002B	MW-64BR-UPR-150-009	Water	2/13/2012 2:00:00 PM	2/13/2012	2/29/2012
N007319-002C	MW-64BR-UPR-150-009	Water	2/13/2012 2:00:00 PM	2/13/2012	2/29/2012
N007319-002D	MW-64BR-UPR-150-009	Water	2/13/2012 2:00:00 PM	2/13/2012	2/29/2012
N007319-002E	MW-64BR-UPR-150-009	Water	2/13/2012 2:00:00 PM	2/13/2012	2/29/2012
N007319-003A	MW-72-080-009	Water	2/13/2012 11:55:00 AM	2/13/2012	2/29/2012
N007319-003B	MW-72-080-009	Water	2/13/2012 11:55:00 AM	2/13/2012	2/29/2012
N007319-003C	MW-72-080-009	Water	2/13/2012 11:55:00 AM	2/13/2012	2/29/2012
N007319-003D	MW-72-080-009	Water	2/13/2012 11:55:00 AM	2/13/2012	2/29/2012
N007319-003E	MW-72-080-009	Water	2/13/2012 11:55:00 AM	2/13/2012	2/29/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-009
Lab Order:	N007319	**Collection Date:**	2/13/2012 3:13:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007319-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120213A**	QC Batch: **R83245**			PrepDate:			Analyst: **MCS**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	2/13/2012

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.

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Advanced Technology Laboratories, Inc.

Date: *29-Feb-12*

CLIENT: CH2M HILL
Work Order: N007319
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83245** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83245**
Client ID: **LCSW** Batch ID: **R83245** TestNo: **EPA 120.1** Analysis Date: **2/13/2012** SeqNo: **1361021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	9980.000	0.10	9980	0	100	85	115				

Sample ID: **N007319-001C-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83245**
Client ID: **ZZZZZZ** Batch ID: **R83245** TestNo: **EPA 120.1** Analysis Date: **2/13/2012** SeqNo: **1361023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7150.000	0.10						7160	0.140	10	

Sample ID: **N007319-002E-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83245**
Client ID: **ZZZZZZ** Batch ID: **R83245** TestNo: **EPA 120.1** Analysis Date: **2/13/2012** SeqNo: **1361025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	22260.000	0.20	9986	12080	102	75	125				

Sample ID: **N007319-002E-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83245**
Client ID: **ZZZZZZ** Batch ID: **R83245** TestNo: **EPA 120.1** Analysis Date: **2/13/2012** SeqNo: **1361026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	21640.000	0.20	9986	12080	95.7	75	125	22260	2.82	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		

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-009
Lab Order:	N007319	**Collection Date:**	2/13/2012 3:13:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007319-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120214A**	QC Batch: **R83281**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.024	1.0		mg/L	2	2/14/2012 11:11 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.

Date: *29-Feb-12*

CLIENT: CH2M HILL
Work Order: N007319
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R83281_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83281**
Client ID: **PBW** Batch ID: **R83281** TestNo: **EPA 300.0** Analysis Date: **2/14/2012** SeqNo: **1362016**

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-R83281_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83281**
Client ID: **LCSW** Batch ID: **R83281** TestNo: **EPA 300.0** Analysis Date: **2/14/2012** SeqNo: **1362017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.446	0.50	2.500	0	97.8	90	110				

Sample ID: **N007319-001CDUP** SampType: **DUP** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83281**
Client ID: **ZZZZZZ** Batch ID: **R83281** TestNo: **EPA 300.0** Analysis Date: **2/14/2012** SeqNo: **1362020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	0.820	1.0						0.8140	0	20	

Sample ID: **N007319-003EMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83281**
Client ID: **ZZZZZZ** Batch ID: **R83281** TestNo: **EPA 300.0** Analysis Date: **2/14/2012** SeqNo: **1362021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	13.125	2.5	12.50	1.145	95.8	80	120				

Sample ID: **N007319-003EMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83281**
Client ID: **ZZZZZZ** Batch ID: **R83281** TestNo: **EPA 300.0** Analysis Date: **2/14/2012** SeqNo: **1362022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	13.210	2.5	12.50	1.145	96.5	80	120	13.12	0.646	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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Feb-12*

CLIENT: CH2M HILL
Lab Order: N007319
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007319-001D

Client Sample ID: MW-63-065-009
Collection Date: 2/13/2012 3:13:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_120217C**	QC Batch: **38996**				PrepDate:	**2/15/2012**	Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	2/17/2012 10:41 AM
Barium	28	0.20	3.0		ug/L	1	2/17/2012 10:41 AM
Beryllium	ND	0.090	1.0		ug/L	1	2/17/2012 10:41 AM
Cadmium	ND	0.23	3.0		ug/L	1	2/17/2012 10:41 AM
Cobalt	ND	0.31	3.0		ug/L	1	2/17/2012 10:41 AM
Copper	5.6	0.53	5.0		ug/L	1	2/17/2012 10:41 AM
Lead	ND	1.5	10		ug/L	1	2/17/2012 10:41 AM
Manganese	44	1.7	10		ug/L	1	2/17/2012 10:41 AM
Molybdenum	21	0.49	5.0		ug/L	1	2/17/2012 10:41 AM
Nickel	5.2	1.1	5.0		ug/L	1	2/17/2012 10:41 AM
Silver	ND	0.72	3.0		ug/L	1	2/17/2012 10:41 AM
Vanadium	ND	0.19	3.0		ug/L	1	2/20/2012 04:47 PM
Zinc	28	4.6	10		ug/L	1	2/17/2012 10:41 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.

Date: *29-Feb-12*

CLIENT: CH2M HILL
Work Order: N007319
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	ND	3.0									

Sample ID: **LCS-38996** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **LCSW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	9.721	3.0	10.00	0	97.2	85	115				

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.013	3.0	10.00	0	100	75	125				

Sample ID: **N007288-001C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.042	3.0	10.00	0	100	75	125	10.01	0.292	20	

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	0.363	3.0									

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

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69625

CLIENT: CH2M HILL
Work Order: N007319
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	ND	3.0									
Copper	1.080	5.0									
Lead	ND	10									
Manganese	ND	10									
Molybdenum	3.250	5.0									
Nickel	ND	5.0									
Silver	ND	3.0									
Zinc	ND	10									

Sample ID: **LCS-38996** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **LCSW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.692	10	50.00	0	105	85	115				
Barium	51.478	3.0	50.00	0	103	85	115				
Beryllium	9.786	1.0	10.00	0	97.9	85	115				
Cadmium	10.191	3.0	10.00	0	102	85	115				
Cobalt	9.509	3.0	10.00	0	95.1	85	115				
Copper	11.354	5.0	10.00	0	114	85	115				
Lead	51.138	10	50.00	0	102	85	115				
Manganese	103.499	10	100.0	0	103	85	115				
Molybdenum	50.962	5.0	50.00	0	102	85	115				
Nickel	48.559	5.0	50.00	0	97.1	85	115				
Silver	9.885	3.0	10.00	0	98.9	85	115				
Zinc	47.455	10	50.00	0	94.9	85	115				

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364916**

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

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CLIENT: CH2M HILL
Work Order: N007319
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	57.973	10	50.00	0	116	75	125				
Barium	149.431	3.0	50.00	98.27	102	75	125				
Beryllium	9.860	1.0	10.00	0.1860	96.7	75	125				
Cadmium	6.209	3.0	10.00	0	62.1	75	125				S
Cobalt	8.424	3.0	10.00	0	84.2	75	125				
Copper	15.959	5.0	10.00	3.836	121	75	125				
Lead	39.526	10	50.00	0	79.1	75	125				
Manganese	723.154	10	100.0	627.7	95.4	75	125				
Molybdenum	67.744	5.0	50.00	18.63	98.2	75	125				
Nickel	43.845	5.0	50.00	0	87.7	75	125				
Silver	18.262	3.0	10.00	6.967	113	75	125				
Zinc	186.111	10	50.00	133.8	105	75	125				

Sample ID: **N007288-001C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	56.967	10	50.00	0	114	75	125	57.97	1.75	20	
Barium	148.222	3.0	50.00	98.27	99.9	75	125	149.4	0.812	20	
Beryllium	9.826	1.0	10.00	0.1860	96.4	75	125	9.860	0.345	20	
Cadmium	6.054	3.0	10.00	0	60.5	75	125	6.209	2.53	20	S
Cobalt	8.455	3.0	10.00	0	84.6	75	125	8.424	0.372	20	
Copper	15.726	5.0	10.00	3.836	119	75	125	15.96	1.47	20	
Lead	38.538	10	50.00	0	77.1	75	125	39.53	2.53	20	
Manganese	716.915	10	100.0	627.7	89.2	75	125	723.2	0.867	20	
Molybdenum	66.999	5.0	50.00	18.63	96.7	75	125	67.74	1.11	20	
Nickel	43.840	5.0	50.00	0	87.7	75	125	43.84	0.00984	20	
Silver	18.080	3.0	10.00	6.967	111	75	125	18.26	0.998	20	
Zinc	184.229	10	50.00	133.8	101	75	125	186.1	1.02	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

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-009
Lab Order:	N007319	**Collection Date:**	2/13/2012 3:13:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007319-001D		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_120225A**	QC Batch: **39068**			PrepDate:		**2/23/2012**	Analyst: **CEI**
Arsenic	1.2	0.0025	0.10		µg/L	1	2/25/2012 01:43 PM
Chromium	ND	0.0080	0.50		µg/L	1	2/25/2012 01:43 PM
Selenium	0.83	0.018	0.50		µg/L	1	2/25/2012 01:43 PM
Thallium	0.71	0.039	0.50		µg/L	1	2/25/2012 01:43 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: *29-Feb-12*

CLIENT: CH2M HILL
Work Order: N007319
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39068** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **PBW** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.015	0.10									
Chromium	ND	0.50									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **LCS-39068** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **LCSW** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.817	0.10	10.00	0	88.2	85	115				
Chromium	9.461	0.50	10.00	0	94.6	85	115				
Selenium	9.335	0.50	10.00	0	93.3	85	115				
Thallium	10.437	0.50	10.00	0	104	85	115				

Sample ID: **N007325-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.895	0.50	10.00	3.298	96.0	75	125				
Selenium	16.616	2.5	10.00	4.535	121	75	125				

Sample ID: **N007325-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	34.457	0.50	10.00	27.20	72.6	75	125				S

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: N007319
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007325-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.129	12	10.00	0	101	75	125				

Sample ID: **N007325-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.957	0.50	10.00	3.298	96.6	75	125	12.90	0.475	20	
Selenium	13.161	2.5	10.00	4.535	86.3	75	125	16.62	23.2	20	R

Sample ID: **N007325-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	34.380	0.50	10.00	27.20	71.8	75	125	34.46	0.223	20	S

Sample ID: **N007325-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.213	12	10.00	0	102	75	125	10.13	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

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *29-Feb-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-63-065-009
Lab Order:	N007319	**Collection Date:**	2/13/2012 3:13:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007319-001D		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120222A**	QC Batch: **39063**			PrepDate:	**2/21/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	2/22/2012

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: *29-Feb-12*

CLIENT: CH2M HILL
Work Order: N007319
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39063** SampType: **LCS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/21/2012** RunNo: **83393**
Client ID: **LCSW** Batch ID: **39063** TestNo: **EPA 7470A** Analysis Date: **2/22/2012** SeqNo: **1366712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.562	0.20	5.000	0	91.2	85	115				

Sample ID: **MB-39063** SampType: **MBLK** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/21/2012** RunNo: **83393**
Client ID: **PBW** Batch ID: **39063** TestNo: **EPA 7470A** Analysis Date: **2/22/2012** SeqNo: **1366714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.100	0.20									

Sample ID: **N007325-003C-MS** SampType: **MS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/21/2012** RunNo: **83393**
Client ID: **ZZZZZZ** Batch ID: **39063** TestNo: **EPA 7470A** Analysis Date: **2/22/2012** SeqNo: **1366729**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.533	0.20	5.000	0.1034	88.6	75	125				

Sample ID: **N007325-003C-MSD** SampType: **MSD** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/21/2012** RunNo: **83393**
Client ID: **ZZZZZZ** Batch ID: **39063** TestNo: **EPA 7470A** Analysis Date: **2/22/2012** SeqNo: **1366730**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.686	0.20	5.000	0.1034	91.7	75	125	4.533	3.32	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

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CH2MHILL

CHAIN OF CUSTODY RECORD

2/13/2012 4:23:07 PM

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/13/2012
COC Number: 3

			Container:	1Liter Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
			Filtered:	NA	Field	Field	Field	Field	NA	NA			
			Holding Time:	30	28	180	180	180	2	2			
	DATE	TIME	Matrix	Extra (*)	Cr6 (E218.6) Field Filtered	Metals (6010B/6020A/7470Adis) Field Filtered Title 22 metals	Metals (SW6010B/SW6020Adis) Field Filtered Chromium	Metals (6010BFF) Field Filtered Mn	Specific Conductance (E120.1)	Anions (E300.0) NO3		Number of Containers	COMMENTS
MW-63-065-009	2/13/2012	15:13	Water	X		X		X	X	X	N0073191-1	4	
MW-64BR-UPR-150-0	2/13/2012	14:00	Water	X	X	X	X		X		-2	5	
MW-72-080-009	2/13/2012	11:55	Water	X	X	X	X	X	X	X	-3	6	
											TOTAL NUMBER OF CONTAINERS	~~13~~ 15	BLL

	Signatures	Date/Time
Approved by		2-13-12
Sampled by		1630
Relinquished by		
Received by		2/13/12 1630
Relinquished by		2/13/12 1900
Received by		2/13/12 @ 1900

Shipping Details

Method of Shipment: courier
On Ice: ~~yes~~ / no 2.0°C
Airbill No: 1R#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
February, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL

CHAIN OF CUSTODY RECORD

2/13/2012 4:23:07 PM

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/13/2012
COC Number: 3

			Container:	1Liter Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
			Filtered:	NA	Field	Field	Field	Field	NA	NA			
			Holding Time:	30	28	180	180	180	2	2			
	DATE	TIME	Matrix	Extra (*)	Cr6 (E218.6) Field Filtered	Metals (6010B/6020A/7470Adis) Field Filtered Title 22 metals	Metals (SW6010B/SW6020Adis) Field Filtered Chromium	Metals (6010BFF) Field Filtered Mn	Specific Conductance (E120.1)	Anions (E300.0) NO3		Number of Containers	COMMENTS
MW-63-065-009	2/13/2012	15:13	Water	X		X		X	X	X		4	
MW-64BR-UPR-150-0	2/13/2012	14:00	Water	X	X	X	X		X			5	
MW-72-080-009	2/13/2012	11:55	Water	X	X	X	X	X	X	X		6	
											TOTAL NUMBER OF CONTAINERS	~~10~~ 15	

	Signatures	Date/Time
Approved by		2-13-12
Sampled by		1630
Relinquished by		
Received by	PM Galang	2/13/12 1630
Relinquished by	PM Galang	2/13/12 1900
Received by	MCLAUGHLIN	2/13/12 @ 1900

Shipping Details

Method of Shipment: courier
On Ice: ~~yes~~ / no 2.0°C
Airbill No: 1R#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
February, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On:	2/13/2012	Workorder:	N007319
Rep sample Temp (Deg C):	2	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	Courier		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 2/14/12

Reviewed By:

00044

CLIENT CORRESPONDENCE LOG

DATE: 2/29/2012 4:16:24 PM

Client Name: -CH2M HILL-OAKLAND

ATL Workorder No.: N00731

DATE	CONTACT	CALL IN/OUT	ISSUE / PROBLEM	COMMENTS/CORRECTIVE ACTION	INITIAL
~~2/29/2012 4:12:02~~ 2/14/12 @1100	S. Duffy	OUT	Sample MW-63-065-009 says field filtered on the label and COC and confirmed by B. Collom that it was field filtered. However, the samples physical appearance doesn't look filtered.	Shawn Duffy requested to filter sample from Gen Min container via .45 and .1 micron. Then run the three filtrate as different fractions for metals.	marlonc

2/29/12

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = ug/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For N007319-003B, concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 10.980177 * 10$$

$$= 109.80177 \ \mu g/L$$

Reporting results in two significant figures,

$$Cr^{+6}, \mu g/L = 110 \ \mu g/L$$

OMS 2/24/12

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:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007319-001C**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	0.407 * 2
	=	0.814 mg/L

Since the reporting limit is 1.0 mg/L, therefore

Nitrate, mg/L	**=**	**ND**

ONS 2/21/12

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Aqueous

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Iron, ug/L = A * DF * PF*1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007319-001B**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.16973* 1 * (25/25)*1000

= 169.73ug/L

Reporting results in two significant figures,

Barium, ug/L = 170

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007319
Test Method: EPA 6010
Analysis Date: 02/17/12

Matrix: Water
Batch No.: 38996

Instrument ID: ICP-01/02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007288-001B-DT 5X	Antimony	µg/L	0	NA	0		10
N007288-001B-DT 5X	Barium	µg/L	99.82141	PASS	98.271417	-1.58%	10
N007288-001B-DT 5X	Beryllium	µg/L	0.57934	NA	0.186031		10
N007288-001B-DT 5X	Cadmium	mg/L	0	NA	0		10
N007288-001B-DT 5X	Cobalt	µg/L	0	NA	0		10
N007288-001B-DT 5X	Copper	µg/L	4.058185	PASS	3.835882	-5.80%	10
N007288-001B-DT 5X	Manganese	µg/L	675.007965	PASS	627.727274	-7.53%	10
N007288-001B-DT 5X	Molybdenum	µg/L	22.585575	NA	18.633053	-21.21%	10
N007288-001B-DT 5X	Nickel	µg/L	0	NA	0		10
N007288-001B-DT 5X	Silver	µg/L	5.732825	NA	6.966748	17.71%	10
N007288-001B-DT 5X	Lead	µg/L	0	NA	0		10
N007288-001B-DT 5X	Zinc	µg/L	130.123395	PASS	133.801315	2.75%	10

Note: NA - Not Applicable

Post Spike not Applicable since DT passes criteria.

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007319
Test Method: EPA 6010
Analysis Date: 02/20/12

Matrix: Water
Batch No.: 38996

Instrument ID: ICP-01/02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	QQual	SAMPrefval	%DIFF	%DIFFlimit
N007288-001B-DT 5X	Vanadium	µg/L	0	NA	0		10

Note: NA - Not Applicable

Post Spike not Applicable since DT passes criteria.

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007319
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007288-001C-PS 2** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	1036.157	6.0	1000	0	104	75	125				

Sample ID: **N007288-001C-PS 2** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	275.019	20	250.0	0	110	75	125				
Barium	346.015	6.0	250.0	98.27	99.1	75	125				
Beryllium	243.883	2.0	250.0	0.1860	97.5	75	125				
Cadmium	249.929	6.0	250.0	0	100	75	125				
Cobalt	240.093	6.0	250.0	0	96.0	75	125				
Copper	269.106	10	250.0	3.836	106	75	125				
Lead	221.741	20	250.0	0	88.7	75	125				
Manganese	1125.113	20	1000	627.7	49.7	75	125				S
Molybdenum	262.293	10	250.0	18.63	97.5	75	125				
Nickel	228.766	10	250.0	0	91.5	75	125				
Silver	263.239	6.0	250.0	6.967	103	75	125				
Zinc	386.723	20	250.0	133.8	101	75	125				

DT of Manganese @ 5x is within acceptance criteria

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		

MS fr 2/28/12

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:

Arsenic, mg/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 **N007319-001B**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 6.0175* 1 * (25/25)

= 6.0175 ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 6.0

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007319
Test Method: EPA 6020
Analysis Date: 02/25/12

Matrix: Water
Batch No.: 39068

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Se,. The calc. values were < 25X the RL. PS @ 5x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007325-001B-DT 5X	Chromium	µg/L	29.5349741	PASS	27.19840095	-8.59%	10
N007325-001B-DT 25X	Arsenic	µg/L	3.522566521	PASS	3.297843687	-6.81%	10
N007325-001B-DT 25X	Selenium	µg/L	7.543528126	NA	4.534920977	-66.34%	10

Advanced Technology Laboratories, Inc.

Date: *29-Feb-12*

CLIENT: CH2M HILL
Work Order: N007319
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007325-001B-PS 5** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.657	0.50	50.00	3.298	94.7	75	125				
Selenium	45.542	2.5	50.00	4.535	82.0	75	125				

Sample ID: **N007325-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	45.217	1.0	20.00	27.20	90.1	75	125				

Sample ID: **N007325-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	248.970	12	250.0	0	99.6	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		

00215

CLIENT: CH2M HILL
Work Order: N007319
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N007325-001B-PS 2** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	45.217	2.0	20.00	27.20	90.1	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 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:

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 coversion factor.

For Sample **N007319-001B**, the concentration in ug/L is calculated as follows:

Mercury, ug/L = 0.12 * 1 * (50/25) * 0.5

= 0.12 ug/L

Reporting results in two significant figures,

Mercury, ug/L = 0.12

Mercury, ug/L = ND

March 05, 2012

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.: N007325

RE: PG&E Topock, 417981.ER.02.DM

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 14, 2012 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.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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 gsgosmundt

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-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 417981.ER.02.DM
Lab Order: N007325

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 218.6:

Dilution was necessary for sample N007325-003 due to matrix interference. Sample was analyzed at lower dilution however matrix spikes were not recovered indicating possible matrix interference. Sample was reported at dilution that meet matrix spike recovery limit.

Analytical Comments for EPA 6010B:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Cadmium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium 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 Selenium ; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Advanced Technology Laboratories, Inc. 3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

Date: *01-Mar-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 417981.ER.02.DM
Lab Order: N007325
Contract No: 2012-EASTRAV

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007325-001A	MW-23-060-009	Water	2/14/2012 9:34:00 AM	2/14/2012	3/1/2012
N007325-001B	MW-23-060-009	Water	2/14/2012 9:34:00 AM	2/14/2012	3/1/2012
N007325-001C	MW-23-060-009	Water	2/14/2012 9:34:00 AM	2/14/2012	3/1/2012
N007325-002A	MW-23-080-009	Water	2/14/2012 10:58:00 AM	2/14/2012	3/1/2012
N007325-002B	MW-23-080-009	Water	2/14/2012 10:58:00 AM	2/14/2012	3/1/2012
N007325-002C	MW-23-080-009	Water	2/14/2012 10:58:00 AM	2/14/2012	3/1/2012
N007325-003A	MW-68BR-280-009	Water	2/14/2012 3:20:00 PM	2/14/2012	3/1/2012
N007325-003B	MW-68BR-280-009	Water	2/14/2012 3:20:00 PM	2/14/2012	3/1/2012
N007325-003C	MW-68BR-280-009	Water	2/14/2012 3:20:00 PM	2/14/2012	3/1/2012
N007325-003D	MW-68BR-280-009	Water	2/14/2012 3:20:00 PM	2/14/2012	3/1/2012
N007325-004A	MW-73-080-009	Water	2/14/2012 11:32:00 AM	2/14/2012	3/1/2012
N007325-004B	MW-73-080-009	Water	2/14/2012 11:32:00 AM	2/14/2012	3/1/2012
N007325-004C	MW-73-080-009	Water	2/14/2012 11:32:00 AM	2/14/2012	3/1/2012
N007325-004D	MW-73-080-009	Water	2/14/2012 11:32:00 AM	2/14/2012	3/1/2012
N007325-004E	MW-73-080-009	Water	2/14/2012 11:32:00 AM	2/14/2012	3/1/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *01-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007325
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007325-001

Client Sample ID: MW-23-060-009
Collection Date: 2/14/2012 9:34:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120214F**	QC Batch: **R83246**			PrepDate:			Analyst: **MCS**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	2/14/2012

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-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-080-009
Lab Order:	N007325	**Collection Date:**	2/14/2012 10:58:00 AM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007325-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120214F**	QC Batch: **R83246**			PrepDate:			Analyst: **MCS**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	2/14/2012

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: *01-Mar-12*

CLIENT: CH2M HILL
Work Order: N007325
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83246** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83246**
Client ID: **LCSW** Batch ID: **R83246** TestNo: **EPA 120.1** Analysis Date: **2/14/2012** SeqNo: **1361028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	9510.000	0.10	9980	0	95.3	85	115				

Sample ID: **N007325-004D-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83246**
Client ID: **ZZZZZZ** Batch ID: **R83246** TestNo: **EPA 120.1** Analysis Date: **2/14/2012** SeqNo: **1361033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	10070.000	0.10						10020	0.498	10	

Sample ID: **N007325-004D-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83246**
Client ID: **ZZZZZZ** Batch ID: **R83246** TestNo: **EPA 120.1** Analysis Date: **2/14/2012** SeqNo: **1361034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	19220.000	0.20	9986	10020	92.1	75	125				

Sample ID: **N007325-004D-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83246**
Client ID: **ZZZZZZ** Batch ID: **R83246** TestNo: **EPA 120.1** Analysis Date: **2/14/2012** SeqNo: **1361035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	19620.000	0.20	9986	10020	96.1	75	125	19220	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		

00016

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *01-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007325
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007325-001

Client Sample ID: MW-23-060-009
Collection Date: 2/14/2012 9:34:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_120217C**	QC Batch: **38996**			PrepDate:	**2/15/2012**		Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	2/17/2012 11:03 AM
Barium	130	0.20	3.0		ug/L	1	2/17/2012 11:03 AM
Beryllium	ND	0.090	1.0		ug/L	1	2/17/2012 11:03 AM
Cadmium	ND	0.23	3.0		ug/L	1	2/17/2012 11:03 AM
Cobalt	ND	0.31	3.0		ug/L	1	2/17/2012 11:03 AM
Copper	17	0.53	5.0		ug/L	1	2/17/2012 11:03 AM
Lead	ND	1.5	10		ug/L	1	2/17/2012 11:03 AM
Manganese	ND	1.7	10		ug/L	1	2/17/2012 11:03 AM
Molybdenum	9.6	0.49	5.0		ug/L	1	2/17/2012 11:03 AM
Nickel	ND	1.1	5.0		ug/L	1	2/17/2012 11:03 AM
Silver	9.7	0.72	3.0		ug/L	1	2/17/2012 11:03 AM
Vanadium	6.9	0.19	3.0		ug/L	1	2/20/2012 05:03 PM
Zinc	14	4.6	10		ug/L	1	2/17/2012 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: *01-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007325
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007325-002

Client Sample ID: MW-23-080-009
Collection Date: 2/14/2012 10:58:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_120217C**	QC Batch: **38996**			PrepDate:	**2/15/2012**		Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	2/17/2012 11:08 AM
Barium	62	0.20	3.0		ug/L	1	2/17/2012 11:08 AM
Beryllium	ND	0.090	1.0		ug/L	1	2/17/2012 11:08 AM
Cadmium	ND	0.23	3.0		ug/L	1	2/17/2012 11:08 AM
Cobalt	ND	0.31	3.0		ug/L	1	2/17/2012 11:08 AM
Copper	ND	0.53	5.0		ug/L	1	2/17/2012 11:08 AM
Lead	ND	1.5	10		ug/L	1	2/17/2012 11:08 AM
Manganese	ND	1.7	10		ug/L	1	2/17/2012 11:08 AM
Molybdenum	31	0.49	5.0		ug/L	1	2/17/2012 11:08 AM
Nickel	ND	1.1	5.0		ug/L	1	2/17/2012 11:08 AM
Silver	9.1	0.72	3.0		ug/L	1	2/17/2012 11:08 AM
Vanadium	20	0.19	3.0		ug/L	1	2/20/2012 05:07 PM
Zinc	ND	4.6	10		ug/L	1	2/17/2012 11:08 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

Advanced Technology Laboratories, Inc.

Date: *01-Mar-12*

CLIENT: CH2M HILL
Work Order: N007325
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	ND	3.0									

Sample ID: **LCS-38996** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **LCSW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	9.721	3.0	10.00	0	97.2	85	115				

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.013	3.0	10.00	0	100	75	125				

Sample ID: **N007288-001C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.042	3.0	10.00	0	100	75	125	10.01	0.292	20	

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	0.363	3.0									

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

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CLIENT: CH2M HILL
Work Order: N007325
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-38996** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **PBW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	ND	3.0									
Copper	1.080	5.0									
Lead	ND	10									
Manganese	ND	10									
Molybdenum	3.250	5.0									
Nickel	ND	5.0									
Silver	ND	3.0									
Zinc	ND	10									

Sample ID: **LCS-38996** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **LCSW** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.692	10	50.00	0	105	85	115				
Barium	51.478	3.0	50.00	0	103	85	115				
Beryllium	9.786	1.0	10.00	0	97.9	85	115				
Cadmium	10.191	3.0	10.00	0	102	85	115				
Cobalt	9.509	3.0	10.00	0	95.1	85	115				
Copper	11.354	5.0	10.00	0	114	85	115				
Lead	51.138	10	50.00	0	102	85	115				
Manganese	103.499	10	100.0	0	103	85	115				
Molybdenum	50.962	5.0	50.00	0	102	85	115				
Nickel	48.559	5.0	50.00	0	97.1	85	115				
Silver	9.885	3.0	10.00	0	98.9	85	115				
Zinc	47.455	10	50.00	0	94.9	85	115				

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364916**

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	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		

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CLIENT: CH2M HILL
Work Order: N007325
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007288-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	57.973	10	50.00	0	116	75	125				
Barium	149.431	3.0	50.00	98.27	102	75	125				
Beryllium	9.860	1.0	10.00	0.1860	96.7	75	125				
Cadmium	6.209	3.0	10.00	0	62.1	75	125				S
Cobalt	8.424	3.0	10.00	0	84.2	75	125				
Copper	15.959	5.0	10.00	3.836	121	75	125				
Lead	39.526	10	50.00	0	79.1	75	125				
Manganese	723.154	10	100.0	627.7	95.4	75	125				
Molybdenum	67.744	5.0	50.00	18.63	98.2	75	125				
Nickel	43.845	5.0	50.00	0	87.7	75	125				
Silver	18.262	3.0	10.00	6.967	113	75	125				
Zinc	186.111	10	50.00	133.8	105	75	125				

Sample ID: **N007288-001C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/15/2012** RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	56.967	10	50.00	0	114	75	125	57.97	1.75	20	
Barium	148.222	3.0	50.00	98.27	99.9	75	125	149.4	0.812	20	
Beryllium	9.826	1.0	10.00	0.1860	96.4	75	125	9.860	0.345	20	
Cadmium	6.054	3.0	10.00	0	60.5	75	125	6.209	2.53	20	S
Cobalt	8.455	3.0	10.00	0	84.6	75	125	8.424	0.372	20	
Copper	15.726	5.0	10.00	3.836	119	75	125	15.96	1.47	20	
Lead	38.538	10	50.00	0	77.1	75	125	39.53	2.53	20	
Manganese	716.915	10	100.0	627.7	89.2	75	125	723.2	0.867	20	
Molybdenum	66.999	5.0	50.00	18.63	96.7	75	125	67.74	1.11	20	
Nickel	43.840	5.0	50.00	0	87.7	75	125	43.84	0.00984	20	
Silver	18.080	3.0	10.00	6.967	111	75	125	18.26	0.998	20	
Zinc	184.229	10	50.00	133.8	101	75	125	186.1	1.02	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

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: ***05-Mar-12***

CLIENT: CH2M HILL
Lab Order: N007325
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007325-001

Client Sample ID: MW-23-060-009
Collection Date: 2/14/2012 9:34:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120225A**	QC Batch: **39068**			PrepDate:		**2/23/2012**	Analyst: **CEI**
Arsenic	3.3	0.012	0.50		µg/L	5	2/25/2012 11:39 AM
Chromium	27	0.0080	1.0		µg/L	1	2/25/2012 11:44 AM
Selenium	4.5	0.090	2.5		µg/L	5	2/25/2012 11:39 AM
Thallium	ND	0.98	12		µg/L	25	2/25/2012 11:50 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: ***05-Mar-12***

CLIENT: CH2M HILL
Lab Order: N007325
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007325-002

Client Sample ID: MW-23-080-009
Collection Date: 2/14/2012 10:58:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120225A**	QC Batch: **39068**			PrepDate:		**2/23/2012**	Analyst: **CEI**
Arsenic	3.7	0.0025	0.10		µg/L	1	2/25/2012 03:56 PM
Chromium	10	0.0080	1.0		µg/L	1	2/25/2012 03:56 PM
Selenium	5.3	0.090	2.5		µg/L	5	2/25/2012 03:21 PM
Thallium	ND	0.98	12		µg/L	25	2/25/2012 04:01 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.
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Advanced Technology Laboratories, Inc.

Date: ***05-Mar-12***

CLIENT: CH2M HILL
Work Order: N007325
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39068** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **PBW** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.015	0.10									
Chromium	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **LCS-39068** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **LCSW** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.817	0.10	10.00	0	88.2	85	115				
Chromium	9.461	1.0	10.00	0	94.6	85	115				
Selenium	9.335	0.50	10.00	0	93.3	85	115				
Thallium	10.437	0.50	10.00	0	104	85	115				

Sample ID: **N007325-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.895	0.50	10.00	3.298	96.0	75	125				
Selenium	16.616	2.5	10.00	4.535	121	75	125				

Sample ID: **N007325-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	34.457	1.0	10.00	27.20	72.6	75	125				S

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		

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REVISION 1, 03/05/12

CLIENT: CH2M HILL
Work Order: N007325
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007325-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.129	12	10.00	0	101	75	125				

Sample ID: **N007325-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.957	0.50	10.00	3.298	96.6	75	125	12.90	0.475	20	
Selenium	13.161	2.5	10.00	4.535	86.3	75	125	16.62	23.2	20	R

Sample ID: **N007325-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	34.380	1.0	10.00	27.20	71.8	75	125	34.46	0.223	20	S

Sample ID: **N007325-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.213	12	10.00	0	102	75	125	10.13	0	20	

REVISION 1, 03/05/12

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		

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *01-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-060-009
Lab Order:	N007325	**Collection Date:**	2/14/2012 9:34:00 AM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007325-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120222A**	QC Batch: **39063**			PrepDate:	**2/21/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	2/22/2012

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.

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *01-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-23-080-009
Lab Order:	N007325	**Collection Date:**	2/14/2012 10:58:00 AM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007325-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120222A**	QC Batch: **39063**			PrepDate:	**2/21/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	2/22/2012

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: *01-Mar-12*

CLIENT: CH2M HILL
Work Order: N007325
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39063** SampType: **LCS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/21/2012** RunNo: **83393**
Client ID: **LCSW** Batch ID: **39063** TestNo: **EPA 7470A** Analysis Date: **2/22/2012** SeqNo: **1366712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.562	0.20	5.000	0	91.2	85	115				

Sample ID: **MB-39063** SampType: **MBLK** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/21/2012** RunNo: **83393**
Client ID: **PBW** Batch ID: **39063** TestNo: **EPA 7470A** Analysis Date: **2/22/2012** SeqNo: **1366714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.100	0.20									

Sample ID: **N007325-003C-MS** SampType: **MS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/21/2012** RunNo: **83393**
Client ID: **ZZZZZZ** Batch ID: **39063** TestNo: **EPA 7470A** Analysis Date: **2/22/2012** SeqNo: **1366729**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.533	0.20	5.000	0.1034	88.6	75	125				

Sample ID: **N007325-003C-MSD** SampType: **MSD** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/21/2012** RunNo: **83393**
Client ID: **ZZZZZZ** Batch ID: **39063** TestNo: **EPA 7470A** Analysis Date: **2/22/2012** SeqNo: **1366730**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.686	0.20	5.000	0.1034	91.7	75	125	4.533	3.32	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		

ER/TCS-009 ATL # 3

CH2MHILL

CHAIN OF CUSTODY RECORD

2/14/2012 4:08:24 PM

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/14/2012
COC Number: 4

			Container:	1Liter Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	5 X 1L Amber			
			Preservatives:	4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C			
			Filtered:	NA	Field	Field	Field	Field	NA	NA	NA			
			Holding Time:	30	28	180	180	180	2	2	7			
	DATE	TIME	Matrix	Extra (*)	Cr6 (E218.6) Field Filtered	Metals (6010B/6020A/7470Adis) Field Filtered Title 22 Metals	Metals (SW6010B/SW6020Adis) Field Filtered Chromium	Metals (6010BFF) Field Filtered Mn	Specific Conductance (E120.1)	Anions (E300.0) NO3	TPH-Extractable (SW8015B-E)		Number of Containers	COMMENTS
MW-23-060-009	2/14/2012	9:34	Water	X		X		X	X			N007325-1	4	
MW-23-080-009	2/14/2012	10:58	Water	X		X		X	X			-2	4	
MW-68BR-280-009	2/14/2012	15:20	Water	X	X	X	X	X	X	X		-3	5	
MW-73-080-009	2/14/2012	11:32	Water	X	X	X	X	X	X	X	X	-4	7	
												TOTAL NUMBER OF CONTAINERS	20	

	Signatures	Date/Time
Approved by		2-14-12
Sampled by		1610
Relinquished by		
Received by	PM Galang	2/14/12 - 1610
Relinquished by	PM Galang	2/14/12 1634
Received by	MCCARTHY	2/14/12 @1834

Shipping Details
Method of Shipment: courier
On Ice: ~~yes~~ / no 2.6 °C
Airbill No: IR # 2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marion

Special Instructions:
February, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

0019

ER/TCS-009 ATL # 3

CH2MHILL

CHAIN OF CUSTODY RECORD

2/14/2012 4:08:24 PM

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/14/2012
COC Number: 4

			Container:	1Liter Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	5 X 1L Amber			
			Preservatives:	4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C			
			Filtered:	NA	Field	Field	Field	Field	NA	NA	NA			
			Holding Time:	30	28	180	180	180	2	2	7			
	DATE	TIME	Matrix	Extra (*)	Cr6 (E218.6) Field Filtered	Metals (6010B/6020A/7470Adis) Field Filtered Title 22 Metals	Metals (SW6010B/SW6020Adis) Field Filtered Chromium	Metals (6010BFF) Field Filtered Mn	Specific Conductance (E120.1)	Anions (E300.0) NO3	TPH-Extractable (SW8015B-E)		Number of Containers	COMMENTS
MW-23-060-009	2/14/2012	9:34	Water	X		X		X	X				4	
MW-23-080-009	2/14/2012	10:58	Water	X		X		X	X				4	
MW-68BR-280-009	2/14/2012	15:20	Water	X	X	X	X	X	X	X			5	
MW-73-080-009	2/14/2012	11:32	Water	X	X	X	X	X	X	X	X		7	
												TOTAL NUMBER OF CONTAINERS	20	

	Signatures	Date/Time
Approved by		2-14-12
Sampled by		1610
Relinquished by		
Received by	P M Galang	2/14/12 - 1610
Relinquished by	P M Galang	2/14/12 1834
Received by	MMCARTIN	2/14/12 @ 1834

Shipping Details

Method of Shipment: courier
On Ice: ~~yes~~ no 2.6 °C
Airbill No: 12#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
February, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On:	2/14/2012	Workorder:	N007325
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 2/15/12

Reviewed By: 2/15/12

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = ug/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For N007325-004B, concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 7.120827 * 5$$

$$= 35.60414 \ \mu g/L$$

Reporting results in two significant figures,

$$Cr^{+6}, \mu g/L = 36 \ \mu g/L$$

ans 2/24/12

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:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007325-004D**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	1.061 * 5
	=	5.305 mg/L

Reporting **N007325-004D**, results in two significant figures,

Nitrate, mg/L	**=**	**5.3 mg/L**

OMS 2/22/12

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Aqueous

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Iron, ug/L = A * DF * PF*1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample **N007325-001B**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.13237* 1 * (25/25)*1000

= 132.37ug/L

Reporting results in two significant figures,

Barium, ug/L = 130

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007325
Test Method: EPA 6010
Analysis Date: 02/17/12

Matrix: Water
Batch No.: 38996

Instrument ID: ICP-01/02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	QQual	SAMPrefval	%DIFF	%DIFFlimit
N007288-001B-DT 5X	Antimony	µg/L	0	NA	0		10
N007288-001B-DT 5X	Barium	µg/L	99.82141	PASS	98.271417	-1.58%	10
N007288-001B-DT 5X	Beryllium	µg/L	0.57934	NA	0.186031		10
N007288-001B-DT 5X	Cadmium	mg/L	0	NA	0		10
N007288-001B-DT 5X	Cobalt	µg/L	0	NA	0		10
N007288-001B-DT 5X	Copper	µg/L	4.058185	PASS	3.835882	-5.80%	10
N007288-001B-DT 5X	Manganese	µg/L	675.007965	PASS	627.727274	-7.53%	10
N007288-001B-DT 5X	Molybdenum	µg/L	22.585575	NA	18.633053	-21.21%	10
N007288-001B-DT 5X	Nickel	µg/L	0	NA	0		10
N007288-001B-DT 5X	Silver	µg/L	5.732825	NA	6.966748	17.71%	10
N007288-001B-DT 5X	Lead	µg/L	0	NA	0		10
N007288-001B-DT 5X	Zinc	µg/L	130.123395	PASS	133.801315	2.75%	10

Note: NA - Not Applicable

Post Spike not Applicable since DT passes criteria.

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007325
Test Method: EPA 6010
Analysis Date: 02/20/12

Matrix: Water
Batch No.: 38996

Instrument ID: ICP-01/02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	QQual	SAMPrefval	%DIFF	%DIFFlimit
N007288-001B-DT 5X	Vanadium	µg/L	0	NA	0		10

Note: NA - Not Applicable

Post Spike not Applicable since DT passes criteria.

Advanced Technology Laboratories, Inc.

Date: *28-Feb-12*

CLIENT: CH2M HILL
Work Order: N007325
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007288-001C-PS 2** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83321**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2012** SeqNo: **1363768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	1036.157	6.0	1000	0	104	75	125				

Sample ID: **N007288-001C-PS 2** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **83284**
Client ID: **ZZZZZZ** Batch ID: **38996** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2012** SeqNo: **1364915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	275.019	20	250.0	0	110	75	125				
Barium	346.015	6.0	250.0	98.27	99.1	75	125				
Beryllium	243.883	2.0	250.0	0.1860	97.5	75	125				
Cadmium	249.929	6.0	250.0	0	100	75	125				
Cobalt	240.093	6.0	250.0	0	96.0	75	125				
Copper	269.106	10	250.0	3.836	106	75	125				
Lead	221.741	20	250.0	0	88.7	75	125				
Manganese	1125.113	20	1000	627.7	49.7	75	125				S
Molybdenum	262.293	10	250.0	18.63	97.5	75	125				
Nickel	228.766	10	250.0	0	91.5	75	125				
Silver	263.239	6.0	250.0	6.967	103	75	125				
Zinc	386.723	20	250.0	133.8	101	75	125				

DT of Manganese @ 5X is within acceptance criteria
KS 2/29/12

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:

Arsenic, mg/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 **N007325-001B**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 0.6596* 5 * (25/25)

= 3.298ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 3.3

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007325
Test Method: EPA 6020
Analysis Date: 02/25/12

Matrix: Water
Batch No.: 39068

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Se,. The calc. values were < 25X the RL. PS @ 5x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007325-001B-DT 5X	Chromium	µg/L	29.5349741	PASS	27.19840095	-8.59%	10
N007325-001B-DT 25X	Arsenic	µg/L	3.522566521	PASS	3.297843687	-6.81%	10
N007325-001B-DT 25X	Selenium	µg/L	7.543528126	NA	4.534920977	-66.34%	10

Advanced Technology Laboratories, Inc.

Date: *29-Feb-12*

CLIENT: CH2M HILL
Work Order: N007325
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007325-001B-PS 5** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.657	0.50	50.00	3.298	94.7	75	125				
Selenium	45.542	2.5	50.00	4.535	82.0	75	125				

Sample ID: **N007325-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	45.217	1.0	20.00	27.20	90.1	75	125				

Sample ID: **N007325-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	248.970	12	250.0	0	99.6	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		

082145

CLIENT: CH2M HILL
Work Order: N007325
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N007325-001B-PS 2** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	45.217	2.0	20.00	27.20	90.1	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 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:

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 coversion factor.

For Sample **N007325-001B**, the concentration in ug/L is calculated as follows:

Mercury, ug/L = 0.12 * 1 * (50/25) * 0.5

= 0.12 ug/L

Reporting results in two significant figures,

Mercury, ug/L = 0.12

Mercury, ug/L = ND

March 05, 2012

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.: N007329

RE: PG&E Topock, 417981.ER.02.DM

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 15, 2012 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.

Advanced Technology Laboratories, Inc. **Date:** *05-Mar-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 417981.ER.02.DM
Lab Order: N007329

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 218.6:

Dilution was necessary for sample N007329-004 due to matrix interference. Sample was analyzed at lower dilution however matrix spikes were not recovered indicating possible matrix interference. Sample was reported at dilution that meet matrix spike recovery limit.

Analytical Comments for EPA 6010B:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Cadmium and Copper possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium 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 Selenium ; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Advanced Technology Laboratories, Inc. 3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

Date: *05-Mar-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 417981.ER.02.DM
Lab Order: N007329
Contract No: 2012-EASTRAV

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007329-001A	MW-57-070-009	Water	2/15/2012 8:20:00 AM	2/15/2012	3/5/2012
N007329-001B	MW-57-070-009	Water	2/15/2012 8:20:00 AM	2/15/2012	3/5/2012
N007329-001C	MW-57-070-009	Water	2/15/2012 8:20:00 AM	2/15/2012	3/5/2012
N007329-002A	MW-60-125-009	Water	2/15/2012 1:31:00 PM	2/15/2012	3/5/2012
N007329-002B	MW-60-125-009	Water	2/15/2012 1:31:00 PM	2/15/2012	3/5/2012
N007329-002C	MW-60-125-009	Water	2/15/2012 1:31:00 PM	2/15/2012	3/5/2012
N007329-002D	MW-60-125-009	Water	2/15/2012 1:31:00 PM	2/15/2012	3/5/2012
N007329-003A	MW-61-110-009	Water	2/15/2012 9:30:00 AM	2/15/2012	3/5/2012
N007329-003B	MW-61-110-009	Water	2/15/2012 9:30:00 AM	2/15/2012	3/5/2012
N007329-003C	MW-61-110-009	Water	2/15/2012 9:30:00 AM	2/15/2012	3/5/2012
N007329-003D	MW-61-110-009	Water	2/15/2012 9:30:00 AM	2/15/2012	3/5/2012
N007329-004A	MW-71-035-009A	Water	2/15/2012 9:10:00 AM	2/15/2012	3/5/2012
N007329-004B	MW-71-035-009A	Water	2/15/2012 9:10:00 AM	2/15/2012	3/5/2012
N007329-004C	MW-71-035-009A	Water	2/15/2012 9:10:00 AM	2/15/2012	3/5/2012
N007329-004D	MW-71-035-009A	Water	2/15/2012 9:10:00 AM	2/15/2012	3/5/2012

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-070-009
Lab Order:	N007329	**Collection Date:**	2/15/2012 8:20:00 AM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007329-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120215B**	QC Batch: **R83247**			PrepDate:			Analyst: **MCS**
Specific Conductance	2800	0.10	0.10		umhos/cm	1	2/15/2012

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.

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60-125-009
Lab Order:	N007329	**Collection Date:**	2/15/2012 1:31:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007329-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120215B**	QC Batch: **R83247**			PrepDate:			Analyst: **MCS**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	2/15/2012

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: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-61-110-009
Lab Order:	N007329	**Collection Date:**	2/15/2012 9:30:00 AM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007329-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120215B**	QC Batch: **R83247**			PrepDate:			Analyst: **MCS**
Specific Conductance	29000	0.10	0.10		umhos/cm	1	2/15/2012

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: *05-Mar-12*

CLIENT: CH2M HILL
Work Order: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83247** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83247**
Client ID: **LCSW** Batch ID: **R83247** TestNo: **EPA 120.1** Analysis Date: **2/15/2012** SeqNo: **1361036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	9490.000	0.10	9980	0	95.1	85	115				

Sample ID: **N007329-004D-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83247**
Client ID: **ZZZZZZ** Batch ID: **R83247** TestNo: **EPA 120.1** Analysis Date: **2/15/2012** SeqNo: **1361041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13100.000	0.10						13120	0.153	10	

Sample ID: **N007329-004D-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83247**
Client ID: **ZZZZZZ** Batch ID: **R83247** TestNo: **EPA 120.1** Analysis Date: **2/15/2012** SeqNo: **1361042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	22680.000	0.20	9986	13120	95.7	75	125				

Sample ID: **N007329-004D-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83247**
Client ID: **ZZZZZZ** Batch ID: **R83247** TestNo: **EPA 120.1** Analysis Date: **2/15/2012** SeqNo: **1361043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	22720.000	0.20	9986	13120	96.1	75	125	22680	0.176	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		

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60-125-009
Lab Order:	N007329	**Collection Date:**	2/15/2012 1:31:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007329-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120216A**	QC Batch: **R83379**			PrepDate:			Analyst: **QBM**
Nitrate as N	3.5	0.024	1.0		mg/L	2	2/16/2012 11:25 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: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-61-110-009
Lab Order:	N007329	**Collection Date:**	2/15/2012 9:30:00 AM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007329-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120216A**	QC Batch: **R83379**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	2/16/2012 11:37 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.

Date: *05-Mar-12*

CLIENT: CH2M HILL
Work Order: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R83379_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83379**
Client ID: **PBW** Batch ID: **R83379** TestNo: **EPA 300.0** Analysis Date: **2/16/2012** SeqNo: **1366230**

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-R83379_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83379**
Client ID: **LCSW** Batch ID: **R83379** TestNo: **EPA 300.0** Analysis Date: **2/16/2012** SeqNo: **1366231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.393	0.50	2.500	0	95.7	90	110				

Sample ID: **N007329-002DDUP** SampType: **DUP** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83379**
Client ID: **ZZZZZZ** Batch ID: **R83379** TestNo: **EPA 300.0** Analysis Date: **2/16/2012** SeqNo: **1366235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	3.464	1.0						3.488	0.690	20	

Sample ID: **N007329-002DMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83379**
Client ID: **ZZZZZZ** Batch ID: **R83379** TestNo: **EPA 300.0** Analysis Date: **2/16/2012** SeqNo: **1366236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	8.648	1.0	5.000	3.488	103	80	120				

Sample ID: **N007329-002DMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83379**
Client ID: **ZZZZZZ** Batch ID: **R83379** TestNo: **EPA 300.0** Analysis Date: **2/16/2012** SeqNo: **1366237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	8.566	1.0	5.000	3.488	102	80	120	8.648	0.953	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

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *05-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007329
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007329-001

Client Sample ID: MW-57-070-009
Collection Date: 2/15/2012 8:20:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_120224A**	QC Batch: **39057**				PrepDate:	**2/17/2012**	Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	2/24/2012 10:32 AM
Barium	130	0.20	3.0		ug/L	1	2/24/2012 10:32 AM
Beryllium	ND	0.090	1.0		ug/L	1	2/24/2012 10:32 AM
Cadmium	ND	0.23	3.0		ug/L	1	2/24/2012 10:32 AM
Cobalt	ND	0.31	3.0		ug/L	1	2/24/2012 10:32 AM
Copper	9.8	0.53	5.0		ug/L	1	2/28/2012 05:11 PM
Lead	ND	1.5	10		ug/L	1	2/24/2012 10:32 AM
Molybdenum	ND	0.49	5.0		ug/L	1	2/24/2012 10:32 AM
Nickel	6.7	1.1	5.0		ug/L	1	2/24/2012 10:32 AM
Silver	6.5	0.72	3.0		ug/L	1	2/24/2012 10:32 AM
Vanadium	ND	0.19	3.0		ug/L	1	2/24/2012 10:32 AM
Zinc	ND	4.6	10		ug/L	1	2/24/2012 10:32 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

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *05-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007329
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007329-002

Client Sample ID: MW-60-125-009
Collection Date: 2/15/2012 1:31:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_120224A**	QC Batch: **39057**				PrepDate:	**2/17/2012**	Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	2/24/2012 11:00 AM
Barium	42	0.20	3.0		ug/L	1	2/24/2012 11:00 AM
Beryllium	ND	0.090	1.0		ug/L	1	2/24/2012 11:00 AM
Cadmium	ND	0.23	3.0		ug/L	1	2/24/2012 11:00 AM
Cobalt	ND	0.31	3.0		ug/L	1	2/24/2012 11:00 AM
Copper	ND	0.53	5.0		ug/L	1	2/28/2012 05:37 PM
Lead	ND	1.5	10		ug/L	1	2/24/2012 11:00 AM
Manganese	15	1.7	10		ug/L	1	2/24/2012 11:00 AM
Molybdenum	14	0.49	5.0		ug/L	1	2/24/2012 11:00 AM
Nickel	ND	1.1	5.0		ug/L	1	2/24/2012 11:00 AM
Silver	7.1	0.72	3.0		ug/L	1	2/24/2012 11:00 AM
Vanadium	ND	0.19	3.0		ug/L	1	2/24/2012 11:00 AM
Zinc	12	4.6	10		ug/L	1	2/24/2012 11:00 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

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *05-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007329
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007329-003

Client Sample ID: MW-61-110-009
Collection Date: 2/15/2012 9:30:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_120224A**	QC Batch: **39057**				PrepDate:	**2/17/2012**	Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	2/24/2012 11:05 AM
Barium	87	0.20	3.0		ug/L	1	2/24/2012 11:05 AM
Beryllium	ND	0.090	1.0		ug/L	1	2/24/2012 11:05 AM
Cadmium	ND	0.23	3.0		ug/L	1	2/24/2012 11:05 AM
Cobalt	ND	0.31	3.0		ug/L	1	2/24/2012 11:05 AM
Copper	ND	0.53	5.0		ug/L	1	2/28/2012 05:42 PM
Lead	ND	1.5	10		ug/L	1	2/24/2012 11:05 AM
Manganese	220	1.7	10		ug/L	1	2/24/2012 11:05 AM
Molybdenum	16	0.49	5.0		ug/L	1	2/24/2012 11:05 AM
Nickel	ND	1.1	5.0		ug/L	1	2/24/2012 11:05 AM
Silver	9.4	0.72	3.0		ug/L	1	2/24/2012 11:05 AM
Vanadium	ND	0.19	3.0		ug/L	1	2/24/2012 11:05 AM
Zinc	ND	4.6	10		ug/L	1	2/24/2012 11:05 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

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Advanced Technology Laboratories, Inc.

Date: *05-Mar-12*

CLIENT: CH2M HILL
Work Order: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39057** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/17/2012** RunNo: **83363**
Client ID: **PBW** Batch ID: **39057** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2012** SeqNo: **1366079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	ND	3.0									
Cobalt	ND	3.0									
Lead	ND	10									
Manganese	ND	10									
Molybdenum	2.053	5.0									
Nickel	ND	5.0									
Silver	ND	3.0									
Vanadium	ND	3.0									
Zinc	ND	10									

Sample ID: **LCS-39057** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/17/2012** RunNo: **83363**
Client ID: **LCSW** Batch ID: **39057** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2012** SeqNo: **1366080**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	53.646	10	50.00	0	107	85	115				
Barium	50.126	3.0	50.00	0	100	85	115				
Beryllium	9.626	1.0	10.00	0	96.3	85	115				
Cadmium	10.793	3.0	10.00	0	108	85	115				
Cobalt	10.407	3.0	10.00	0	104	85	115				
Lead	50.878	10	50.00	0	102	85	115				
Manganese	104.780	10	100.0	0	105	85	115				
Molybdenum	50.690	5.0	50.00	0	101	85	115				
Nickel	52.557	5.0	50.00	0	105	85	115				
Silver	9.734	3.0	10.00	0	97.3	85	115				
Vanadium	10.873	3.0	10.00	0	109	85	115				

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

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00025

CLIENT: CH2M HILL
Work Order: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **LCS-39057** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/17/2012** RunNo: **83363**
Client ID: **LCSW** Batch ID: **39057** TestNo: **EPA 6010B EPA 3010A** Analysis Date: **2/24/2012** SeqNo: **1366080**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	52.243	10	50.00	0	104	85	115				

Sample ID: **N007329-001B-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/17/2012** RunNo: **83363**
Client ID: **ZZZZZZ** Batch ID: **39057** TestNo: **EPA 6010B EPA 3010A** Analysis Date: **2/24/2012** SeqNo: **1366084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.401	10	50.00	0	105	75	125				
Barium	170.136	3.0	50.00	130.3	79.6	75	125				
Beryllium	9.196	1.0	10.00	0	92.0	75	125				
Cadmium	7.100	3.0	10.00	0	71.0	75	125				S
Cobalt	9.523	3.0	10.00	0	95.2	75	125				
Lead	41.575	10	50.00	0	83.1	75	125				
Manganese	99.748	10	100.0	4.857	94.9	75	125				
Molybdenum	51.138	5.0	50.00	1.907	98.5	75	125				
Nickel	53.728	5.0	50.00	6.675	94.1	75	125				
Silver	15.378	3.0	10.00	6.486	88.9	75	125				
Vanadium	10.494	3.0	10.00	0	105	75	125				
Zinc	56.855	10	50.00	9.759	94.2	75	125				

Sample ID: **N007329-001B-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/17/2012** RunNo: **83363**
Client ID: **ZZZZZZ** Batch ID: **39057** TestNo: **EPA 6010B EPA 3010A** Analysis Date: **2/24/2012** SeqNo: **1366085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	51.965	10	50.00	0	104	75	125	52.40	0.835	20	
Barium	173.693	3.0	50.00	130.3	86.8	75	125	170.1	2.07	20	
Beryllium	9.219	1.0	10.00	0	92.2	75	125	9.196	0.254	20	
Cadmium	7.187	3.0	10.00	0	71.9	75	125	7.100	1.23	20	S
Cobalt	9.479	3.0	10.00	0	94.8	75	125	9.523	0.465	20	
Lead	42.404	10	50.00	0	84.8	75	125	41.57	1.97	20	
Manganese	100.139	10	100.0	4.857	95.3	75	125	99.75	0.391	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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007329-001B-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/17/2012** RunNo: **83363**
Client ID: **ZZZZZZ** Batch ID: **39057** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2012** SeqNo: **1366085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	51.108	5.0	50.00	1.907	98.4	75	125	51.14	0.0582	20	
Nickel	53.967	5.0	50.00	6.675	94.6	75	125	53.73	0.443	20	
Silver	15.307	3.0	10.00	6.486	88.2	75	125	15.38	0.464	20	
Vanadium	10.599	3.0	10.00	0	106	75	125	10.49	0.993	20	
Zinc	57.255	10	50.00	9.759	95.0	75	125	56.86	0.701	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

98827

CLIENT: CH2M HILL
Work Order: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39145** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83424**
Client ID: **PBW** Batch ID: **39145** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1367753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	4.886	5.0									
Vanadium	ND	3.0									

Sample ID: **LCS-39145** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83424**
Client ID: **LCSW** Batch ID: **39145** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1367754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	9.737	5.0	10.00	0	97.4	85	115				
Vanadium	9.898	3.0	10.00	0	99.0	85	115				

Sample ID: **N007329-001B-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83424**
Client ID: **ZZZZZZ** Batch ID: **39145** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1367758**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	15.285	5.0	10.00	9.829	54.6	75	125				S
Vanadium	9.883	3.0	10.00	0	98.8	75	125				

Sample ID: **N007329-001B-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83424**
Client ID: **ZZZZZZ** Batch ID: **39145** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1367759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	14.064	5.0	10.00	9.829	42.3	75	125	15.28	8.32	20	S
Vanadium	9.955	3.0	10.00	0	99.5	75	125	9.883	0.721	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

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-070-009
Lab Order:	N007329	**Collection Date:**	2/15/2012 8:20:00 AM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007329-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_120225A**	QC Batch: **39068**			PrepDate:		**2/23/2012**	Analyst: **CEI**
Arsenic	1.2	0.0025	0.10		µg/L	1	2/25/2012 04:55 PM
Chromium	520	0.040	5.0		µg/L	5	2/25/2012 04:35 PM
Selenium	3.6	0.018	0.50		µg/L	1	2/25/2012 04:55 PM
Thallium	ND	0.039	0.50		µg/L	1	2/25/2012 04:55 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: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60-125-009
Lab Order:	N007329	**Collection Date:**	2/15/2012 1:31:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007329-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_120225A**	QC Batch: **39068**			PrepDate:		**2/23/2012**	Analyst: **CEI**
Arsenic	1.2	0.0025	0.10		µg/L	1	2/25/2012 05:09 PM
Chromium	1100	0.20	25		µg/L	25	2/25/2012 05:14 PM
Selenium	5.5	0.018	0.50		µg/L	1	2/25/2012 05:09 PM
Thallium	ND	0.20	2.5		µg/L	5	2/25/2012 05:04 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *05-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007329
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007329-003

Client Sample ID: MW-61-110-009
Collection Date: 2/15/2012 9:30:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **ICP7_120225A**	QC Batch: **39068**				PrepDate:	**2/23/2012**	Analyst: **CEI**
Arsenic	3.2	0.0025	0.10		µg/L	1	2/25/2012 05:24 PM
Chromium	670	0.040	5.0		µg/L	5	2/25/2012 05:19 PM
Selenium	ND	0.090	2.5		µg/L	5	2/25/2012 05:19 PM
Thallium	ND	0.20	2.5		µg/L	5	2/25/2012 05:19 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		

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Advanced Technology Laboratories, Inc.

Date: *05-Mar-12*

CLIENT: CH2M HILL
Work Order: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39068** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **PBW** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.015	0.10									
Chromium	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **LCS-39068** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **LCSW** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.817	0.10	10.00	0	88.2	85	115				
Chromium	9.461	1.0	10.00	0	94.6	85	115				
Selenium	9.335	0.50	10.00	0	93.3	85	115				
Thallium	10.437	0.50	10.00	0	104	85	115				

Sample ID: **N007325-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.895	0.50	10.00	3.298	96.0	75	125				
Selenium	16.616	2.5	10.00	4.535	121	75	125				

Sample ID: **N007325-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	34.457	1.0	10.00	27.20	72.6	75	125				S

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: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007325-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.129	12	10.00	0	101	75	125				

Sample ID: **N007325-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.957	0.50	10.00	3.298	96.6	75	125	12.90	0.475	20	
Selenium	13.161	2.5	10.00	4.535	86.3	75	125	16.62	23.2	20	R

Sample ID: **N007325-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	34.380	1.0	10.00	27.20	71.8	75	125	34.46	0.223	20	S

Sample ID: **N007325-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2012** RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.213	12	10.00	0	102	75	125	10.13	0	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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-57-070-009
Lab Order:	N007329	**Collection Date:**	2/15/2012 8:20:00 AM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007329-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120222A**	QC Batch: **39063**			PrepDate:	**2/21/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	2/22/2012

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		

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-60-125-009
Lab Order:	N007329	**Collection Date:**	2/15/2012 1:31:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007329-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120222A**	QC Batch: **39063**			PrepDate:	**2/21/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	2/22/2012

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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-61-110-009
Lab Order:	N007329	**Collection Date:**	2/15/2012 9:30:00 AM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007329-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120222A**	QC Batch: **39063**			PrepDate:	**2/21/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	2/22/2012

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: *05-Mar-12*

CLIENT: CH2M HILL
Work Order: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39063** SampType: **LCS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/21/2012** RunNo: **83393**
Client ID: **LCSW** Batch ID: **39063** TestNo: **EPA 7470A** Analysis Date: **2/22/2012** SeqNo: **1366712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.562	0.20	5.000	0	91.2	85	115				

Sample ID: **MB-39063** SampType: **MBLK** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/21/2012** RunNo: **83393**
Client ID: **PBW** Batch ID: **39063** TestNo: **EPA 7470A** Analysis Date: **2/22/2012** SeqNo: **1366714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.100	0.20									

Sample ID: **N007325-003C-MS** SampType: **MS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/21/2012** RunNo: **83393**
Client ID: **ZZZZZZ** Batch ID: **39063** TestNo: **EPA 7470A** Analysis Date: **2/22/2012** SeqNo: **1366729**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.533	0.20	5.000	0.1034	88.6	75	125				

Sample ID: **N007325-003C-MSD** SampType: **MSD** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/21/2012** RunNo: **83393**
Client ID: **ZZZZZZ** Batch ID: **39063** TestNo: **EPA 7470A** Analysis Date: **2/22/2012** SeqNo: **1366730**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.686	0.20	5.000	0.1034	91.7	75	125	4.533	3.32	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		

ER/TCS-009 ATL #4

CH2MHILL

CHAIN OF CUSTODY RECORD

2/15/2012 3:22:29 PM

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/15/2012
COC Number: 6

				Extra (*)	Cr6 (E218.6) Field Filtered	Metals (6010B/6020A/7470Adis) Field Filtered Title 22 metals	Metals (SW6010B/SW6020Adis) Field Filtered Chromium	Metals (6010BFF) Field Filtered Mn	Specific Conductance (E120.1)	Anions (E300.0) NO3		Number of Containers	COMMENTS
			Container:	1Liter Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
			Filtered:	NA	Field	Field	Field	Field	NA	NA			
			Holding Time:	30	28	180	180	180	2	2			
	DATE	TIME	Matrix										
MW-57-070-009	2/15/2012	8:20	Water	X		X			X		N007329-1	3	
MW-60-125-009	2/15/2012	13:31	Water	X		X		X	X	X	-2	4	
MW-61-110-009	2/15/2012	9:30	Water	X		X		X	X	X	-3	4	
MW-71-035-009A	2/15/2012	9:10	Water		X	X	X	X	X	X	-4	4	
											TOTAL NUMBER OF CONTAINERS	15	

	Signatures	Date/Time
Approved by		
Sampled by		2-15-12 1627
Relinquished by		
Received by		2/15/12 @ 1627
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: yes / no 2.1°C
Airbill No: ice 1R#2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
February, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On:	2/15/2012	Workorder:	N007329
Rep sample Temp (Deg C):	2.9	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 2/16/12

Reviewed By: [illegible]

00042

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in μg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = ug/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For N007329-004A, concentration in μg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.016416 * 5$$

$$= 0.08208 \ \mu g/L$$

Reporting results in two significant figures,

$$Cr^{+6}, \mu g/L = 0.082 \ \mu g/L$$

Since reporting limit is 1.0 μg/L,

$$Cr^{+6}, \mu g/L = ND$$

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:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007329-002D**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	1.744 * 2
	=	3.488 mg/L

Reporting **N007329-002D**, results in two significant figures,

Nitrate, mg/L	**=**	**3.5 mg/L**

MS 2/28/12

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF * CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL
CF = Conversion Factor

For Sample **N007329-001B**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.13031 * 1* (25/25) * 1000

= 130.31 ug/L

Reporting results in two significant figures,

Barium, ug/L = 130

NS fn
3/5/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007329
Test Method: EPA 6010
Analysis Date: 02/24/12

Matrix: Water
Batch No.: 39057

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007329-001B-DT 5X	Antimony	ug/L	0	NA	0		10
N007329-001B-DT 5X	Barium	ug/L	131.39777	PASS	130.311148	-0.83%	10
N007329-001B-DT 5X	Beryllium	ug/L	0	NA	0		10
N007329-001B-DT 5X	Cadmium	ug/L	0	NA	0		10
N007329-001B-DT 5X	Cobalt	ug/L	0	NA	0		10
N007329-001B-DT 5X	Molybdenum	ug/L	2.897705	NA	1.906786	-51.97%	10
N007329-001B-DT 5X	Nickel	ug/L	0	NA	6.675422	100.00%	10
N007329-001B-DT 5X	Silver	ug/L	7.35455	NA	6.485649	-13.40%	10
N007329-001B-DT 5X	Lead	ug/L	0	NA	0		10
N007329-001B-DT 5X	Vanadium	ug/L	0	NA	0		10
N007329-001B-DT 5X	Zinc	ug/L	0	NA	9.758954	100.00%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007329
Test Method: EPA 6010
Analysis Date: 02/28/12

Matrix: Water
Batch No.: 39145

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	QQual	SAMPrefval	%DIFF	%DIFFlimit
N007329-001B-DT 5X	Copper	ug/L	6.026328	NA	9.829283	38.69%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

Date: *02-Mar-12*

CLIENT: CH2M HILL
Work Order: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007329-001B-PS 2** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **83363**
Client ID: **ZZZZZZ** Batch ID: **39057** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2012** SeqNo: **1366083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	269.531	20	250.0	0	108	75	125				
Barium	372.602	6.0	250.0	130.3	96.9	75	125				
Beryllium	253.565	2.0	250.0	0	101	75	125				
Cadmium	245.741	6.0	250.0	0	98.3	75	125				
Cobalt	253.634	6.0	250.0	0	101	75	125				
Lead	240.387	20	250.0	0	96.2	75	125				
Manganese	500.524	20	500.0	4.857	99.1	75	125				
Molybdenum	252.928	10	250.0	1.907	100	75	125				
Nickel	254.924	10	250.0	6.675	99.3	75	125				
Silver	261.515	6.0	250.0	6.486	102	75	125				
Vanadium	261.482	6.0	250.0	0	105	75	125				
Zinc	254.674	20	250.0	9.759	98.0	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		

00200

CLIENT: CH2M HILL
Work Order: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007329-001B-PS 2** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **83424**
Client ID: **ZZZZZZ** Batch ID: **39145** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1367757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	247.406	10	250.0	9.829	95.0	75	125				
Vanadium	250.210	6.0	250.0	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:

Arsenic, mg/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 **N007329-001B**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 1.212* 1 * (25/25)

= 1.212 ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 1.2

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007329
Test Method: EPA 6020
Analysis Date: 02/25/12

Matrix: Water
Batch No.: 39068

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to Se,. The calc. values were < 25X the RL. PS @ 5x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007325-001B-DT 5X	Chromium	µg/L	29.5349741	PASS	27.19840095	-8.59%	10
N007325-001B-DT 25X	Arsenic	µg/L	3.522566521	PASS	3.297843687	-6.81%	10
N007325-001B-DT 25X	Selenium	µg/L	7.543528126	NA	4.534920977	-66.34%	10

Advanced Technology Laboratories, Inc.

Date: *29-Feb-12*

CLIENT: CH2M HILL
Work Order: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007325-001B-PS 5** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.657	0.50	50.00	3.298	94.7	75	125				
Selenium	45.542	2.5	50.00	4.535	82.0	75	125				

Sample ID: **N007325-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	45.217	1.0	20.00	27.20	90.1	75	125				

Sample ID: **N007325-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	248.970	12	250.0	0	99.6	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		

002256

CLIENT: CH2M HILL
Work Order: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N007325-001B-PS 2** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **83392**
Client ID: **ZZZZZZ** Batch ID: **39068** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/25/2012** SeqNo: **1366756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	45.217	2.0	20.00	27.20	90.1	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 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:

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 coversion factor.

For Sample **N007329-001B**, the concentration in ug/L is calculated as follows:

Mercury, ug/L = 0.11 * 1 * (50/25) * 0.5

= 0.11 ug/L

Reporting results in two significant figures,

Mercury, ug/L = 0.11

Mercury, ug/L = ND

March 13, 2012

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.: N007337

RE: PG&E Topock, 417981.ER.02.DM

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 16, 2012 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.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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.

Advanced Technology Laboratories, Inc. **Date:** *13-Mar-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 417981.ER.02.DM
Lab Order: N007337

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 Cadmium and Copper possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) is outside recovery criteria for Selenium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020:

Dilution was necessary for Selenium and Thallium due to matrix interference. The associated internal standards fail the recovery limit of 70-130 % at lower dilution. Results were reported at dilution that meets internal standard recovery limit.

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

Date: *05-Mar-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 417981.ER.02.DM
Lab Order: N007337
Contract No: 2012-EASTRAV

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007337-001A	MW-60BR-245-009	Water	2/16/2012 7:35:00 AM	2/16/2012	3/5/2012
N007337-001B	MW-60BR-245-009	Water	2/16/2012 7:35:00 AM	2/16/2012	3/5/2012
N007337-001C	MW-60BR-245-009	Water	2/16/2012 7:35:00 AM	2/16/2012	3/5/2012
N007337-001D	MW-60BR-245-009	Water	2/16/2012 7:35:00 AM	2/16/2012	3/5/2012
N007337-002A	MW-62-110-009	Water	2/16/2012 3:25:00 PM	2/16/2012	3/5/2012
N007337-002B	MW-62-110-009	Water	2/16/2012 3:25:00 PM	2/16/2012	3/5/2012
N007337-002C	MW-62-110-009	Water	2/16/2012 3:25:00 PM	2/16/2012	3/5/2012
N007337-003A	MW-62-190-009	Water	2/16/2012 3:30:00 PM	2/16/2012	3/5/2012
N007337-003B	MW-62-190-009	Water	2/16/2012 3:30:00 PM	2/16/2012	3/5/2012
N007337-003C	MW-62-190-009	Water	2/16/2012 3:30:00 PM	2/16/2012	3/5/2012
N007337-004A	MW-64BR-LWR-150-009	Water	2/16/2012 10:35:00 AM	2/16/2012	3/5/2012
N007337-004B	MW-64BR-LWR-150-009	Water	2/16/2012 10:35:00 AM	2/16/2012	3/5/2012
N007337-004C	MW-64BR-LWR-150-009	Water	2/16/2012 10:35:00 AM	2/16/2012	3/5/2012
N007337-004D	MW-64BR-LWR-150-009	Water	2/16/2012 10:35:00 AM	2/16/2012	3/5/2012
N007337-005A	MW-65-160-009	Water	2/16/2012 12:08:00 PM	2/16/2012	3/5/2012
N007337-005B	MW-65-160-009	Water	2/16/2012 12:08:00 PM	2/16/2012	3/5/2012
N007337-005C	MW-65-160-009	Water	2/16/2012 12:08:00 PM	2/16/2012	3/5/2012
N007337-005D	MW-65-160-009	Water	2/16/2012 12:08:00 PM	2/16/2012	3/5/2012
N007337-006A	MW-65-225-009	Water	2/16/2012 4:11:00 PM	2/16/2012	3/5/2012
N007337-006B	MW-65-225-009	Water	2/16/2012 4:11:00 PM	2/16/2012	3/5/2012
N007337-006C	MW-65-225-009	Water	2/16/2012 4:11:00 PM	2/16/2012	3/5/2012
N007337-006D	MW-65-225-009	Water	2/16/2012 4:11:00 PM	2/16/2012	3/5/2012
N007337-007A	MW-70-105-009	Water	2/16/2012 1:06:00 PM	2/16/2012	3/5/2012
N007337-007B	MW-70-105-009	Water	2/16/2012 1:06:00 PM	2/16/2012	3/5/2012
N007337-007C	MW-70-105-009	Water	2/16/2012 1:06:00 PM	2/16/2012	3/5/2012
N007337-007D	MW-70-105-009	Water	2/16/2012 1:06:00 PM	2/16/2012	3/5/2012
N007337-008A	MW-70BR-225-009	Water	2/16/2012 2:45:00 PM	2/16/2012	3/5/2012
N007337-008B	MW-70BR-225-009	Water	2/16/2012 2:45:00 PM	2/16/2012	3/5/2012
N007337-008C	MW-70BR-225-009	Water	2/16/2012 2:45:00 PM	2/16/2012	3/5/2012

Advanced Technology Laboratories, Inc.
3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-009
Lab Order:	N007337	**Collection Date:**	2/16/2012 3:25:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007337-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120216B**	QC Batch: **R83248**			PrepDate:			Analyst: **MCS**
Specific Conductance	8700	0.10	0.10		umhos/cm	1	2/16/2012

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: *05-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007337
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007337-003

Client Sample ID: MW-62-190-009
Collection Date: 2/16/2012 3:30:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120216B**	QC Batch: **R83248**			PrepDate:			Analyst: **MCS**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	2/16/2012

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: *05-Mar-12*

CLIENT: CH2M HILL
Work Order: N007337
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83248** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83248**
Client ID: **LCSW** Batch ID: **R83248** TestNo: **EPA 120.1** Analysis Date: **2/16/2012** SeqNo: **1361044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	9540.000	0.10	9980	0	95.6	85	115				

Sample ID: **N007337-008D-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83248**
Client ID: **ZZZZZZ** Batch ID: **R83248** TestNo: **EPA 120.1** Analysis Date: **2/16/2012** SeqNo: **1361053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13080.000	0.10						13130	0.382	10	

Sample ID: **N007337-008D-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83248**
Client ID: **ZZZZZZ** Batch ID: **R83248** TestNo: **EPA 120.1** Analysis Date: **2/16/2012** SeqNo: **1361054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	23380.000	0.20	9986	13130	103	75	125				

Sample ID: **N007337-008D-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83248**
Client ID: **ZZZZZZ** Batch ID: **R83248** TestNo: **EPA 120.1** Analysis Date: **2/16/2012** SeqNo: **1361055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	21760.000	0.20	9986	13130	86.4	75	125	23380	7.18	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.

ANALYTICAL RESULTS

Print Date: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-009
Lab Order:	N007337	**Collection Date:**	2/16/2012 3:25:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007337-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120217A**	QC Batch: **R83410**			PrepDate:			Analyst: **QBM**
Nitrate as N	3.2	0.024	1.0		mg/L	2	2/17/2012 11:12 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: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-190-009
Lab Order:	N007337	**Collection Date:**	2/16/2012 3:30:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007337-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120217A**	QC Batch: **R83410**			PrepDate:			Analyst: **QBM**
Nitrate as N	ND	0.060	2.5		mg/L	5	2/17/2012 11:24 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.

Date: *05-Mar-12*

CLIENT: CH2M HILL
Work Order: N007337
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R83410_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83410**
Client ID: **PBW** Batch ID: **R83410** TestNo: **EPA 300.0** Analysis Date: **2/17/2012** SeqNo: **1367453**

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-R83410_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83410**
Client ID: **LCSW** Batch ID: **R83410** TestNo: **EPA 300.0** Analysis Date: **2/17/2012** SeqNo: **1367454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.442	0.50	2.500	0	97.7	90	110				

Sample ID: **N007337-002CDUP** SampType: **DUP** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83410**
Client ID: **ZZZZZZ** Batch ID: **R83410** TestNo: **EPA 300.0** Analysis Date: **2/17/2012** SeqNo: **1367464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	3.200	1.0						3.208	0.250	20	

Sample ID: **N007337-006DMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83410**
Client ID: **ZZZZZZ** Batch ID: **R83410** TestNo: **EPA 300.0** Analysis Date: **2/17/2012** SeqNo: **1367465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	17.835	2.5	12.50	5.590	98.0	80	120				

Sample ID: **N007337-006DMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83410**
Client ID: **ZZZZZZ** Batch ID: **R83410** TestNo: **EPA 300.0** Analysis Date: **2/17/2012** SeqNo: **1367466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	17.780	2.5	12.50	5.590	97.5	80	120	17.84	0.309	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

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-009
Lab Order:	N007337	**Collection Date:**	2/16/2012 3:25:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007337-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_120224A**	QC Batch: **39057**				PrepDate:	**2/17/2012**	Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	2/24/2012 11:33 AM
Barium	41	0.20	3.0		ug/L	1	2/24/2012 11:33 AM
Beryllium	ND	0.090	1.0		ug/L	1	2/24/2012 11:33 AM
Cadmium	ND	0.23	3.0		ug/L	1	2/24/2012 11:33 AM
Cobalt	ND	0.31	3.0		ug/L	1	2/24/2012 11:33 AM
Copper	ND	0.53	5.0		ug/L	1	2/28/2012 06:11 PM
Lead	ND	1.5	10		ug/L	1	2/24/2012 11:33 AM
Manganese	190	1.7	10		ug/L	1	2/24/2012 11:33 AM
Molybdenum	44	0.49	5.0		ug/L	1	2/24/2012 11:33 AM
Nickel	ND	1.1	5.0		ug/L	1	2/24/2012 11:33 AM
Silver	3.2	0.72	3.0		ug/L	1	2/24/2012 11:33 AM
Vanadium	ND	0.19	3.0		ug/L	1	2/24/2012 11:33 AM
Zinc	ND	4.6	10		ug/L	1	2/24/2012 11:33 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *05-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007337
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007337-003

Client Sample ID: MW-62-190-009
Collection Date: 2/16/2012 3:30:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_120224A**	QC Batch: **39057**			PrepDate:	**2/17/2012**		Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	2/24/2012 11:38 AM
Barium	72	0.20	3.0		ug/L	1	2/24/2012 11:38 AM
Beryllium	ND	0.090	1.0		ug/L	1	2/24/2012 11:38 AM
Cadmium	ND	0.23	3.0		ug/L	1	2/24/2012 11:38 AM
Cobalt	ND	0.31	3.0		ug/L	1	2/24/2012 11:38 AM
Copper	ND	0.53	5.0		ug/L	1	2/28/2012 06:15 PM
Lead	ND	1.5	10		ug/L	1	2/24/2012 11:38 AM
Manganese	840	1.7	10		ug/L	1	2/24/2012 11:38 AM
Molybdenum	63	0.49	5.0		ug/L	1	2/24/2012 11:38 AM
Nickel	ND	1.1	5.0		ug/L	1	2/24/2012 11:38 AM
Silver	5.4	0.72	3.0		ug/L	1	2/24/2012 11:38 AM
Vanadium	ND	0.19	3.0		ug/L	1	2/24/2012 11:38 AM
Zinc	ND	4.6	10		ug/L	1	2/24/2012 11:38 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.

Date: *05-Mar-12*

CLIENT: CH2M HILL
Work Order: N007337
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39057** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/17/2012** RunNo: **83363**
Client ID: **PBW** Batch ID: **39057** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2012** SeqNo: **1366079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	ND	3.0									
Cobalt	ND	3.0									
Lead	ND	10									
Manganese	ND	10									
Molybdenum	2.053	5.0									
Nickel	ND	5.0									
Silver	ND	3.0									
Vanadium	ND	3.0									
Zinc	ND	10									

Sample ID: **LCS-39057** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/17/2012** RunNo: **83363**
Client ID: **LCSW** Batch ID: **39057** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2012** SeqNo: **1366080**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	53.646	10	50.00	0	107	85	115				
Barium	50.126	3.0	50.00	0	100	85	115				
Beryllium	9.626	1.0	10.00	0	96.3	85	115				
Cadmium	10.793	3.0	10.00	0	108	85	115				
Cobalt	10.407	3.0	10.00	0	104	85	115				
Lead	50.878	10	50.00	0	102	85	115				
Manganese	104.780	10	100.0	0	105	85	115				
Molybdenum	50.690	5.0	50.00	0	101	85	115				
Nickel	52.557	5.0	50.00	0	105	85	115				
Silver	9.734	3.0	10.00	0	97.3	85	115				
Vanadium	10.873	3.0	10.00	0	109	85	115				

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: N007337
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **LCS-39057** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/17/2012** RunNo: **83363**
Client ID: **LCSW** Batch ID: **39057** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2012** SeqNo: **1366080**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	52.243	10	50.00	0	104	85	115				

Sample ID: **N007329-001B-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/17/2012** RunNo: **83363**
Client ID: **ZZZZZZ** Batch ID: **39057** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2012** SeqNo: **1366084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.401	10	50.00	0	105	75	125				
Barium	170.136	3.0	50.00	130.3	79.6	75	125				
Beryllium	9.196	1.0	10.00	0	92.0	75	125				
Cadmium	7.100	3.0	10.00	0	71.0	75	125				S
Cobalt	9.523	3.0	10.00	0	95.2	75	125				
Lead	41.575	10	50.00	0	83.1	75	125				
Manganese	99.748	10	100.0	4.857	94.9	75	125				
Molybdenum	51.138	5.0	50.00	1.907	98.5	75	125				
Nickel	53.728	5.0	50.00	6.675	94.1	75	125				
Silver	15.378	3.0	10.00	6.486	88.9	75	125				
Vanadium	10.494	3.0	10.00	0	105	75	125				
Zinc	56.855	10	50.00	9.759	94.2	75	125				

Sample ID: **N007329-001B-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/17/2012** RunNo: **83363**
Client ID: **ZZZZZZ** Batch ID: **39057** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2012** SeqNo: **1366085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	51.965	10	50.00	0	104	75	125	52.40	0.835	20	
Barium	173.693	3.0	50.00	130.3	86.8	75	125	170.1	2.07	20	
Beryllium	9.219	1.0	10.00	0	92.2	75	125	9.196	0.254	20	
Cadmium	7.187	3.0	10.00	0	71.9	75	125	7.100	1.23	20	S
Cobalt	9.479	3.0	10.00	0	94.8	75	125	9.523	0.465	20	
Lead	42.404	10	50.00	0	84.8	75	125	41.57	1.97	20	
Manganese	100.139	10	100.0	4.857	95.3	75	125	99.75	0.391	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

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CLIENT: CH2M HILL
Work Order: N007337
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007329-001B-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/17/2012** RunNo: **83363**
Client ID: **ZZZZZZ** Batch ID: **39057** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2012** SeqNo: **1366085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	51.108	5.0	50.00	1.907	98.4	75	125	51.14	0.0582	20	
Nickel	53.967	5.0	50.00	6.675	94.6	75	125	53.73	0.443	20	
Silver	15.307	3.0	10.00	6.486	88.2	75	125	15.38	0.464	20	
Vanadium	10.599	3.0	10.00	0	106	75	125	10.49	0.993	20	
Zinc	57.255	10	50.00	9.759	95.0	75	125	56.86	0.701	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

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CLIENT: CH2M HILL
Work Order: N007337
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39145** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83424**
Client ID: **PBW** Batch ID: **39145** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1367753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	4.886	5.0									
Vanadium	ND	3.0									

Sample ID: **LCS-39145** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83424**
Client ID: **LCSW** Batch ID: **39145** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1367754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	9.737	5.0	10.00	0	97.4	85	115				
Vanadium	9.898	3.0	10.00	0	99.0	85	115				

Sample ID: **N007329-001B-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83424**
Client ID: **ZZZZZZ** Batch ID: **39145** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1367758**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	15.285	5.0	10.00	9.829	54.6	75	125				S
Vanadium	9.883	3.0	10.00	0	98.8	75	125				

Sample ID: **N007329-001B-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/27/2012** RunNo: **83424**
Client ID: **ZZZZZZ** Batch ID: **39145** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1367759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	14.064	5.0	10.00	9.829	42.3	75	125	15.28	8.32	20	S
Vanadium	9.955	3.0	10.00	0	99.5	75	125	9.883	0.721	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

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *05-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007337
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007337-002

Client Sample ID: MW-62-110-009
Collection Date: 2/16/2012 3:25:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_120227A**	QC Batch: **39116**				PrepDate:	**2/25/2012**	Analyst: **CEI**
Arsenic	6.3	0.012	0.50		µg/L	5	2/27/2012 02:45 PM
Chromium	880	0.040	5.0		µg/L	5	2/27/2012 02:45 PM
Selenium	ND	0.45	12		µg/L	25	2/27/2012 02:54 PM
Thallium	ND	0.98	12		µg/L	25	2/27/2012 02:54 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		

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *05-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007337
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007337-003

Client Sample ID: MW-62-190-009
Collection Date: 2/16/2012 3:30:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_120227A**	QC Batch: **39116**				PrepDate:	**2/25/2012**	Analyst: **CEI**
Arsenic	6.4	0.012	0.50		µg/L	5	2/27/2012 02:59 PM
Chromium	ND	0.0080	1.0		µg/L	1	2/27/2012 03:26 PM
Selenium	ND	0.45	12		µg/L	25	2/27/2012 03:30 PM
Thallium	ND	0.98	12		µg/L	25	2/27/2012 03:30 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: *05-Mar-12*

CLIENT: CH2M HILL
Work Order: N007337
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39116** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/25/2012** RunNo: **83381**
Client ID: **PBW** Batch ID: **39116** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/27/2012** SeqNo: **1366325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.007	0.10									
Chromium	0.016	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **LCS-39116** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/25/2012** RunNo: **83381**
Client ID: **LCSW** Batch ID: **39116** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/27/2012** SeqNo: **1366326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.182	0.10	10.00	0	91.8	85	115				
Chromium	9.456	1.0	10.00	0	94.6	85	115				
Selenium	9.384	0.50	10.00	0	93.8	85	115				
Thallium	9.758	0.50	10.00	0	97.6	85	115				

Sample ID: **N007337-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/25/2012** RunNo: **83381**
Client ID: **ZZZZZZ** Batch ID: **39116** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/27/2012** SeqNo: **1366333**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.178	0.50	10.00	4.026	102	75	125				
Chromium	269.499	5.0	10.00	246.8	227	75	125				S

Sample ID: **N007337-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/25/2012** RunNo: **83381**
Client ID: **ZZZZZZ** Batch ID: **39116** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/27/2012** SeqNo: **1366338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.104	12	10.00	2.943	71.6	75	125				S
Thallium	10.344	12	10.00	0	103	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: N007337
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007337-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/25/2012** RunNo: **83381**
Client ID: **ZZZZZZ** Batch ID: **39116** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/27/2012** SeqNo: **1366339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.418	0.50	10.00	4.026	104	75	125	14.18	1.68	20	
Chromium	271.534	5.0	10.00	246.8	247	75	125	269.5	0.752	20	S

Sample ID: **N007337-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/25/2012** RunNo: **83381**
Client ID: **ZZZZZZ** Batch ID: **39116** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/27/2012** SeqNo: **1366372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.369	12	10.00	2.943	84.3	75	125	10.10	0	20	
Thallium	10.367	12	10.00	0	104	75	125	10.34	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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-110-009
Lab Order:	N007337	**Collection Date:**	2/16/2012 3:25:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007337-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120227B**	QC Batch: **39065**			PrepDate:	**2/24/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	2/27/2012

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: *05-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-190-009
Lab Order:	N007337	**Collection Date:**	2/16/2012 3:30:00 PM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007337-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120227B**	QC Batch: **39065**			PrepDate:	**2/24/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	2/27/2012

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: *05-Mar-12*

CLIENT: CH2M HILL
Work Order: N007337
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39065** SampType: **LCS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/24/2012** RunNo: **83436**
Client ID: **LCSW** Batch ID: **39065** TestNo: **EPA 7470A** Analysis Date: **2/27/2012** SeqNo: **1368223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.625	0.20	5.000	0	92.5	85	115				

Sample ID: **MB-39065** SampType: **MBLK** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/24/2012** RunNo: **83436**
Client ID: **PBW** Batch ID: **39065** TestNo: **EPA 7470A** Analysis Date: **2/27/2012** SeqNo: **1368224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N007337-001C-MS** SampType: **MS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/24/2012** RunNo: **83436**
Client ID: **ZZZZZZ** Batch ID: **39065** TestNo: **EPA 7470A** Analysis Date: **2/27/2012** SeqNo: **1368226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.801	0.20	5.000	0	96.0	75	125				

Sample ID: **N007337-001C-MSD** SampType: **MSD** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/24/2012** RunNo: **83436**
Client ID: **ZZZZZZ** Batch ID: **39065** TestNo: **EPA 7470A** Analysis Date: **2/27/2012** SeqNo: **1368227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.806	0.20	5.000	0	96.1	75	125	4.801	0.0962	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		

CH2MHILL

CHAIN OF CUSTODY RECORD

2/16/2012 4:49:56 PM

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/16/2012
COC Number: 8

			Container:	1Liter Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
			Filtered:	NA	Field	Field	Field	Field	NA	NA			
			Holding Time:	30	28	180	180	180	2	2			
	DATE	TIME	Matrix	Extra (*)	Cr6 (E218.6) Field Filtered	Metals (6010B/6020A/7470Adis) Field Filtered Title 22 metals	Metals (SW6010B/SW6020Adis) Field Filtered Chromium	Metals (6010BFF) Field Filtered Mn	Specific Conductance (E120.1)	Anions (E300.0) NO3		Number of Containers	COMMENTS
MW-60BR-245-009	2/16/2012	7:35	Water	X	X	X	X	X	X	X	N007337-1	5	
MW-62-110-009	2/16/2012	15:25	Water	X		X		X	X	X	-2	4	
MW-62-190-009	2/16/2012	15:30	Water	X		X		X	X	X	-3	4	
MW-64BR-LWR-150-	2/16/2012	10:35	Water	X	X	X	X		X		-4	4	
MW-65-160-009	2/16/2012	12:08	Water	X	X	X	X	X	X	X	-5	5	
MW-65-225-009	2/16/2012	16:11	Water	X	X	X	X	X	X	X	-6	5	
MW-70-105-009	2/16/2012	13:06	Water	X	X	X	X	X	X	X	-7	5	
MW-70BR-225-009	2/16/2012	14:45	Water	X	X	X	X	X	X	X	-8	5	
											TOTAL NUMBER OF CONTAINERS	37	

	Signatures	Date/Time
Approved by		2-16-12
Sampled by		1700
Relinquished by		
Received by		2/16/12 2/700
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 1.7°C, 4.2°C
Airbill No: ICE IRH2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
February, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On: 2/16/2012 Workorder: N007337

Rep sample Temp (Deg C): 1.7/4.2 IR Gun ID: 2

Temp Blank: ☐ Yes ☑ No

Carrier name: ATL

Last 4 digits of Tracking No.: na Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 2/17/12

Reviewed By: [signature]

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = ug/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For N007337-001B, concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 12.729755 * 20$$

$$= 254.595 \ \mu g/L$$

Reporting results in two significant figures,

$$Cr^{+6}, \mu g/L = 250 \ \mu g/L$$

MS 2/24/12

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:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007337-002C**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	1.604 * 2
	=	3.208 mg/L

Reporting **N007337-002C**, results in two significant figures,

Nitrate, mg/L	**=**	**3.2 mg/L**

MS 3/1/12

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF * CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL
CF = Conversion Factor

For Sample **N007337-001B**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.06237 * 1* (25/25) * 1000

= 62.37 ug/L

Reporting results in two significant figures,

Barium, ug/L = 62

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007337
Test Method: EPA 6010
Analysis Date: 02/24/12

Matrix: Water
Batch No.: 39057

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007329-001B-DT 5X	Antimony	ug/L	0	NA	0		10
N007329-001B-DT 5X	Barium	ug/L	131.39777	PASS	130.311148	-0.83%	10
N007329-001B-DT 5X	Beryllium	ug/L	0	NA	0		10
N007329-001B-DT 5X	Cadmium	ug/L	0	NA	0		10
N007329-001B-DT 5X	Cobalt	ug/L	0	NA	0		10
N007329-001B-DT 5X	Molybdenum	ug/L	2.897705	NA	1.906786	-51.97%	10
N007329-001B-DT 5X	Nickel	ug/L	0	NA	6.675422	100.00%	10
N007329-001B-DT 5X	Silver	ug/L	7.35455	NA	6.485649	-13.40%	10
N007329-001B-DT 5X	Lead	ug/L	0	NA	0		10
N007329-001B-DT 5X	Vanadium	ug/L	0	NA	0		10
N007329-001B-DT 5X	Zinc	ug/L	0	NA	9.758954	100.00%	10
↓	Manganese	j	0		4.857	0	j

Note: NA - Not Applicable

NS for 3/5/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007337
Test Method: EPA 6010
Analysis Date: 02/28/12

Matrix: Water
Batch No.: 39145

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007329-001B-DT 5X	Copper	ug/L	6.026328	NA	9.829283	38.69%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

Date: *02-Mar-12*

CLIENT: CH2M HILL
Work Order: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007329-001B-PS 2** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **83363**
Client ID: **ZZZZZZ** Batch ID: **39057** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2012** SeqNo: **1366083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	269.531	20	250.0	0	108	75	125				
Barium	372.602	6.0	250.0	130.3	96.9	75	125				
Beryllium	253.565	2.0	250.0	0	101	75	125				
Cadmium	245.741	6.0	250.0	0	98.3	75	125				
Cobalt	253.634	6.0	250.0	0	101	75	125				
Lead	240.387	20	250.0	0	96.2	75	125				
Manganese	500.524	20	500.0	4.857	99.1	75	125				
Molybdenum	252.928	10	250.0	1.907	100	75	125				
Nickel	254.924	10	250.0	6.675	99.3	75	125				
Silver	261.515	6.0	250.0	6.486	102	75	125				
Vanadium	261.482	6.0	250.0	0	105	75	125				
Zinc	254.674	20	250.0	9.759	98.0	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		

00233

CLIENT: CH2M HILL
Work Order: N007329
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007329-001B-PS 2**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **83424**
Client ID: **ZZZZZZ**	Batch ID: **39145**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/28/2012**	SeqNo: **1367757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	247.406	10	250.0	9.829	95.0	75	125				
Vanadium	250.210	6.0	250.0	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		

082314

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:

Arsenic, mg/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 **N007337-001C**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 0.80512* 5 * (25/25)

= 4.0256 ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 4.0

mgr 3/5/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007337
Test Method: EPA 6020
Analysis Date: 02/27/12

Matrix: Water
Batch No.: 39116

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DiFF	%DiFFlimit
N007337-001C-DT 25X	Chromium	µg/L	260.1388	PASS	246.7871	-5.41%	10
N007337-001C-DT 25X	Arsenic	µg/L	3.9458	PASS	4.0256	1.98%	10

Advanced Technology Laboratories, Inc.

Date: *05-Mar-12*

CLIENT: CH2M HILL
Work Order: N007337
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007337-001C-PS 5** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83381**
Client ID: **ZZZZZZ** Batch ID: **39116** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/27/2012** SeqNo: **1366330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	53.731	0.50	50.00	4.026	99.4	75	125				
Chromium	290.297	5.0	50.00	246.8	87.0	75	125				

Sample ID: **N007337-001C-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83381**
Client ID: **ZZZZZZ** Batch ID: **39116** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/27/2012** SeqNo: **1366332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	250.755	12	250.0	2.943	99.1	75	125				
Thallium	264.890	12	250.0	0	106	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		

00260

CLIENT: CH2M HILL
Work Order: N007337
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N007337-001C-PS 5** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **83381**
Client ID: **ZZZZZZ** Batch ID: **39116** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/27/2012** SeqNo: **1368163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	290.297	5.0	50.00	246.8	87.0	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		

00261

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:

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 coversion factor.

For Sample **N007337-001C**, the concentration in ug/L is calculated as follows:

Mercury, ug/L = 0.01 * 1 * (50/25) * 0.5

= 0.01 ug/L

Reporting results in two significant figures,

Mercury, ug/L = 0.01

Mercury, ug/L = ND

NS fn
3/5/12

March 08, 2012

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.: N007345

RE: PG&E Topock, 417981.ER.02.DM

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 17, 2012 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, 417981.ER.02.DM
Lab Order: N007345

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) is outside recovery criteria for Cadmium possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 8015B_DRO/ORO:

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 8081A:

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 8082:

Surrogate Tetrachloro-m-xylene was out of recovery, bias low, for sample N007345-001 possibly due to matrix interference. . The sample has dirt and is colored . The other surrogate Decachlorobiphenyl was within recovery limit.

Matrix Spike(MS) and Matrix Spike Duplicate(MSD) were not performed due to limited sample. LCS/LCSD was used instead to measure precision.

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CASE NARRATIVE

Analytical Comments for EPA 8270C_SIM:

Matrix Spike(MS) and Matrix Spike Duplicate(MSD) were not performed due to limited sample. LCS/LCSD was used instead to measure precision.

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Advanced Technology Laboratories, Inc.

Date: *08-Mar-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 417981.ER.02.DM
Lab Order: N007345
Contract No: 2012-EASTRAV

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007345-001A	MW-71-035-009B	Water	2/16/2012 8:15:00 AM	2/17/2012	3/8/2012
N007345-001B	MW-71-035-009B	Water	2/16/2012 8:15:00 AM	2/17/2012	3/8/2012
N007345-001C	MW-71-035-009B	Water	2/16/2012 8:15:00 AM	2/17/2012	3/8/2012
N007345-002A	MW-62-065-009	Water	2/17/2012 10:46:00 AM	2/17/2012	3/8/2012
N007345-002B	MW-62-065-009	Water	2/17/2012 10:46:00 AM	2/17/2012	3/8/2012
N007345-002C	MW-62-065-009	Water	2/17/2012 10:46:00 AM	2/17/2012	3/8/2012
N007345-003A	MW-66-165-009	Water	2/17/2012 9:36:00 AM	2/17/2012	3/8/2012
N007345-003B	MW-66-165-009	Water	2/17/2012 9:36:00 AM	2/17/2012	3/8/2012
N007345-003C	MW-66-165-009	Water	2/17/2012 9:36:00 AM	2/17/2012	3/8/2012
N007345-003D	MW-66-165-009	Water	2/17/2012 9:36:00 AM	2/17/2012	3/8/2012
N007345-004A	MW-68-240-009	Water	2/17/2012 11:46:00 AM	2/17/2012	3/8/2012
N007345-004B	MW-68-240-009	Water	2/17/2012 11:46:00 AM	2/17/2012	3/8/2012
N007345-004C	MW-68-240-009	Water	2/17/2012 11:46:00 AM	2/17/2012	3/8/2012
N007345-004D	MW-68-240-009	Water	2/17/2012 11:46:00 AM	2/17/2012	3/8/2012
N007345-005A	MW-69-195-009	Water	2/17/2012 8:36:00 AM	2/17/2012	3/8/2012
N007345-005B	MW-69-195-009	Water	2/17/2012 8:36:00 AM	2/17/2012	3/8/2012
N007345-005C	MW-69-195-009	Water	2/17/2012 8:36:00 AM	2/17/2012	3/8/2012
N007345-005D	MW-69-195-009	Water	2/17/2012 8:36:00 AM	2/17/2012	3/8/2012
N007345-006A	MW-74BR-240-009	Water	2/17/2012 7:40:00 AM	2/17/2012	3/8/2012
N007345-006B	MW-74BR-240-009	Water	2/17/2012 7:40:00 AM	2/17/2012	3/8/2012
N007345-006C	MW-74BR-240-009	Water	2/17/2012 7:40:00 AM	2/17/2012	3/8/2012
N007345-006D	MW-74BR-240-009	Water	2/17/2012 7:40:00 AM	2/17/2012	3/8/2012

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ANALYTICAL RESULTS

Print Date: *08-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-009
Lab Order:	N007345	**Collection Date:**	2/17/2012 10:46:00 AM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007345-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120217A**	QC Batch: **R83249**			PrepDate:			Analyst: **KAB**
Specific Conductance	6500	0.10	0.10		umhos/cm	1	2/17/2012

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: *08-Mar-12*

CLIENT: CH2M HILL
Work Order: N007345
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83249** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83249**
Client ID: **LCSW** Batch ID: **R83249** TestNo: **EPA 120.1** Analysis Date: **2/17/2012** SeqNo: **1361056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1409.000	0.10	1410	0	99.9	85	115				

Sample ID: **N007345-006D-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83249**
Client ID: **ZZZZZZ** Batch ID: **R83249** TestNo: **EPA 120.1** Analysis Date: **2/17/2012** SeqNo: **1361070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1650.000	0.10						1660	0.604	10	

Sample ID: **N007345-006D-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83249**
Client ID: **ZZZZZZ** Batch ID: **R83249** TestNo: **EPA 120.1** Analysis Date: **2/17/2012** SeqNo: **1361071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	3030.000	0.20	1410	1660	97.2	75	125				

Sample ID: **N007345-006D-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83249**
Client ID: **ZZZZZZ** Batch ID: **R83249** TestNo: **EPA 120.1** Analysis Date: **2/17/2012** SeqNo: **1361072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	3040.000	0.20	1410	1660	97.9	75	125	3030	0.329	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

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ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *08-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007345
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007345-002

Client Sample ID: MW-62-065-009
Collection Date: 2/17/2012 10:46:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_120227A**	QC Batch: **39075**				PrepDate:	**2/20/2012**	Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	2/27/2012 02:18 PM
Barium	35	0.20	3.0		ug/L	1	2/27/2012 02:18 PM
Beryllium	ND	0.090	1.0		ug/L	1	2/27/2012 02:18 PM
Cadmium	ND	0.23	3.0		ug/L	1	2/27/2012 02:18 PM
Cobalt	ND	0.31	3.0		ug/L	1	2/27/2012 02:18 PM
Copper	ND	0.53	5.0		ug/L	1	2/27/2012 02:18 PM
Lead	ND	1.5	10		ug/L	1	2/27/2012 02:18 PM
Molybdenum	11	0.49	5.0		ug/L	1	2/27/2012 02:18 PM
Nickel	ND	1.1	5.0		ug/L	1	2/27/2012 02:18 PM
Silver	3.4	0.72	3.0		ug/L	1	2/27/2012 02:18 PM
Vanadium	ND	0.19	3.0		ug/L	1	2/28/2012 08:34 PM
Zinc	12	4.6	10		ug/L	1	2/29/2012 01:40 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		

Advanced Technology Laboratories, Inc.

Date: *08-Mar-12*

CLIENT: CH2M HILL
Work Order: N007345
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39075** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/20/2012** RunNo: **83399**
Client ID: **PBW** Batch ID: **39075** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/27/2012** SeqNo: **1366973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	ND	3.0									
Cobalt	ND	3.0									
Copper	0.893	5.0									
Lead	ND	10									
Manganese	ND	10									
Molybdenum	2.274	5.0									
Nickel	ND	5.0									
Silver	ND	3.0									

Sample ID: **LCS-39075** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/20/2012** RunNo: **83399**
Client ID: **LCSW** Batch ID: **39075** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/27/2012** SeqNo: **1366974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	51.689	10	50.00	0	103	85	115				
Barium	53.039	3.0	50.00	0	106	85	115				
Beryllium	10.045	1.0	10.00	0	100	85	115				
Cadmium	10.273	3.0	10.00	0	103	85	115				
Cobalt	10.801	3.0	10.00	0	108	85	115				
Copper	10.014	5.0	10.00	0	100	85	115				
Lead	51.742	10	50.00	0	103	85	115				
Manganese	103.427	10	100.0	0	103	85	115				
Molybdenum	48.444	5.0	50.00	0	96.9	85	115				
Nickel	54.435	5.0	50.00	0	109	85	115				
Silver	9.809	3.0	10.00	0	98.1	85	115				

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

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CLIENT: CH2M HILL
Work Order: N007345
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007344-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/20/2012** RunNo: **83399**
Client ID: **ZZZZZZ** Batch ID: **39075** TestNo: **EPA 6010B EPA 3010A** Analysis Date: **2/27/2012** SeqNo: **1366978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	50.276	10	50.00	0	101	75	125				
Barium	75.543	3.0	50.00	27.79	95.5	75	125				
Beryllium	9.013	1.0	10.00	0	90.1	75	125				
Cadmium	7.092	3.0	10.00	0	70.9	75	125				S
Cobalt	9.528	3.0	10.00	0	95.3	75	125				
Copper	16.899	5.0	10.00	5.764	111	75	125				
Lead	40.225	10	50.00	0	80.4	75	125				
Manganese	102.003	10	100.0	7.263	94.7	75	125				
Molybdenum	66.453	5.0	50.00	17.88	97.2	75	125				
Nickel	47.775	5.0	50.00	0	95.6	75	125				
Silver	14.965	3.0	10.00	4.953	100	75	125				

Sample ID: **N007344-001C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/20/2012** RunNo: **83399**
Client ID: **ZZZZZZ** Batch ID: **39075** TestNo: **EPA 6010B EPA 3010A** Analysis Date: **2/27/2012** SeqNo: **1366979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.069	10	50.00	0	104	75	125	50.28	3.50	20	
Barium	77.277	3.0	50.00	27.79	99.0	75	125	75.54	2.27	20	
Beryllium	9.031	1.0	10.00	0	90.3	75	125	9.013	0.190	20	
Cadmium	8.536	3.0	10.00	0	85.4	75	125	7.092	18.5	20	
Cobalt	9.666	3.0	10.00	0	96.7	75	125	9.528	1.44	20	
Copper	16.652	5.0	10.00	5.764	109	75	125	16.90	1.47	20	
Lead	44.638	10	50.00	0	89.3	75	125	40.22	10.4	20	
Manganese	102.484	10	100.0	7.263	95.2	75	125	102.0	0.470	20	
Molybdenum	65.603	5.0	50.00	17.88	95.5	75	125	66.45	1.29	20	
Nickel	48.739	5.0	50.00	0	97.5	75	125	47.78	2.00	20	
Silver	13.918	3.0	10.00	4.953	89.6	75	125	14.96	7.25	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: N007345
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39075** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/20/2012** RunNo: **83424**
Client ID: **PBW** Batch ID: **39075** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1367782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	ND	3.0									

Sample ID: **LCS-39075** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/20/2012** RunNo: **83424**
Client ID: **LCSW** Batch ID: **39075** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1367783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.029	3.0	10.00	0	100	85	115				

Sample ID: **N007344-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/20/2012** RunNo: **83424**
Client ID: **ZZZZZZ** Batch ID: **39075** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1367789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	17.715	3.0	10.00	7.159	106	75	125				

Sample ID: **N007344-001C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/20/2012** RunNo: **83424**
Client ID: **ZZZZZZ** Batch ID: **39075** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1367790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	17.143	3.0	10.00	7.159	99.8	75	125	17.72	3.28	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

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CLIENT: CH2M HILL
Work Order: N007345
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39151** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/29/2012** RunNo: **83433**
Client ID: **PBW** Batch ID: **39151** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/29/2012** SeqNo: **1367962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	ND	10									

Sample ID: **LCS-39151** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/29/2012** RunNo: **83433**
Client ID: **LCSW** Batch ID: **39151** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/29/2012** SeqNo: **1367963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	52.906	10	50.00	0	106	85	115				

Sample ID: **N007344-001C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/29/2012** RunNo: **83433**
Client ID: **ZZZZZZ** Batch ID: **39151** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/29/2012** SeqNo: **1367967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	46.824	10	50.00	0	93.6	75	125				

Sample ID: **N007344-001C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/29/2012** RunNo: **83433**
Client ID: **ZZZZZZ** Batch ID: **39151** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/29/2012** SeqNo: **1367968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	47.003	10	50.00	0	94.0	75	125	46.82	0.381	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

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3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *08-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007345
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007345-002

Client Sample ID: MW-62-065-009
Collection Date: 2/17/2012 10:46:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_120228A**	QC Batch: **39117**			PrepDate:		**2/27/2012**	Analyst: **CEI**
Arsenic	1.5	0.0025	0.10		µg/L	1	2/28/2012 03:43 PM
Chromium	460	0.040	5.0		µg/L	5	2/28/2012 03:38 PM
Selenium	3.1	0.018	0.50		µg/L	1	2/28/2012 03:43 PM
Thallium	ND	0.20	2.5		µg/L	5	2/28/2012 03:38 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: *08-Mar-12*

CLIENT: CH2M HILL
Work Order: N007345
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39117** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/27/2012** RunNo: **83440**
Client ID: **PBW** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **LCS-39117** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/27/2012** RunNo: **83440**
Client ID: **LCSW** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.989	0.10	10.00	0	89.9	85	115				
Chromium	9.569	1.0	10.00	0	95.7	85	115				
Selenium	9.249	0.50	10.00	0	92.5	85	115				
Thallium	9.830	0.50	10.00	0	98.3	85	115				

Sample ID: **N007383-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/27/2012** RunNo: **83440**
Client ID: **ZZZZZZ** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	18.375	0.10	10.00	8.487	98.9	75	125				
Chromium	10.861	1.0	10.00	1.568	92.9	75	125				
Selenium	9.909	0.50	10.00	0.3883	95.2	75	125				
Thallium	10.146	0.50	10.00	0	101	75	125				

Sample ID: **N007383-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/27/2012** RunNo: **83440**
Client ID: **ZZZZZZ** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	18.309	0.10	10.00	8.487	98.2	75	125	18.38	0.364	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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: CH2M HILL
Work Order: N007345
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007383-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/27/2012** RunNo: **83440**
Client ID: **ZZZZZZ** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.806	1.0	10.00	1.568	92.4	75	125	10.86	0.505	20	
Selenium	9.629	0.50	10.00	0.3883	92.4	75	125	9.909	2.87	20	
Thallium	9.969	0.50	10.00	0	99.7	75	125	10.15	1.75	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.
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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *08-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-62-065-009
Lab Order:	N007345	**Collection Date:**	2/17/2012 10:46:00 AM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007345-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120227B**	QC Batch: **39065**			PrepDate:	**2/24/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	2/27/2012

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.

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

Date: *08-Mar-12*

CLIENT: CH2M HILL
Work Order: N007345
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39065** SampType: **LCS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/24/2012** RunNo: **83436**
Client ID: **LCSW** Batch ID: **39065** TestNo: **EPA 7470A** Analysis Date: **2/27/2012** SeqNo: **1368223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.625	0.20	5.000	0	92.5	85	115				

Sample ID: **MB-39065** SampType: **MBLK** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/24/2012** RunNo: **83436**
Client ID: **PBW** Batch ID: **39065** TestNo: **EPA 7470A** Analysis Date: **2/27/2012** SeqNo: **1368224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N007337-001C-MS** SampType: **MS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/24/2012** RunNo: **83436**
Client ID: **ZZZZZZ** Batch ID: **39065** TestNo: **EPA 7470A** Analysis Date: **2/27/2012** SeqNo: **1368226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.801	0.20	5.000	0	96.0	75	125				

Sample ID: **N007337-001C-MSD** SampType: **MSD** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/24/2012** RunNo: **83436**
Client ID: **ZZZZZZ** Batch ID: **39065** TestNo: **EPA 7470A** Analysis Date: **2/27/2012** SeqNo: **1368227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.806	0.20	5.000	0	96.1	75	125	4.801	0.0962	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		

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417981

CH2MHILL

CHAIN OF CUSTODY RECORD

2/17/2012 12:18:19 PM

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/17/2012
COC Number: 11

			Container:	1Liter Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly	5 X 1L Amber	5 X 1L Amber	5 X 1L Amber	5 X 1L Amber			
			Preservatives:	4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C	4°C	4°C	4°C	4°C			
			Filtered:	NA	Field	Field	Field	Field	NA	NA	NA	NA	NA	NA			
			Holding Time:	30	28	180	180	180	2	2	7	7	7	7			
	DATE	TIME	Matrix	Extra (*)	Cr6 (E218.6) Field Filtered	Metals (6010B/6020A/7470Adis) Field Filtered Title 22 Metals	Metals (SW6010B/SW6020Adis) Field Filtered Chromium	Metals (6010BFF) Field Filtered Mn	Specific Conductance (E120.1)	Anions (E300.0) NO3	TPH-Extractable (SW8015B-E)	PAHs (SW8270-Sim)	PCBs (SW8082)	Pesticides (SW8081A)		Number of Containers	COMMENTS
MW-71-035-009B	2/16/2012	8:15	Water								X	X	X	X	H0073245-1	6	
MW-62-065-009	2/17/2012	10:46	Water	X		X			X						-2	3	
MW-66-165-009	2/17/2012	9:36	Water	X	X	X	X	X	X	X					-3	5	
MW-68-240-009	2/17/2012	11:46	Water	X	X	X	X	X	X	X					-4	5	
MW-69-195-009	2/17/2012	8:36	Water	X	X	X	X	X	X	X					-5	5	
MW-74BR-240-009	2/17/2012	7:40	Water	X	X	X	X	X	X	X					-6	5	
															TOTAL NUMBER OF CONTAINERS	29	

	Signatures	Date/Time
Approved by		2-17-12 1220
Sampled by		
Relinquished by		2/17/12 @ 1240
Received by		
Relinquished by		
Received by		

Shipping Details

Method of Shipment: courier
On Ice: (yes) / no 2.1, 4.4, 3.7
Airbill No:
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
February, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On:	2/17/2012	Workorder:	N007345
Rep sample Temp (Deg C):	2.1, 4.4, 3.7	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 2/20/12

Reviewed By:

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:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007345-003D**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	3.226 * 10
	=	32.26 mg/L

Reporting **N007345-003D**, results in two significant figures,

Nitrate, mg/L	**=**	**32 mg/L**

OWS 3/2/12

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF * CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL
CF = Conversion Factor

For Sample **N007345-002B**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.0354 * 1* (25/25) * 1000

= 35.4 ug/L

Reporting results in two significant figures,

Barium, ug/L = 35

NS fn
3/6/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007345
Test Method: EPA 6010
Analysis Date: 02/27/12

Matrix: Water
Batch No.: 39075

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007344-001C-DT 5X	Aluminum	ug/L	0	NA	23.08762554	100.00%	10
N007344-001C-DT 5X	Antimony	ug/L	0	NA	0	0.00%	10
N007344-001C-DT 5X	Arsenic	ug/L	26.1434991	NA	8.281423955	-215.69%	10
N007344-001C-DT 5X	Barium	ug/L	29.4655802	PASS	27.78984634	-6.03%	10
N007344-001C-DT 5X	Beryllium	ug/L	0	NA	0	0.00%	10
N007344-001C-DT 5X	Boron	ug/L	1155.757034	PASS	1156.733759	0.08%	10
N007344-001C-DT 5X	Cadmium	ug/L	0	NA	0	0.00%	10
N007344-001C-DT 5X	Calcium	ug/L	234118.421	PASS	242835.2512	3.59%	10
N007344-001C-DT 5X	Chromium	ug/L	873.8574625	PASS	869.0870236	-0.55%	10
N007344-001C-DT 5X	Cobalt	ug/L	0	NA	0	0.00%	10
N007344-001C-DT 5X	Copper	ug/L	7.78241999	NA	5.764174119	-35.01%	10
N007344-001C-DT 5X	Iron	ug/L	0	NA	0	0.00%	10
N007344-001C-DT 5X	Lead	ug/L	0	NA	0	0.00%	10
N007344-001C-DT 5X	Magnesium	ug/L	37506.3471	PASS	35320.36484	-6.19%	10
N007344-001C-DT 5X	Manganese	ug/L	0	NA	7.26268204	100.00%	10
N007344-001C-DT 5X	Molybdenum	ug/L	17.20803594	PASS	17.87708867	3.74%	10
N007344-001C-DT 5X	Nickel	ug/L	0	NA	0	0.00%	10
N007344-001C-DT 5X	Selenium	ug/L	0	NA	0	0.00%	10
N007344-001C-DT 5X	Silicon	ug/L	10655.3027	PASS	11138.97919	4.34%	10
N007344-001C-DT 5X	Silver	ug/L	4.680708971	PASS	4.953258124	5.50%	10
N007344-001C-DT 5X	Thallium	ug/L	0	NA	0	0.00%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007345
Test Method: EPA 6010
Analysis Date: 02/28/12

Matrix: Water
Batch No.: 39075 Rerun

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007344-001C-DT 5X	Vanadium	ug/L	7.232524	NA	7.158766	-1.03%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007345
Test Method: EPA 6010
Analysis Date: 02/29/12

Matrix: Water
Batch No.: 39151

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007344-001C-DT 5X	Zinc	ug/L	0	NA	0	0.00%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

Date: *02-Mar-12*

CLIENT: CH2M HILL
Work Order: N007345
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007344-001C-PS 2** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **83399**
Client ID: **ZZZZZZ** Batch ID: **39075** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/27/2012** SeqNo: **1366977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	266.523	20	250.0	0	107	75	125				
Barium	286.308	6.0	250.0	27.79	103	75	125				
Beryllium	252.796	2.0	250.0	0	101	75	125				
Cadmium	244.665	6.0	250.0	0	97.9	75	125				
Cobalt	254.556	6.0	250.0	0	102	75	125				
Copper	281.440	10	250.0	5.764	110	75	125				
Lead	230.863	20	250.0	0	92.3	75	125				
Manganese	495.837	20	500.0	7.263	97.7	75	125				
Molybdenum	267.663	10	250.0	17.88	99.9	75	125				
Nickel	254.026	10	250.0	0	102	75	125				
Silver	274.771	6.0	250.0	4.953	108	75	125				

Sample ID: **N007344-001C-PS 2** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **83424**
Client ID: **ZZZZZZ** Batch ID: **39075** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1367788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	269.142	6.0	250.0	7.159	105	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		

00261

CLIENT: CH2M HILL
Work Order: N007345
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007344-001C-PS 2** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **83433**
Client ID: **ZZZZZZ** Batch ID: **39151** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/29/2012** SeqNo: **1367966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	249.564	20	250.0	0	99.8	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:

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 **N007345-002B**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 1.4647 * 1 * (25/25)

= 1.4647. ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 1.5

NS fm
3/6/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007345
Test Method: EPA 6020
Analysis Date: 02/28/12

Matrix: Water
Batch No.: 39117

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to analytes that calc. values were < 25X the RL. PS @ 2x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007383-001B-DT 5X	Arsenic	µg/L	8.674891701	PASS	8.487395081	-2.21%	10
N007383-001B-DT 5X	Chromium	µg/L	1.59574442	NA	1.567524793	-1.80%	10
N007383-001B-DT 5X	Manganese	µg/L	2.115384917	NA	2.233867929	5.30%	10
N007383-001B-DT 5X	Selenium	µg/L	0.302028153	NA	0.388305001	22.22%	10
N007383-001B-DT 5X	Thallium	µg/L	0	NA	0		10

Advanced Technology Laboratories, Inc.

Date: *04-Mar-12*

CLIENT: CH2M HILL
Work Order: N007345
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007383-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83440**
Client ID: **ZZZZZZ** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	29.410	0.20	20.00	8.487	105	75	125				
Chromium	21.731	1.0	20.00	1.568	101	75	125				
Selenium	20.291	1.0	20.00	0.3883	99.5	75	125				
Thallium	21.334	1.0	20.00	0	107	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		

CLIENT: CH2M HILL
Work Order: N007345
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N007383-001B-PS 2** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **83440**
Client ID: **ZZZZZZ** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368395**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.731	2.0	20.00	1.568	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		

00312

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:

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 coversion factor.

For Sample **N007345-002B**, the concentration in ug/L is calculated as follows:

Mercury, ug/L = 0.0 * 1 * (50/25) * 0.5

= 0.0 ug/L

Reporting results in two significant figures,

Mercury, ug/L = 0.0

Mercury, ug/L = ND

ms fa 3/5/12

March 07, 2012

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.: N007367

RE: PG&E Topock, 417981.ER.02.DM

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 22, 2012 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, 417981.ER.02.DM
Lab Order: N007367

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. *3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

Advanced Technology Laboratories, Inc.

Date: *07-Mar-12*

CLIENT: CH2M HILL
Project: PG&E Topock, 417981.ER.02.DM
Lab Order: N007367
Contract No: 2012-EASTRAV

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N007367-001A	MW-59-100-009	Water	2/22/2012 8:55:00 AM	2/22/2012	3/7/2012
N007367-001B	MW-59-100-009	Water	2/22/2012 8:55:00 AM	2/22/2012	3/7/2012
N007367-001C	MW-59-100-009	Water	2/22/2012 8:55:00 AM	2/22/2012	3/7/2012
N007367-002A	MW-66-230-009	Water	2/22/2012 10:05:00 AM	2/22/2012	3/7/2012
N007367-002B	MW-66-230-009	Water	2/22/2012 10:05:00 AM	2/22/2012	3/7/2012
N007367-002C	MW-66-230-009	Water	2/22/2012 10:05:00 AM	2/22/2012	3/7/2012
N007367-002D	MW-66-230-009	Water	2/22/2012 10:05:00 AM	2/22/2012	3/7/2012
N007367-003A	MW-68-180-009	Water	2/22/2012 12:18:00 PM	2/22/2012	3/7/2012
N007367-003B	MW-68-180-009	Water	2/22/2012 12:18:00 PM	2/22/2012	3/7/2012
N007367-003C	MW-68-180-009	Water	2/22/2012 12:18:00 PM	2/22/2012	3/7/2012
N007367-003D	MW-68-180-009	Water	2/22/2012 12:18:00 PM	2/22/2012	3/7/2012

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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-59-100-009
Lab Order:	N007367	**Collection Date:**	2/22/2012 8:55:00 AM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007367-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_120223D**	QC Batch: **R83357**			PrepDate:			Analyst: **KAB**
Specific Conductance	9100	0.10	0.10		umhos/cm	1	2/23/2012

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: *07-Mar-12*

CLIENT: CH2M HILL
Work Order: N007367
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **LCS-R83357** SampType: **LCS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83357**
Client ID: **LCSW** Batch ID: **R83357** TestNo: **EPA 120.1** Analysis Date: **2/23/2012** SeqNo: **1364990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	9980.000	0.10	9986	0	99.9	85	115				

Sample ID: **N007367-003D-DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83357**
Client ID: **ZZZZZZ** Batch ID: **R83357** TestNo: **EPA 120.1** Analysis Date: **2/23/2012** SeqNo: **1364995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	3940.000	0.10						3930	0.254	10	

Sample ID: **N007367-003D-MS** SampType: **MS** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83357**
Client ID: **ZZZZZZ** Batch ID: **R83357** TestNo: **EPA 120.1** Analysis Date: **2/23/2012** SeqNo: **1364997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13920.000	0.20	9986	3930	100	75	125				

Sample ID: **N007367-003D-MSD** SampType: **MSD** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **83357**
Client ID: **ZZZZZZ** Batch ID: **R83357** TestNo: **EPA 120.1** Analysis Date: **2/23/2012** SeqNo: **1364998**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13940.000	0.20	9986	3930	100	75	125	13920	0.144	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		

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-59-100-009
Lab Order:	N007367	**Collection Date:**	2/22/2012 8:55:00 AM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007367-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_120223B**	QC Batch: **R83454**			PrepDate:			Analyst: **QBM**
Nitrate as N	4.1	0.060	2.5		mg/L	5	2/23/2012 11:02 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.

Date: *07-Mar-12*

CLIENT: CH2M HILL
Work Order: N007367
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 300W_NO3PGE

Sample ID: **MB-R83454_NO3** SampType: **MBLK** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83454**
Client ID: **PBW** Batch ID: **R83454** TestNo: **EPA 300.0** Analysis Date: **2/23/2012** SeqNo: **1368711**

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-R83454_NO3** SampType: **LCS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83454**
Client ID: **LCSW** Batch ID: **R83454** TestNo: **EPA 300.0** Analysis Date: **2/23/2012** SeqNo: **1368712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.449	0.50	2.500	0	98.0	90	110				

Sample ID: **N007367-003DDUP** SampType: **DUP** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83454**
Client ID: **ZZZZZZ** Batch ID: **R83454** TestNo: **EPA 300.0** Analysis Date: **2/23/2012** SeqNo: **1368716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	24.000	5.0						24.06	0.250	20	

Sample ID: **N007367-003DMS** SampType: **MS** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83454**
Client ID: **ZZZZZZ** Batch ID: **R83454** TestNo: **EPA 300.0** Analysis Date: **2/23/2012** SeqNo: **1368717**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	49.380	5.0	25.00	24.06	101	80	120				

Sample ID: **N007367-003DMSD** SampType: **MSD** TestCode: **300W_NO3P** Units: **mg/L** Prep Date: RunNo: **83454**
Client ID: **ZZZZZZ** Batch ID: **R83454** TestNo: **EPA 300.0** Analysis Date: **2/23/2012** SeqNo: **1368718**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	49.500	5.0	25.00	24.06	102	80	120	49.38	0.243	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.

ANALYTICAL RESULTS

Print Date: *07-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007367
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007367-001

Client Sample ID: MW-59-100-009
Collection Date: 2/22/2012 8:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_120302A**	QC Batch: **39104**			PrepDate:		**2/23/2012**	Analyst: **JT**
Antimony	ND	5.4	10		ug/L	1	3/2/2012 04:13 PM
Barium	67	0.20	3.0		ug/L	1	3/2/2012 04:13 PM
Beryllium	ND	0.090	1.0		ug/L	1	3/2/2012 04:13 PM
Cadmium	ND	0.23	3.0		ug/L	1	3/2/2012 04:13 PM
Cobalt	ND	0.31	3.0		ug/L	1	3/2/2012 04:13 PM
Copper	ND	0.53	5.0		ug/L	1	3/3/2012 03:46 PM
Lead	ND	1.5	10		ug/L	1	3/2/2012 04:13 PM
Manganese	ND	1.7	10		ug/L	1	3/2/2012 04:13 PM
Molybdenum	ND	0.49	5.0		ug/L	1	3/2/2012 04:13 PM
Nickel	ND	1.1	5.0		ug/L	1	3/2/2012 04:13 PM
Silver	11	0.72	3.0		ug/L	1	3/3/2012 03:46 PM
Vanadium	ND	0.19	3.0		ug/L	1	3/2/2012 04:13 PM
Zinc	ND	4.6	10		ug/L	1	3/2/2012 04:13 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: *07-Mar-12*

CLIENT: CH2M HILL
Work Order: N007367
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39104** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/23/2012** RunNo: **83463**
Client ID: **PBW** Batch ID: **39104** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/2/2012** SeqNo: **1369095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10									
Barium	ND	3.0									
Beryllium	ND	1.0									
Cadmium	ND	3.0									
Cobalt	ND	3.0									
Lead	ND	10									
Manganese	ND	10									
Molybdenum	1.795	5.0									
Nickel	ND	5.0									
Vanadium	ND	3.0									
Zinc	ND	10									

Sample ID: **LCS-39104** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/23/2012** RunNo: **83463**
Client ID: **LCSW** Batch ID: **39104** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/2/2012** SeqNo: **1369096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	49.759	10	50.00	0	99.5	85	115				
Barium	51.739	3.0	50.00	0	103	85	115				
Beryllium	9.533	1.0	10.00	0	95.3	85	115				
Cadmium	10.169	3.0	10.00	0	102	85	115				
Cobalt	10.251	3.0	10.00	0	103	85	115				
Lead	49.425	10	50.00	0	98.8	85	115				
Manganese	99.409	10	100.0	0	99.4	85	115				
Molybdenum	51.811	5.0	50.00	0	104	85	115				
Nickel	51.945	5.0	50.00	0	104	85	115				
Vanadium	10.488	3.0	10.00	0	105	85	115				
Zinc	50.782	10	50.00	0	102	85	115				

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

000214

CLIENT: CH2M HILL
Work Order: N007367
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007359-005C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/23/2012** RunNo: **83463**
Client ID: **ZZZZZZ** Batch ID: **39104** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/2/2012** SeqNo: **1369100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.659	10	50.00	0	105	75	125				
Barium	127.611	3.0	50.00	76.80	102	75	125				
Beryllium	7.989	1.0	10.00	0	79.9	75	125				
Cadmium	7.972	3.0	10.00	0	79.7	75	125				
Cobalt	9.998	3.0	10.00	0	100	75	125				
Lead	42.952	10	50.00	0	85.9	75	125				
Manganese	489.478	10	100.0	393.1	96.4	75	125				
Molybdenum	129.846	5.0	50.00	77.53	105	75	125				
Nickel	50.050	5.0	50.00	0	100	75	125				
Vanadium	8.310	3.0	10.00	0	83.1	75	125				
Zinc	53.679	10	50.00	0	107	75	125				

Sample ID: **N007359-005C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **2/23/2012** RunNo: **83463**
Client ID: **ZZZZZZ** Batch ID: **39104** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/2/2012** SeqNo: **1369101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	53.861	10	50.00	0	108	75	125	52.66	2.26	20	
Barium	127.196	3.0	50.00	76.80	101	75	125	127.6	0.326	20	
Beryllium	7.927	1.0	10.00	0	79.3	75	125	7.989	0.780	20	
Cadmium	7.805	3.0	10.00	0	78.1	75	125	7.972	2.11	20	
Cobalt	9.729	3.0	10.00	0	97.3	75	125	9.998	2.73	20	
Lead	42.648	10	50.00	0	85.3	75	125	42.95	0.712	20	
Manganese	487.055	10	100.0	393.1	94.0	75	125	489.5	0.496	20	
Molybdenum	128.892	5.0	50.00	77.53	103	75	125	129.8	0.737	20	
Nickel	49.419	5.0	50.00	0	98.8	75	125	50.05	1.27	20	
Vanadium	8.338	3.0	10.00	0	83.4	75	125	8.310	0.336	20	
Zinc	53.472	10	50.00	0	107	75	125	53.68	0.387	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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

022825

CLIENT: CH2M HILL
Work Order: N007367
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-39178** SampType: **MBLK** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/2/2012** RunNo: **83467**
Client ID: **PBW** Batch ID: **39178** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/3/2012** SeqNo: **1369200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	2.376	5.0									
Silver	ND	3.0									

Sample ID: **LCS-39178** SampType: **LCS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/2/2012** RunNo: **83467**
Client ID: **LCSW** Batch ID: **39178** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/3/2012** SeqNo: **1369202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	10.926	5.0	10.00	0	109	85	115				
Silver	9.718	3.0	10.00	0	97.2	85	115				

Sample ID: **N007359-005C-MS** SampType: **MS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/2/2012** RunNo: **83467**
Client ID: **ZZZZZZ** Batch ID: **39178** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/3/2012** SeqNo: **1369206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	13.386	5.0	10.00	5.639	77.5	75	125				
Silver	15.983	3.0	10.00	5.435	105	75	125				

Sample ID: **N007359-005C-MSD** SampType: **MSD** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: **3/2/2012** RunNo: **83467**
Client ID: **ZZZZZZ** Batch ID: **39178** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/3/2012** SeqNo: **1369207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	13.430	5.0	10.00	5.639	77.9	75	125	13.39	0.329	20	
Silver	16.333	3.0	10.00	5.435	109	75	125	15.98	2.17	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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

Print Date: *07-Mar-12*

CLIENT: CH2M HILL
Lab Order: N007367
Project: PG&E Topock, 417981.ER.02.DM
Lab ID: N007367-001

Client Sample ID: MW-59-100-009
Collection Date: 2/22/2012 8:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_120228A**	QC Batch: **39117**			PrepDate:	**2/27/2012**		Analyst: **CEI**
Arsenic	2.0	0.012	0.50		µg/L	5	2/28/2012 06:22 PM
Chromium	4400	0.20	25		µg/L	25	2/28/2012 06:27 PM
Selenium	3.8	0.090	2.5		µg/L	5	2/28/2012 06:22 PM
Thallium	ND	0.20	2.5		µg/L	5	2/28/2012 06:22 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: *07-Mar-12*

CLIENT: CH2M HILL
Work Order: N007367
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **MB-39117** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/27/2012** RunNo: **83440**
Client ID: **PBW** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **LCS-39117** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/27/2012** RunNo: **83440**
Client ID: **LCSW** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.989	0.10	10.00	0	89.9	85	115				
Chromium	9.569	1.0	10.00	0	95.7	85	115				
Selenium	9.249	0.50	10.00	0	92.5	85	115				
Thallium	9.830	0.50	10.00	0	98.3	85	115				

Sample ID: **N007383-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/27/2012** RunNo: **83440**
Client ID: **ZZZZZZ** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	18.375	0.10	10.00	8.487	98.9	75	125				
Chromium	10.861	1.0	10.00	1.568	92.9	75	125				
Selenium	9.909	0.50	10.00	0.3883	95.2	75	125				
Thallium	10.146	0.50	10.00	0	101	75	125				

Sample ID: **N007383-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/27/2012** RunNo: **83440**
Client ID: **ZZZZZZ** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	18.309	0.10	10.00	8.487	98.2	75	125	18.38	0.364	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		

000058

CLIENT: CH2M HILL
Work Order: N007367
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007383-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/27/2012** RunNo: **83440**
Client ID: **ZZZZZZ** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.806	1.0	10.00	1.568	92.4	75	125	10.86	0.505	20	
Selenium	9.629	0.50	10.00	0.3883	92.4	75	125	9.909	2.87	20	
Thallium	9.969	0.50	10.00	0	99.7	75	125	10.15	1.75	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 Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

000031

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: *07-Mar-12*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-59-100-009
Lab Order:	N007367	**Collection Date:**	2/22/2012 8:55:00 AM
Project:	PG&E Topock, 417981.ER.02.DM	**Matrix:**	WATER
Lab ID:	N007367-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **AA1_120227B**	QC Batch: **39065**			PrepDate:	**2/24/2012**		Analyst: **CEI**
Mercury	ND	0.028	0.20		µg/L	1	2/27/2012

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.

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

Date: *07-Mar-12*

CLIENT: CH2M HILL
Work Order: N007367
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-39065** SampType: **LCS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/24/2012** RunNo: **83436**
Client ID: **LCSW** Batch ID: **39065** TestNo: **EPA 7470A** Analysis Date: **2/27/2012** SeqNo: **1368223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.625	0.20	5.000	0	92.5	85	115				

Sample ID: **MB-39065** SampType: **MBLK** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/24/2012** RunNo: **83436**
Client ID: **PBW** Batch ID: **39065** TestNo: **EPA 7470A** Analysis Date: **2/27/2012** SeqNo: **1368224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N007337-001C-MS** SampType: **MS** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/24/2012** RunNo: **83436**
Client ID: **ZZZZZZ** Batch ID: **39065** TestNo: **EPA 7470A** Analysis Date: **2/27/2012** SeqNo: **1368226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.801	0.20	5.000	0	96.0	75	125				

Sample ID: **N007337-001C-MSD** SampType: **MSD** TestCode: **7470_W_DIS** Units: **µg/L** Prep Date: **2/24/2012** RunNo: **83436**
Client ID: **ZZZZZZ** Batch ID: **39065** TestNo: **EPA 7470A** Analysis Date: **2/27/2012** SeqNo: **1368227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.806	0.20	5.000	0	96.1	75	125	4.801	0.0962	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		

ER/TCS-009 ATL # 8

CH2MHILL

CHAIN OF CUSTODY RECORD

2/22/2012 1:25:05 PM

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/22/2012
COC Number: 15

				Extra (*)	Cr6 (E218.6) Field Filtered	Metals (6010B/6020A/7470Adis) Field Filtered Title 22 Metals	Metals (SW6010B/SW6020Adis) Field Filtered Chromium	Metals (6010BFF) Field Filtered Mn	Specific Conductance (E120.1)	Anions (E300.0) NO3		Number of Containers	COMMENTS
			Container:	1Liter Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
			Filtered:	NA	Field	Field	Field	Field	NA	NA			
			Holding Time:	30	28	180	180	180	2	2			
	DATE	TIME	Matrix										
MW-59-100-009	2/22/2012	8:55	Water	X		X		X	X	X	N007367 - 1	4	
MW-66-230-009	2/22/2012	10:05	Water	X	X	X	X	X	X	X	- 2	5	
MW-68-180-009	2/22/2012	12:18	Water	X	X	X	X	X	X	X	- 3	5	
											TOTAL NUMBER OF CONTAINERS	14	

	Signatures	Date/Time
Approved by		2-22-12 1510
Sampled by		
Relinquished by		
Received by		2/22/12/1510
Relinquished by		2/22/12/1755
Received by		2/22/12 @ 1755

Shipping Details
Method of Shipment: courier
On Ice: yes / ~~no~~ 2.8°C
Airbill No: 1RH2
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
February, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

ER/TCS-009 ATL # 8

CH2MHILL

CHAIN OF CUSTODY RECORD

2/22/2012 1:25:05 PM

Project Name PG&E Topock
Location Topock
Project Manager Mike C.
Sample Manager Shawn Duffy
Project Number 417981.ER.02.DM
Task Order
Project 2012-EASTRAVINE-GWINV-009
Turnaround Time 10 Days
Shipping Date: 2/22/2012
COC Number: 15

			Container:	1Liter Poly	250 ml Poly	500 ml Poly	500 ml Poly	500 ml Poly	1 Liter Poly	1 Liter Poly			
			Preservatives:	4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	HNO3, 4°C	HNO3, 4°C	4°C	4°C			
			Filtered:	NA	Field	Field	Field	Field	NA	NA			
			Holding Time:	30	28	180	180	180	2	2			
	DATE	TIME	Matrix	Extra (*)	Cr6 (E218.6) Field Filtered	Metals (6010B/6020A/7470Adis) Field Filtered Title 22 Metals	Metals (SW6010B/SW6020Adis) Field Filtered Chromium	Metals (6010BFF) Field Filtered Mn	Specific Conductance (E120.1)	Anions (E300.0) NO3		Number of Containers	COMMENTS
MW-59-100-009	2/22/2012	8:55	Water	X		X		X	X	X		4	
MW-66-230-009	2/22/2012	10:05	Water	X	X	X	X	X	X	X		5	
MW-68-180-009	2/22/2012	12:18	Water	X	X	X	X	X	X	X		5	
											TOTAL NUMBER OF CONTAINERS	14	

	Signatures	Date/Time
Approved by		2-22-12 1510
Sampled by		
Relinquished by		
Received by		2/22/12/1510
Relinquished by		2/22/12/1755
Received by		2/22/12 @ 1755

Shipping Details

Method of Shipment: courier
On Ice: ~~yes / no~~ 2-8°C
Airbill No: 1R42
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody
and
Marlon

Special Instructions:
February, 2012

Report Copy to
Shawn Duffy
(530) 229-3303

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO 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.

Cooler Received/Opened On:	2/22/2012	Workorder:	N007367
Rep sample Temp (Deg C):	2.8	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ATL		
Last 4 digits of Tracking No.:	na	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B MBC 2/23/12

Reviewed By:

0003

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in μg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = ug/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For N007367-002B, concentration in μg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 11.594707 * 500$$

$$= 5797.3535 \ \mu g/L$$

Reporting results in two significant figures,

$$Cr^{+6}, \mu g/L = 5800 \ \mu g/L$$

CMS 2/29/12

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:

Nitrate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N007367-001C**, concentration in mg/L are calculated as follows:

Nitrate, mg/L	=	0.810 * 5
	=	4.05 mg/L

Reporting **N007367-001C**, results in two significant figures,

Nitrate, mg/L	**=**	**4.1 mg/L**

OAS 3/5/12

Sample Calculation

METHOD: EPA 6010
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Barium concentration, in ug/L, in the original sample as follows:

Barium, ug/L = A * DF * PF * CF

where:

A = ug/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL
CF = Conversion Factor

For Sample **N007367-002C**, the concentration in ug/L is calculated as follows:

Barium, ug/L = 0.05478* 1* (25/25) * 1000

= 54.78 ug/L

Reporting results in two significant figures,

Barium, ug/L = 55

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007359 07 MJ 3/7/12
Test Method: EPA 6010
Analysis Date: 03/02/12

Matrix: Water
Batch No.: 39104

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPref Val	%DIFF	%DIFFlimit
N007359-005C-DT 5X	Antimony	ug/L	0	NA	0	0.00%	10
N007359-005C-DT 5X	Barium	ug/L	77.70141395	PASS	76.80429304	-1.17%	10
N007359-005C-DT 5X	Beryllium	ug/L	0	NA	0	0.00%	10
N007359-005C-DT 5X	Cadmium	ug/L	0	NA	0	0.00%	10
N007359-005C-DT 5X	Cobalt	ug/L	0	NA	0	0.00%	10
N007359-005C-DT 5X	Manganese	ug/L	397.7701266	PASS	393.086693	-1.19%	10
N007359-005C-DT 5X	Molybdenum	ug/L	76.3809452	PASS	77.53112502	1.48%	10
N007359-005C-DT 5X	Nickel	ug/L	0	NA	0	0.00%	10
N007359-005C-DT 5X	Lead	ug/L	0	NA	0	0.00%	10
N007359-005C-DT 5X	Vanadium	ug/L	0	NA	0	0.00%	10
N007359-005C-DT 5X	Zinc	ug/L	0	NA	0	0.00%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007367
Test Method: EPA 6010
Analysis Date: 03/03/12

Matrix: Water
Batch No.: 39178

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Jojo Tenorio

Dilution Test is not applicable for analytes with concentration < 25X the RL. However the PS @2X passes the criteria.

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPref Val	%DIFF	%DIFFlimit
N007359-005C-DT 5X	Copper	ug/L	11.16101882	NA	5.638551552	-97.94%	10
N007359-005C-DT 5X	Silver	ug/L	5.50650068	NA	5.434538716	-1.32%	10

Note: NA - Not Applicable

Advanced Technology Laboratories, Inc.

Date: *06-Mar-12*

CLIENT: CH2M HILL
Work Order: N007367
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007359-005C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **83463**
Client ID: **ZZZZZZ** Batch ID: **39104** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/2/2012** SeqNo: **1369099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	268.591	20	250.0	0	107	75	125				
Barium	324.016	6.0	250.0	76.80	98.9	75	125				
Beryllium	255.077	2.0	250.0	0	102	75	125				
Cadmium	267.745	6.0	250.0	0	107	75	125				
Cobalt	263.594	6.0	250.0	0	105	75	125				
Lead	243.695	20	250.0	0	97.5	75	125				
Manganese	889.134	20	500.0	393.1	99.2	75	125				
Molybdenum	348.245	10	250.0	77.53	108	75	125				
Nickel	264.439	10	250.0	0	106	75	125				
Vanadium	262.283	6.0	250.0	0	105	75	125				
Zinc	278.141	20	250.0	0	111	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: N007367
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N007359-005C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **83467**
Client ID: **ZZZZZZ** Batch ID: **39178** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/3/2012** SeqNo: **1369205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	284.809	10	250.0	5.639	112	75	125				
Silver	284.964	6.0	250.0	5.435	112	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		

66151

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:

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 **N007367-001B**, the concentration in ug/L is calculated as follows:

Arsenic, ug/L = 0.398 * 5 * (25/25)

= 1.99 ug/L

Reporting results in two significant figures,

Arsenic, ug/L = 2.0

MS 3/6/12

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N007367
Test Method: EPA 6020
Analysis Date: 02/28/12

Matrix: Water
Batch No.: 39117

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Claire Ignacio

Dilution Test is not applicable to analytes that calc. values were < 25X the RL. PS @ 2x passes the criteria

Sample ID	Analyte	&Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N007383-001B-DT 5X	Arsenic	µg/L	8.674891701	PASS	8.487395081	-2.21%	10
N007383-001B-DT 5X	Chromium	µg/L	1.59574442	NA	1.567524793	-1.80%	10
N007383-001B-DT 5X	Manganese	µg/L	2.115384917	NA	2.233867929	5.30%	10
N007383-001B-DT 5X	Selenium	µg/L	0.302028153	NA	0.388305001	22.22%	10
N007383-001B-DT 5X	Thallium	µg/L	0	NA	0		10

Advanced Technology Laboratories, Inc.

Date: *04-Mar-12*

CLIENT: CH2M HILL
Work Order: N007367
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N007383-001B-PS 2** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **83440**
Client ID: **ZZZZZZ** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	29.410	0.20	20.00	8.487	105	75	125				
Chromium	21.731	1.0	20.00	1.568	101	75	125				
Selenium	20.291	1.0	20.00	0.3883	99.5	75	125				
Thallium	21.334	1.0	20.00	0	107	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		

00249

CLIENT: CH2M HILL
Work Order: N007367
Project: PG&E Topock, 417981.ER.02.DM

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N007383-001B-PS 2** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **83440**
Client ID: **ZZZZZZ** Batch ID: **39117** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/28/2012** SeqNo: **1368395**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.731	2.0	20.00	1.568	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 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:

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 coversion factor.

For Sample **N007367-001B**, the concentration in ug/L is calculated as follows:

Mercury, ug/L = 0.0 * 1 * (50/25) * 0.5

= 0.0 ug/L

Reporting results in two significant figures,

Mercury, ug/L = 0.0

Mercury, ug/L = ND

bs fn
3/5/12

Appendix B
Other Groundwater Monitoring Results

Table B-1

Arsenic Results in Monitoring Wells, March 2011 through March 2012

First Quarter 2012 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	09-Dec-11		6.3
MW-12	SA	06-May-11		49.0
		06-Oct-11		47.0
		09-Dec-11		49.0
		09-Feb-12		47.0
MW-13	SA	06-Dec-11		2.0
MW-16	SA	02-May-11		10.0
		07-Dec-11		11.0
MW-17	SA	03-May-11		1.3
		07-Dec-11		1.5
MW-20-130	DA	06-May-11		5.1
		09-Dec-11		5.2
MW-22	SA	03-May-11		12.0
		16-Dec-11		14.0
MW-23-060	BR	04-May-11		2.5
		29-Sep-11		2.1
		13-Dec-11		2.2
		14-Feb-12		3.3
MW-23-080	BR	04-May-11		3.3
		04-May-11	FD	3.4
		29-Sep-11		3.5
		12-Dec-11		3.3
		12-Dec-11	FD	3.3
		14-Feb-12		3.7
MW-25	SA	15-Dec-11		1.4
		15-Dec-11	FD	1.2
MW-26	SA	05-May-11		1.4
		09-Dec-11		1.7
MW-27-20	SA	05-Dec-11		2.4
MW-27-60	MA	05-Dec-11		10.0
		07-Feb-12		9.6
MW-27-85	DA	28-Apr-11		1.4
		28-Apr-11	FD	1.4
		03-Oct-11		1.4
		03-Oct-11	FD	1.4
		05-Dec-11		1.7
		07-Feb-12		1.4

Table B-1

Arsenic Results in Monitoring Wells, March 2011 through March 2012

First Quarter 2012 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-28-25	SA	02-May-11		2.0
		12-Dec-11		1.5
MW-28-90	DA	02-May-11		2.0
		26-Sep-11		2.0
		12-Dec-11		1.9
		07-Feb-12		1.8
MW-29	SA	29-Apr-11		9.0
		07-Dec-11		4.4
MW-30-30	SA	07-Dec-11		2.6
MW-30-50	MA	08-Dec-11		5.6
MW-31-60	SA	06-Dec-11		1.3
MW-31-135	DA	06-Dec-11		4.0
MW-32-20	SA	08-Dec-11		3.2
MW-32-35	SA	02-May-11		26.0
		09-Dec-11		25.0
MW-33-40	SA	02-May-11		19.0
		27-Sep-11		11.0
		12-Dec-11		13.0
		08-Feb-12		15.0
MW-33-90	MA	13-Dec-11		1.4
MW-33-150	DA	13-Dec-11		1.7
		09-Feb-12		1.8
MW-33-210	DA	13-Dec-11		0.96
		09-Feb-12		1.2
MW-34-55	MA	06-Dec-11		2.7
MW-34-80	DA	28-Apr-11		1.4
		03-Oct-11		1.5
		06-Dec-11		1.6
		07-Feb-12		1.4
MW-34-100	DA	28-Apr-11		1.4
		28-Apr-11	FD	1.3
		03-Oct-11		1.3
		03-Oct-11	FD	1.4
		09-Nov-11		2.0
		06-Dec-11		1.6
		06-Dec-11	FD	1.6
		18-Jan-12		2.2

Table B-1

Arsenic Results in Monitoring Wells, March 2011 through March 2012

First Quarter 2012 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-34-100	DA	07-Feb-12		1.6
		07-Feb-12	FD	1.5
MW-35-60	SA	07-Dec-11		1.2
		06-Feb-12		0.97
MW-35-135	DA	07-Dec-11		0.99
MW-36-20	SA	14-Dec-11		3.1
MW-36-40	SA	14-Dec-11		5.3
MW-36-50	MA	14-Dec-11		3.9
MW-36-70	MA	14-Dec-11		6.7
MW-36-90	DA	02-May-11		19.0
		14-Dec-11		19.0
MW-36-100	DA	03-May-11		6.3
		06-Dec-11		6.6
MW-37S	MA	07-Dec-11		1.9
MW-39-40	SA	15-Dec-11		19.0
		15-Dec-11	FD	18.0
MW-39-50	MA	15-Dec-11		8.5
MW-39-60	MA	15-Dec-11		6.5
MW-39-100	DA	14-Dec-11		3.2
MW-40D	DA	05-May-11		4.3
		07-Dec-11		4.6
MW-40S	SA	07-Dec-11		1.2
MW-41D	DA	05-Dec-11		2.8
MW-41M	DA	05-Dec-11		2.2
MW-41S	SA	07-Dec-11		2.1
		07-Dec-11	FD	2.1
MW-42-30	SA	06-Dec-11		2.2
MW-42-55	MA	29-Apr-11		13.0
		26-Sep-11		13.0
		06-Dec-11		14.0
		07-Feb-12		13.0
MW-42-65	MA	29-Apr-11		2.2
		26-Sep-11		2.3
		06-Dec-11		2.4
		07-Feb-12		2.4
MW-43-25	SA	29-Apr-11		20.0

Table B-1

Arsenic Results in Monitoring Wells, March 2011 through March 2012

First Quarter 2012 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-43-25	SA	09-Dec-11		20.0
MW-43-75	DA	09-Dec-11		12.0
MW-43-90	DA	29-Apr-11		3.3
		09-Dec-11		3.5
MW-44-70	MA	03-May-11		3.3
		08-Dec-11		3.9
MW-44-115	DA	03-May-11		5.6
		27-Sep-11		6.1
		08-Dec-11		5.7
		08-Dec-11	FD	5.4
		08-Feb-12		5.5
MW-44-125	DA	03-May-11		3.7
		03-May-11	FD	3.4
		27-Sep-11		4.2
		27-Sep-11	FD	3.8
		08-Dec-11		4.9
		08-Dec-11	FD	4.8
		08-Feb-12		4.3
		08-Feb-12	FD	4.1
MW-45-095a	DA	14-Dec-11		ND (2.5)
		14-Dec-11	FD	3.2
MW-47-55	SA	08-Dec-11		1.4
MW-49-135	DA	07-Dec-11		1.9
MW-51	MA	06-May-11		3.9
		07-Dec-11		4.5
MW-52D	DA	03-May-11		3.3
		15-Dec-11		24.0
MW-52M	DA	03-May-11		1.2
		15-Dec-11		1.4
MW-52S	MA	03-May-11		0.5
		15-Dec-11		0.6
MW-53D	DA	03-May-11		3.2 J
		03-Oct-11		3.0
		03-Oct-11	FD	2.9
		16-Dec-11		3.3
		16-Dec-11	FD	ND (2.5)
MW-53M	DA	03-May-11		0.96

Table B-1

Arsenic Results in Monitoring Wells, March 2011 through March 2012

First Quarter 2012 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-53M	DA	16-Dec-11		ND (2.5)
MW-54-85	DA	05-May-11		ND (5.0)
		06-Dec-11		4.4
MW-54-140	DA	05-May-11		ND (5.0)
		06-Dec-11		3.1
MW-54-195	DA	05-May-11		ND (5.0) J
		05-May-11	FD	ND (5.0) J
		06-Dec-11		ND (5.0)
MW-57-070	BR	15-Dec-11		ND (2.5)
		15-Feb-12		1.2
MW-57-185	BR	03-May-11		12.0
		28-Sep-11		13.0
		13-Dec-11		12.0
		10-Feb-12		12.0
		10-Feb-12	FD	13.0
MW-58BR-LWR-160	BR	04-Apr-11		1.6
MW-58BR-UPR-160	BR	18-Mar-11		1.8
MW-59-100	SA	06-May-11		2.0
		04-Oct-11		2.0
		15-Dec-11		2.0
		15-Dec-11	FD	1.5
		22-Feb-12		2.0
MW-60-125	BR	05-May-11		1.8
		04-Oct-11		1.7
		14-Dec-11		1.5
		15-Feb-12		1.2
MW-61-110	BR	05-May-11		3.4
		30-Sep-11		3.3
		14-Dec-11		3.2
		15-Feb-12		3.2
MW-62-065	BR	29-Sep-11		1.3
		13-Dec-11		0.98
		17-Feb-12		1.5
MW-62-110	BR	05-May-11		14.0
		29-Sep-11		11.0
		14-Dec-11		10.0
		16-Feb-12		6.3

Table B-1

Arsenic Results in Monitoring Wells, March 2011 through March 2012
First Quarter 2012 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	05-May-11	6.5
		29-Sep-11	6.6
		14-Dec-11	6.7
		16-Feb-12	6.4
MW-63-065	BR	03-May-11	1.6
		28-Sep-11	1.5
		12-Dec-11	1.5
		13-Feb-12	1.2
MW-64BR-LWR-150	BR	20-Apr-11	3.9
MW-64BR-UPR-150	BR	12-Apr-11	3.1
OW-3D	DA	06-Dec-11	2.8

NOTES:

µg/L = micrograms per liter.
FD = field duplicate.

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 floodwater. 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. Monitoring continues at this well as part of the East Ravine Investigation as of June 2011. Results will be reported under separate cover at the completion of the East Ravine/Topock Compressor Station groundwater investigation.

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. Monitoring continues at this well as part of the East Ravine Investigation as of June 2011. Results will be reported under separate cover at the completion of the East Ravine/Topock Compressor Station groundwater investigation.

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

Table B-2
Other GMP Data, First Quarter 2012
First Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Well ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
	California MCL:	6	10	1,000	4	5	NE	1,000*	15	2	NE	100	50	100*	2	NE	5,000*
MW-23-060	12/13/2011	ND (20)	2.2	130	ND (2.0)	ND (6.0)	ND (6.0) J	ND (10)	ND (20)	ND (0.2)	12.0	ND (10) J	4.7	15.0	ND (2.5)	ND (6.0)	ND (20)
	02/14/2012	ND (10)	3.3	130	ND (1.0)	ND (3.0)	ND (3.0)	17.0	ND (10)	ND (0.2)	9.6	ND (5.0)	4.5 J	9.7	ND (12)	6.9	14.0
MW-23-080	12/12/2011	ND (20)	3.3	67.0	ND (2.0)	ND (6.0) J	ND (6.0) J	ND (10)	ND (20) J	ND (0.2)	41.0	ND (10) J	4.8	14.0	ND (2.5)	19.0	ND (20)
FD	12/12/2011	ND (20)	3.3	69.0	ND (2.0)	ND (6.0) J	ND (6.0) J	ND (10)	ND (20) J	ND (0.2)	41.0	ND (10) J	5.3	14.0	ND (2.5)	19.0	ND (20)
	02/14/2012	ND (10)	3.7	62.0	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	31.0	ND (5.0)	5.3	9.1	ND (12)	20.0	ND (10)
MW-57-070	12/15/2011	ND (10)	ND (2.5)	150	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	ND (5.0)	ND (5.0) J	3.0	5.8	ND (2.5)	ND (3.0)	69.0
	02/15/2012	ND (10)	1.2	130	ND (1.0)	ND (3.0) J	ND (3.0)	9.8 J	ND (10)	ND (0.2)	ND (5.0)	6.7	3.6	6.5	ND (0.5)	ND (3.0)	ND (10)
MW-57-185	12/13/2011	ND (20)	12.0	55.0	ND (2.0)	ND (6.0)	ND (6.0) J	ND (10)	ND (20)	ND (0.2)	78.0	ND (10) J	ND (2.5)	ND (6.0)	ND (2.5)	ND (6.0)	ND (20)
	02/10/2012	ND (10)	12.0	51.0	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	69.0	ND (5.0)	ND (2.5)	4.4	ND (2.5)	ND (3.0)	ND (10)
FD	02/10/2012	ND (10)	13.0	54.0	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	72.0	ND (5.0)	ND (2.5)	4.5	ND (12)	ND (3.0)	ND (10)
MW-59-100	12/15/2011	ND (10)	2.0	66.0	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	ND (5.0)	ND (5.0) J	5.3	12.0	ND (2.5)	ND (3.0)	ND (10)
FD	12/15/2011	ND (10)	1.5	66.0	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	ND (5.0)	ND (5.0) J	3.7	12.0	ND (2.5)	ND (3.0)	ND (10)
	02/22/2012	ND (10)	2.0	67.0	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	ND (5.0)	ND (5.0)	3.8	11.0	ND (2.5)	ND (3.0)	ND (10)
MW-60-125	12/14/2011	ND (10)	1.5	41.0	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	15.0	ND (5.0) J	5.4	7.2	ND (2.5)	ND (3.0)	ND (10)
	02/15/2012	ND (10)	1.2	42.0	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	14.0	ND (5.0)	5.5	7.1	ND (2.5)	ND (3.0)	12.0
MW-61-110	12/14/2011	ND (20)	3.2	93.0	ND (2.0)	ND (6.0) J	ND (6.0)	ND (10)	ND (20)	ND (0.2)	17.0	ND (10) J	ND (2.5)	9.7	ND (12)	ND (6.0)	ND (20)
	02/15/2012	ND (10)	3.2	87.0	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	16.0	ND (5.0)	ND (2.5)	9.4	ND (2.5)	ND (3.0)	ND (10)
MW-62-065	12/13/2011	ND (10)	0.98	39.0	ND (1.0)	ND (3.0)	ND (3.0)	5.2	ND (10)	ND (0.2)	12.0	ND (5.0) J	3.2	4.4	ND (0.5)	ND (3.0)	100
	02/17/2012	ND (10)	1.5	35.0	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	11.0	ND (5.0)	3.1	3.4	ND (2.5)	ND (3.0)	12.0
MW-62-110	12/14/2011	ND (10)	10.0	39.0	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	44.0	ND (5.0) J	ND (12)	ND (3.0)	ND (2.5)	ND (3.0)	ND (10)
	02/16/2012	ND (10)	6.3	41.0	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	44.0	ND (5.0)	ND (12)	3.2	ND (12)	ND (3.0)	ND (10)
MW-62-190	12/14/2011	ND (20)	6.7	63.0	ND (2.0)	ND (6.0)	ND (6.0)	ND (10)	ND (20)	ND (0.2)	76.0	ND (10) J	ND (2.5)	ND (6.0) J	ND (12)	ND (6.0)	ND (20)
	02/16/2012	ND (10)	6.4	72.0	ND (1.0)	ND (3.0)	ND (3.0)	ND (5.0)	ND (10)	ND (0.2)	63.0	ND (5.0)	ND (12)	5.4	ND (12)	ND (3.0)	ND (10)
MW-63-065	12/12/2011	ND (10)	1.5	40.0	ND (1.0)	ND (3.0)	ND (3.0)	11.0	ND (10)	ND (0.2)	21.0	ND (5.0) J	1.1	3.3	0.82	ND (3.0)	73.0
	02/13/2012	ND (10)	1.2	28.0	ND (1.0)	ND (3.0)	ND (3.0)	5.6	ND (10)	ND (0.2)	21.0	5.2	0.83	ND (3.0)	0.71	ND (3.0)	28.0

Notes:

* Secondary USEPA MCL.
FD field duplicate sample.
J concentration or reporting limit estimated by laboratory or data validation.
ND not detected at listed reporting limit.
NE not established.

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.

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

Table C-1

Chemical Performance Monitoring Analytical Results, March 2005 through March 2012

First Quarter 2012 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
Monitoring Wells														
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
	07-Dec-11	1400	-7.9	-61.9	540	330	11.0	ND (0.5)	71.0	100	25.0	---	380	---
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

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-20-100 [a]	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
	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)	870	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
	08-Dec-11	1700	-6.7	-55.6	580	380	13.0	ND (0.5)	120	170	25.0	---	390	---
MW-20-130 [a]	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

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-20-130 [a]	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
	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
	09-Dec-11	6200	-6.6	-57.2	3300	1200	12.0	ND (2.5)	74.0	340	22.0	33.0	2400	2.40
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

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-25	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
	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
	15-Dec-11	860	-9.2	-68.6	270	120	5.90	ND (1.0)	170	89.0	19.0	8.50	210	0.49
	15-Dec-11 FD	890	-8.9	-66.7	280	120	6.00	ND (0.5)	170	91.0	19.0	8.00	220	0.50
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

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										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-26	09-Dec-11	2300	-8.1	-65.2	930	530	14.0	1.20	94.0	210	47.0	15.0	690	0.89
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)
	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)
	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
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
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
	08-Oct-07	27400	-9.0	-73.9	13700	3370	ND (1.0)	3.88	800	650	540	56.0	9600	4.50
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

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-30-50	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
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
	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
	06-Dec-11	1800	-8.8	-67.9	790	200	3.40	ND (1.0)	76.0	150	24.0	7.60	450	0.54
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

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-32-20	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
	10-Mar-09	29000	-8.91	-70.5	15000	2100 J	ND (5.0)	15.0	750	1620	970	96.6	7020	3.53
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
	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
	09-Dec-11	8500	-10.8	-84.2	5000	1700	ND (2.5)	ND (2.5)	640	680	310	34.0	3100	1.70

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
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
	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
	06-Dec-11	630	-12.3	-101.0	83.0	220	ND (0.5)	ND (0.5)	160	81.0	19.0	4.60	100	0.19
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
	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

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-34-80	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
	06-Dec-11	3900	-11.1	-88.1	1900	640	ND (1.0)	ND (1.0)	230	220	43.0	16.0	1300	1.10
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
	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

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-34-100	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
	06-Dec-11	10000	-10.1	-79.2	5700	1300	ND (2.5)	ND (2.5)	120	170	7.60	43.0	4000	2.70
	06-Dec-11 FD	9400	-10	-79.5	5600	1200	ND (2.5)	ND (2.5)	120	160	7.40	43.0 J	3900	2.70
Surface Water Stations														
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)
	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)
	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)

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Surface Water Stations														
R-28	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)
	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)
	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)
	11-Jan-12	---	---	---	80.5	218	ND (0.5)	ND (0.5)	127	70.2	27.4	4.76	83.7	ND (0.2)

Table C-1

Chemical Performance Monitoring Analytical Results, March 2005 through March 2012
First Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

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.
--- = data not collected or available.

[a] 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).

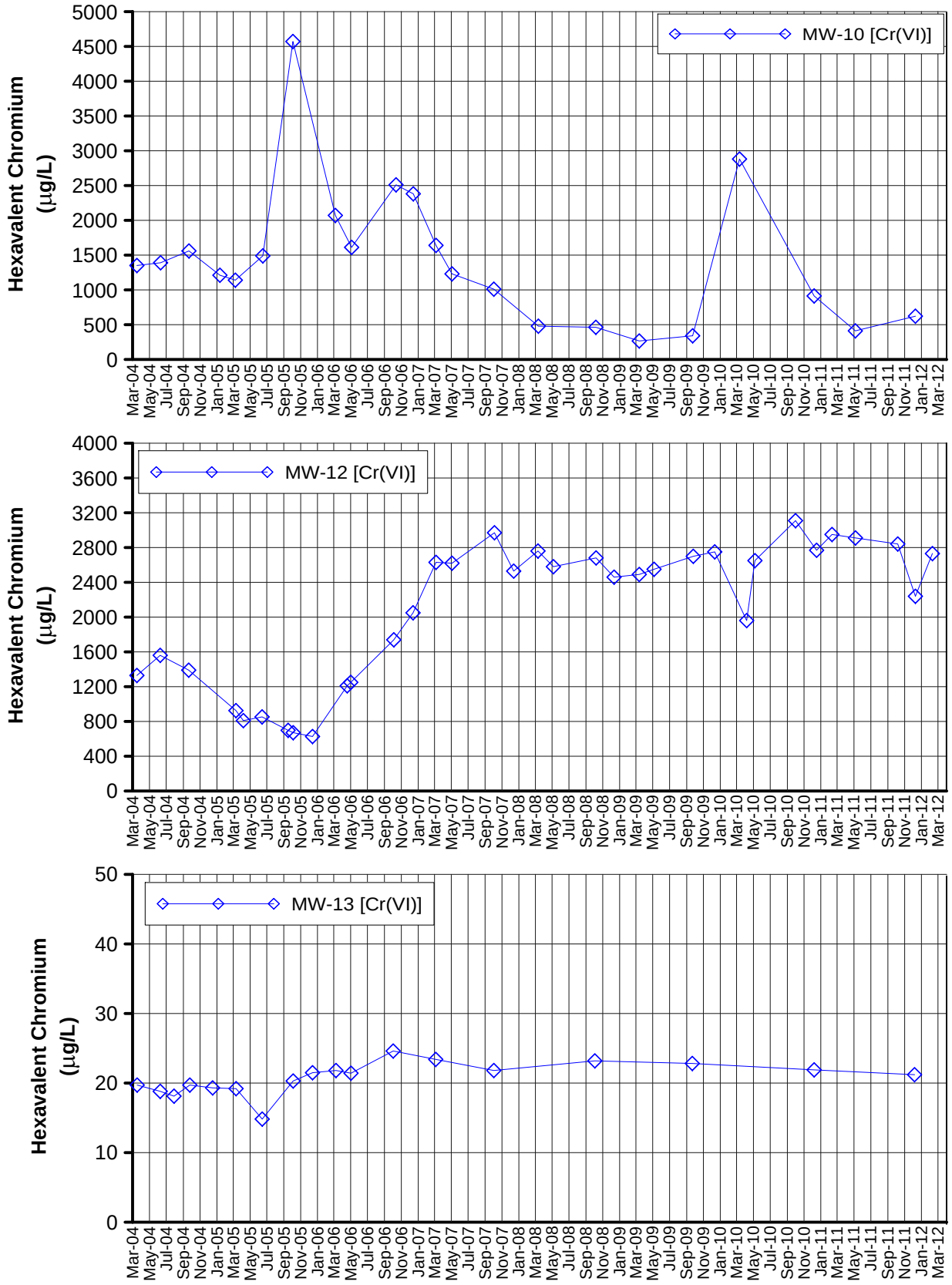


FIGURE C-1
HEXAVALENT CHROMIUM
IN MW-10, MW-12, AND MW-13
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

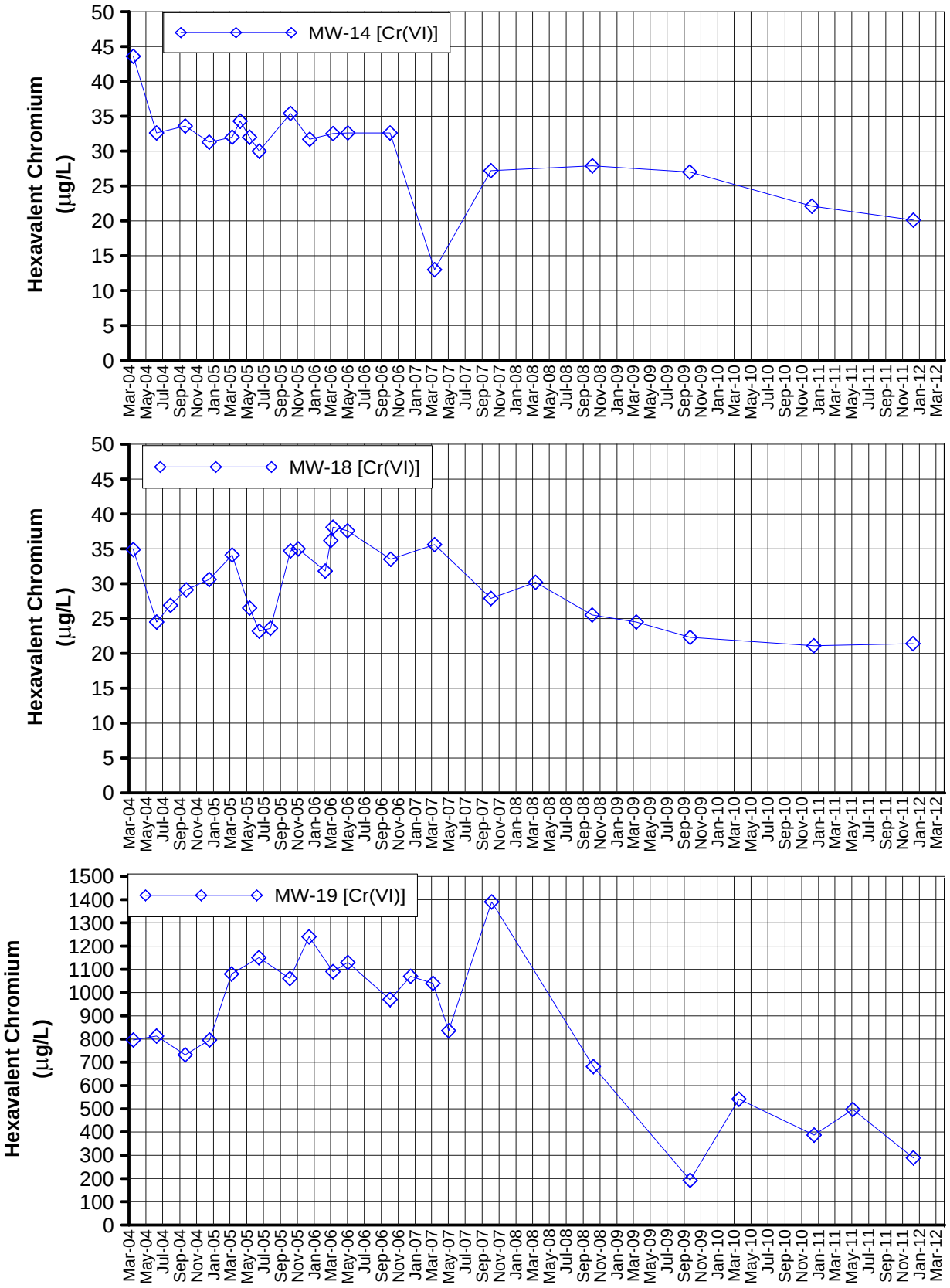
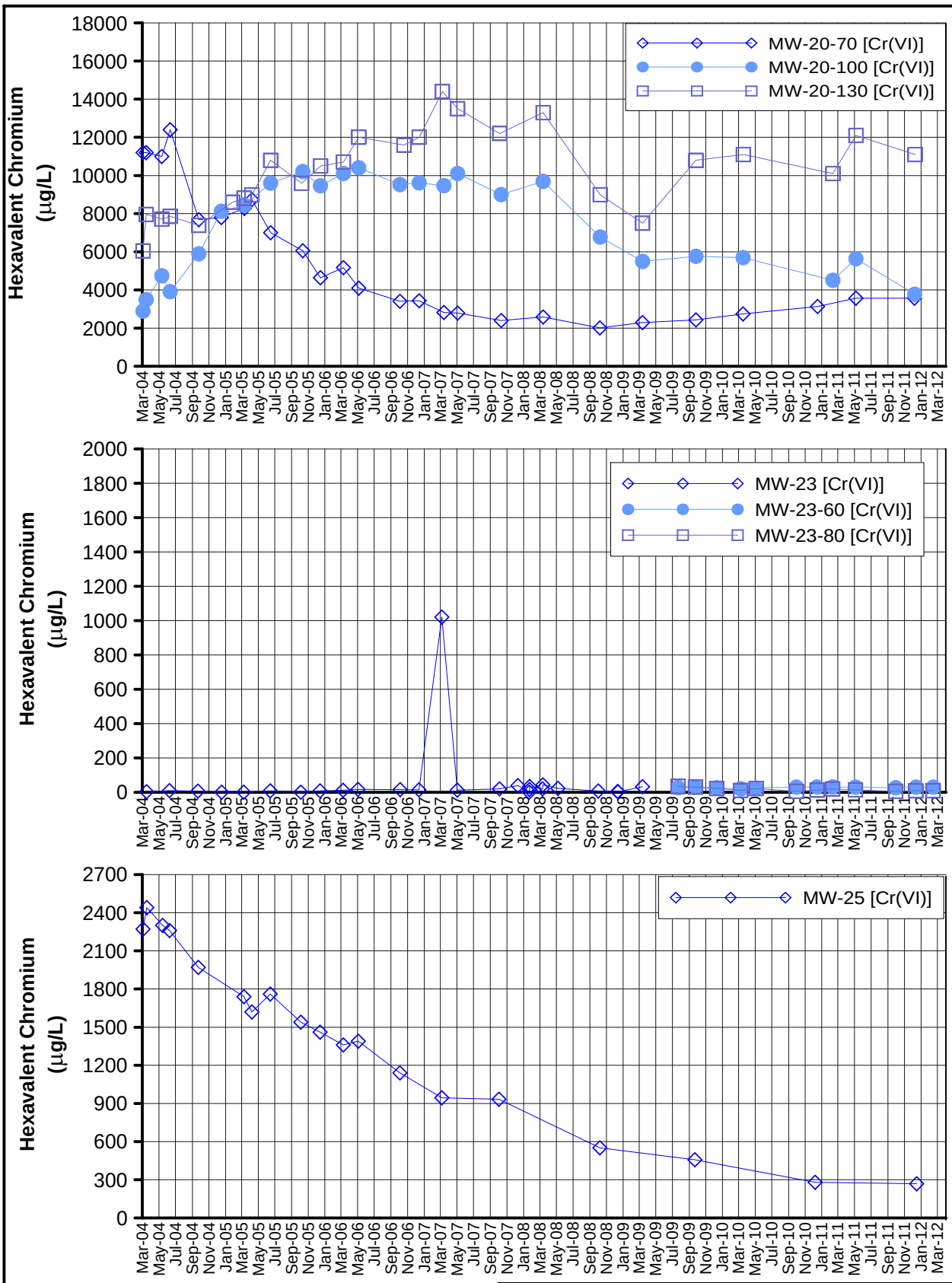


FIGURE C-2
HEXAVALENT CHROMIUM
IN MW-14, MW-18, AND MW-19
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL



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 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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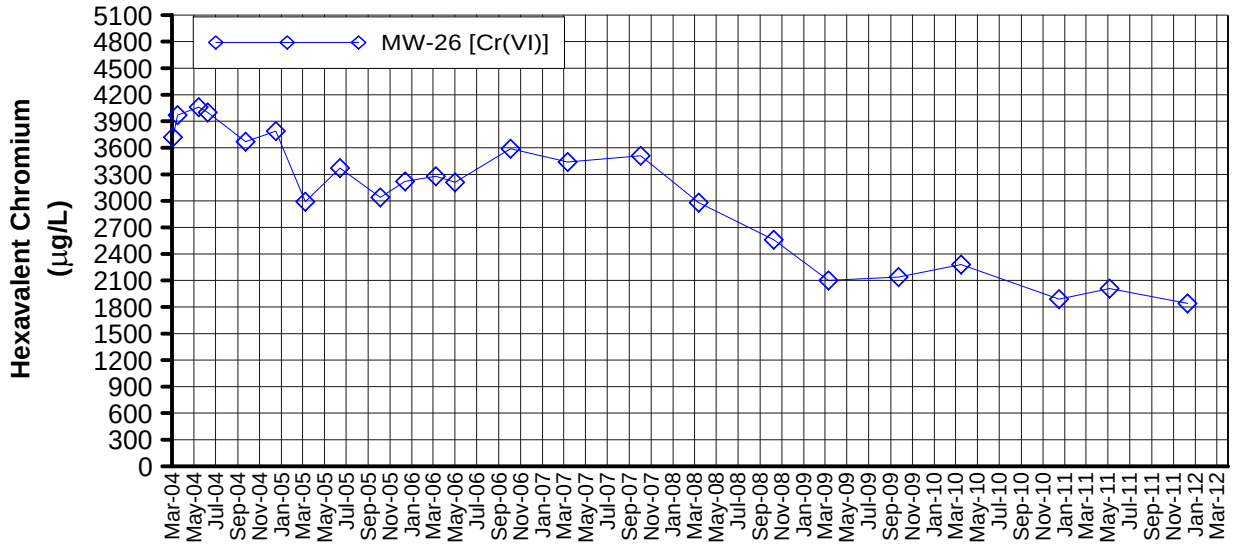

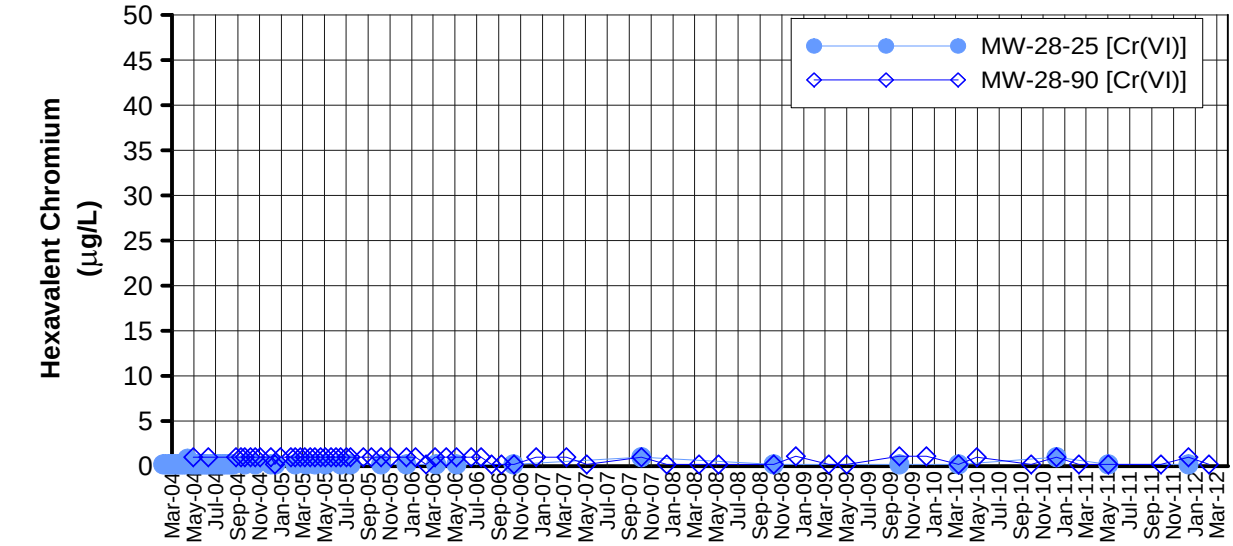

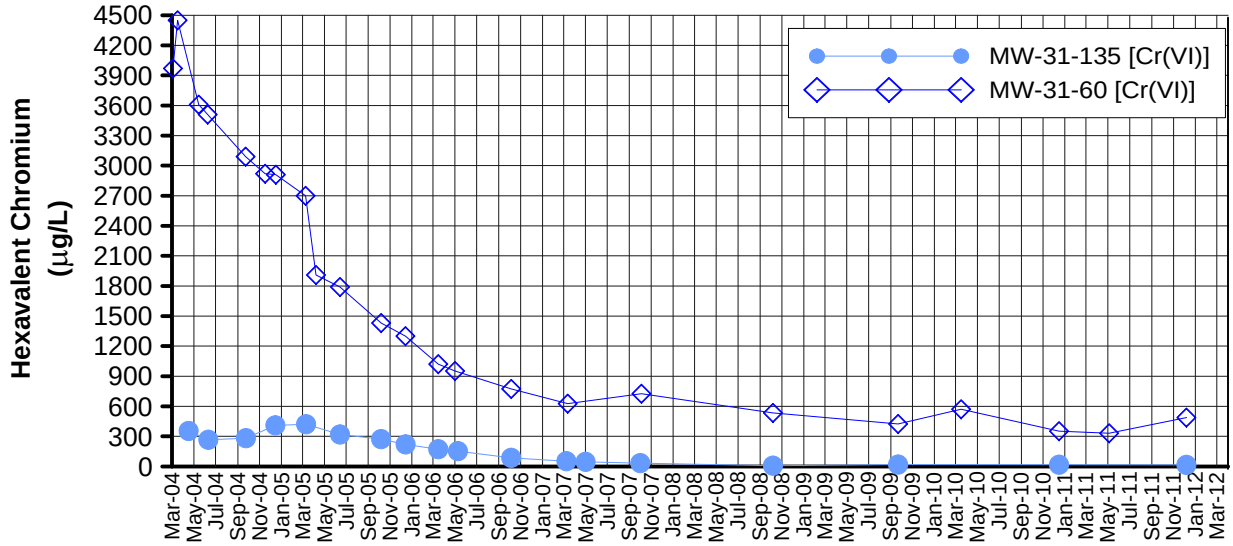

Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-28-90 is 20 µg/L.

FIGURE C-4
HEXAVALENT CHROMIUM
IN MW-26, MW-28, AND MW-31 CLUSTERS
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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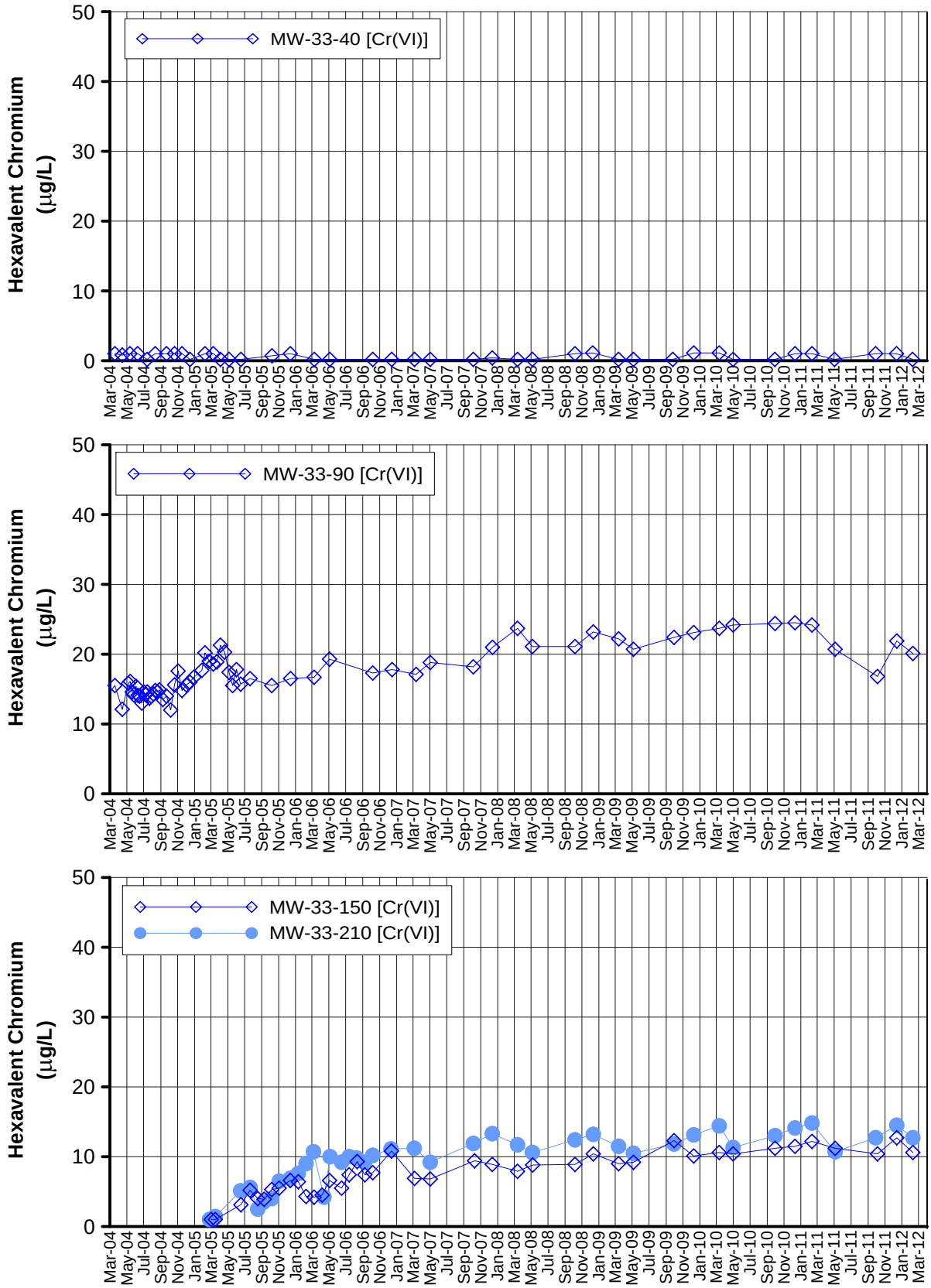


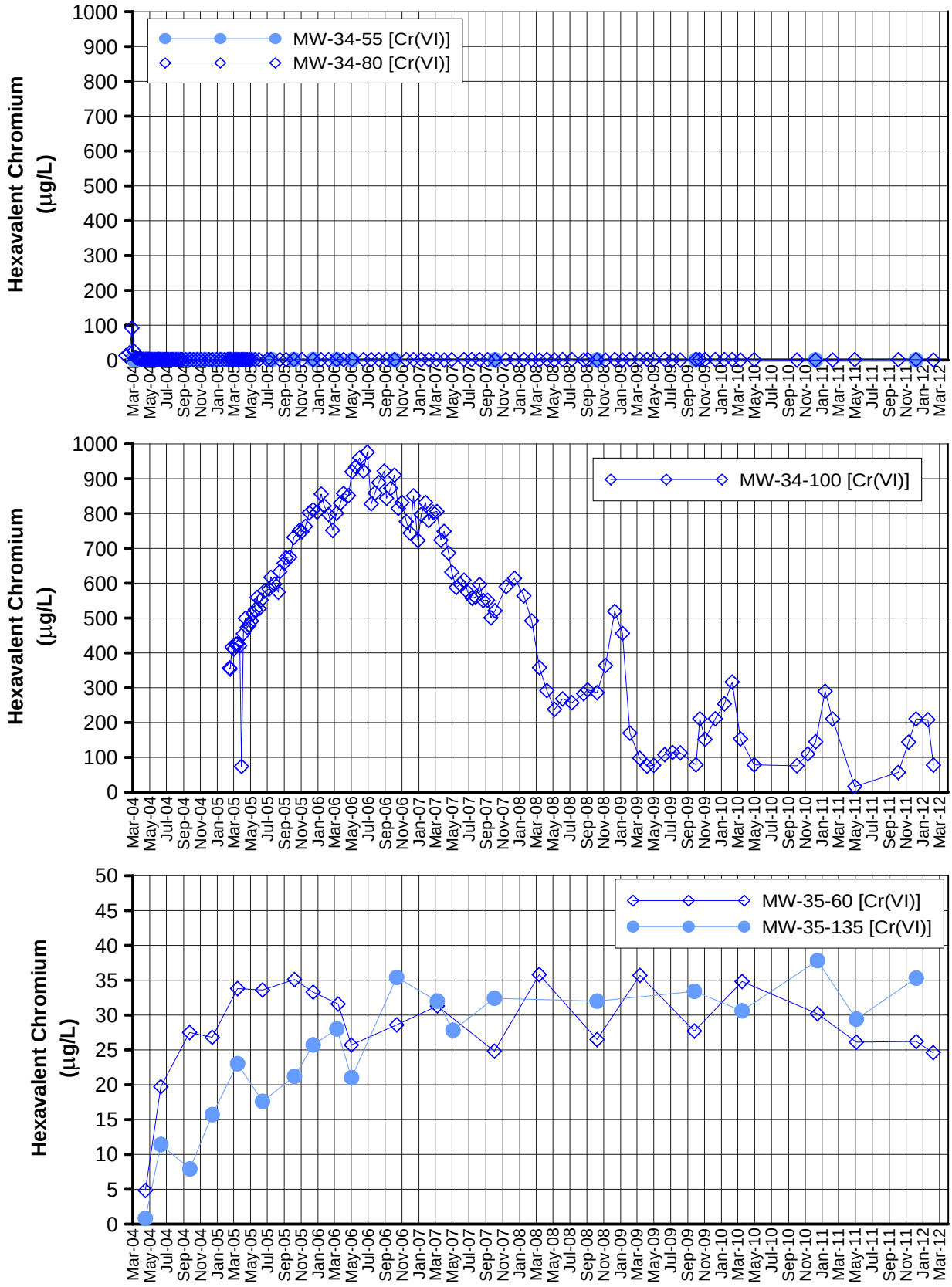
Notes:

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 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

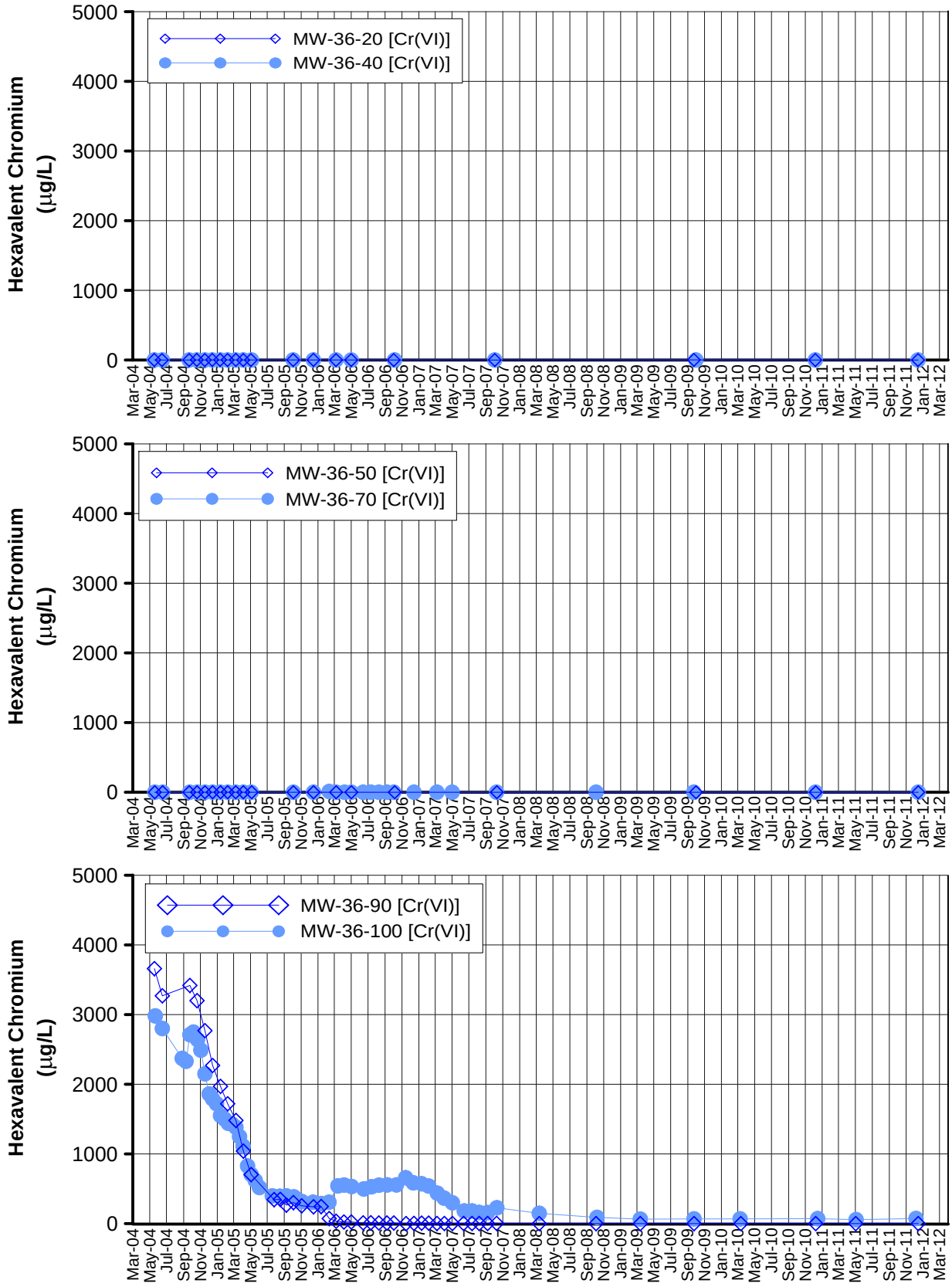
CH2MHILL



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 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

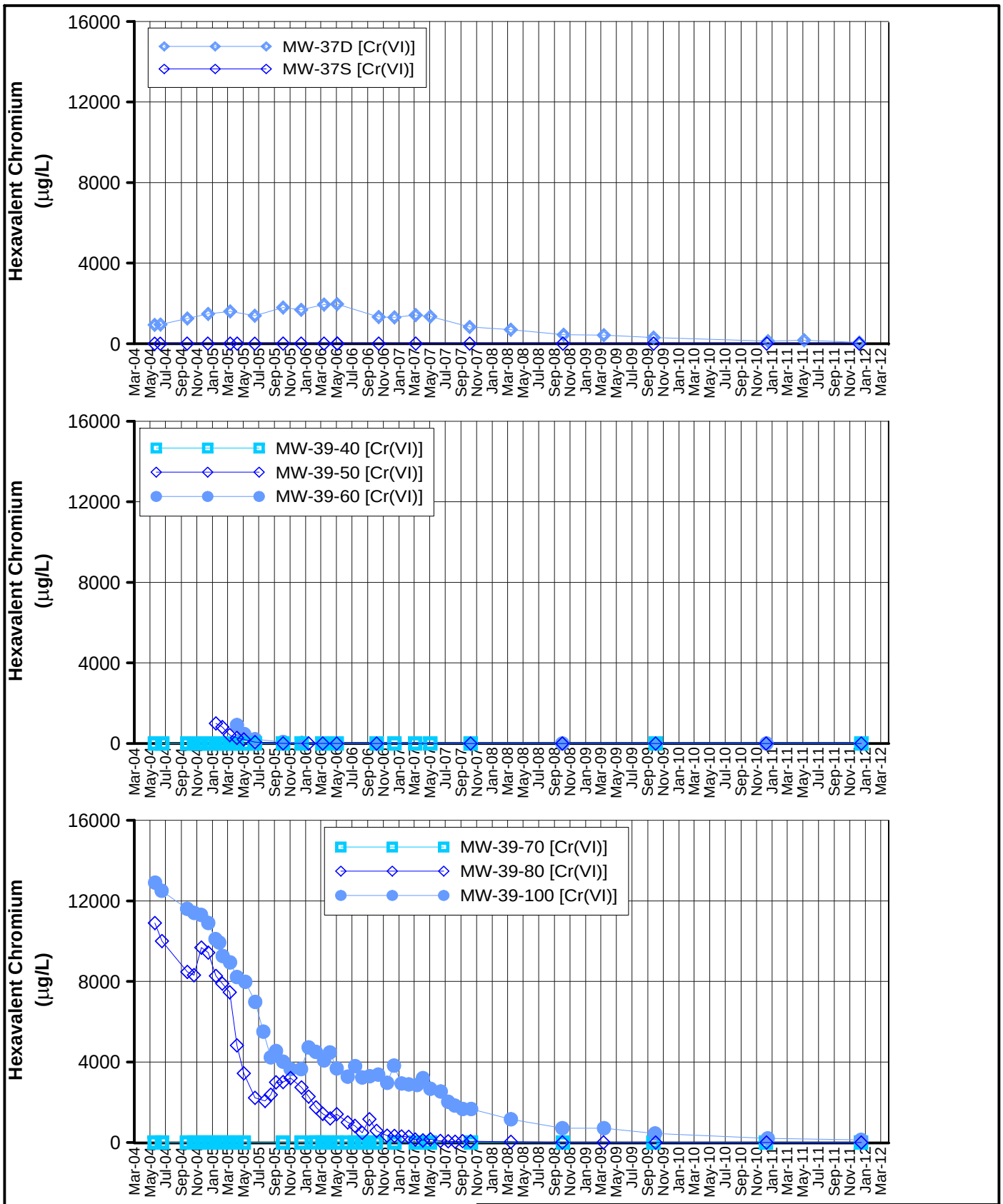
CH2MHILL



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 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL



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
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

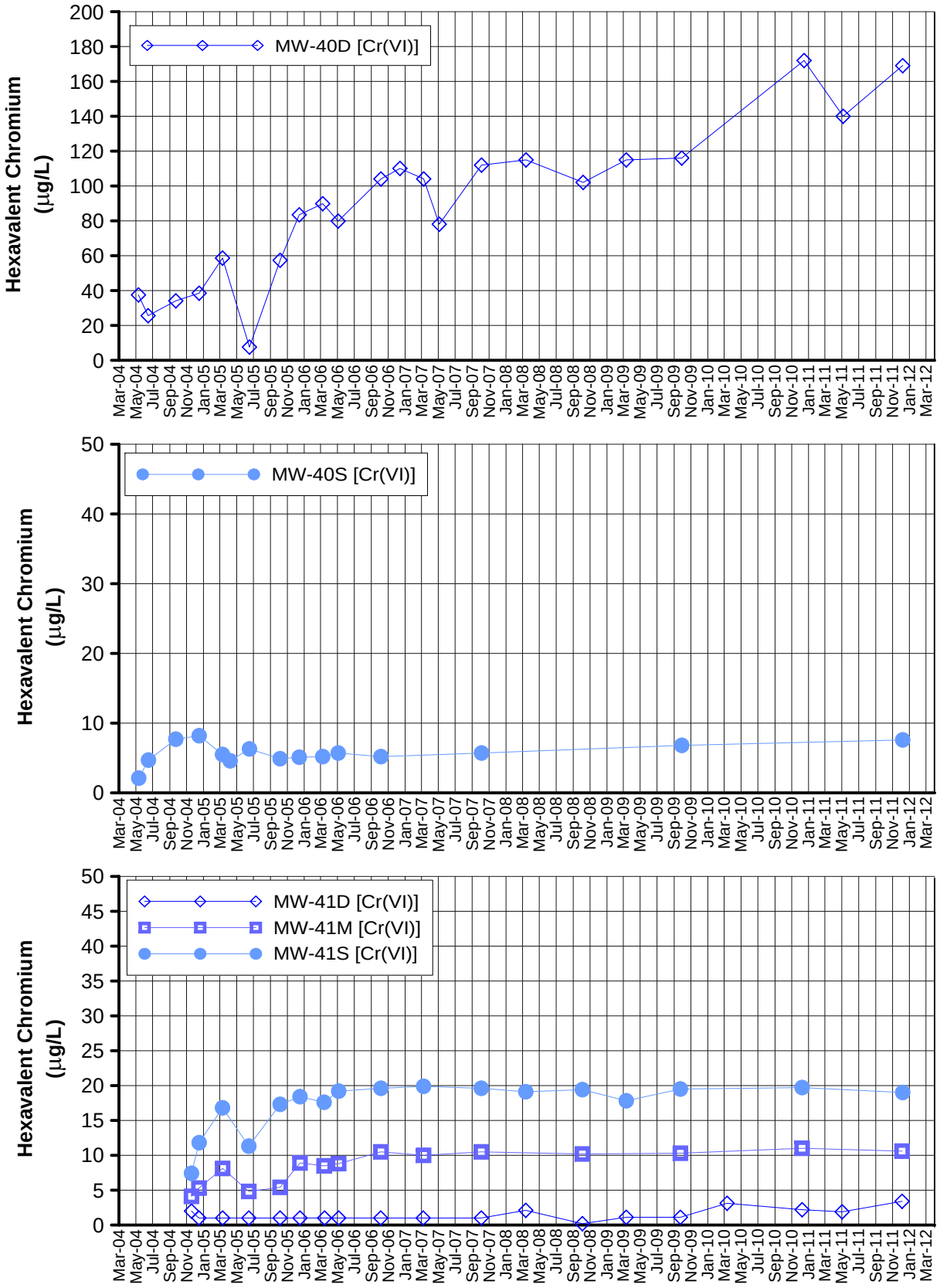
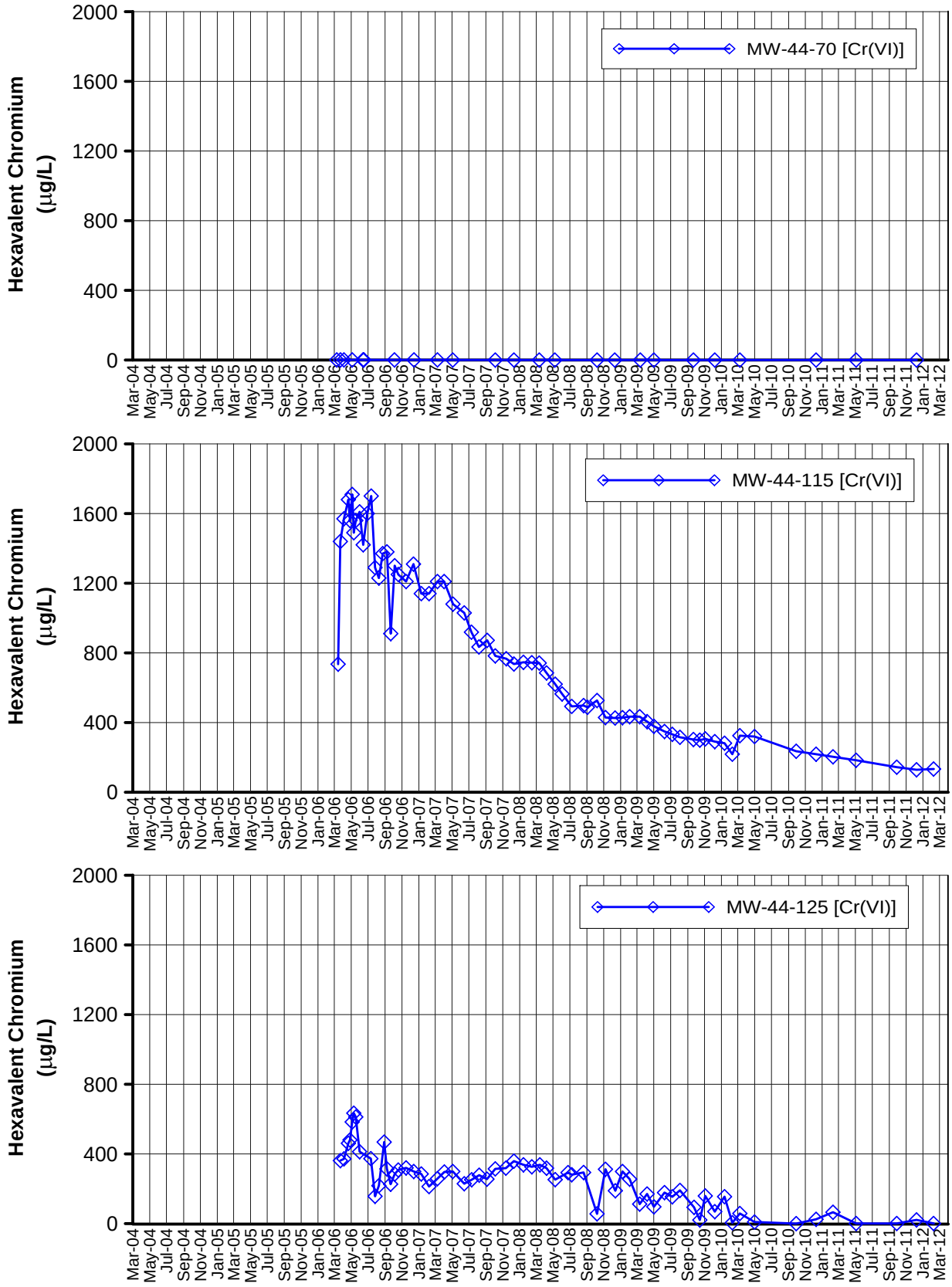


FIGURE C-9
HEXAVALENT CHROMIUM
IN MW-40 AND MW-41 CLUSTERS
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL



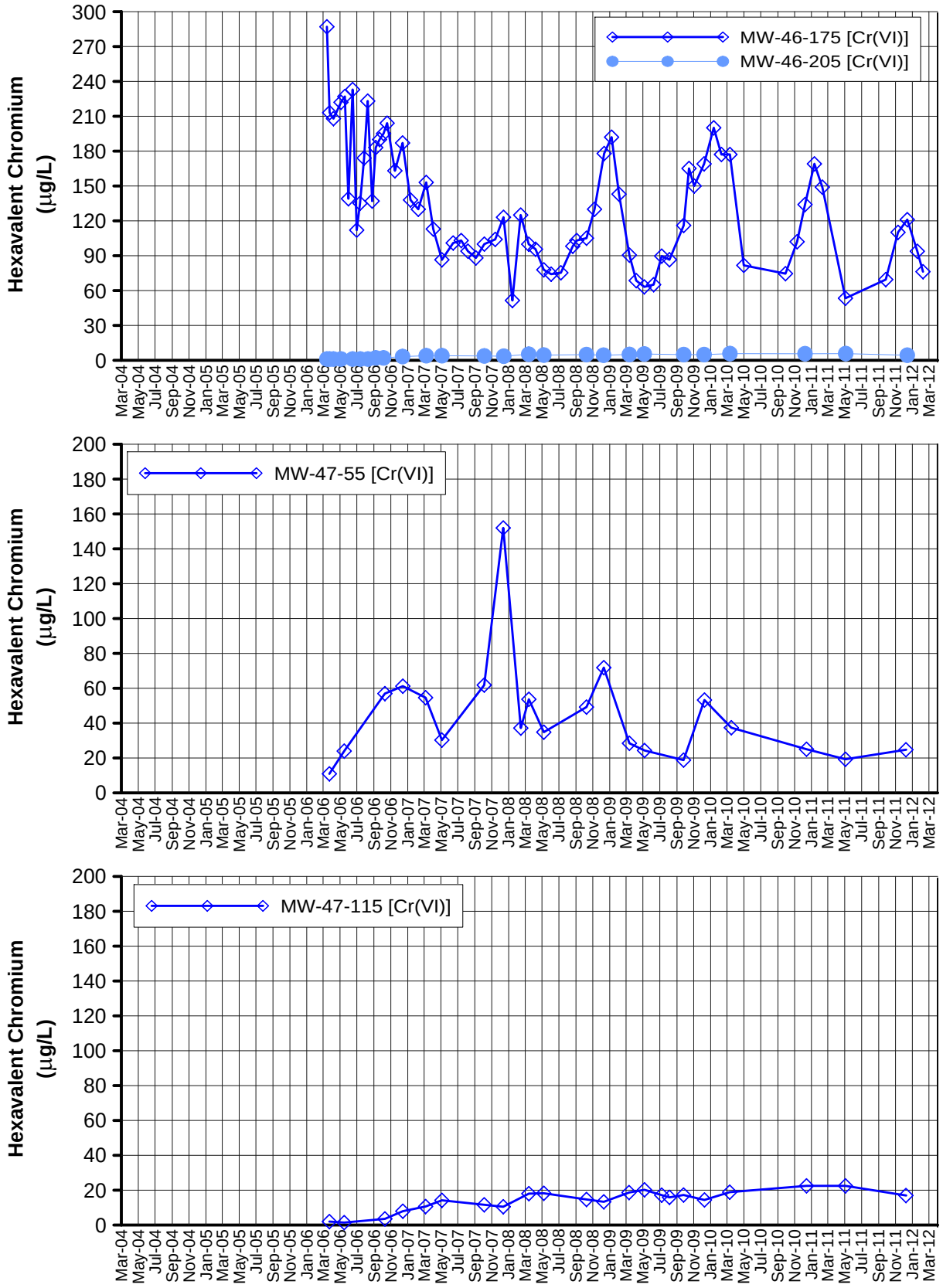
Notes:

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 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

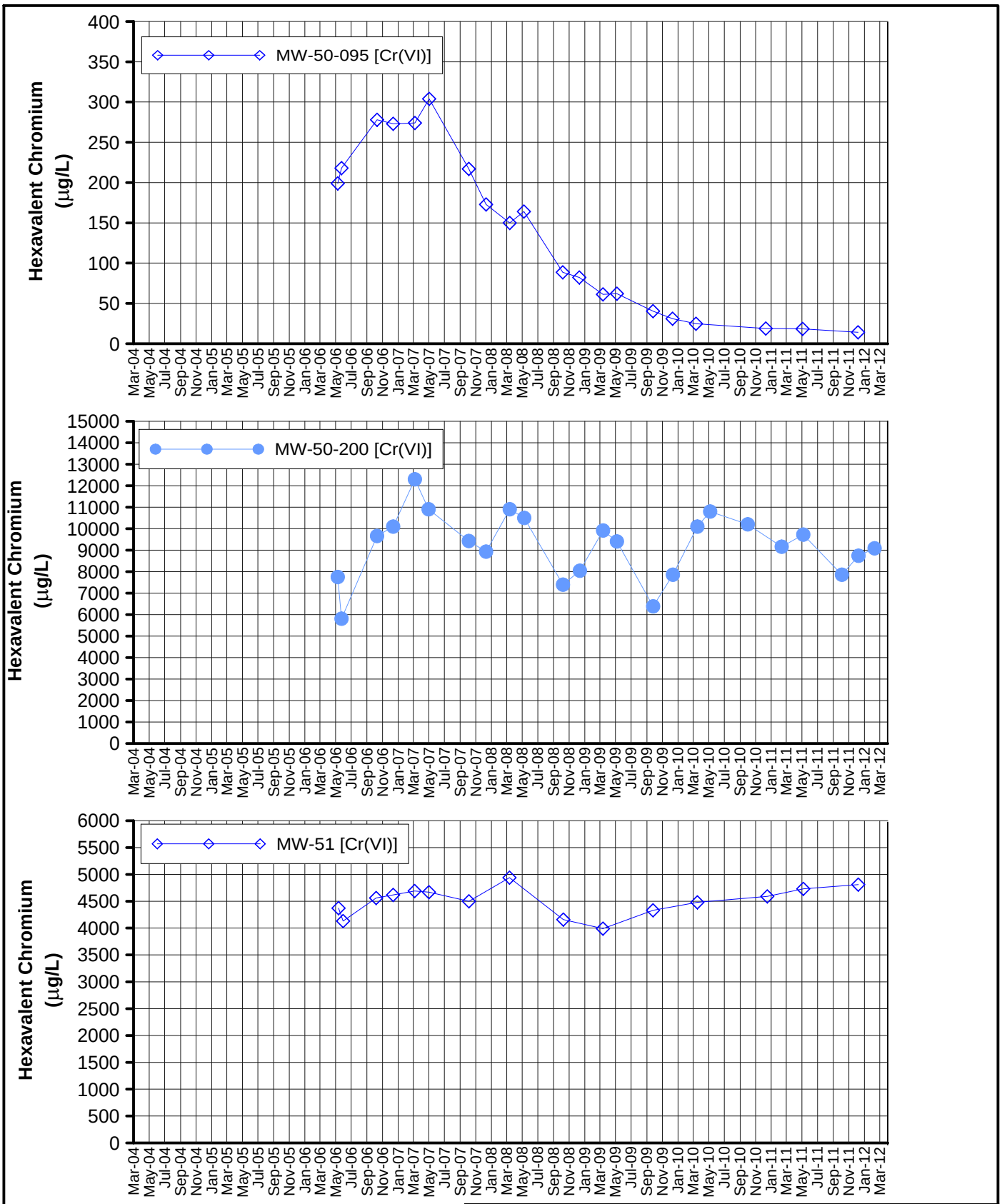


Notes:

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 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL



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 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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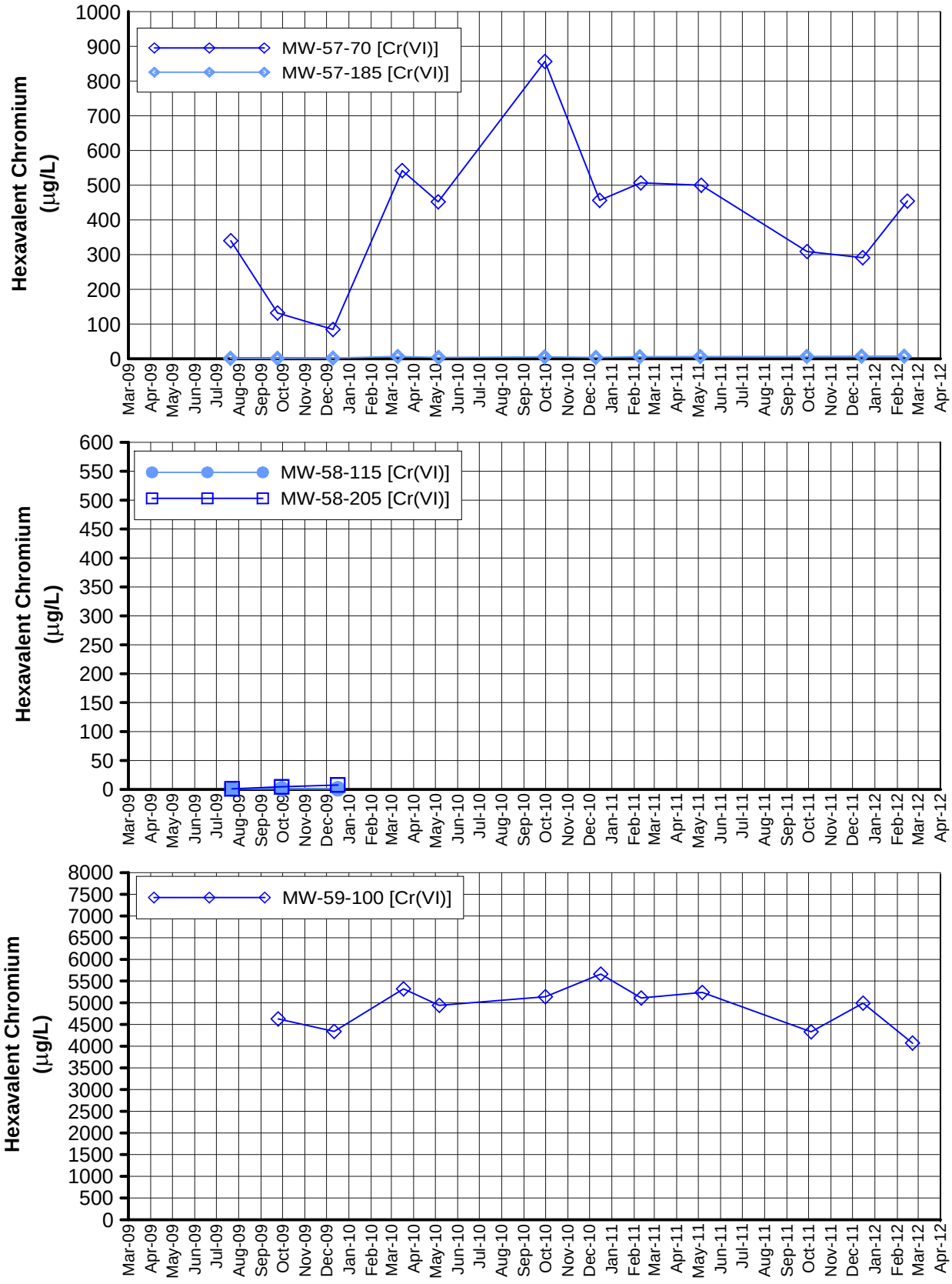

FIGURE C-13
HEXAVALENT CHROMIUM
IN MW-57, MW-58 and MW-59 CLUSTERS
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

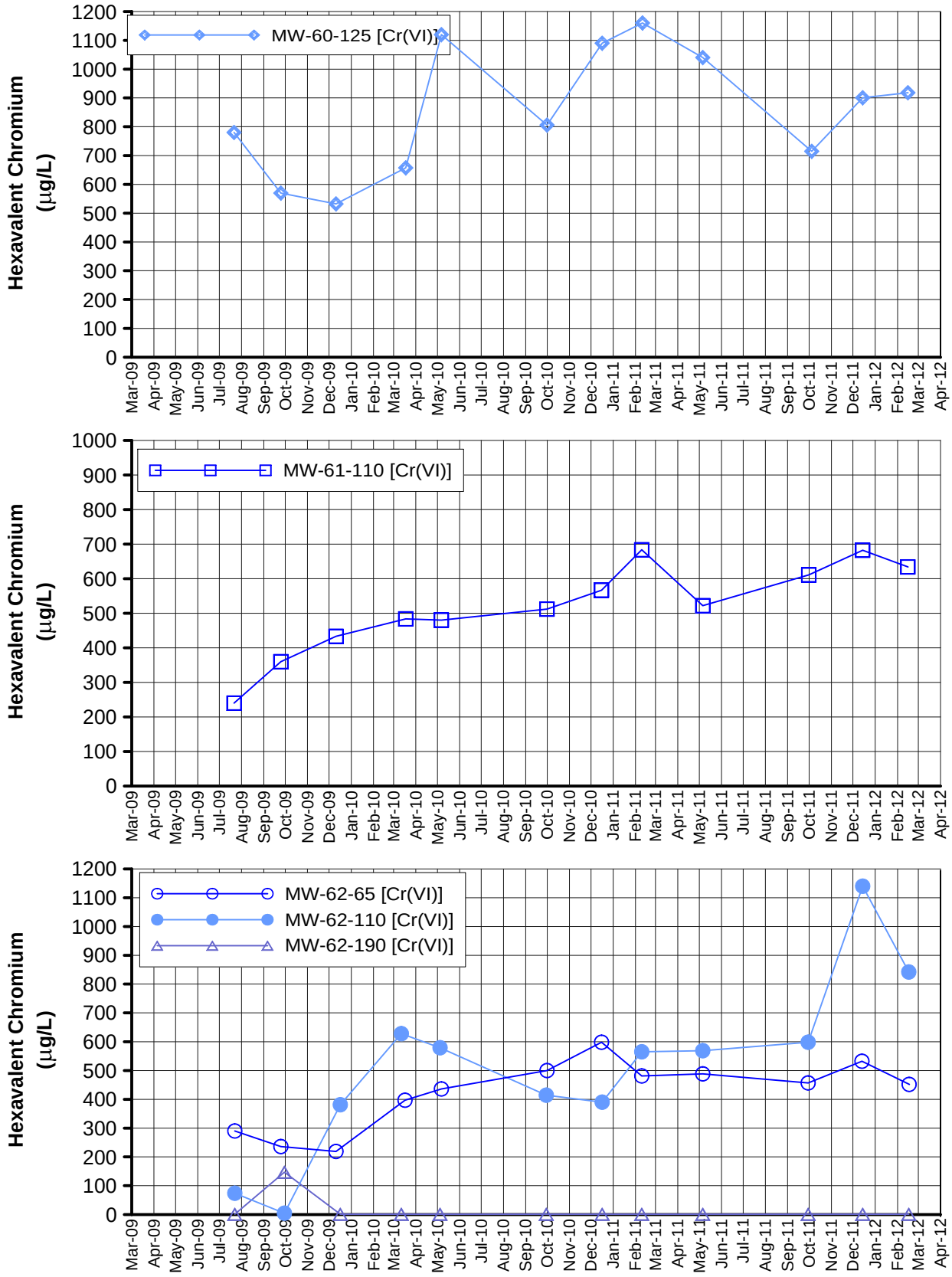

FIGURE C-14
HEXAVALENT CHROMIUM
IN MW-60-125, MW-61-110 AND THE MW-62 CLUSTER
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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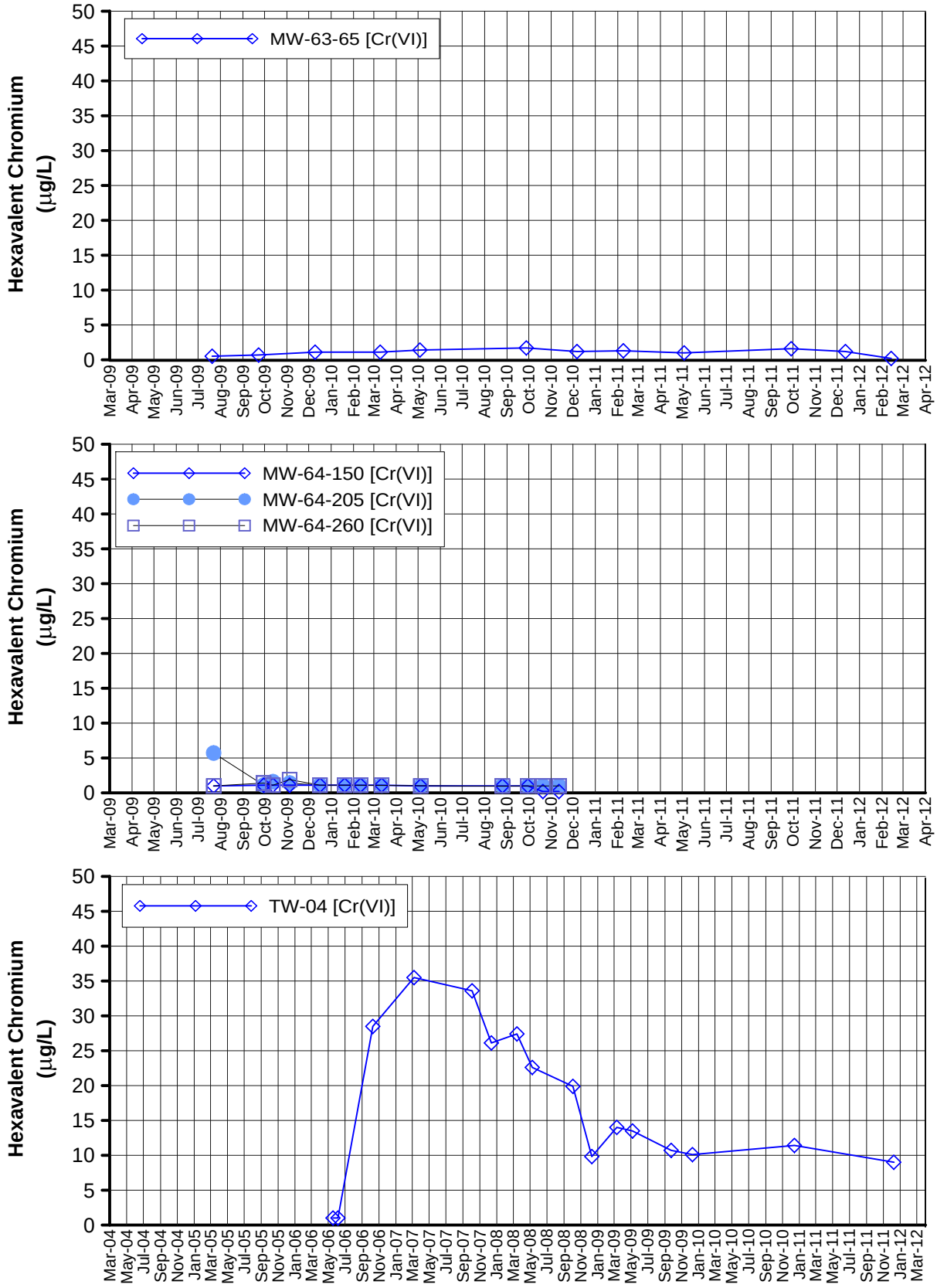

FIGURE C-15
HEXAVALENT CHROMIUM
IN MW-63-065, THE MW-64 CLUSTER, AND TW-04
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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Appendix D
Interim Measure Extraction System Operations Log, First Quarter 2012

APPENDIX D

Interim Measures Extraction System Operations Log, First Quarter 2012, PG&E Topock Performance Monitoring Program

During First Quarter 2012 (January through March), extraction wells TW-3D and PE-1 operated at a target pump rate of at 135 gallons per minute, excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during First Quarter 2012. The operational run time for the Interim Measure groundwater extraction system (combined or individual pumping) was approximately 98.7 percent during First Quarter 2012.

The Interim Measure Number 3 (IM-3) facility treated approximately 17,165,892 gallons of extracted groundwater during First Quarter 2012. The IM-3 facility also treated approximately 3,355 gallons of water generated from the groundwater monitoring program and 17,100 gallons of water from IM-3 injection well development. Four 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 1.3 percent of downtime during First Quarter 2012) are summarized below. The times shown are in Pacific Standard Time to be consistent with other data collected (for example, water level data) at the site.

D.1 January 2012

- **January 4, 2012 (planned):** The extraction well system was offline from 12:28 p.m. to 12:30 p.m. and 12:34 p.m. to 12: 36 p.m. due to critical alarm and leak detection system testing. Extraction system downtime: 4 minutes.
- **January 9, 2012 (planned):** The extraction well system was offline from 2:20 p.m. to 3:46 p.m. due to microfilter flow meter repair. Extraction system downtime: 1 hour and 26 minutes.
- **January 12, 2012 (planned):** The extraction well system was offline from 11:18 a.m. to 12:54 p.m. due to clarifier cleaning. Extraction system downtime: 1 hour and 36 minutes.

D.2 February 2012

- **February 1, 2012 (planned):** The extraction well system was offline from 10:04 a.m. to 11:22 a.m. due to tank management to control tank levels and critical alarm and leak detection system testing. Extraction system downtime: 1 hour and 18 minutes.
- **February 3, 2012 (unplanned):** The extraction well system was offline from 11:42 p.m. to 11:46 p.m. due to air compressor failure. Extraction system downtime: 4 minutes.
- **February 7, 2012 (planned):** The extraction well system was offline from 1:04 p.m. to 1:30 p.m. due replacement of a pressure relief valve on the air compressor tank. Extraction system downtime: 26 minutes.
- **February 18, 2012 (planned):** The extraction well system was offline from 8:18 a.m. to 9:56 a.m. due to microfilter performance testing. Extraction system downtime: 1 hour and 38 minutes.
- **February 24, 2012 (unplanned):** The extraction well system was offline from 1:28 p.m. to 1:30 p.m. due to a City of Needles power imbalance that shut down extraction wells. Extraction system downtime: 2 minutes.

D.3 March 2012

- **March 6, 2012 (unplanned):** The extraction well system was offline from 6:48 p.m. to 7:08 p.m. due to a City of Needles power imbalance that shut down extraction wells. Extraction system downtime: 20 minutes.

- **March 7, 2012 (planned):** The extraction well system was offline from 2:40 a.m. to 2:46 a.m. due to switching to City of Needles power from generator power. Extraction system downtime: 6 minutes.
- **March 7, 2012 (planned):** The extraction well system was offline from 12:52 p.m. to 12:54 p.m., 1:02 p.m. to 1:04 p.m., 1:14 p.m. to 1:16 p.m., and 1:30 p.m. to 1:32 p.m. due to checking the specific capacity of extraction wells. Extraction system downtime: 8 minutes.
- **March 20, 2012 (unplanned):** The extraction well system was offline from 4:54 p.m. to 6:24 p.m. due to low air flow to the iron oxidation tanks. Extraction system downtime: 1 hour and 30 minutes.
- **March 21, 2012 (planned):** The extraction well system was offline from 11:52 a.m. to 5:12 p.m. due to extraction well PE-1 rehabilitation. Extraction system downtime: 5 hours and 20 minutes.
- **March 21, 2012 (planned):** The extraction well system was offline from 8:14 p.m. to 8:18 p.m. due to testing well PE-01 after maintenance. Extraction system downtime: 4 minutes.
- **March 22, 2012 (unplanned):** The extraction well system was offline from 6:08 p.m. to 6:24 p.m. and 6:26 p.m. to 7:28 p.m. due to a pressure regulating valve failure in well PE-01 that triggered the high-level alarm in the raw water storage tank. Extraction system downtime: 1 hour and 18 minutes.
- **March 24, 2012 (unplanned):** The extraction well system was offline from 2:46 a.m. to 4:24 a.m. due to a pressure regulating valve failure in well PE-01 that triggered the high-level alarm in the raw water storage tank. Extraction system downtime: 1 hour and 38 minutes.
- **March 25, 2012 (unplanned):** The extraction well system was offline from 11:48 a.m. to 12:50 p.m. due to a pressure regulating valve failure in well PE-01 which triggered the high level alarm in the raw water storage tank. Extraction system downtime was 1 hour and 2 minutes.
- **March 26, 2012 (unplanned):** The extraction well system was offline from 9:34 a.m. to 10:52 a.m. due to a pressure-regulating valve failure in well PE-01 that triggered the high-level alarm in the raw water storage tank. Extraction system downtime: 1 hour and 18 minutes.
- **March 27, 2012 (unplanned):** The extraction well system was offline from 6:08 a.m. to 7:44 a.m. due to a pressure-regulating valve failure in well PE-01 that triggered the high-level alarm in the raw water storage tank. Extraction system downtime: 1 hour and 36 minutes.
- **March 28, 2012 (planned):** The extraction well system was offline from 6:58 a.m. to 10:12 a.m., 10:14 a.m. to 2:18 p.m., and 2:20 p.m. to 2:38 p.m. due to monthly scheduled plant maintenance. Extraction system downtime: 7 hours and 36 minutes.
- **March 31, 2012 (unplanned):** The extraction well system was offline from 11:54 a.m. to 1:00 p.m. due to a pressure-regulating valve failure in well PE-01 that triggered the high-level alarm in the raw water storage tank. Extraction system downtime: 1 hour and 6 minutes.

Appendix E
Hydraulic Data for Interim Measures Reporting Period

Table E-1

Average Monthly and Quarterly Groundwater Elevations, First Quarter 2012

First Quarter 2012 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 2012	February 2012	March 2012	Quarter Average	Days in Quarter Average
I-3	River Station	453.99	455.25	455.88	455.02	88
MW-20-070	Shallow Zone	452.56	453.53	454.10	453.37	87
MW-20-100	Middle Zone	452.10	453.09	453.65	452.92	87
MW-20-130	Deep Zone	451.70	452.71	453.30	452.54	87
MW-22	Shallow Zone	453.59	454.46	455.02	454.32	86
MW-25	Shallow Zone	454.10	454.78	455.28	454.70	88
MW-26	Shallow Zone	453.80	454.49	455.00	454.41	89
MW-27-020	Shallow Zone	453.67	455.00	455.61	454.72	86
MW-27-060	Middle Zone	453.61	454.86	INC	INC	60
MW-27-085	Deep Zone	453.80	455.04	455.71	454.85	91
MW-28-025	Shallow Zone	453.75	455.02	455.64	454.76	87
MW-28-090	Deep Zone	453.80	455.01	455.61	454.77	87
MW-30-050	Middle Zone	453.40	454.60	455.20	454.36	86
MW-31-060	Shallow Zone	453.49	454.49	455.03	454.31	88
MW-31-135	Deep Zone	452.76	453.77	454.40	453.64	91
MW-32-035	Shallow Zone	453.49	454.72	455.30	454.46	86
MW-33-040	Shallow Zone	453.70	454.79	455.43	454.64	91
MW-33-090	Middle Zone	453.89	455.03	455.71	454.88	91
MW-33-150	Deep Zone	453.80	454.80	455.48	454.69	91
MW-34-055	Middle Zone	453.76	455.02	455.63	454.76	86
MW-34-080	Deep Zone	453.88	454.99	455.63	454.79	86
MW-34-100	Deep Zone	453.55	454.76	455.46	454.59	91
MW-35-060	Shallow Zone	454.17	455.36	455.95	455.12	87
MW-35-135	Deep Zone	454.48	455.48	456.02	455.29	87
MW-36-020	Shallow Zone	453.59	454.78	455.36	454.54	87
MW-36-040	Shallow Zone	453.53	454.75	455.35	454.50	87
MW-36-050	Middle Zone	453.44	454.67	455.27	454.42	87
MW-36-070	Middle Zone	453.44	454.66	455.26	454.41	87
MW-36-090	Deep Zone	452.64	453.80	454.39	453.57	87
MW-36-100	Deep Zone	452.91	454.10	454.71	453.87	87
MW-39-040	Shallow Zone	453.34	454.51	455.10	454.28	86
MW-39-050	Middle Zone	453.20	454.35	454.93	454.12	86
MW-39-060	Middle Zone	452.98	454.12	454.71	453.90	86
MW-39-070	Middle Zone	452.56	453.65	454.24	453.45	86
MW-39-080	Deep Zone	452.71	453.82	454.42	453.61	86
MW-39-100	Deep Zone	452.90	454.04	454.66	453.82	86
MW-42-030	Shallow Zone	453.29	454.50	455.09	454.25	86
MW-42-065	Middle Zone	453.50	454.64	455.29	454.43	86
MW-43-025	Shallow Zone	453.73	455.05	455.67	454.77	86
MW-43-090	Deep Zone	454.08	455.41	456.03	455.13	86
MW-44-070	Middle Zone	453.66	454.90	455.50	454.64	86
MW-44-115	Deep Zone	453.26	454.38	454.97	454.16	86
MW-44-125	Deep Zone	453.63	454.70	455.34	454.52	86
MW-45-095a	Deep Zone	452.55	453.77	454.55	453.62	91
MW-46-175	Deep Zone	453.76	454.75	455.29	454.56	87
MW-47-055	Shallow Zone	454.02	455.13	455.66	454.90	87
MW-47-115	Deep Zone	453.98	455.03	455.58	454.83	87
MW-49-135	Deep Zone	454.16	455.25	455.82	455.04	87

Table E-1

Average Monthly and Quarterly Groundwater Elevations, First Quarter 2012

First Quarter 2012 Interim Measure Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

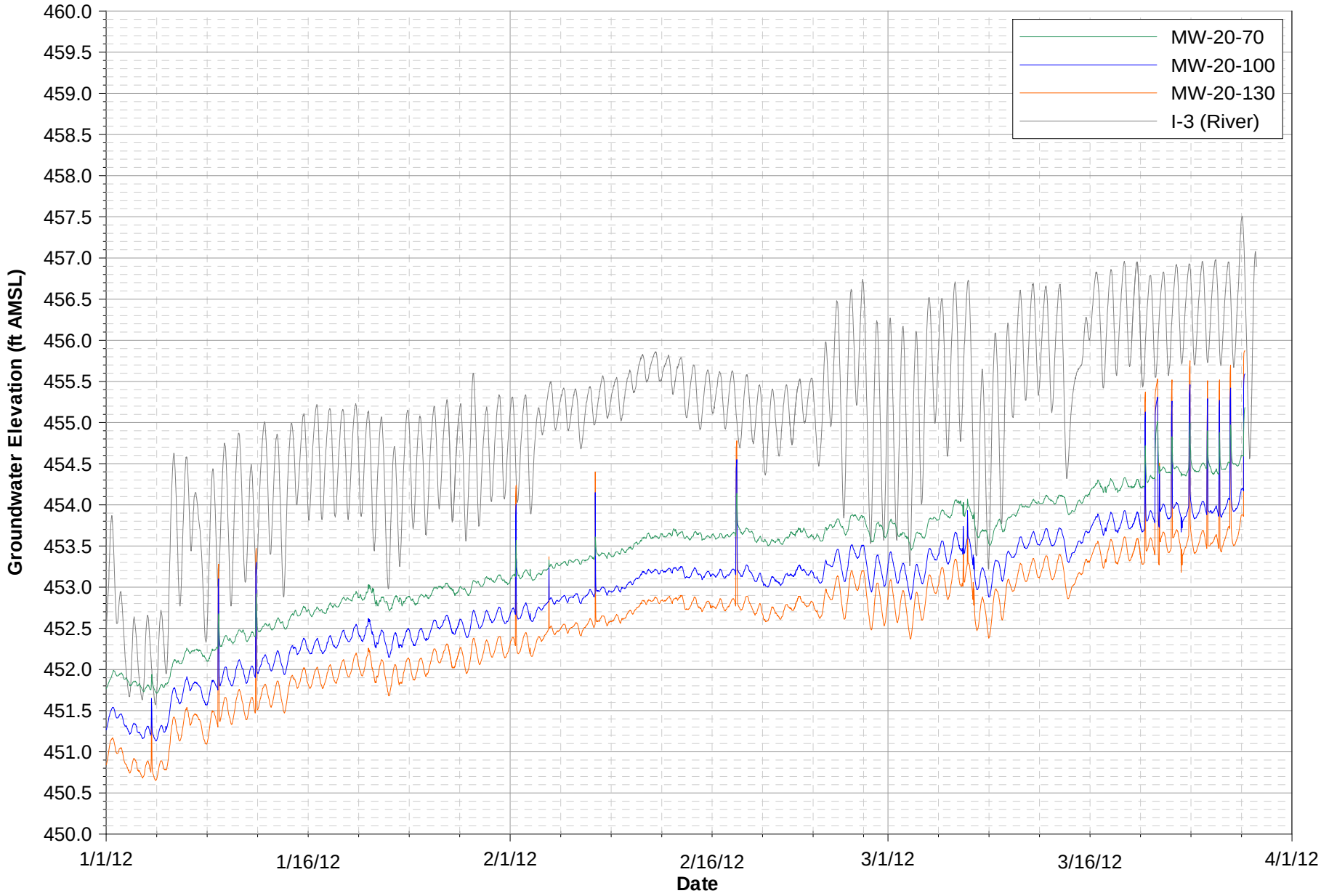
Well ID	Aquifer Zone	January 2012	February 2012	March 2012	Quarter Average	Days in Quarter Average
MW-50-095	Middle Zone	453.64	454.60	455.15	454.43	88
MW-51	Middle Zone	453.77	454.44	454.96	454.38	89
MW-54-085	Deep Zone	454.20	455.40	456.04	455.18	87
MW-54-140	Deep Zone	454.46	455.56	456.13	455.35	87
MW-54-195	Deep Zone	454.70	455.73	456.28	455.54	87
MW-55-045	Middle Zone	455.26	456.05	456.51	455.92	89
MW-55-120	Deep Zone	455.50	INC	456.65	INC	58
PT2D	Deep Zone	452.27	453.34	453.90	453.13	87
PT5D	Deep Zone	452.69	453.79	454.39	453.59	87
PT6D	Deep Zone	452.87	453.96	454.54	453.75	87
RRB	River Station	INC	455.55	456.22	455.54	80

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



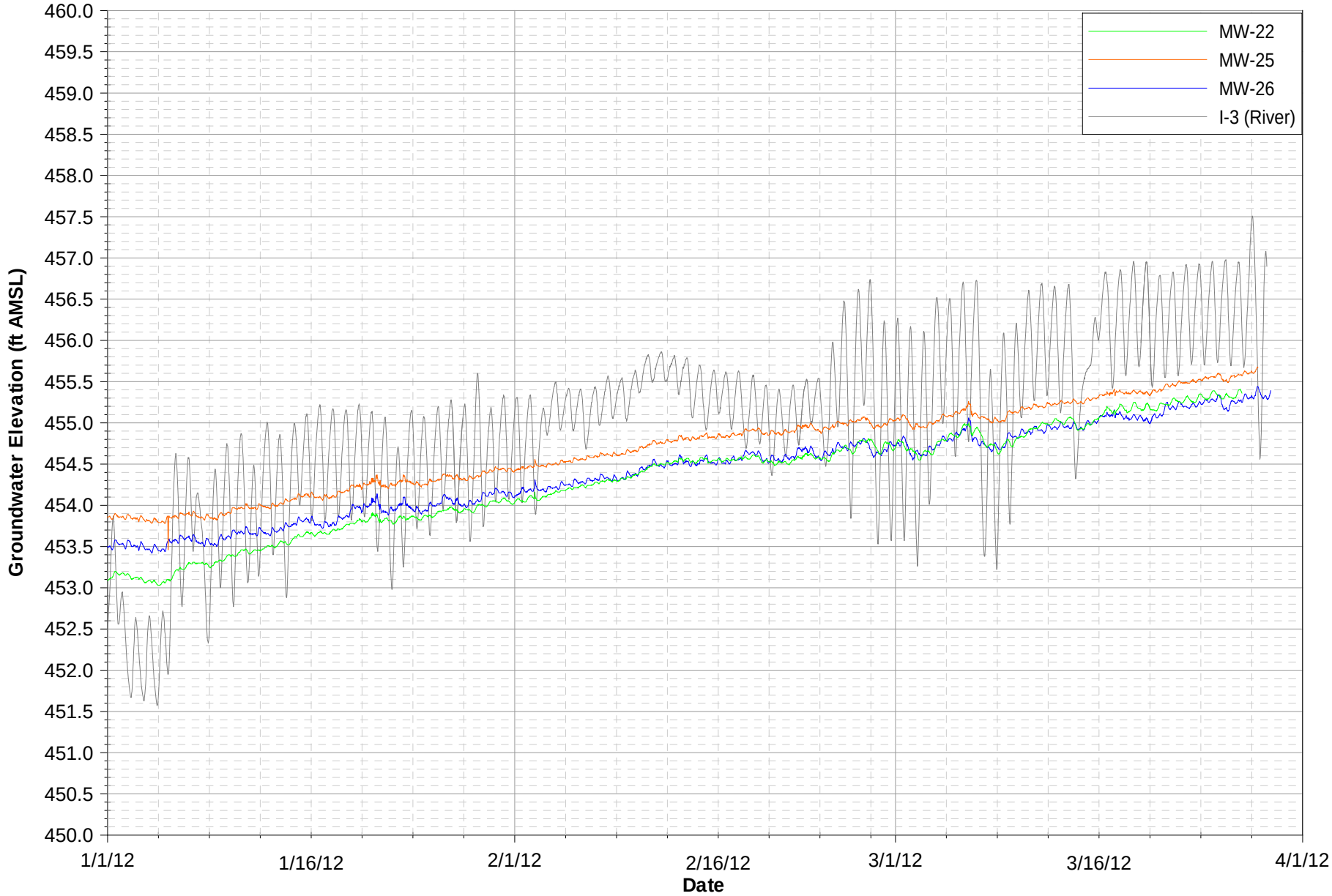
Notes:
Data subject to review.

FIGURE E-1A

MW-20 CLUSTER HYDROGRAPHS

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



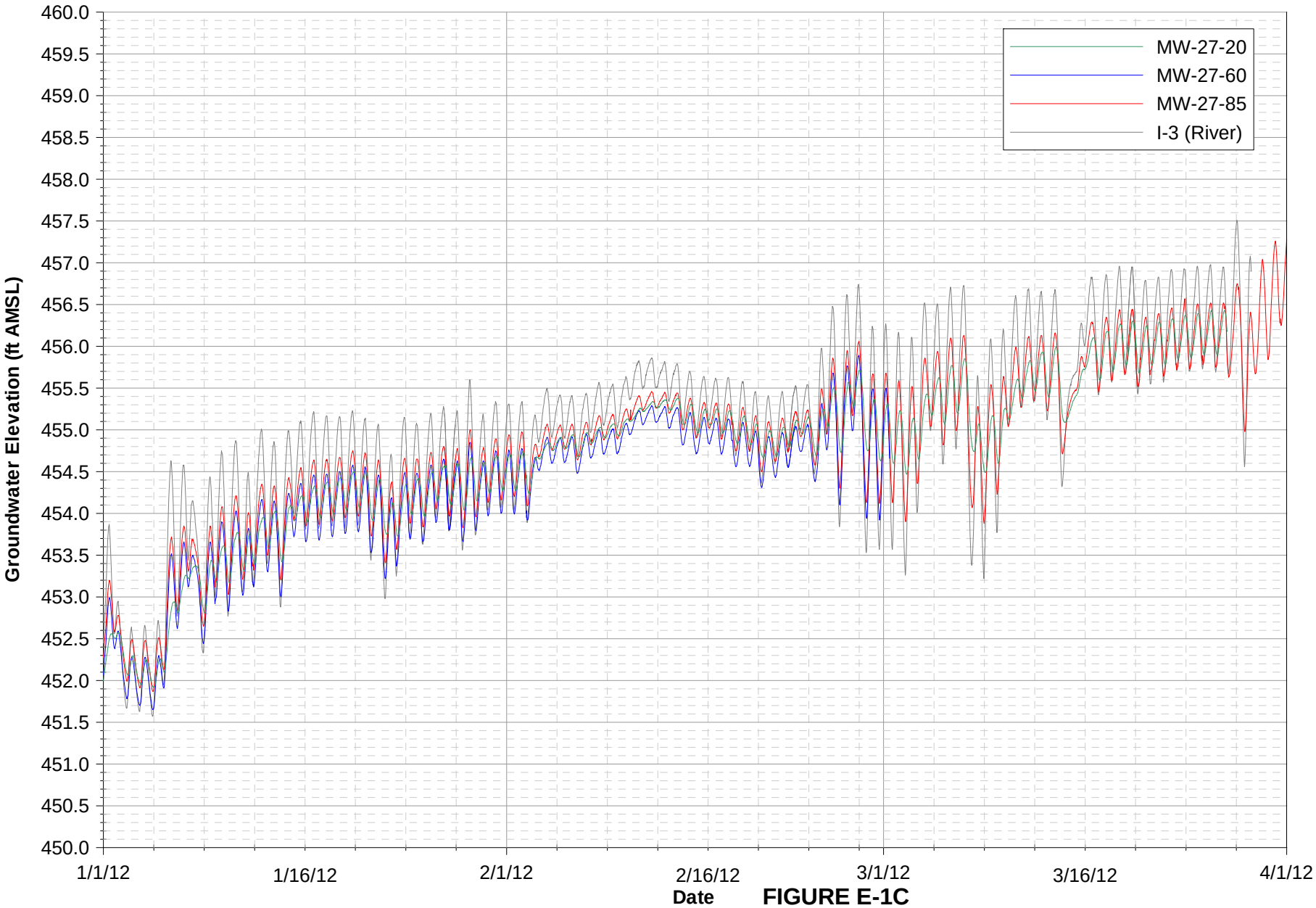
Notes:
Data subject to review..

FIGURE E-1B

MW-22, MW-25, AND MW-26 HYDROGRAPHS

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

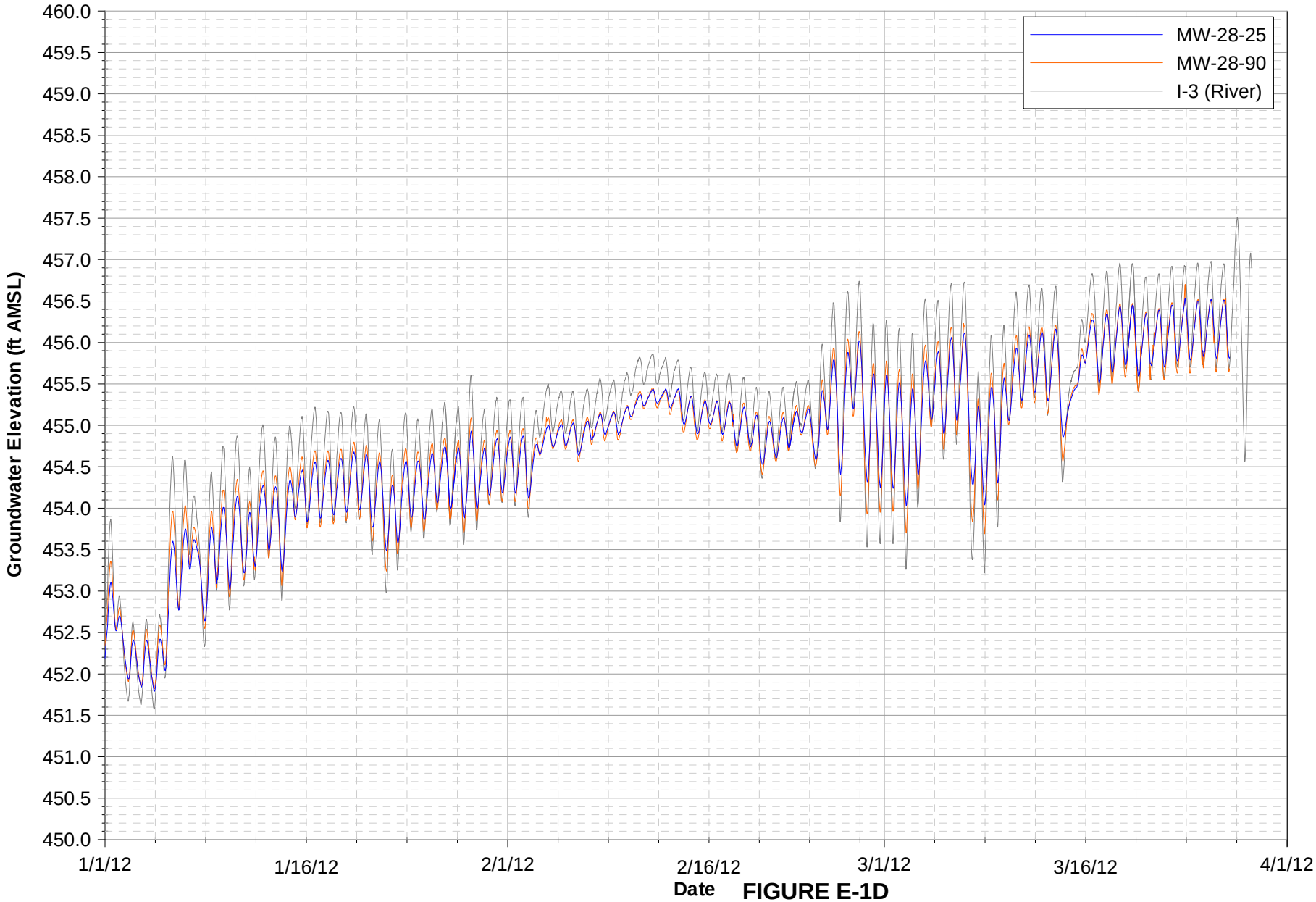
CH2MHILL



Notes:
Data for MW-27-060 unavailable from March 1, 2012 through March 31, 2012 due to equipment malfunction.

FIGURE E-1C
MW-27 CLUSTER HYDROGRAPHS
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



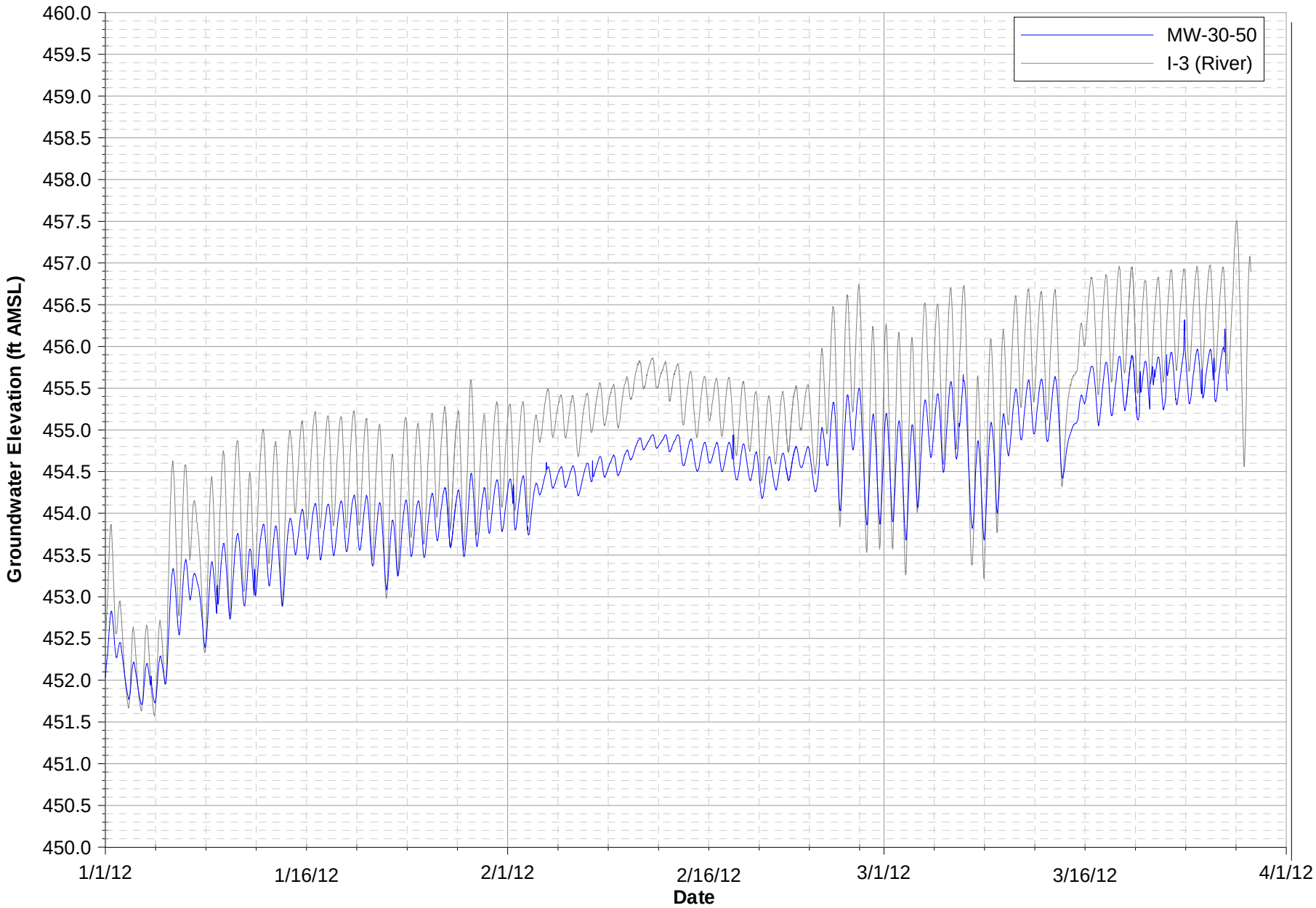
Notes:
Data subject to review.

FIGURE E-1D

MW-28 CLUSTER HYDROGRAPHS

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



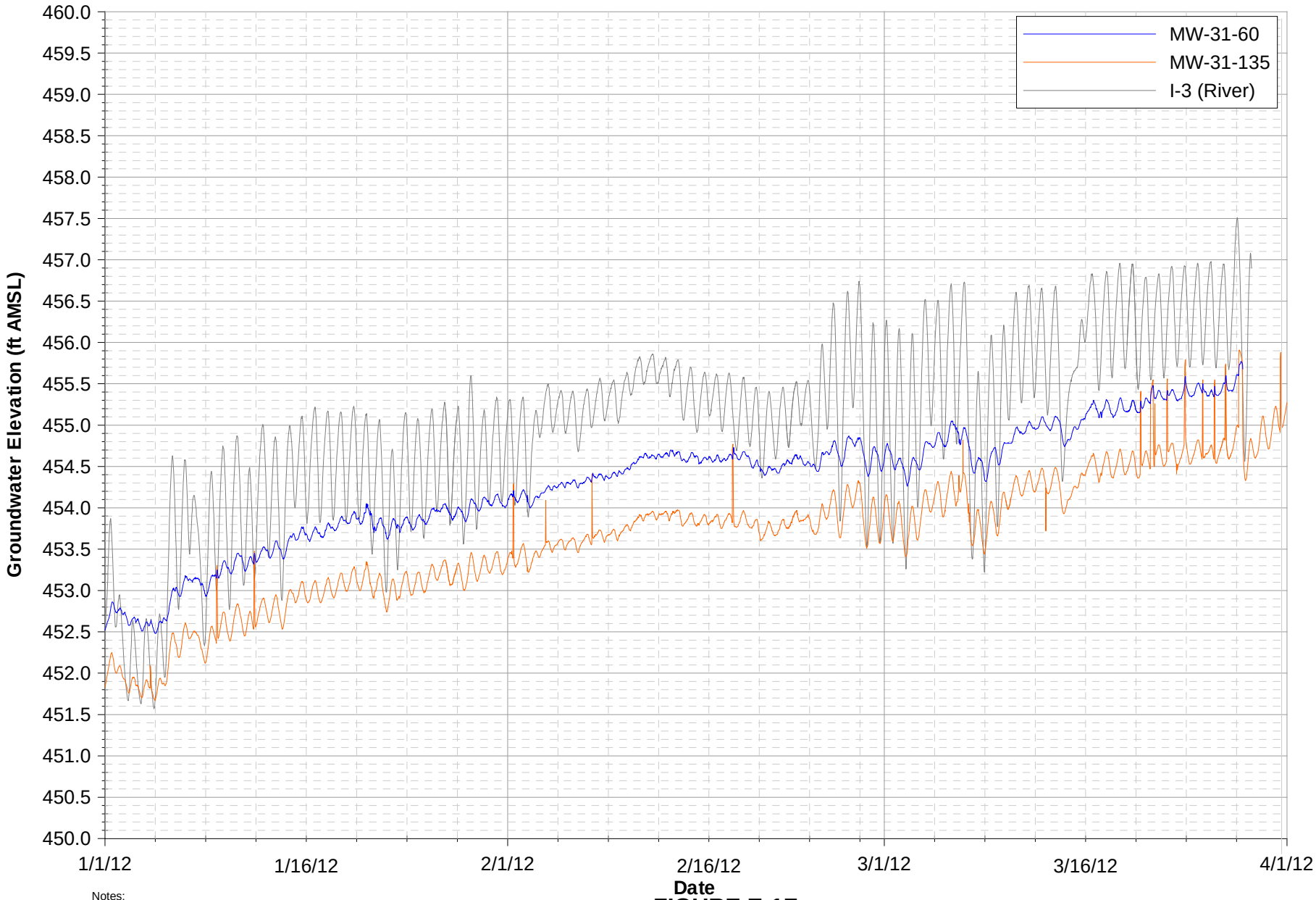
Notes:
Data subject to review.

FIGURE E-1E

MW-30-50 HYDROGRAPH

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



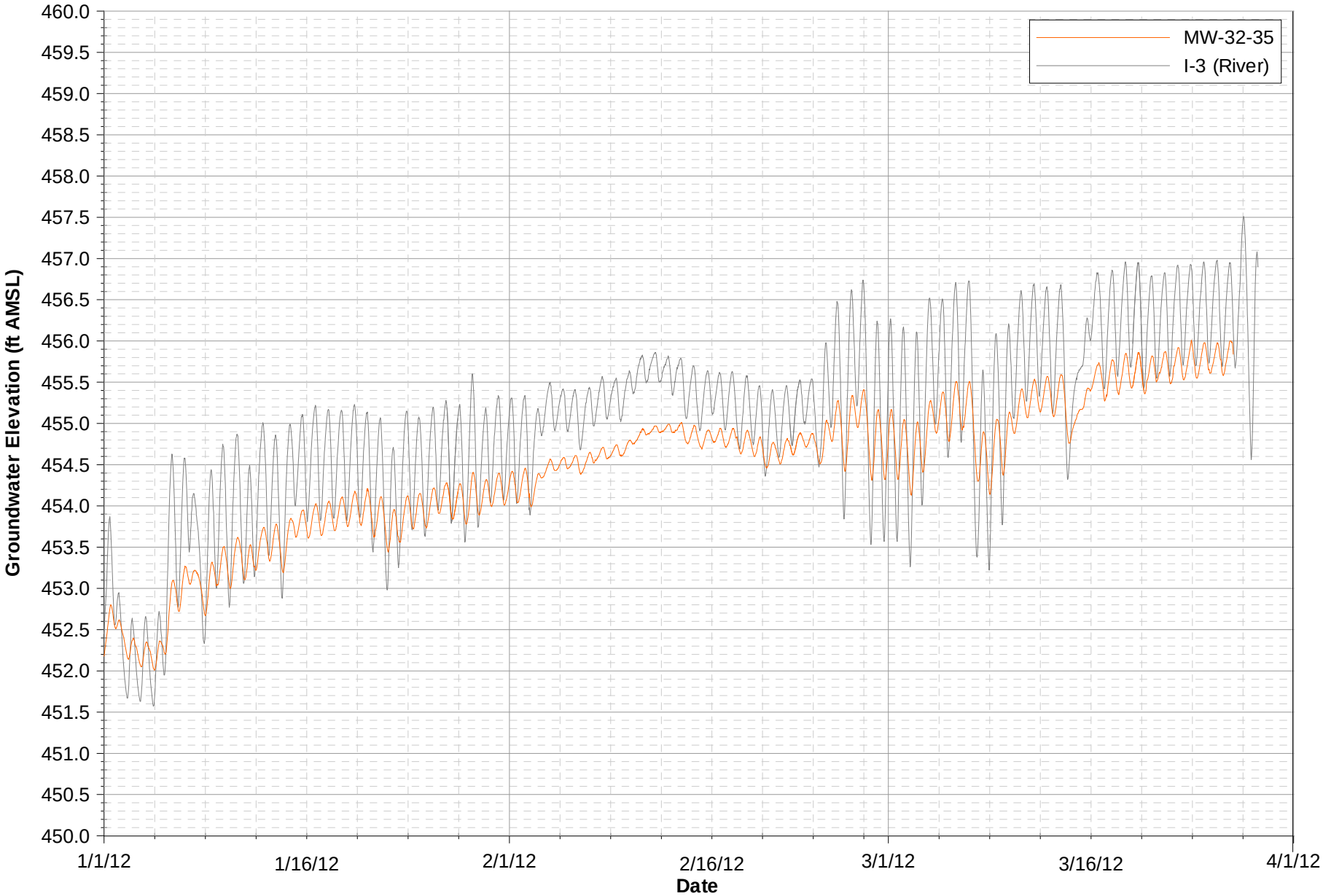
Notes:
Data subject to review.

FIGURE E-1F

MW-31 CLUSTER HYDROGRAPHS

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

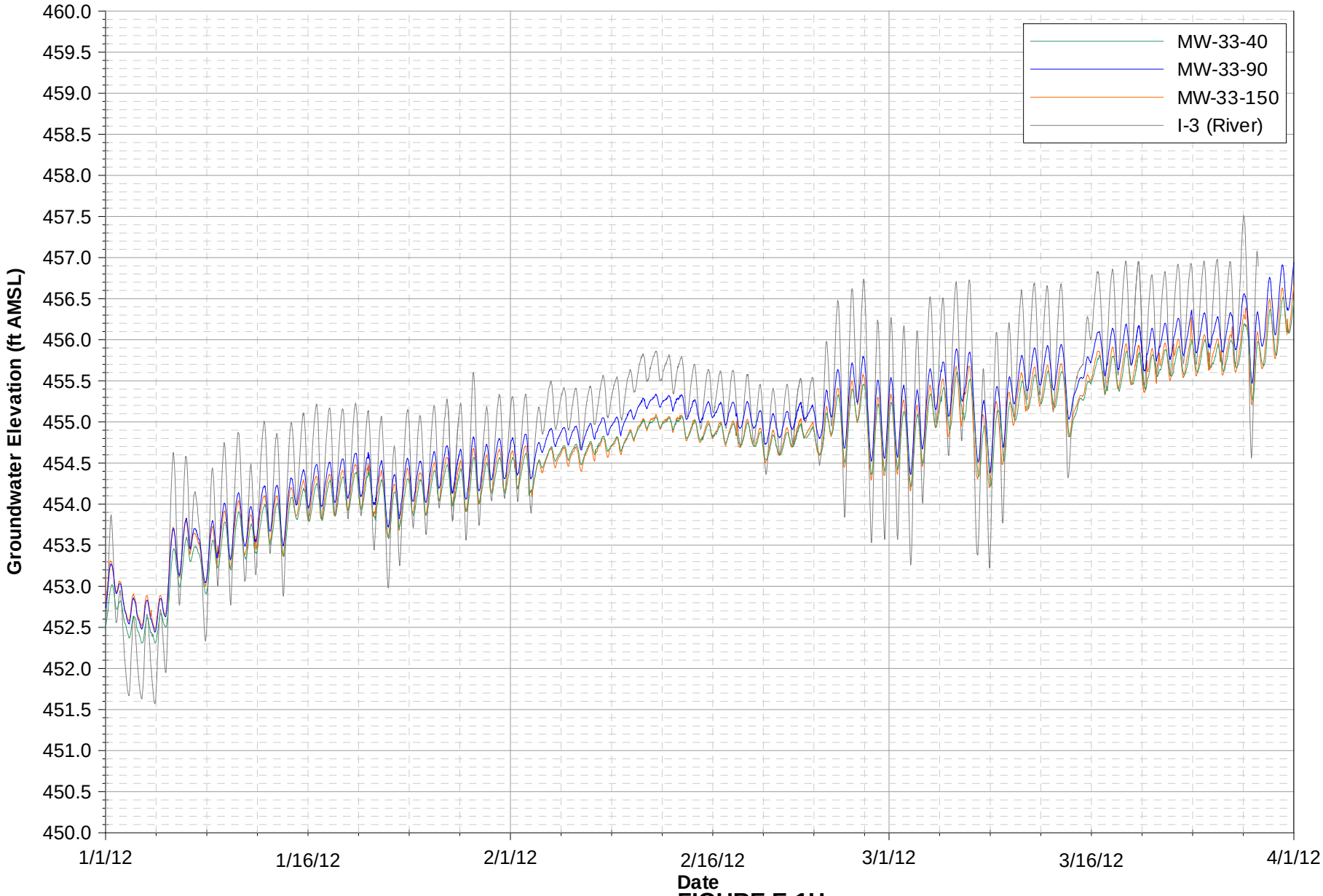
CH2MHILL



Notes:
Data subject to review.

FIGURE E-1G
MW-32 HYDROGRAPH
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



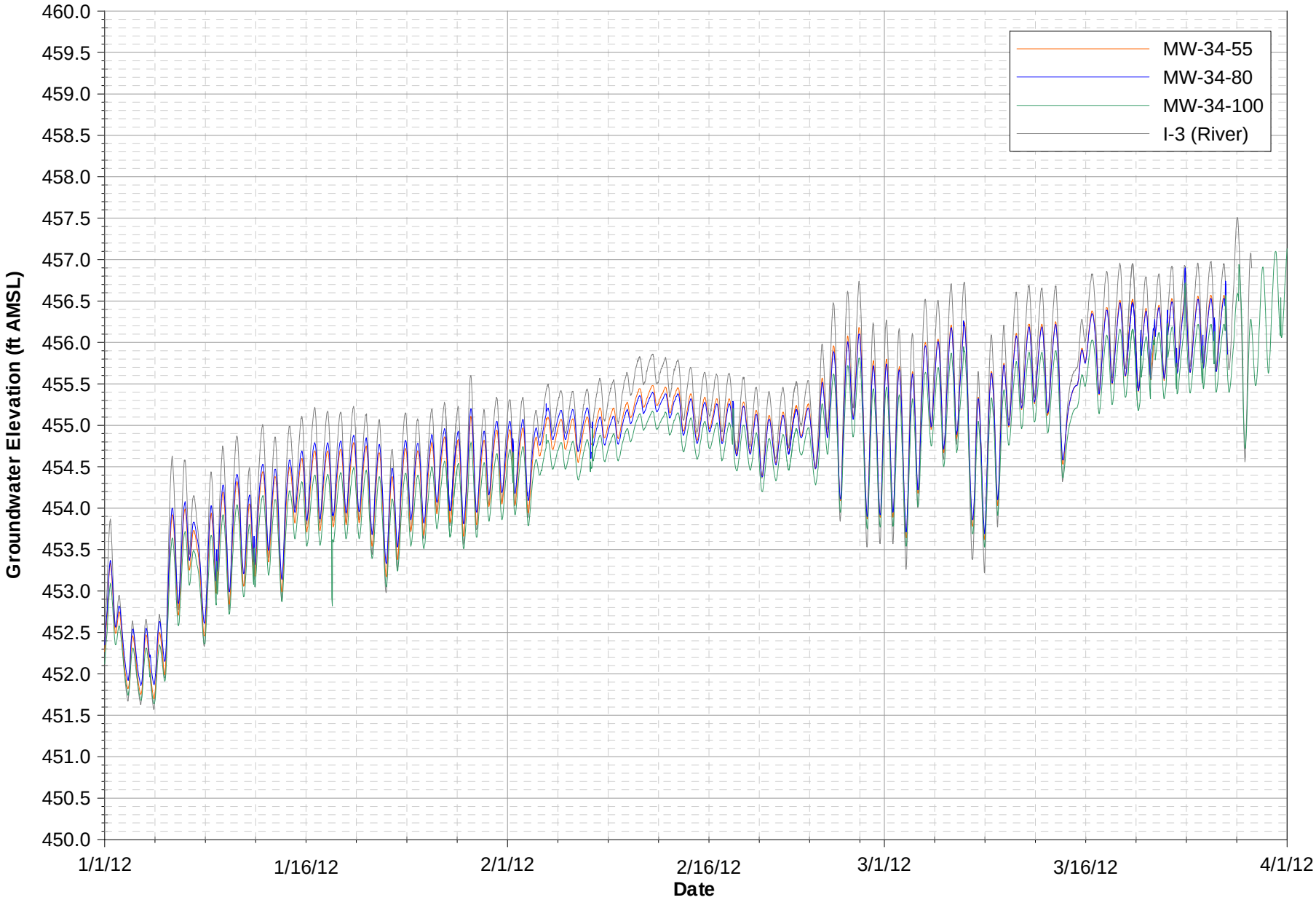
Notes:
Data subject to review.

FIGURE E-1H

MW-33 CLUSTER HYDROGRAPHS

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



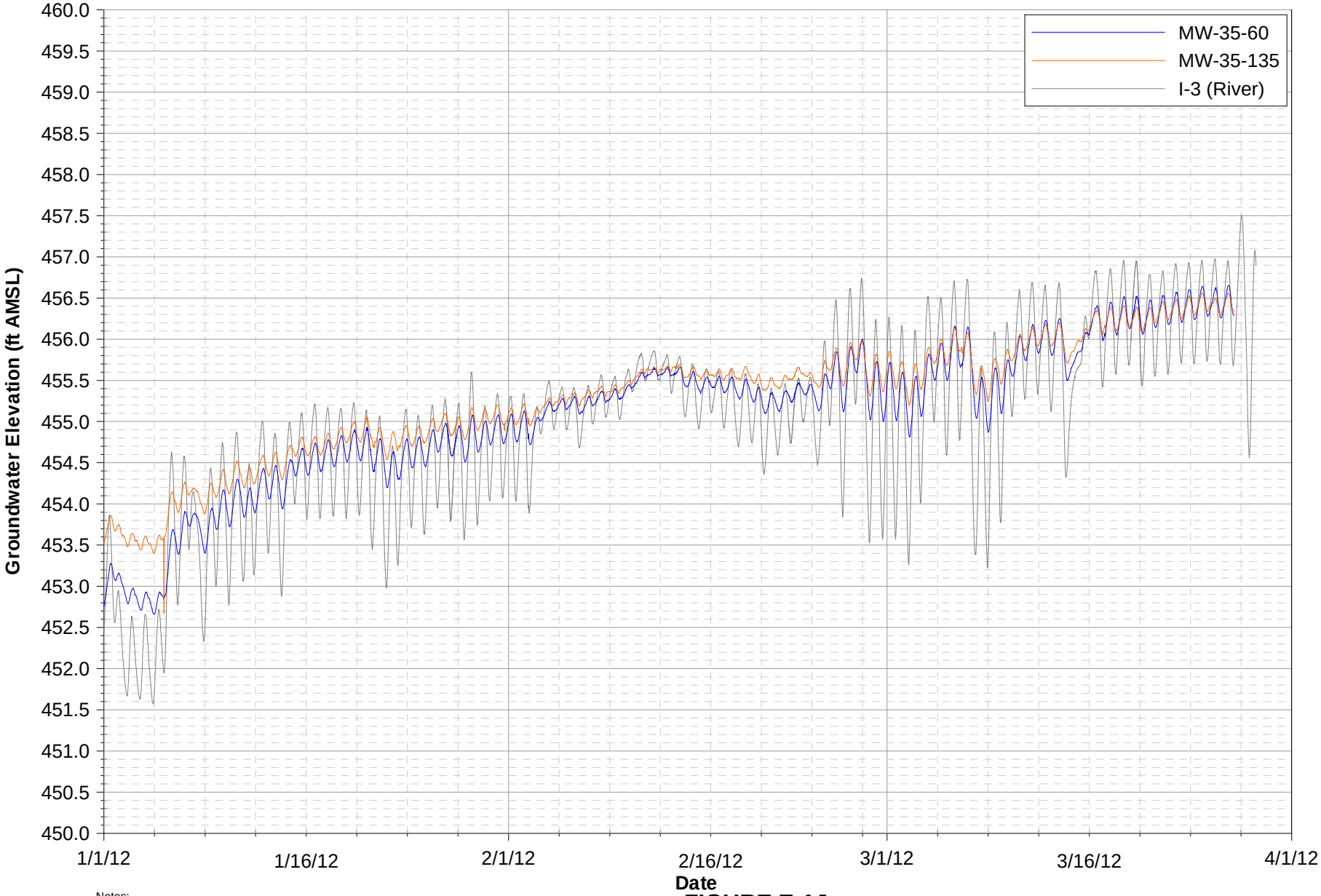
Notes:
Data subject to review.

FIGURE E-1I

MW-34 CLUSTER HYDROGRAPHS

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



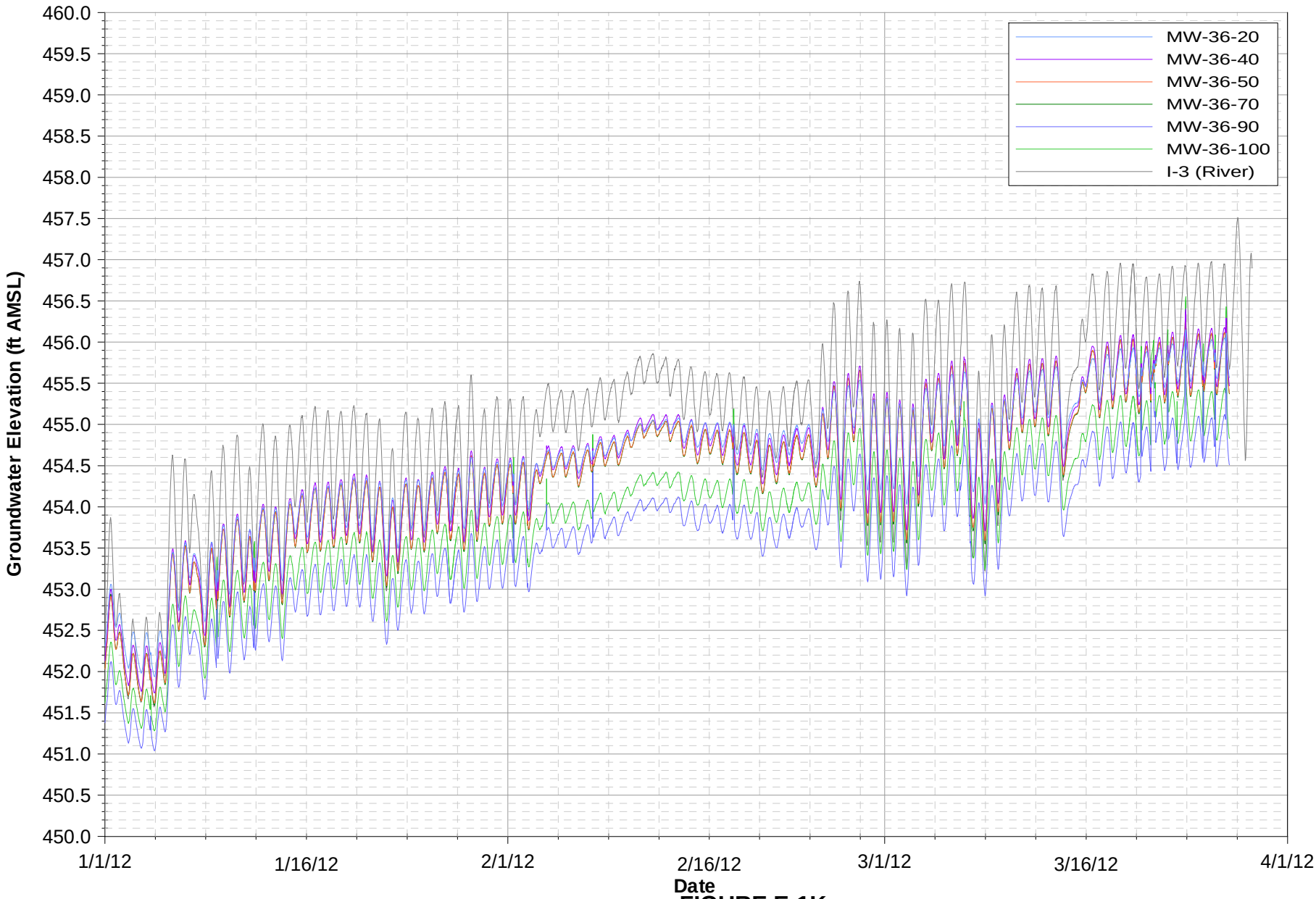
Notes:
Data subject to review.

FIGURE E-1J

MW-35 CLUSTER HYDROGRAPHS

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



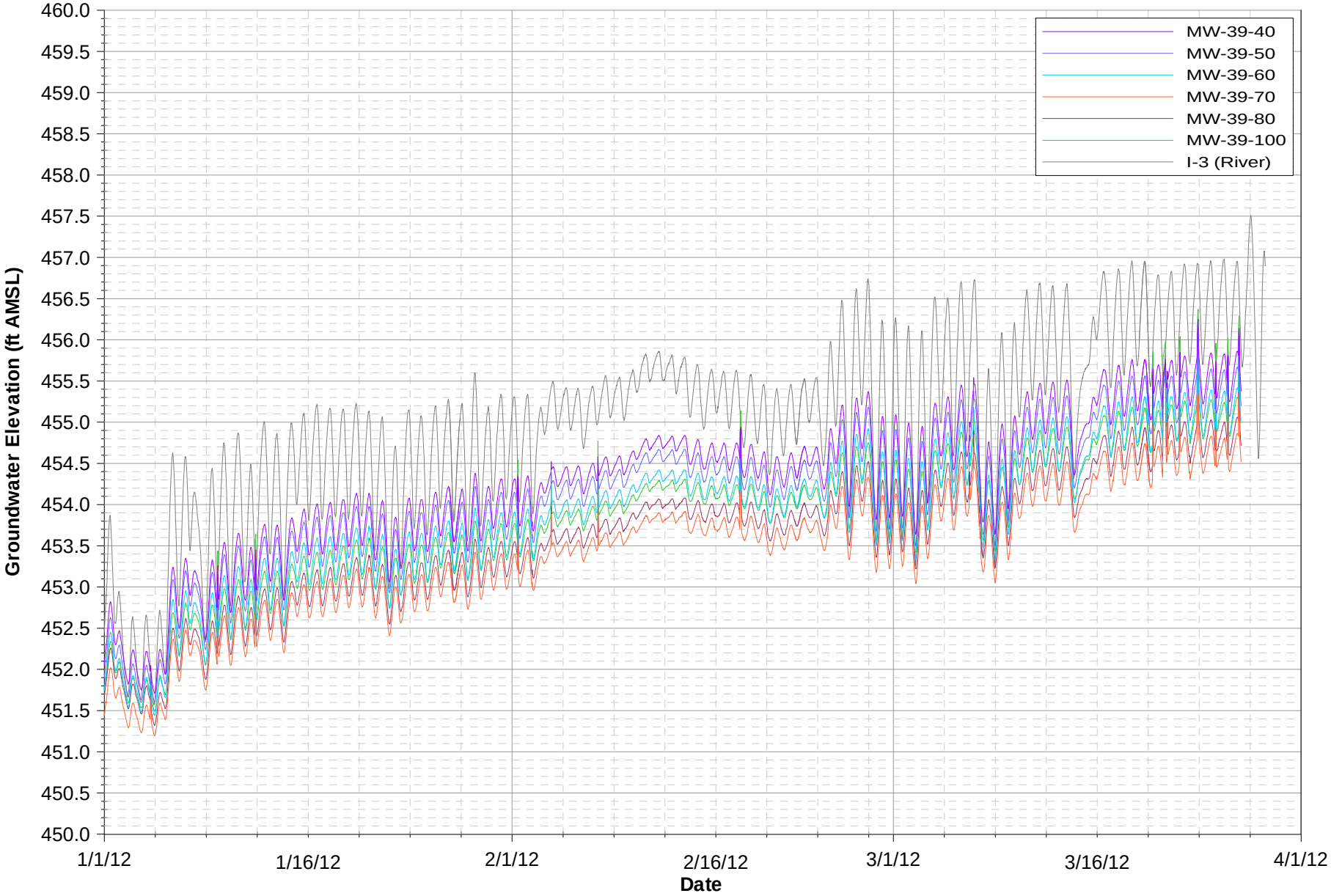
Notes:
Data subject to review.

FIGURE E-1K

MW-36 CLUSTER HYDROGRAPHS

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



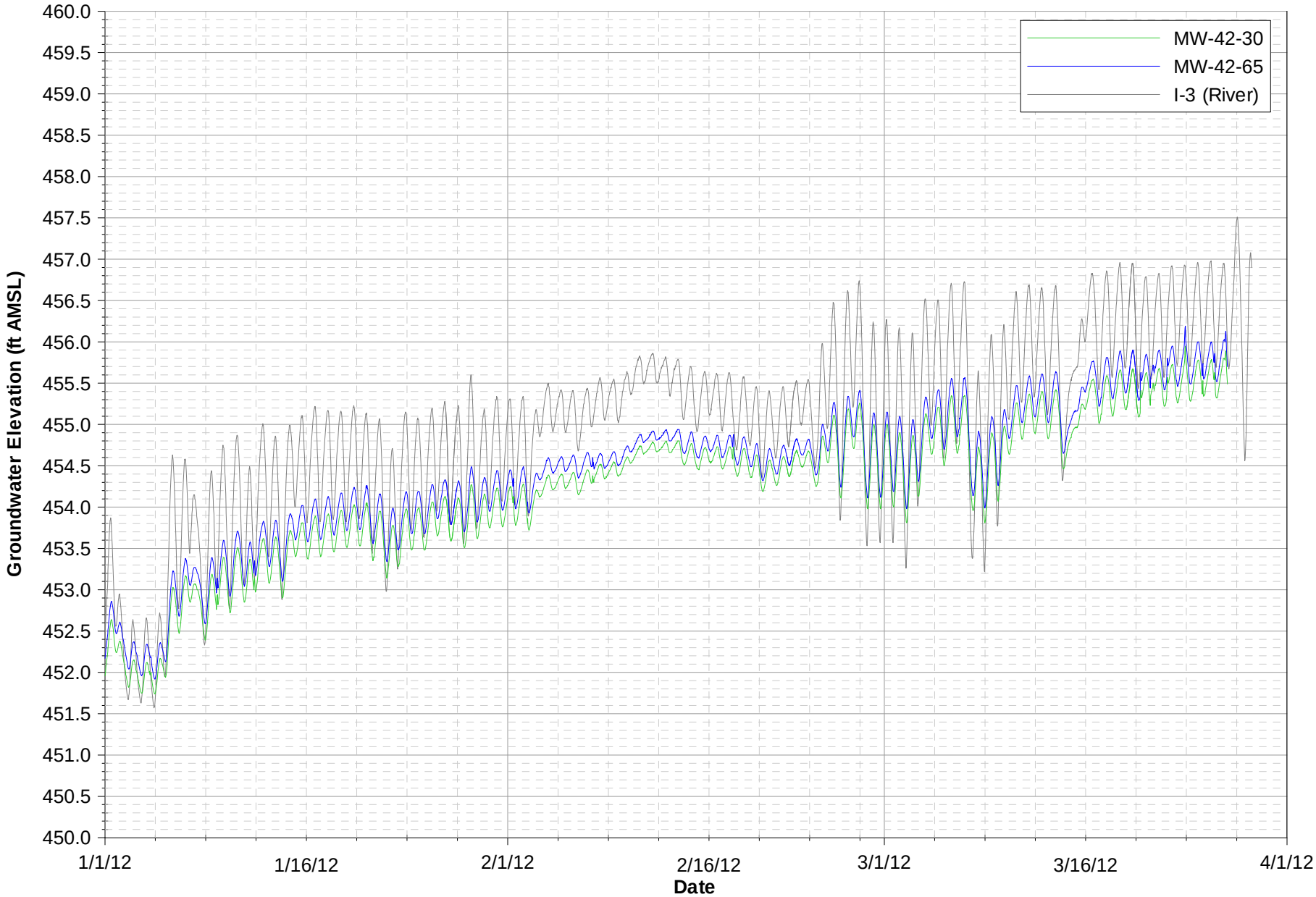
Notes:
Data subject to review.

FIGURE E-1L

MW-39 CLUSTER HYDROGRAPHS

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



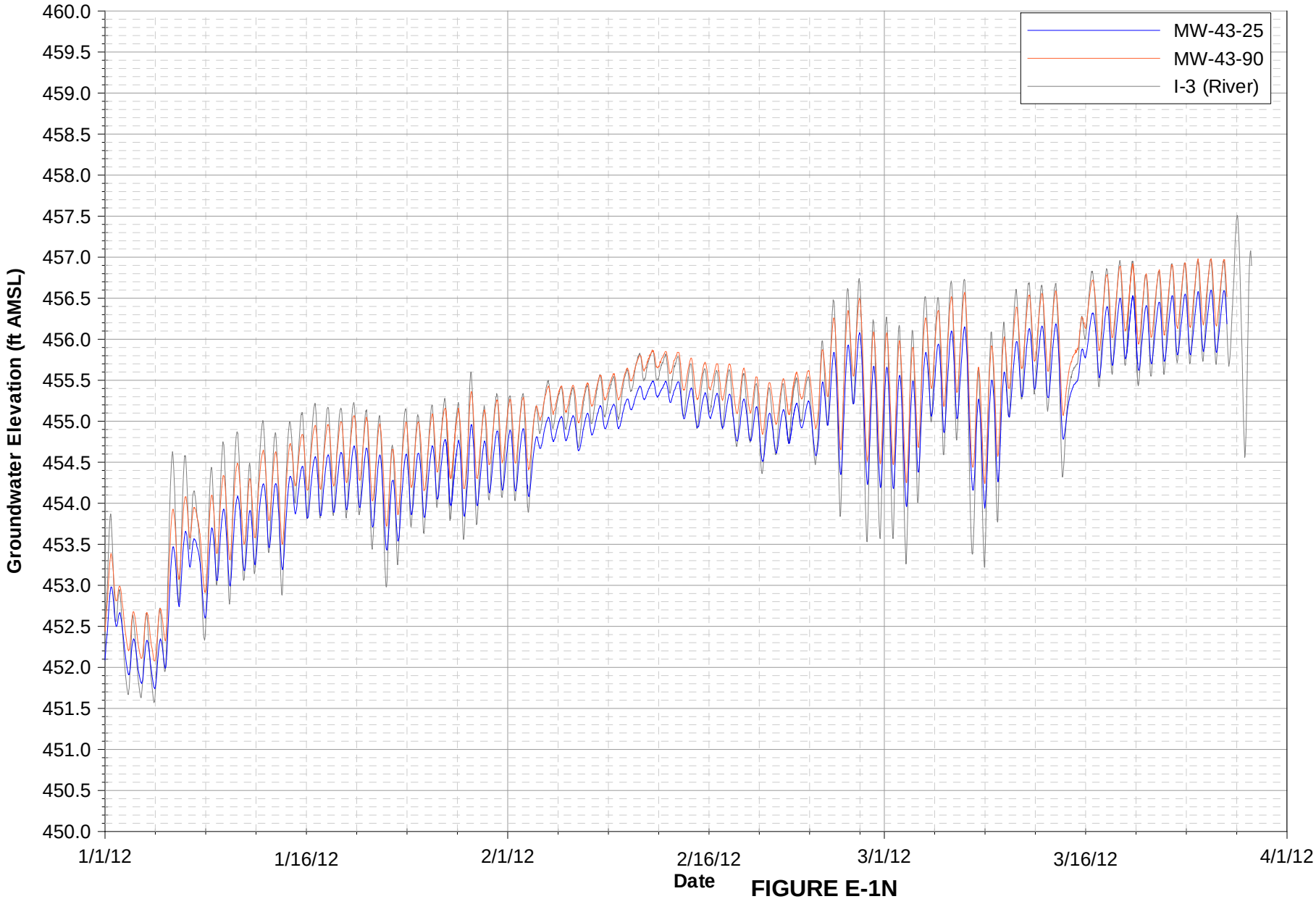
Notes:
Data subject to review.

FIGURE E-1M

MW-42 CLUSTER HYDROGRAPHS

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

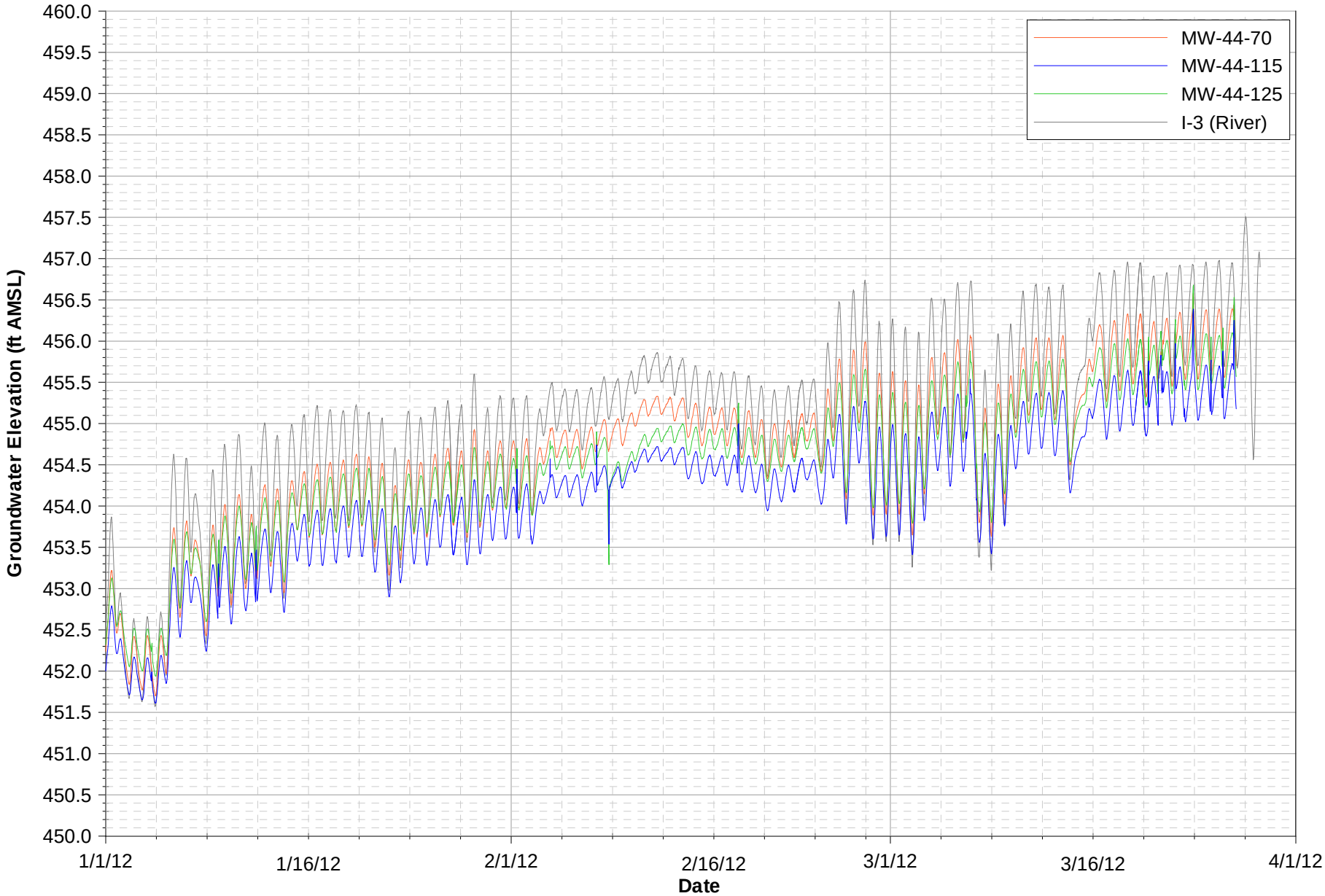
CH2MHILL



Notes:
Data subject to review.

FIGURE E-1N
MW-43 CLUSTER HYDROGRAPHS
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



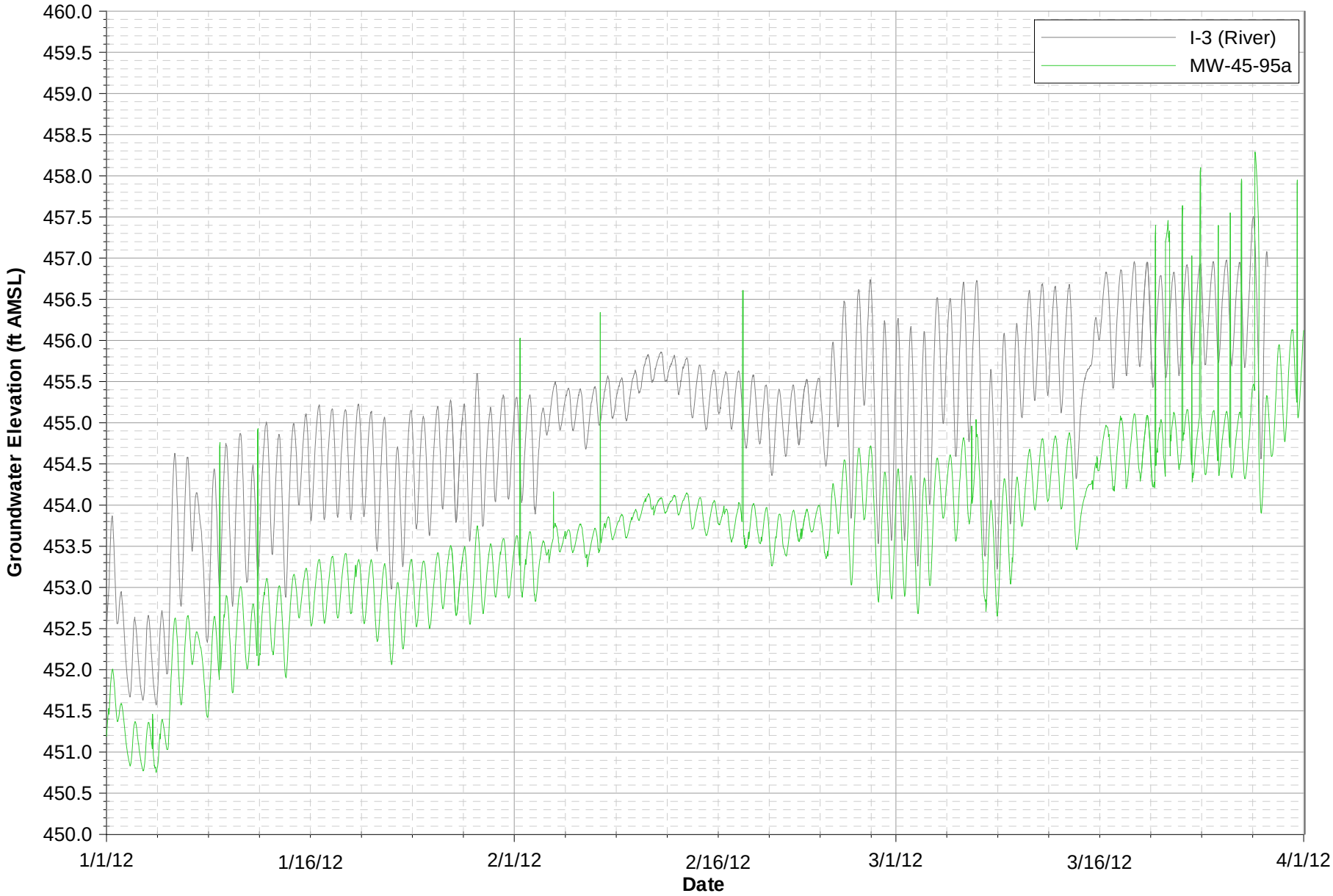
Notes:
Data subject to review..

FIGURE E-1O

MW-44 CLUSTER HYDROGRAPHS

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

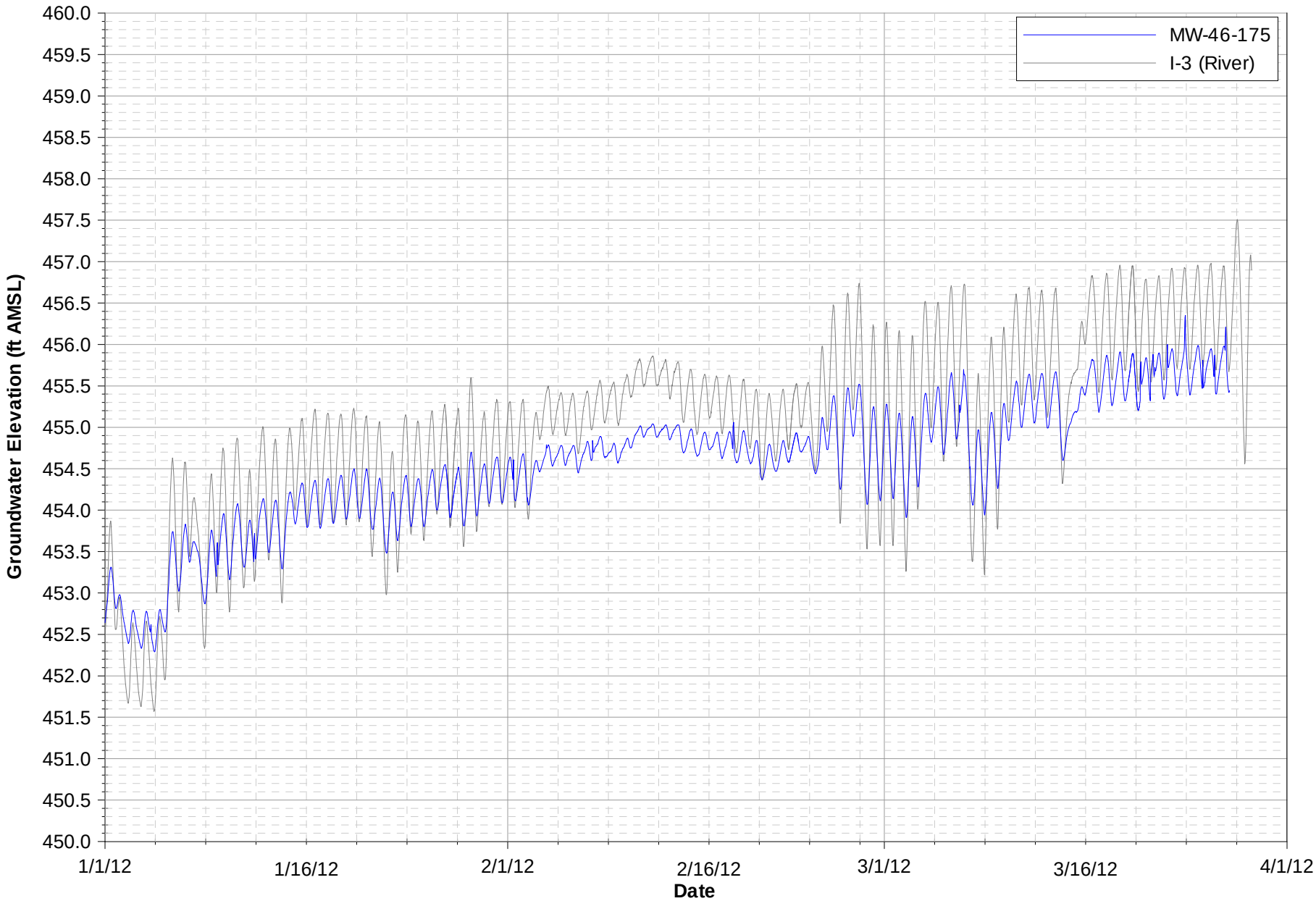
CH2MHILL



Notes:
Data subject to review.

FIGURE E-1P
MW-45-95a HYDROGRAPH
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

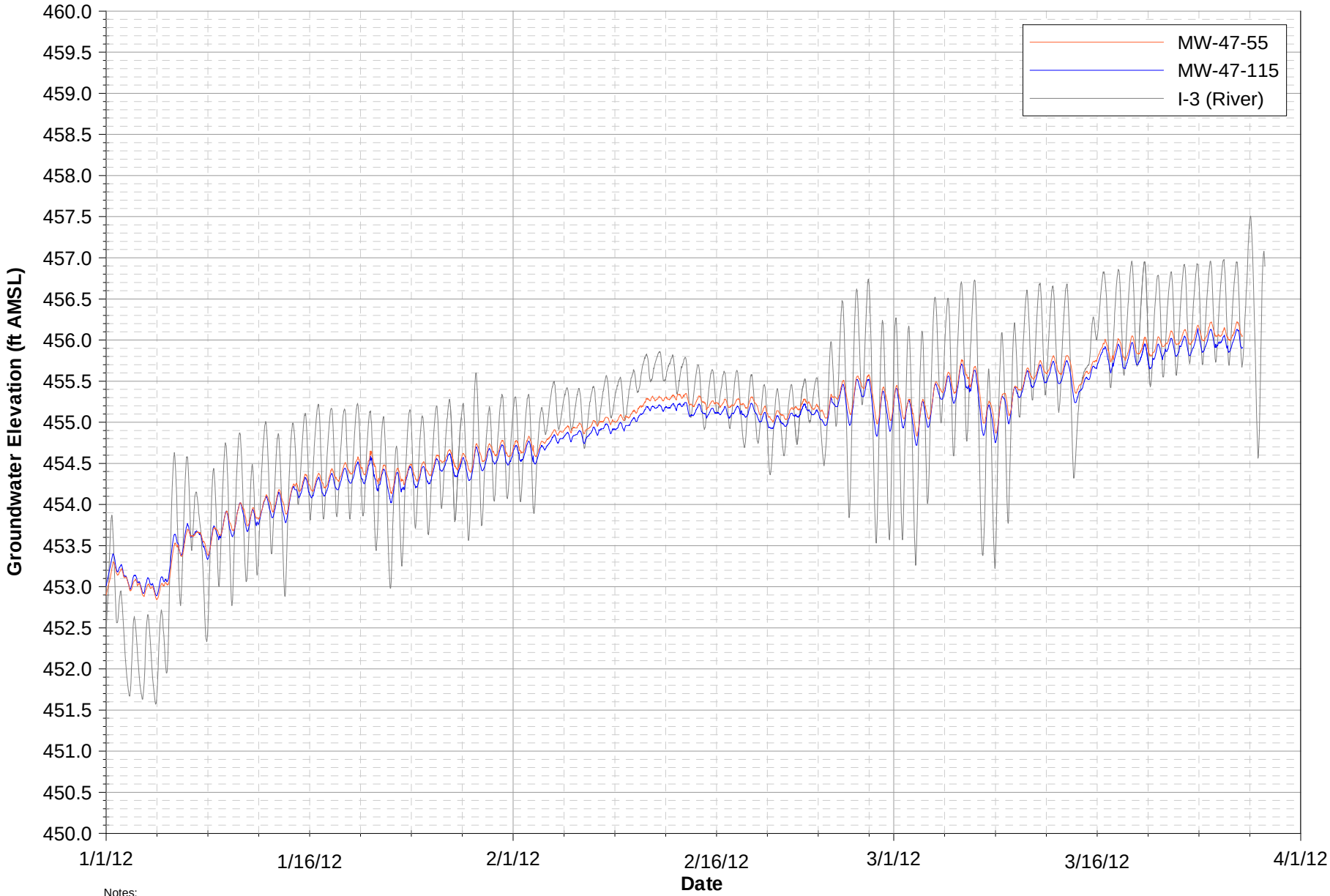
CH2MHILL



Notes:
Data subject to review.

FIGURE E-1Q
MW-46 HYDROGRAPH
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



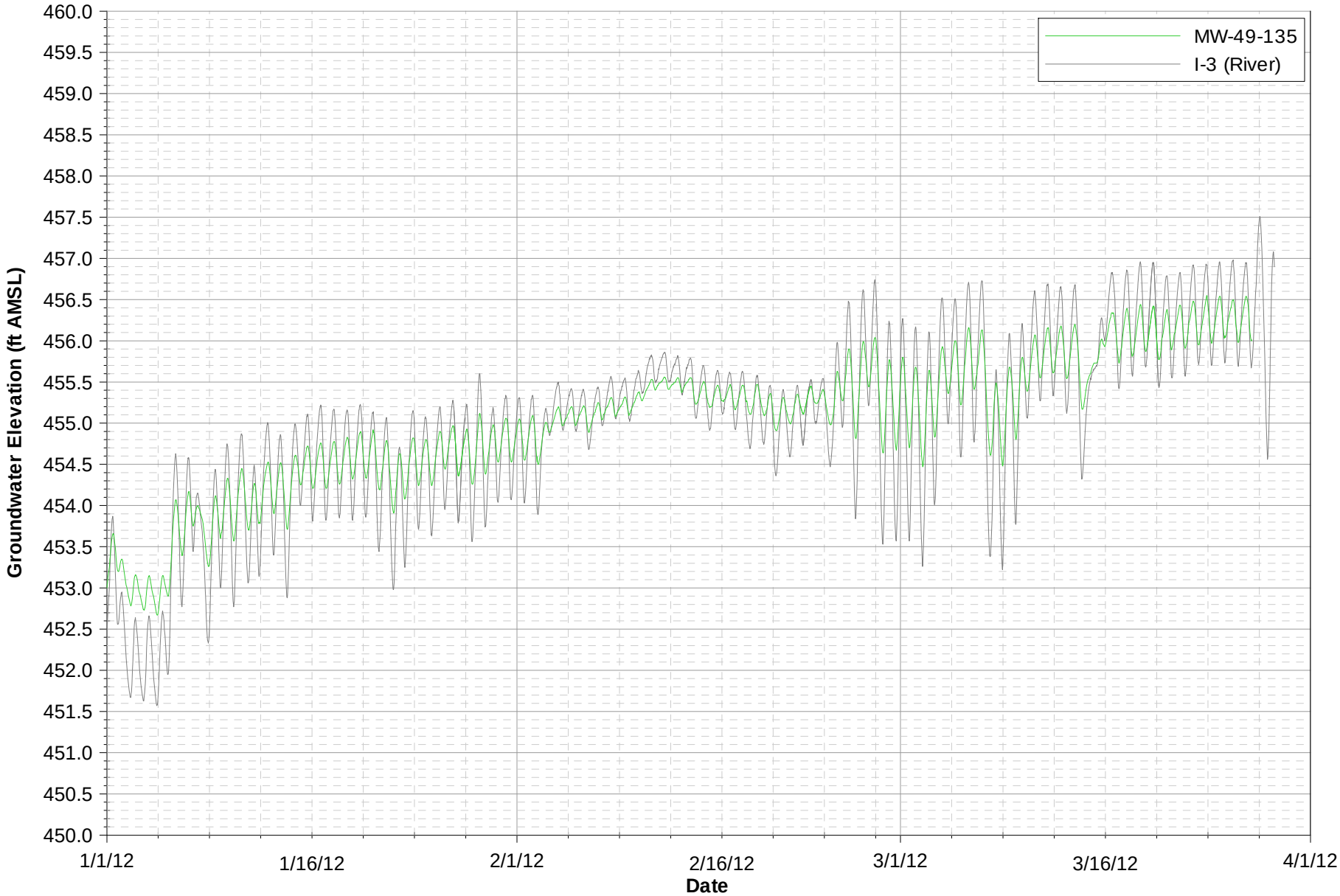
Notes:
Data subject to review.

FIGURE E-1R

MW-47 CLUSTER HYDROGRAPHS

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

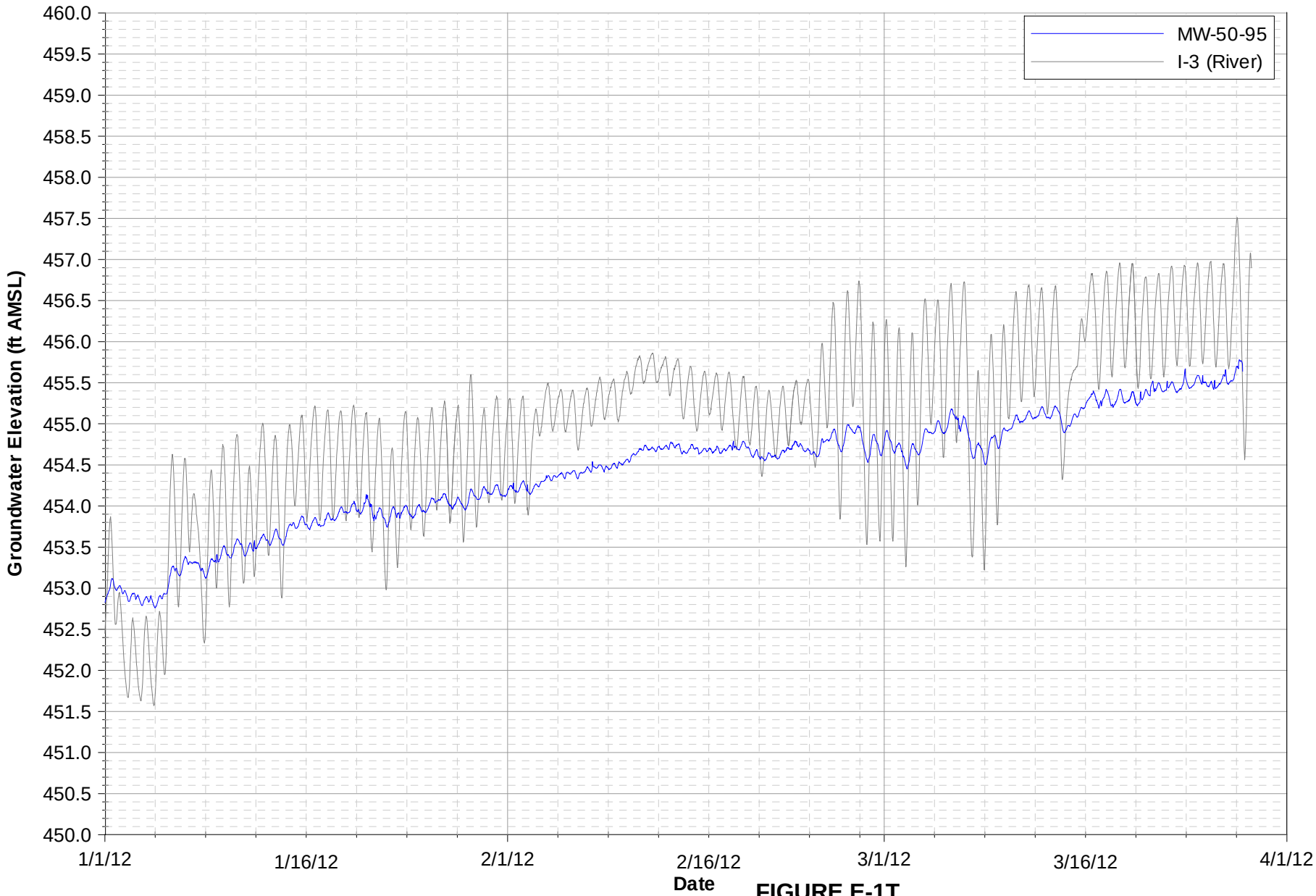
CH2MHILL



Notes:
Data subject to review.

FIGURE E-1S
MW-49 HYDROGRAPH
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

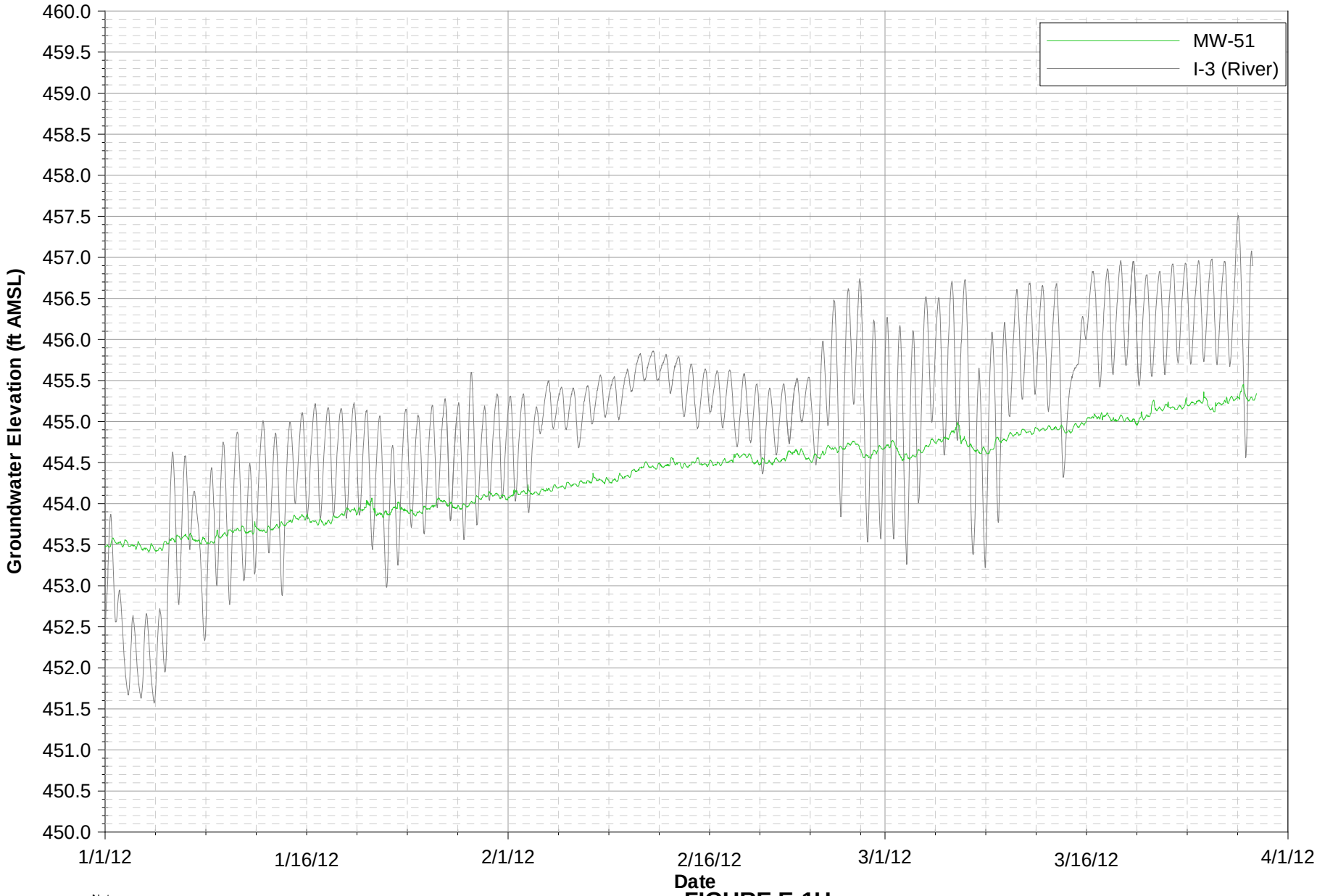
CH2MHILL



Notes:
Data subject to review.

FIGURE E-1T
MW-50 HYDROGRAPH
FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



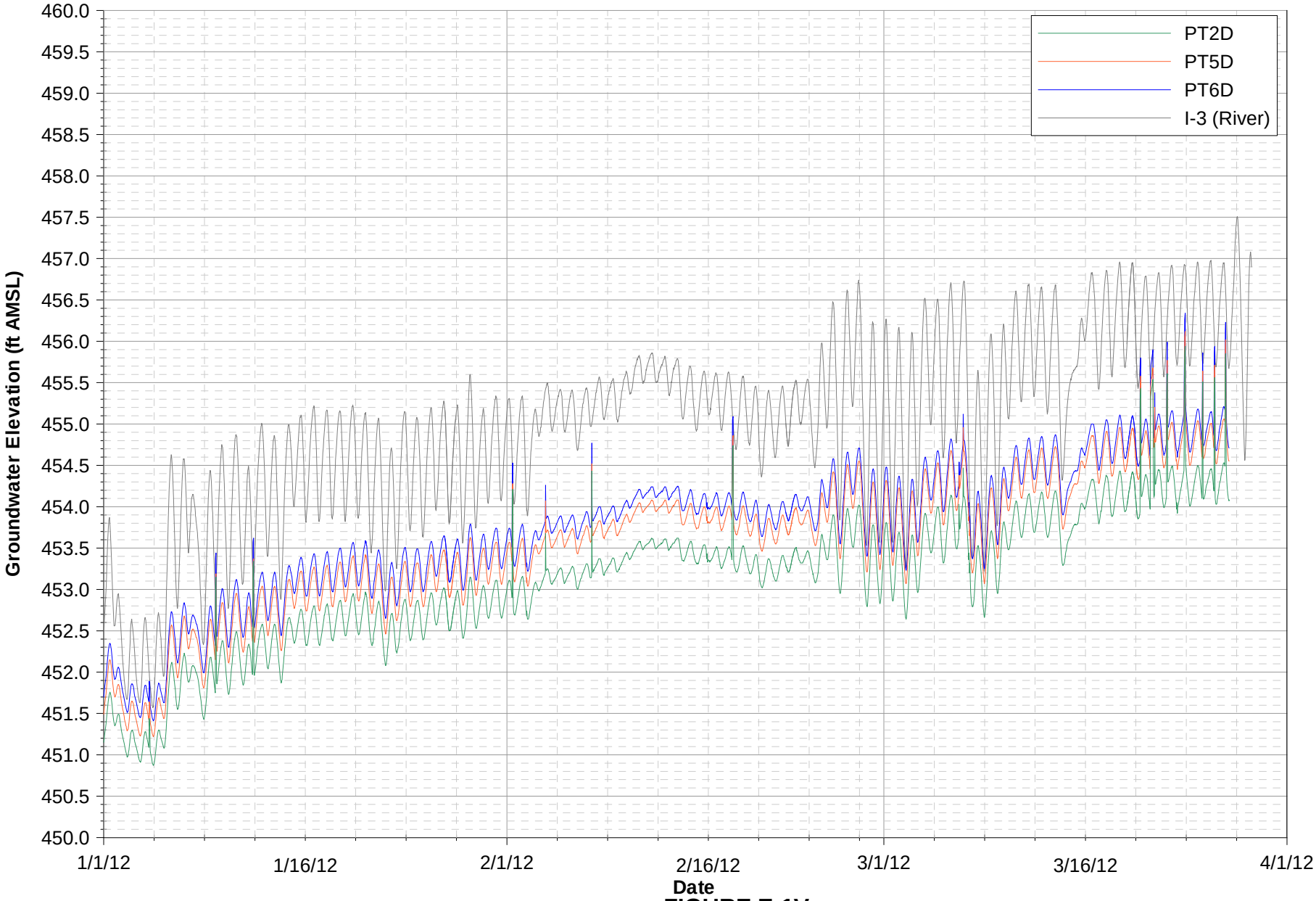
Notes:
Data subject to review.

FIGURE E-1U

MW-26 & MW-51 HYDROGRAPHS

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL



Note:
Data subject to review.

FIGURE E-1V

INSITU PILOT STUDY WELL HYDROGRAPHS

FIRST QUARTER 2012 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL