Topock Project Executive Abstract

Document Title: Second Quarter 2010 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report Submitting Agency: DTSC Final Document? ☒ Yes ☐ No	Date of Document: 8/30/2010 Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) PG&E
Priority Status: ☐ HIGH ☐ MED ☒ LOW Is this time critical? ☐ Yes ☒ No Type of Document: ☐ Draft ☒ Report ☐ Letter ☐ Memo ☐ Other / Explain:	Action Required: ☒ Information Only ☐ Review & Comment Return to: _____ _____ By Date:_____ ☐ Other / Explain:
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 ☐ Other / Explain:	Is this a Regulatory Requirement? ☒ Yes ☐ No If no, why is the document needed?
What is the consequence of NOT doing this item? What is the consequence of DOING this item? Report is required to be in compliance with DTSC requirements.	Other Justification/s: ☐ Permit ☐ Other / Explain:

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 and the Groundwater Monitoring Program and Surface Water Monitoring Program at Topock. 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 the second quarter 2010 reporting period, which includes the months of May, June, and July 2010. The average pumping rate for the IM extraction system over the second quarter 2010 was 128.6 gallons per minute, and an estimated 63.4 kilograms (or 140 pounds) of chromium were removed.

Written by: PG&E

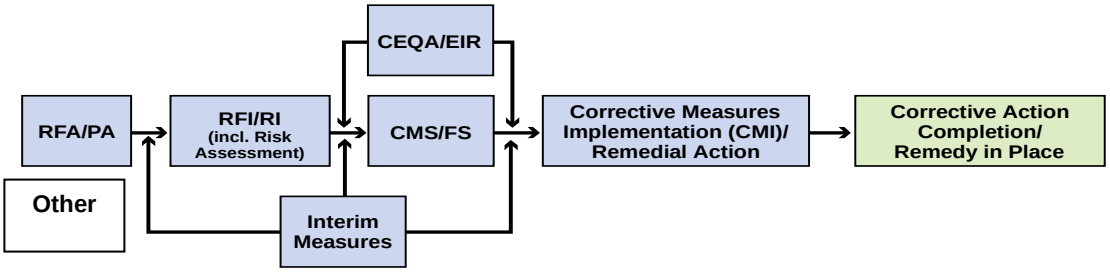
Recommendations:
This report is for information only.

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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August 30, 2010

Mr. Aaron Yue
Project Manager
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Subject: *Second Quarter 2010 Interim Measures Performance and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California* (Document ID: PGE20100830A)

Dear Mr. Yue:

Enclosed is the *Second Quarter 2010 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California* for PG&E's Interim Measures Performance Monitoring Program and the Groundwater Monitoring Program and Surface Water Monitoring Program for the Topock project. This report presents the second quarter (May through July 2010) performance monitoring results for the IM hydraulic containment system and summarizes the operations and performance evaluation for the reporting period. This report also presents groundwater and surface water monitoring activities, results, and analyses related to the Groundwater and Surface Water Monitoring Programs during the reporting period.

The Interim Measures quarterly performance monitoring report is submitted in conformance with the reporting requirements in the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC's) Interim Measure 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, and April 28, 2010.

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

Sincerely,

Yvonne Meeks
Topock Project Manager

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Enclosure
Second Quarter 2010 Interim Measures Performance and Site-Wide Groundwater and Surface Water Monitoring Report

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Final Report

Second Quarter 2010 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station Needles, California

Document ID: PGE20100830A

Prepared for

California Department of Toxic Substances Control

on behalf of

Pacific Gas and Electric Company

August 30, 2010

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Second Quarter 2010 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report

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

Prepared for

California Department of Toxic Substances Control

On behalf of

Pacific Gas and Electric Company

August 30, 2010

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

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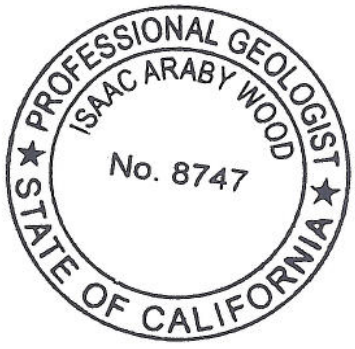

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Acronyms and Abbreviations

µg/L	micrograms per liter
bgs	below ground surface
BOR	United States Bureau of Reclamation
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
PG&E	Pacific Gas and Electric Company
PMP	Performance Monitoring Program
RCRA	Resource Conservation and Recovery Act
RMP	Surface Water Monitoring Program
TDS	total dissolved solids

1.0 Introduction

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

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

The data presented for the GMP were collected from April 29 through May 6, 2010. The data for the RMP were collected from July 7 through July 8, 2010. 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, 2009a).

1.1 Site-wide Groundwater and Surface Water Monitoring Program

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

Groundwater monitoring data collected between July 1997 and October 2007 are presented in the *Revised Final RCRA Facility Investigation and Remedial Investigation Report, Volume 2 – Hydrogeological Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*, dated February 11, 2009 (CH2M HILL, 2009a). Select groundwater and surface water monitoring data from November 2007 through September 2008 are presented in the *Final RCRA Facility Investigation/Remedial Investigation Report, Volume 2 Addendum – Hydrogeologic Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California,* dated June 29, 2009 (CH2M HILL, 2009b).

For background and descriptions of the current groundwater and surface water sampling, analyses, and monitoring programs, refer to PG&E's *Fourth Quarter 2009 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, 2010 (CH2M HILL, 2010a).

GMP and RMP Monitoring Networks

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

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

Sampling frequencies for the GMP wells were updated beginning in First Quarter 2010 following the DTSC directive dated March 3, 2010 (2010a). 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 (2010b).

Figure 1-2 also shows the locations and sampling frequencies of the RMP. The RMP consists of:

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

During the week of January 18, 2010, a series of storm events occurred that damaged several wells in the GMP monitoring network, including the bedrock wells of the MW-58 cluster: MW-58-115 and MW-58-205. As a result of this cluster being inundated and filled with floodwater, the Flexible Liner Underground Technologies™ well liner that allowed discrete sampling at the 115 feet below ground surface (bgs) and 205 feet bgs depth intervals was removed from the borehole. The MW-58 bedrock well cluster is now configured as an open rock borehole and is being temporarily re-designated as MW-58BR. In late August or early September 2010, a packer system is planned to be installed in MW-58BR, dividing the well into upper and lower intervals. Following packer installation and well development, monthly sampling is planned to be conducted from each of these intervals for at least one quarter.

The two wells composing the MW-38 cluster, located in Bat Cave Wash adjacent to the Topock Compressor Station, were also damaged in the storm events during the week of January 18, 2010. Plans to repair monitoring well MW-38D and repair or replace monitoring well MW-38S were submitted in the technical memorandum entitled *Implementation Plan for Repair of Monitoring Wells MW-38S and MW-38D* (CH2M HILL, 2010b) that was submitted to DTSC and the United States Department of the Interior on July 19, 2010. Pending approval from DTSC and United States Department of the Interior, PG&E is anticipating holding a project initiation meeting at the site on September 7, 2010 immediately prior to the start of field work. The repair of MW-38S and MW-38D is anticipated to be completed prior to Third Quarter 2010 sampling.

1.2 Interim Measure Performance Monitoring Program

In compliance with the requirements for IM monitoring and reporting outlined in the DTSC IM performance directive of March 2005, and in subsequent directives from the DTSC in 2007 (DTSC, 2005a; DTSC, 2007a-c), this document presents the Second Quarter 2010 PMP evaluation report for the IM monitoring activities from May 1 through July 31, 2010.

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 Interim Measures Number 3 (IM-3). Currently, the IM-3 facilities include a groundwater extraction system (four extraction wells: TW-2D, TW-3D, TW-2S, and PE-1), conveyance piping, a groundwater treatment plant, and an injection well field for the discharge of the treated groundwater. Figure 1-1 shows the location of the IM-3 extraction, conveyance, treatment, and injection facilities.

In a letter dated February 14, 2005, DTSC established the criteria for evaluating the performance of the IM (DTSC, 2005b). 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, 2005c). In October 2007, DTSC modified the reporting requirements for the PMP (DTSC, 2007a) to discontinue monthly performance monitoring reports (the quarterly and annual reporting requirements were unchanged). Additional updates and modifications to the PMP were approved by DTSC in letters dated October 12, 2007, July 14, 2008, and July 17, 2008 (DTSC, 2007a, 2008a-b).

PMP Monitoring Networks

Figure 1-3 shows the locations of wells used for IM extraction, performance monitoring, and hydraulic gradient measurements. With approval from DTSC, the list of wells included in the PMP was modified beginning August 1, 2008. The performance monitoring wells that were in service/active as of May 2010 are defined as:

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

Three extraction wells (TW-2D, TW-3D, and TW-2S) are located on the MW-20 bench. In addition, extraction well PE-1 is located on the floodplain approximately 450 feet east of

extraction well TW-3D, as shown in Figure 1-3. Currently, extraction wells TW-3D and PE-1 operate full time.

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

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

2.0 Second Quarter 2010 Monitoring Activities

This section provides a summary of the monitoring and sampling activities completed during the second quarter 2010.

2.1 Groundwater Monitoring Program

2.1.1 Monthly

The active IM extraction wells (PE-1 and TW-3D) were sampled for Cr(VI) and chromium during May, June, and July.

2.1.2 Quarterly

The second quarter GMP semiannual groundwater monitoring event was conducted between April 29, 2010 and May 6, 2010 and consisted of sampling:

- Thirty-three groundwater monitoring wells, including 12 East Ravine wells.
- Two active IM extraction wells.

The above wells were sampled for Cr(VI), chromium, field oxidation-reduction potential, field specific conductance, and field pH. In addition, one well (MW-12) was sampled for California Code of Regulations Title 22 metals analyses.

2.1.3 Additional Monitoring Activities

The following monitoring activities were conducted at selected GMP wells during second quarter 2010:

- Eight GMP wells screened in fluvial sediments were sampled for arsenic during the May semiannual sampling event, as directed by DTSC in its Corrective Measures Study review comment No. 186 (DTSC, 2009b).
- Arsenic was also analyzed in groundwater samples from five bedrock monitoring wells.

2.2 Surface Water Monitoring Program

Quarterly surface water sampling was conducted on July 7 and July 8, 2010 from the complete RMP monitoring network. Samples were analyzed for Cr(VI), chromium, specific conductance, and pH.

2.3 Performance Monitoring Program

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

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

3.1 Groundwater Results for Cr(VI) and Chromium

Table 3-1 presents the results for Cr(VI), chromium, field oxidation-reduction potential, field specific conductance, and field pH in groundwater samples collected from July 2009 through July 2010. During second quarter 2010, the maximum detected Cr(VI) concentration was 10,800 µg/L at well MW-50-200. The laboratory reports for results from May through July 2010 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, respectively, from the second quarter 2010 sampling event. Figures 3-1a through 3-1c also show the approximate outlines of Cr(VI) concentration contours greater than 32 µg/L for the Alluvial Aquifer and bedrock based on results from the more comprehensive groundwater sampling event conducted in March 2010.The value of 32 µg/L is based on the calculated natural background upper tolerance limit for Cr(VI) in groundwater from the background study (CH2M HILL, 2009a).

The approximate outlines of monitoring wells with Cr(VI) concentrations 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, 2010a,c).

3.2 Surface Water Results for Cr(VI) and Chromium

Table 3-2 presents results of Cr(VI), chromium, specific conductance, and lab pH from the second quarter 2010 (July) surface water monitoring event. Cr(VI) and chromium were not detected above the reporting limit at any in-channel, shoreline, or other surface water monitoring locations during the second quarter 2010 event.

3.3 Other Monitoring Results

3.3.1 Title 22 Metals

Table 3-3 presents the Title 22 metals results for the single GMP monitoring well sampled during the second quarter 2010 event, MW-12. In addition to chromium, the trace metals detected in MW-12 during the May 2010 groundwater sampling event were arsenic, barium, molybdenum, nickel, selenium, vanadium, and zinc. The dissolved concentrations of the trace metals detected during the May 2010 event—other than chromium and arsenic—are below the respective federal and California maximum contaminant level drinking water standards.

3.3.2 Arsenic Sampling in Monitoring Wells

Eight fluvial/alluvial wells were sampled for arsenic in the second quarter 2010 event. These results are presented in Appendix B, Table B-1. Three of the monitoring well samples had arsenic concentrations greater than the California maximum contaminant level of 10 µg/L (MW-12, MW-33-40, and MW-42-55). The maximum concentration was detected in MW-12 at 66.9 µg/L. All eight arsenic concentrations are within the previously observed ranges for each well.

Five bedrock wells were sampled for arsenic in the second quarter 2010 event. These results are presented in Appendix B, Table B-1. Two of the monitoring well samples had arsenic concentrations greater that the California maximum contaminant level of 10 µg/L (MW-62-110 and MW-64-150). The maximum concentration was detected in MW-64-150 at 12.9 µg/L.

3.4 Data Validation and Completeness

Laboratory analytical data from the second quarter 2010 GMP sampling event were reviewed by project chemists to assess data quality and to identify deviations from analytical requirements. The completeness objectives were met for all method and analyte combinations. No significant analytical deficiencies were identified in the Second Quarter 2010 GMP data. Additional details are provided in the data validation reports, which are kept in the project file and are available upon request.

4.0 IM Performance Monitoring Program Evaluation

4.1 Water Quality Results for PMP Floodplain Wells

Table C-1 in Appendix C presents the results of the general chemistry and stable isotope analyses for 15 PMP monitoring wells and two river stations during sampling events from March 2005 through July 2010. 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 1-3 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 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 May 2010 distribution of Cr(VI) in the upper (shallow wells), middle (mid-depth wells), and lower (deep wells) intervals of the Alluvial Aquifer is shown in plan view and cross-section in Figure 4-1. Figure 4-2 presents the May 2010 Cr(VI) results for cross-section B, oriented parallel to the Colorado River. The location of cross-section B is shown in Figure 1-3. The Cr(VI) concentration contours shown for the Alluvial Aquifer on these figures are based on results from the more comprehensive groundwater sampling conducted in March 2010.

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.

Figure 4-3 presents Cr(VI) concentration trend graphs for selected deep monitoring wells in the floodplain area through July 2010. Sampling results are plotted for wells MW-34-100, MW-36-90, MW-36-100, MW-44-115, MW-44-125, and MW-46-175. The locations of the deep wells selected for performance evaluation are shown in Figure 1-3. Appendix C includes Cr(VI) concentration trend graphs for selected monitoring well clusters through July 2010.

Wells showing marked decreases in concentration are generally in the floodplain area where IM pumping is removing chromium in groundwater. Wells with historic detections near or at reporting limits remained at these levels during the second quarter 2010 period. A review of Figure 4-3 and Appendix C indicates that Cr(VI) concentrations have remained steady or

have decreased in many wells since IM and PE-1 pumping began in 2004 and 2005, respectively.

Key trends include:

- MW-33 cluster (MW-33-40, MW-33-150, MW-33-210) Cr(VI) concentrations have remained relatively stable since 2008, as shown in Figure C-1.
- Deep well MW-44-115 has shown an overall downward trend since July 2006, as shown in Figure 4-3 and Figure C-5. Well MW-44-125 has also shown an overall downward trend since November 2008, as shown in Figure 4-3 and Figure C-5.
- Since 2006, concentrations in deep well MW-46-175 have shown some fluctuation within a generally stable range; that is, concentrations have shown no net increase or decrease, as shown in Figure 4-3 and Figure C-6. However, the sample from May 2010 shows a decrease to below 100 µg/L, which is the lowest result in over a year.
- MW-28-90 Cr(VI) concentrations have remained stable since May 2004, as shown in Figure C-6.

As shown in Figure 4-3, well MW-34-100 has shown both short-term declines and increases in Cr(VI) concentrations since PE-1 pumping commenced. Since June 2006, concentrations at this well have shown a general downward trend with seasonal fluctuations, as shown in Figure 4-3. Landward gradients have been present at this location since IM pumping began; therefore, the periodic increases in concentration observed at MW-34-100 do not indicate any movement of the plume toward the river.

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. Current IMCP wells, trigger levels, and most recent sampling results are listed in Table 4-1. The IMCP well Cr(VI) results in second quarter 2010 were all below their assigned trigger levels. Appendix C includes Cr(VI) concentration trend graphs for the IMCP wells.

4.4 Extraction Systems Operations

Pumping data for the IM-3 groundwater extraction system for the second quarter reporting period of May 1 through July 31, 2010 are presented in Table 4-2. From May 1 through July 31, 2010, the volume of groundwater extracted and treated by the IM-3 system was 17,033,956 gallons. This resulted in removal of an estimated 63.4 kilograms (or 140 pounds) of chromium from the aquifer during the second quarter 2010 reporting period. The average extraction rate for the IM system during the reporting period was 128.6 gallons per minute (gpm). The average monthly pumping rates were 134.3 gpm (May 2010), 126.7 gpm (June 2010), and 124.7 gpm (July 2010) during the reporting period.

During Second Quarter 2010, extraction wells TW-3D and PE-1 operated at a combined pump rate of 128.6 gpm, excluding periods of planned and unplanned downtime. Extraction wells TW-2S and TW-2D were not operated during Second Quarter 2010. The

operational run-time percentage for the IM extraction system was 96.4 percent during this reporting period. The operations log for the extraction system during the second quarter 2010, including planned and unplanned downtime, is included in Appendix D.

The concentrate (i.e., saline water) from the reverse osmosis system was shipped offsite as a RCRA non-hazardous waste and was transported to Liquid Environmental Solutions in Phoenix, Arizona for treatment and disposal. Three containers of solids from the IM-3 facility were disposed of at the Kettleman Hills Chemical Waste Management facility during Second Quarter 2010. 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 second quarter 2010 reporting period, Cr(VI) concentrations in TW-3D have remained stable, ranging from a maximum value of 1,500 µg/L in June 2010 to a minimum value of 1,000 µg/L in May 2010, as shown in Table 4-3. TDS concentrations in TW-3D for this period have remained relatively stable, averaging about 5,300 milligrams per liter, as shown in Table 4-3.

The Cr(VI) concentrations in the extracted groundwater at well PE-1, located on the floodplain, have ranged from 13.0 to 14.0 µg/L during the reporting period, as shown in Table 4-3. TDS concentrations in PE-1 for this period have also remained stable, averaging about 3,300 milligrams per liter.

4.5 Hydraulic Gradient and River Levels during Quarterly Period

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

Daily average groundwater and river elevations calculated from the pressure transducer data for the second quarter 2010 reporting period are summarized in Table E-1 in Appendix E. Groundwater elevations (or hydraulic heads) are adjusted for temperature and for salinity differences between wells (i.e., adjusted to a common freshwater equivalent), as described in the Performance Monitoring Plan. Groundwater elevation hydrographs for the PMP wells during the second quarter 2010 reporting period are included in Appendix E. The elevation of the Colorado River measured at the I-3 gauge station (location shown in Figure 1-3) is also shown on the hydrographs.

Average Second Quarter 2010 groundwater elevations for the shallow, mid-depth, and deep wells are presented and contoured in plan view in Figures 4-4a through 4-4c. Average groundwater elevations for wells on floodplain cross-section A are presented and contoured in Figure 4-5. Note that several monitoring wells are significantly deeper than other wells in the lower depth interval. Due to vertical gradients present at the Topock site, water levels in deeper wells tend to be higher than water levels in shallower wells. Consequently, some of the wells with screen intervals significantly deeper than most of the lower-interval wells exhibit water levels that are not contoured in the plan view in Figure 4-4c.

For the second quarter 2010 reporting period, a full set of transducer data was recorded in wells located on the Arizona side of the Colorado River. The quarterly average groundwater elevations for wells MW-55-120, MW-54-85, MW-54-140, and MW-54-195 are posted 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. Because this is the single data point in these depth intervals on the Arizona side, this area was not shown or included in contouring of the shallow and middle intervals.

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

Hydraulic gradients were measured during the second quarter 2010 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 4-4 presents the average monthly hydraulic gradients that were measured between the gradient well pairs in May, June and July 2010. The overall average gradients for all well pairs ranged from 0.0048 to 0.0056 feet per foot (ft/ft). This is 4.8 to 5.6 times greater than the required gradient of 0.001 ft/ft. The gradient for the northern well pair ranged from 2.1 to 2.5 times the target gradient of 0.001 ft/ft. For the central well pair, the average landward gradient ranged from 9.0 to 10.5 times the target gradient. The southern well pair gradients averaged 3.1 to 3.9 times the target gradient for the second quarter 2010 reporting period.

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.

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 August 2010 is based on the July 2010 BOR projections of Davis Dam release and Lake Havasu level not the actual release and level values. The variability between measured and projected river levels is due to the difference between measured and actual Davis Dam release and Lake Havasu levels. The more recent data plotted in Figure 4-7 are summarized in Table 4-5. The future projections shown in Figure 4-7 are based on BOR long-range projections of Davis Dam releases and Lake Havasu levels from July 2010. There is more uncertainty in these projections at longer times in the future since water demand is based on climatic factors.

Current BOR projections, shown in Table 4-5, show that the average Davis Dam release for August 2010 (13,500 cubic feet per second) will be less than the actual release in July 2010 (14,841 cubic feet per second). Based on July 2010 BOR projections, it is anticipated that the Colorado River level at the I-3 gage location in August 2010 will be approximately 0.90 foot lower compared to the actual levels in July 2010. Current projections show that the water levels will decrease during the next quarterly reporting period, followed by a further decline during November through December, as shown in Figure 4-7.

4.7 Quarterly PMP Evaluation Summary

The groundwater elevation and hydraulic gradient data from May through July 2010 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 Second Quarter 2010 were 4.8 to 5.6 times the required minimum magnitude. The current gradient well pairs are adequate to define the capture of the plume while pumping from extraction wells TW-3D and PE-1.

A total of 17,033,956 gallons of groundwater was extracted between May and July 2010 by the IM-3 treatment facility. An estimated 140 pounds (63.4 kilograms) of chromium were removed and treated during this quarter. The average pumping rate for the IM extraction system during the second quarter 2010, excluding system down time, was 128.6 gpm.

A review of the groundwater gradient maps for second quarter 2010 (Figures 4-4a to 4-4c) shows that floodplain PMP monitoring wells where Cr(VI) was detected at greater than 20 µg/L are within the IM capture zone of the pumping well(s) during the reporting period. That is, the inferred groundwater flow lines from floodplain PMP wells with Cr(VI) greater than 20 µg/L are oriented towards the TW-3D and PE-1 extraction wells.

The wells that are monitored in the IM pumping area (e.g., MW-36-100, MW-39-70, MW-39-80, and MW-39-100) generally continue to show overall declining Cr(VI) concentrations relative to prior monitoring results, as shown in Figure 4-3 and Appendix C. Presentation and evaluation of the Cr(VI) trends observed in the performance monitoring area during the second quarter 2010 reporting period are discussed in Section 4.2.

Based on the hydraulic and monitoring data and evaluation presented in this report, the IM performance standard has been met for the second quarter 2010 reporting period.

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 third quarter 2010 quarterly monitoring report, which will be submitted by November 30, 2010.

5.1 Groundwater Monitoring Program

5.1.1 Quarterly Monitoring

The third quarter monitoring event will occur September 27 through October 6, 2010. This sampling event will be conducted at 47 GMP wells, including the wells located in the East Ravine area. The groundwater monitoring report for this quarterly monitoring event will be submitted by November 30, 2010.

5.1.2 Monthly Monitoring

Monthly sampling of the two active extraction wells (TW-3D and PE-1) will continue to be performed by IM-3 staff during the first two weeks of each month. Results will be reported in the third quarter 2010 quarterly monitoring report. Following packer installation at MW-58BR and well development, monthly sampling will be conducted and is planned to start in October. In addition, per DTSC's direction on August 5, 2010, monthly sampling will also be conducted at MW-64.

5.2 Surface Water Monitoring Program

The third quarter 2010 surface water monitoring event will be conducted at locations in the RMP monitoring network and is scheduled to occur October 14-16, 2010. Results will be reported in the third quarter 2010 quarterly monitoring report.

5.3 Performance Monitoring Program

5.3.1 Extraction

Per DTSC direction, PG&E will continue to operate wells TW-3D and PE-1 at a target combined pumping rate of 135 gpm during third quarter 2010, except for periods when planned and unplanned downtime occurs. Extracted groundwater treated at the IM-3 facility will be discharged into the IM-3 injection wells in accordance with Waste Discharge Requirements Order No. R7-2006-0060. Saline water and solids generated as byproducts of the treatment process will continue to be transported for offsite disposal.

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

5.3.2 Transducer Download

Downloads of the transducers in the key gradient control wells (MW-27-085, MW-31-135, MW-33-135, MW-34-100, and MW-45-095) will continue to be conducted weekly during the third quarter 2010 reporting period. Downloads of the remainder of the transducers will occur during the first week of each month during the third quarter reporting period.

6.0 References

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Tables

Table 3-1
Groundwater Sampling Results, July 2009 through July 2010
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Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-9	SA	24-Sep-09	311	260	60	3,180	7.6
MW-10	SA	22-Sep-09	341	348	16	3,200	7.7
		11-Mar-10	2,880	3,140	-6.1	2,040	7.7
MW-12	SA	24-Sep-09	2,490	2,780	19	6,650	8.3
		24-Sep-09 FD	2,700	2,910	FD	FD	FD
		11-Dec-09	2,750	2,660	150	6,840	8.3
		06-Apr-10	1,960	1,900	74	6,150	8.4
		06-Apr-10 FD	1,960	1,840	FD	FD	FD
		06-May-10	2,650	2,700	84	5,820	8.4
		06-May-10 FD	2,650	2,890	FD	FD	FD
MW-13	SA	21-Sep-09	22.8	22.5	50	1,980	7.5
MW-14	SA	21-Sep-09	27.0	26.6	38	1,510	7.7
MW-15	SA	30-Sep-09	12.3	10.4	46	1,750	7.8
MW-16	SA	28-Sep-09	9.1	8.6	57	1,110	7.9
		16-Mar-10	12.0	10.8	80	1,230	8.0
MW-17	SA	30-Sep-09	10.6	10.1	27	1,760	7.9
		11-Mar-10	16.4	15.1	-15	1,710	7.9
MW-18	SA	22-Sep-09	22.3	20.2	48	1,410	7.7
MW-19	SA	22-Sep-09	192	193	51	2,370	7.5
		18-Mar-10	542	453	93	2,450	7.5
MW-20-70	SA	25-Sep-09	2,430	2,650	110	3,140	7.6
		17-Mar-10	2,740	2,870	68	3,320	7.6
MW-20-100	MA	25-Sep-09	5,760	6,790	94	3,500	7.4
		17-Mar-10	5,690	5,740	61	3,480	7.4
MW-20-130	DA	25-Sep-09	10,800	11,000	82	12,600	7.5
		18-Mar-10	11,100	11,100	110	13,100	7.5
MW-21	SA	04-Aug-09	---	---	76	9,060	7.5
		23-Sep-09	ND (1.0)	2.7	49	12,800	7.2
		09-Dec-09	ND (1.0)	ND (1.0)	-67	11,000	6.8
		10-Mar-10	1.4	1.2	-24	8,950	7.0
		04-May-10	2.0	3.8	-30	8,420	7.1
MW-22	SA	29-Sep-09	ND (1.0)	ND (1.0)	-61	20,800	6.9

Refer to table footnotes for data qualifier explanation.

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Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-22	SA	10-Dec-09	---	ND (1.0)	-52	34,200	6.8
		12-Mar-10	ND (2.1)	ND (1.0)	-87	34,300	6.8
MW-23-060	BR-SA	21-Jul-09	26.0	30.0	150	16,400	8.4
		24-Sep-09	30.5	25.6	24	17,000	9.4
		10-Dec-09	25.8	25.6	-1.9	16,200	11.3
		08-Mar-10	19.7	17.2	-9	10,700	10
		03-May-10	24.7	23.9	-32	14,700	9.1
MW-23-080	BR-SA	21-Jul-09	34.0	44.0	88	16,900	11.0
		23-Sep-09	29.7	28.1	-5.4	17,700	11.3
		10-Dec-09	21.8	22.4	-41	17,700	11.1
		08-Mar-10	11.3	9.6	-46	18,100	10.8
		04-May-10	21.8	20.5	-77	18,000	10.9
MW-24BR	BR	28-Sep-09	ND (2.1)	ND (1.0)	-65	15,100	8.1
		08-Dec-09	ND (1.0)	ND (1.0)	-180	14,900	7.8
		12-Mar-10	ND (1.0)	ND (1.0)	-140	15,500	8.1
		05-May-10	ND (1.0)	ND (1.0)	-150	15,400	8.4
MW-25	SA	21-Sep-09	455	495	86	1,270	7.3
		21-Sep-09 FD	457	482	FD	FD	FD
MW-26	SA	22-Sep-09	2,140	2,180	44	3,940	7.5
		16-Mar-10	2,280	2,270	71	4,230	7.4
MW-27-20	SA	01-Oct-09	ND (0.2)	ND (1.0)	-160	1,040	7.6
MW-27-60	MA	01-Oct-09	ND (0.2)	ND (1.0)	-100	1,820	7.8
		08-Dec-09	ND (0.2)	ND (1.0)	-64	1,810	8.2
MW-27-85	DA	01-Oct-09	ND (1.0)	ND (1.0)	-32	15,200	7.1
		08-Dec-09	ND (1.0)	ND (1.0)	-36	15,100	7.0
		09-Mar-10	ND (1.0)	ND (1.0)	-24	15,200	7.2
		29-Apr-10	ND (1.0)	ND (1.0)	-29	15,400	7.2
MW-28-25	SA	24-Sep-09	ND (0.2)	ND (1.0)	-120	1,140	7.4
		09-Mar-10	ND (0.2)	ND (1.0)	-25	1,200	7.5
MW-28-90	DA	24-Sep-09	ND (1.0)	ND (1.0)	-160	7,560	7.5
		09-Dec-09	ND (1.0)	ND (1.0)	-110	7,650	7.3
		09-Mar-10	ND (0.2)	ND (1.0)	-100	8,130	7.4
		29-Apr-10	ND (1.0)	ND (1.0)	-100	7,980	7.4

Refer to table footnotes for data qualifier explanation.

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Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-29	SA	24-Sep-09	ND (1.0)	ND (1.0)	-180	2,620	7.5
		11-Mar-10	ND (0.2)	ND (1.0)	-110	3,480	7.4
MW-30-30	SA	04-Aug-09	---	---	-240	11,900	7.6
		24-Sep-09	ND (1.0)	ND (1.0)	-130	19,500	7.3
MW-30-50	MA	24-Sep-09	ND (0.21)	ND (1.0)	-90	1,590	8.0
MW-31-60	SA	21-Sep-09	424	417	55	3,320	7.6
		16-Mar-10	571	531	160	3,190	7.5
MW-31-135	DA	21-Sep-09	19.6	20.4	65	11,300	7.9
MW-32-20	SA	22-Sep-09	ND (5.2)	ND (1.0)	-150	53,300	6.8
MW-32-35	SA	22-Sep-09	ND (1.0)	ND (1.0)	-190	21,900	7.0
		09-Mar-10	ND (2.1)	ND (1.0)	-160	23,400	7.1
MW-33-40	SA	24-Sep-09	ND (0.21)	ND (1.0)	-130	6,600	8.1
		09-Dec-09	ND (1.0)	2.2	12	11,400	7.8
		11-Mar-10	ND (1.0)	ND (1.0)	-25	6,820	8.3
		30-Apr-10	ND (0.2)	ND (1.0)	-37	5,920	8.3
MW-33-90	MA	29-Sep-09	22.4	21.1	62	10,500	7.6
		09-Dec-09	23.1	24.4	38	10,600	7.5
		12-Mar-10	23.7	25.2	170	11,600	7.5
		30-Apr-10	24.2	22.7	-32	10,900	7.5
MW-33-150	DA	29-Sep-09	9.3 J	8.9	140	16,900	7.6
		29-Sep-09 FD	12.3 J	9.3	FD	FD	FD
		09-Dec-09	10.1	10.5	8.2	17,600	7.6
		11-Mar-10	10.6	11.6	0.6	18,000	7.7
		11-Mar-10 FD	10.5	10.1	FD	FD	FD
		30-Apr-10	9.5	9.3	-33	17,600	7.6
		30-Apr-10 FD	10.4	9.7	FD	FD	FD
MW-33-210	DA	29-Sep-09	11.8	11.4	59	19,600	7.4
		09-Dec-09	13.1	13.3	26	19,900	7.4
		11-Mar-10	14.4	15.9	9.4	20,700	7.5
		30-Apr-10	11.3	11.8	-27	20,400	7.4
MW-34-55	MA	30-Sep-09	ND (0.2)	ND (1.0)	-120	1,060	7.9
		17-Nov-09	---	---	-120	1,080	7.5
MW-34-80	DA	07-Jul-09	ND (0.2)	ND (1.0)	-39	7,600	7.3

Refer to table footnotes for data qualifier explanation.

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PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-34-80	DA	04-Aug-09	ND (0.2)	ND (1.0)	-300	6,850	7.9
		30-Sep-09	ND (1.0)	ND (1.0)	-47	8,230	7.4
		13-Oct-09	ND (1.0)	ND (1.0)	-4.1	8,200	7.5
		02-Nov-09	ND (1.0)	ND (1.0)	-290	8,090	8.1
		09-Dec-09	ND (1.0)	ND (1.0)	-57	8,050	7.4
		11-Jan-10	ND (1.0)	1.6	-58	8,020	7.2
		08-Feb-10	ND (1.0)	ND (1.0)	-34	8,070	7.4
		10-Mar-10	ND (0.2)	ND (1.0)	-77	8,330	7.3
		29-Apr-10	ND (1.0)	ND (1.0)	-6.9	8,570	7.4
MW-34-100	DA	07-Jul-09	114	115	-11	16,800	7.5
		04-Aug-09	113	112	-250	11,700	7.9
		30-Sep-09	78.4	70.8	-6	18,400	7.5
		30-Sep-09 FD	78.9	72.6	FD	FD	FD
		14-Oct-09	211	208	-71	18,600	7.8
		02-Nov-09	152	146	-290	18,500	8.1
		02-Nov-09 FD	152	144	FD	FD	FD
		17-Nov-09	---	---	120	18,600	7.4
		09-Dec-09	211	203	23	18,400	7.6
		09-Dec-09 FD	211	211	FD	FD	FD
		11-Jan-10	243	231	67	20,000	8.0
		11-Jan-10 FD	254	235	FD	FD	FD
		08-Feb-10	312	311	-10	18,900	7.6
		08-Feb-10 FD	316	372	FD	FD	FD
		10-Mar-10	153	129	-34	19,300	7.5
		10-Mar-10 FD	152	133	FD	FD	FD
		29-Apr-10	71.3	73.5	29	19,500	7.5
		29-Apr-10 FD	78.7	73.6	FD	FD	FD
MW-35-60	SA	24-Sep-09	27.7	23.2	78	7,410	7.6
		24-Sep-09 FD	25.3	23.6	FD	FD	FD
		16-Mar-10	34.8	36.1	100	6,910	7.4
		16-Mar-10 FD	34.4	35.6	FD	FD	FD
MW-35-135	DA	24-Sep-09	33.4	30.8	100	9,920	8.0
		16-Mar-10	30.6	33.2	97	10,600	7.7
MW-36-20	SA	23-Sep-09	ND (1.0)	ND (1.0)	-190	3,920	8.1
MW-36-40	SA	30-Sep-09	ND (0.2)	ND (1.0)	-180	3,730	7.9

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Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-36-50	MA	30-Sep-09	ND (0.2)	ND (1.0)	-130	1,230	7.9
MW-36-70	MA	22-Sep-09	ND (0.2)	ND (1.0)	37	12,800	3.3
MW-36-90	DA	23-Sep-09	ND (0.2)	ND (1.0)	-57	1,490	8.2
		12-Mar-10	0.25	ND (1.0)	-81	1,430	8.3
MW-36-100	DA	23-Sep-09	67.6	64.5	-170	11,500	7.1
		09-Mar-10	67.1	74.4	-140	12,600	7.2
MW-37S	MA	23-Sep-09	7.9	8.2	38	5,150	7.9
		23-Sep-09 FD	8.5	7.9	FD	FD	FD
MW-37D	DA	23-Sep-09	308	336	49	15,700	7.9
MW-39-40	SA	01-Oct-09	ND (1.0)	ND (1.0)	-130	8,490	7.4
MW-39-50	MA	01-Oct-09	ND (0.2)	ND (1.0)	5.3	1,990	8.1
MW-39-60	MA	01-Oct-09	ND (0.2)	ND (1.0)	38	2,720	7.9
MW-39-70	MA	01-Oct-09	ND (0.2)	ND (1.0)	49	4,090	7.6
MW-39-80	DA	01-Oct-09	ND (1.0)	1.4	34	10,800	7.1
MW-39-100	DA	29-Sep-09	451	451	61	20,900	6.8
MW-40S	SA	28-Sep-09	6.8	6.9	78	2,250	7.7
MW-40D	DA	28-Sep-09	116	114	53	16,300	7.5
MW-41S	SA	23-Sep-09	18.7	18.9	32	5,220	8.0
		23-Sep-09 FD	19.5	17.8	FD	FD	FD
MW-41M	DA	23-Sep-09	10.3	10.8	29	15,500	7.7
MW-41D	DA	23-Sep-09	ND (1.0)	2.2	63	22,400	7.9
		11-Mar-10	3.1	2.6	-71	23,100	7.8
MW-42-30	SA	23-Sep-09	---	---	-180	6,150	7.7
MW-42-55	MA	23-Sep-09	ND (1.0)	ND (1.0)	-190	10,600	7.4
		08-Dec-09	ND (1.0)	ND (1.0)	-120	10,800	7.2
		09-Mar-10	ND (1.0)	ND (1.0)	-130	11,000	7.4
		29-Apr-10	ND (1.0)	ND (1.0)	-100	10,500	7.5
MW-42-65	MA	23-Sep-09	ND (1.0)	ND (1.0)	-110	12,800	7.1
		08-Dec-09	ND (1.0)	ND (1.0)	-25	13,200	7.0
		09-Mar-10	ND (1.0)	ND (1.0)	-40	14,300	7.2
		29-Apr-10	ND (1.0)	ND (1.0)	-31	13,600	7.2

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Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-43-25	SA	01-Oct-09	ND (0.2)	ND (1.0)	-170	1,300	7.5
MW-43-75	DA	01-Oct-09	ND (1.0)	ND (1.0)	-140	11,900	7.6
MW-43-90	DA	01-Oct-09	ND (1.0)	ND (1.0)	-95	18,900	6.9
MW-44-70	MA	21-Sep-09	ND (0.2)	ND (1.0)	-190	3,030	7.7
		07-Dec-09	ND (0.2)	ND (1.0)	-97	3,000	7.5
		08-Mar-10	ND (0.2)	ND (1.0)	-110	3,080	7.5
MW-44-115	DA	06-Jul-09	333	308	-150	12,000	7.9
		03-Aug-09	316	300	-360	10,400	8.2
		21-Sep-09	302	304	-250	12,000	8.1
		21-Sep-09 FD	303	296	FD	FD	FD
		14-Oct-09	300	295	-110	12,300	8.0
		03-Nov-09	306	293	-25	12,300	7.9
		07-Dec-09	291	284	-94	12,300	7.9
		12-Jan-10	282	279	-170	12,600	7.9
		09-Feb-10	219	256	-110	12,700	7.9
		08-Mar-10	325	269	-120	12,900	7.9
		30-Apr-10	269	270	-100	12,600	7.9
		30-Apr-10 FD	320	273	FD	FD	FD
MW-44-125	DA	06-Jul-09	154	169	-150	12,600	7.9
		03-Aug-09	191	184	-380	11,000	8.4
		23-Sep-09	93.7	90.3	-200	12,700	8.0
		14-Oct-09	20.3	176	-120	13,400	8.1
		03-Nov-09	159	160	-250	13,100	8.1
		07-Dec-09	68.8	78.3	-97	13,400	8.2
		12-Jan-10	155	127	-190	13,800	8.0
		09-Feb-10	5.0	176	-160	14,400	8.2
		08-Mar-10	46.4 J	51.8	-160	13,300	7.9
		08-Mar-10 FD	58.0 J	54.6	FD	FD	FD
		30-Apr-10	9.4	40.8	-210	13,000	8.0
MW-45-095a	DA	29-Sep-09	---	---	-0.9	9,700	7.6
MW-46-175	DA	07-Jul-09	89.6	82.8	-130	15,900	8.4
		04-Aug-09	86.6	86.6	-300	11,300	8.6
		25-Sep-09	116	105	-120	17,600	8.4
		14-Oct-09	160	159	-99	17,700	8.6
		14-Oct-09 FD	165	155	FD	FD	FD

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Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-46-175	DA	02-Nov-09	150	142	-330	17,200	8.6
		08-Dec-09	169	163	-97	17,800	8.3
		12-Jan-10	200	194	-160	18,300	8.4
		08-Feb-10	177	190	-100	18,500	8.4
		11-Mar-10	177	154	-160	18,700	8.5
		30-Apr-10	81.7	79.8	-120	18,400	8.5
MW-46-205	DA	25-Sep-09	4.9	5.6	-91	21,500	8.4
		08-Dec-09	4.6	4.7	-49	21,900	8.2
		08-Dec-09 FD	4.9	4.9	FD	FD	FD
		11-Mar-10	5.7	6.5	-90	22,800	8.5
MW-47-55	SA	24-Sep-09	18.8	17.4	51	4,910	7.7
		09-Dec-09	53.3	46.4	-13	4,150	7.4
		16-Mar-10	37.4	40.8	83	4,220	7.5
MW-47-115	DA	07-Jul-09	17.0	17.8	76	12,100	7.6
		07-Jul-09 FD	17.1	14.8	FD	FD	FD
		04-Aug-09	15.8	15.0	-200	9,310	7.8
		04-Aug-09 FD	15.8	13.5	FD	FD	FD
		24-Sep-09	17.2	16.3	46	13,200	7.7
		09-Dec-09	14.4	14.4	-55	14,300	7.5
		10-Mar-10	18.8	16.3	-5.6	14,100	7.7
MW-48	BR	23-Sep-09	ND (1.0)	ND (1.0)	120	18,300	7.3
		09-Dec-09	ND (1.0)	ND (1.0)	17	18,400	7.2
		08-Apr-10	ND (1.0)	ND (1.0)	89	19,200	7.0
		05-May-10	ND (1.0)	ND (1.0)	-27	19,500	7.8
MW-49-135	DA	22-Sep-09	ND (1.0)	ND (1.0)	85	13,500	7.9
MW-49-275	DA	22-Sep-09	ND (2.1)	1.8	-150	24,400	8.2
MW-49-365	DA	22-Sep-09	ND (2.1)	ND (1.0)	-230	37,900	8.0
MW-50-095	MA	24-Sep-09	40.3	39.6	56	5,120	8.1
		10-Dec-09	30.9	29.5	5.0	5,220	8.2
		12-Mar-10	24.9	25.3	-18	5,330	7.8
MW-50-200	DA	25-Sep-09	6,380	7,450	77	20,900	8.0
		11-Dec-09	7,860	8,140	92	22,300	7.8
		11-Dec-09 FD	7,510	8,370	FD	FD	FD
		17-Mar-10	10,100	9,600	77	23,000	7.7

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Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-50-200	DA	06-May-10	10,800	9,840	110	22,400	7.8
MW-51	MA	24-Sep-09	4,330	4,760	42	11,300	7.5
		17-Mar-10	4,480	4,590	59	11,500	7.4
MW-52S	MA	29-Sep-09	ND (1.0)	ND (1.0)	-130	11,300	7.4
		10-Dec-09	ND (1.0)	1.6	-160	11,000	7.6
		10-Mar-10	ND (1.0)	ND (1.0)	-170	11,500	7.5
MW-52M	DA	29-Sep-09	ND (1.0)	ND (1.0)	-150	17,400	7.7
		10-Dec-09	ND (2.1)	1.8	-200	17,200	7.8
		10-Mar-10	ND (1.0)	ND (1.0)	-170	17,700	7.8
MW-52D	DA	29-Sep-09	ND (1.0)	ND (1.0)	-150	22,600	8.0
		10-Dec-09	ND (5.2)	1.6	-200	22,100	8.3
		10-Mar-10	ND (1.0)	ND (1.0)	-210	23,000	8.3
MW-53M	DA	29-Sep-09	ND (1.0)	ND (1.0)	-160	20,700	8.4
		10-Dec-09	ND (2.1)	1.9	-210	20,600	8.3
		10-Mar-10	ND (1.0)	ND (1.0)	-220	21,200	8.4
MW-53D	DA	29-Sep-09	ND (2.1)	ND (1.0)	-200	27,300	8.6
		10-Dec-09	ND (5.2)	ND (1.0)	-220	26,900	8.7
		10-Mar-10	ND (2.1)	ND (1.0)	-200	27,800	8.4
MW-54-85	DA	22-Sep-09	ND (0.2)	ND (1.0)	-200	10,800	7.6
		08-Dec-09	ND (0.2)	ND (1.0)	-160	10,800	7.3
		09-Mar-10	ND (1.0)	ND (1.0)	-170	11,200	7.5
MW-54-140	DA	22-Sep-09	ND (0.2)	ND (1.0)	-53	13,400	7.9
		08-Dec-09	ND (1.0)	ND (1.0)	-100	13,300	7.7
		09-Mar-10	ND (2.0)	ND (1.0)	-75	13,800	7.8
MW-54-195	DA	22-Sep-09	ND (1.0)	ND (1.0)	-220	20,000	8.2
		08-Dec-09	ND (0.2)	ND (1.0)	-220	19,700	8.0
		09-Mar-10	ND (2.0)	ND (1.0)	-220	20,900	8.1
MW-55-45	MA	22-Sep-09	ND (0.2)	ND (1.0)	-160	1,550	7.8
		07-Dec-09	ND (0.2)	ND (1.0)	-110	1,520	7.8
		08-Mar-10	ND (0.2)	ND (1.0)	-100	1,550	7.7
MW-55-120	DA	22-Sep-09	4.0	5.1	-89	9,400	8.0
		22-Sep-09 FD	4.0	5.1	FD	FD	FD
		07-Dec-09	4.7	6.1	-42	9,430	7.9

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Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-55-120	DA	07-Dec-09 FD	4.6	5.8	FD	FD	FD
		08-Mar-10	5.6	6.1	-27	9,820	7.9
		08-Mar-10 FD	5.4	6.3	FD	FD	FD
MW-56S	SA	30-Sep-09	ND (0.2)	ND (1.0)	-120	6,510	7.4
		10-Dec-09	ND (0.2)	ND (1.0)	-170	5,970	7.6
		18-Mar-10	ND (0.2)	ND (1.0)	-150	6,290	7.3
MW-56M	DA	30-Sep-09	ND (0.2)	ND (1.0)	-110	15,000	7.4
		10-Dec-09	ND (1.0)	ND (1.0)	-160	14,900	7.4
		18-Mar-10	ND (1.0)	ND (1.0)	-140	15,500	7.2
MW-56D	DA	30-Sep-09	ND (1.0)	ND (1.0)	-120	21,700	7.9
		10-Dec-09	ND (2.0)	ND (1.0)	-140	21,500	8.0
		18-Mar-10	ND (2.0)	ND (5.0)	-92	21,600	7.7
MW-57-050	PA	17-Feb-10	86.0	88.0 LF	---	1,900	7.4
MW-57-070	BR	21-Jul-09	340	350	290	3,140	6.6
		24-Sep-09	132	139	34	3,160	7.2
		10-Dec-09	84.4	103	-32	3,270	7.3
		16-Mar-10	542	449	41	1,250	7.3
		05-May-10	452	452	3.5	1,830	7.4
MW-57-185	BR-DA	20-Jul-09	1.4	ND (4.9)	190	18,300	8.2
		23-Sep-09	1.1	2.4	-42	19,000	8.9
		09-Dec-09	2.1	2.6	-190	18,900	8.5
		09-Mar-10	6.8	6.7	-38	19,200	9.5
		05-May-10	3.9	4.7	-50	19,700	8.7
MW-58-065	BR-SA	17-Feb-10	ND (0.2)	8.0 LF	---	737	8.0
MW-58-115	BR-MA	22-Jul-09	ND (1.0)	3.0	-320	6,590	6.8
		29-Sep-09	ND (1.0)	ND (1.0)	-160	12,300	7.3
		16-Dec-09	ND (1.0)	1.4	-180	8,810	7.4
MW-58-205	BR-DA	22-Jul-09	ND (1.0)	6.3	-340	16,300	7.4
		29-Sep-09	4.7	9.7	-250	4,550	7.4
		16-Dec-09	7.6	26.6	-280	5,330	7.8
MW-58BR[1]	BR	25-Mar-10	9.1	15.0	---	---	---
MW-59-100	SA	22-Jul-09	5,100	4,900	90	10,800	6.9
		22-Jul-09 FD	5,100	4,800	FD	FD	FD

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Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-59-100	SA	24-Sep-09	4,630	5,300	63	11,900	7.0
		11-Dec-09	4,340	4,420	200	11,200	7.1
		17-Mar-10	5,320	5,270	100	13,100	6.9
		06-May-10	4,940	4,850	93	10,500	7.0
MW-60-125	BR-SA	21-Jul-09	780	810	71	8,200	7.2
		05-Aug-09	---	---	-140	6,220	7.6
		24-Sep-09	570	619	-14	8,240	7.5
		10-Dec-09	532	592	-71	8,320	7.5
		17-Mar-10	657	592	77	9,480	7.5
		06-May-10	1,120	1,080	76	9,610	7.4
MW-61-110	BR-SA	21-Jul-09	240	260	-9.6	15,100	7.3
		24-Sep-09	360	363	-20	15,900	7.7
		10-Dec-09	433	450	-76	16,400	7.7
		17-Mar-10	484	406	24	15,700	7.6
		06-May-10	480	511	110	16,600	7.5
MW-62-065	BR-SA	22-Jul-09	290	300	52	5,810	7.3
		24-Sep-09	236	251	29	5,780	7.6
		10-Dec-09	219	247	-17	5,760	7.5
		16-Mar-10	397	372	64	6,170	7.3
		06-May-10	436	456	120	6,580	7.4
MW-62-110	BR-MA	22-Jul-09	74.0	71.0	-94	8,950	8.1
		29-Sep-09	4.4	31.3	-130	8,580	7.8
		16-Dec-09	381	460	-120	8,840	7.7
		20-Jan-10	---	---	-70	8,830	7.8
		10-Feb-10	---	---	-110	8,960	7.9
		11-Mar-10	628	684	-110	9,360	7.8
		04-May-10	579	569	-54	9,220	8.0
MW-62-190	BR-DA	22-Jul-09	ND (1.0)	2.0	-310	28,800	7.7
		29-Sep-09	147	50.3	-230	18,600	7.6
		16-Dec-09	ND (1.0)	1.6	-190	18,300	7.7
		20-Jan-10	---	---	-160	18,700	7.8
		10-Feb-10	---	---	-150	18,700	8.0
		11-Mar-10	ND (1.0)	ND (1.0)	-140	19,600	7.9
		04-May-10	ND (1.0)	ND (1.0)	-95	19,500	8.0
MW-63-065	BR-SA	20-Jul-09	0.54	ND (2.9)	310	6,650	6.5

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Location ID	Aquifer Zone	Sample Date		Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
						ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-63-065	BR-SA	20-Jul-09	FD	0.54	ND (3.0)	FD	FD	FD
		22-Sep-09		0.65	1.2	66	6,930	7.3
		22-Sep-09	FD	0.54	1.9	FD	FD	FD
		09-Dec-09		0.63	1.1	40	6,840	7.1
		09-Dec-09	FD	ND (1.0)	ND (1.0)	FD	FD	FD
		09-Mar-10		ND (1.0)	ND (1.0)	12	7,620	7.1
		09-Mar-10	FD	1.1	ND (1.0)	FD	FD	FD
		03-May-10		1.4	2.1	15	8,070	7.1
		03-May-10	FD	1.4	2.4	FD	FD	FD
MW-64-150	BR-SA	22-Jul-09		ND (1.0)	5.2	-30	8,860	7.4
		29-Sep-09		ND (1.0)	1.5	-200	9,760	6.8
		12-Oct-09		ND (1.0)	ND (1.0)	-320	9,760	7.1
		04-Nov-09		ND (1.0)	ND (1.0)	-300	9,820	7.1
		16-Dec-09		ND (1.0)	1.8	-290	10,900	7.1
		19-Jan-10		ND (1.0)	ND (1.0)	-95	11,900	7.0
		10-Feb-10		ND (1.0)	ND (1.0)	-44	11,800	7.3
		11-Mar-10		ND (1.0)	ND (1.0)	68	11,500	6.9
		04-May-10		ND (1.0)	ND (1.0)	38	11,300	6.9
MW-64-205	BR-DA	22-Jul-09		5.7	17.0	26	14,800	7.3
		29-Sep-09		ND (1.0)	2.5	-240	14,200	6.7
		12-Oct-09		1.6	6.0	-300	13,800	7.1
		04-Nov-09		1.4	5.6	-310	14,100	7.1
		16-Dec-09		ND (1.0)	5.6	-180	15,200	7.0
		19-Jan-10		ND (1.0)	3.2	-190	15,400	7.1
		10-Feb-10		ND (1.0)	ND (1.0)	-81	16,300	7.4
		11-Mar-10		ND (1.0)	ND (1.0)	-140	16,700	7.2
		04-May-10		ND (1.0)	2.6	-170	16,300	7.2
MW-64-260	BR-DA	22-Jul-09		ND (1.0)	4.8	29	10,900	7.3
		29-Sep-09		1.4	1.4	-280	14,200	6.8
		12-Oct-09		ND (1.0)	1.3	-310	13,300	7.2
		04-Nov-09		1.9	1.2	-290	11,600	7.1
		16-Dec-09		ND (1.0)	2.2	-210	15,100	7.0
		19-Jan-10		ND (1.0)	ND (1.0)	-210	15,700	7.0
		10-Feb-10		ND (1.0)	ND (1.0)	-210	16,400	7.2
		11-Mar-10		ND (1.0)	ND (1.0)	-220	16,600	7.2
		04-May-10		ND (1.0)	ND (1.0)	-190	16,100	7.2

Refer to table footnotes for data qualifier explanation.

Table 3-1
Groundwater Sampling Results, July 2009 through July 2010
Second Quarter 2010 Interim Measures Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
PE-1	DA	01-Jul-09	20.4	19.2	---	---	---
		05-Aug-09	19.2	17.5	---	---	---
		02-Sep-09	19.6	17.9	---	---	---
		01-Oct-09	---	---	220	5,630	7.5
		07-Oct-09	20.7	18.6 LF	---	---	---
		04-Nov-09	19.9	19.6 LF	---	---	---
		02-Dec-09	19.7	19.4	---	---	---
		06-Jan-10	20.0	19.6 LF	---	---	---
		03-Feb-10	22.6	19.1 LF	---	---	---
		03-Mar-10	20.8	17.3 LF	---	---	---
		07-Apr-10	13.7	15.4 LF	---	---	---
		04-May-10	13.0	14.6 LF	---	---	---
		02-Jun-10	14.0	13.4 UF	---	---	---
		07-Jul-10	13.7	11.4 LF	---	---	---
PGE-7BR	BR	16-Mar-10	ND (1.0)	ND (1.0)	-270	20,200	9.2
PGE-8	BR	08-Apr-10	ND (1.0)	3.0	-270	21,600	8.3
Park Moabi-3	MA	01-Oct-09	9.9	9.5 UF	350	1,430	7.7
Park Moabi-4	MA	01-Oct-09	21.0	18.0 UF	730	1,870	7.9
TW-1	MA	22-Sep-09	3,740	4,130	88	7,180	7.4
		15-Mar-10	3,430	4,010	50	7,520	7.2
		05-May-10	3,700	3,700	31	7,450	7.4
TW-2S	MA	01-Oct-09	831	880	230	2,530	7.7
TW-2D	DA	01-Oct-09	356	352	250	8,690	7.2
TW-3D	DA	01-Jul-09	1,500	1,360	---	---	---
		05-Aug-09	1,190	1,270	---	---	---
		02-Sep-09	1,220	1,360	---	---	---
		07-Oct-09	1,330	1,340 LF	---	---	---
		04-Nov-09	1,160	1,310 LF	---	---	---
		02-Dec-09	1,410	1,340	---	---	---
		06-Jan-10	1,300	1,350 LF	---	---	---
		03-Feb-10	1,400	1,320 LF	---	---	---
		03-Mar-10	1,380	1,340 LF	---	---	---
		07-Apr-10	1,380	1,310 LF	---	---	---
		04-May-10	1,000	1,240 LF	---	---	---

Refer to table footnotes for data qualifier explanation.

Table 3-1
Groundwater Sampling Results, July 2009 through July 2010
Second Quarter 2010 Interim Measures Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
TW-3D	DA	02-Jun-10	1,500	1,230 UF	---	---	---
		07-Jul-10	1,100	1,130 LF	---	---	---
TW-4	DA	23-Sep-09	10.7	11.1	41	21,800	7.7
		23-Sep-09 FD	10.1	10.5	FD	FD	FD
		09-Dec-09	10.1	10.4	-63	21,800	7.5
TW-5	DA	23-Sep-09	10.4	9.6	-30	13,800	8.0

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

[1] This sample collected from a borehole.

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.

Sampling results from East Ravine wells prior to August 1, 2009 can be found in "Summary of Findings Associated with the East Ravine Groundwater Investigation, PGE Topock Compressor Station, Needles, California" (CH2M HILL, 2009), which is Appendix A of the Final CMS report.

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 and are not included in this table.

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

Wells are assigned to seperate 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)

Table 3-2
Surface Water Sampling Results, May through July 2010
Second Quarter 2010 Interim Measures 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	07/07/2010	ND (0.2)	ND (1.0)	935	8.15 J
C-CON-S	07/08/2010	ND (0.2)	ND (1.0)	934	8.26 J
C-CON-D	07/08/2010	ND (0.2)	ND (1.0)	929	8.28 J
C-I-3-S	07/07/2010	ND (0.2)	ND (1.0)	944	8.20 J
C-I-3-D	07/07/2010	ND (0.2)	ND (1.0)	942	8.25 J
C-MAR-S	07/07/2010	ND (0.2)	ND (1.0)	1040	7.44 J
C-MAR-D	07/07/2010	ND (0.2)	ND (1.0)	1040	7.43 J
C-NR1-S	07/08/2010	ND (0.2)	ND (1.0)	929	8.23 J
C-NR1-D	07/08/2010	ND (0.2)	ND (1.0)	936	8.25 J
C-NR3-S	07/08/2010	ND (0.2)	ND (1.0)	930	8.19 J
C-NR3-D	07/08/2010	ND (0.2)	ND (1.0)	942	8.18 J
C-NR4-S	07/08/2010	ND (0.2)	ND (1.0)	937	8.18 J
C-NR4-D	07/08/2010	ND (0.2)	ND (1.0)	932	8.17 J
C-R22a-S	07/07/2010	ND (0.2)	ND (1.0)	937	8.30 J
C-R22a-D	07/07/2010	ND (0.2)	ND (1.0)	938	8.28 J
C-R27-S	07/07/2010	ND (0.2)	ND (1.0)	944	8.25 J
C-R27-D	07/07/2010	ND (0.2)	ND (1.0)	951	8.24 J
C-TAZ-S	07/07/2010	ND (0.2)	ND (1.0)	943	8.26 J
C-TAZ-D	07/07/2010	ND (0.2)	ND (1.0)	947	8.30 J
Shoreline Samples					
R-19	07/07/2010	ND (0.2)	ND (1.0)	943	8.30 J
R-28	07/07/2010	ND (0.2)	ND (1.0)	939	8.33 J
R63	07/07/2010	ND (0.2)	ND (1.0)	940	8.37 J
RRB	07/08/2010	ND (0.2)	ND (1.0)	947	8.12 J
Other Surface Water Monitoring Locations					
SW1	07/08/2010	ND (0.2)	ND (1.0)	1000	7.58 J
SW2	07/08/2010	ND (0.2)	ND (1.0)	988	7.57 J

Table 3-2
Surface Water Sampling Results, May through July 2010
Second Quarter 2010 Interim Measures Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Notes:

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

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

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

Specific conductance is reported to three significant figures.

Table 3-3
Title 22 Metals Results, May 2010
Second Quarter 2010 Interim Measures Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

		California MCL:	6	10	1,000	4	5	NE	50	1,000*	15	2	NE	100	50	100*	2	NE	5,000*
Well ID		**Sample Date**	**Antimony**	**Arsenic**	**Barium**	**Beryllium**	**Cadmium**	**Cobalt**	**Chromium**	**Copper**	**Lead**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Thallium**	**Vanadium**	**Zinc**
MW-12		05/06/2010	ND (10)	**64.2**	40.0	ND (1.0)	ND (3.0)	ND (3.0)	**2,700**	ND (5.0)	ND (10)	ND (0.2)	18.0	5.7	14.0	ND (3.0)	ND (1.0)	13.0	31.0
	FD	05/06/2010	ND (10)	**66.9**	42.0	ND (1.0)	ND (3.0)	ND (3.0)	**2,890**	ND (5.0)	ND (10)	ND (0.2)	19.0	6.0	14.0	ND (3.0)	ND (1.0)	14.0	19.0

Notes:

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

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

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

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

Metals analyzed by Methods SW6010B or SW6020A or SW7470A.

Analytes detected above MCL are in bold.

TABLE 4-1
Assessment Monitoring Wells and Trigger Levels for IM Performance Monitoring
Second Quarter 2010 Interim Measures Performance Monitoring and
Site-Wide Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Assessment Monitoring Well	July 2008 Cr(VI) Trigger Level [(a)] (µg/L)	Most Recent Cr(VI) Concentration		Cr(VI) Concentration Trend[(c)]
		(µg/L)	Date	
Shallow Zone Wells				
MW-21	20	2.0	4-May-10	NA
MW-32-20	20	ND (5.2)	22-Sep-09	NA
MW-32-35	20	ND (2.1)	9-Mar-10	NA
MW-33-40	20	ND (0.2)	30-Apr-10	NA
MW-39-40	20	ND (1.0)	1-Oct-09	NA
MW-47-55	150	37.4	16-Mar-10	fluctuating
Mid-Depth Zone Wells				
MW-33-90	25	24.2	30-Apr-10	slightly increasing
MW-36-70	20	ND (0.2)	22-Sep-09	NA
MW-42-55	20	ND (1.0)	29-Apr-10	NA
MW-42-65	20	ND (1.0)	29-Apr-10	NA
MW-44-70	20	ND (0.2)	8-Mar-10	NA
Deep Zone Wells				
MW-27-85	20	ND (1.0)	29-Apr-10	NA
MW-28-90	20	ND (0.2)	9-Mar-10	NA
MW-33-150	20	10.4	30-Apr-10	stable over previous two years, overall slightly increasing
MW-33-210	20	11.3	30-Apr-10	stable over previous two years, overall slightly increasing
MW-34-80	20	ND (1.0)	29-Apr-10	NA
MW-34-100	750	78.7	29-Apr-10	flutuating over previous year, overall decreasing
MW-43-75	20	ND (1.0)	1-Oct-09	NA
MW-43-90	20	ND (1.0)	1-Oct-09	NA
MW-44-115	1,200	320	30-Apr-10	stable over previous year, overall decreasing
MW-44-125	475	9.4	30-Apr-10	overall decreasing
MW-46-175	225	81.7	30-Apr-10	fluctuating
MW-46-205	20	5.7	11-Mar-10	stable
MW-47-115	31 [(b)]	18.8	10-Mar-10	stable over previous two years, overall slightly increasing

Notes:

(a) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b). Concentrations in micrograms per liter (µg/L).

(b) An updated trigger level for MW-47-115, based on Shewart statistical control limit calculated from data through May 2009, was approved by DTSC by email June 24, 2009.

(c) Chromium concentration plots for selected wells are included in Appendix C.

ND = not detected at listed reporting limit.

NA = not applicable.

J = concentration or RL estimated by laboratory or data validation.

TABLE 4-2
Pumping Rate and Extracted Volume for IM System, May through July 2010
Second Quarter 2010 Interim Measures Performance Monitoring and
Site-Wide Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Extraction Well ID	May 2010		June 2010		July 2010		Second Quarter 2010		Project to Date [a]
	Average Pumping Rate [b] (gpm)	Volume Pumped (gal)	Average Pumping Rate [b] (gpm)	Volume Pumped (gal)	Average Pumping Rate [b] (gpm)	Volume Pumped (gal)	Average Pumping Rate [b] (gpm)	Volume Pumped (gal)	Cumulative Volume Pumped (gal)
TW-02S	0.00	0	0.00	0	0.00	0	0.00	0	1,000,780
TW-02D	0.00	0	0.00	0	0.00	0	0.00	0	53,104,680
TW-03D	107.13	4,782,085	101.21	4,372,406	98.87	4,413,450	102.40	13,567,942	237,955,704
PE-01	27.18	1,213,411	25.46	1,099,702	25.83	1,152,902	26.15	3,466,015	69,102,895
TOTAL	**134.3**	**5,995,496**	**126.7**	**5,472,108**	**124.7**	**5,566,352**	**128.6**	**17,033,956**	361,164,059
							Volume Pumped from the MW-20 Well Cluster		1,527,724
							Total Volume Pumped (gal)		362,691,783
							Total Volume Pumped (ac-ft)		1,113.0

NOTES:

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

[a] Interim measure groundwater extraction at the Topock site was initiated in March 2004.

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

Table 4-3
Analytical Results for Extraction Wells, February 2009 through July 2010
Second Quarter 2010 Interim Measures 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-Feb-09	1,620	1,330	5,970
	04-Mar-09	1,280 LF	1,280	5,630
	01-Apr-09	1,320	1,270	5,700
	06-May-09	1,450	1,610	5,020
	03-Jun-09	1,500	1,470	5,340
	01-Jul-09	1,360	1,500	5,300
	05-Aug-09	1,270	1,190	5,270
	02-Sep-09	1,360	1,220	5,140
	07-Oct-09	1,340 LF	1,330	5,530
	04-Nov-09	1,310 LF	1,160	5,810
	02-Dec-09	1,340	1,410	5,370
	06-Jan-10	1,350 LF	1,300	5,350
	03-Feb-10	1,320 LF	1,400	5,220
	03-Mar-10	1,340 LF	1,380	5,080
	07-Apr-10	1,310 LF	1,380	5,110
	04-May-10	1,240 LF	1,000	5,210
	02-Jun-10	1,230 UF	1,500	5,500
	07-Jul-10	1,130 LF	1,100	5,280
PE-1	04-Feb-09	25.5	26.3	3,500
	04-Mar-09	22.4 LF	23.5	3,490
	01-Apr-09	20.8	21.4	3,690
	06-May-09	18.1	18.6	3,460
	03-Jun-09	19.8	18.7	3,490
	01-Jul-09	19.2	20.4	3,460
	05-Aug-09	17.5	19.2	3,560
	02-Sep-09	17.9	19.6	3,420
	07-Oct-09	18.6 LF	20.7	3,360
	04-Nov-09	19.6 LF	19.9	3,620
	02-Dec-09	19.4	19.7	3,430
	06-Jan-10	19.6 LF	20.0	3,110
	03-Feb-10	19.1 LF	22.6	3,330
	03-Mar-10	17.3 LF	20.8	3,080
	07-Apr-10	15.4 LF	13.7	3,120
	04-May-10	14.6 LF	13.0	3,280
	02-Jun-10	13.4 UF	14.0	3,450
	07-Jul-10	11.4 LF	13.7	3,350

NOTES:

µg/L = concentration in micrograms per liter
mg/L = concentration in milligrams per liter
LF = lab filtered
UF = unfiltered

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

Dissolved chromium was analyzed by Method SW6010B or SW6020, hexavalent chromium analyzed by Method SM3500-CrB and total dissolved solids were analyzed by Method SM2540C.

TABLE 4-4

Average Hydraulic Gradients Measured at Well Pairs, May through July 2010
Second Quarter 2010 Interim Measures Performance 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 (feet/foot) [b]	Days in Monthly Average [c]
Overall Average	May	0.0056	NA
	June	0.0049	NA
	July	0.0048	NA
Northern Gradient Pair MW-31-135 / MW-33-150	May	0.0025	31 / 31
	June	0.0023	30 / 30
	July	0.0021	31 / 31
Central Gradient Pair MW-45-95 / MW-34-100	May	0.0105	31 / 31
	June	0.0091	30 / 30
	July	0.0090	31 / 31
Southern Gradient Pair MW-45-95 / MW-27-85	May	0.0039	31 / 31
	June	0.0033	30 / 30
	July	0.0031	31 / 31

Notes:

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

a Refer to Figure 1-3 for location of well pairs
b For IM pumping, the target landward gradient for the selected well pairs is 0.001 feet/foot
c Number of days transducers in both wells were operating correctly / Total number of days in month.

TABLE 4-5
Predicted and Actual Monthly Average Davis Dam Discharge and Colorado River Elevation at I-3
Second Quarter 2010 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 2008	9,300	8,900	400	453.5	453.6	0.1
February 2008	10,100	12,463	-2,363	454.5	454.7	0.1
March 2008	15,200	15,837	-637	455.6	455.9	0.3
April 2008	17,600	18,554	-954	456.6	457.0	0.4
May 2008	17,200	16,155	1,045	456.6	456.4	-0.3
June 2008	15,400	15,655	-255	456.2	456.5	0.3
July 2008	14,500	14,574	-74	455.8	456.0	0.2
August 2008	13,100	12,976	124	455.2	455.2	0.0
September 2008	12,300	11,731	569	454.9	455.0	0.1
October 2008	10,500	10,272	228	454.1	454.2	0.1
November 2008	10,400	10,130	270	454.1	454.03	-0.1
December 2008	5,800	5,506	294	452.3	452.45	0.2
January 2009	9,300	10,644	-1,344	452.6	454.02	1.4
February 2009	10,800	11,319	-519	454.2	454.34	0.2
March 2009	16,200	16,826	-626	456.1	456.37	0.3
April 2009	18,800	18,432	368	457.2	457.13	-0.1
May 2009	15,800	14,889	911	456.4	456.26	-0.1
June 2009	14,100	13,246	854	455.8	455.73	0.0
July 2009	13,500	13,579	-79	455.5	455.65	0.1
August 2009	11,900	12,296	-396	454.8	455.08	0.3
September 2009	12,700	12,203	497	454.9	455.24	0.4
October 2009	9,500	10,128	-628	453.8	454.04	0.3
November 2009	10,200	9,909	291	454.1	454.27	0.2
December 2009	9,000	8,650	350	453.6	453.54	-0.1
January 2010	9,900	7,415	2,485	453.9	453.36	-0.5
February 2010	7,700	7,961	-261	453.0	453.41	0.4
March 2010	14,700	14,014	686	455.5	455.40	-0.1
April 2010	16,100	14,762	1,338	455.3	455.94	0.7
May 2010	15,500	15,246	254	456.2	456.41	0.3
June 2010	15,800	15,332	468	456.4	456.45	0.0
July 2010	14,500	14,841	-341	455.9	456.34	0.4
August 2010	13,500			455.4		

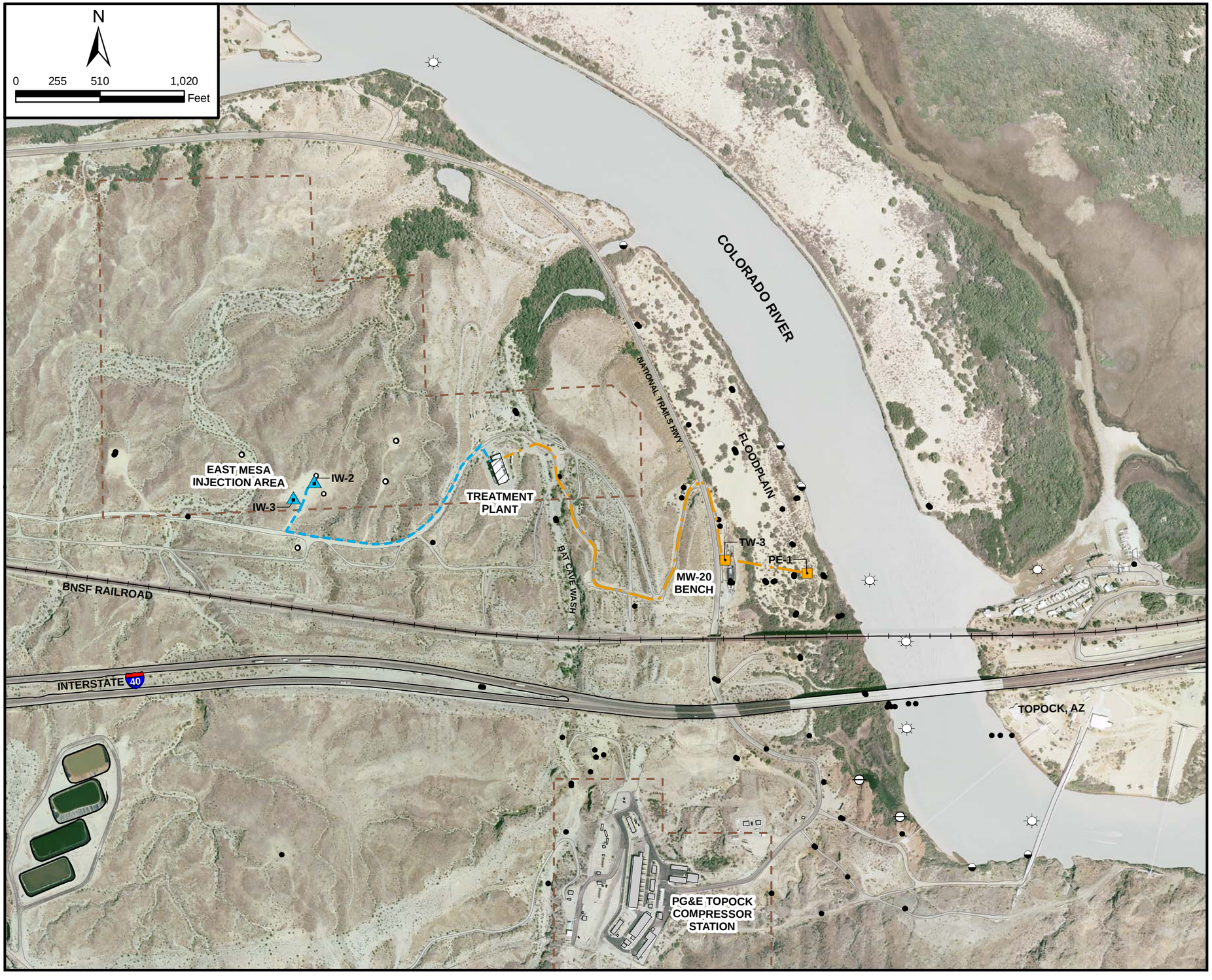
NOTES:
cfs = cubic feet per second; ft amsl = feet above mean sea level.

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 August 2010 USBR projections. These data are reported monthly by the US Department of Interior, at http://www.usbr.gov/lc/region/g4000/24mo.pdf.

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

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

Figures



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 GMP, RMP, and PMP monitoring locations and identifications.

FIGURE 1-1
LOCATIONS OF IM-3 FACILITIES AND MONITORING LOCATIONS
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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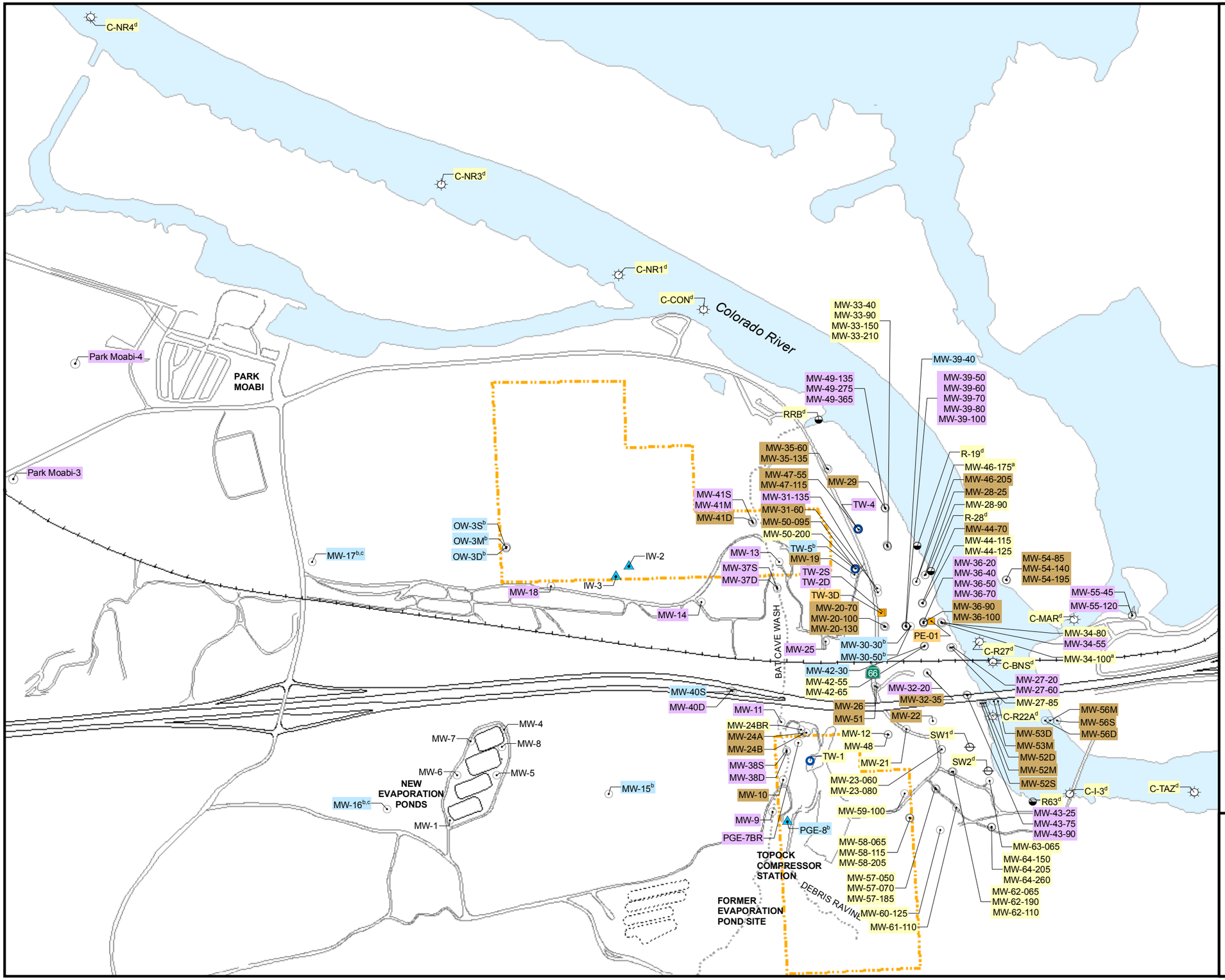

LEGEND

- Injection Well
- Groundwater Monitoring Well
- Test Well or Supply Well (Inactive)
- Extraction Well
- Shoreline Surface Water Monitoring Location
- River Channel Surface Water Monitoring Location
- Other Surface Water Monitoring Location
- Property Boundary

Sampling Frequency for GMP and RMP

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 will be sampled annually for the water quality snapshot.

[c] Background metals collected semiannually.

[d] Shoreline, river channel, and other surface water monitoring locations are sampled twice during periods of low river stage (typically November – January) otherwise quarterly.

N

0 500 1,000

Feet

California State Plane NAD83 Zone 5 US Feet

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

SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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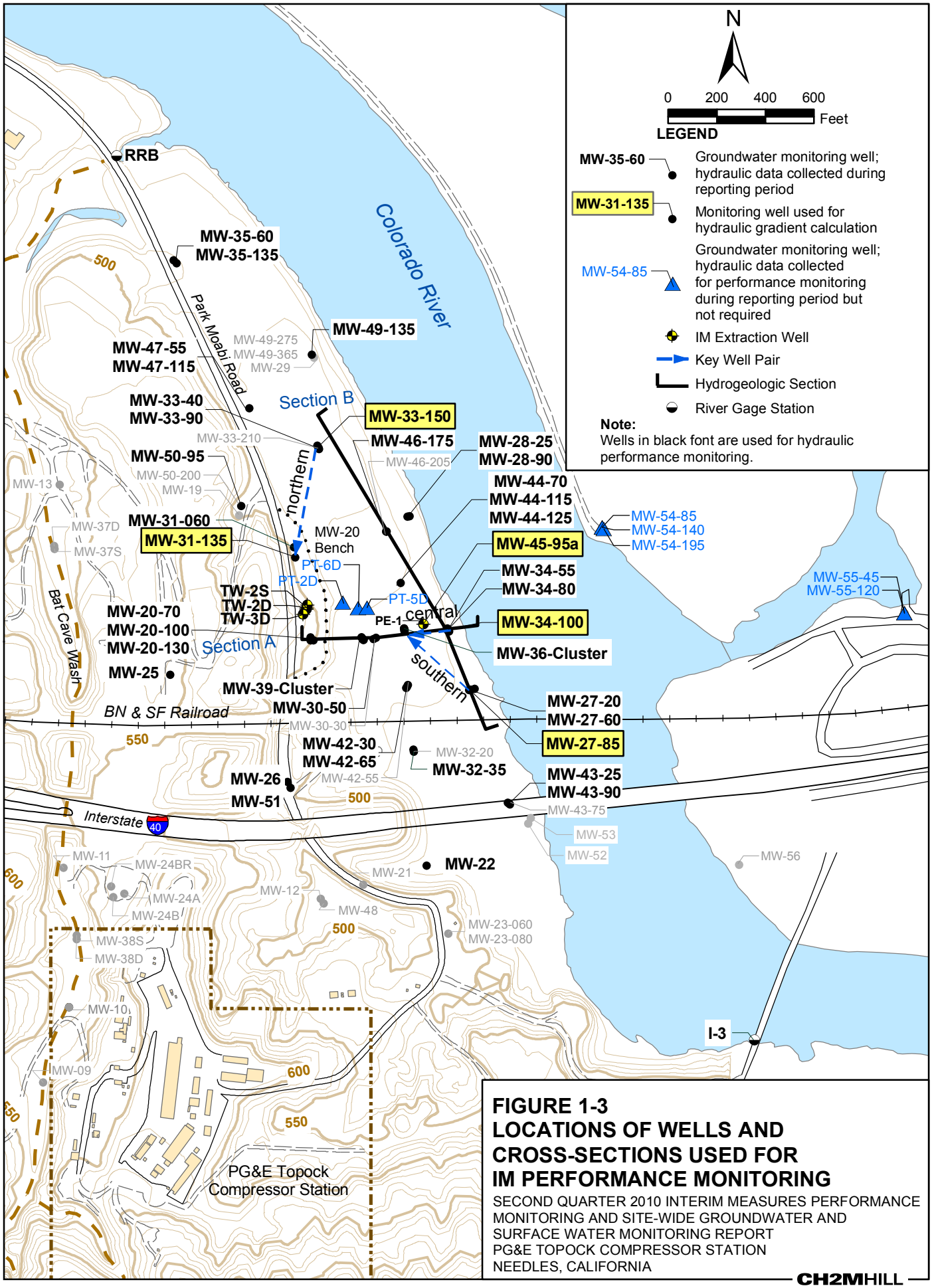

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FIGURE 1-3
LOCATIONS OF WELLS AND CROSS-SECTIONS USED FOR IM PERFORMANCE MONITORING

SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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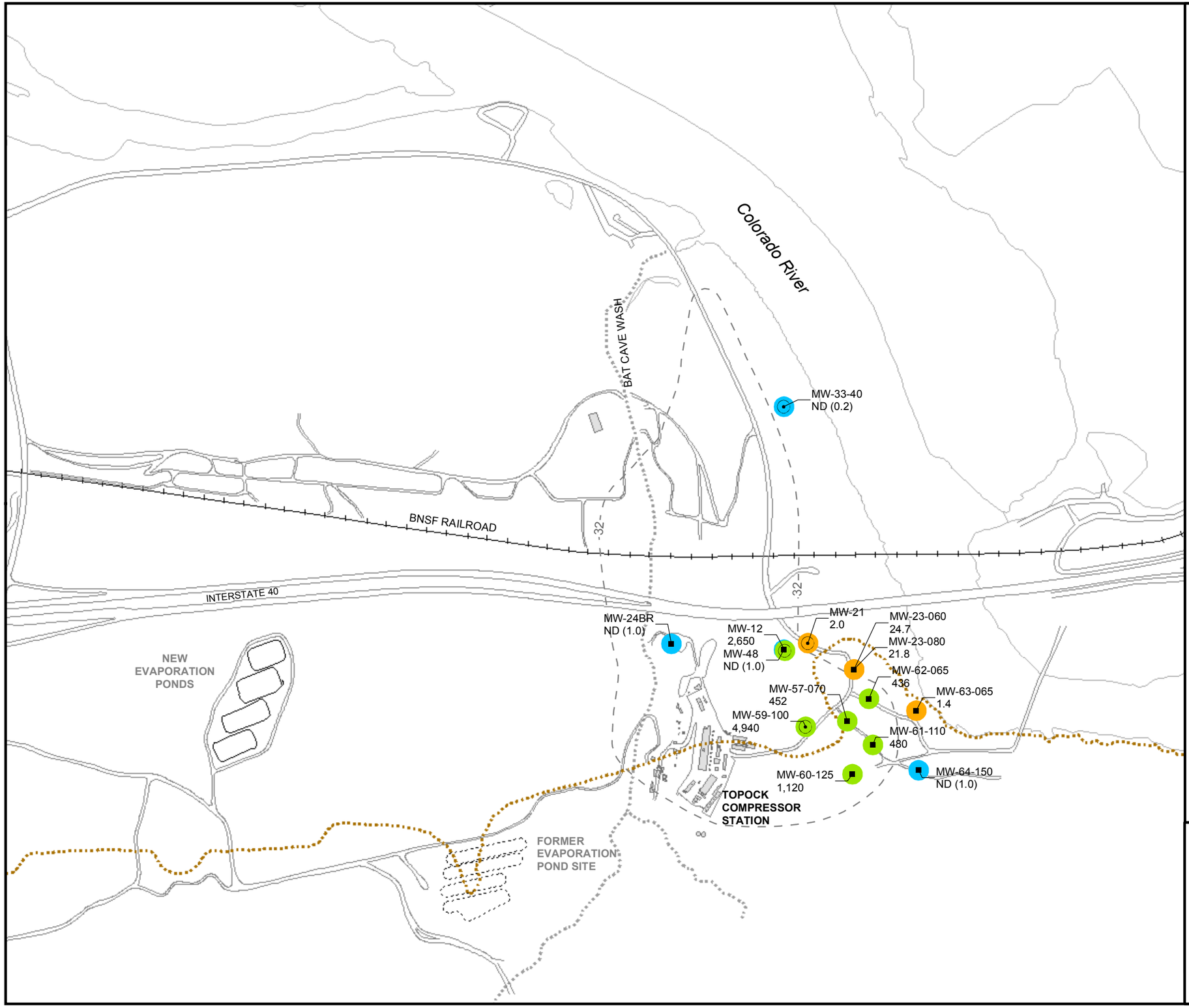

LEGEND

- 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 - May 2010

- 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 March 2010 groundwater sampling.

Approximate bedrock contact at 455 ft MSL elevation

Note:
Results plotted are maximum concentration from primary and duplicate samples, 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, MAY 2010

SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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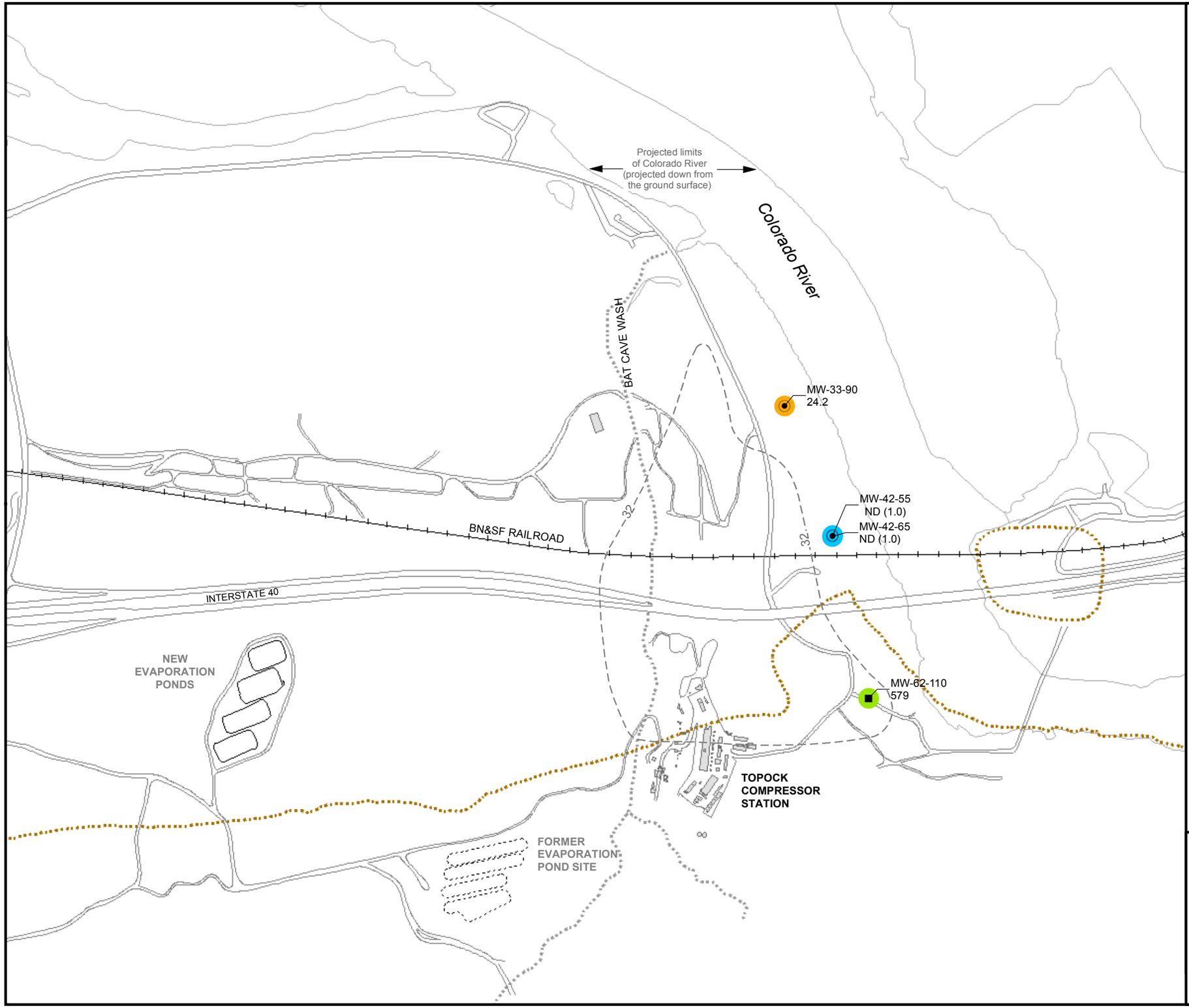

LEGEND

- 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 - May 2010

- 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 March 2010 groundwater sampling.
- Approximate bedrock contact at 425 ft MSL elevation

Note:
Results plotted are maximum concentration from primary and duplicate samples, 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, MAY 2010

SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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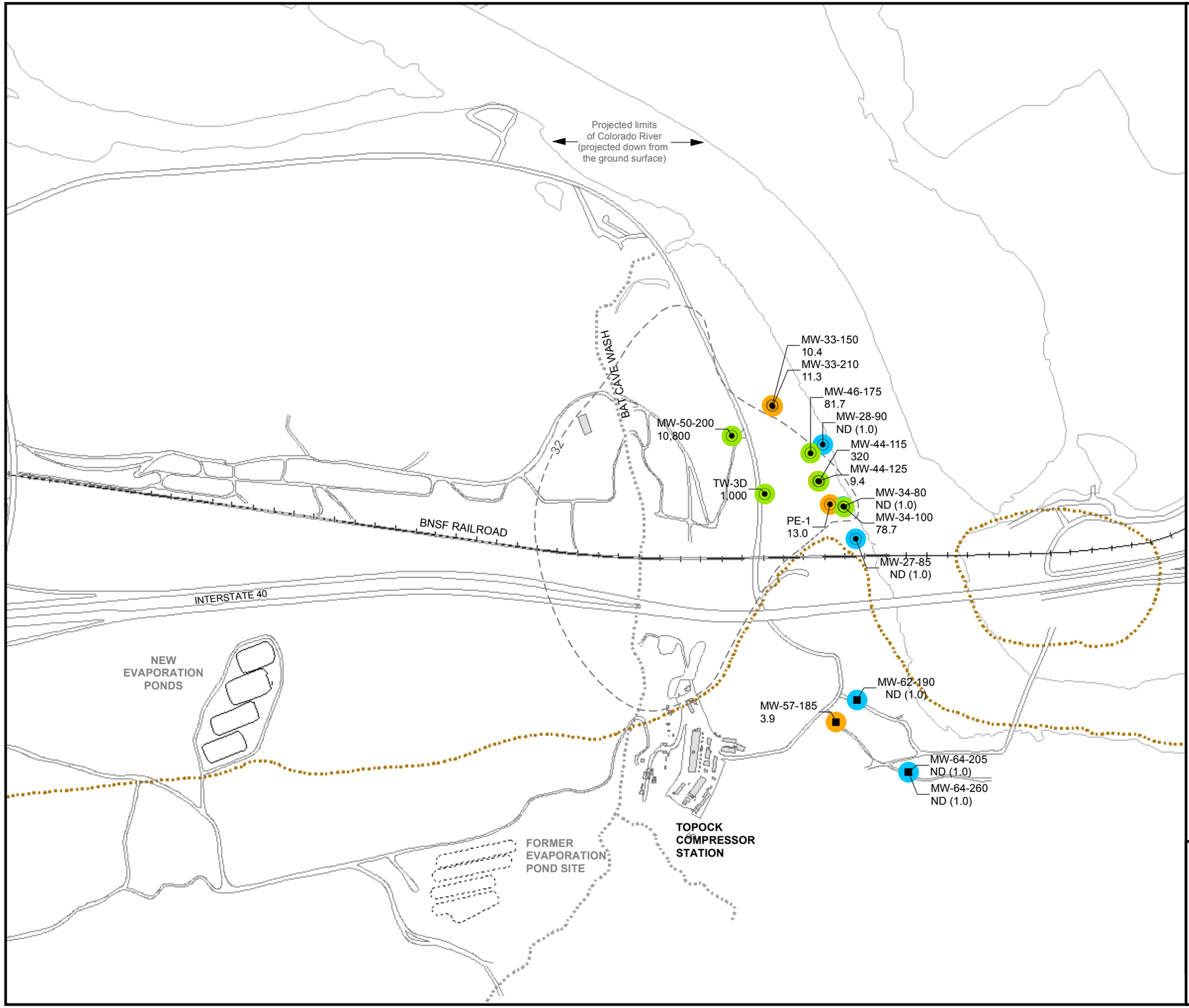

LEGEND

- ⦿ 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 **Deep zone** of Alluvial Aquifer and Bedrock.

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

Cr(VI) Concentrations - May 2010

- 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 March 2010 groundwater sampling.

Approximate bedrock contact at 395 ft MSL elevation

Note:
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.

N

0 500 1,000 Feet

FIGURE 3-1c
Cr(VI) SAMPLING RESULTS, DEEP WELLS IN ALLUVIAL AQUIFER AND BEDROCK MAY 2010

SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNA

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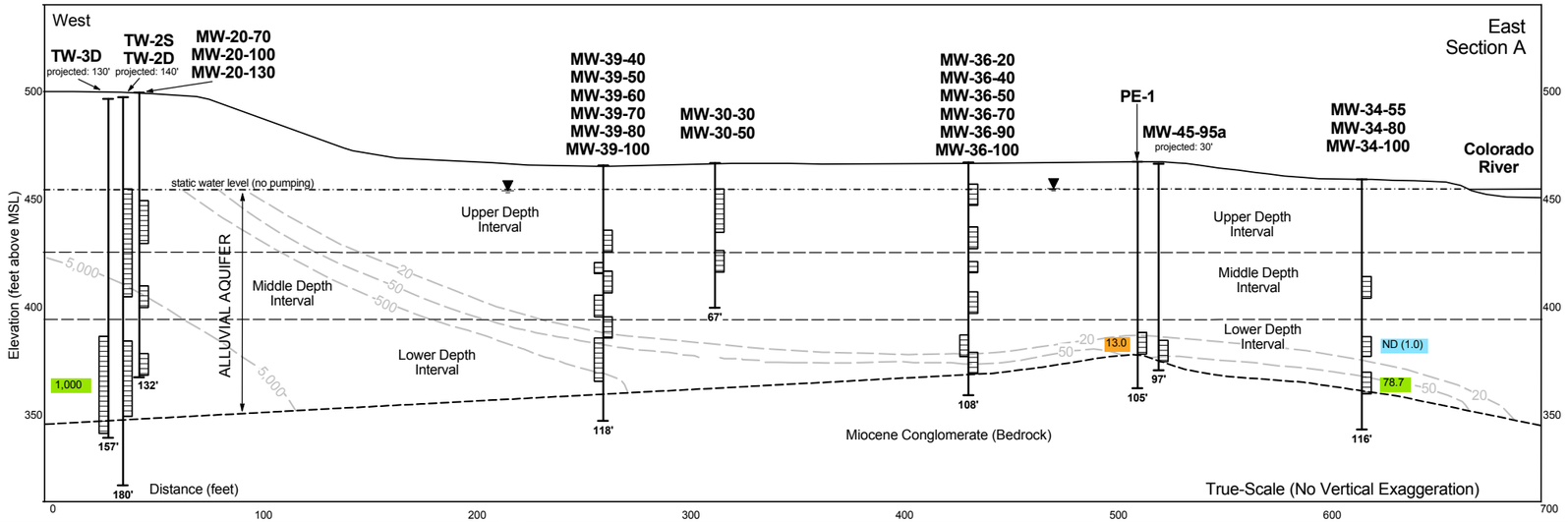
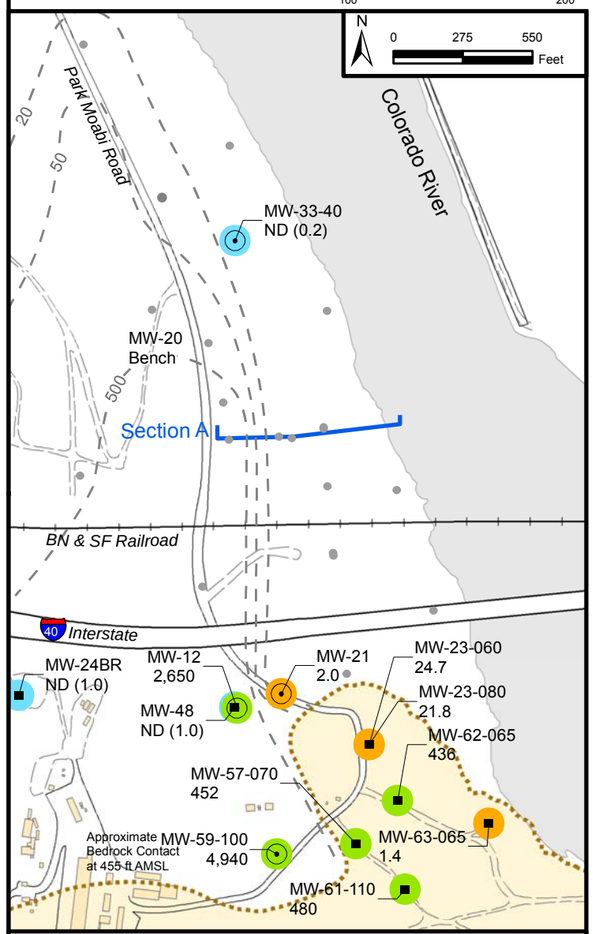
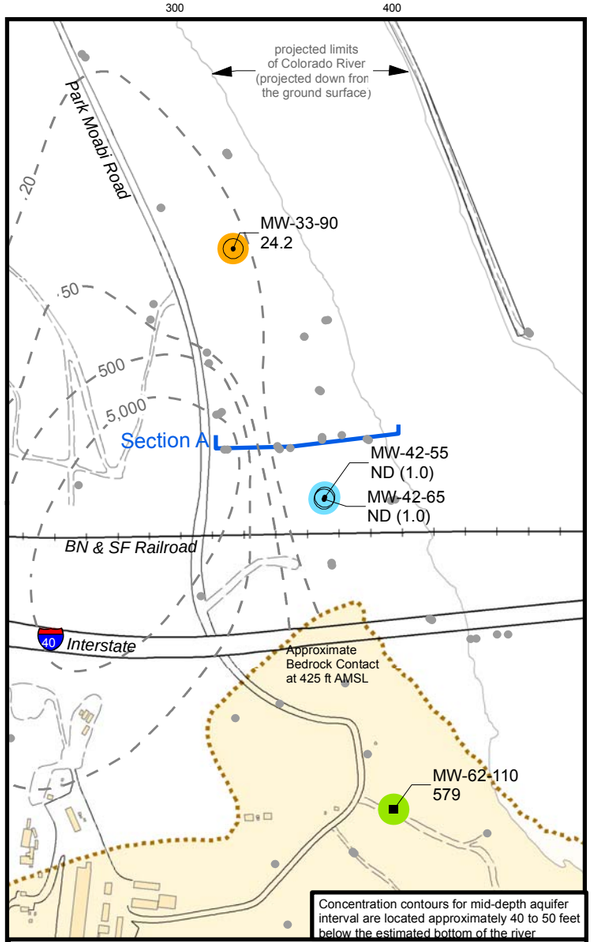
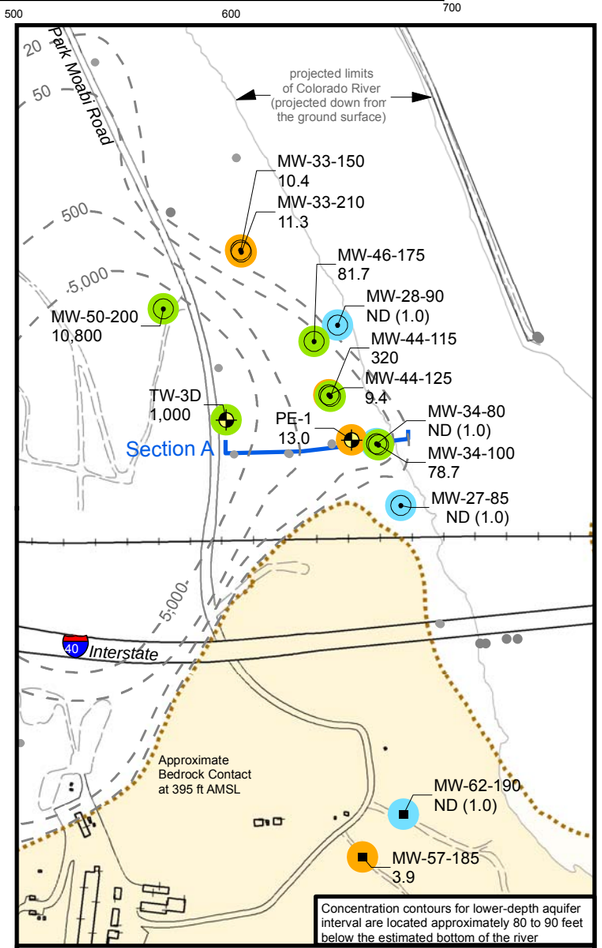




Shallow Wells (Upper Depth Interval)



Mid-Depth Wells (Middle-Depth Interval)



Deep Wells (Lower Depth Interval)

LEGEND

- Alluvial Aquifer Well Sampled During May 2010 Sampling Event
- Bedrock Well Sampled During May 2010 Sampling Event
- Extraction Wells Sampled During May 2010 Sampling Event
- Wells Not Sampled During May 2010 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 - May 2010

- Not detected at analytical reporting limit
- Concentrations between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L
- 50 — Inferred Cr(VI) concentration contour within Alluvial aquifer depth interval based on March 2010 sampling results.
- Hydrogeologic Section A showing aquifer depth intervals and May 2010 Cr(VI) sampling results

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.

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. The beige shading shows the area of bedrock groundwater and Cr(VI) concentrations for bedrock monitoring wells for the second quarter 2010 results presentation. 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.

4. Extraction wells PE-1 and TW-3D are not included in contouring. These wells draw water from a larger area and do not represent Cr(VI) concentrations at their specific locations.

FIGURE 4-1
MAXIMUM Cr(VI) CONCENTRATIONS IN ALLUVIAL AQUIFER, MAY 2010
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNA

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North

South
Section B

Cross-Section Parallel to the Colorado River

BN & SF Railroad

MW-33-40
MW-33-90
MW-33-150
MW-33-210

MW-46-175
MW-46-205

MW-28-25
MW-28-90
projected: 110'

MW-44-70
MW-44-115
MW-44-125

MW-34-55
MW-34-80
MW-34-100

MW-27-20
MW-27-60
MW-27-85

Elevation (feet above MSL)

700
600
500
400
300
200
100
0

water table (average 455' MSL)

ALLUVIAL AQUIFER

Oldest Alluvium

Fluvial Deposits

Upper Depth Interval

Middle Depth Interval

Lower Depth Interval

Approximate geologic contact between alluvial fan and fluvial deposits

ND (0.2)

24.2

10.4

11.3

237'

ND (1.0)

81.7

216'

320

9.4

134'

ND (1.0)

78.7

116'

ND (1.0)

107'

20

50

Miocene Conglomerate (Bedrock)

True-Scale (No Vertical Exaggeration)

-100 0 100 200 300 400 500 600 700 800 900 1,000 1,100 1,200 1,300 1,400

Distance (feet)

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 1-3 for map of this cross-section.

water level

well screen

3,810

boring depth (feet) 103'

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

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

ND (1)	Not detected at listed reporting limit (ppb)
29	Less than 32 µg/L
3,810	Greater than 32 µg/L

FIGURE 4-2
Cr(VI) CONCENTRATIONS
FLOODPLAIN CROSS-SECTION B,
MAY 2010

SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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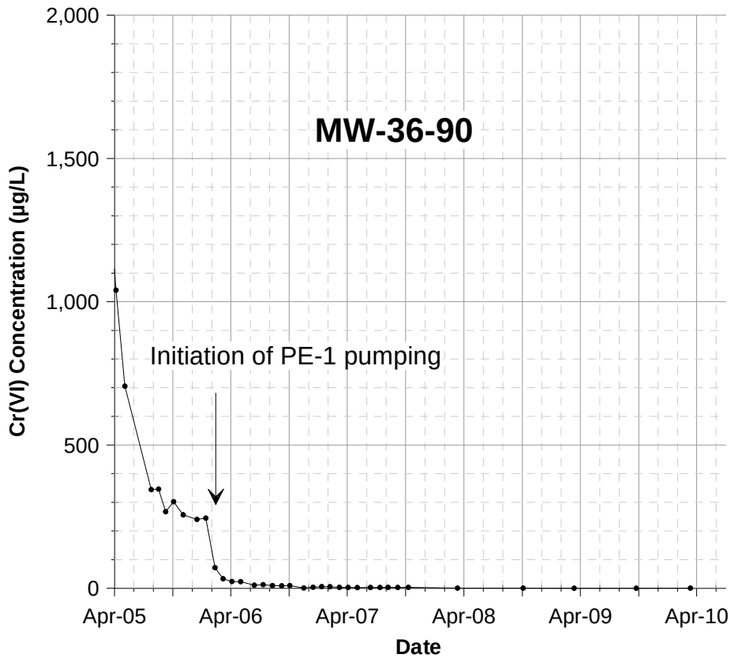
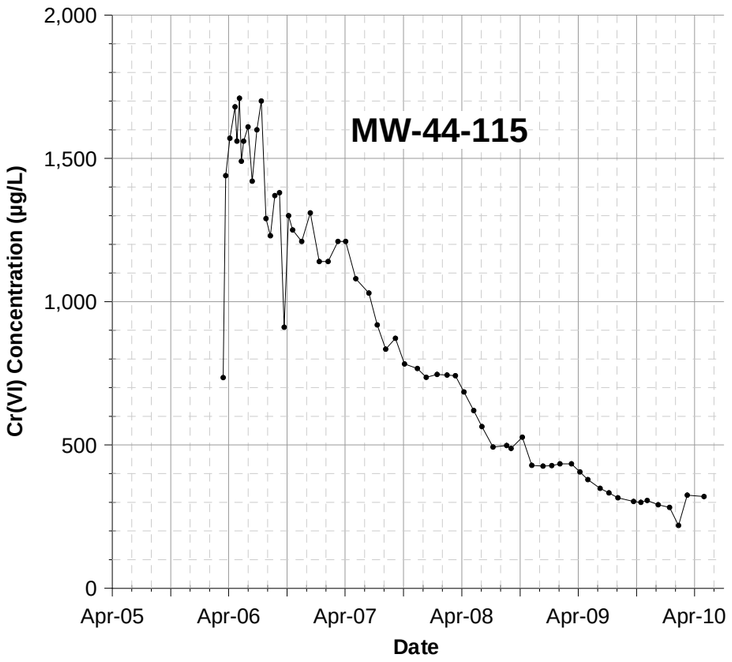
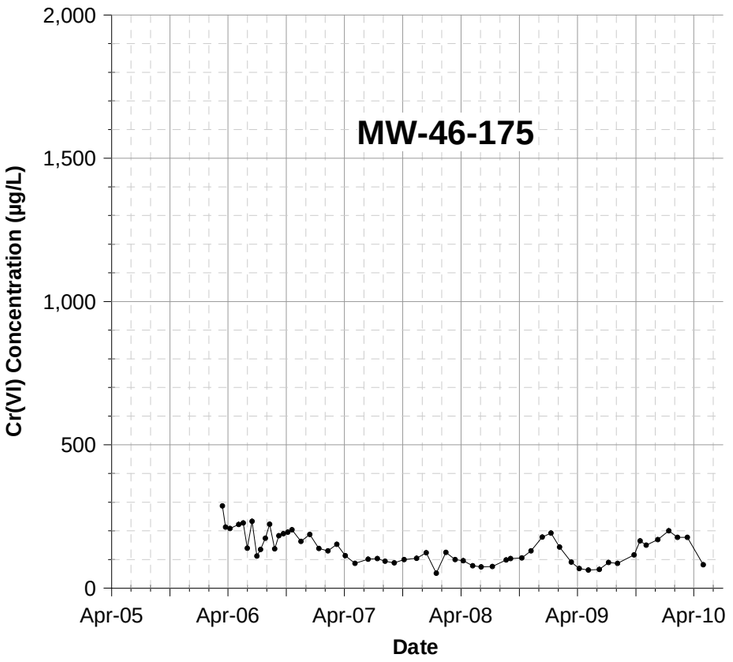
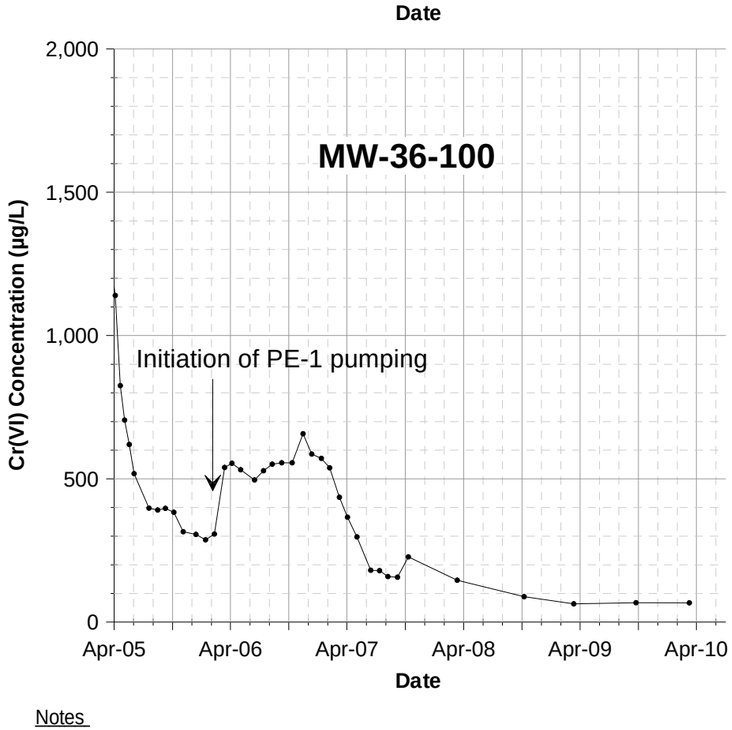
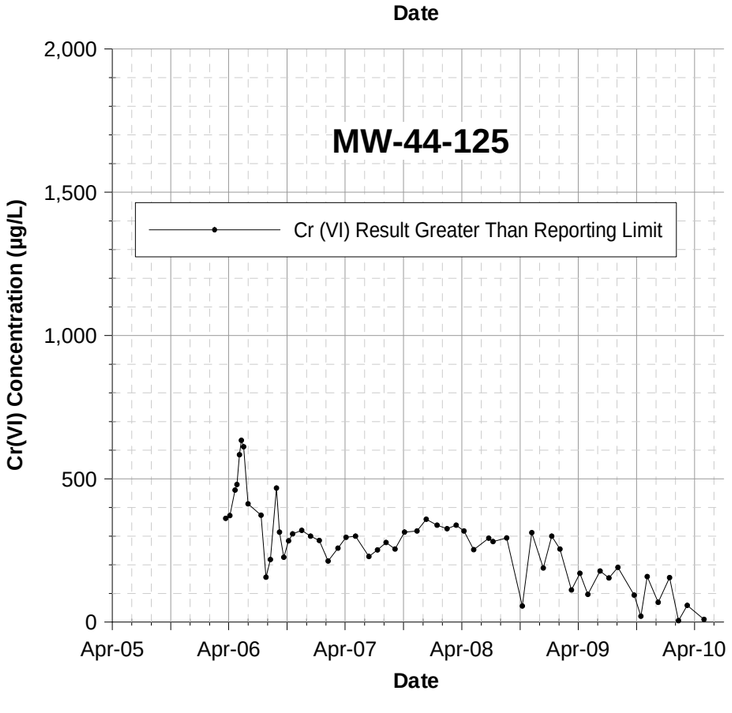
C:\USERS\CHALL6\DOCUMENTS\GINT\2010_2Q\FIGURE_4-2_XSECB_CR.GDW;

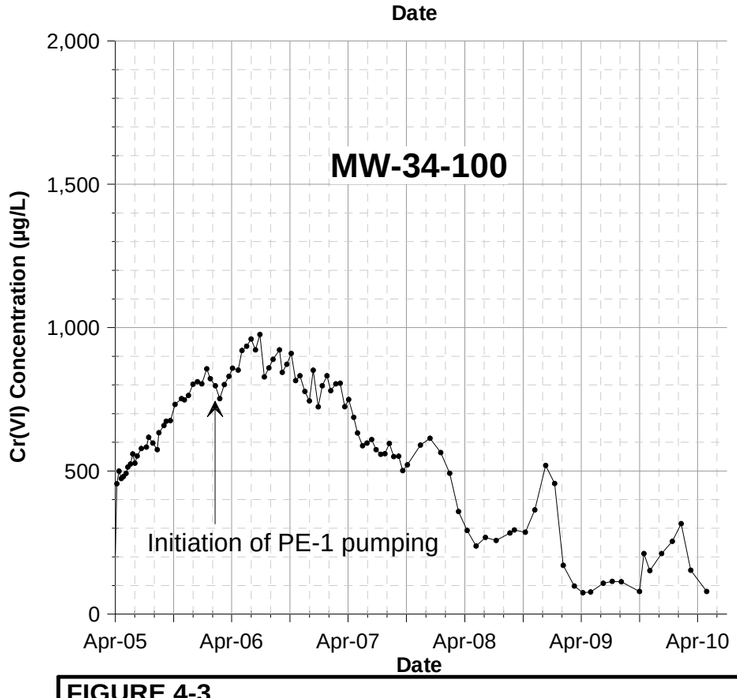












Notes
1. Hexavalent chromium [Cr(VI)] results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples; see Table 3-1 for complete results.
3. MW-36 wells selected to monitor effects of PE-1 pumping on plume 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 JULY 2010
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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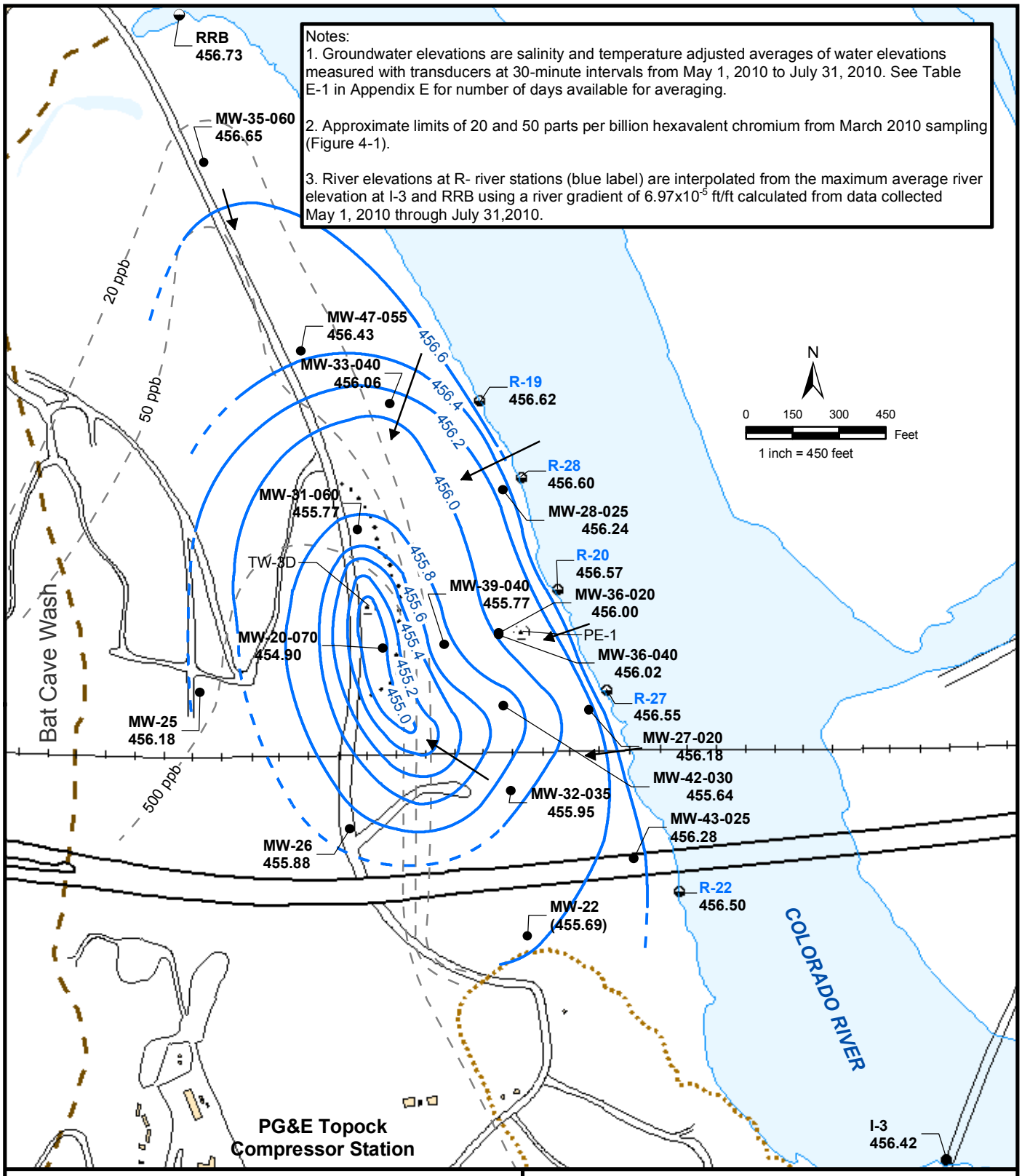

FIGURE 4-4a
AVERAGE GROUNDWATER ELEVATIONS FOR SHALLOW WELLS AND RIVER ELEVATIONS, MAY THROUGH JULY 2010

SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION,
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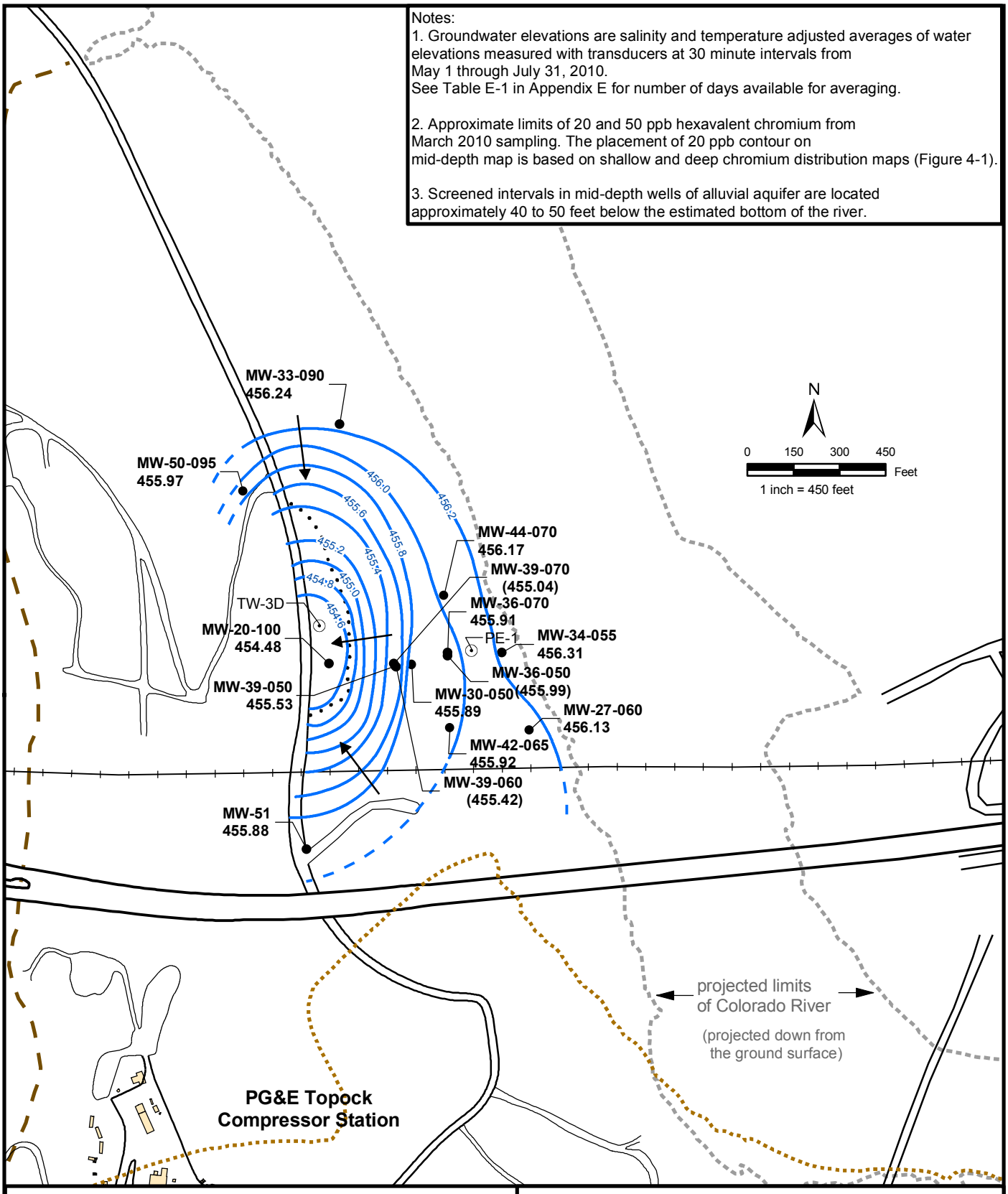

FIGURE 4-4b
AVERAGE GROUNDWATER ELEVATIONS FOR MID-DEPTH WELLS, MAY THROUGH JULY 2010

SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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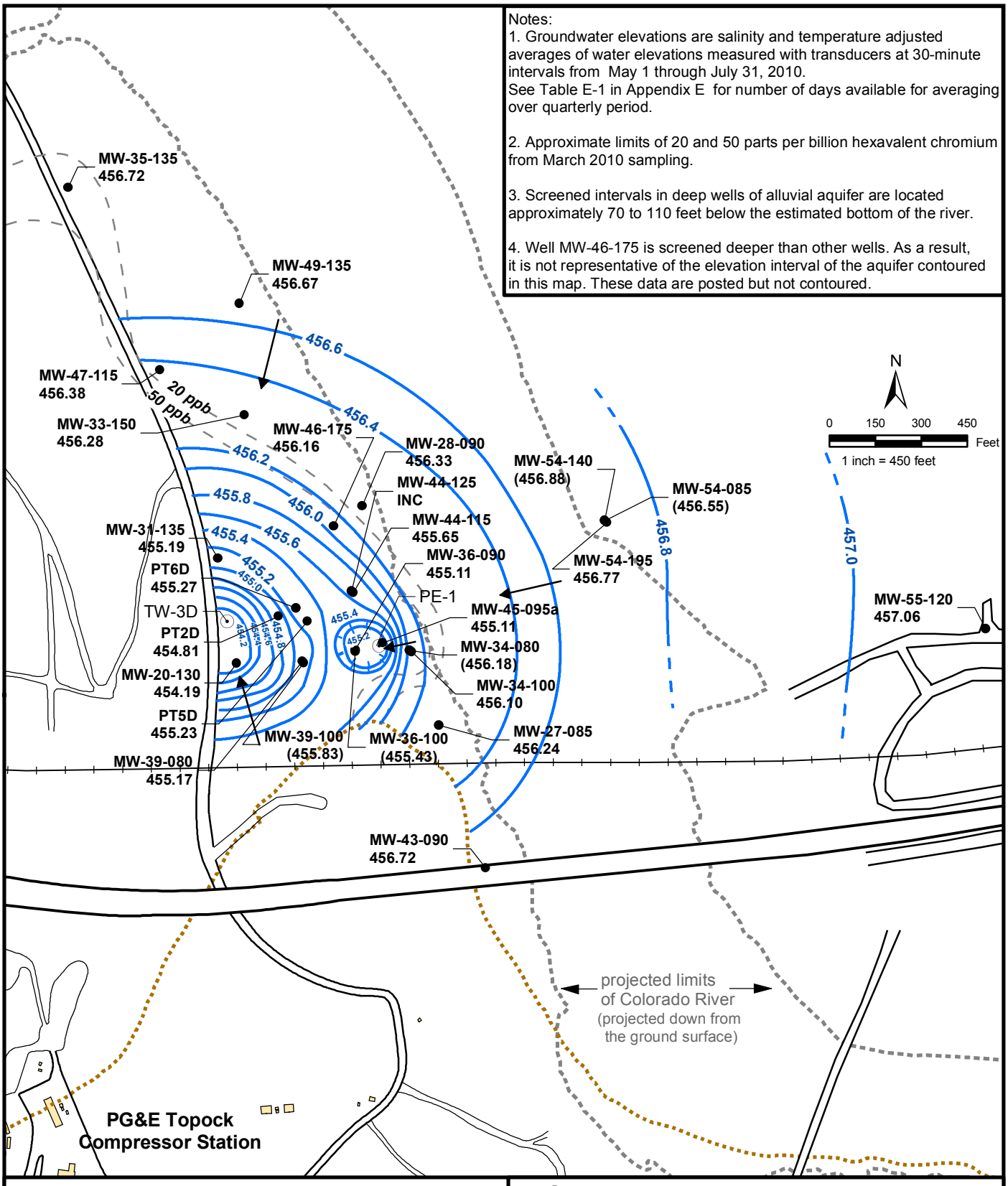

FIGURE 4-4c
AVERAGE GROUNDWATER ELEVATIONS FOR DEEP WELLS, MAY THROUGH JULY 2010

SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION,
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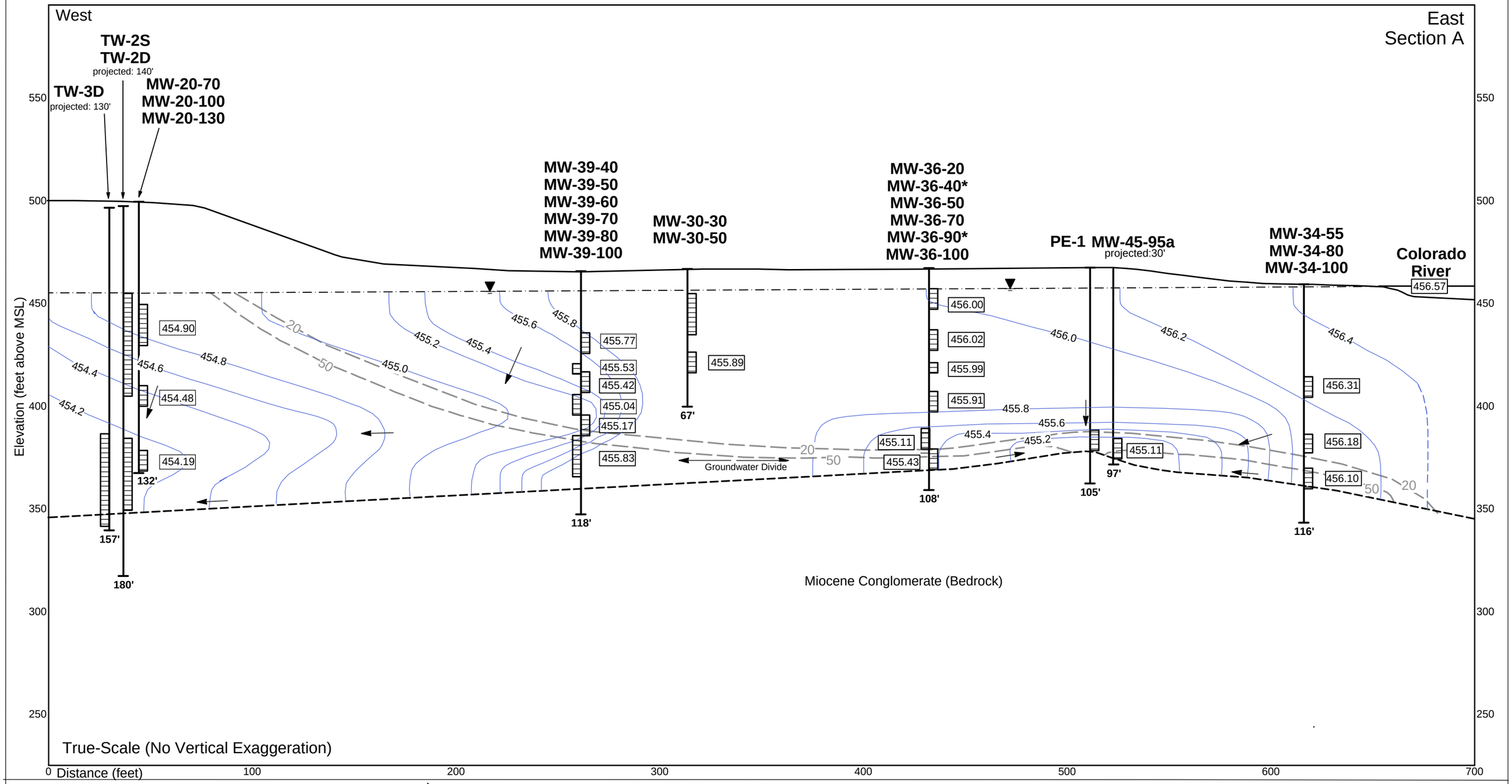

Notes:
Results show average groundwater elevations for May 1, 2010 through July 31, 2010 measured with transducers at 30 minute intervals.

Groundwater elevations adjusted for salinity and temperature.
Well MW-36-40* is excluded from contouring.
Well MW-36-90* is excluded from contouring.
River elevation (R-20) is the calculated average river level based upon the river gradient between RRB and I-3.

Legend:

MW-30-50
Inferred water table
well screen
455.23 Monthly average groundwater head (ft AMSL)
103 boring depth (feet)

20 Inferred hexavalent chromium contour (ppb) from March 2010 sampling.

453.5 Groundwater head contour

453.5 Inferred groundwater head contour

Interpreted groundwater flow direction

FIGURE 4-5
AVERAGE GROUNDWATER ELEVATIONS FOR WELLS IN FLOODPLAIN CROSS-SECTION A MAY THROUGH JULY 2010

SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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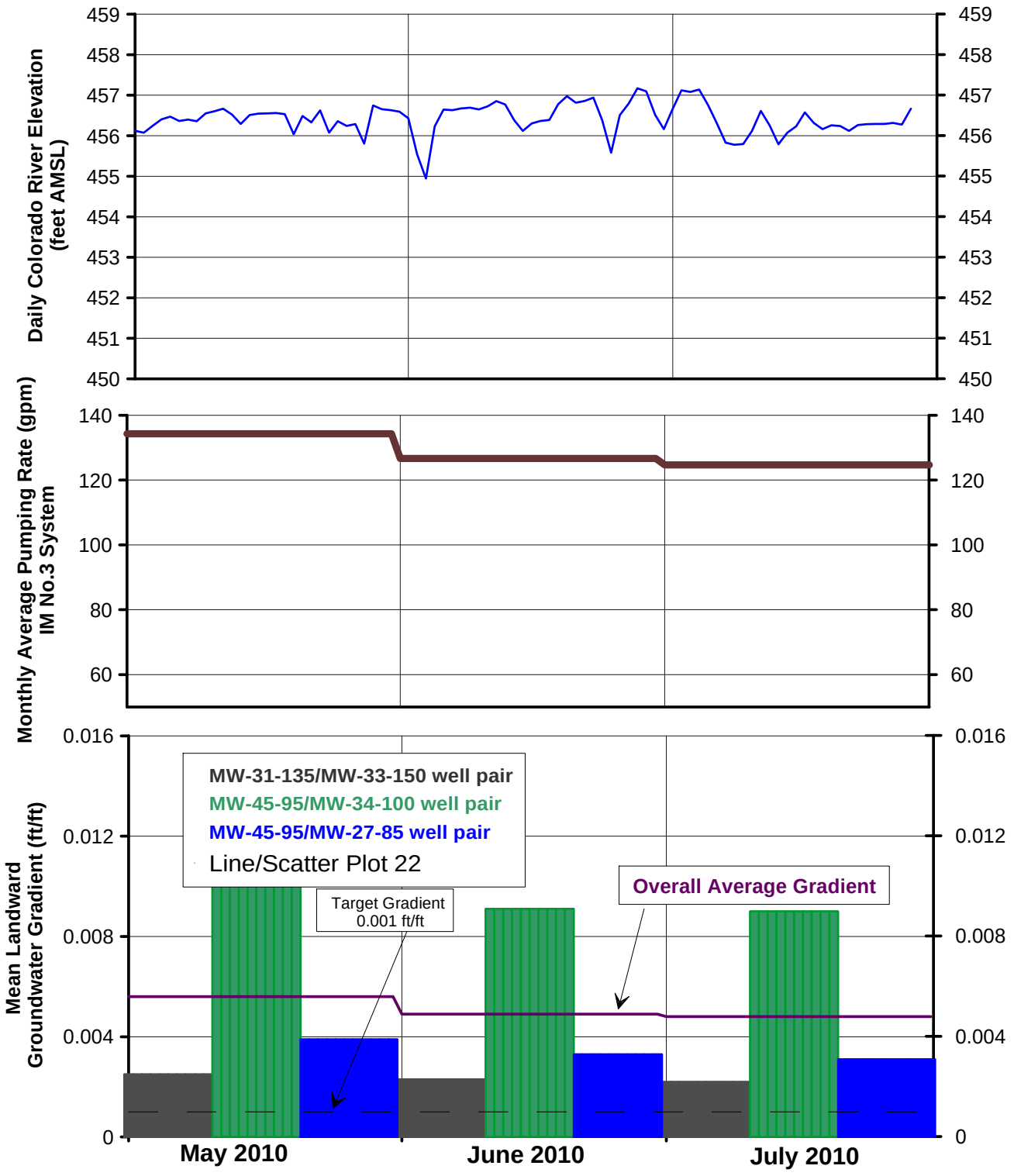
C:\USERS\E2USER\DOCUMENTS\TOPOCK\GINT\2010_1Q\FIGURE_4-5_XSECA_GW.GDW;



Notes:

1) For IM pumping, the target landward gradient for well pairs is 0.001 feet/foot.
2) Refer to Table 4-2 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 4-4 and Section 4.5 for discussion of gradient data.

FIGURE 4-6
MEASURED HYDRAULIC GRADIENTS, RIVER ELEVATION, AND PUMPING RATE, MAY 2010 THROUGH JULY 2010

SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
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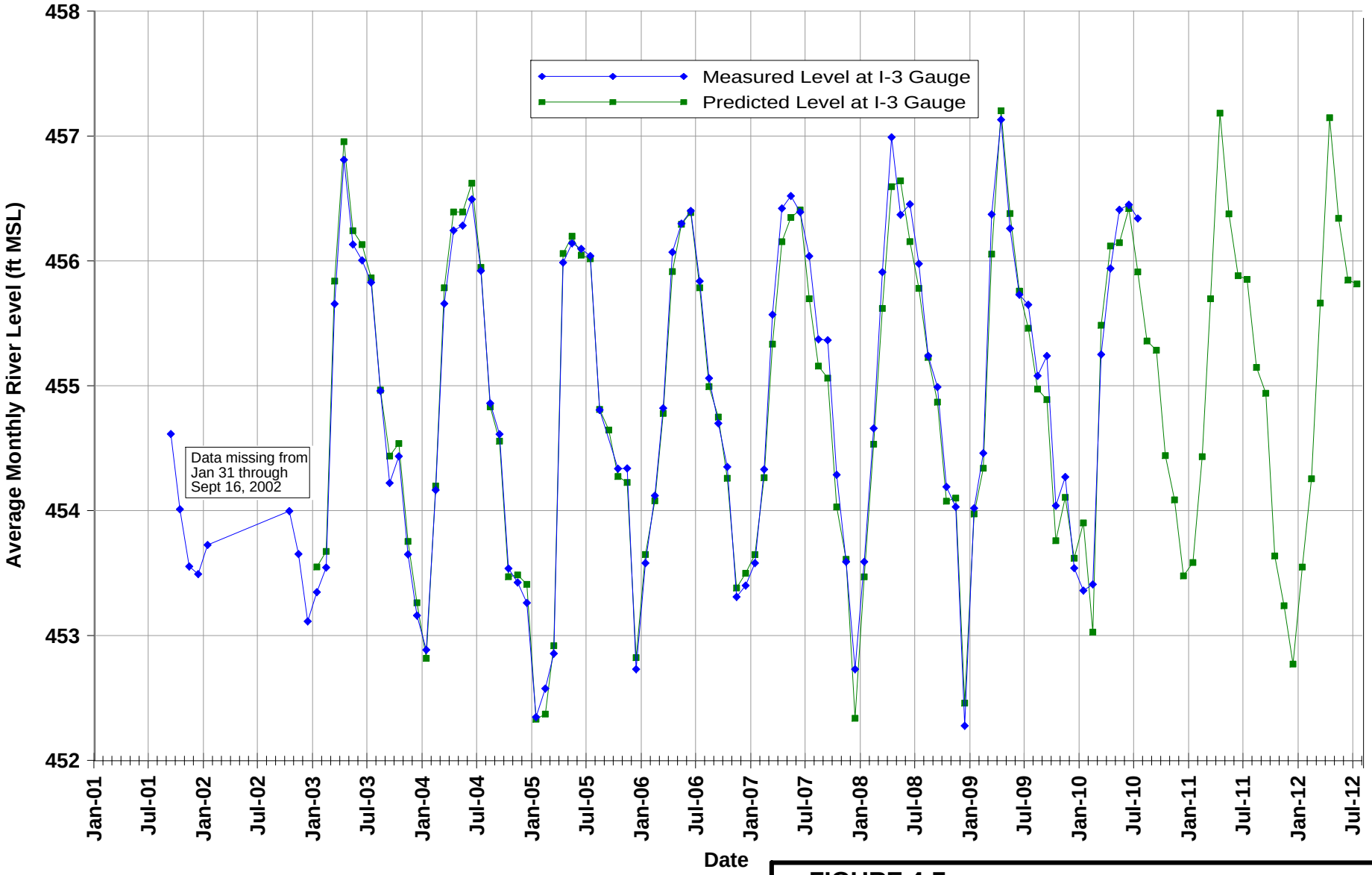

Note:
Projected river level for each month in the past is calculated based on the preceding months USBR projections of Davis Dam release and stage in Lake Havasu. Future projections of river level at I-3 are based upon July 2010 USBR projections. These data are reported monthly by the US Department of Interior, at http://www.usbr.gov/lc/region/g4000/24mo.pdf

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

SECOND QUARTER 2010 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, May through July 2010
(Provided on CD-ROM with hardcopy submittal)

TRUESDAIL LABORATORIES, INC.
EXCELLENCE IN INDEPENDENT TESTING

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

May 17, 2010

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-170, GROUNDWATER MONITORING PROJECT, TLI NO.: 989101

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-170 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 May 4, 2010, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Due to the large number of samples in house, the samples for Total Dissolved Chromium were analyzed by method EPA 200.8 rather than EPA 200.7 as requested on the chain of custody.

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

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

K. R. P. Iyer

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

TRUESDAIL LABORATORIES, INC.
EXCELLENCE IN INDEPENDENT TESTING
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14201 FRANKLIN AVENUE
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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.: 392895.AA.DM

Laboratory No.: 989101
Date: May 17, 2010
Collected: May 4, 2010
Received: May 4, 2010

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Iordan Stavrev
SM 2540C	Total Dissolved Solids	Ethel Suico
EPA 200.8	Dissolved Chromium	Linda Saetern
EPA 218.6	Hexavalent Chromium	Sonya Bersudsky
SM 3500-Cr B	Hexavalent Chromium	Ethel Suico

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

Laboratory No.: 989101
Date Received: May 4, 2010

Project Name: PG&E Topock Project
Project No.: 392895.AA.DM
P.O. No.: 392895.AA.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL	Lab Qualifier
989101-001	PE-01-170	E200.8	LABFLT	5/4/10	9:10	Chromium	14.6	ug/L	1.00	=
989101-001	PE-01-170	E218.6	LABFLT	5/4/10	9:10	Chromium, hexavalent	13.0	ug/L	0.20	=
989101-001	PE-01-170	E120.1	NONE	5/4/10	9:10	EC	5570	umhos/cm	2.00	=
989101-001	PE-01-170	SM2540C	NONE	5/4/10	9:10	Total Dissolved Solids	3280	mg/L	125	=
989101-002	TW-03D-170	E200.8	LABFLT	5/4/10	9:10	Chromium	1240	ug/L	1.00	=
989101-002	TW-03D-170	SM3500-CrB	LABFLT	5/4/10	9:10	Chromium, hexavalent	1000	ug/L	250	=
989101-002	TW-03D-170	E120.1	NONE	5/4/10	9:10	EC	8680	umhos/cm	2.00	=
989101-002	TW-03D-170	SM2540C	NONE	5/4/10	9:10	Total Dissolved Solids	5210	mg/L	250	=

ND: Non Detected (below reporting limit)

Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.001 will have two (2) significant figures.
Result above or equal to 0.001 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
P.O. Number: 392895.AA.DM
Project Number: 392895.AA.DM

Laboratory No. 989101

Printed 5/19/10

Samples Received on 5/4/10 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-170	989101-001	05/04/2010 09:10	Water
TW-03D-170	989101-002	05/04/2010 09:10	Water

Specific Conductivity - EPA 120.1 Batch 05EC10C 5/6/10

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989101-001 Specific Conductivity	umhos/cm	05/06/2010	1.00		2.00	5570
989101-002 Specific Conductivity	umhos/cm	05/06/2010	1.00		2.00	8680

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 989101-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	8700	8680	0.230	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	707.	706.	100	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	702.	706.	99.4	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	702.	706.	99.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	980.	1000	98.0	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 2 of 6
Project Number: 392895.AA.DM Printed 5/19/10

Chrome VI by EPA 218.6 Batch 05CrH10A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989101-001 Chromium, Hexavalent	ug/L	05/05/2010 09:31	1.05		0.20	13.0

Method Blank

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

Duplicate — Lab ID = 989100-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptanca Range
Chromium, Hexavalent	ug/L	105	898.	838.	6.91	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.30	5.00	106.	90 - 110

Matrix Spike — Lab ID = 989030-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.38	1.37(1.06)	101	90 - 110

Matrix Spike — Lab ID = 989100-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	105	1930	1890(1050)	104.	90 - 110

Matrix Spike — Lab ID = 989100-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.88	1.83(1.06)	105	90 - 110

Matrix Spike — Lab ID = 989102-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.33	6.11(5.25)	104	90 - 110

Matrix Spike — Lab ID = 989102-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.5	181.	176(105)	104	90 - 110

Matrix Spike — Lab ID = 989102-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.03	5.25(5.25)	95.8	90 - 110

Matrix Spike — Lab ID = 989101-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.09	28.5	28.0(15.0)	103	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 3 of 6
Project Number: 392895.AA.DM Printed 5/19/10

Matrix Spike Lab ID = 989102-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.00	5.25(5.25)	95.2	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.94	5.00	98.8	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.62	10.0	96.2	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.76	10.0	97.6	95 - 105
MRCVS - Primary						
Perameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.63	10.0	96.3	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.55	10.0	95.5	95 - 105

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Chromium, Hexavalent by SM 3500-Cr B Batch 05CrH10A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989101-002 Chromium, Hexavalent	ug/L	05/05/2010 13:18	25.0		250.	1000

Method Blank

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

Duplicate — Lab ID = 989101-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	1030	1000	2.96	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	99.2	100.	99.2	90 - 110

Matrix Spike — Lab ID = 989101-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	3260	3500(2500)	90.4	85 - 115

Matrix Spike Duplicate — Lab ID = 989101-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	3320	3500(2500)	92.8	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	58.7	60.0	97.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	62.2	60.0	104	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 5 of 6
Project Number: 392895.AA.DM Printed 5/19/10

Total Dissolved Solids by SM 2540 C Batch 05TDS10B 5/6/10

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989101-001 Total Dissolved Solids	mg/L	05/06/2010	50.0		125.	3280
989101-002 Total Dissolved Solids	mg/L	05/06/2010	100		250.	5210

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	10.0	ND

Duplicate Lab ID = 989100-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	100	4140	4140	0	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	10.0	494.	500.	98.8	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	10.0	492.	500.	98.4	90 - 110

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

Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 392895.AA.DM Printed 5/19/10

Metals by EPA 200.8, Dissolved Batch 051210A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989101-001 Chromium	ug/L	05/12/2010 12:08	5.00		5.00	14.6
989101-002 Chromium	ug/L	05/12/2010 12:13	5.00		5.00	1240

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.0	50.0	94.0	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.4	50.0	92.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.3	50.0	92.6	90 - 110

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.2	50.0	92.4	90 - 110

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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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-170]

989101

COC Number

TURNAROUND TIME 10 Days

DATE 05/04/10 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	392895.AA.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-01-170	05/04/10	09:10	Ground water	X		X	X	X	4	pH = 7
-2 TW-03D-170	05/04/10	09:10	Ground water	X	X	X	X		4	pH = 7
		TEST TIME								
SAMPLE TIME pH	Sc		TEMP							
PE-1 9:10	7.4	5.73	09:37	71.9°C					8	TOTAL NUMBER OF CONTAINERS
TW-3D	7.4	9.00		77.9°C						

ALERT !!
Level III QC For Sample Conditions See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished) C. Knight	C. KNIGHT	OMI	5-4-10 1540
Signature (Received)	Hipolito	TLI	5-4-10 1540
Signature (Relinquished)	Hipolito	TLI	5-4-10 2100
Signature (Received) L. Shakespeare	Linda	TLI	MAY 04 2010 21:00
Signature (Relinquished)			
Signature (Received)			

SAMPLE CONDITIONS

RECEIVED COOL ☐ WARM ☐ °F

CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

038

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E 2 **Lab #** 989101

Date Delivered: 05/04/10 **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? Temperature (if yes)? 4 °C	☒ Yes	☐ No	☐ N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc..)?	☒ Yes	☐ No	☐ N/A
8.	Were sample custody seals intact?	☐ Yes	☐ No	☒ N/A
9.	Does the number of samples received agree with COC?	☒ Yes	☐ No	☐ N/A
10.	Did sample labels correspond with the client ID's?	☒ Yes	☐ No	☐ N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: ☐ **Truesdail** ☐ Client	☐ Yes	☐ No	☒ N/A
12.	Were samples pH checked? pH = see C.O.C.	☒ Yes	☐ No	☐ N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	☒ Yes	☐ No	☐ N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): ☐ **RUSH** ☒ Std	☒ Yes	☐ No	☐ N/A

ALERT !! Level III QC

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. Shalamina

\\MATRIX\usv\Discrp.FormBlank.doc

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www.truesdail.com

June 7, 2010

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2010-GMP-167-Q2, GROUNDWATER MONITORING PROJECT, TLI NO.: 989102

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2010-GMP-167-Q2 groundwater-monitoring project for Hexavalent and Dissolved Chromium and Specific Conductivity. 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 May 4, 2010, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Mr. Shawn Duffy of CH2M Hill placed a hold on all samples having a sample I.D. ending in "-EB".

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

Total Dissolved Chromium, for sample 989102-19, was re-analyzed due to the discrepancy between the Total Dissolved Chromium (40.8 ug/L) and Hexavalent Chromium (9.4 ug/L) results. The result from the re-analysis (45.1 ug/L) matched that from the original run. Total Dissolved Chromium was then analyzed using sample from the Hexavalent Chromium bottle and yielded a result of 18.2 ug/L. The result from the original run is reported.

Total Dissolved Chromium, for sample 989102-23, was re-analyzed due to the discrepancy between the Total Dissolved Chromium and Hexavalent Chromium results. The result from the re-analysis is reported.

Total Dissolved Chromium, for samples 989102-25, and 989102-28, were re-analyzed due to the discrepancy between the Total Dissolved Chromium and Hexavalent Chromium results. The result from the re-analysis matched those from the original run, therefor, the original results are reported.

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

K. R. P. Iyer

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

TRUESDAIL LABORATORIES, INC.
INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

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

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

Laboratory No.: 989102
Date Received: May 4, 2010

Project Name: PG&E Topock Project
Project No.: 390378.MP.02.GM.04
P.O. No.: 390378.MP.02.GM.04

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
989102-001	MW-27-085-167	E120.1	NONE	4/29/10	14:11	EC	14200	umhos/cm	2.00
989102-001	MW-27-085-167	E218.6	FLDFLT	4/29/10	14:11	Chromium, hexavalent	ND	ug/L	1.0
989102-001	MW-27-085-167	SW6020	FLDFLT	4/29/10	14:11	Chromium	ND	ug/L	1.0
989102-003	MW-28-090-167	E120.1	NONE	4/29/10	15:21	EC	7460	umhos/cm	2.00
989102-003	MW-28-090-167	E218.6	FLDFLT	4/29/10	15:21	Chromium, hexavalent	ND	ug/L	1.0
989102-003	MW-28-090-167	SW6020	FLDFLT	4/29/10	15:21	Chromium	ND	ug/L	1.0
989102-005	MW-34-080-167	E120.1	NONE	4/29/10	12:05	EC	8010	umhos/cm	2.00
989102-005	MW-34-080-167	E218.6	FLDFLT	4/29/10	12:05	Chromium, hexavalent	ND	ug/L	1.0
989102-005	MW-34-080-167	SW6020	FLDFLT	4/29/10	12:05	Chromium	ND	ug/L	1.0
989102-006	MW-34-100-167	E120.1	NONE	4/29/10	12:48	EC	18200	umhos/cm	2.00
989102-006	MW-34-100-167	E218.6	FLDFLT	4/29/10	12:48	Chromium, hexavalent	71.3	ug/L	2.1
989102-006	MW-34-100-167	SW6020	FLDFLT	4/29/10	12:48	Chromium	73.5	ug/L	1.0
989102-007	MW-42-055-167	E120.1	NONE	4/29/10	16:17	EC	9640	umhos/cm	2.00
989102-007	MW-42-055-167	E218.6	FLDFLT	4/29/10	16:17	Chromium, hexavalent	ND	ug/L	1.0
989102-007	MW-42-055-167	SW6020	FLDFLT	4/29/10	16:17	Chromium	ND	ug/L	1.0
989102-009	MW-42-065-167	E120.1	NONE	4/29/10	17:03	EC	12800	umhos/cm	2.00
989102-009	MW-42-065-167	E218.6	FLDFLT	4/29/10	17:03	Chromium, hexavalent	ND	ug/L	1.0
989102-009	MW-42-065-167	SW6020	FLDFLT	4/29/10	17:03	Chromium	ND	ug/L	1.0
989102-011	MW-72-167	E218.6	FLDFLT	4/29/10	17:35	Chromium, hexavalent	ND	ug/L	0.20
989102-012	MW-92-167	E120.1	NONE	4/29/10	10:30	EC	18200	umhos/cm	2.00
989102-012	MW-92-167	E218.6	FLDFLT	4/29/10	10:30	Chromium, hexavalent	78.7	ug/L	1.0
989102-012	MW-92-167	SW6020	FLDFLT	4/29/10	10:30	Chromium	73.6	ug/L	1.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
989102-013	MW-33-040-167	E120.1	NONE	4/30/10	14:24	EC	5420	umhos/cm	2.00
989102-013	MW-33-040-167	E218.6	FLDFLT	4/30/10	14:24	Chromium, hexavalent	ND	ug/L	0.20
989102-013	MW-33-040-167	SW6020	FLDFLT	4/30/10	14:24	Chromium	ND	ug/L	1.0
989102-015	MW-33-090-167	E120.1	NONE	4/30/10	17:45	EC	10300	umhos/cm	2.00
989102-015	MW-33-090-167	E218.6	FLDFLT	4/30/10	17:45	Chromium, hexavalent	24.2	ug/L	1.0
989102-015	MW-33-090-167	SW6020	FLDFLT	4/30/10	17:45	Chromium	22.7	ug/L	1.0
989102-016	MW-33-150-167	E120.1	NONE	4/30/10	15:36	EC	16500	umhos/cm	2.00
989102-016	MW-33-150-167	E218.6	FLDFLT	4/30/10	15:36	Chromium, hexavalent	9.5	ug/L	1.0
989102-016	MW-33-150-167	SW6020	FLDFLT	4/30/10	15:36	Chromium	9.3	ug/L	1.0
989102-017	MW-33-210-167	E120.1	NONE	4/30/10	16:38	EC	19200	umhos/cm	2.00
989102-017	MW-33-210-167	E218.6	FLDFLT	4/30/10	16:38	Chromium, hexavalent	11.3	ug/L	1.0
989102-017	MW-33-210-167	SW6020	FLDFLT	4/30/10	16:38	Chromium	11.8	ug/L	1.0
989102-018	MW-44-115-167	E120.1	NONE	4/30/10	10:41	EC	11800	umhos/cm	2.00
989102-018	MW-44-115-167	E218.6	FLDFLT	4/30/10	10:41	Chromium, hexavalent	269	ug/L	5.2
989102-018	MW-44-115-167	SW6020	FLDFLT	4/30/10	10:41	Chromium	270	ug/L	1.0
989102-019	MW-44-125-167	E120.1	NONE	4/30/10	13:00	EC	12400	umhos/cm	2.00
989102-019	MW-44-125-167	E218.6	FLDFLT	4/30/10	13:00	Chromium, hexavalent	9.4	ug/L	1.0
989102-019	MW-44-125-167	SW6020	FLDFLT	4/30/10	13:00	Chromium	40.8	ug/L	1.0
989102-020	MW-46-175-167	E120.1	NONE	4/30/10	9:53	EC	17500	umhos/cm	2.00
989102-020	MW-46-175-167	E218.6	FLDFLT	4/30/10	9:53	Chromium, hexavalent	81.7	ug/L	2.1
989102-020	MW-46-175-167	SW6020	FLDFLT	4/30/10	9:53	Chromium	79.8	ug/L	1.0
989102-021	MW-73-167	E218.6	FLDFLT	4/30/10	18:08	Chromium, hexavalent	ND	ug/L	0.20
989102-022	MW-91-167	E120.1	NONE	4/30/10	12:01	EC	16600	umhos/cm	2.00
989102-022	MW-91-167	E218.6	FLDFLT	4/30/10	12:01	Chromium, hexavalent	10.4	ug/L	1.0
989102-022	MW-91-167	SW6020	FLDFLT	4/30/10	12:01	Chromium	9.7	ug/L	1.0
989102-023	MW-93-167	E120.1	NONE	4/30/10	8:47	EC	12000	umhos/cm	2.00
989102-023	MW-93-167	E218.6	FLDFLT	4/30/10	8:47	Chromium, hexavalent	320	ug/L	5.2
989102-023	MW-93-167	SW6020	FLDFLT	4/30/10	8:47	Chromium	273	ug/L	1.0
989102-024	MW-23-060-167	E120.1	NONE	5/3/10	15:02	EC	14000	umhos/cm	2.00
989102-024	MW-23-060-167	E218.6	FLDFLT	5/3/10	15:02	Chromium, hexavalent	24.7	ug/L	1.0
989102-024	MW-23-060-167	SW6020	FLDFLT	5/3/10	15:02	Chromium	23.9	ug/L	1.0
989102-025	MW-63-065-167	E120.1	NONE	5/3/10	11:22	EC	7580	umhos/cm	2.00
989102-025	MW-63-065-167	E218.6	FLDFLT	5/3/10	11:22	Chromium, hexavalent	1.4	ug/L	1.0
989102-025	MW-63-065-167	SW6020	FLDFLT	5/3/10	11:22	Chromium	2.1	ug/L	1.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
989102-026	MW-75-167	E218.6	FLDFLT	5/3/10	12:37	Chromium, hexavalent	ND	ug/L	0.20
989102-027	MW-76-167	E218.6	FLDFLT	5/3/10	16:52	Chromium, hexavalent	ND	ug/L	0.20
989102-028	MW-94-167	E120.1	NONE	5/3/10	9:38	EC	7470	umhos/cm	2.00
989102-028	MW-94-167	E218.6	FLDFLT	5/3/10	9:38	Chromium, hexavalent	1.4	ug/L	1.0
989102-028	MW-94-167	SW6020	FLDFLT	5/3/10	9:38	Chromium	2.4	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.

EXCELLENCE IN INDEPENDENT TESTING

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REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 600
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
P.O. Number: 390378.MP.02.GM.04
Project Number: 390378.MP.02.GM.04

Laboratory No. 989102

Printed 6/10/10

Samples Received on 5/4/10 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
MW-27-085-167	989102-001	04/29/2010 14:11	Water
MW-28-090-167	989102-003	04/29/2010 15:21	Water
MW-34-080-167	989102-005	04/29/2010 12:05	Water
MW-34-100-167	989102-006	04/29/2010 12:48	Water
MW-42-055-167	989102-007	04/29/2010 16:17	Water
MW-42-065-167	989102-009	04/29/2010 17:03	Water
MW-72-167	989102-011	04/29/2010 17:35	Water
MW-92-167	989102-012	04/29/2010 10:30	Water
MW-33-040-167	989102-013	04/30/2010 14:24	Water
MW-33-090-167	989102-015	04/30/2010 17:45	Water
MW-33-150-167	989102-016	04/30/2010 15:36	Water
MW-33-210-167	989102-017	04/30/2010 16:38	Water
MW-44-115-167	989102-018	04/30/2010 10:41	Water
MW-44-125-167	989102-019	04/30/2010 13:00	Water
MW-46-175-167	989102-020	04/30/2010 09:53	Water
MW-73-167	989102-021	04/30/2010 18:08	Water
MW-91-167	989102-022	04/30/2010 12:01	Water
MW-93-167	989102-023	04/30/2010 08:47	Water
MW-23-060-167	989102-024	05/03/2010 15:02	Water
MW-63-065-167	989102-025	05/03/2010 11:22	Water
MW-75-167	989102-026	05/03/2010 12:37	Water
MW-76-167	989102-027	05/03/2010 16:52	Water
MW-94-167	989102-028	05/03/2010 09:38	Water

Specific Conductivity - EPA 120.1 Batch 05EC10B 5/6/10

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989102-001 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	14200
989102-003 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	7460
989102-005 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	8010
989102-006 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	18200

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989102-007 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	9640
989102-009 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	12800
989102-012 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	18200
989102-013 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	5420
989102-015 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	10300
989102-016 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	16500
989102-017 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	19200
989102-018 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	11800
989102-019 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	12400
989102-020 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	17500
989102-022 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	16600
989102-023 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	12000
989102-024 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	14000
989102-025 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	7580
989102-028 Specific Conductivity	umhos/cm	05/06/2010	1.00	0.038	2.00	7470

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 989102-016

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	16500	16500	0	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	720.	706.	102	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	718.	706.	102	90 - 110

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	980.	1000	98.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	986.	1000	98.6	90 - 110

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Chrome VI by EPA 218.6

Batch 05CrH10A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989102-001 Chromium, Hexavalent	ug/L	05/05/2010 14:50	5.25	0.0998	1.0	ND
989102-003 Chromium, Hexavalent	ug/L	05/05/2010 15:11	5.25	0.0998	1.0	ND
989102-005 Chromium, Hexavalent	ug/L	05/05/2010 15:32	5.25	0.0998	1.0	ND
989102-006 Chromium, Hexavalent	ug/L	05/05/2010 16:15	10.5	0.200	2.1	71.3

Method Blank

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

Duplicate — Lab ID = 989100-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	105	898.	838.	6.91	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.30	5.00	106.	90 - 110

Matrix Spike — Lab ID = 989030-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.38	1.37(1.06)	101	90 - 110

Matrix Spike — Lab ID = 989100-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	105	1930	1890(1050)	104.	90 - 110

Matrix Spike — Lab ID = 989100-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.88	1.83(1.06)	105	90 - 110

Matrix Spike — Lab ID = 989102-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.33	6.11(5.25)	104	90 - 110

Matrix Spike — Lab ID = 989102-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.5	181.	176(105)	104	90 - 110

Metrix Spike — Lab ID = 989102-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.03	5.25(5.25)	95.8	90 - 110

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Matrix Spike — Lab ID = 989101-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.09	28.5	28.0(15.0)	103	90 - 110

Matrix Spike — Lab ID = 989102-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.00	5.25(5.25)	95.2	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.94	5.00	98.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.62	10.0	96.2	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.76	10.0	97.6	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.63	10.0	96.3	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.55	10.0	95.5	95 - 105

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Chrome VI by EPA 218.6 Batch 05CrH10B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989102-007 Chromium, Hexavalent	ug/L	05/06/2010 08:47	5.25	0.0998	1.0	ND
989102-009 Chromium, Hexavalent	ug/L	05/06/2010 08:58	5.25	0.0998	1.0	ND
989102-011 Chromium, Hexavalent	ug/L	05/06/2010 06:32	1.05	0.019	0.20	ND
989102-012 Chromium, Hexavalent	ug/L	05/06/2010 11:14	5.25	0.0998	1.0	78.7
989102-013 Chromium, Hexavalent	ug/L	05/06/2010 06:53	1.05	0.019	0.20	ND
989102-015 Chromium, Hexavalent	ug/L	05/06/2010 11:24	5.25	0.0998	1.0	24.2
989102-016 Chromium, Hexavalent	ug/L	05/06/2010 11:35	5.25	0.0998	1.0	9.5
989102-017 Chromium, Hexavalent	ug/L	05/06/2010 12:59	5.25	0.0998	1.0	11.3
989102-018 Chromium, Hexavalent	ug/L	05/06/2010 07:35	26.2	0.498	5.2	269.
989102-019 Chromium, Hexavalent	ug/L	05/06/2010 07:45	5.25	0.0998	1.0	9.4
989102-020 Chromium, Hexavalent	ug/L	05/06/2010 08:16	10.5	0.200	2.1	81.7
989102-021 Chromium, Hexavalent	ug/L	05/06/2010 11:45	1.05	0.019	0.20	ND
989102-022 Chromium, Hexavalent	ug/L	05/06/2010 13:09	5.25	0.0998	1.0	10.4

Method Blank

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

Duplicate — Lab ID = 989102-018

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	266.	269.	1.12	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.96	5.00	99.2	90 - 110

Matrix Spike — Lab ID = 989102-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.14	1.06(1.06)	108	90 - 110

Matrix Spike — Lab ID = 989102-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	155.	158(78.8)	96.8	90 - 110

Matrix Spike — Lab ID = 989102-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.18	5.25(5.25)	98.7	90 - 110

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Matrix Spike — Lab ID = 989102-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.30	5.25(5.25)	101	90 - 110

Matrix Spike — Lab ID = 989102-013

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.14	1.06(1.06)	108	90 - 110

Matrix Spike — Lab ID = 989102-019

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	36.9	35.6(26.2)	105	90 - 110

Matrix Spike — Lab ID = 989102-022

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	36.3	36.6(26.2)	98.9	90 - 110

Matrix Spike — Lab ID = 989102-021

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.02	1.06(1.06)	96.2	90 - 110

Matrix Spike — Lab ID = 989102-020

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.5	193.	187(105)	106.	90 - 110

Matrix Spike — Lab ID = 989102-016

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	34.7	35.7(26.2)	96.2	90 - 110

Matrix Spike — Lab ID = 989102-015

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	48.2	50.4(26.2)	91.6	90 - 110

Matrix Spike — Lab ID = 989102-018

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	666.	663.(394)	101	90 - 110

Matrix Spike — Lab ID = 989102-017

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	36.9	37.5(26.2)	97.7	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.12	5.00	102	90 - 110

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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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	9.90	10.0	99.0	95 - 105

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Chrome VI by EPA 218.6 Batch 05CrH10C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989102-023 Chromium, Hexavalent	ug/L	05/07/2010 09:23	26.2	0.498	5.2	320.
989102-024 Chromium, Hexavalent	ug/L	05/07/2010 10:05	5.25	0.0998	1.0	24.7
989102-025 Chromium, Hexavalent	ug/L	05/07/2010 10:26	5.25	0.0998	1.0	1.4
989102-026 Chromium, Hexavalent	ug/L	05/07/2010 12:02	1.05	0.019	0.20	ND
989102-027 Chromium, Hexavalent	ug/L	05/07/2010 12:13	1.05	0.019	0.20	ND
989102-028 Chromium, Hexavalent	ug/L	05/07/2010 12:54	5.25	0.0998	1.0	1.4

Method Blank

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

Duplicate — Lab ID = 989102-023

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	323.	320.	0.933	0 - 20

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 = 989102-024

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	51.6	50.9(26.2)	103	90 - 110

Matrix Spike — Lab ID = 989102-023

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	724.	714.(394)	103	90 - 110

Matrix Spike — Lab ID = 989102-028

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	7.20	6.65(5.25)	110	90 - 110

Matrix Spike — Lab ID = 989159-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	7.77	7.25(5.25)	110	90 - 110

Matrix Spike — Lab ID = 989159-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	49.2	48.0(26.2)	105	90 - 110

Matrix Spike — Lab ID = 989102-027

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.30	1.22(1.06)	108	90 - 110

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Matrix Spike — Lab ID = 989102-025

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.41	6.65(5.25)	95.4	90 - 110

Matrix Spike — Lab ID = 989102-026

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.28	1.21(1.06)	107	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.88	5.00	97.6	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	9.85	10.0	98.5	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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Metals by EPA 6020A, Dissolved Batch 051010A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989102-001 Chromium	ug/L	05/10/2010 10:40	1.00	0.015	1.0	ND
989102-003 Chromium	ug/L	05/10/2010 11:37	1.00	0.015	1.0	ND
989102-005 Chromium	ug/L	05/10/2010 11:44	1.00	0.015	1.0	ND
989102-006 Chromium	ug/L	05/10/2010 11:51	1.00	0.015	1.0	73.5
989102-007 Chromium	ug/L	05/10/2010 11:58	1.00	0.015	1.0	ND
989102-009 Chromium	ug/L	05/10/2010 12:11	1.00	0.015	1.0	ND
989102-012 Chromium	ug/L	05/10/2010 12:18	1.00	0.015	1.0	73.6
989102-013 Chromium	ug/L	05/10/2010 12:25	1.00	0.015	1.0	ND
989102-015 Chromium	ug/L	05/10/2010 12:32	1.00	0.015	1.0	22.7
989102-016 Chromium	ug/L	05/10/2010 12:39	1.00	0.015	1.0	9.3
989102-017 Chromium	ug/L	05/10/2010 12:46	1.00	0.015	1.0	11.8
989102-018 Chromium	ug/L	05/10/2010 13:13	1.00	0.015	1.0	270.
989102-019 Chromium	ug/L	05/10/2010 13:20	1.00	0.015	1.0	40.8
989102-020 Chromium	ug/L	05/10/2010 13:27	1.00	0.015	1.0	79.8
989102-022 Chromium	ug/L	05/10/2010 13:34	1.00	0.015	1.0	9.7
989102-024 Chromium	ug/L	05/10/2010 13:47	1.00	0.015	1.0	23.9
989102-025 Chromium	ug/L	05/10/2010 13:54	1.00	0.015	1.0	2.1
989102-028 Chromium	ug/L	05/10/2010 13:01	1.00	0.015	1.0	2.4

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 989102-001

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

Lab Control Sample

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

Matrix Spike — Lab ID = 989102-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	1.00	44.8	50.0(50.0)	89.6	75 - 125

Matrix Spike Duplicate — Lab ID = 989102-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	1.00	44.4	50.0(50.0)	88.8	75 - 125

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MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.5	50.0	93.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	45.4	50.0	90.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.6	50.0	97.2	90 - 110

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.5	50.0	95.0	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.0	50.0	96.0	80 - 120

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Metals by EPA 6020A, Dissolved Batch 051710A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989102-023 Chromium	ug/L	06/07/2010 14:29	5.00	0.075	1.0	273.

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Copper	mg/L	1.00	ND
Manganese	ug/L	1.00	ND
Zinc	mg/L	1.00	ND

Duplicate Lab ID = 989307-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	5.00	18.3	18.5	1.09	0 - 20
Chromium	ug/L	5.00	ND	0	0	0 - 20
Copper	mg/L	5.00	ND	0	0	0 - 20
Manganese	ug/L	5.00	69.3	70.7	2.00	0 - 20
Zinc	mg/L	5.00	0.0362	0.0380	4.85	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	49.4	50.0	98.8	90 - 110
Chromium	ug/L	1.00	50.0	50.0	100.	90 - 110
Copper	mg/L	1.00	0.0503	0.0500	101	90 - 110
Manganese	ug/L	1.00	50.5	50.0	101.	90 - 110
Zinc	mg/L	1.00	0.0498	0.0500	99.6	90 - 110

Matrix Spike Lab ID = 989307-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	251.	268(250)	93.0	75 - 125
Chromium	ug/L	5.00	231.	250.(250)	92.4	75 - 125
Copper	mg/L	5.00	0.235	0.250(0.250)	94.0	75 - 125
Manganese	ug/L	5.00	309.	321(250)	95.3	75 - 125
Zinc	mg/L	5.00	0.265	0.288(0.250)	90.8	75 - 125

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Matrix Spike Duplicate — Lab ID = 989307-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	252.	268(250)	93.4	75 - 125
Chromium	ug/L	5.00	232.	250.(250)	92.8	75 - 125
Copper	mg/L	5.00	0.235	0.250(0.250)	94.0	75 - 125
Manganese	ug/L	5.00	308.	321(250)	94.9	75 - 125
Zinc	mg/L	5.00	0.268	0.288(0.250)	92.0	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	50.7	50.0	101	90 - 110
Chromium	ug/L	1.00	50.4	50.0	101	90 - 110
Copper	mg/L	1.00	0.0498	0.0500	99.6	90 - 110
Manganese	ug/L	1.00	51.1	50.0	102	90 - 110
Zinc	mg/L	1.00	0.0511	0.0500	102	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	50.3	50.0	101	90 - 110
Chromium	ug/L	1.00	50.3	50.0	101	90 - 110
Copper	mg/L	1.00	0.0497	0.0500	99.4	90 - 110
Manganese	ug/L	1.00	49.5	50.0	99.0	90 - 110
Zinc	mg/L	1.00	0.0510	0.0500	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	49.7	50.0	99.4	90 - 110
Chromium	ug/L	1.00	50.5	50.0	101.	90 - 110
Copper	mg/L	1.00	0.0502	0.0500	100	90 - 110
Manganese	ug/L	1.00	51.6	50.0	103	90 - 110
Zinc	mg/L	1.00	0.0515	0.0500	103.	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	ND	0		
Chromium	ug/L	1.00	ND	0		
Copper	mg/L	1.00	ND	0		
Manganese	ug/L	1.00	ND	0		
Zinc	mg/L	1.00	ND	0		

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Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	ND	0		
Chromium	ug/L	1.00	ND	0		
Copper	mg/L	1.00	ND	0		
Manganese	ug/L	1.00	ND	0		
Zinc	mg/L	1.00	ND	0		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	51.2	50.0	102	80 - 120
Chromium	ug/L	1.00	49.9	50.0	99.8	80 - 120
Copper	mg/L	1.00	0.0496	0.0500	99.2	80 - 120
Manganese	ug/L	1.00	50.6	50.0	101	80 - 120
Zinc	mg/L	1.00	0.0516	0.0500	103	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	50.0	50.0	100.	80 - 120
Chromium	ug/L	1.00	50.4	50.0	101	80 - 120
Copper	mg/L	1.00	0.0505	0.0500	101.	80 - 120
Manganese	ug/L	1.00	51.6	50.0	103	80 - 120
Zinc	mg/L	1.00	0.0512	0.0500	102	80 - 120

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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TLI #1 pg 1

989102

CH2MHILL **CHAIN OF CUSTODY RECORD** 5/4/2010 2:39:58 PM Page 1 OF 2

Project Name PG&E Topock
Location Topock
Project Number 390378.MP.02.GM.04
Project Manager Jay Piper
Sample Manager Shawn Duffy

Task Order
Project 2010-GMP-167-Q2
Turnaround Time 10 Days
Shipping Date: 5/4/2010
COC Number: 1

	Container:	250 ml Poly	2x250 ml Poly	250 ml Poly	1 Liter Poly			
	Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	4°C			
	Filtered:	Field	Field	Field	NA			
	Holding Time:	28	28	180	28			
		Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Dissolved Chromium (6010BCRFF) Field Filtered Chromium	Specific Conductance (E120.1)		Number of Containers	COMMENTS
	DATE / TIME / Matrix							
1	MW-27-085-167 4/29/2010 14:11 Water		X	X	X		4	pH = 2
2	MW-27-085-167-EB 4/29/2010 13:24 Water	X					1	
3	MW-28-090-167 4/29/2010 15:21 Water		X	X	X		4	pH = 2
4	MW-28-090-167-EB 4/29/2010 14:38 Water	X					1	
5	MW-34-080-167 4/29/2010 12:05 Water		X	X	X		4	pH = 2
6	MW-34-100-167 4/29/2010 12:48 Water		X	X	X		4	pH = 2
7	MW-42-055-167 4/29/2010 16:17 Water		X	X	X		4	pH = 2
8	MW-42-055-167-EB 4/29/2010 15:45 Water	X					1	
9	MW-42-065-167 4/29/2010 17:03 Water		X	X	X		4	pH = 2
10	MW-42-065-167-EB 4/29/2010 16:34 Water	X					1	
11	MW-72-167 4/29/2010 17:35 Water	X					1	
12	MW-92-167 4/29/2010 10:30 Water		X	X	X		4	pH = 2
13	MW-33-040-167 4/30/2010 14:24 Water		X	X	X		4	pH = 2
14	MW-33-040-167-EB 4/30/2010 13:17 Water	X					1	
15	MW-33-090-167 4/30/2010 17:45 Water	X		X	X		3	pH = 2

Rec'd 05/04/10
s 989102

For Sample Conditions See Form Attached

ALERT !! Level III QC

	Signatures	Date/Time
Approved by		
Sampled by		5-4-10
Relinquished by		5-4-10 1650
Received by		
Relinquished by		5-4-10 2100
Received by	L. Shelburne MAY 04 2010	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:
April 29 - May 7, 2010

Report Copy to
Shawn Duffy
(530) 229-3303

TLI #1 pg 2

989102

CH2MHILL **CHAIN OF CUSTODY RECORD** 5/4/2010 2:39:59 PM Page 2 OF 2

Project Name PG&E Topock
Location Topock
Project Number 390378.MP.02.GM.04
Project Manager Jay Piper
Sample Manager Shawn Duffy

Task Order
Project 2010-GMP-167-Q2
Turnaround Time 10 Days
Shipping Date: 5/4/2010
COC Number: 1

	Container	250 ml Poly	2x250 ml Poly	250 ml Poly	1 Liter Poly			
	Preservatives	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	4°C			
	Filtered	Field	Field	Field	NA			
	Holding Time	28	28	180	28			
		Cr6 (E218.6) Field Filtered	Cr6 (E218.6R) Field Filtered	Dissolved Chromium (6010BCRFF) Field Filtered Chromium	Specific Conductance (E120.1)		Number of Containers	COMMENTS
	DATE / TIME / Matrix							
16	MW-33-150-167 4/30/2010 15:36 Water	X		X	X		3	
17	MW-33-210-167 4/30/2010 16:38 Water	X		X	X		3	
18	MW-44-115-167 4/30/2010 10:41 Water	X		X	X		3	pH=2
19	MW-44-125-167 4/30/2010 13:00 Water	X		X	X		3	
20	MW-46-175-167 4/30/2010 9:53 Water	X		X	X		3	
21	MW-73-167 4/30/2010 18:08 Water	X					1	
22	MW-91-167 4/30/2010 12:01 Water	X		X	X		3	
23	MW-93-167 4/30/2010 8:47 Water	X		X	X		3	pH=2
24	MW-23-060-167 5/3/2010 15:02 Water	X		X	X		3	
25	MW-63-065-167 5/3/2010 11:22 Water	X		X	X		3	
26	MW-75-167 5/3/2010 12:37 Water	X					1	
27	MW-76-167 5/3/2010 16:52 Water	X					1	
28	MW-94-167 5/3/2010 9:38 Water	X		X	X		3	pH=2
						TOTAL NUMBER OF CONTAINERS	74	

ALERT !!
Level III QC

	Signatures	Date/Time
Approved by		5-4-10
Sampled by		
Relinquished by		
Received by		5-4-10 1800
Relinquished by		5-4-10 2100
Received by	L. Shabenina	MAY 04 2010 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:
April 29 - May 7, 2010

Report Copy to
Shawn Duffy
(530) 229-3303

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E 2 **Lab #** 989102

Date Delivered: 05/04/10 **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? Temperature (if yes)? 4° C	☒ Yes	☐ No	☐ N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc..)?	☒ Yes	☐ No	☐ N/A
8.	Were sample custody seals intact?	☐ Yes	☐ No	☒ N/A
9.	Does the number of samples received agree with COC?	☒ Yes	☐ No	☐ N/A
10.	Did sample labels correspond with the client ID's?	☒ Yes	☐ No	☐ N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: ☒ **Truesdail** ☐ Client	☒ Yes	☐ No	☐ N/A
12.	Were samples pH checked? pH = see C.O.P.	☒ Yes	☐ No	☐ N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	☒ Yes	☐ No	☐ N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): ☐ **RUSH** ☒ Std	☒ Yes	☐ No	☐ N/A

ALERT !! Level III QC

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. Shabunin

\\MATRIX\env\Discrp.FormBlank.doc

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
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May 26, 2010

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2010-GMP-167-Q2, GROUNDWATER MONITORING PROJECT, TLI NO.: 989145

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2010-GMP-167-Q2 groundwater-monitoring project for Hexavalent and Dissolved Chromium and Specific Conductivity. 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 May 6, 2010, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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

TRUESDAIL LABORATORIES, INC.
INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

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

Laboratory No.: 989145
Date Received: May 6, 2010
Revision 1

Project Name: PG&E Topock Project
Project No.: 390378.MP.02.GM.04
P.O. No.: 390378.MP.02.GM.04

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
989145-001	MW-62-110-167	E120.1	NONE	5/4/10	16:02	EC	8640	umhos/cm	2.00
989145-001	MW-62-110-167	SM3500-CrB	FLDFLT	5/4/10	16:02	Chromium, hexavalent	579	ug/L	50.0
989145-001	MW-62-110-167	SW6020	FLDFLT	5/4/10	16:02	Chromium	569	ug/L	1.0
989145-002	MW-62-190-167	E120.1	NONE	5/4/10	16:12	EC	18100	umhos/cm	2.00
989145-002	MW-62-190-167	E218.6	FLDFLT	5/4/10	16:12	Chromium, hexavalent	ND	ug/L	1.0
989145-002	MW-62-190-167	SW6020	FLDFLT	5/4/10	16:12	Chromium	ND	ug/L	1.0
989145-003	MW-64-150-167	E120.1	NONE	5/4/10	16:40	EC	10100	umhos/cm	2.00
989145-003	MW-64-150-167	E218.6	FLDFLT	5/4/10	16:40	Chromium, hexavalent	ND	ug/L	1.0
989145-003	MW-64-150-167	SW6020	FLDFLT	5/4/10	16:40	Chromium	ND	ug/L	1.0
989145-004	MW-64-205-167	E120.1	NONE	5/4/10	16:52	EC	15200	umhos/cm	2.00
989145-004	MW-64-205-167	E218.6	FLDFLT	5/4/10	16:52	Chromium, hexavalent	ND	ug/L	1.0
989145-004	MW-64-205-167	SW6020	FLDFLT	5/4/10	16:52	Chromium	2.6	ug/L	1.0
989145-005	MW-64-260-167	E120.1	NONE	5/4/10	17:05	EC	15100	umhos/cm	2.00
989145-005	MW-64-260-167	E218.6	FLDFLT	5/4/10	17:05	Chromium, hexavalent	ND	ug/L	1.0
989145-005	MW-64-260-167	SW6020	FLDFLT	5/4/10	17:05	Chromium	ND	ug/L	1.0
989145-006	MW-74-167	E218.6	FLDFLT	5/4/10	15:40	Chromium, hexavalent	ND	ug/L	0.20
989145-007	MW-24BR-167	E120.1	NONE	5/5/10	10:54	EC	14300	umhos/cm	2.00
989145-007	MW-24BR-167	E218.6	FLDFLT	5/5/10	10:54	Chromium, hexavalent	ND	ug/L	1.0
989145-007	MW-24BR-167	SW6020	FLDFLT	5/5/10	10:54	Chromium	ND	ug/L	1.0
989145-008	MW-48-167	E120.1	NONE	5/5/10	12:00	EC	17700	umhos/cm	2.00
989145-008	MW-48-167	E218.6	FLDFLT	5/5/10	12:00	Chromium, hexavalent	ND	ug/L	1.0
989145-008	MW-48-167	SW6020	FLDFLT	5/5/10	12:00	Chromium	ND	ug/L	1.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
989145-009	MW-57-070-167	E120.1	NONE	5/5/10	14:00	EC	1700	umhos/cm	2.00
989145-009	MW-57-070-167	E218.6	FLDFLT	5/5/10	14:00	Chromium, hexavalent	452	ug/L	5.2
989145-009	MW-57-070-167	SW6020	FLDFLT	5/5/10	14:00	Chromium	452	ug/L	1.0
989145-010	MW-57-185-167	E120.1	NONE	5/5/10	9:55	EC	18400	umhos/cm	2.00
989145-010	MW-57-185-167	E218.6	FLDFLT	5/5/10	9:55	Chromium, hexavalent	3.9	ug/L	1.0
989145-010	MW-57-185-167	SW6020	FLDFLT	5/5/10	9:55	Chromium	4.7	ug/L	1.0
989145-011	MW-77-167	E218.6	FLDFLT	5/5/10	15:44	Chromium, hexavalent	ND	ug/L	0.2
989145-012	TW-01-167	E120.1	NONE	5/5/10	15:32	EC	6860	umhos/cm	2.00
989145-012	TW-01-167	SM3500-CrB	FLDFLT	5/5/10	15:32	Chromium, hexavalent	3700	ug/L	250
989145-012	TW-01-167	SW6020	FLDFLT	5/5/10	15:32	Chromium	3700	ug/L	1.0
989145-013	MW-12-167	E120.1	NONE	5/6/10	14:24	EC	5520	umhos/cm	2.00
989145-013	MW-12-167	SM3500-CrB	FLDFLT	5/6/10	14:24	Chromium, hexavalent	2650	ug/L	250
989145-013	MW-12-167	SW6020	FLDFLT	5/6/10	14:24	Chromium	2700	ug/L	1.0
989145-014	MW-50-200-167	E120.1	NONE	5/6/10	15:14	EC	21100	umhos/cm	2.00
989145-014	MW-50-200-167	SM3500-CrB	FLDFLT	5/6/10	15:14	Chromium, hexavalent	10800	ug/L	250
989145-014	MW-50-200-167	SW6020	FLDFLT	5/6/10	15:14	Chromium	9840	ug/L	1.0
989145-015	MW-59-100-167	E120.1	NONE	5/6/10	13:35	EC	9890	umhos/cm	2.00
989145-015	MW-59-100-167	SM3500-CrB	FLDFLT	5/6/10	13:35	Chromium, hexavalent	4940	ug/L	250
989145-015	MW-59-100-167	SW6020	FLDFLT	5/6/10	13:35	Chromium	4850	ug/L	1.0
989145-016	MW-60-125-167	E120.1	NONE	5/6/10	12:31	EC	9080	umhos/cm	2.00
989145-016	MW-60-125-167	SM3500-CrB	FLDFLT	5/6/10	12:31	Chromium, hexavalent	1120	ug/L	50
989145-016	MW-60-125-167	SW6020	FLDFLT	5/6/10	12:31	Chromium	1080	ug/L	1.0
989145-017	MW-61-110-167	E120.1	NONE	5/6/10	10:40	EC	15500	umhos/cm	2.00
989145-017	MW-61-110-167	SM3500-CrB	FLDFLT	5/6/10	10:40	Chromium, hexavalent	480	ug/L	50
989145-017	MW-61-110-167	SW6020	FLDFLT	5/6/10	10:40	Chromium	511	ug/L	1.0
989145-018	MW-62-065-167	E120.1	NONE	5/6/10	9:37	EC	6230	umhos/cm	2.00
989145-018	MW-62-065-167	SM3500-CrB	FLDFLT	5/6/10	9:37	Chromium, hexavalent	436	ug/L	50
989145-018	MW-62-065-167	SW6020	FLDFLT	5/6/10	9:37	Chromium	456	ug/L	1.0
989145-019	MW-78-167	E218.6	FLDFLT	5/6/10	15:30	Chromium, hexavalent	0.48	ug/L	0.2
989145-020	MW-90-167	E120.1	NDNE	5/6/10	9:32	EC	5480	umhos/cm	2.00
989145-020	MW-90-167	SM3500-CrB	FLDFLT	5/6/10	9:32	Chromium, hexavalent	2650	ug/L	250
989145-020	MW-90-167	SW6020	FLDFLT	5/6/10	9:32	Chromium	2890	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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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: 390378.MP.02.GM.04
Project Number: 390378.MP.02.GM.04

Laboratory No. 989145

Printed 6/11/10
Revision 1

Samples Received on 5/6/10 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
MW-62-110-167	989145-001	05/04/2010 16:02	Water
MW-62-190-167	989145-002	05/04/2010 16:12	Water
MW-64-150-167	989145-003	05/04/2010 16:40	Water
MW-64-205-167	989145-004	05/04/2010 16:52	Water
MW-64-260-167	989145-005	05/04/2010 17:05	Water
MW-74-167	989145-006	05/04/2010 15:40	Water
MW-24BR-167	989145-007	05/05/2010 10:54	Water
MW-48-167	989145-008	05/05/2010 12:00	Water
MW-57-070-167	989145-009	05/05/2010 14:00	Water
MW-57-185-167	989145-010	05/05/2010 09:55	Water
MW-77-167	989145-011	05/05/2010 15:44	Water
TW-01-167	989145-012	05/05/2010 15:32	Water
MW-12-167	989145-013	05/06/2010 14:24	Water
MW-50-200-167	989145-014	05/06/2010 15:14	Water
MW-59-100-167	989145-015	05/06/2010 13:35	Water
MW-60-125-167	989145-016	05/06/2010 12:31	Water
MW-61-110-167	989145-017	05/06/2010 10:40	Water
MW-62-065-167	989145-018	05/06/2010 09:37	Water
MW-78-167	989145-019	05/06/2010 15:30	Water
MW-90-167	989145-020	05/06/2010 09:32	Water

Specific Conductivity - EPA 120.1 Batch 05EC10E 5/11/10

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989145-001 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	8640
989145-002 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	18100
989145-003 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	10100
989145-004 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	15200
989145-005 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	15100
989145-007 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	14300

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989145-008 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	17700
989145-009 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	1700
989145-010 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	18400
989145-012 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	6860
989145-013 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	5520
989145-014 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	21100
989145-015 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	9890
989145-016 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	9080
989145-017 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	15500
989145-018 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	6230
989145-020 Specific Conductivity	umhos/cm	05/11/2010	1.00	0.038	2.00	5480

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 989145-012

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	6890	6860	0.436	0 - 10

Duplicate — Lab ID = 989145-020

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	5470	5480	0.183	0 - 10

Lab Control Sample

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

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	707.	706.	100	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	703.	706.	99.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	988.	1000	98.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	986.	1000	98.6	90 - 110

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Chrome VI by EPA 218.6

Batch 05CrH10D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989145-002 Chromium, Hexavalent	ug/L	05/11/2010 11:12	5.25	0.0998	1.0	ND
989145-003 Chromium, Hexavalent	ug/L	05/11/2010 11:23	5.25	0.0998	1.0	ND
989145-004 Chromium, Hexavalent	ug/L	05/11/2010 11:33	5.25	0.0998	1.0	ND
989145-005 Chromium, Hexavalent	ug/L	05/11/2010 13:31	5.25	0.0998	1.0	ND
989145-006 Chromium, Hexavalent	ug/L	05/11/2010 06:50	1.05	0.019	0.20	ND
989145-007 Chromium, Hexavalent	ug/L	05/11/2010 15:27	5.25	0.0998	1.0	ND
989145-008 Chromium, Hexavalent	ug/L	05/11/2010 16:51	5.25	0.0998	1.0	ND
989145-009 Chromium, Hexavalent	ug/L	05/11/2010 09:45	26.2	0.498	5.2	452.
989145-010 Chromium, Hexavalent	ug/L	05/11/2010 11:44	5.25	0.0998	1.0	3.9
989145-011 Chromium, Hexavalent	ug/L	05/11/2010 07:42	1.05	0.019	0.20	ND
989145-019 Chromium, Hexavalent	ug/L	05/11/2010 07:53	1.05	0.019	0.20	0.48

Method Blank

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

Duplicate — Lab ID = 989145-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	446.	452.	1.34	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.03	5.00	101	90 - 110

Matrix Spike — Lab ID = 989145-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.04	5.25(5.25)	96.0	90 - 110

Matrix Spike — Lab ID = 989145-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.08	5.25(5.25)	96.8	90 - 110

Matrix Spike — Lab ID = 989145-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.01	5.25(5.25)	95.4	90 - 110

Matrix Spike — Lab ID = 989145-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	931.	977.(525)	91.2	90 - 110

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Matrix Spike — Lab ID = 989145-019

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.57	1.54(1.06)	103	90 - 110

Matrix Spike — Lab ID = 989145-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.16	1.06(1.06)	109	90 - 110

Matrix Spike — Lab ID = 989145-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	8.88	9.15(5.25)	94.9	90 - 110

Matrix Spike — Lab ID = 989145-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.09	1.06(1.06)	103	90 - 110

Matrix Spike — Lab ID = 989145-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.23	5.25(5.25)	99.6	90 - 110

Matrix Spike — Lab ID = 989145-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	4.92	5.25(5.25)	93.7	90 - 110

Matrix Spike — Lab ID = 989145-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	4.81	5.25(5.25)	91.6	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.03	5.00	101	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	9.61	10.0	96.1	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.74	10.0	97.4	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.95	10.0	99.5	95 - 105

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Metals by EPA 6020A, Dissolved Batch 051010B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989145-001 Chromium	ug/L	05/10/2010 15:23	5.00	0.075	1.0	569.
989145-002 Chromium	ug/L	05/10/2010 15:50	5.00	0.075	1.0	ND
989145-003 Chromium	ug/L	05/10/2010 15:57	5.00	0.075	1.0	ND
989145-004 Chromium	ug/L	05/10/2010 16:17	5.00	0.075	1.0	2.6
989145-005 Chromium	ug/L	05/10/2010 16:24	5.00	0.075	1.0	ND
989145-007 Chromium	ug/L	05/10/2010 16:30	5.00	0.075	1.0	ND
989145-008 Chromium	ug/L	05/10/2010 16:37	5.00	0.075	1.0	ND
989145-009 Chromium	ug/L	05/10/2010 16:44	5.00	0.075	1.0	452.
989145-010 Chromium	ug/L	05/10/2010 16:51	5.00	0.075	1.0	4.7
989145-016 Chromium	ug/L	05/10/2010 17:38	5.00	0.075	1.0	1080
989145-017 Chromium	ug/L	05/10/2010 17:45	5.00	0.075	1.0	511.
989145-018 Chromium	ug/L	05/10/2010 17:51	5.00	0.075	1.0	456.

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 989145-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	566.	569.	0.529	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.2	50.0	98.4	90 - 110

Matrix Spike — Lab ID = 989145-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	817.	819.(250)	99.2	75 - 125

Matrix Spike Duplicate — Lab ID = 989145-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	794.	819.(250)	90.0	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.6	50.0	97.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	45.9	50.0	91.8	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.9	50.0	93.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.2	50.0	98.4	90 - 110

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.9	50.0	95.8	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.6	50.0	93.2	80 - 120

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Metals by EPA 6020A, Dissolved Batch 051210A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989145-012 Chromium	ug/L	05/12/2010 12:20	10.0	0.15	2.0	3700
989145-013 Chromium	ug/L	05/12/2010 12:26	10.0	0.15	2.0	2700
989145-014 Chromium	ug/L	05/12/2010 12:33	50.0	0.75	10.0	9840
989145-015 Chromium	ug/L	05/12/2010 12:40	20.0	0.30	4.0	4850
989145-020 Chromium	ug/L	05/12/2010 12:47	10.0	0.15	2.0	2890

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.0	50.0	94.0	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.4	50.0	92.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.3	50.0	92.6	90 - 110

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.2	50.0	92.4	90 - 110

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.2	50.0	92.4	80 - 120

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 9 of 11
Project Number: 390378.MP.02.GM.04 Printed 6/10/10

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	44.1	50.0	88.2	80 - 120

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Chromium, Hexavalent by SM 3500-Cr B Batch 05CrH10B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989145-001 Chromium, Hexavalent	ug/L	05/10/2010 12:18	5.00	17.5	50.0	579.
989145-012 Chromium, Hexavalent	ug/L	05/10/2010 12:19	25.0	87.5	250.	3700
989145-013 Chromium, Hexavalent	ug/L	05/10/2010 12:20	25.0	87.5	250.	2650
989145-014 Chromium, Hexavalent	ug/L	05/10/2010 12:21	25.0	87.5	250.	10800
989145-015 Chromium, Hexavalent	ug/L	05/10/2010 12:22	25.0	87.5	250.	4940
989145-016 Chromium, Hexavalent	ug/L	05/10/2010 12:26	5.00	17.5	50.0	1120
989145-017 Chromium, Hexavalent	ug/L	05/10/2010 12:29	5.00	17.5	50.0	480.
989145-018 Chromium, Hexavalent	ug/L	05/10/2010 12:30	5.00	17.5	50.0	436.
989145-020 Chromium, Hexavalent	ug/L	05/10/2010 12:31	25.0	87.5	250.	2650

Method Blank

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

Duplicate — Lab ID = 989145-015

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	4810	4940	2.67	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 = 989145-015

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	7290	7440(2500)	94.0	85 - 115

Matrix Spike Duplicate — Lab ID = 989145-015

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	7420	7440(2500)	99.2	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	57.5	60.0	95.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	60.0	60.0	100.	90 - 110

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Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services

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CH2MHILL CHAIN OF CUSTODY RECORD 989145 6/2010 3:35:45 PM Page 1 OF 2

Project Name PG&E Topock
Location Topock
Project Number 390378.MP.02.GM.04
Project Manager Jay Piper
Sample Manager Shawn Duffy

Task Order
Project 2010-GMP-167-Q2
Turnaround Time 10 Days
Shipping Date: 5/6/2010
COC Number: 4

Rec'd 05/06/10
s 989145

				Container:	250 ml Poly	250 ml Poly	250 ml Poly	1 Liter Poly		
				Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	4°C		
				Filtered:	Field	Field	Field	NA		
				Holding Time:	28	28	180	28		
		DATE	TIME	Matrix	Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Dissolved Chromium (6010BCRFF) Field Filtered Chromium	Specific Conductance (E120.1)	Number of Containers	COMMENTS
-1	MW-62-110-167	5/4/2010	16:02	Water		X	X	X	3	
-2	MW-62-190-167	5/4/2010	16:12	Water	X		X	X	3	
-3	MW-64-150-167	5/4/2010	16:40	Water	X		X	X	3	pH=2
-4	MW-64-205-167	5/4/2010	16:52	Water	X		X	X	3	
-5	MW-64-260-167	5/4/2010	17:05	Water	X		X	X	3	
-6	MW-74-167	5/4/2010	15:40	Water	X				1	
-7	MW-24BR-167	5/5/2010	10:54	Water	X		X	X	3	
-8	MW-48-167	5/5/2010	12:00	Water	X		X	X	3	
-9	MW-57-070-167	5/5/2010	14:00	Water	X		X	X	3	pH=2
-10	MW-57-185-167	5/5/2010	9:55	Water	X		X	X	3	
-11	MW-77-167	5/5/2010	15:44	Water	X				1	
-12	TW-01-167	5/5/2010	15:32	Water		X	X	X	3	
-13	MW-12-167	5/6/2010	14:24	Water		X	X	X	3	
-14	MW-50-200-167	5/6/2010	15:14	Water		X	X	X	3	pH=2
-15	MW-59-100-167	5/6/2010	13:35	Water		X	X	X	3	

ALERT !! Level III QC

For Sample Conditions See Form Attached

	Signatures	Date/Time
Approved by		5-6-10
Sampled by		
Relinquished by	[signature] T.L.I	1540
Received by	Rafael Davila	5/6/10 15:43
Relinquished by	Rafael Davila	5/6/10 21:00
Received by	L. Shabunina	5/6/10 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:
April 29 - May 7, 2010

Report Copy to
Shawn Duffy
(530) 229-3303

98914 5

CH2MHILL **CHAIN OF CUSTODY RECORD** 5/6/2010 3:35:46 PM Page 2 OF 2

Project Name PG&E Topock
Location Topock
Project Number 390378.MP.02.GM.04
Project Manager Jay Piper
Sample Manager Shawn Duffy

Task Order
Project 2010-GMP-167-Q2
Turnaround Time 10 Days
Shipping Date: 5/6/2010
COC Number: 4

	Container:	250 ml Poly	250 ml Poly	250 ml Poly	1 Liter Poly					
	Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	4°C					
	Filtered:	Field	Field	Field	NA					
	Holding Time:	28	28	180	28					
		Cr6 (E218.6) Field Filtered	Cr6 (SM3500B) Field Filtered	Dissolved Chromium (6010BCRFF) Field Filtered Chromium	Specific Conductance (E120.1)				Number of Containers	COMMENTS
		DATE	TIME	Matrix						
-16	MW-60-125-167	5/6/2010	12:31	Water		X	X	X	3	
-17	MW-61-110-167	5/6/2010	10:40	Water		X	X	X	3	pm=2
-18	MW-62-065-167	5/6/2010	9:37	Water		X	X	X	3	
-19	MW-78-167	5/6/2010	15:30	Water	X				1	
-20	MW-90-167	5/6/2010	9:32	Water		X	X	X	3	pm=2
								TOTAL NUMBER OF CONTAINERS	54	

ALERT !!
Level III QC

	Signatures	Date/Time
Approved by		5-6-10
Sampled by		1540
Relinquished by		
Received by	Rafael Davila	T+T 15:45 5-6-10
Relinquished by	Rafael Davila	5-6-10 21:00
Received by	L. Shakespeare	5/6/10 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:
April 29 - May 7, 2010

Report Copy to
Shawn Duffy
(530) 229-3303

7600

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 989145

Date Delivered: 05/06/10 **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!! Level III QC

\\MATRIX\env\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

May 26, 2010

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2010-GMP-167-Q2, GROUNDWATER MONITORING PROJECT, TLI NO.: 989159

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2010-GMP-167-Q2 groundwater-monitoring project for Hexavalent and Dissolved Chromium and Specific Conductivity. 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 May 4, 2010, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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

TRUESDAIL LABORATORIES, INC.
INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

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

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

Laboratory No.: 989159
Date Received: May 4, 2010

Project Name: PG&E Topock Project
Project No.: 390378.MP.02.GM.04
P.O. No.: 390378.MP.02.GM.04

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
989159-001	MW-21-167	E120.1	NONE	5/4/10	13:18	EC	8280	umhos/cm	2.00
989159-001	MW-21-167	E218.6	FLOFLT	5/4/10	13:18	Chromium, hexavalent	2.00	ug/L	1.05
989159-001	MW-21-167	SW6020	FLDFLT	5/4/10	13:18	Chromium	3.78	ug/L	1.00
989159-002	MW-23-080-167	E120.1	NONE	5/4/10	15:20	EC	16600	umhos/cm	2.00
989159-002	MW-23-080-167	E218.6	FLDFLT	5/4/10	15:20	Chromium, hexavalent	21.8	ug/L	1.05
989159-002	MW-23-080-167	SW6020	FLDFLT	5/4/10	15:20	Chromium	20.5	ug/L	1.00

ND: Non Detected (below reporting limit)
mg/L: Milligrams per liter.
Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01ppm will have two (2) significant figures.
Result above or equal to 0.01ppm will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

004

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

REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
P.O. Number: 390378.MP.02.GM.04
Project Number: 390378.MP.02.GM.04

Laboratory No. 989159

Printed 5/26/10

Samples Received on 5/4/10 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
MW-21-167	989159-001	05/04/2010 13:18	Water
MW-23-080-167	989159-002	05/04/2010 15:20	Water

Specific Conductivity - EPA 120.1 Batch 05EC10H 5/17/10

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989159-001 Specific Conductivity	umhos/cm	05/17/2010	1.00		2.00	8280
989159-002 Specific Conductivity	umhos/cm	05/17/2010	1.00		2.00	16600

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 989159-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	8400	8280	1.44	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	703.	706.	99.6	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	707.	706.	100	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	720.	706.	102	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	982.	1000	98.2	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 2 of 5
Project Number: 390378.MP.02.GM.04 Printed 5/26/10

Chrome VI by EPA 218.6 Batch 05CrH10C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989159-001 Chromium, Hexavalent	ug/L	05/07/2010 14:28	5.25		1.05	2.00
989159-002 Chromium, Hexavalent	ug/L	05/07/2010 13:25	5.25		1.05	21.8

Method Blank

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

Duplicate — Lab ID = 989102-023

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	323.	320.	0.933	0 - 20

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 = 989102-024

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	51.6	50.9(26.2)	103	90 - 110

Matrix Spike — Lab ID = 989102-023

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	724.	714.(394)	103	90 - 110

Matrix Spike — Lab ID = 989102-028

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	7.20	6.69(5.25)	110	90 - 110

Matrix Spike — Lab ID = 989159-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	7.77	7.25(5.25)	110	90 - 110

Matrix Spike — Lab ID = 989159-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	49.2	48.0(26.2)	105	90 - 110

Matrix Spike — Lab ID = 989102-027

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.30	1.22(1.06)	108	90 - 110

Matrix Spike — Lab ID = 989102-025

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.41	6.63(5.25)	95.8	90 - 110

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Matrix Spike — Lab ID = 989102-026

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.28	1.21(1.06)	107	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.88	5.00	97.6	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	9.85	10.0	98.5	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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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 4 of 5
Project Number: 390378.MP.02.GM.04 Printed 5/26/10

Metals by EPA 6020A, Dissolved Batch 051010B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989159-001 Chromium	ug/L	05/10/2010 18:05	5.00		1.00	3.78
989159-002 Chromium	ug/L	05/10/2010 18:12	5.00		1.00	20.5

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 989145-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	566.	569.	0.529	0 - 20

Calibration Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Calibration Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.2	50.0	98.4	90 - 110

Matrix Spike — Lab ID = 989145-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	817.	819.(250)	99.2	75 - 125

Matrix Spike Duplicate — Lab ID = 989145-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	794.	819.(250)	90.0	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.6	50.0	97.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	45.9	50.0	91.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.9	50.0	93.8	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 390378.MP.02.GM.04 Printed 5/26/10

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.2	50.0	98.4	90 - 110

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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989159

CH2MHILL **CHAIN OF CUSTODY RECORD** 5/5/2010 4:22:05 PM Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Number 390378.MP.02.GM.04
Project Manager Jay Piper
Sample Manager Shawn Duffy

Task Order
Project 2010-GMP-167-Q2
Turnaround Time 10 Days
Shipping Date: 5/4/2010
COC Number: 3

Rec'd 05/04/10
s 989159

		DATE	TIME	Matrix	Container: 250 ml Poly; Preservatives: (NH4)2SO4/NH4OH, 4°C; Filtered: Field; Holding Time: 28; Cr6 (E218.6) Field Filtered	Container: 2x250 ml Poly; Preservatives: (NH4)2SO4/NH4OH, 4°C; Filtered: Field; Holding Time: 28; Cr6 (E218.6R) Field Filtered	Container: 250 ml Poly; Preservatives: HNO3, 4°C; Filtered: Field; Holding Time: 180; Dissolved Chromium (6010B/CRFF) Field Filtered Chromium	Container: 1 Liter Poly; Preservatives: 4°C; Filtered: NA; Holding Time: 28; Specific Conductance (E120.1)	Number of Containers	COMMENTS
1	MW-21-167	5/4/2010	13:18	Water		X	X	X	4	pH=2
2	MW-23-080-167	5/4/2010	15:20	Water	X		X	X	3	pH=2
								TOTAL NUMBER OF CONTAINERS	7	

ALERT !!
Level III QC

For Sample Condition
See Form Attached

	Signatures	Date/Time
Approved by		5-4-10
Sampled by		
Relinquished by		1600
Received by	L. Shabunina	5/4/10 21:00
Relinquished by		
Received by		

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:
April 29 - May 7, 2010

Report Copy to
Shawn Duffy
(530) 229-3303

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E 2 **Lab #** 989159

Date Delivered: 05/04/10 **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? Temperature (if yes)? 4 °C.	☒ Yes	☐ No	☐ N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc..)?	☒ Yes	☐ No	☐ N/A
8.	Were sample custody seals intact?	☐ Yes	☐ No	☒ N/A
9.	Does the number of samples received agree with COC?	☒ Yes	☐ No	☐ N/A
10.	Did sample labels correspond with the client ID's?	☒ Yes	☐ No	☐ N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: ☒ Truesdail ☐ Client	☒ Yes	☐ No	☐ N/A
12.	Were samples pH checked? pH = see C.O.C.	☒ Yes	☐ No	☐ N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	☒ Yes	☐ No	☐ N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): ☐ RUSH ☒ Std	☒ Yes	☐ No	☐ N/A

ALERT!! Level III QC

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

\\MATRIX\env\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

July 6, 2010

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-171, GROUNDWATER MONITORING PROJECT, TLI NO.: 989584

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-171 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 June 2, 2010, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Samples for Total Dissolved Chromium were analyzed by method EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with the approval of Mr. Shawn Duffy of CH2M Hill.

The samples were received already preserved, the Total Chromium has been reported rather than Total Dissolved Chromium as requested on the chain of custody.

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

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for

Mona Nassimi
Manager, Analytical Services

K. R. P. Iyer

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

TRUESDAIL LABORATORIES, INC.

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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.: 392895.AA.DM

Laboratory No.: 989584
Date: July 6, 2010
Collected: June 2, 2010
Received: June 2, 2010
Revision 1

ANALYST LIST

EPA 120.1	Specific Conductivity	Jordan Stavrev
SM 2540C	Total Dissolved Solids	Ethel Suico
EPA 200.8	Total Chromium	Daniel Kang
EPA 218.6	Hexavalent Chromium	Sonya Bersudsky
SM 3500-CrB	Hexavalent Chromium	Kim Luck

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

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

Project Name: PG&E Topock Project
Project No.: 392895.AA.DM
P.O. No.: 392895.AA.DM

Laboratory No.: 989584
Date Received: June 2, 2010
Revision 1

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
989584-001	PE-01-171	E120.1	NONE	6/2/10	8:20	EC	5560	umhos/cm	2.00
989584-001	PE-01-171	E200.8	NONE	6/2/10	8:20	Chromium	13.4	ug/L	1.0
989584-001	PE-01-171	E218.6	LABFLT	6/2/10	8:20	Chromium, hexavalent	14.0	ug/L	0.20
989584-001	PE-01-171	SM2540C	NONE	6/2/10	8:20	Total Dissolved Solids	3450	mg/L	125
989584-002	TW-03D-171	E120.1	NONE	6/2/10	8:20	EC	8580	umhos/cm	2.00
989584-002	TW-03D-171	E200.8	NONE	6/2/10	8:20	Chromium	1230	ug/L	1.0
989584-002	TW-03D-171	SM2540C	NONE	6/2/10	8:20	Total Dissolved Solids	5500	mg/L	250
989584-002	TW-03D-171	SM3500-CrB	LABFLT	6/2/10	8:20	Chromium, hexavalent	1500	ug/L	100

ND: Non Detected (below reporting limit)

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

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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: 392895.AA.DM
Project Number: 392895.AA.DM

Laboratory No. 989584

Printed 6/17/10

Samples Received on 6/2/10 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-171	989584-001	06/02/2010 08:20	Water
TW-03D-171	989584-002	06/02/2010 08:20	Water

Specific Conductivity - EPA 120.1 Batch 06EC10A 6/4/10

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989584-001 Specific Conductivity	umhos/cm	06/04/2010	1.00	0.0380	2.00	5560
989584-002 Specific Conductivity	umhos/cm	06/04/2010	1.00	0.0380	2.00	8580

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 989585-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	58800	58600	0.341	0 - 10

Lab Control Sample

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

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	699.	706.	99.0	90 - 110

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	999.	1000	99.9	90 - 110

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Chrome VI by EPA 218.6 Batch 06CrH10B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989584-001 Chromium, Hexavalent	ug/L	06/04/2010 11:15	1.05	0.0190	0.20	14.0

Method Blank

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

Duplicate — Lab ID = 989584-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	14.0	14.0	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.02	5.00	100	90 - 110

Matrix Spike — Lab ID = 989584-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.09	30.5	30.4(16.4)	101	90 - 110

Matrix Spike — Lab ID = 989585-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.55	1.55(1.06)	100.	90 - 110

Matrix Spike — Lab ID = 989585-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	105	2080	2080(1050)	100.	90 - 110

Matrix Spike — Lab ID = 989585-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	32.0	33.0(26.2)	96.2	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	10.5	10.0	105.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.4	10.0	104.	95 - 105

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Metals by EPA 200.8, Total Batch 061010A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989584-001 Chromium	ug/L	06/10/2010 20:33	5.00	0.0750	1.0	13.4
989584-002 Chromium	ug/L	06/10/2010 21:00	5.00	0.0750	1.0	1230

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 989584-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	13.5	13.4	0.743	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.0	50.0	102.	90 - 110

Matrix Spike — Lab ID = 989584-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	258.	263(250)	97.8	75 - 125

Matrix Spike Duplicate — Lab ID = 989584-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	254.	263(250)	96.2	75 - 125

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.6	50.0	101	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.7	50.0	103	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.4	50.0	98.8	90 - 110

Interference Check Standard A

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

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Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.3	50.0	96.6	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.6	50.0	99.2	80 - 120

Chromium, Hexavalent by SM 3500-Cr B Batch 06CrH10A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989584-002 Chromium, Hexavalent	ug/L	06/03/2010 11:47	10.0	35.0	100.	1500

Method Blank

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

Duplicate — Lab ID = 989584-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	1470	1500	2.02	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	95.9	100.	95.9	90 - 110

Matrix Spike — Lab ID = 989584-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	3880	4000(2500)	95.2	85 - 115

Matrix Spike Duplicate — Lab ID = 989584-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	3920	4000(2500)	96.8	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	57.5	60.0	95.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	57.5	60.0	95.8	90 - 110

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Total Dissolved Solids by SM 2540 C Batch 06TDS10B 6/7/10

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989584-001 Total Dissolved Solids	mg/L	06/07/2010	1.00	0.434	125.	3450
989584-002 Total Dissolved Solids	mg/L	06/07/2010	1.00	0.434	250.	5500

Method Blank

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

Duplicate Lab ID = 989584-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	3570	3450	3.42	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	498.	500.	99.6	90 - 110

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services

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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-171] 989 584

COC Number
TURNAROUND TIME 10 Days
DATE 06/02/10 PAGE 1 OF 1

COMPANY 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 392895.AA.DM
SAMPLERS (SIGNATURE [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-01-171	06/02/10	820	Ground water	X		X	X	X	4	pH=2
-2	TW-03D-171	06/02/10	820	Ground water	X	X	X	X		4	pH=2
		pH	TIME	TEMP	EC						
	PE-1	7.5	08:29	74.3°	5.70						
	TW-3D	7.3	08:27	80.4°	8.88						
										8	TOTAL NUMBER OF CONTAINERS

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD

Signature	Printed Name	Company/ Agency	Date/ Time
(Relinquished) [signature]	Ron Phelps	OMI	6-2-10 1530
(Received) Rafael Davila	Rafael	T.L.I	6-2-10 15:30
(Relinquished) Rafael Davila	Rafael	T.L.I	6-2-10 21:30
(Received) Shabunina	Shabunina	TLI	6/2/10 21:30
(Relinquished)			
(Received)			

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

SPECIAL REQUIREMENTS:

ALERT !!
Level III QC

036

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 989584

Date Delivered: 06/02/10 **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? ☒ Yas ☐ 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 _____
16. Comments: _____
17. Sample Check-In completed by **Truesdail** Log-In/Receiving: L. Shabunina

ALERT !! Level III QC

\\MATRIX\env\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

July 14, 2010

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2010-GMP-167-AS, GROUNDWATER MONITORING PROJECT, TLI NO.: 989982

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2010-GMP-167-As groundwater-monitoring project for Total Dissolved 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 on June 30, 2010, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

The samples were prepared following the instructions provided by Mr. Shawn Duffy of CH2M Hill (see 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

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

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

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

Laboratory No.: 989982
Date Received: June 30, 2010

Project Name: PG&E Topock Project
Project No.: 390378.MP.02.GM.04
P.O. No.: 390378.MP.02.GM.04

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
989982-001	MW-12-167	SW6020	FLDFLT; SW 3005A M	5/6/10	14:24	Arsenic	64.2	ug/L	1.0
989982-002	MW-27-085-167	SW6020	FLDFLT; SW 3005A M	4/29/10	14:11	Arsenic	5.6	ug/L	3.3
989982-003	MW-28-090-167	SW6020	FLDFLT; SW 3005A M	4/29/10	15:21	Arsenic	2.8	ug/L	1.0
989982-004	MW-33-040-167	SW6020	FLDFLT; SW 3005A M	4/30/10	14:24	Arsenic	20.3	ug/L	1.0
989982-005	MW-34-080-167	SW6020	FLDFLT; SW 3005A M	4/29/10	12:05	Arsenic	2.2	ug/L	1.0
989982-006	MW-34-100-167	SW6020	FLDFLT; SW 3005A M	4/29/10	12:48	Arsenic	2.2	ug/L	1.0
989982-007	MW-42-055-167	SW6020	FLDFLT; SW 3005A M	4/29/10	16:17	Arsenic	14.2	ug/L	1.0
989982-008	MW-42-065-167	SW6020	FLDFLT; SW 3005A M	4/29/10	17:03	Arsenic	3.3	ug/L	1.0
989982-009	MW-62-110-167	SW6020	FLDFLT; SW 3005A M	5/4/10	16:02	Arsenic	12.0	ug/L	1.0
989982-010	MW-62-190-167	SW6020	FLDFLT; SW 3005A M	5/4/10	16:12	Arsenic	9.4	ug/L	1.0
989982-011	MW-64-150-167	SW6020	FLDFLT; SW 3005A M	5/4/10	16:40	Arsenic	12.9	ug/L	3.3
989982-012	MW-64-205-167	SW6020	FLDFLT; SW 3005A M	5/4/10	16:52	Arsenic	8.5	ug/L	3.3
989982-013	MW-64-260-167	SW6020	FLDFLT; SW 3005A M	5/4/10	17:05	Arsenic	5.2	ug/L	1.0
989982-014	MW-90-167	SW6020	FLDFLT; SW 3005A M	5/6/10	9:32	Arsenic	66.9	ug/L	1.0
989982-015	MW-92-167	SW6020	FLDFLT; SW 3005A M	4/29/10	10:30	Arsenic	3.4	ug/L	3.3

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

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

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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: 390378.MP.02.GM.04
Project Number: 390378.MP.02.GM.04

Laboratory No. 989982

Printed 7/14/10

Samples Received on 6/30/10 8:45:00 AM

Field ID	Lab ID	Collected	Matrix
MW-12-167	989982-001	05/06/2010 14:24	Water
MW-27-085-167	989982-002	04/29/2010 14:11	Water
MW-28-090-167	989982-003	04/29/2010 15:21	Water
MW-33-040-167	989982-004	04/30/2010 14:24	Water
MW-34-080-167	989982-005	04/29/2010 12:05	Water
MW-34-100-167	989982-006	04/29/2010 12:48	Water
MW-42-055-167	989982-007	04/29/2010 16:17	Water
MW-42-065-167	989982-008	04/29/2010 17:03	Water
MW-62-110-167	989982-009	05/04/2010 16:02	Water
MW-62-190-167	989982-010	05/04/2010 16:12	Water
MW-64-150-167	989982-011	05/04/2010 16:40	Water
MW-64-205-167	989982-012	05/04/2010 16:52	Water
MW-64-260-167	989982-013	05/04/2010 17:05	Water
MW-90-167	989982-014	05/06/2010 09:32	Water
MW-92-167	989982-015	04/29/2010 10:30	Water

Metals by EPA 6020A, Dissolved Batch 070710A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
989982-001 Arsenic	ug/L	07/06/2010 23:50	1.00	0.218	1.0	64.2
989982-002 Arsenic	ug/L	07/06/2010 21:47	5.00	1.09	3.3	5.6
989982-003 Arsenic	ug/L	07/07/2010 00:04	1.00	0.218	1.0	2.8
989982-004 Arsenic	ug/L	07/07/2010 00:10	1.00	0.218	1.0	20.3
989982-005 Arsenic	ug/L	07/07/2010 00:17	1.00	0.218	1.0	2.2
989982-006 Arsenic	ug/L	07/07/2010 00:24	1.00	0.218	1.0	2.2
989982-007 Arsenic	ug/L	07/07/2010 00:31	1.00	0.218	1.0	14.2
989982-008 Arsenic	ug/L	07/07/2010 00:38	1.00	0.218	1.0	3.3
989982-009 Arsenic	ug/L	07/07/2010 00:45	1.00	0.218	1.0	12.0
989982-010 Arsenic	ug/L	07/07/2010 01:06	1.00	0.218	1.0	9.4

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989982-011 Arsenic	ug/L	07/06/2010 23:02	5.00	1.09	3.3	12.9
989982-012 Arsenic	ug/L	07/06/2010 23:09	5.00	1.09	3.3	8.5
989982-013 Arsenic	ug/L	07/07/2010 01:26	1.00	0.218	1.0	5.2
989982-014 Arsenic	ug/L	07/07/2010 01:33	1.00	0.218	1.0	66.9
989982-015 Arsenic	ug/L	07/06/2010 23:43	5.00	1.09	3.3	3.4

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND

Duplicate — Lab ID = 989982-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	5.00	55.7	60.0	7.43	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	10.0	1810	2000	90.5	90 - 110

Matrix Spike — Lab ID = 989982-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	9080	10100(10000)	90.2	75 - 125

Matrix Spike Duplicate — Lab ID = 989982-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	9440	10100(10000)	93.8	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	51.8	50.0	104	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	50.5	50.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	49.0	50.0	98.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	50.3	50.0	101	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	51.1	50.0	102	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	50.4	50.0	101	90 - 110

MRCVS - Primary

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

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	53.8	50.0	108	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	54.2	50.0	108	80 - 120

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 4 of 6
Project Number: 390378.MP.02.GM.04 Printed 7/14/10

Metals by EPA 6020A, Dissolved Batch 071310A Post Spikes 7/13/10

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	2160	2000	108.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	2180	2000	109.	90 - 110

Matrix Spike Lab ID = 989982-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	1.00	8.31	7.80(5.00)	110	75 - 125

Matrix Spike Lab ID = 989982-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	10.1	10.6(5.00)	90.0	75 - 125

Matrix Spike Lab ID = 989982-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	1.00	116.	114(50.0)	104	75 - 125

Matrix Spike Lab ID = 989982-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	1.00	41.9	40.3(20.0)	108.	75 - 125

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Matrix Spike — Lab ID = 989982-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	1.00	20.7	19.4(10.0)	113.	75 - 125

Matrix Spike — Lab ID = 989982-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	1.00	146.	142(75.0)	105	75 - 125

Matrix Spike — Lab ID = 989982-015

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	9.18	8.40(5.00)	116	75 - 125

Matrix Spike — Lab ID = 989982-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	1.00	7.35	7.20(5.00)	103.	75 - 125

Matrix Spike — Lab ID = 989982-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	1.00	7.38	7.20(5.00)	104	75 - 125

Matrix Spike — Lab ID = 989982-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	1.00	30.4	29.2(15.0)	108.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	52.7	50.0	105	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	51.5	50.0	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	49.7	50.0	99.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	51.5	50.0	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	52.9	50.0	106	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	53.2	50.0	106	90 - 110

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Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	50.1	50.0	100	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	52.4	50.0	105	80 - 120

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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

CHAIN OF CUSTODY RECORD

[2010-GMP-167-As]

939982

COC Number
Turnaround Time 10 Days
Date

COMPANY E2
PROJECT PG&E Topock
ADDRESS 155 Grand Ave Ste 1000
Oakland, CA 94612
PHONE (530) 229-3303 FAX (530) 339-3303
P.O. NUM 390378.MP.02.GM.04 TEAM 1
SAMPLERS (SIGNATURE

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

	SAMPLE I.D.	DATE	TIME	Matrix	Container: 500 ml Poly; Preservatives: HNO3; Filtered: Field; Holding Time: 7; Arsenic (6020) Field Filtered	Number of Containers	COMMENTS
1	MW-12-167	5/6/10	14:24		x	1	
2	MW-27-085-167	4/29/10	14:11		x	1	
3	MW-28-090-167	4/29/10	15:21		x	1	
4	MW-33-040-167	4/30/10	14:24		x	1	pH=2
5	MW-34-080-167	4/29/10	12:05		x	1	
6	MW-34-100-167	4/29/10	12:48		x	1	
7	MW-42-055-167	4/29/10	16:17		x	1	
8	MW-42-065-167	4/29/10	17:03		x	1	
9	MW-62-110-167	5/4/10	16:02		x	1	

CHAIN OF CUSTODY SIGNATURE RECORD

	Signature	Printed Name	Company/ Agency	Date/ Time
1	(Relinquished)	Shawn Duffy	CH2M HILL	6/30/10
2	(Received)	Shakeerunna	TLI	6/30/10 08:41
3	(Relinquished)			
4	(Received)			
5	(Relinquished)			
6	(Received)			

SAMPLE CONDITIONS

RECEIVED COOL ☑ WARM ☐ 5°C *k

CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

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

CHAIN OF CUSTODY RECORD

[2010-GMP-167-As] 989982

COC Number
Turnaround Time 10 Days
Date
Page 2 OF 2

COMPANY E2
PROJECT PG&E Topock
ADDRESS 155 Grand Ave Ste 1000
Oakland, CA 94612
PHONE (530) 229-3303 FAX (530) 339-3303
P.O. NUM 390378.MP.02.GM.04 TEAM 1
SAMPLERS (SIGNATURE

Container: 500 ml Poly
Preservatives: HNO3
Filtered: Field
Holding Time: 7

ALERT !!
Level III QC

	SAMPLE I.D.	DATE	TIME	Matrix	Arsenic (6020) Field Filtered		Number of Containers	COMMENTS
-10	MW-62-190-167	5/4/10	16:12		x		1	
-11	MW-64-150-167	5/4/10	16:40		x		1	
-12	MW-64-205-167	5/4/10	16:52		x		1	
-13	MW-64-260-167	5/4/10	17:05		x		1	pH=2
-14	MW-90-167	5/6/10	9:32		x		1	
-15	MW-92-167	4/29/10	10:30		x		1	

TOTAL NUMBER OF CONTAINERS 15

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	[signature]	Printed Name	Shawn Duffy	Company/ Agency	CH2M HILL	Date/ Time	6/30/10
Signature (Received)	Shabunina	Printed Name	Shabunina	Company/ Agency	TLI	Date/ Time	6/30/10 08:45
Signature (Relinquished)		Printed Name		Company/ Agency		Date/ Time	
Signature (Received)		Printed Name		Company/ Agency		Date/ Time	
Signature (Relinquished)		Printed Name		Company/ Agency		Date/ Time	
Signature (Received)		Printed Name		Company/ Agency		Date/ Time	

SAMPLE CONDITIONS

RECEIVED COOL ☑ WARM ☐ 5°C

CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

Advanced Technology Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atlglobal.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

989982

QC Level: Level IV

Subcontractor:

Truesdail
14201 Franklin Ave.
Tustin, CA 92680

TEL: (714) 730-6239
FAX: (714) 730-6462
Acct #:

Field Sampler: Barry Collom

29-Jun-10

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 6020		
N004098-001A / MW-27-085-167	Water	4/29/2010 2:11:00 PM	16OZP	1		
N004098-002A / MW-28-090-167	Water	4/29/2010 3:21:00 PM	16OZP	1		
N004098-003A / MW-34-080-167	Water	4/29/2010 12:05:00 PM	16OZP	1		
N004098-004A / MW-34-100-167	Water	4/29/2010 12:48:00 PM	16OZP	1		
N004098-005A / MW-42-055-167	Water	4/29/2010 4:17:00 PM	16OZP	1		
N004098-006A / MW-42-065-167	Water	4/29/2010 5:03:00 PM	16OZP	1		
N004098-007A / MW-92-167	Water	4/29/2010 10:30:00 AM	16OZP	1		
N004098-008A / MW-33-040-167	Water	4/30/2010 2:24:00 PM	16OZP	1		

ALERT !!
Level III QC

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N/A Please fax results by:

CH2M Hill sample. Please contact Shawn Duffy for test reference and TAT.

	Date/Time		Date/Time
Relinquished by:	6/29/10	Received by: L. Shabunina	JUN 30 2010 8:45
Relinquished by:		Received by:	

026

Advanced Technology Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atlglobal.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

989982

QC Level: Level IV

Subcontractor:

Truesdail
14201 Franklin Ave.
Tustin, CA 92680

TEL: (714) 730-6239
FAX: (714) 730-6462
Acct #:

Field Sampler: Barry Collom

29-Jun-10

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 6020		
N004114-001A / MW-62-110-167	Water	5/4/2010 4:02:00 PM	16OZP	1		
N004114-002A / MW-62-190-167	Water	5/4/2010 4:12:00 PM	16OZP	1		
N004114-003A / MW-64-150-167	Water	5/4/2010 4:40:00 PM	16OZP	1		
N004114-004A / MW-64-205-167	Water	5/4/2010 4:52:00 PM	16OZP	1		
N004114-005A / MW-64-260-167	Water	5/4/2010 5:05:00 PM	16OZP	1		
N004114-006A / MW-12-167	Water	5/6/2010 2:24:00 PM	8OZP	1		
N004114-007A / MW-90-167	Water	5/6/2010 9:32:00 AM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N/A Please fax results by:

CH2M Hill sample. Please contact Shawn Duffy for test reference and TAT.

	Date/Time		Date/Time
Relinquished by:	6/29/10	Received by: L. Shabunina	JUN 30 2010 8:45
Relinquished by:		Received by:	

027

Subject: As samples
From: "Shawn.Duffy@CH2M.com" <Shawn.Duffy@CH2M.com>
Date: Thu, 1 Jul 2010 17:36:45 -0400
To: Sean Condon <seanc@truesdail.com>
CC: Mona Nassimi <mona@truesdail.com>, Jenny Tankunakorn <jenny@truesdail.com>, "Trudy.Scott@CH2M.com" <Trudy.Scott@CH2M.com>, "Doug.Scott@critigen.com" <Doug.Scott@critigen.com>

Hi Sean,

For the Arsenic samples ATL transferred to TLI, we want to analyze the samples under a very specific set of conditions.

Please digest the samples following the method listed below. The volumes can be adjusted, but the quantities should stay consistent. (Note: beginning volume and ending volume should be the same.)

A. Digestion - Modified Method 3005A

Transfer a 50-mL aliquot of well-mixed sample to a beaker.
Add 1 mL of concentrated HNO3 and 2.5 mL of concentrated HCl.
Heat on a steam bath, hot plate or other heating source at 90 to 95 °C until the volume has been reduced to 7-10 mL.
CAUTION: Do not boil.
Remove from heat and allow to cool.
Wash down the container walls and watch glass with water and, when necessary, filter or centrifuge the sample to remove silicates and other insoluble material that could clog the nebulizer. (Filtration should be done only if there is concern that insoluble materials may clog the nebulizer; this additional step is liable to cause sample contamination uuless the filter and filtering apparatus are thoroughly cleaned and pre-rinsed with dilute HNO3.)
Adjust the final volume to 50 mL with reagent water.

B. Analyze the samples "normally" as far as TLI's standard analysis of samples (i.e. don't change the instrument configuration). Please include the interference check solution results in the report. The results must meet all the criteria of a standard set of samples (i.e. internal standards, spikes, etc.).

C. Analyze a Serial Dilution on every sample. Analysis a fivefold (1+4) dilution, the results must agree within ± 10% of the original result.

D. Please Pick ten of the samples and analyze a post digestion spike. The spike concentration should be at approximately the same concentration as the sample if the sample concentration is greater than 5 ppb. If the concentration is less than 5 ppb use 5 ppb as the spike concentration. (Please include the following five samples in your list of ten samples spiked: MW-12-167, MW-34-100-167, MW-62-190-167, MW-90-167, and MW-92-167)

E. Also because this will differ from your historic prep method, please set up a seven point MDL study concurrently with these samples. (all seven replicates can be prepped and analyzed at one time)

Please don't hesitate to call me if you have any questions.

Shawn Duffy

Project Scientist
CH2M HILL
2525 Airpark Dr.
Redding, CA 96001
Office: (530) 229-3303
Home Office: (530) 243-1078
Fax: (530) 339-3303
Cell: (530) 941-9227

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 **Lab #** 989982

Date Delivered: 06/30/10 **Time:** 08:45 **By:** ☒Mail ☐Field Service ☐Client

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

ALERT!! Level III QC

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

\\MATRIX\raw\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

July 21, 2010

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-172, GROUNDWATER MONITORING PROJECT, TLI NO.: 990069

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-172 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 July 7, 2010, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Samples for Total Dissolved Chromium were analyzed by method EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with the approval of Mr. Shawn Duffy of CH2M Hill.

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

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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

TRUESDAIL LABORATORIES, INC.

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www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Two (2) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 392895.AA.DM

Laboratory No.: 990069
Date: July 21, 2010
Collected: July 7, 2010
Received: July 7, 2010

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Iordan Stavrev
SM 2540C	Total Dissolved Solids	Ethel Suico
EPA 200.8	Total Chromium	Linda Saetern
EPA 218.6	Hexavalent Chromium	Sonya Bersudsky
SM 3500-CrB	Hexavalent Chromium	Ethel Suico

TRUESDAIL LABORATORIES, INC.
INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES
Established 1931
14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

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

Laboratory No.: 990069
Date Received: July 7, 2010

Project Name: PG&E Topock Project
Project No.: 392895.AA.DM
P.O. No.: 392895.AA.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
990069-001	PE-01-172	E120.1	NONE	7/7/10	8:25	EC	5500	umhos/cm	2.00
990069-001	PE-01-172	E200.8	LABFLT	7/7/10	8:25	Chromium	11.4	ug/L	1.0
990069-001	PE-01-172	E218.6	LABFLT	7/7/10	8:25	Chromium, hexavalent	13.7	ug/L	0.20
990069-001	PE-01-172	SM2540C	NONE	7/7/10	8:25	Total Dissolved Solids	3350	mg/L	250
990069-002	TW-03D-172	E120.1	NONE	7/7/10	8:25	EC	8480	umhos/cm	2.00
990069-002	TW-03D-172	E200.8	LABFLT	7/7/10	8:25	Chromium	1130	ug/L	1.0
990069-002	TW-03D-172	SM2540C	NONE	7/7/10	8:25	Total Dissolved Solids	5280	mg/L	250
990069-002	TW-03D-172	SM3500-CrB	LABFLT	7/7/10	8:25	Chromium, hexavalent	1100	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.

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

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REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 300
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
P.O. Number: 392895.AA.DM
Project Number: 392895.AA.DM

Laboratory No. 990069

Printed 7/21/10

Samples Received on 7/7/10 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-172	990069-001	07/07/2010 08:25	Water
TW-03D-172	990069-002	07/07/2010 08:25	Water

Specific Conductivity - EPA 120.1 Batch 07EC10F 7/19/10

Parameter	Unit	Analyzed	DF	MDL	RL	Result
990069-001 Specific Conductivity	umhos/cm	07/19/2010	1.00	0.0380	2.00	5500
990069-002 Specific Conductivity	umhos/cm	07/19/2010	1.00	0.0380	2.00	8480

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 990069-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	8550	8480	0.822	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	707.	706.	100	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	687.	706.	97.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	952.	1000	95.2	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 2 of 6
Project Number: 392895.AA.DM Printed 7/21/10

Chrome VI by EPA 218.6 Batch 07CrH10B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
990069-001 Chromium, Hexavalent	ug/L	07/08/2010 13:25	1.05	0.0190	0.20	13.7

Method Blank

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

Duplicate — Lab ID = 990068-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	105	1020	1010	0.985	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00	98.0	90 - 110

Matrix Spike — Lab ID = 990068-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.26	1.30(1.06)	96.2	90 - 110

Matrix Spike — Lab ID = 990068-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	105	2020	2060(1050)	96.2	90 - 110

Matrix Spike — Lab ID = 990069-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.09	29.9	30.1(16.4)	98.8	90 - 110

Matrix Spike — Lab ID = 990068-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.53	5.25(5.25)	105	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.97	5.00	99.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.83	10.0	98.3	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.4	10.0	104.	95 - 105

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Chromium, Hexavalent by SM 3500-Cr B Batch 07CrH10A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
990069-002 Chromium, Hexavalent	ug/L	07/08/2010 11:18	25.0	87.5	250.	1100

Method Blank

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

Duplicate — Lab ID = 990069-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	1160	1100	5.31	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	108.	100.	108.	90 - 110

Matrix Spike — Lab ID = 990069-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	3330	3600(2500)	89.2	85 - 115

Matrix Spike Duplicate — Lab ID = 990069-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	3480	3600(2500)	95.2	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	65.0	60.0	108	90 - 110

MRCVS - Primery

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	62.5	60.0	104	90 - 110

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 4 of 6
Project Number: 392895.AA.DM Printed 7/21/10

Total Dissolved Solids by SM 2540 C Batch 07TDS10C 7/7/10

Parameter	Unit	Analyzed	DF	MDL	RL	Result
990069-001 Total Dissolved Solids	mg/L	07/07/2010	1.00	0.434	250.	3350
990069-002 Total Dissolved Solids	mg/L	07/07/2010	1.00	0.434	250.	5280

Method Blank

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

Duplicate Lab ID = 990069-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	5140	5280	2.69	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	491.	500.	98.2	90 - 110

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Metals by EPA 200.8, Dissolved Batch 071410A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
990069-001 Chromium	ug/L	07/14/2010 10:29	5.00	0.0960	1.0	11.4
990069-002 Chromium	ug/L	07/14/2010 11:10	5.00	0.0960	1.0	1130

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 990069-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	11.8	11.4	3.45	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.8	50.0	99.6	90 - 110

Matrix Spike — Lab ID = 990069-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	245.	261(250)	93.4	75 - 125

Matrix Spike Duplicate — Lab ID = 990069-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	248.	261(250)	94.6	75 - 125

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.4	50.0	96.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.9	50.0	93.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.9	50.0	95.8	90 - 110

Interference Check Standard A

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

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project
Project Number: 392895.AA.DM Printed 7/21/10

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.9	50.0	93.8	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.1	50.0	98.2	80 - 120

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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E2 Seam

4

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 07TDS10C

Date Calculated: 7/12/10

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	68.1215	68.1220	68.1218	0.0002	No	0.0003	3.0	25.0	ND	1
990024	50	75.0552	75.1348	75.1348	0.0000	No	0.0796	1592.0	50.0	1592.0	1
990036-16	50	69.8214	69.8652	69.865	0.0002	No	0.0436	872.0	50.0	872.0	1
990071	475	110.3648	110.3667	110.3667	0.0000	No	0.0019	4.0	5.3	ND	1
990068-1	10	47.9726	48.0185	48.0181	0.0004	No	0.0455	4550.0	250.0	4550.0	1
990068-2	10	49.5594	49.6088	49.6086	0.0002	No	0.0492	4920.0	250.0	4920.0	1
990069-1	10	47.2935	47.3274	47.327	0.0004	No	0.0335	3350.0	250.0	3350.0	1
990069-2	10	48.1860	48.2389	48.2388	0.0001	No	0.0528	5280.0	250.0	5280.0	1
990069-2d	10	50.5850	50.6367	50.6364	0.0003	No	0.0514	5140.0	250.0	5140.0	1
LCS	100	68.5299	68.5793	68.579	0.0003	No	0.0491	491.0	25.0	491.0	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

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 07TDS10C

Date Calculated: 7/12/10

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
990024	2210	0.72	1436.5	1.11
990036-*6	1440	0.61	936	0.93
990071	7.97	ND	5.1805	ND
990068-1	7500	0.61	4875	0.93
990068-2	7880	0.62	5122	0.96
990069-1	5520	0.61	3588	0.93
990069-2	8580	0.62	5577	0.95
990069-2d	8580	0.60	5577	0.92

ES 7/12/10

WetChem TDS_0310.xls

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CHAIN OF CUSTODY RECORD

[IM3Plant-EW-172] 990069

COC Number
TURNAROUND TIME 10 Days
DATE 07/07/10 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: 392895.AA.DM
SAMPLERS (SIGNATURE: [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-01-172	07/07/10	0825	Ground water	X		X	X	X										4	pH=7
-2	TW-03D-172	07/07/10	0825	Ground water	X	X	X	X											4	pH=7
	ANALYSIS	pH	EC	TEMP															8	TOTAL NUMBER OF CONTAINERS
PE-1	0830	7.5	5.62	72.5																
TW3D	0835	7.3	8.79	79.5																

CHAIN OF CUSTODY SIGNATURE RECORD

7-7-10

Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time
[signature]	JAIME	OMI	1530
Rafael Davila	Rafael	T.L.I	7-7-10 15:30
Rafael Davila	Rafael	T.L.I	7-7-10 21:30
Shabunina	Shabunina	TLI	JUL 07 2010 21:30

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

SPECIAL REQUIREMENTS:

For Sample Conditions See Form Attached

ALERT!! Level III QC

036

TRUESDAIL LABORATORIES, INC.

ALERT !!
Level III QC

Sample Integrity & Analysis Discrepancy Form

Client: CH2M HILL **Lab #** 990069

Date Delivered: 7 / 7 /10 **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? Temperature (if yes)? 4°C	☑Yes	☐No	☐N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc..)?	☑Yes	☐No	☐N/A
8.	Were sample custody seals intact?	☐Yes	☐No	☐N/A
9.	Does the number of samples received agree with COC?	☑Yes	☐No	☐N/A
10.	Did sample labels correspond with the client ID's?	☑Yes	☐No	☐N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: ☐**Truesdail** ☐Client	☐Yes	☐No	☑N/A
12.	Were samples pH checked? pH = see C.O.C	☐Yes	☐No	☑N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	☑Yes	☐No	☐N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): ☐ **RUSH** ☑ Std	☑Yes	☐No	☐N/A

15. **Sample Matrix:** ☐Liquid ☐Drinking Water ☑Ground Water ☐Waste Water ☐Sludge ☐Soil ☐Wipe ☐Paint ☐Solid ☐Other_____

16. Comments: _____

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

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July 19, 2010

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2010-RMP-167, SURFACEWATER MONITORING PROJECT, TLI NO.: 990070

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2010-RMP-167 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 July 7, 2010, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services

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

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Event 2010-RMP-167 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-167	2.00	No			
C-I-3-D-167	2.00	No			
C-I-3-S-167	2.00	No			
C-MAR-D-167	2.00	No			
C-MAR-S-167	2.00	No			
C-R22A-D-167	2.00	No			
C-R22A-S-167	2.00	No			
C-R27-D-167	2.00	No			
C-R27-S-167	2.00	No			
C-TAZ-D-167	2.00	No			
C-TAZ-S-167	2.00	No			
R-19-167	2.00	No			
R-28-167	2.00	No			
R63-167	2.00	No			

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Event 2010-RMP-167 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-167	9.50	No			
C-I-3-D-167	9.50	No			
C-I-3-S-167	9.50	No			
C-MAR-D-167	9.50	No			
C-MAR-S-167	9.50	No			
C-R22A-D-167	9.50	No			
C-R22A-S-167	9.50	No			
C-R27-D-167	9.50	No			
C-R27-S-167	9.50	No			
C-TAZ-D-167	9.50	No			
C-TAZ-S-167	9.50	No			
R-19-167	9.50	No			
R-28-167	9.50	No			
R63-167	9.50	No			

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INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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

Laboratory No.: 990070
Date Received: July 7, 2010

Project Name: PG&E Topock Project
Project No.: 390378.MP.02.RM.01
P.O. No.: 390378.MP.02.RM.01

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
990070-001	C-BNS-D-167	E120.1	NONE	7/7/10	10:53	EC	935	umhos/cm	2.00
990070-001	C-BNS-D-167	E218.6	FLDFLT	7/7/10	10:53	Chromium, hexavalent	ND	ug/L	0.20
990070-001	C-BNS-D-167	SM4500HB	NONE	7/7/10	10:53	PH	8.15	pH	4.00
990070-001	C-BNS-D-167	SW6020	FLDFLT	7/7/10	10:53	Chromium	ND	ug/L	1.0
990070-002	C-I-3-D-167	E120.1	NONE	7/7/10	9:24	EC	942	umhos/cm	2.00
990070-002	C-I-3-D-167	E218.6	FLDFLT	7/7/10	9:24	Chromium, hexavalent	ND	ug/L	0.20
990070-002	C-I-3-D-167	SM4500HB	NONE	7/7/10	9:24	PH	8.25	pH	4.00
990070-002	C-I-3-D-167	SW6020	FLDFLT	7/7/10	9:24	Chromium	ND	ug/L	1.0
990070-003	C-I-3-S-167	E120.1	NONE	7/7/10	9:32	EC	944	umhos/cm	2.00
990070-003	C-I-3-S-167	E218.6	FLDFLT	7/7/10	9:32	Chromium, hexavalent	ND	ug/L	0.20
990070-003	C-I-3-S-167	SM4500HB	NONE	7/7/10	9:32	PH	8.20	pH	4.00
990070-003	C-I-3-S-167	SW6020	FLDFLT	7/7/10	9:32	Chromium	ND	ug/L	1.0
990070-004	C-MAR-D-167	E120.1	NONE	7/7/10	12:38	EC	1040	umhos/cm	2.00
990070-004	C-MAR-D-167	E218.6	FLDFLT	7/7/10	12:38	Chromium, hexavalent	ND	ug/L	0.20
990070-004	C-MAR-D-167	SM4500HB	NONE	7/7/10	12:38	PH	7.43	pH	4.00
990070-004	C-MAR-D-167	SW6020	FLDFLT	7/7/10	12:38	Chromium	ND	ug/L	1.0
990070-005	C-MAR-S-167	E120.1	NONE	7/7/10	12:50	EC	1040	umhos/cm	2.00
990070-005	C-MAR-S-167	E218.6	FLDFLT	7/7/10	12:50	Chromium, hexavalent	ND	ug/L	0.20
990070-005	C-MAR-S-167	SM4500HB	NONE	7/7/10	12:50	PH	7.44	pH	4.00
990070-005	C-MAR-S-167	SW6020	FLDFLT	7/7/10	12:50	Chromium	ND	ug/L	1.0
990070-006	C-R22A-D-167	E120.1	NONE	7/7/10	10:18	EC	938	umhos/cm	2.00
990070-006	C-R22A-D-167	E218.6	FLDFLT	7/7/10	10:18	Chromium, hexavalent	ND	ug/L	0.20
990070-006	C-R22A-D-167	SM4500HB	NONE	7/7/10	10:18	PH	8.28	pH	4.00
990070-006	C-R22A-D-167	SW6020	FLDFLT	7/7/10	10:18	Chromium	ND	ug/L	1.0

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
990070-007	C-R22A-S-167	E120.1	NONE	7/7/10	10:30	EC	937	umhos/cm	2.00
990070-007	C-R22A-S-167	E218.6	FLDFLT	7/7/10	10:30	Chromium, hexavalent	ND	ug/L	0.20
990070-007	C-R22A-S-167	SM4500HB	NONE	7/7/10	10:30	PH	8.30	pH	4.00
990070-007	C-R22A-S-167	SW6020	FLDFLT	7/7/10	10:30	Chromium	ND	ug/L	1.0
990070-008	C-R27-D-167	E120.1	NONE	7/7/10	11:16	EC	951	umhos/cm	2.00
990070-008	C-R27-D-167	E218.6	FLDFLT	7/7/10	11:16	Chromium, hexavalent	ND	ug/L	0.20
990070-008	C-R27-D-167	SM4500HB	NONE	7/7/10	11:16	PH	8.24	pH	4.00
990070-008	C-R27-D-167	SW6020	FLDFLT	7/7/10	11:16	Chromium	ND	ug/L	1.0
990070-009	C-R27-S-167	E120.1	NONE	7/7/10	11:27	EC	944	umhos/cm	2.00
990070-009	C-R27-S-167	E218.6	FLDFLT	7/7/10	11:27	Chromium, hexavalent	ND	ug/L	0.20
990070-009	C-R27-S-167	SM4500HB	NONE	7/7/10	11:27	PH	8.25	pH	4.00
990070-009	C-R27-S-167	SW6020	FLDFLT	7/7/10	11:27	Chromium	ND	ug/L	1.0
990070-010	C-TAZ-D-167	E120.1	NONE	7/7/10	8:45	EC	947	umhos/cm	2.00
990070-010	C-TAZ-D-167	E218.6	FLDFLT	7/7/10	8:45	Chromium, hexavalent	ND	ug/L	0.20
990070-010	C-TAZ-D-167	SM4500HB	NONE	7/7/10	8:45	PH	8.30	pH	4.00
990070-010	C-TAZ-D-167	SW6020	FLDFLT	7/7/10	8:45	Chromium	ND	ug/L	1.0
990070-011	C-TAZ-S-167	E120.1	NONE	7/7/10	8:55	EC	943	umhos/cm	2.00
990070-011	C-TAZ-S-167	E218.6	FLDFLT	7/7/10	8:55	Chromium, hexavalent	ND	ug/L	0.20
990070-011	C-TAZ-S-167	SM4500HB	NONE	7/7/10	8:55	PH	8.26	pH	4.00
990070-011	C-TAZ-S-167	SW6020	FLDFLT	7/7/10	8:55	Chromium	ND	ug/L	1.0
990070-012	R-19-167	E120.1	NONE	7/7/10	12:16	EC	943	umhos/cm	2.00
990070-012	R-19-167	E218.6	FLDFLT	7/7/10	12:16	Chromium, hexavalent	ND	ug/L	0.20
990070-012	R-19-167	SM4500HB	NONE	7/7/10	12:16	PH	8.30	pH	4.00
990070-012	R-19-167	SW6020	FLDFLT	7/7/10	12:16	Chromium	ND	ug/L	1.0
990070-013	R-28-167	E120.1	NONE	7/7/10	11:46	EC	939	umhos/cm	2.00
990070-013	R-28-167	E218.6	FLDFLT	7/7/10	11:46	Chromium, hexavalent	ND	ug/L	0.20
990070-013	R-28-167	SM4500HB	NONE	7/7/10	11:46	PH	8.33	pH	4.00
990070-013	R-28-167	SW6020	FLDFLT	7/7/10	11:46	Chromium	ND	ug/L	1.0
990070-014	R63-167	E120.1	NONE	7/7/10	9:50	EC	940	umhos/cm	2.00
990070-014	R63-167	E218.6	FLDFLT	7/7/10	9:50	Chromium, hexavalent	ND	ug/L	0.20
990070-014	R63-167	SM4500HB	NONE	7/7/10	9:50	PH	8.37	pH	4.00
990070-014	R63-167	SW6020	FLDFLT	7/7/10	9:50	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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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: 390378.MP.02.RM.01
Project Number: 390378.MP.02.RM.01

Laboratory No. 990070

Printed 7/20/10

Samples Received on 7/7/10 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
C-BNS-D-167	990070-001	07/07/2010 10:53	Water
C-I-3-D-167	990070-002	07/07/2010 09:24	Water
C-I-3-S-167	990070-003	07/07/2010 09:32	Water
C-MAR-D-167	990070-004	07/07/2010 12:38	Water
C-MAR-S-167	990070-005	07/07/2010 12:50	Water
C-R22A-D-167	990070-006	07/07/2010 10:18	Water
C-R22A-S-167	990070-007	07/07/2010 10:30	Water
C-R27-D-167	990070-008	07/07/2010 11:16	Water
C-R27-S-167	990070-009	07/07/2010 11:27	Water
C-TAZ-D-167	990070-010	07/07/2010 08:45	Water
C-TAZ-S-167	990070-011	07/07/2010 08:55	Water
R-19-167	990070-012	07/07/2010 12:16	Water
R-28-167	990070-013	07/07/2010 11:46	Water
R63-167	990070-014	07/07/2010 09:50	Water

Specific Conductivity - EPA 120.1 Batch 07EC10C 7/9/10

Parameter	Unit	Analyzed	DF	MDL	RL	Result
990070-001 Specific Conductivity	umhos/cm	07/09/2010	1.00	0.0380	2.00	935.
990070-002 Specific Conductivity	umhos/cm	07/09/2010	1.00	0.0380	2.00	942.
990070-003 Specific Conductivity	umhos/cm	07/09/2010	1.00	0.0380	2.00	944.
990070-004 Specific Conductivity	umhos/cm	07/09/2010	1.00	0.0380	2.00	1040
990070-005 Specific Conductivity	umhos/cm	07/09/2010	1.00	0.0380	2.00	1040
990070-006 Specific Conductivity	umhos/cm	07/09/2010	1.00	0.0380	2.00	938.
990070-007 Specific Conductivity	umhos/cm	07/09/2010	1.00	0.0380	2.00	937.
990070-008 Specific Conductivity	umhos/cm	07/09/2010	1.00	0.0380	2.00	951.
990070-009 Specific Conductivity	umhos/cm	07/09/2010	1.00	0.0380	2.00	944.
990070-010 Specific Conductivity	umhos/cm	07/09/2010	1.00	0.0380	2.00	947.
990070-011 Specific Conductivity	umhos/cm	07/09/2010	1.00	0.0380	2.00	943.

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990070-012 Specific Conductivity	umhos/cm	07/09/2010	1.00	0.0380	2.00	943.
990070-013 Specific Conductivity	umhos/cm	07/09/2010	1.00	0.0380	2.00	939.
990070-014 Specific Conductivity	umhos/cm	07/09/2010	1.00	0.0380	2.00	940.

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 990070-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	952.	951.	0.105	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	696.	706.	98.6	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	692.	706.	98.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	985.	1000	98.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	981.	1000	98.1	90 - 110

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Chrome VI by EPA 218.6 Batch 07CrH10C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
990070-001 Chromium, Hexavalent	ug/L	07/13/2010 08:12	1.05	0.0190	0.20	ND
990070-002 Chromium, Hexavalent	ug/L	07/13/2010 08:23	1.05	0.0190	0.20	ND
990070-003 Chromium, Hexavalent	ug/L	07/13/2010 08:33	1.05	0.0190	0.20	ND
990070-004 Chromium, Hexavalent	ug/L	07/13/2010 08:43	1.05	0.0190	0.20	ND
990070-005 Chromium, Hexavalent	ug/L	07/13/2010 10:28	1.05	0.0190	0.20	ND
990070-006 Chromium, Hexavalent	ug/L	07/13/2010 10:39	1.05	0.0190	0.20	ND
990070-007 Chromium, Hexavalent	ug/L	07/13/2010 10:49	1.05	0.0190	0.20	ND
990070-008 Chromium, Hexavalent	ug/L	07/13/2010 11:00	1.05	0.0190	0.20	ND
990070-009 Chromium, Hexavalent	ug/L	07/13/2010 12:13	1.05	0.0190	0.20	ND
990070-010 Chromium, Hexavalent	ug/L	07/13/2010 13:05	1.05	0.0190	0.20	ND
990070-011 Chromium, Hexavalent	ug/L	07/13/2010 13:15	1.05	0.0190	0.20	ND
990070-012 Chromium, Hexavalent	ug/L	07/13/2010 14:13	1.05	0.0190	0.20	ND
990070-013 Chromium, Hexavalent	ug/L	07/13/2010 14:24	1.05	0.0190	0.20	ND
990070-014 Chromium, Hexavalent	ug/L	07/13/2010 14:34	1.05	0.0190	0.20	ND

Method Blank

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

Duplicate — Lab ID = 990070-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	ND	0.0970	0	0 - 20

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 = 990070-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.18	1.16(1.06)	102	90 - 110

Matrix Spike — Lab ID = 990070-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.25	1.21(1.06)	104	90 - 110

Matrix Spike — Lab ID = 990070-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.23	1.18(1.06)	104	90 - 110

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Matrix Spike — Lab ID = 990070-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.21	1.17(1.06)	103	90 - 110

Matrix Spike — Lab ID = 990070-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.23	1.19(1.06)	104	90 - 110

Matrix Spike — Lab ID = 990070-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.12	1.15(1.06)	97.1	90 - 110

Matrix Spike — Lab ID = 990070-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.20	1.13(1.06)	107	90 - 110

Matrix Spike — Lab ID = 990070-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.19(1.06)	103	90 - 110

Matrix Spike — Lab ID = 990070-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.24	1.23(1.06)	101	90 - 110

Matrix Spike — Lab ID = 990070-013

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.20	1.21(1.06)	99.2	90 - 110

Matrix Spike — Lab ID = 990070-014

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.33	1.25(1.06)	107	90 - 110

Matrix Spike — Lab ID = 990070-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.25	1.18(1.06)	106	90 - 110

Matrix Spike — Lab ID = 990070-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.27	1.21(1.06)	106	90 - 110

Matrix Spike — Lab ID = 990070-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.24	1.21(1.06)	103	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.08	5.00	102	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.65	10.0	96.5	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.98	10.0	99.8	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.97	10.0	99.7	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.4	10.0	104.	95 - 105

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Metals by EPA 6020A, Dissolved Batch 070910A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
990070-001 Chromium	ug/L	07/19/2010 16:26	5.00	0.0960	1.0	ND
990070-002 Chromium	ug/L	07/19/2010 17:00	5.00	0.0960	1.0	ND
990070-003 Chromium	ug/L	07/19/2010 17:07	5.00	0.0960	1.0	ND
990070-004 Chromium	ug/L	07/19/2010 17:14	5.00	0.0960	1.0	ND
990070-005 Chromium	ug/L	07/19/2010 17:21	5.00	0.0960	1.0	ND
990070-006 Chromium	ug/L	07/19/2010 17:42	5.00	0.0960	1.0	ND
990070-007 Chromium	ug/L	07/19/2010 17:49	5.00	0.0960	1.0	ND
990070-008 Chromium	ug/L	07/19/2010 17:55	5.00	0.0960	1.0	ND
990070-009 Chromium	ug/L	07/19/2010 18:02	5.00	0.0960	1.0	ND
990070-010 Chromium	ug/L	07/19/2010 18:09	5.00	0.0960	1.0	ND
990070-011 Chromium	ug/L	07/19/2010 18:16	5.00	0.0960	1.0	ND
990070-012 Chromium	ug/L	07/19/2010 18:23	5.00	0.0960	1.0	ND
990070-013 Chromium	ug/L	07/19/2010 18:30	5.00	0.0960	1.0	ND
990070-014 Chromium	ug/L	07/19/2010 18:37	5.00	0.0960	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 990070-001

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.6	50.0	104	90 - 110

Matrix Spike — Lab ID = 990070-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	248.	250.(250)	99.2	75 - 125

Matrix Spike Duplicate — Lab ID = 990070-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	243.	250.(250)	97.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	52.0	50.0	104.	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.7	50.0	93.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.2	50.0	98.4	90 - 110

MRCVS - Primary

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

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.4	50.0	96.8	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.9	50.0	99.8	80 - 120

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pH by SM 4500-H B Batch 07PH10E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
990070-001 pH	pH	07/08/2010 08:04	1.00	0.0250	4.00	8.15
990070-002 pH	pH	07/08/2010 08:07	1.00	0.0250	4.00	8.25
990070-003 pH	pH	07/08/2010 08:10	1.00	0.0250	4.00	8.20
990070-004 pH	pH	07/08/2010 08:13	1.00	0.0250	4.00	7.43
990070-005 pH	pH	07/08/2010 08:16	1.00	0.0250	4.00	7.44
990070-006 pH	pH	07/08/2010 08:19	1.00	0.0250	4.00	8.28
990070-007 pH	pH	07/08/2010 08:22	1.00	0.0250	4.00	8.30
990070-008 pH	pH	07/08/2010 08:25	1.00	0.0250	4.00	8.24
990070-009 pH	pH	07/08/2010 08:28	1.00	0.0250	4.00	8.25
990070-010 pH	pH	07/08/2010 08:31	1.00	0.0250	4.00	8.30
990070-011 pH	pH	07/08/2010 08:40	1.00	0.0250	4.00	8.26
990070-012 pH	pH	07/08/2010 08:43	1.00	0.0250	4.00	8.30
990070-013 pH	pH	07/08/2010 08:46	1.00	0.0250	4.00	8.33
990070-014 pH	pH	07/08/2010 08:49	1.00	0.0250	4.00	8.37

Duplicate — Lab ID = 990070-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	8.31	8.30	0.120	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.00	7.00	100.	98.6 - 101

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.01	7.00	100	98.6 - 101

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.04	7.00	101	98.6 - 101

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Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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990070

CH2MHILL **CHAIN OF CUSTODY RECORD** 7/7/2010 1:56:40 PM Page 1 OF 2

Project Name PG&E Topock
Location Topock
Project Number 390378.MP.02.RM.01
Project Manager Jay Piper
Sample Manager Shawn Duffy

Task Order
Project 2010-RMP-167
Turnaround Time 10 Days
Shipping Date: 7/9/2010
COC Number: 1

	Container	3X250 ml Poly	250 Poly	250 ml Poly	1 Liter Poly	1 Liter Poly			
	Preservatives	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	4°C	4°C			
	Filtered	Field	NA	Field	NA	NA			
	Holding Time	28	28	180	28	28			
		Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Dissolved Chromium (6010BCRFF) Field Filtered Chromium	Specific Conductance (E120.1)	PH (SM4500HB)		Number of Containers	COMMENTS
	DATE TIME Matrix								
1	C-BNS-D-167 7/7/2010 10:53 Water	X		X	X	X		5	
2	C-I-3-D-167 7/7/2010 9:24 Water	X		X	X	X		5	
3	C-I-3-S-167 7/7/2010 9:32 Water	X		X	X	X		5	pH=2
4	C-MAR-D-167 7/7/2010 12:38 Water	X		X	X	X		5	
5	C-MAR-S-167 7/7/2010 12:50 Water	X		X	X	X		5	
	C-MW-80-167 7/7/2010 11:10 Water		X					1	Hold
	C-MW-81-167 7/7/2010 10:45 Water		X					1	Hold
6	C-R22A-D-167 7/7/2010 10:18 Water	X		X	X	X		5	
7	C-R22A-S-167 7/7/2010 10:30 Water	X		X	X	X		5	
8	C-R27-D-167 7/7/2010 11:16 Water	X		X	X	X		5	
9	C-R27-S-167 7/7/2010 11:27 Water	X		X	X	X		5	
10	C-TAZ-D-167 7/7/2010 8:45 Water	X		X	X	X		5	pH=2
11	C-TAZ-S-167 7/7/2010 8:55 Water	X		X	X	X		5	
12	R-19-167 7/7/2010 12:16 Water	X		X	X	X		5	
13	R-28-167 7/7/2010 11:46 Water	X		X	X	X		5	

* Where provided w/3 Cr6 bottles, please analyze 1 + hold 2

ALERT !! Level III QC

	Signatures	Date/Time
Approved by		7-7-10
Sampled by		1445
Relinquished by		7-7-10
Received by	Rafael Davila	15:00
Relinquished by	Rafael Davila	7-7-10 8:30
Received by	Shakemura	JUL 07 2010 4:30

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:
July 13-15, 2010

Report Copy to
Shawn Duffy
(530) 229-3303

CH2MHILL CHAIN OF CUSTODY RECORD 390070 7/7/2010 1:56:40 PM Page 2 OF 2

Project Name PG&E Topock
Location Topock
Project Number 390378.MP.02.RM.01
Project Manager Jay Piper
Sample Manager Shawn Duffy

Task Order
Project 2010-RMP-167
Turnaround Time 10 Days
Shipping Date: 7/9/2010
COC Number: 1

	DATE	TIME	Matrix	Container	3X250 ml Poly	250 Poly	250 ml Poly	1 Liter Poly	1 Liter Poly	Number of Containers	COMMENTS
				Preservatives	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	4°C	4°C		
				Filtered	Field	NA	Field	NA	NA		
				Holding Time	28	28	180	28	28		
					Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Dissolved Chromium (6010BCRFF) Field Filtered Chromium	Specific Conductance (E120.1)	PH (SM4500HB)		
14	R63-167	7/7/2010	9:50	Water	X		X	X	X	5	QU=2
	RMP-AB1-167	7/7/2010	12:55	Water		X				1	Hold
									TOTAL NUMBER OF CONTAINERS	73	

* Where provided w/ 3 Cr6 bottles, please analyze 1 + hold 2

ALERT !! Level III QC

For Sample Condition See Form Attached

	Signatures	Date/Time
Approved by		7/7/10
Sampled by		1445
Relinquished by		
Received by	Rafael Davila	7/7/10 15:00
Relinquished by	Rafael Davila	7/7/10 21:30
Received by	JUL 07 2010	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:
July 13-15, 2010

Report Copy to
Shawn Duffy
(530) 229-3303

040

TRUESDAIL LABORATORIES, INC.

ALERT !!
Level III QC

Sample Integrity & Analysis Discrepancy Form

Client: CH2M HILL **Lab #** 990070

Date Delivered: 7/7/10 **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? Temperature (if yes)? 6/°C	☑Yes	☐No	☐N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc..)?	☑Yes	☐No	☐N/A
8.	Were sample custody seals intact?	☐Yes	☐No	☐N/A
9.	Does the number of samples received agree with COC?	☑Yes	☐No	☐N/A
10.	Did sample labels correspond with the client ID's?	☑Yes	☐No	☐N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: ☑Truesdail ☐Client	☑Yes	☐No	☐N/A
12.	Were samples pH checked? pH = See C-O-C	☑Yes	☐No	☐N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	☑Yes	☐No	☐N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): ☐ RUSH ☑ Std	☑Yes	☐No	☐N/A

15. **Sample Matrix:** ☐Liquid ☐Drinking Water ☐Ground Water ☐Waste Water ☐Sludge ☐Soil ☐Wipe ☐Paint ☐Solid ☑Other WATER

16. Comments: _____

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

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Established 1931

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

July 22, 2010

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK 2010-RMP-167, SURFACEWATER MONITORING PROJECT, TLI NO.: 990128

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock 2010-RMP-167 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 July 9, 2010, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

The samples for pH analysis by method SM 4500-H B were received past the holding time. The samples were analyzed at the request of Mr. Shawn Duffy.

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

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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

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Event 2010-RMP-167 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-167	2.00	No			
C-CON-S-167	2.00	No			
C-NR1-D-167	2.00	No			
C-NR1-S-167	2.00	No			
C-NR3-D-167	2.00	No			
C-NR3-S-167	2.00	No			
C-NR4-D-167	2.00	No			
C-NR4-S-167	2.00	No			
RRB-167	2.00	No			
SW1-167	2.00	No			
SW2-167	2.00	No			

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Event 2010-RMP-167 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-167	9.50	No			
C-CON-S-167	9.50	No			
C-NR1-D-167	9.50	No			
C-NR1-S-167	9.50	No			
C-NR3-D-167	9.50	No			
C-NR3-S-167	9.50	No			
C-NR4-D-167	9.50	No			
C-NR4-S-167	9.50	No			
RRB-167	9.50	No			
SW1-167	9.50	No			
SW2-167	9.50	No			

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INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

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

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

Laboratory No.: 990128
Date Received: July 9, 2010

Project Name: PG&E Topock Project
Project No.: 390378.MP.02.RM.01
P.O. No.: 390378.MP.02.RM.01

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
990128-001	C-CON-D-167	E120.1	NONE	7/8/10	9:06	EC	929	umhos/cm	2.00
990128-001	C-CON-D-167	E218.6	FLDFLT	7/8/10	9:06	Chromium, hexavalent	ND	ug/L	0.20
990128-001	C-CON-D-167	SM4500HB	NONE	7/8/10	9:06	PH	8.28 J	pH	4.00
990128-001	C-CON-D-167	SW6020	FLDFLT	7/8/10	9:06	Chromium	ND	ug/L	1.0
990128-002	C-CON-S-167	E120.1	NONE	7/8/10	9:15	EC	934	umhos/cm	2.00
990128-002	C-CON-S-167	E218.6	FLDFLT	7/8/10	9:15	Chromium, hexavalent	ND	ug/L	0.20
990128-002	C-CON-S-167	SM4500HB	NONE	7/8/10	9:15	PH	8.26 J	pH	4.00
990128-002	C-CON-S-167	SW6020	FLDFLT	7/8/10	9:15	Chromium	ND	ug/L	1.0
990128-003	C-NR1-D-167	E120.1	NONE	7/8/10	9:41	EC	936	umhos/cm	2.00
990128-003	C-NR1-D-167	E218.6	FLDFLT	7/8/10	9:41	Chromium, hexavalent	ND	ug/L	0.20
990128-003	C-NR1-D-167	SM4500HB	NONE	7/8/10	9:41	PH	8.25 J	pH	4.00
990128-003	C-NR1-D-167	SW6020	FLDFLT	7/8/10	9:41	Chromium	ND	ug/L	1.0
990128-004	C-NR1-S-167	E120.1	NONE	7/8/10	9:50	EC	929	umhos/cm	2.00
990128-004	C-NR1-S-167	E218.6	FLDFLT	7/8/10	9:50	Chromium, hexavalent	ND	ug/L	0.20
990128-004	C-NR1-S-167	SM4500HB	NONE	7/8/10	9:50	PH	8.23 J	pH	4.00
990128-004	C-NR1-S-167	SW6020	FLDFLT	7/8/10	9:50	Chromium	ND	ug/L	1.0
990128-005	C-NR3-D-167	E120.1	NONE	7/8/10	10:18	EC	942	umhos/cm	2.00
990128-005	C-NR3-D-167	E218.6	FLDFLT	7/8/10	10:18	Chromium, hexavalent	ND	ug/L	0.20
990128-005	C-NR3-D-167	SM4500HB	NONE	7/8/10	10:18	PH	8.18 J	pH	4.00
990128-005	C-NR3-D-167	SW6020	FLDFLT	7/8/10	10:18	Chromium	ND	ug/L	1.0
990128-006	C-NR3-S-167	E120.1	NONE	7/8/10	10:30	EC	930	umhos/cm	2.00
990128-006	C-NR3-S-167	E218.6	FLDFLT	7/8/10	10:30	Chromium, hexavalent	ND	ug/L	0.20
990128-006	C-NR3-S-167	SM4500HB	NONE	7/8/10	10:30	PH	8.19 J	pH	4.00
990128-006	C-NR3-S-167	SW6020	FLDFLT	7/8/10	10:30	Chromium	ND	ug/L	1.0

900

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
990128-007	C-NR4-D-167	E120.1	NONE	7/8/10	11:08	EC	932	umhos/cm	2.00
990128-007	C-NR4-D-167	E218.6	FLDFLT	7/8/10	11:08	Chromium, hexavalent	ND	ug/L	0.20
990128-007	C-NR4-D-167	SM4500HB	NONE	7/8/10	11:08	PH	8.17 J	pH	4.00
990128-007	C-NR4-D-167	SW6020	FLDFLT	7/8/10	11:08	Chromium	ND	ug/L	1.0
990128-008	C-NR4-S-167	E120.1	NONE	7/8/10	11:20	EC	937	umhos/cm	2.00
990128-008	C-NR4-S-167	E218.6	FLDFLT	7/8/10	11:20	Chromium, hexavalent	ND	ug/L	0.20
990128-008	C-NR4-S-167	SM4500HB	NONE	7/8/10	11:20	PH	8.18 J	pH	4.00
990128-008	C-NR4-S-167	SW6020	FLDFLT	7/8/10	11:20	Chromium	ND	ug/L	1.0
990128-009	RRB-167	E120.1	NONE	7/8/10	8:25	EC	947	umhos/cm	2.00
990128-009	RRB-167	E218.6	FLDFLT	7/8/10	8:25	Chromium, hexavalent	ND	ug/L	0.20
990128-009	RRB-167	SM4500HB	NONE	7/8/10	8:25	PH	8.12 J	pH	4.00
990128-009	RRB-167	SW6020	FLDFLT	7/8/10	8:25	Chromium	ND	ug/L	1.0
990128-010	SW1-167	E120.1	NONE	7/8/10	13:05	EC	1000	umhos/cm	2.00
990128-010	SW1-167	E218.6	FLDFLT	7/8/10	13:05	Chromium, hexavalent	ND	ug/L	0.20
990128-010	SW1-167	SM4500HB	NONE	7/8/10	13:05	PH	7.58 J	pH	4.00
990128-010	SW1-167	SW6020	FLDFLT	7/8/10	13:05	Chromium	ND	ug/L	1.0
990128-011	SW2-167	E120.1	NONE	7/8/10	13:30	EC	988	umhos/cm	2.00
990128-011	SW2-167	E218.6	FLDFLT	7/8/10	13:30	Chromium, hexavalent	ND	ug/L	0.20
990128-011	SW2-167	SM4500HB	NONE	7/8/10	13:30	PH	7.57 J	pH	4.00
990128-011	SW2-167	SW6020	FLDFLT	7/8/10	13:30	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.

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TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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

REPORT

Client: **E2 Consulting Engineers, Inc.**
155 Grand Avenue, Suite 800
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
P.O. Number: 390378.MP.02.RM.01
Project Number: 390378.MP.02.RM.01

Laboratory No. 990128

Printed 7/26/10

Samples Received on 7/9/10 2:50:00 PM

Field ID	Lab ID	Collected	Matrix
C-CON-D-167	990128-001	07/08/2010 09:06	Water
C-CON-S-167	990128-002	07/08/2010 09:15	Water
C-NR1-D-167	990128-003	07/08/2010 09:41	Water
C-NR1-S-167	990128-004	07/08/2010 09:50	Water
C-NR3-D-167	990128-005	07/08/2010 10:18	Water
C-NR3-S-167	990128-006	07/08/2010 10:30	Water
C-NR4-D-167	990128-007	07/08/2010 11:08	Water
C-NR4-S-167	990128-008	07/08/2010 11:20	Water
RRB-167	990128-009	07/08/2010 08:25	Water
SW1-167	990128-010	07/08/2010 13:05	Water
SW2-167	990128-011	07/08/2010 13:30	Water

Specific Conductivity - EPA 120.1 Batch 07EC10D 7/13/10

Parameter	Unit	Analyzed	DF	MDL	RL	Result
990128-001 Specific Conductivity	umhos/cm	07/13/2010	1.00	0.0380	2.00	929.
990128-002 Specific Conductivity	umhos/cm	07/13/2010	1.00	0.0380	2.00	934.
990128-003 Specific Conductivity	umhos/cm	07/13/2010	1.00	0.0380	2.00	936.
990128-004 Specific Conductivity	umhos/cm	07/13/2010	1.00	0.0380	2.00	929.
990128-005 Specific Conductivity	umhos/cm	07/13/2010	1.00	0.0380	2.00	942.
990128-006 Specific Conductivity	umhos/cm	07/13/2010	1.00	0.0380	2.00	930.
990128-007 Specific Conductivity	umhos/cm	07/13/2010	1.00	0.0380	2.00	932.
990128-008 Specific Conductivity	umhos/cm	07/13/2010	1.00	0.0380	2.00	937.
990128-009 Specific Conductivity	umhos/cm	07/13/2010	1.00	0.0380	2.00	947.
990128-010 Specific Conductivity	umhos/cm	07/13/2010	1.00	0.0380	2.00	1000
990128-011 Specific Conductivity	umhos/cm	07/13/2010	1.00	0.0380	2.00	988.

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Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate — Lab ID = 990128-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	946.	947.	0.106	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	697.	706.	98.7	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	694.	706.	98.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	987.	1000	98.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	984.	1000	98.4	90 - 110

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Chrome VI by EPA 218.6

Batch 07CrH10D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
990128-001 Chromium, Hexavalent	ug/L	07/14/2010 08:22	1.05	0.0190	0.20	ND
990128-002 Chromium, Hexavalent	ug/L	07/14/2010 08:32	1.05	0.0190	0.20	ND
990128-003 Chromium, Hexavalent	ug/L	07/14/2010 08:43	1.05	0.0190	0.20	ND
990128-004 Chromium, Hexavalent	ug/L	07/14/2010 09:35	1.05	0.0190	0.20	ND
990128-005 Chromium, Hexavalent	ug/L	07/14/2010 10:06	1.05	0.0190	0.20	ND
990128-006 Chromium, Hexavalent	ug/L	07/14/2010 10:16	1.05	0.0190	0.20	ND
990128-007 Chromium, Hexavalent	ug/L	07/14/2010 10:58	1.05	0.0190	0.20	ND
990128-008 Chromium, Hexavalent	ug/L	07/14/2010 11:08	1.05	0.0190	0.20	ND
990128-009 Chromium, Hexavalent	ug/L	07/14/2010 11:19	1.05	0.0190	0.20	ND
990128-010 Chromium, Hexavalent	ug/L	07/14/2010 12:21	1.05	0.0190	0.20	ND
990128-011 Chromium, Hexavalent	ug/L	07/14/2010 12:32	1.05	0.0190	0.20	ND

Method Blank

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

Duplicate — Lab ID = 990128-001

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.95	5.00	99.0	90 - 110

Matrix Spike — Lab ID = 990128-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.11	1.06(1.06)	105	90 - 110

Matrix Spike — Lab ID = 990128-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.08	1.06(1.06)	102	90 - 110

Matrix Spike — Lab ID = 990128-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.12	1.06(1.06)	106	90 - 110

Matrix Spike — Lab ID = 990128-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.11	1.06(1.06)	105	90 - 110

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Matrix Spike — Lab ID = 990128-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.04	1.06(1.06)	98.1	90 - 110

Matrix Spike — Lab ID = 990169-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.08	1.06(1.06)	102	90 - 110

Matrix Spike — Lab ID = 990169-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.34	5.25(5.25)	102	90 - 110

Matrix Spike — Lab ID = 990128-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.10	1.06(1.06)	104	90 - 110

Matrix Spike — Lab ID = 990128-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.09	1.06(1.06)	103	90 - 110

Matrix Spike — Lab ID = 990128-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.11	1.06(1.06)	105	90 - 110

Matrix Spike — Lab ID = 990128-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.12	1.06(1.06)	106	90 - 110

Matrix Spike — Lab ID = 990128-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.15	1.06(1.06)	108	90 - 110

Matrix Spike — Lab ID = 990128-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.13	1.06(1.06)	107	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.94	5.00	98.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.92	10.0	99.2	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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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 5 of 8
Project Number: 390378.MP.02.RM.01 Printed 7/26/10

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.63	10.0	96.3	95 - 105

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Metals by EPA 6020A, Dissolved Batch 071410A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
990128-001 Chromium	ug/L	07/14/2010 11:17	5.00	0.0750	1.0	ND
990128-002 Chromium	ug/L	07/14/2010 11:24	5.00	0.0750	1.0	ND
990128-003 Chromium	ug/L	07/14/2010 11:30	5.00	0.0750	1.0	ND
990128-004 Chromium	ug/L	07/14/2010 11:37	5.00	0.0750	1.0	ND
990128-005 Chromium	ug/L	07/14/2010 11:44	5.00	0.0750	1.0	ND
990128-006 Chromium	ug/L	07/14/2010 11:51	5.00	0.0750	1.0	ND
990128-007 Chromium	ug/L	07/14/2010 11:58	5.00	0.0750	1.0	ND
990128-008 Chromium	ug/L	07/14/2010 12:05	5.00	0.0750	1.0	ND
990128-009 Chromium	ug/L	07/14/2010 12:12	5.00	0.0750	1.0	ND
990128-010 Chromium	ug/L	07/14/2010 12:32	5.00	0.0750	1.0	ND
990128-011 Chromium	ug/L	07/14/2010 12:39	5.00	0.0750	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate — Lab ID = 990128-011

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.8	50.0	99.6	90 - 110

Matrix Spike — Lab ID = 990128-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	228.	250.(250)	91.2	75 - 125

Matrix Spike Duplicate — Lab ID = 990128-011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	224.	250.(250)	89.6	75 - 125

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.9	50.0	93.8	90 - 110

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.9	50.0	95.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.4	50.0	96.8	90 - 110

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.9	50.0	93.8	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.1	50.0	98.2	80 - 120

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pH by SM 4500-H B Batch 07PH10G

Parameter	Unit	Analyzed	DF	MDL	RL	Result	
990128-001 pH	pH	07/09/2010 15:31	1.00	0.0250	4.00	8.28	J
990128-002 pH	pH	07/09/2010 15:34	1.00	0.0250	4.00	8.26	J
990128-003 pH	pH	07/09/2010 15:38	1.00	0.0250	4.00	8.25	J
990128-004 pH	pH	07/09/2010 15:41	1.00	0.0250	4.00	8.23	J
990128-005 pH	pH	07/09/2010 15:44	1.00	0.0250	4.00	8.18	J
990128-006 pH	pH	07/09/2010 15:47	1.00	0.0250	4.00	8.19	J
990128-007 pH	pH	07/09/2010 15:50	1.00	0.0250	4.00	8.17	J
990128-008 pH	pH	07/09/2010 15:53	1.00	0.0250	4.00	8.18	J
990128-009 pH	pH	07/09/2010 15:56	1.00	0.0250	4.00	8.12	J
990128-010 pH	pH	07/09/2010 15:59	1.00	0.0250	4.00	7.58	J
990128-011 pH	pH	07/09/2010 16:02	1.00	0.0250	4.00	7.57	J

Duplicate — Lab ID = 990128-011

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	7.58	7.57	0.132	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.01	7.00	100	98.6 - 101

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.03	7.00	100	98.6 - 101

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.03	7.00	100	98.6 - 101

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Manager, Analytical Services

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Rec'd 07/09/10
Lab#: 990128

990128

CH2MHILL

CHAIN OF CUSTODY RECORD

7/8/2010 2:26:32 PM

Project Name PG&E Topock
Location Topock
Project Number 390378.MP.02.RM.01
Project Manager Jay Piper
Sample Manager Shawn Duffy

Task Order
Project 2010-RMP-167
Turnaround Time 10 Days
Shipping Date: 7/9/2010
COC Number: 2

ALERT !!
Level III QC

Where provided w/3 Cr6 bottles, please ~~saw~~ analyze 1 + hold 2

For Sample Conditions See Form Attached

	Container:	3X250 ml Poly	250 Poly	250 ml Poly	1 Liter Poly	1 Liter Poly
	Preservatives:	(NH4)2SO4/NH4OH, 4°C	(NH4)2SO4/NH4OH, 4°C	HNO3, 4°C	4°C	4°C
	Filtered:	Field	NA	Field	NA	NA
	Holding Time:	28	28	180	28	28

		DATE	TIME	Matrix	Cr6 (E218.6 - river) Field Filtered	Field QC Cr6 (E218.6-river)	Dissolved Chromium (6010BCRFF) Field Filtered Chromium	Specific Conductance (E120.1)	PH (SM4500HEI)	Number of Containers	COMMENTS
1	C-CON-D-167	7/8/2010	9:06	Water	x		x	x	x	5	
2	C-CON-S-167	7/8/2010	9:15	Water	x		x	x	x	5	PH=2
.	C-MW-82-167	7/8/2010	8:55	Water		x				1	Hold
.	C-MW-83-167	7/8/2010	10:08	Water		x				1	Hold
3	C-NR1-D-167	7/8/2010	9:41	Water	x		x	x	x	5	
4	C-NR1-S-167	7/8/2010	9:50	Water	x		x	x	x	5	
5	C-NR3-D-167	7/8/2010	10:18	Water	x		x	x	x	5	
6	C-NR3-S-167	7/8/2010	10:30	Water	x		x	x	x	5	PH=2
7	C-NR4-D-167	7/8/2010	11:08	Water	x		x	x	x	5	
8	C-NR4-S-167	7/8/2010	11:20	Water	x		x	x	x	5	
.	RMP-AB2-167	7/8/2010	11:23	Water		x				1	Hold
9	RRB-167	7/8/2010	8:25	Water	x		x	x	x	5	
10	SW1-167	7/8/2010	13:05	Water	x		x	x	x	5	PH=2
11	SW2-167	7/8/2010	13:30	Water	x		x	x	x	5	
									TOTAL NUMBER OF CONTAINERS	58	

	Signatures	Date/Time
Approved by		
Sampled by	[signature]	7-9-10
Relinquished by	[signature] OMI	7-9-10
Received by	BONIFACIO DAYAG	1400
Relinquished by	Bonifacio Dayag	7-9-10 ~~1400~~ 1450
Received by	Shabunina	7/9/10 14:50

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:
July 13-15, 2010

Report Copy to
Shawn Duffy
(530) 229-3303

TRUESDAIL LABORATORIES, INC.

ALERT !!
Level III QC

Sample Integrity & Analysis Discrepancy Form

Client: CH2 M Hill **Lab #** 990128

Date Delivered: 07/09/10 **Time:** 14:50 **By:** ☐Mail ☒Field Service ☐Client

1.	Was a Chain of Custody received and signed?	☒Yes	☐No	☐N/A
2.	Does Customer require an acknowledgement of the COC?	☐Yes	☐No	☒N/A
3.	Are there any special requirements or notes on the COC?	☐Yes	☐No	☒N/A
4.	If a letter was sent with the COC, does it match the COC?	☐Yes	☐No	☒N/A
5.	Were all requested analyses understood and acceptable?	☒Yes	☐No	☐N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? 4.1°C	☒Yes	☐No	☐N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc..)?	☒Yes	☐No	☐N/A
8.	Were sample custody seals intact?	☐Yes	☒No	☐N/A
9.	Does the number of samples received agree with COC?	☒Yes	☐No	☐N/A
10.	Did sample labels correspond with the client ID's?	☒Yes	☐No	☐N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: ☒Truesdail ☐Client	☒Yes	☐No	☐N/A
12.	Were samples pH checked? pH = See C.O.C	☒Yes	☐No	☐N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	☒Yes	☐No	☐N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): ☐ RUSH ☒Std	☒Yes	☐No	☐N/A

15. **Sample Matrix:** ☐Liquid ☐Drinking Water ☐Ground Water ☐Waste Water ☐Sludge ☐Soil ☐Wipe ☐Paint ☐Solid ☒Other water

16. Comments: _____

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

\\MATRIX\qa\v\Discrep Form Blank.doc

CLIENT: CH2M HILL
Lab Order: N004114
Project: PG&E Topock
Lab ID: N004114-007

Client Sample ID: MW-90-167
Collection Date: 5/6/2010 9:32:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP1_100507C**	QC Batch: **34519**				PrepDate:	**5/7/2010**	Analyst: **NS**
Antimony	ND	3.1	10		µg/L	1	5/7/2010 06:42 PM
Barium	42	0.29	3.0		µg/L	1	5/7/2010 06:42 PM
Beryllium	ND	0.13	1.0		µg/L	1	5/7/2010 06:42 PM
Cadmium	ND	0.080	3.0		µg/L	1	5/7/2010 06:42 PM
Chromium	2800	0.37	1.0		µg/L	1	5/7/2010 06:42 PM
Cobalt	ND	0.46	3.0		µg/L	1	5/7/2010 06:42 PM
Copper	ND	0.87	5.0		µg/L	1	5/7/2010 06:42 PM
Lead	ND	1.3	10		µg/L	1	5/7/2010 06:42 PM
Molybdenum	19	0.64	5.0		µg/L	1	5/7/2010 06:42 PM
Nickel	6.0	0.92	5.0		µg/L	1	5/7/2010 06:42 PM
Silver	ND	0.33	3.0		µg/L	1	5/7/2010 06:42 PM
Vanadium	14	0.17	3.0		µg/L	1	5/7/2010 06:42 PM
Zinc	19	2.2	10		µg/L	1	5/7/2010 06:42 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

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
989145-009	MW-57-070-167	E120.1	NONE	5/5/10	14:00	EC	1700	umhos/cm	2.00
989145-009	MW-57-070-167	E218.6	FLDFLT	5/5/10	14:00	Chromium, hexavalent	452	ug/L	5.2
989145-009	MW-57-070-167	SW6020	FLDFLT	5/5/10	14:00	Chromium	452	ug/L	1.0
989145-010	MW-57-185-167	E120.1	NONE	5/5/10	9:55	EC	18400	umhos/cm	2.00
989145-010	MW-57-185-167	E218.6	FLDFLT	5/5/10	9:55	Chromium, hexavalent	3.9	ug/L	1.0
989145-010	MW-57-185-167	SW6020	FLDFLT	5/5/10	9:55	Chromium	4.7	ug/L	1.0
989145-011	MW-77-167	E218.6	FLDFLT	5/5/10	15:44	Chromium, hexavalent	ND	ug/L	0.2
989145-012	TW-01-167	E120.1	NONE	5/5/10	15:32	EC	6860	umhos/cm	2.00
989145-012	TW-01-167	SM3500-CrB	FLDFLT	5/5/10	15:32	Chromium, hexavalent	3700	ug/L	250
989145-012	TW-01-167	SW6020	FLDFLT	5/5/10	15:32	Chromium	3700	ug/L	1.0
989145-013	MW-12-167	E120.1	NONE	5/6/10	14:24	EC	5520	umhos/cm	2.00
989145-013	MW-12-167	SM3500-CrB	FLDFLT	5/6/10	14:24	Chromium, hexavalent	2650	ug/L	250
989145-013	MW-12-167	SW6020	FLDFLT	5/6/10	14:24	Chromium	2700	ug/L	1.0
989145-014	MW-50-200-167	E120.1	NONE	5/6/10	15:14	EC	21100	umhos/cm	2.00
989145-014	MW-50-200-167	SM3500-CrB	FLDFLT	5/6/10	15:14	Chromium, hexavalent	10800	ug/L	250
989145-014	MW-50-200-167	SW6020	FLDFLT	5/6/10	15:14	Chromium	9840	ug/L	1.0
989145-015	MW-59-100-167	E120.1	NONE	5/6/10	13:35	EC	9890	umhos/cm	2.00
989145-015	MW-59-100-167	SM3500-CrB	FLDFLT	5/6/10	13:35	Chromium, hexavalent	4940	ug/L	250
989145-015	MW-59-100-167	SW6020	FLDFLT	5/6/10	13:35	Chromium	4850	ug/L	1.0
989145-016	MW-60-125-167	E120.1	NONE	5/6/10	12:31	EC	9080	umhos/cm	2.00
989145-016	MW-60-125-167	SM3500-CrB	FLDFLT	5/6/10	12:31	Chromium, hexavalent	1120	ug/L	50
989145-016	MW-60-125-167	SW6020	FLDFLT	5/6/10	12:31	Chromium	1080	ug/L	1.0
989145-017	MW-61-110-167	E120.1	NONE	5/6/10	10:40	EC	15500	umhos/cm	2.00
989145-017	MW-61-110-167	SM3500-CrB	FLDFLT	5/6/10	10:40	Chromium, hexavalent	480	ug/L	50
989145-017	MW-61-110-167	SW6020	FLDFLT	5/6/10	10:40	Chromium	511	ug/L	1.0
989145-018	MW-62-065-167	E120.1	NONE	5/6/10	9:37	EC	6230	umhos/cm	2.00
989145-018	MW-62-065-167	SM3500-CrB	FLDFLT	5/6/10	9:37	Chromium, hexavalent	436	ug/L	50
989145-018	MW-62-065-167	SW6020	FLDFLT	5/6/10	9:37	Chromium	456	ug/L	1.0
989145-019	MW-78-167	E218.6	FLDFLT	5/6/10	15:30	Chromium, hexavalent	0.48	ug/L	0.2
989145-020	MW-90-167	E120.1	NDNE	5/6/10	9:32	EC	5480	umhos/cm	2.00
989145-020	MW-90-167	SM3500-CrB	FLDFLT	5/6/10	9:32	Chromium, hexavalent	2650	ug/L	250
989145-020	MW-90-167	SW6020	FLDFLT	5/6/10	9:32	Chromium	2890	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.

August 03, 2010

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.: N004114

RE: PG&E Topock

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on May 06, 2010 by Advanced Technology Laboratories - Las Vegas . 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,

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 - Las Vega

Date: *26-May-10*

CLIENT: CH2M HILL
Project: PG&E Topock
Lab Order: N004114
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N004114-001A	MW-62-110-167	Water	5/4/2010 4:02:00 PM	5/6/2010	5/26/2010
N004114-001B	MW-62-110-167	Water	5/4/2010 4:02:00 PM	5/6/2010	5/26/2010
N004114-002A	MW-62-190-167	Water	5/4/2010 4:12:00 PM	5/6/2010	5/26/2010
N004114-002B	MW-62-190-167	Water	5/4/2010 4:12:00 PM	5/6/2010	5/26/2010
N004114-003A	MW-64-150-167	Water	5/4/2010 4:40:00 PM	5/6/2010	5/26/2010
N004114-003B	MW-64-150-167	Water	5/4/2010 4:40:00 PM	5/6/2010	5/26/2010
N004114-004A	MW-64-205-167	Water	5/4/2010 4:52:00 PM	5/6/2010	5/26/2010
N004114-004B	MW-64-205-167	Water	5/4/2010 4:52:00 PM	5/6/2010	5/26/2010
N004114-005A	MW-64-260-167	Water	5/4/2010 5:05:00 PM	5/6/2010	5/26/2010
N004114-005B	MW-64-260-167	Water	5/4/2010 5:05:00 PM	5/6/2010	5/26/2010
N004114-006A	MW-12-167	Water	5/6/2010 2:24:00 PM	5/6/2010	5/26/2010
N004114-007A	MW-90-167	Water	5/6/2010 9:32:00 AM	5/6/2010	5/26/2010

CLIENT: CH2M HILL
Lab Order: N004114
Project: PG&E Topock
Lab ID: N004114-006

Client Sample ID: MW-12-167
Collection Date: 5/6/2010 2:24:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP1_100507C**	QC Batch: **34519**				PrepDate:	**5/7/2010**	Analyst: **NS**
Antimony	ND	3.1	10		µg/L	1	5/7/2010 06:48 PM
Barium	40	0.29	3.0		µg/L	1	5/7/2010 06:48 PM
Beryllium	ND	0.13	1.0		µg/L	1	5/7/2010 06:48 PM
Cadmium	ND	0.080	3.0		µg/L	1	5/7/2010 06:48 PM
Chromium	2700	0.37	1.0		µg/L	1	5/7/2010 06:48 PM
Cobalt	ND	0.46	3.0		µg/L	1	5/7/2010 06:48 PM
Copper	ND	0.87	5.0		µg/L	1	5/7/2010 06:48 PM
Lead	ND	1.3	10		µg/L	1	5/7/2010 06:48 PM
Molybdenum	18	0.64	5.0		µg/L	1	5/7/2010 06:48 PM
Nickel	5.7	0.92	5.0		µg/L	1	5/7/2010 06:48 PM
Silver	ND	0.33	3.0		µg/L	1	5/7/2010 06:48 PM
Vanadium	13	0.17	3.0		µg/L	1	5/7/2010 06:48 PM
Zinc	31	2.2	10		µg/L	1	5/7/2010 06:48 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	**Client Sample ID:**	MW-90-167
Lab Order:	N004114	**Collection Date:**	5/6/2010 9:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N004114-007A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP						
	EPA 3010A			**EPA 6010B**		
RunID: ICP1_100507C	QC Batch: 34519			PrepDate:	5/7/2010	Analyst: **NS**
Antimony	ND	10		µg/L	1	5/7/2010 06:42 PM
Barium	42	3.0		µg/L	1	5/7/2010 06:42 PM
Beryllium	ND	1.0		µg/L	1	5/7/2010 06:42 PM
Cadmium	ND	3.0		µg/L	1	5/7/2010 06:42 PM
Cobalt	ND	3.0		µg/L	1	5/7/2010 06:42 PM
Copper	ND	5.0		µg/L	1	5/7/2010 06:42 PM
Lead	ND	10		µg/L	1	5/7/2010 06:42 PM
Molybdenum	19	5.0		µg/L	1	5/7/2010 06:42 PM
Nickel	6.0	5.0		µg/L	1	5/7/2010 06:42 PM
Silver	ND	3.0		µg/L	1	5/7/2010 06:42 PM
Vanadium	14	3.0		µg/L	1	5/7/2010 06:42 PM
Zinc	19	10		µg/L	1	5/7/2010 06:42 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: N004114
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-34519**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **5/7/2010**	RunNo: **76636**
Client ID: **PBW**	Batch ID: **34519**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/7/2010**	SeqNo: **1181467**

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	0.110	3.0									
Chromium	ND	1.0									
Cobalt	ND	3.0									
Copper	ND	5.0									
Lead	ND	10									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Silver	ND	3.0									
Vanadium	ND	3.0									
Zinc	ND	10									

Sample ID: **LCS-34519**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **5/7/2010**	RunNo: **76636**
Client ID: **LCSW**	Batch ID: **34519**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/7/2010**	SeqNo: **1181468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	969.420	10	1000	0	96.9	85	115				
Barium	961.251	3.0	1000	0	96.1	85	115				
Beryllium	959.227	1.0	1000	0	95.9	85	115				
Cadmium	968.730	3.0	1000	0.0001101	96.9	85	115				
Chromium	961.144	1.0	1000	0	96.1	85	115				
Cobalt	972.439	3.0	1000	0	97.2	85	115				
Copper	958.955	5.0	1000	0	95.9	85	115				
Lead	969.656	10	1000	0	97.0	85	115				
Molybdenum	958.663	5.0	1000	0	95.9	85	115				
Nickel	968.900	5.0	1000	0	96.9	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: N004114
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: LCS-34519	SampType: LCS	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 5/7/2010	RunNo: 76636
Client ID: LCSW	Batch ID: 34519	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/7/2010	SeqNo: 1181468

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	954.042	3.0	1000	0	95.4	85	115				
Vanadium	957.898	3.0	1000	0	95.8	85	115				
Zinc	972.332	10	1000	0	97.2	85	115				

Sample ID: N004114-007A-MS	SampType: MS	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 5/7/2010	RunNo: 76636
Client ID: ZZZZZZ	Batch ID: 34519	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/7/2010	SeqNo: 1181475

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	2405.456	10	2500	8.171	95.9	75	125				
Barium	2325.023	3.0	2500	41.53	91.3	75	125				
Beryllium	2366.116	1.0	2500	0	94.6	75	125				
Cadmium	2322.761	3.0	2500	0	92.9	75	125				
Chromium	5002.432	1.0	2500	2809	87.7	75	125				
Cobalt	2315.794	3.0	2500	0	92.6	75	125				
Copper	2392.297	5.0	2500	1.486	95.6	75	125				
Lead	2239.831	10	2500	2.533	89.5	75	125				
Molybdenum	2385.842	5.0	2500	19.04	94.7	75	125				
Nickel	2304.798	5.0	2500	6.014	92.0	75	125				
Silver	2384.047	3.0	2500	0	95.4	75	125				
Vanadium	2391.468	3.0	2500	13.62	95.1	75	125				
Zinc	2371.138	10	2500	18.72	94.1	75	125				

Sample ID: N004114-007A-MSD	SampType: MSD	TestCode: 6010_WDPG	Units: µg/L	Prep Date: 5/7/2010	RunNo: 76636
Client ID: ZZZZZZ	Batch ID: 34519	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/7/2010	SeqNo: 1181476

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	2388.215	10	2500	8.171	95.2	75	125	2405	0.719	20	
Barium	2299.136	3.0	2500	41.53	90.3	75	125	2325	1.12	20	
Beryllium	2333.340	1.0	2500	0	93.3	75	125	2366	1.39	20	
Cadmium	2303.021	3.0	2500	0	92.1	75	125	2323	0.853	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 *3151 W. Post Road, Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

CLIENT: CH2M HILL
Work Order: N004114
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N004114-007A-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **5/7/2010**	RunNo: **76636**
Client ID: **ZZZZZZ**	Batch ID: **34519**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/7/2010**	SeqNo: **1181476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	5018.102	1.0	2500	2809	88.4	75	125	5002	0.313	20	
Cobalt	2293.513	3.0	2500	0	91.7	75	125	2316	0.967	20	
Copper	2367.563	5.0	2500	1.486	94.6	75	125	2392	1.04	20	
Lead	2219.358	10	2500	2.533	88.7	75	125	2240	0.918	20	
Molybdenum	2364.869	5.0	2500	19.04	93.8	75	125	2386	0.883	20	
Nickel	2282.905	5.0	2500	6.014	91.1	75	125	2305	0.954	20	
Silver	2374.825	3.0	2500	0	95.0	75	125	2384	0.388	20	
Vanadium	2367.150	3.0	2500	13.62	94.1	75	125	2391	1.02	20	
Zinc	2353.809	10	2500	18.72	93.4	75	125	2371	0.734	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 *3151 W. Post Road, Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691*

ANALYTICAL RESULTS

Advanced Technology Laboratories - Las Vegas

Print Date: *03-Aug-10*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-167
Lab Order:	N004114	**Collection Date:**	5/6/2010 2:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N004114-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ICP-MS METALS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP4_100520A**	QC Batch: **34561**				PrepDate:	**5/13/2010**	Analyst: **JT**
Selenium	14	0.29	1.0		µg/L	1	5/20/2010
Thallium	ND	0.015	1.0		µg/L	1	5/20/2010

Qualifiers:

B	Analyte detected in 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 - Las Vegas

Print Date: *03-Aug-10*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-90-167
Lab Order:	N004114	**Collection Date:**	5/6/2010 9:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N004114-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ICP-MS METALS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP4_100520A**	QC Batch: **34561**				PrepDate:	**5/13/2010**	Analyst: **JT**
Selenium	14	0.29	1.0		µg/L	1	5/20/2010
Thallium	ND	0.015	1.0		µg/L	1	5/20/2010

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N004114
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: MB-34561	SampType: MBLK	TestCode: 6020_DIS	Units: µg/L	Prep Date: 5/13/2010	RunNo: 76780
Client ID: PBW	Batch ID: 34561	TestNo: EPA 6020	EPA 3010A	Analysis Date: 5/20/2010	SeqNo: 1183501

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.580	1.0									
Thallium	0.115	1.0									

Sample ID: LCS-34561	SampType: LCS	TestCode: 6020_DIS	Units: µg/L	Prep Date: 5/13/2010	RunNo: 76780
Client ID: LCSW	Batch ID: 34561	TestNo: EPA 6020	EPA 3010A	Analysis Date: 5/20/2010	SeqNo: 1183502

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	13.225	1.0	12.50	0	106	85	115				
Thallium	12.790	1.0	12.50	0	102	85	115				

Sample ID: N004145-001A-MS	SampType: MS	TestCode: 6020_DIS	Units: µg/L	Prep Date: 5/13/2010	RunNo: 76780
Client ID: ZZZZZZ	Batch ID: 34561	TestNo: EPA 6020	EPA 3010A	Analysis Date: 5/20/2010	SeqNo: 1183505

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	26.630	1.0	25.00	0.7225	104	70	130				
Thallium	24.716	1.0	25.00	0.02000	98.8	70	130				

Sample ID: N004145-001A-MSD	SampType: MSD	TestCode: 6020_DIS	Units: µg/L	Prep Date: 5/13/2010	RunNo: 76780
Client ID: ZZZZZZ	Batch ID: 34561	TestNo: EPA 6020	EPA 3010A	Analysis Date: 5/20/2010	SeqNo: 1183506

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	26.616	1.0	25.00	0.7225	104	70	130	26.63	0.0516	20	
Thallium	25.044	1.0	25.00	0.02000	100	70	130	24.72	1.32	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

Advanced Technology Laboratories, Inc
3151 W. Post Road Las Vegas, NV 89118 Tel: 702 307-2659 Fax: 702 307-2691

REVISION 1, 08/04/10

ANALYTICAL RESULTS

Advanced Technology Laboratories - Las Vegas

Print Date: *26-May-10*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-12-167
Lab Order:	N004114	**Collection Date:**	5/6/2010 2:24:00 PM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N004114-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470					**EPA 7470A**		
RunID: **AA1_100510C**	QC Batch: **34503**				PrepDate:	**5/6/2010**	Analyst: **JT**
Mercury	ND	0.049	0.20		µg/L	1	5/10/2010

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 - Las Vegas

Print Date: *26-May-10*

CLIENT:	CH2M HILL	**Client Sample ID:**	MW-90-167
Lab Order:	N004114	**Collection Date:**	5/6/2010 9:32:00 AM
Project:	PG&E Topock	**Matrix:**	WATER
Lab ID:	N004114-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470					**EPA 7470A**		
RunID: **AA1_100510C**	QC Batch: **34503**				PrepDate:	**5/6/2010**	Analyst: **JT**
Mercury	ND	0.049	0.20		µg/L	1	5/10/2010

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: CH2M HILL
Work Order: N004114
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID: **LCS-34503**	SampType: **LCS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **5/6/2010**	RunNo: **76646**
Client ID: **LCSW**	Batch ID: **34503**	TestNo: **EPA 7470A**	**EPA 7470**	Analysis Date: **5/10/2010**	SeqNo: **1181183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.375	0.20	10.00	0	104	85	115				

Sample ID: **MB-34503**	SampType: **MBLK**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **5/6/2010**	RunNo: **76646**
Client ID: **PBW**	Batch ID: **34503**	TestNo: **EPA 7470A**	**EPA 7470**	Analysis Date: **5/10/2010**	SeqNo: **1181184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **N004101-001D-MS**	SampType: **MS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **5/6/2010**	RunNo: **76646**
Client ID: **ZZZZZZ**	Batch ID: **34503**	TestNo: **EPA 7470A**	**EPA 7470**	Analysis Date: **5/10/2010**	SeqNo: **1181186**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	20.456	0.20	20.00	0	102	75	125				

Sample ID: **N004101-001D-MSD**	SampType: **MSD**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **5/6/2010**	RunNo: **76646**
Client ID: **ZZZZZZ**	Batch ID: **34503**	TestNo: **EPA 7470A**	**EPA 7470**	Analysis Date: **5/10/2010**	SeqNo: **1181187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	20.495	0.20	20.00	0	102	75	125	20.46	0.190	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

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CH2MHILL **CHAIN OF CUSTODY RECORD** *5/6/2010 3:01:41 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Number 390378.MP.02.GM.04
Project Manager Jay Piper
Sample Manager Shawn Duffy

Task Order
Project 2010-GMP-167-Q2
Turnaround Time 10 Days
Shipping Date: 5/6/2010
COC Number: 5

	DATE	TIME	Matrix	Arsenic (6020) Field Filtered	Metals (6010BFF) Field Filtered Title 22	Metals (7470ADisField) Field Filtered	TOC (SM5310C)	Number of Containers	COMMENTS
Container:				500 ml Poly	250 ml Poly	250 ml Poly	3 x 40 ml VOA		
Preservatives:				HNO3	HNO3, 4°C	HNO3, 4°C	H3PO4, 4°C		
Filtered:				Field	Field	Field	NA		
Holding Time:				7	180	180	0		
MW-62-110-167	5/4/2010	16:02	Water	X			X	~~2~~ 4	
MW-62-190-167	5/4/2010	16:12	Water	X			X	~~2~~ 4	
MW-64-150-167	5/4/2010	16:40	Water	X			X	~~2~~ 4	
MW-64-205-167	5/4/2010	16:52	Water	X			X	~~2~~ 4	
MW-64-260-167	5/4/2010	17:05	Water	X			X	~~2~~ 4	
MW-12-167	5/6/2010	14:24	Water		X	X		~~2~~ 1	
MW-90-167	5/6/2010	9:32	Water		X	X		~~2~~ 1	
							TOTAL NUMBER OF CONTAINERS	~~14~~ 22	PBC 5-6-10

	Signatures	Date/Time
Approved by		
Sampled by		5-6-10 1530
Relinquished by		
Received by	Kristen Everett	5-6-10/1530
Relinquished by	Kristen Everett	5-6-10/1800
Received by		5/6/10 @ 1800

Shipping Details
Method of Shipment: courier
On Ice: (yes) / no 4.8° C
Airbill No:
Lab Name: ADVANCED TECHNOLOGY LABORATO
Lab Phone: (702) 307-2659

ATTN:
Sample Custody

Special Instructions:
April 29 - May 7, 2010

Report Copy to
Shawn Duffy
(530) 229-3303

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CH2MHILL **CHAIN OF CUSTODY RECORD** *5/6/2010 3:01:41 PM* Page 1 OF 1

Project Name PG&E Topock
Location Topock
Project Number 390378.MP.02.GM.04
Project Manager Jay Piper
Sample Manager Shawn Duffy

Task Order
Project 2010-GMP-167-Q2
Turnaround Time 10 Days
Shipping Date: 5/6/2010
COC Number: 5

				Containers:	500 ml Poly	250 ml Poly	250 ml Poly	3 x 40 ml VOA			
				Preservatives:	HNO3	HNO3, 4°C	HNO3, 4°C	H3PO4, 4°C			
				Filtered:	Field	Field	Field	NA			
				Holding Time:	7	180	180	0			
	DATE	TIME	Matrix		Arsenic (6020) Field Filtered	Metals (6010B/F) Field Filtered Title 22	Metals (7470A/Dis/Field) Field Filtered	TOC (SM5310C)		Number of Containers	COMMENTS
MW-62-110-167	5/4/2010	16:02	Water		X			X	NC04114-001	2	4
MW-62-190-167	5/4/2010	16:12	Water		X			X	2	2	4
MW-64-150-167	5/4/2010	16:40	Water		X			X	3	2	4
MW-64-205-167	5/4/2010	16:52	Water		X			X	4	2	4
MW-64-260-167	5/4/2010	17:05	Water		X			X	5	2	4
MW-12-167	5/6/2010	14:24	Water			X	X		6	2	1
MW-90-167	5/6/2010	9:32	Water			X	X		7	2	1
									TOTAL NUMBER OF CONTAINERS	~~14~~ 22	BLC 5/6/10

	Signatures	Date/Time
Approved by		5-6-10
Sampled by		1530
Relinquished by		
Received by	Kristen Everett	5-6-10/1530
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

Special Instructions:
April 29 - May 7, 2010

Report Copy to
Shawn Duffy
(530) 229-3303

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Advanced Technology Laboratories - Las Vegas

Please review the checklist below. Any NO and/or NA signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (562) 989-4045.

Sample Receipt Checklist

Client Name: **CH2M HILL-OAKLAND** Date Time Received: **5/6/2010 4:54:17 PM**

Work Order Number: **N004114** Received by: **MBC**

Cooler Temp (Deg C): 4.8

Checklist completed by: _____ 5/7/10 Reviewed by: _____ 5/11/10
Signature Date Initials Date

Carrier name: ATL

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact 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. Container/Temp Blank temperature within acceptance 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 ☐

Comments: VOAs for TOC

DILUTION TEST

Analytical Method:	**EPA 6010B / 200.7**	**Matrix:**	**Water**
Digestion Method:	**EPA 3010A**	**Amount of Sample:**	**25 mL**
Date of Analysis:	**5/7/2010**	**Units:**	**mg/L**
Digestion Date:	**5/7/2010**		
Instrument Name:	**ICP1**		
Analysts:	**NS**		

Analyte	A	B	Difference	% D
Barium	41.53	42.55474	-1.02474	-2.5
Chromium	2809.1	2849.295	-40.19500	-1.4

FORMULA:

$$\%D = \frac{(A-B)*100}{A}$$

where:

% D = % Difference
A= ug/L, ICP calculated concentration of the original sample
B= ug/L, ICP calculated concentration @5x dilution

NJ
5/13/10

CLIENT: CH2M HILL
Work Order: N004114
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: N004114-007ADT	SampType: DT	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 76636
Client ID: ZZZZZZ	Batch ID: 34519	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/7/2010	SeqNo: 1181469

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	42.555	15						41.53	2.43	10	
Chromium	2849.295	5.0						2809	1.42	10	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N004114
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: N004114-007APS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 76636
Client ID: ZZZZZZ	Batch ID: 34519	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/7/2010	SeqNo: 1181464

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	4994.753	50	5000	8.171	99.7	75	125				
Barium	4872.163	15	5000	41.53	96.6	75	125				
Beryllium	4932.463	5.0	5000	0	98.6	75	125				
Cadmium	4940.118	15	5000	0	98.8	75	125				
Chromium	7649.832	5.0	5000	2809	96.8	75	125				
Cobalt	4936.589	15	5000	0	98.7	75	125				
Copper	4904.117	25	5000	1.486	98.1	75	125				
Lead	4848.765	50	5000	2.533	96.9	75	125				
Molybdenum	4938.622	25	5000	19.04	98.4	75	125				
Nickel	4905.288	25	5000	6.014	98.0	75	125				
Silver	4923.303	15	5000	0	98.5	75	125				
Vanadium	4957.584	15	5000	13.62	98.9	75	125				
Zinc	5010.721	50	5000	18.72	99.8	75	125				

Sample ID: N004114-007APS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 76636
Client ID: ZZZZZZ	Batch ID: 34519	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/7/2010	SeqNo: 1181480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1988.453	20	2000	8.171	99.0	75	125				
Barium	1942.538	6.0	2000	41.53	95.1	75	125				
Beryllium	1932.437	2.0	2000	0	96.6	75	125				
Cadmium	1933.594	6.0	2000	0	96.7	75	125				
Chromium	4645.015	2.0	2000	2809	91.8	75	125				
Cobalt	1918.170	6.0	2000	0	95.9	75	125				
Copper	1977.984	10	2000	1.486	98.8	75	125				
Lead	1895.576	20	2000	2.533	94.7	75	125				
Molybdenum	1967.778	10	2000	19.04	97.4	75	125				
Nickel	1912.586	10	2000	6.014	95.3	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: N004114
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: N004114-007APS	SampType: PS	TestCode: 6010_WDPG	Units: µg/L	Prep Date:	RunNo: 76636
Client ID: ZZZZZZ	Batch ID: 34519	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 5/7/2010	SeqNo: 1181480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	1959.926	6.0	2000	0	98.0	75	125				
Vanadium	1961.683	6.0	2000	13.62	97.4	75	125				
Zinc	2001.669	20	2000	18.72	99.1	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		

CLIENT: CH2M HILL
Work Order: N004114
Project: PG&E Topock

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **N004145-001A-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **76780**
Client ID: **ZZZZZZ**	Batch ID: **34561**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/20/2010**	SeqNo: **1183507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	46.485	0.20	25.00	18.39	112	75	125				
Selenium	25.840	2.0	25.00	0.7225	100	75	125				
Thallium	25.350	2.0	25.00	0.02000	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

Advanced Technology Laboratories, Inc.

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N004114
Test Method: EPA 6020
Analysis Date: 05/20/10

Matrix: Aqueous
Batch No.: 34561

Instrument ID: ICP-MS
Instrument Description: PE DRCplus

Comments:

Analyzed By: Jojo Tenorio

Sample results are less than 25 times the reporting limit except for As. Therefore, dilution test in not applicable.

Sample ID	Analyte	&Units	Calc Val	OQual	1x RPDrefval	% Diff. %RPD	RPDlimit
N004145-001A	Arsenic	µg/L	16.3375	R	18.385	11.14%	10
	Selenium	µg/L	1.75	J	0.7225	NA	10
	Thallium	µg/L	0.16875	J	0.02	NA	10

5/20/10

Appendix B
Other Groundwater Monitoring Results

Table B-1
Arsenic Results in Monitoring Wells, July 2009 through July 2010
Second Quarter 2010 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Well ID	Sample Date		Dissolved Arsenic (µg/L)
Bedrock Wells			
MW-23-060	21-Jul-09		25.0
MW-23-080	21-Jul-09		24.0
MW-57-070	21-Jul-09		5.0
MW-57-185	20-Jul-09		30.0
MW-58-115	16-Dec-09		18.0 J
MW-58-205	16-Dec-09		41.0 J
MW-58BR[1]	25-Mar-10		13.0
MW-60-125	21-Jul-09		11.0
MW-61-110	21-Jul-09		22.0
MW-62-065	22-Jul-09		6.5
MW-62-110	16-Dec-09		32.0 J
	11-Mar-10		10.3
	04-May-10		12.0
MW-62-190	16-Dec-09		40.0 J
	11-Mar-10		9.4
	04-May-10		9.4
MW-63-065	20-Jul-09		6.7
	20-Jul-09	FD	6.6
MW-64-150	16-Dec-09		26.0 J
	11-Mar-10		12.5
	04-May-10		12.9
MW-64-205	16-Dec-09		26.0 J
	11-Mar-10		8.5
	04-May-10		8.5
MW-64-260	16-Dec-09		33.0 J
	11-Mar-10		2.9
	04-May-10		5.2
Fluvial Wells			
MW-10	22-Sep-09		7.1
	11-Mar-10		11.0
MW-12	24-Sep-09		49.0
	24-Sep-09	FD	49.0
	11-Dec-09		26.0
	06-Apr-10		63.0
	06-Apr-10	FD	63.0

Table B-1
Arsenic Results in Monitoring Wells, July 2009 through July 2010
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PG&E Topock Compressor Station, Needles, California

Well ID	Sample Date	Dissolved Arsenic (µg/L)
MW-12	06-May-10	64.2
	06-May-10 FD	66.9
MW-16	28-Sep-09	9.9
MW-17	30-Sep-09	1.7
MW-22	29-Sep-09	28.0
	10-Dec-09	ND (10)
	12-Mar-10	12.1
MW-27-60	08-Dec-09	8.3
MW-27-85	08-Dec-09	14.0
	09-Mar-10	1.4
	29-Apr-10	5.6
MW-28-25	24-Sep-09	2.4
	09-Mar-10	2.0
MW-28-90	24-Sep-09	7.6
	09-Dec-09	7.7
	09-Mar-10	2.1
	29-Apr-10	2.8
MW-29	24-Sep-09	19.0
	11-Mar-10	35.0
MW-30-30	24-Sep-09	19.0
MW-30-50	24-Sep-09	9.2
MW-32-20	22-Sep-09	65.0
MW-32-35	22-Sep-09	53.0
	09-Mar-10	24.4
MW-33-40	24-Sep-09	19.0
	09-Dec-09	20.0
	11-Mar-10	17.7
	30-Apr-10	20.3
MW-33-90	29-Sep-09	9.1
	09-Dec-09	13.0
MW-34-55	30-Sep-09	2.8
MW-34-80	30-Sep-09	7.3
	09-Dec-09	7.3
	10-Mar-10	1.3
	29-Apr-10	2.2
MW-34-100	30-Sep-09	14.0

Table B-1
Arsenic Results in Monitoring Wells, July 2009 through July 2010
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PG&E Topock Compressor Station, Needles, California

Well ID	Sample Date		Dissolved Arsenic (µg/L)
MW-34-100	30-Sep-09	FD	15.0
	09-Dec-09		16.0
	09-Dec-09	FD	16.0
	10-Mar-10		1.7
	10-Mar-10	FD	1.4
	29-Apr-10		2.2
	29-Apr-10	FD	3.4
MW-36-20	23-Sep-09		3.3
MW-36-40	30-Sep-09		7.7
MW-36-50	30-Sep-09		4.2
MW-36-70	22-Sep-09		10.0
MW-36-90	23-Sep-09		16.0
	12-Mar-10		16.4
MW-36-100	23-Sep-09		14.0
	09-Mar-10		4.5
MW-39-40	01-Oct-09		15.0
MW-39-50	01-Oct-09		7.8
MW-39-60	01-Oct-09		5.8
MW-42-30	23-Sep-09		6.5
MW-42-55	23-Sep-09		19.0
	08-Dec-09		22.0
	09-Mar-10		11.8
	29-Apr-10		14.2
MW-42-65	23-Sep-09		14.0
	08-Dec-09		14.0
	09-Mar-10		2.1
	29-Apr-10		3.3
MW-43-25	01-Oct-09		20.0
MW-43-75	01-Oct-09		17.0
MW-43-90	01-Oct-09		25.0
MW-44-70	21-Sep-09		4.2
	07-Dec-09		4.2
	08-Mar-10		3.0
MW-45-095a	29-Sep-09		10.0
MW-52D	29-Sep-09		23.0
	10-Dec-09		27.0

Table B-1
Arsenic Results in Monitoring Wells, July 2009 through July 2010
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Well ID	Sample Date	Dissolved Arsenic (µg/L)
MW-52D	10-Mar-10	3.5
MW-52M	29-Sep-09	17.0
	10-Dec-09	21.0
	10-Mar-10	1.4
MW-52S	29-Sep-09	9.7
	10-Dec-09	12.0
	10-Mar-10	ND (1.0)
MW-53D	29-Sep-09	23.0
	10-Dec-09	32.0
	10-Mar-10	2.7
MW-53M	29-Sep-09	18.0
	10-Dec-09	25.0
	10-Mar-10	ND (1.0)
MW-59-100	22-Jul-09	18.0
	22-Jul-09 FD	17.0

NOTES:

µg/L = micrograms per liter
FD = field duplicate
J = concentration or RL estimated by laboratory or data validation
[1] This sample collected from a borehole.

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

Table C-1
Chemical Performance Monitoring Analytical Results, March 2005 through July 2010
Second Quarter 2010 Interim Measures Performance Monitoring and Site-Wide
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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	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
MW-20-100	15-Jun-05	2500	-4.7	-46.0	921	506	9.02	ND (1.0)	84.0	137	21.3	9.06	592	0.713
	11-Oct-05	2400	-5.3	-48.0	887	484	8.87	0.731	82.3	170	23.7	15.2	500	0.718
	15-Dec-05	2340	-5.4	-40.0	813	404	9.65	ND (1.0)	82.7	136	21.4	14.8	406	0.709
	10-Mar-06	2500	-5.6	-50.3	861	475	9.94	ND (0.5)	92.5	171	27.0	7.75	597	0.803
	05-May-06	2260	-5.1	-46.4	927	522	9.99	ND (1.0)	82.5	193	32.0	10.8	577	0.716
	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

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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	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
MW-20-130	15-Jun-05	7790	-5.0	-48.0	3410	1230	11.1	ND (1.0)	68.7	352	23.2	31.3	2980	2.75
	07-Oct-05	7330	-5.0	-47.0	3010	1210	10.9	1.04 J	72.4	349	13.9	38.4	2070	2.41
	16-Dec-05	7860	-5.8	-43.0	3260	1000	10.7	ND (2.5)	63.2	324	16.3	44.4	1780	1.98
	10-Mar-06	8610	-5.5	-48.8	3370	1250	10.6	ND (0.5)	74.5	312	18.9	27.7	2730	2.03
	05-May-06	7700	-5.3	-47.2	3900	1280	8.95	ND (1.0)	69.2	349	20.3	27.7	2810	2.40
	18-Oct-06	8450	-6.3	-51.4	3680	1100	11.5	ND (5.0)	70.0	358	20.9	28.0	2870	2.28
	13-Dec-06	7890	-6.0	-54.9	3970	1250	10.6	0.896	72.5	335	19.7	27.6	2900	2.31
	13-Dec-06 FD	8250	-5.9	-54.4	3950	1260	10.5	1.09	72.5	328	19.1	27.3	2830	2.24
	08-Mar-07	8450	-6.5	-57.7	3930	1240	11.3	1.08	70.0	353	21.3	27.0	2760	2.24
	08-Mar-07 FD	8510	-6.6	-57.4	3900	1210	11.3	1.06	72.5	351	21.3	26.8	2750	2.19
	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
MW-25	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

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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	796	-9.0	-65.8	189	155	4.58	ND (1.0)	180	66.0	14.0	7.90	200	0.49
	02-Oct-07 FD	758	-9.0	-65.7	195	157	4.40	ND (1.0)	190	63.0	13.0	7.70	220	0.46
	07-Oct-08	740	-9.9	-68.5	170	150	4.30	ND (0.5)	200	59.2	12.9	9.89	143	0.559
	07-Oct-08 FD	730	-10.1	-69.1	170	150	4.40	ND (0.5)	210	58.4	12.9	10.2	144	0.559
	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
MW-26	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
MW-27-20	18-Jul-05	---	-11.9	-98.0	81.9	228	ND (0.5)	ND (0.5)	160	96.1	30.1	4.27	94.8	ND (0.2)
	05-Oct-05	742	-11.8	-102.0	91.1	252	ND (0.5)	ND (0.5)	175	88.6	31.4	5.48	81.0	ND (0.2)
	14-Dec-05	1020	-11.7	-91.0	118	347	ND (0.5)	ND (0.5)	216	116	41.8	6.96	116	ND (0.2)
	06-Mar-06	664	-12.1	-90.9	89.7	231	ND (0.2)	ND (0.2)	385	89.1	28.8	4.90	103	ND (0.2)
	14-Jun-06	730	-12	-89.8	98.3	272	ND (0.5)	ND (0.5)	195	91.1	28.5	2.79 J	96.9	ND (0.2)
	03-Oct-06	600	-13.1	-96.6	90.8	261	ND (0.5)	ND (0.5)	160	102	34.5	6.45	113	ND (0.2)
	02-Oct-07	802	-12.5	-96.3	102	320	ND (1.0)	ND (1.0)	170	97.0	34.0	5.30	150	0.22
	03-Oct-08	---	---	---	94.0	240	ND (0.5)	---	---	87.9	29.5	---	110	---
	01-Oct-09	---	---	---	88.0	230	ND (0.5)	---	130	84.0	25.0	---	87.0	---
MW-28-25	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)

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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-28-25	06-Oct-05	884	-11.7	-95.0	99.8	300	ND (0.5)	ND (0.5)	197	123	37.0	6.61	88.7	ND (0.2)
	16-Dec-05	1010	-11.4	-90.0	128	348	ND (0.5)	ND (0.5)	212	134	41.5	6.46	107	ND (0.2)
	09-Mar-06	746	-11.5	-93.9	84.4	225	ND (0.5)	ND (0.5)	244	98.5	27.5	4.15 J	88.5	ND (0.2)
	05-May-06	741	-11.4	-90.3	110	302	ND (0.5)	ND (0.5)	216	117	35.7	5.77	118	ND (0.2)
	11-Oct-06	1050	-12.2	-95.0	86.3	247	ND (0.5)	ND (0.5)	225	133	40.8	5.47	132	ND (0.2)
	04-Oct-07	812	-12.1	-98.7	110	307	ND (1.0)	ND (1.0)	230	120	37.0 J	4.80	150	0.26 J
	08-Oct-08	---	---	---	100	280	ND (0.5)	---	220	109	34.7	---	102	---
	24-Sep-09	---	---	---	94.0	240	ND (0.5)	---	200	100	27.0	---	100 J	---
MW-30-30	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
	24-Sep-09	---	---	---	5800	1700	ND (5.0)	---	550	280	220	---	3800	---
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
	24-Sep-09	---	---	---	---	---	---	---	220	19.0	4.80	---	270	---
MW-31-60	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

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										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-31-60	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
MW-32-20	17-Jun-05	10200	-9.0	-67.0	4810	690	ND (0.5)	ND (2.5)	676	566	231	23.3	2620	1.75
	04-Oct-05	28800	-7.8	-65.0	14200	2420	ND (5.0)	6.19	733	1380 J	613 J	91.1 J	5400 J	4.75 J
	16-Dec-05	24600	-7.8	-61.0	12200	2140	ND (1.0)	3.48	861	1470	552	90.4	4950	4.16
	10-Mar-06	20900	-8.3	-65.5	10600	1970	ND (0.5)	ND (0.5)	432	1350	530	56.1	6440	3.54
	04-May-06	16900	-8.1	-64.9	9430	1380	ND (0.5)	2.35	218	937	445	46.0	4780	2.87
	02-Oct-06	46200 J	-8.6	-67.1	20200	3190	ND (2.5)	7.30	660	1870	1070	87.0	11300	6.34
	11-Dec-06	37900	-8.0	-67.0	17900	3020	ND (5.0)	7.67	825	1530	785	81.7	8420	4.98
	06-Mar-07	27600	-8.7	-72.7	16200	2210	0.925	5.93	765	1460	635	64.4	7110	3.92
	30-Apr-07	17700	-9.6	-78.1	9820	1310	ND (0.2)	3.78	770	965	484	51.4	5520	3.02
	01-Oct-07	37200	-8.3	-70.1	20600	3160	ND (1.0)	6.44	700	1800	1100	93.0	9900	5.70
	10-Mar-08	26000	-9.4	-72.6	15800	2280	ND (1.0)	5.66	800	1190	710	67.4	11600	2.31
	03-Oct-08	---	---	---	21000	3500	ND (5.0)	---	640	1700	1080	---	9550	---
	10-Mar-09	29000	-8.91	-70.5	15000	2100 J	ND (5.0)	15.0	750	1620	970	96.6	7020	3.53
	22-Sep-09	---	---	---	20000	3600	ND (5.0)	---	730	1800	740	---	9300	---
MW-32-35	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
MW-34-55	15-Jul-05	---	-10.3	-84.0	2250	607	ND (0.5)	ND (0.5)	242	247	52.0	16.5	1420	1.02

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										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-34-55	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
MW-34-80	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
	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
MW-34-100	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

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										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-34-100	05-Oct-05	10400	-9.9	-83.0	4530	1150	1.20	ND (0.5)	172	171	13.8	55.2	2450	2.57
	05-Oct-05 FD	10400	-9.9	-83.0	4680	1200	1.21	ND (0.5)	172	228	14.1	50.9	2730	2.57
	14-Dec-05	---	---	---	---	---	---	---	---	226	14.9	62.9	2530	2.32
	14-Dec-05 FD	---	---	---	---	---	---	---	---	220	15.1	64.2	2530	2.40
	08-Mar-06	10000	-11.4	-75.5 J	4720	1180	1.39	---	152	179	12.1	32.5	3580	2.41
	08-Mar-06 FD	10100	-10.1	-102 J	4920	1220	1.39	---	159	182	11.9	36.5	3530	2.46
	30-Apr-07	10600	-10.9	-80.7	5920	1040	1.38	---	123	186	12.0	31.5	3840	2.39
	30-Apr-07 FD	11900	-11.2	-82.1	5880	1050	1.37	---	123	189	12.0	32.1	3920	2.40
	03-Oct-07	10700	-10.2	-78.2	5350	970	1.19	ND (1.0)	120	170	11.0	44.0	4300	2.50
	03-Oct-07 FD	10500	-10.6	-78.4	5360	953	1.03	ND (1.0)	120	160	10.0	43.0	4300	2.40
	07-Oct-08	11000	-10.9	-80.8	5400	1200	ND (2.5)	ND (2.5)	140	158	10.6	54.5	2970 J	2.35
	07-Oct-08 FD	11000	-11	-81.3	5600	1200	ND (2.5)	ND (2.5)	140	184	11.5	56.7	3880 J	2.59
	30-Sep-09	---	---	---	5500	1300	ND (5.0)	---	170	200	11.0	73.0	3800	2.30
	30-Sep-09 FD	---	---	---	5600	1300	ND (5.0)	---	170	---	---	---	---	---
	17-Nov-09	11000	-10.5	-82.4	---	---	---	ND (1.0)	---	---	---	---	---	---
Surface Water Stations														
R-27	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)
	05-Dec-07	---	-11.7	-99.0	94.7	256	ND (1.0)	ND (0.2)	137	89.8	31.7	6.60	93.4	0.157
	02-Apr-08	---	---	---	93.0	267	ND (1.0)	ND (1.0)	136	80.2	30.7	5.50	106	0.432
	17-Jun-08	682	-13	-101.0	91.6	254	ND (1.0)	ND (1.0)	134	76.2	31.8	6.69	89.7	ND (0.2)
R-28	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)

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										Calcium	Magnesium	Potassium	Sodium	Boron
Surface Water Stations														
R-28	05-Oct-05	672	-11.6	-94.0	85.5	255	ND (0.5)	ND (0.5)	122	85.7	30.4	6.30	77.0	ND (0.2)
	16-Dec-05	710	-11.5	-83.0	88.1	254	ND (0.5)	ND (0.5)	126	87.2	29.8	6.11	76.8	ND (0.2)
	06-Mar-06	675	-12.3	-93.4	91.0	270	ND (0.5)	ND (0.5)	146	76.6	26.6	5.22 J	91.5	ND (0.2)
	03-May-06	586	-13	-92.1	93.4	270	ND (0.5)	ND (0.5)	136	88.1	31.4	4.04 J	107	ND (0.2)
	04-Oct-06	644 J	-12.6	-95.3	90.9	259	ND (0.5)	ND (0.5)	133	84.2	32.1	6.17 J	96.5	ND (0.2)
	20-Dec-06	615	-12.4	-99.6	93.3	262	ND (0.5)	ND (0.5)	143	85.7	32.0	4.66	108	ND (0.2)
	14-Mar-07	710	-12.8	-100.0	96.7	268	0.534	ND (0.5)	133	87.9	31.0	5.71	105	ND (0.2)
	09-May-07	690	-13	-102.0	95.8	271	ND (0.5)	ND (0.5)	143	86.1	30.5	5.92	103	ND (0.2)
	12-Sep-07	682	-12.4	-99.4	106	296	0.372	ND (0.2)	122	73.8	29.9	6.36	89.2	ND (0.2)
	06-Dec-07	---	-11.7	-98.6	96.5	258	0.345	ND (0.2)	139	75.7	30.4	6.62	79.4	ND (0.2)
	02-Apr-08	---	---	---	92.5	309	ND (1.0)	ND (1.0)	137	84.7	31.4	5.58	108	0.467
	18-Jun-08	672	-13.2	-102.0	89.4	248	ND (1.0)	ND (1.0)	132	43.3	31.1	6.95	93.9	ND (0.2)
	17-Sep-08	640	---	---	91.4	256	ND (0.5)	ND (0.5)	132	83.4	31.2	6.48	78.0	ND (0.2)
	04-Dec-08	649	-11.9	-97.0	97.4	260	ND (1.0)	ND (1.0)	135	81.7	30.0	5.95	114	0.262
	21-Jan-09	652	-12	-96.7	91.5	253	ND (0.5)	ND (0.5)	134	79.2	27.8	6.01	91.7	ND (0.2)
	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)

Table C-1
Chemical Performance Monitoring Analytical Results, March 2005 through July 2010
Second Quarter 2010 Interim Measures 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
R = result exceeded analytical criteria for precision and accuracy; should not be used for project decisionmaking
--- = data not collected or available

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).

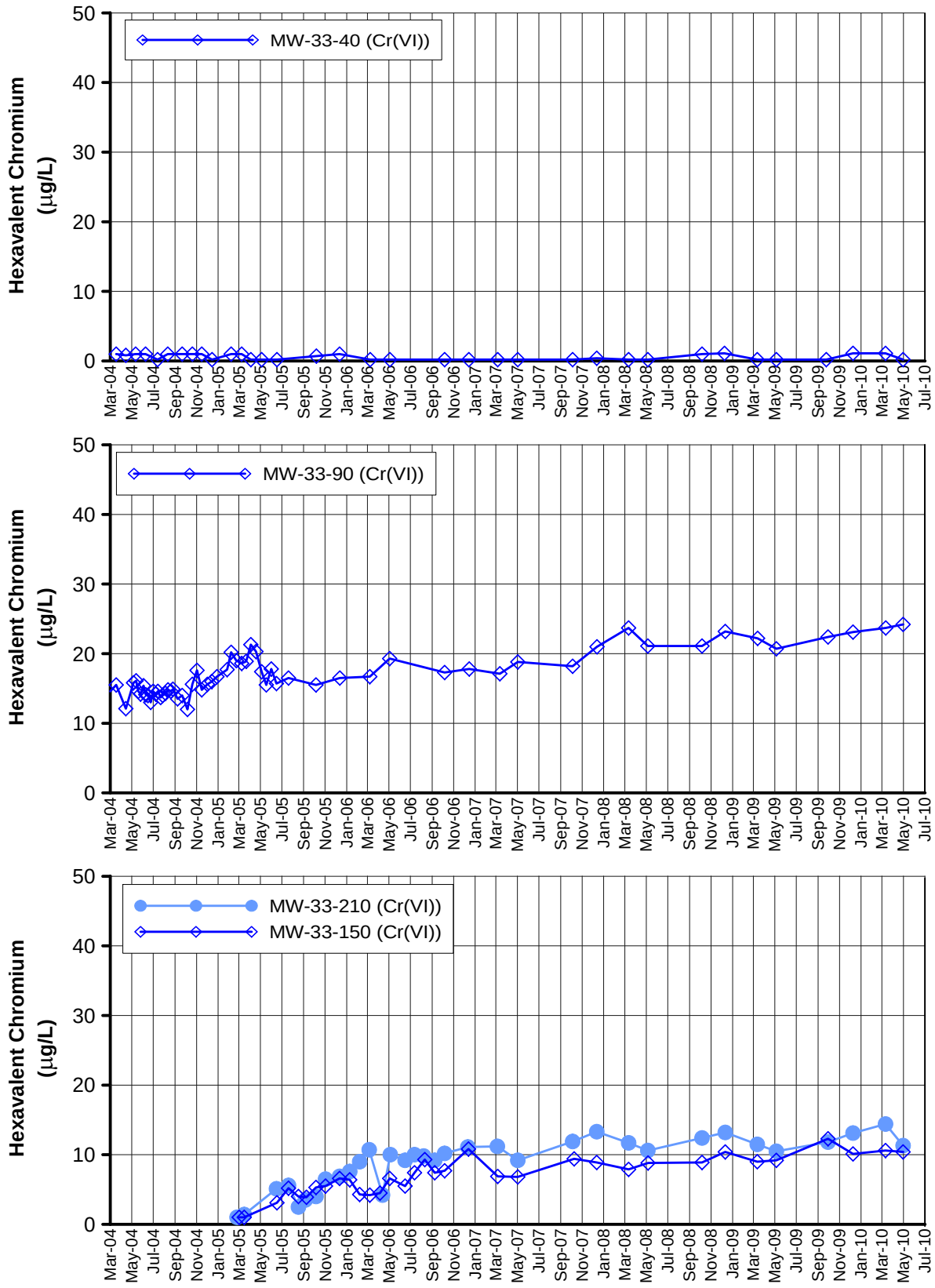

FIGURE C-1
HEXAVALENT CHROMIUM
IN MW-33 CLUSTER
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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\\Zinfandel\Proj\PacificGasElectricCo\TopockProgram\Project_2010_Combined_Monitoring\Reporting\GMP_PMP\2010_Q1\Draft_2010_Q1_GMP_PMP\Appendices\C_Cr6_GenChem

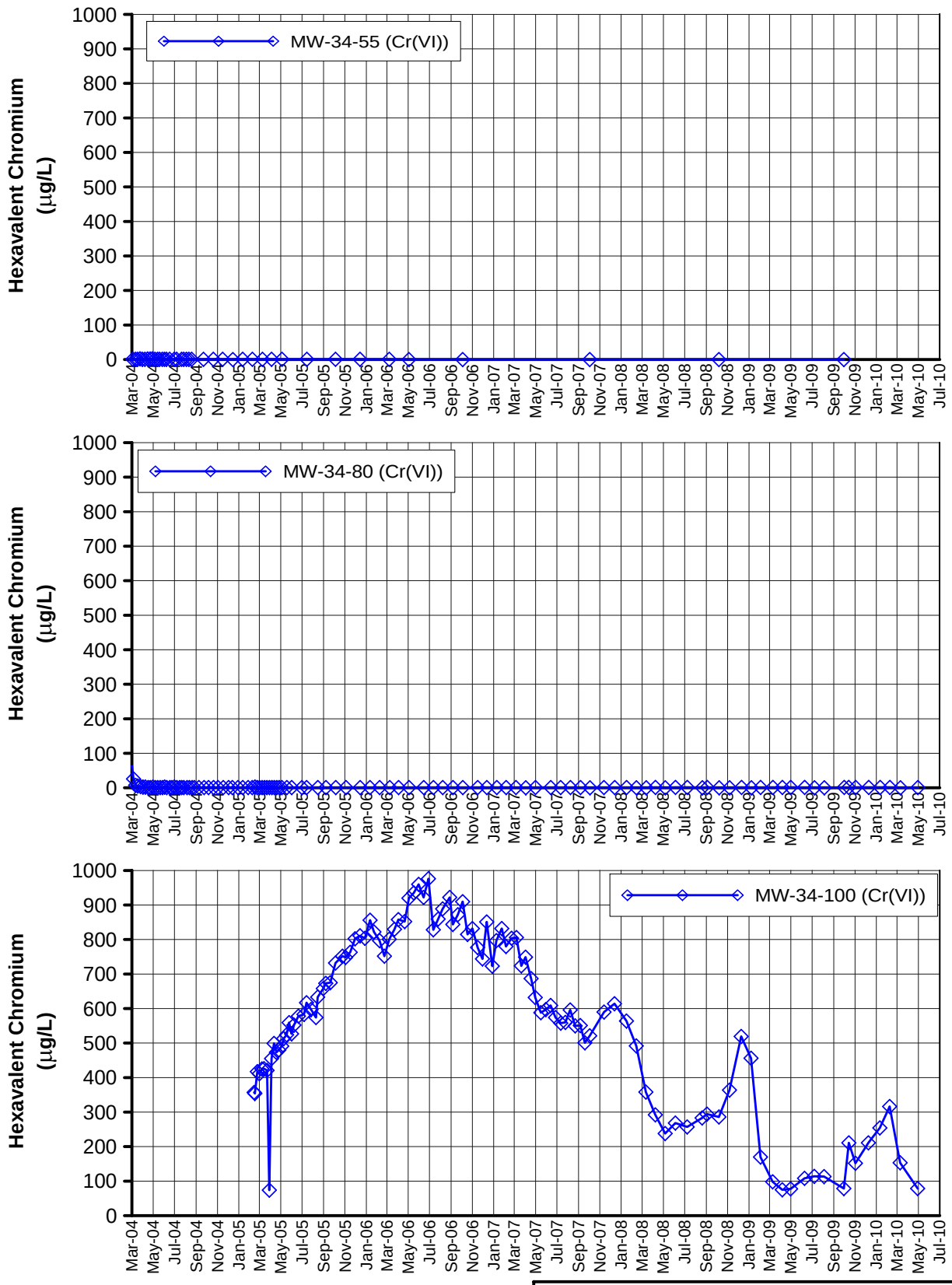

FIGURE C-2
HEXAVALENT CHROMIUM
IN MW-34 CLUSTER
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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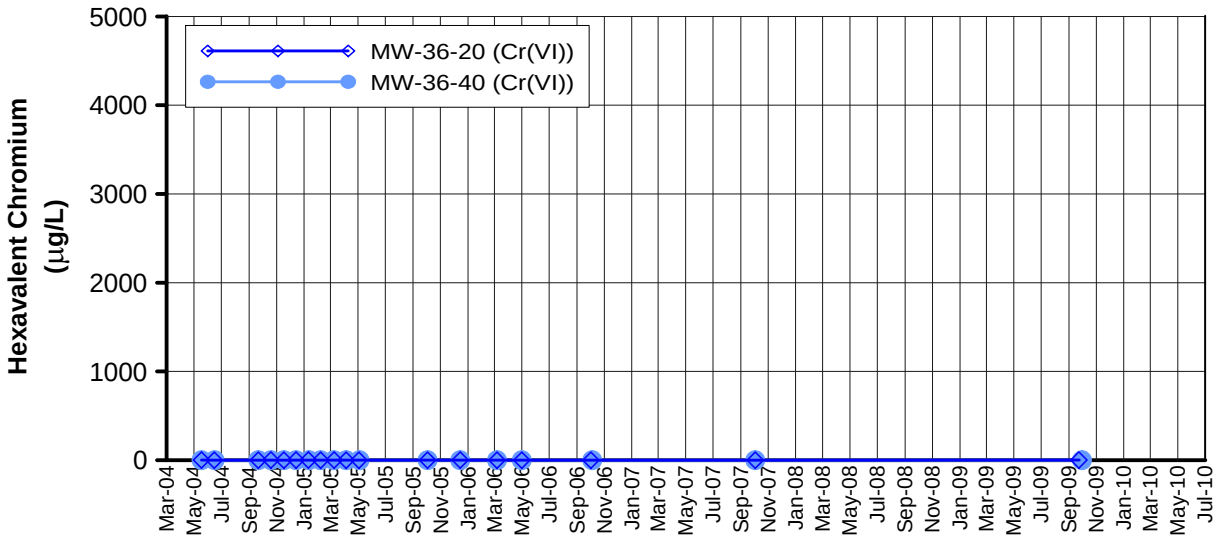

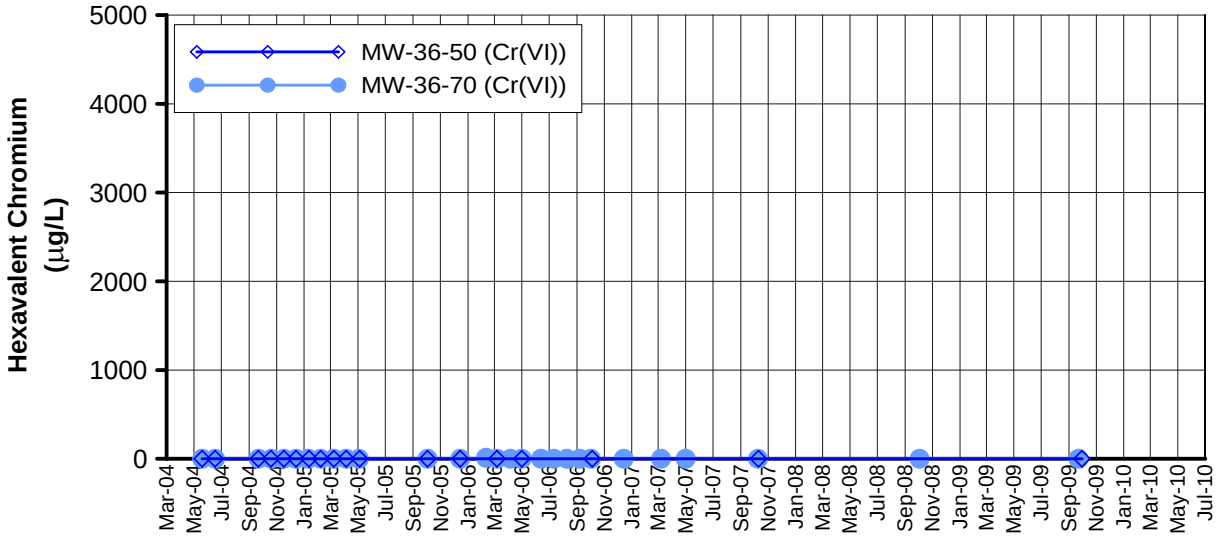

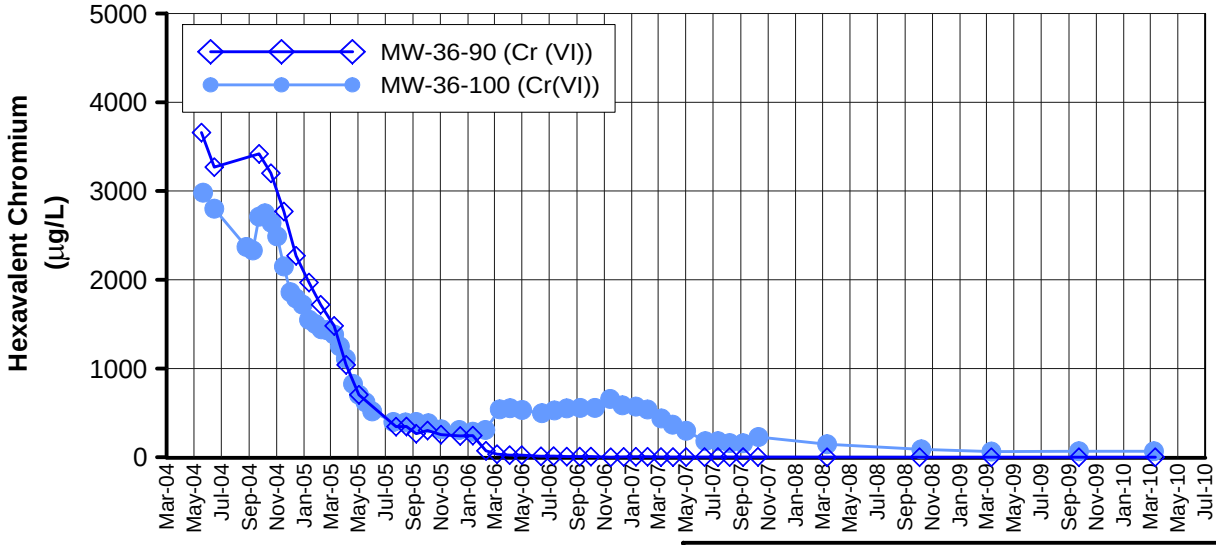

FIGURE C-3
HEXAVALENT CHROMIUM
IN MW-36 CLUSTER
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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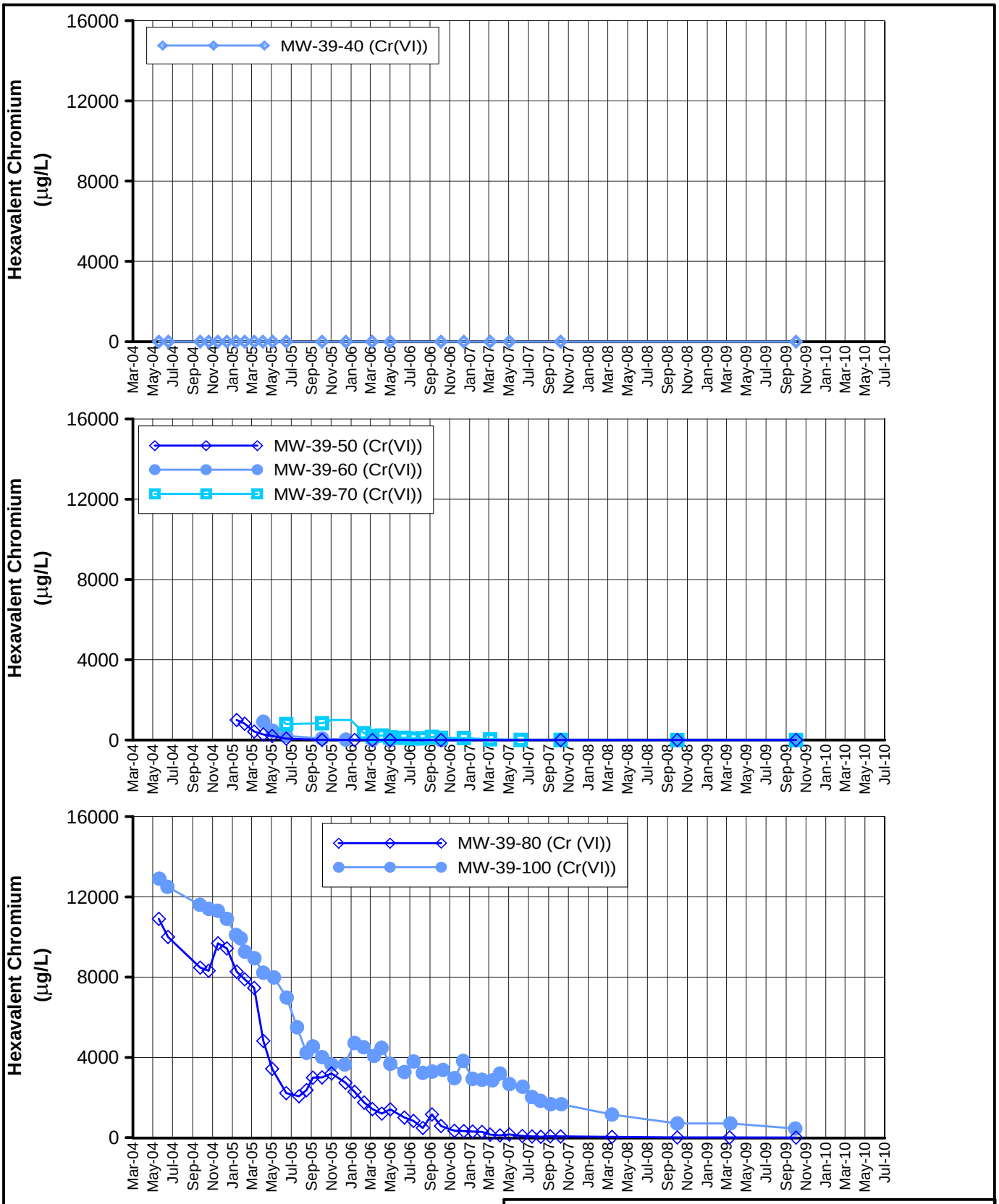

FIGURE C-4
HEXAVALENT CHROMIUM
IN MW-39 CLUSTER
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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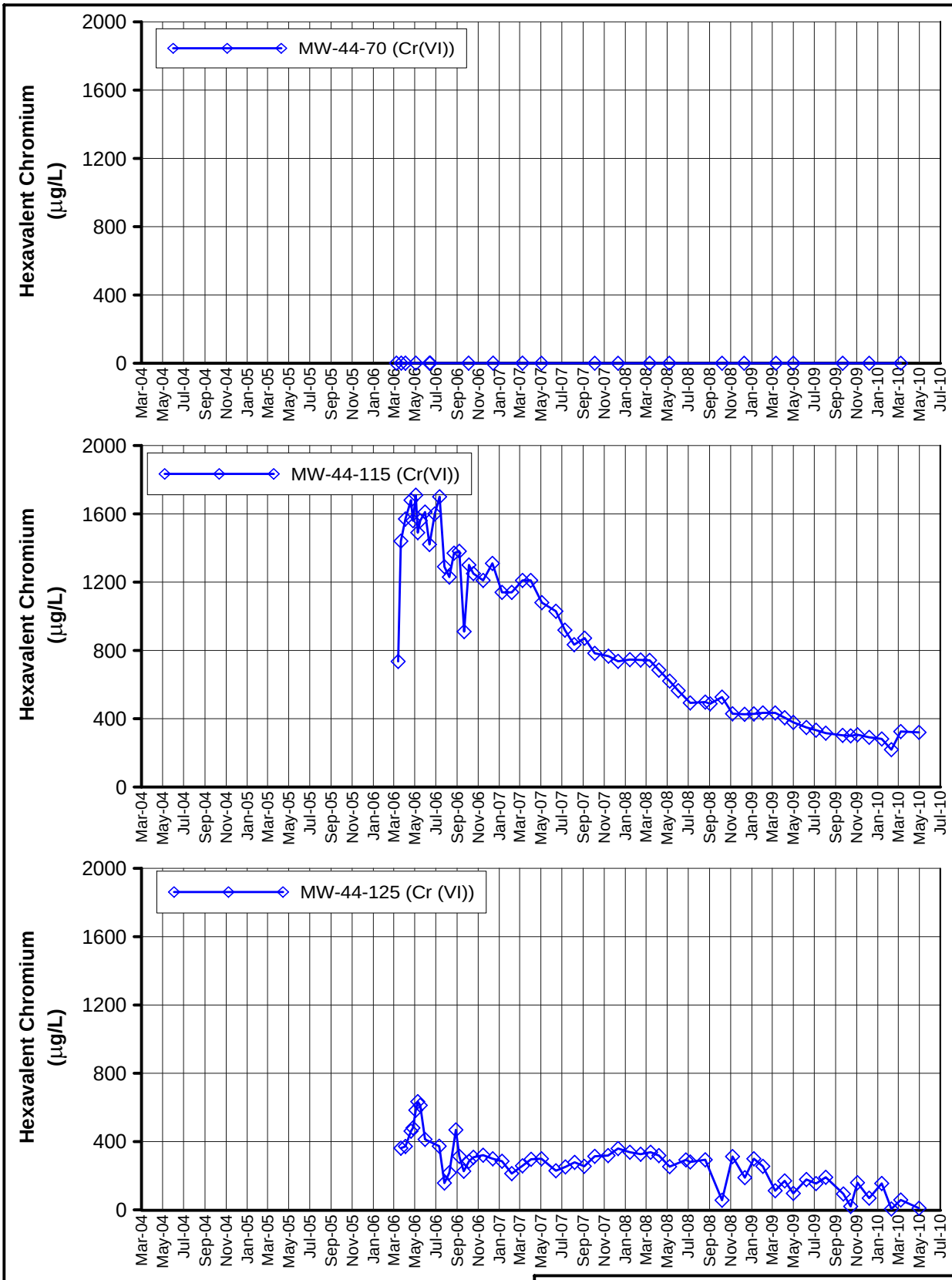

FIGURE C-5
HEXAVALENT CHROMIUM
IN MW-44 CLUSTER
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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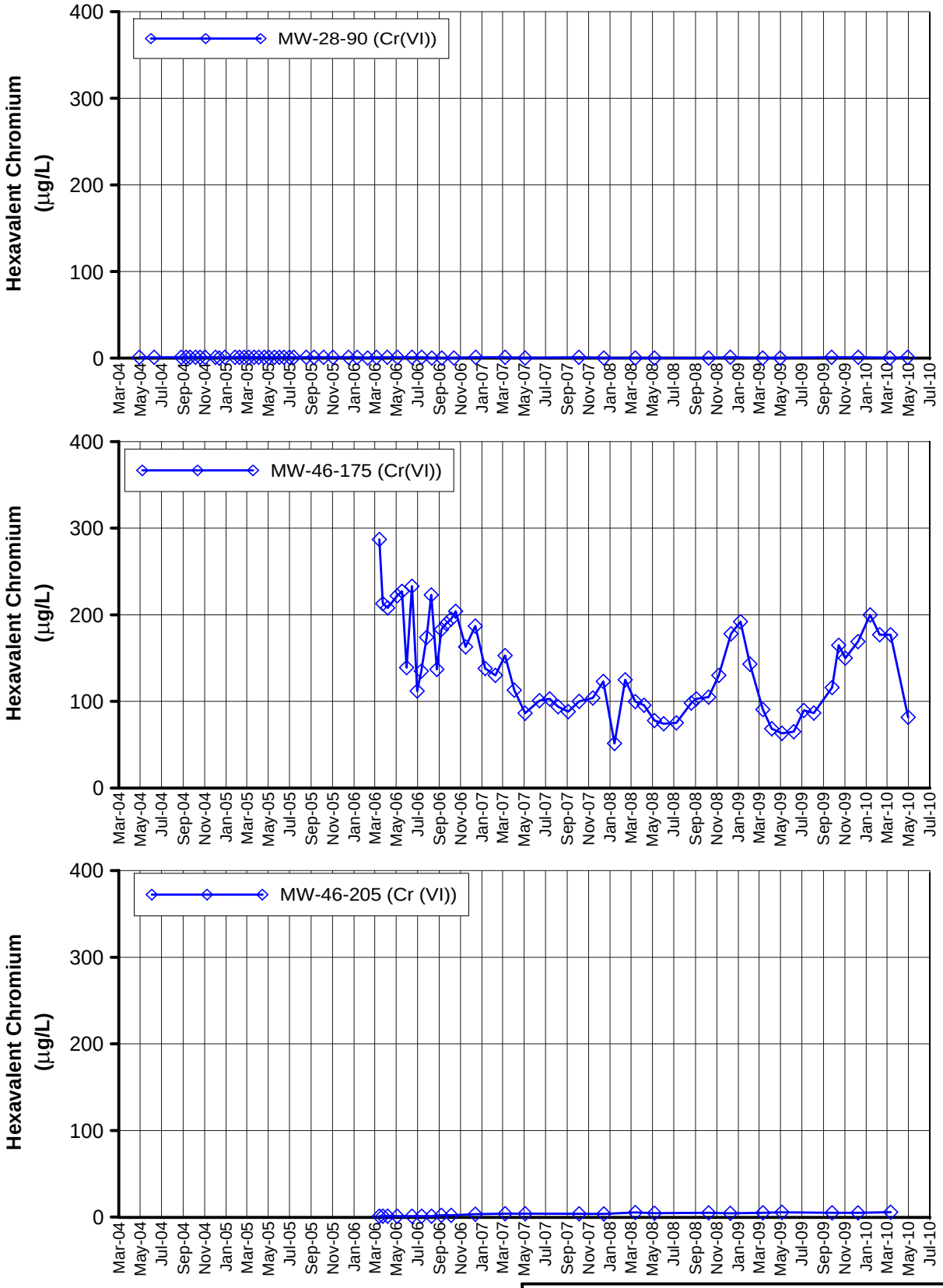

FIGURE C-6
HEXAVALENT CHROMIUM
IN MW-28 and MW-46 CLUSTER
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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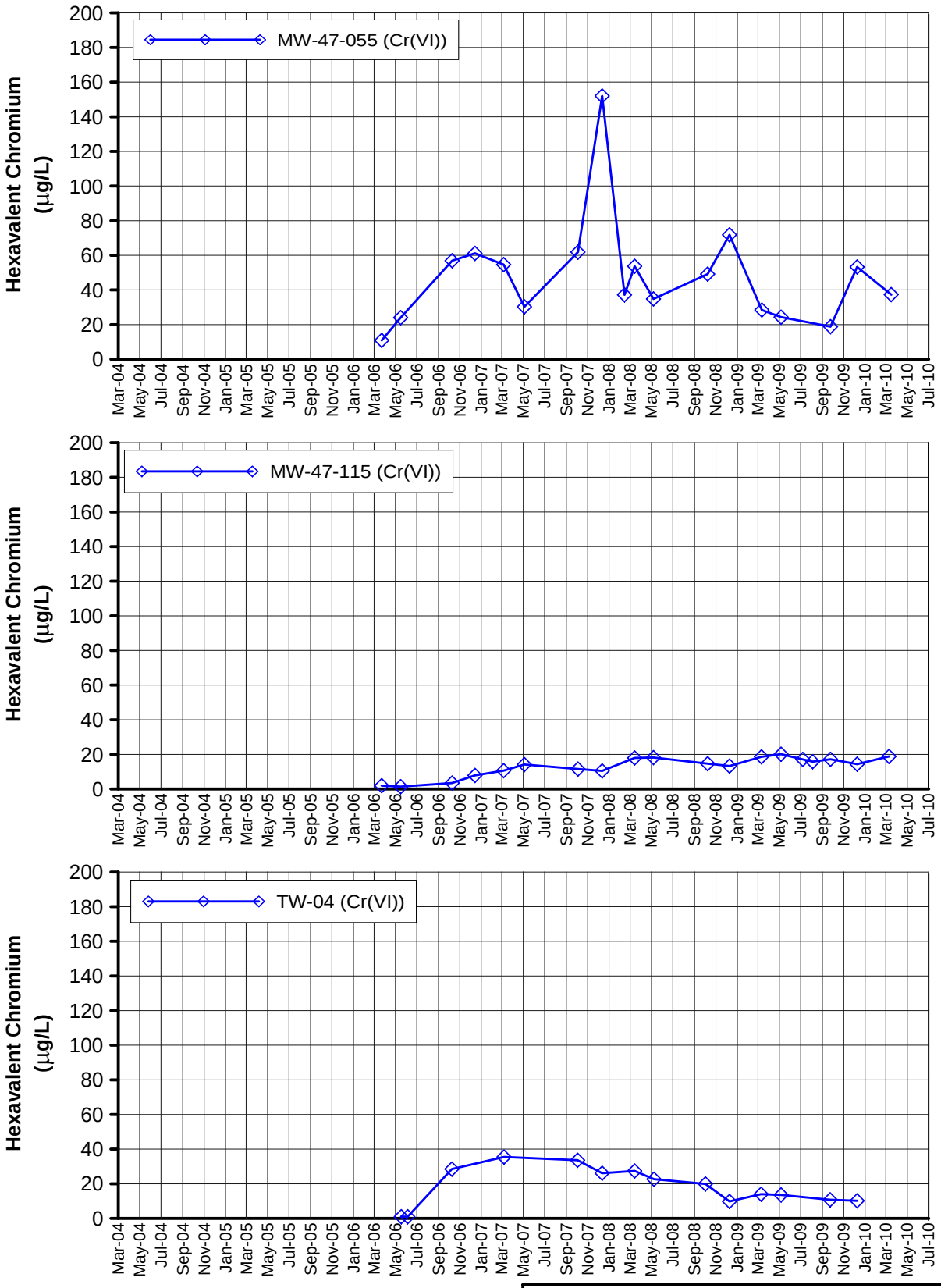

FIGURE C-7
HEXAVALENT CHROMIUM
IN MW-47 CLUSTER AND TW-04
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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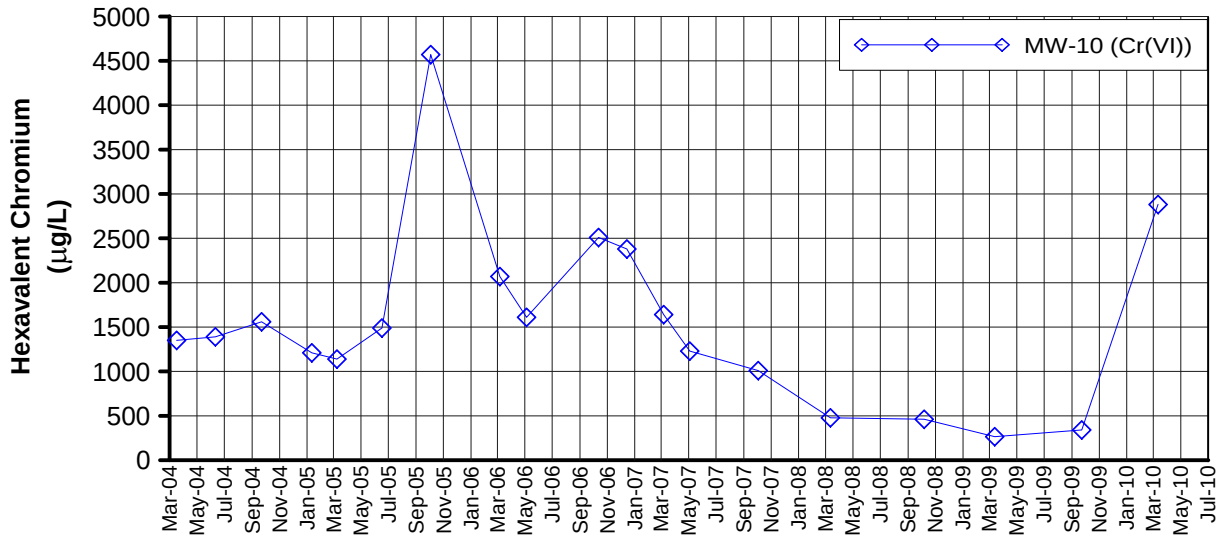

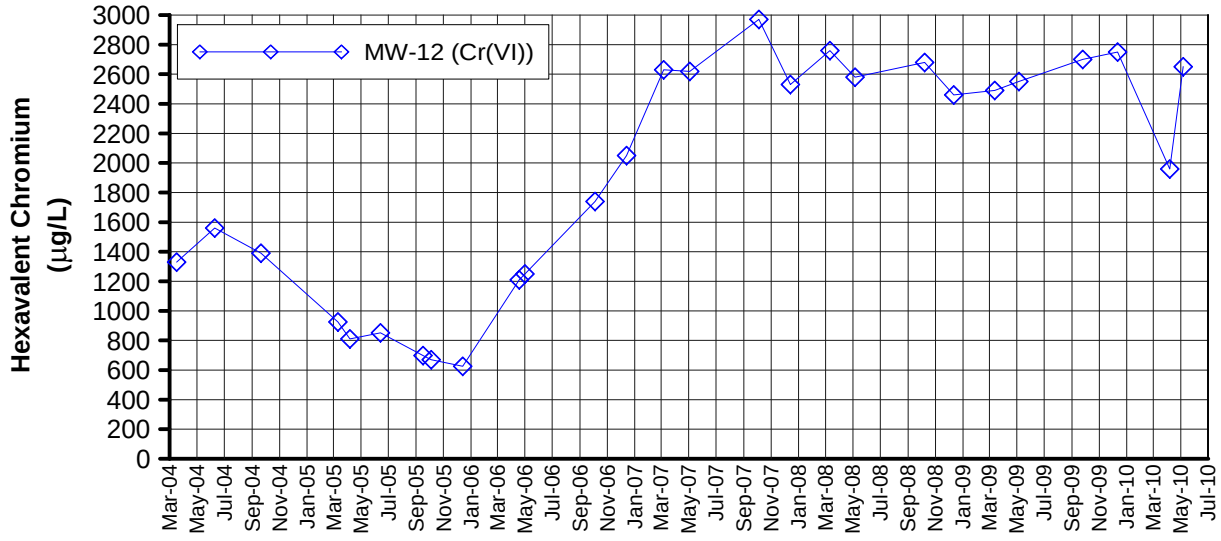

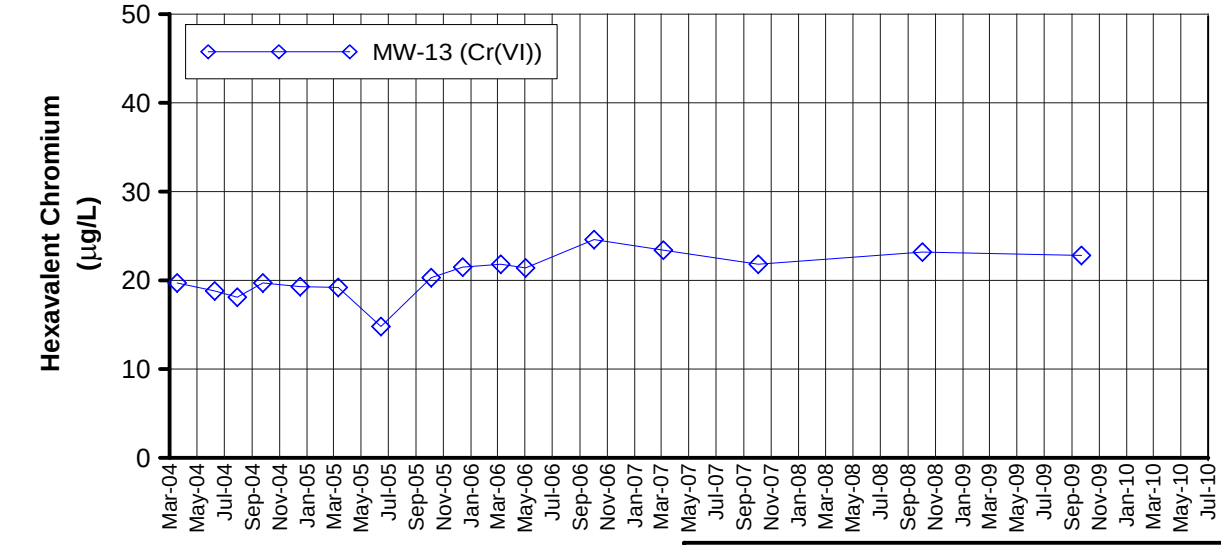

FIGURE C-8
HEXAVALENT CHROMIUM
IN MW-10, MW-12, AND MW-13
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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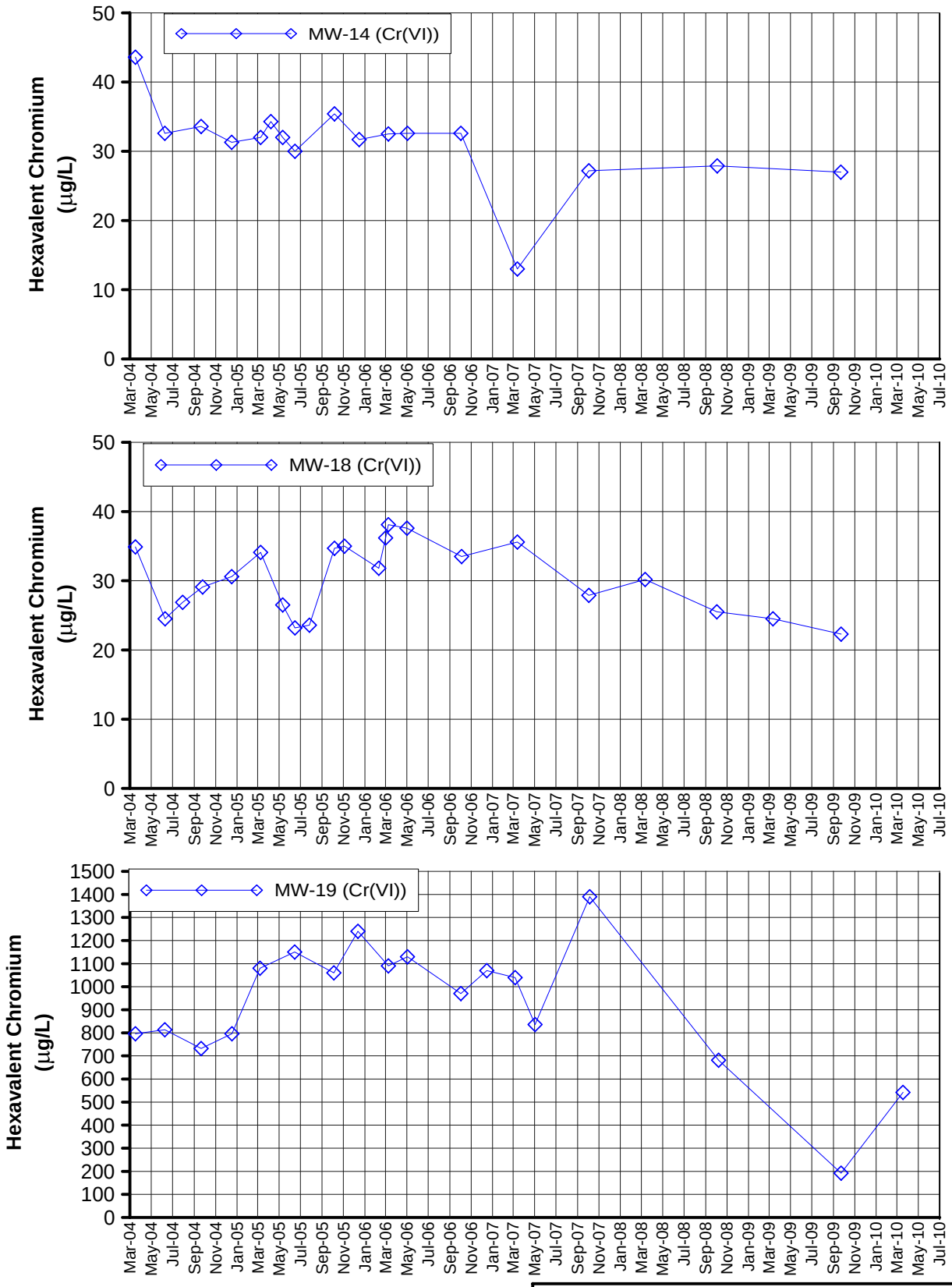

FIGURE C-9
HEXAVALENT CHROMIUM
IN MW-14, MW-18, AND MW-19
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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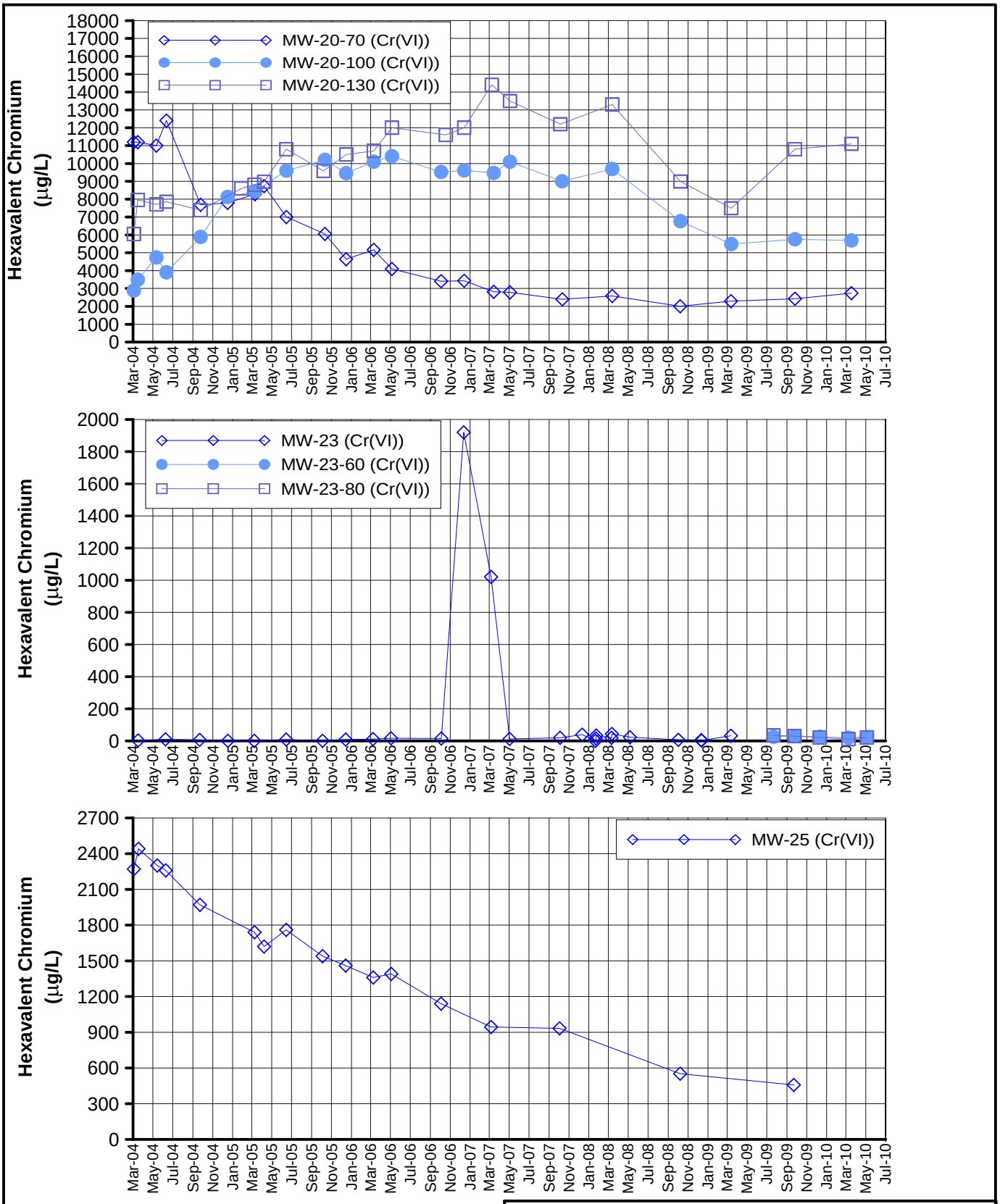

FIGURE C-10
HEXAVALENT CHROMIUM
IN MW-20, MW-23, AND MW-25 CLUSTERS
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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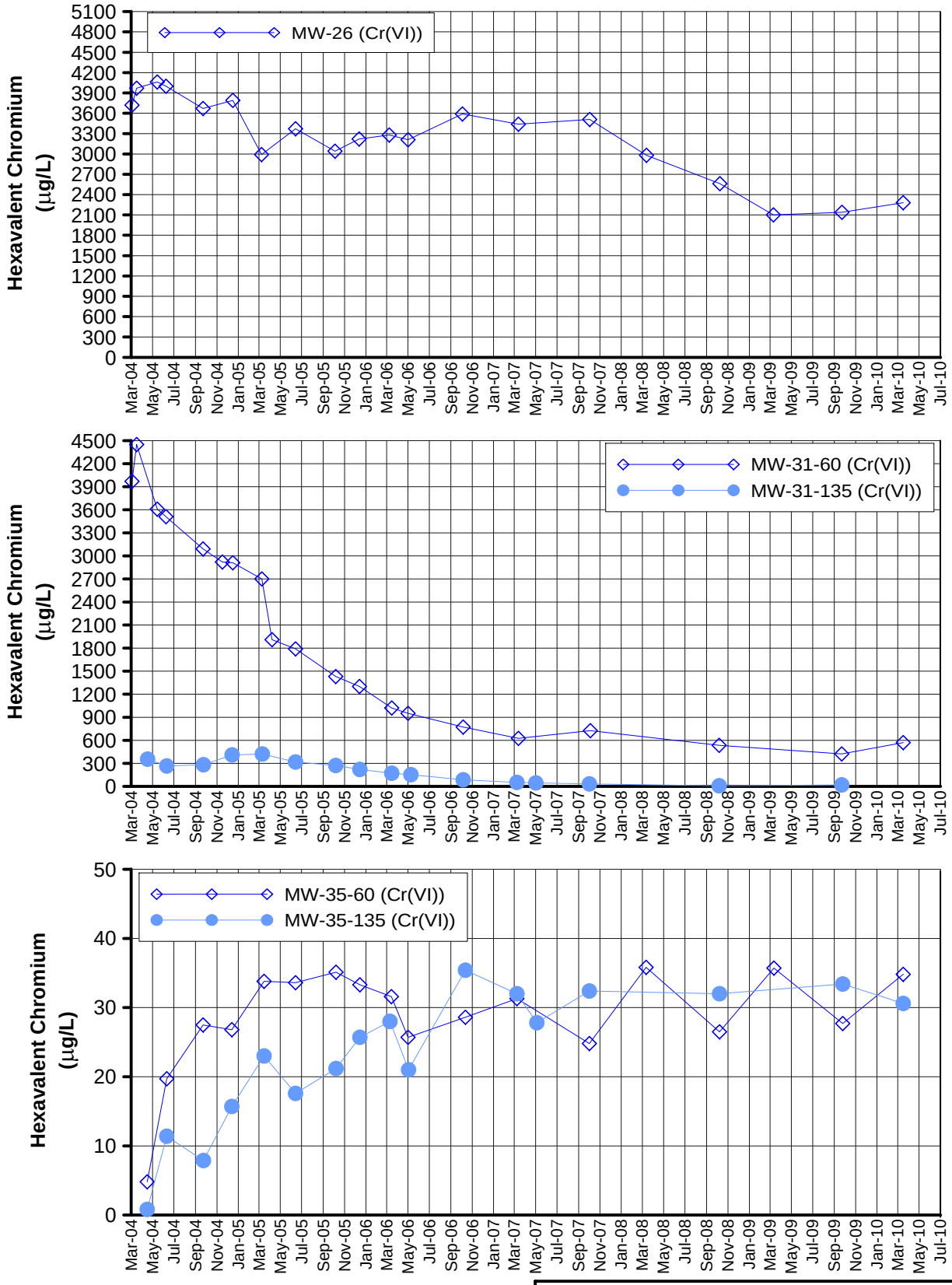

FIGURE C-11
HEXAVALENT CHROMIUM
IN MW-26, MW-31, AND MW-35 CLUSTERS
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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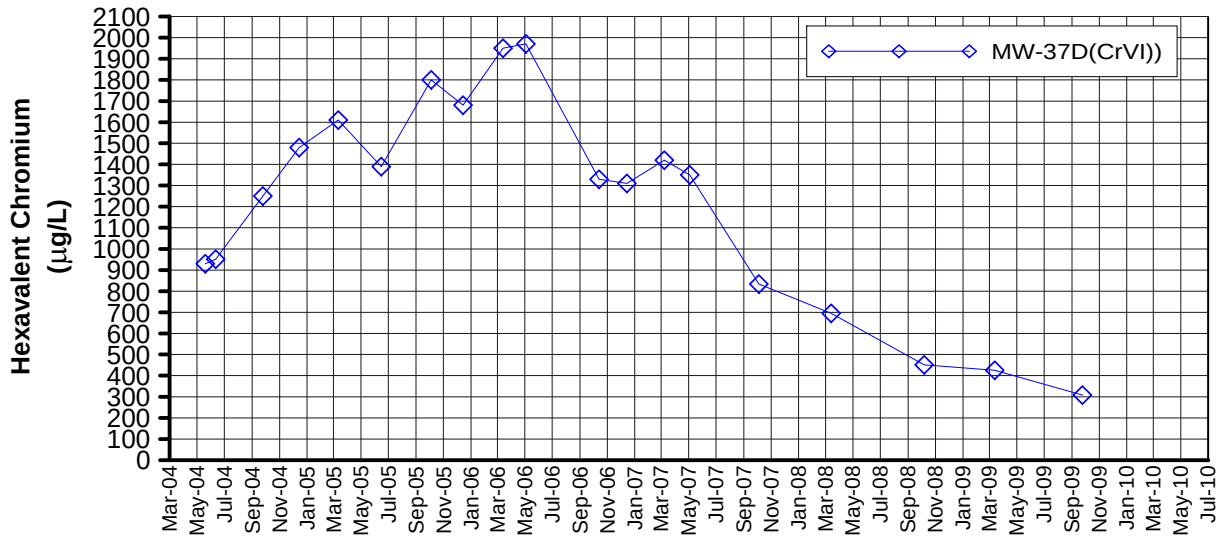

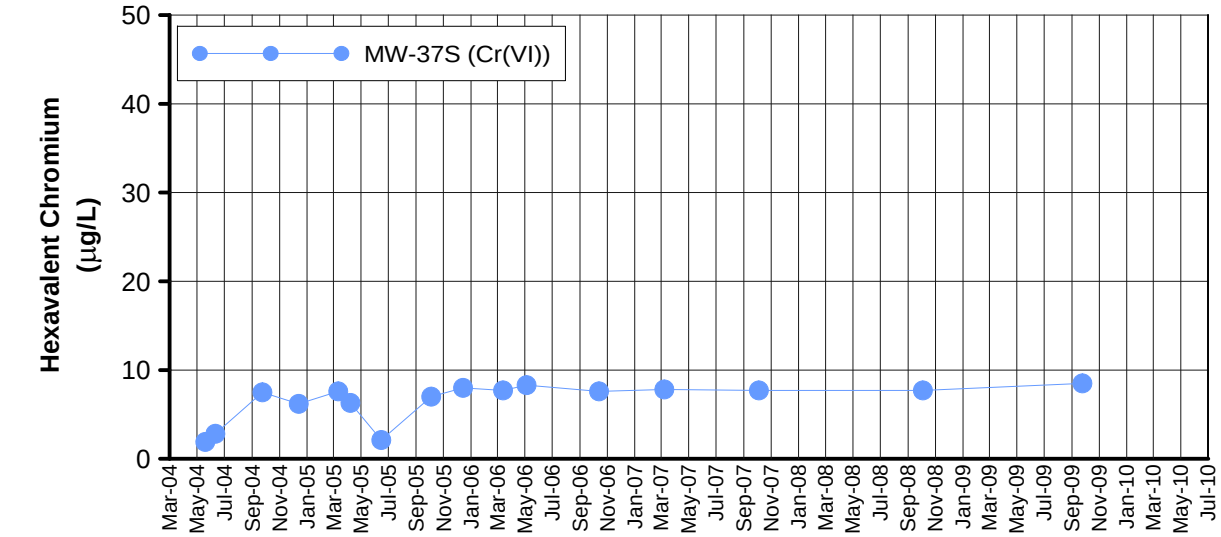

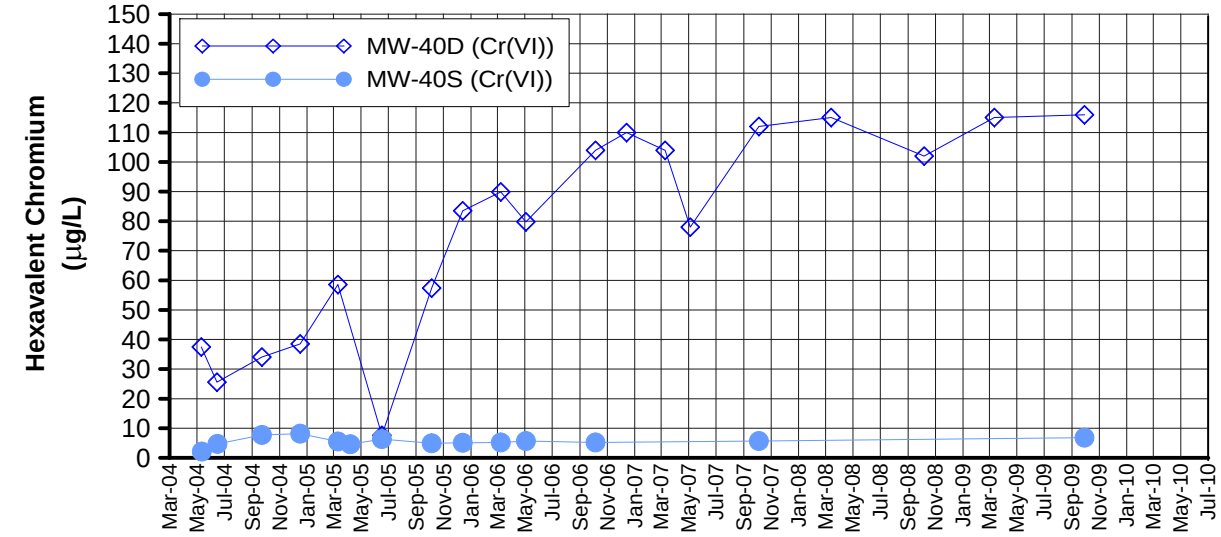

FIGURE C-12
HEXAVALENT CHROMIUM
IN MW-37 AND MW-40 CLUSTERS
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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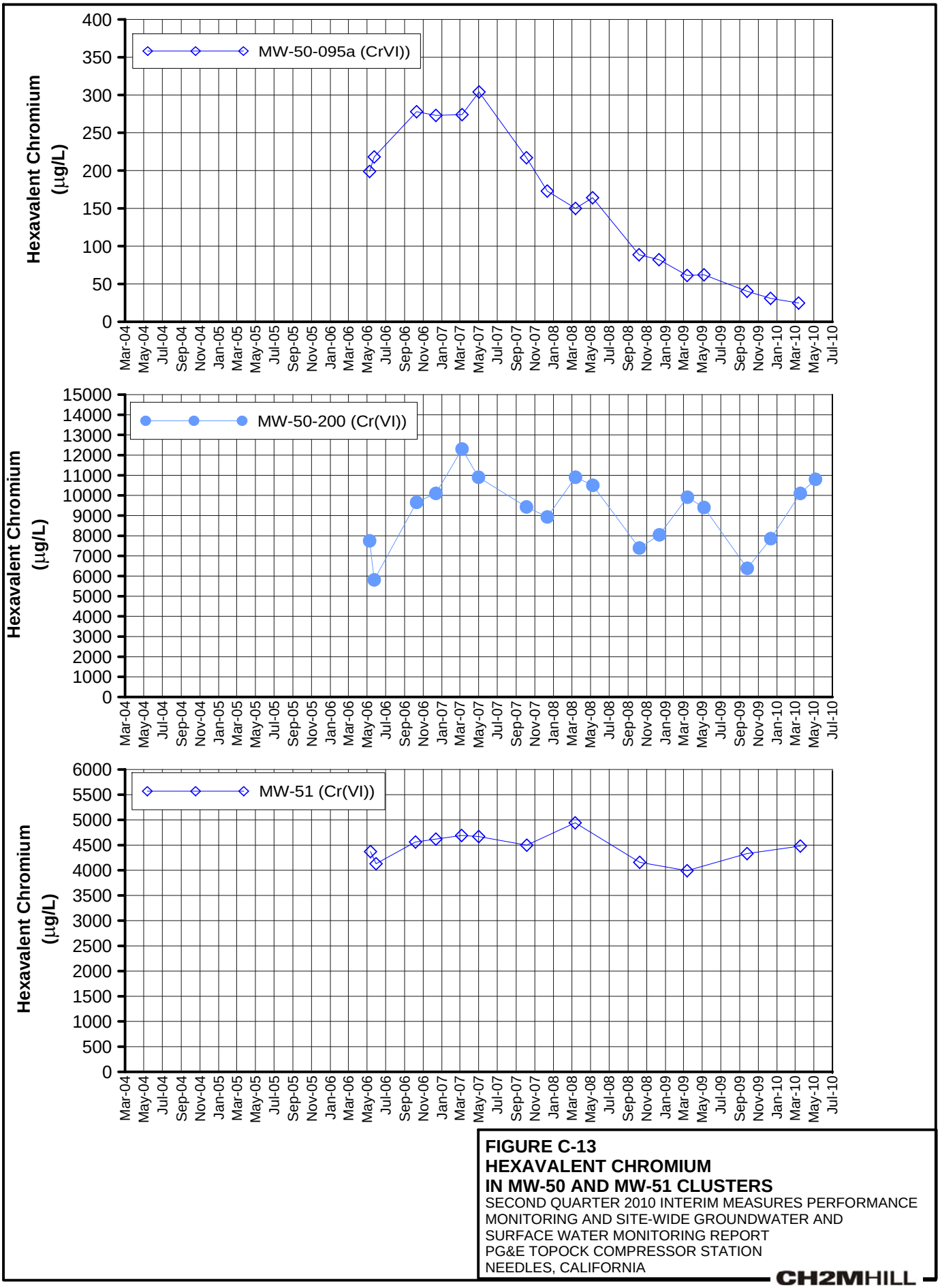

FIGURE C-13
HEXAVALENT CHROMIUM
IN MW-50 AND MW-51 CLUSTERS
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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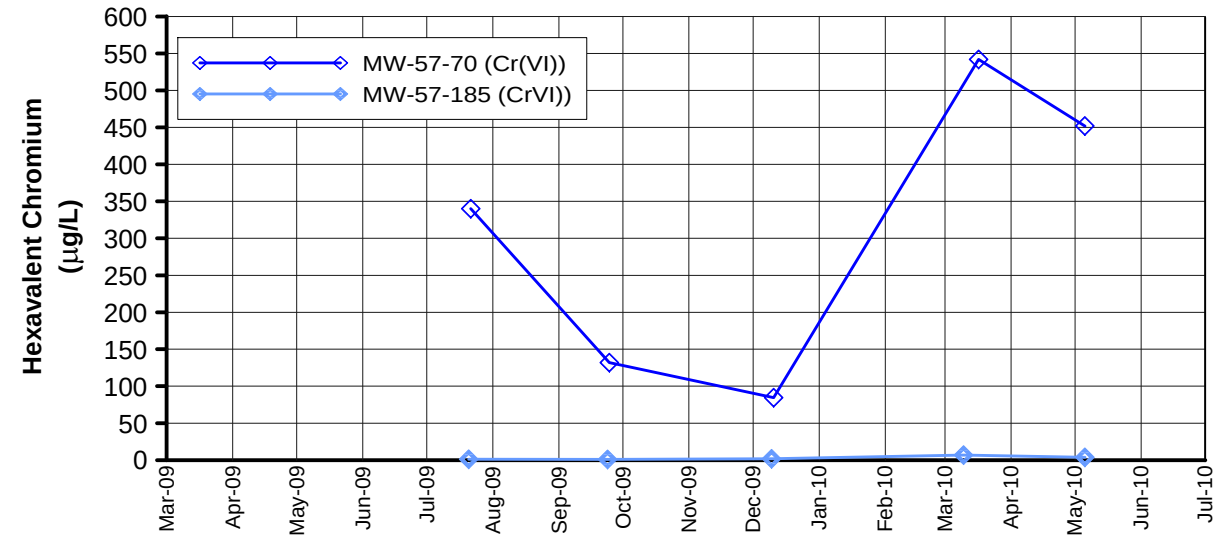

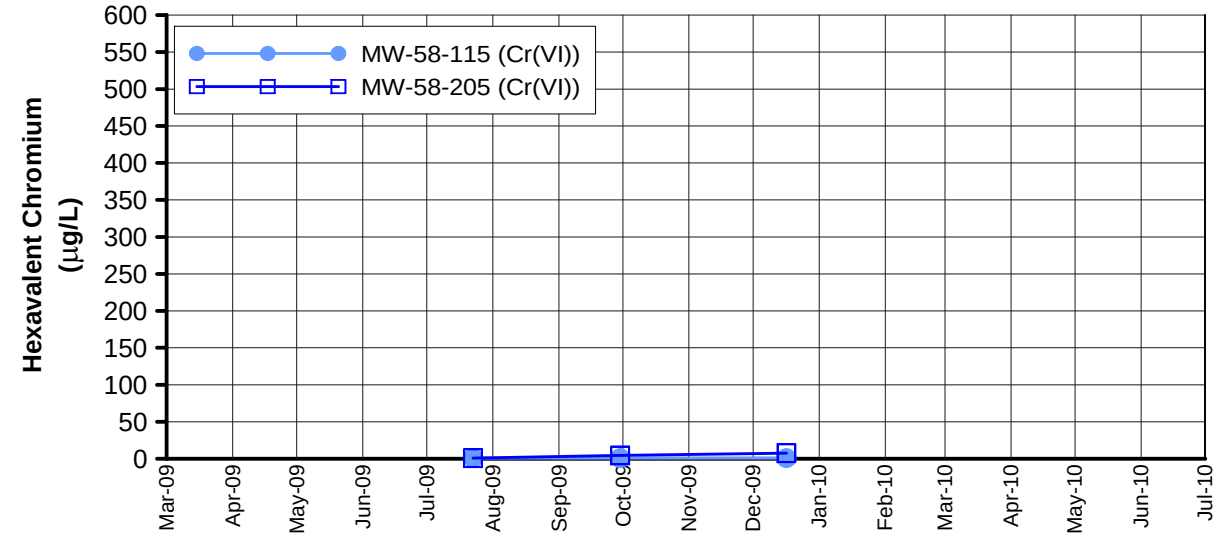

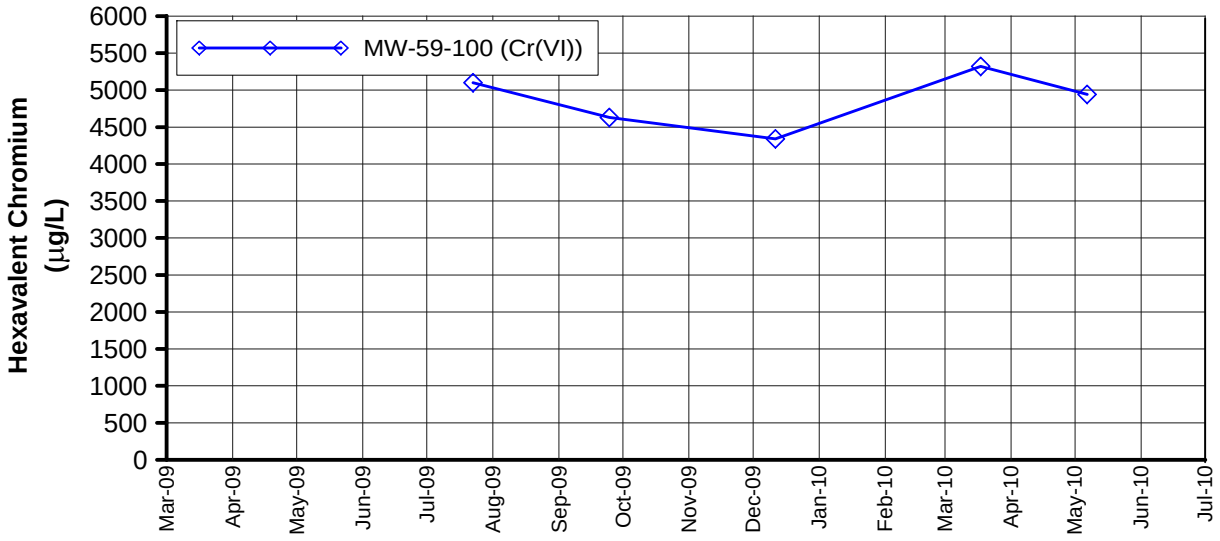

FIGURE C-14
HEXAVALENT CHROMIUM
IN MW-57, MW-58 and MW-59 CLUSTERS
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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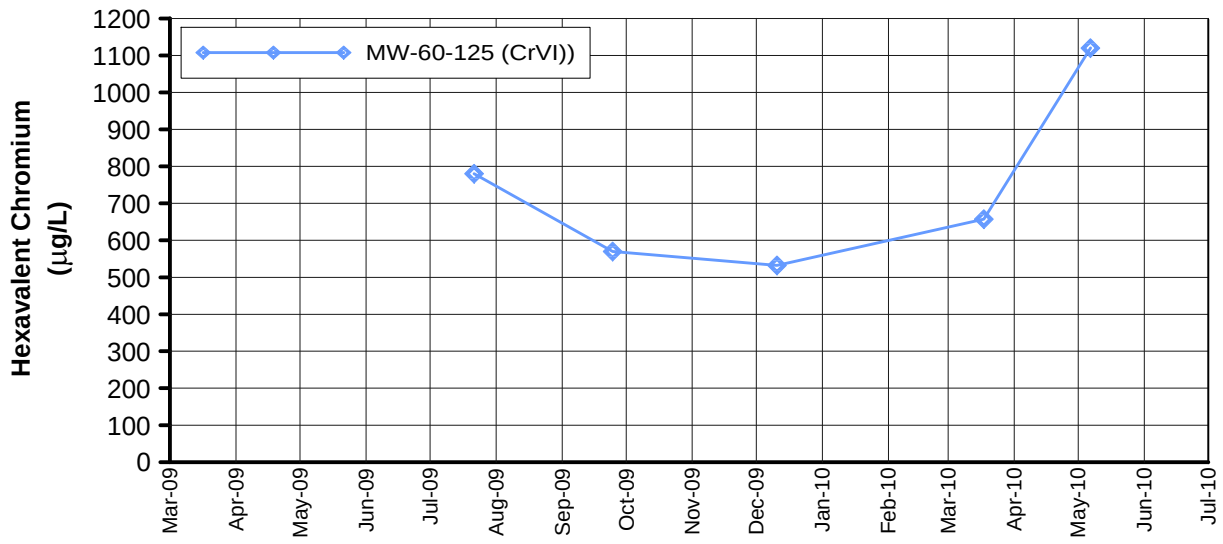

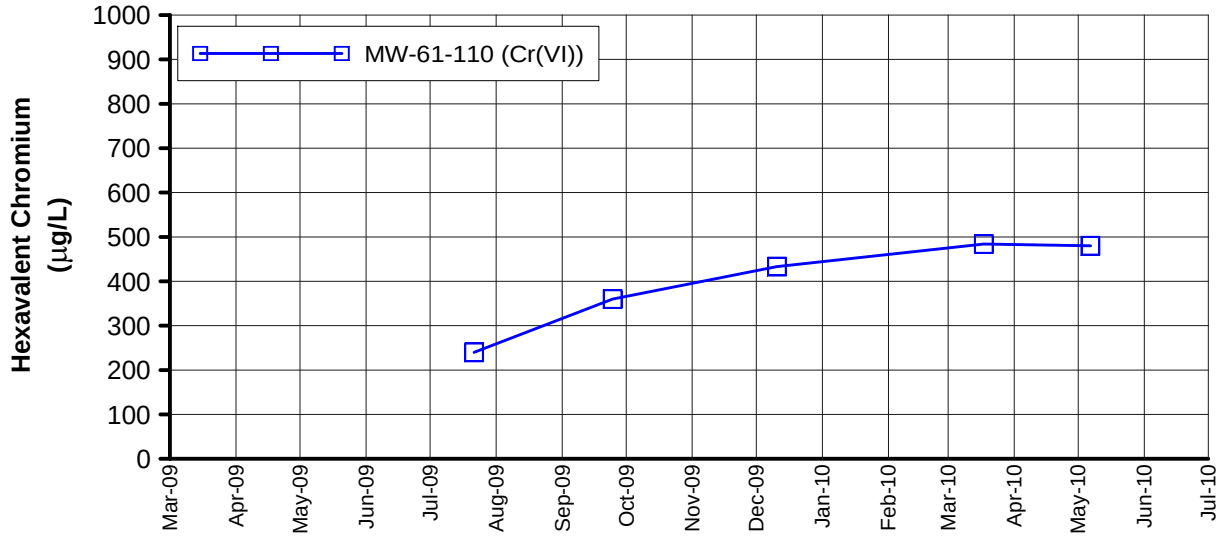

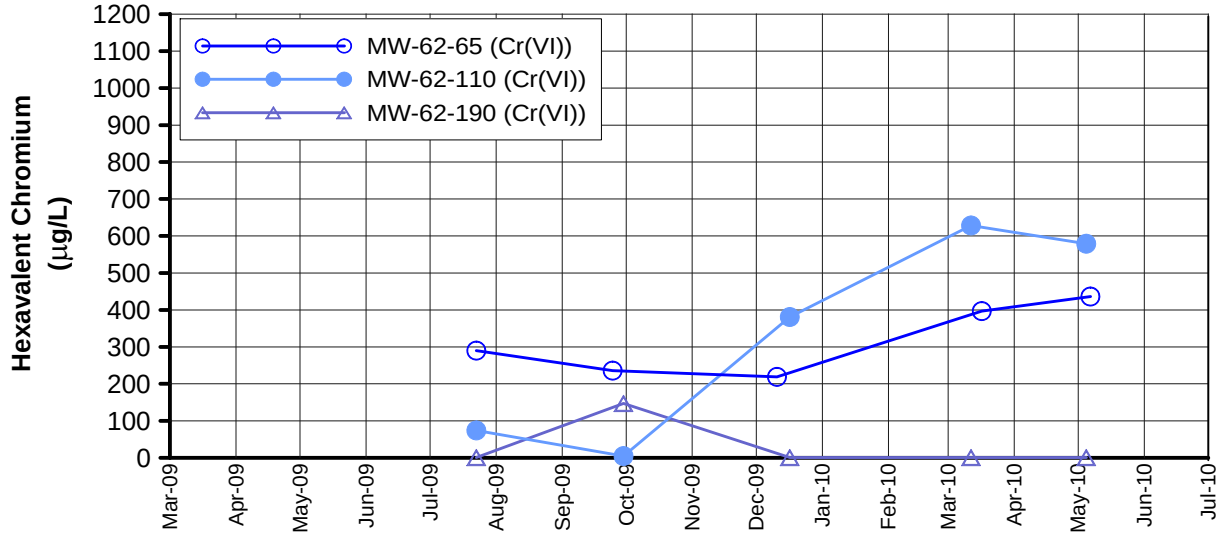

FIGURE C-15
HEXAVALENT CHROMIUM
IN MW-60-125, MW-61-110 AND THE MW-62 CLUSTER
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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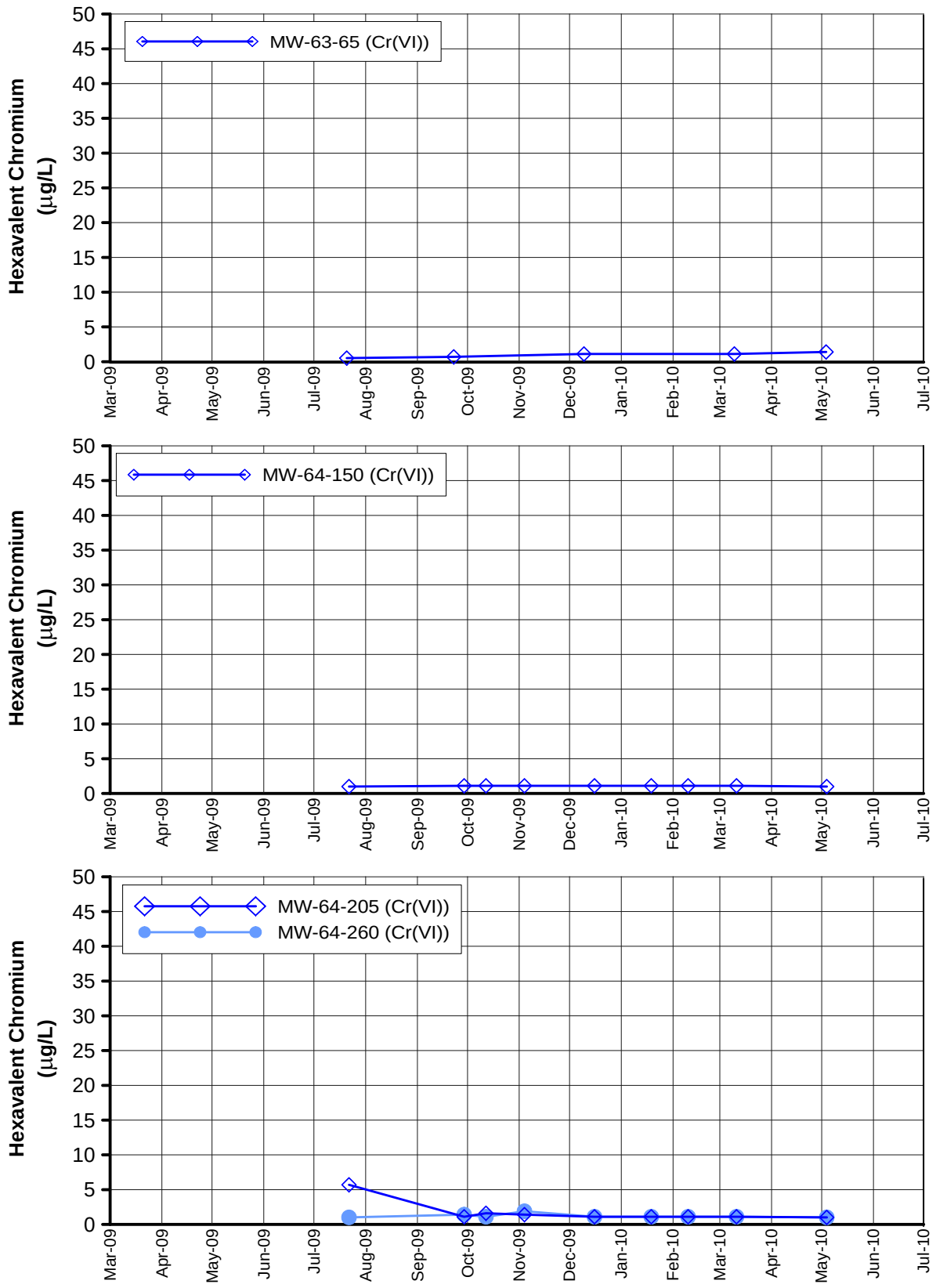

FIGURE C-16
HEXAVALENT CHROMIUM
IN MW-63-065 AND THE MW-64 CLUSTER
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
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Appendix D
Interim Measure Extraction System
Operations Log, May through July 2010

APPENDIX D

Extraction System Operations Log, May through July 2010, PG&E Topock Interim Measures Performance Monitoring Program

During second quarter 2010 (May through July), extraction wells TW-3D and PE-1 operated at a target pump rate of at 135 gallons per minute (gpm), excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during second quarter 2010. The operational run time for the Interim Measure groundwater extraction system (combined or individual pumping) was approximately 96.4 percent during second quarter 2010.

The Interim Measure Number 3 (IM-3) facility treated approximately 17,033,956 gallons of extracted groundwater during second quarter 2010. The IM-3 facility also treated approximately 2,020 gallons of water generated from the groundwater monitoring program and 43,700 gallons of water from IM-3 injection well development. Three containers of solids from the IM-3 facility were transported offsite during the reporting period.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 3.6 percent of downtime during second quarter 2010) are summarized below. The times shown are in Pacific Standard Time to be consistent with other data collected (e.g., water level data) at the site.

D.1 May 2010

- **May 4, 2010 (planned):** The extraction well system was offline from 10:58 a.m. to 11:00 a.m., 11:24 a.m. to 11:26 a.m., 11:30 a.m. to 11:32 a.m., 11:36 a.m. to 11:38 a.m., and 11:42 a.m. to 11:44 a.m. for critical alarm testing. Extraction system downtime 10 minutes.
- **May 17, 2010 (unplanned):** The extraction well system was offline from 10:06 a.m. to 10:10 a.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime 4 minutes.
- **May 19, 2010 (planned):** The extraction well system was offline from 7:28 a.m. to 3:08 p.m. for planned monthly plant maintenance. Extraction system downtime was 7 hours and 40 minutes.

D.2 June 2010

- **June 7, 2010 (planned):** The extraction well system was offline from 1:50 p.m. to 6:02 p.m. for microfilter maintenance. Extraction system downtime was 4 hours and 12 minutes.

- **June 8, 2010 (planned):** The extraction well system was offline from 11:30 a.m. to 11:32 a.m., 11:40 a.m. to 11:48 a.m., and 11:58 a.m. to 12:12 p.m. for critical alarm testing and leak detection system testing. Extraction system downtime 24 minutes.
- **June 14, 2010 (unplanned):** The extraction well system was offline from 9:20 a.m. to 10:46 a.m. due to reduced microfilter performance. Extraction system downtime was 1 hour and 26 minutes.
- **June 15, 2010 (planned):** The extraction well system was offline from 1:16 p.m. to 1:20 p.m. and 1:24 p.m. to 2:16 p.m. due to planned monthly maintenance and the installation and testing of software update. Extraction system downtime was 56 minutes.
- **June 17, 2010 (unplanned):** The extraction well system was offline from 6:28 a.m. to 7:12 a.m. and 12:24 p.m. to 1:46 p.m. due to plant shut down from no sludge production. Extraction system downtime was 2 hours and 6 minutes.
- **June 17, 2010 (unplanned):** The extraction well system was offline from 3:04 p.m. to 4:28 p.m. and 8:30 p.m. to 11:22 p.m. due to clarifier failure. Extraction system downtime was 4 hours and 16 minutes.
- **June 18, 2010 (unplanned):** The extraction well system was offline from 2:12 a.m. to 4:56 a.m. and 6:26 a.m. to 7:06 a.m. due to reduced microfilter performance. Extraction system downtime was 3 hours and 24 minutes.
- **June 18, 2010 (unplanned):** The extraction well system was offline from 11:12 a.m. to 11:16 a.m. when City of Needles power utility adjusted power feed to plant. Extraction system downtime was 4 minutes.
- **June 21, 2010 (unplanned):** The extraction well system was offline from 7:16 a.m. to 1:12 p.m. due polymer system failure. Extraction system downtime was 5 hours and 56 minutes.
- **June 23, 2010 (planned):** The extraction well system was offline from 7:16 a.m. to 5:40 p.m. for clarifier and microfilter cleaning. Extraction system downtime was 10 hours and 24 minutes.
- **June 27-28, 2010 (unplanned):** The extraction well system was offline from 11:22 p.m. on June 27 to 1:52 a.m. on June 28 when the primary RO system alarmed and shutdown the plant. Extraction system downtime was 2 hours and 30 minutes.
- **June 28, 2010 (planned):** The extraction well system was offline from 7:58 a.m. to 8:16 a.m. when City of Needles power came to site and adjusted the AMP's feed to plant. Extraction system downtime was 18 minutes.
- **June 28, 2010 (planned):** The extraction well system was offline from 1:54 p.m. to 3:06 p.m. for microfilter maintenance . Extraction system downtime was 1 hour and 12 minutes.

- **June 29-30, 2010 (unplanned):** The extraction well system was offline from 12:44 p.m. to 3:38 p.m. due to reduced microfilter performance. Extraction system downtime was 2 hours and 54 minutes.
- **June 30, 2010 (unplanned):** The extraction well system was offline from 8:02 a.m. to 11:36 a.m. and 11:38 a.m. to 1:08 p.m. due to reduced microfilter performance. Extraction system downtime was 5 hours and 4 minutes.

D.3 July 2010

- **July 1, 2010 (planned):** The extraction well system was offline from 9:40 a.m. to 1:04 p.m. and 1:24 p.m. to 7:12 p.m. for iron oxidation tank T301B maintenance. Extraction system downtime was 9 hours and 12 minutes.
- **July 1, 2010 (planned):** The extraction well system was offline from 11:00 p.m. to 11:54 p.m. for microfilter bank switch. Extraction system downtime 54 minutes.
- **July 6, 2010 (planned):** The extraction well system was offline from 1:44 p.m. to 3:16 p.m. for microfilter bank switch. Extraction system downtime was 1 hour and 32 minutes.
- **July 7, 2010 (planned):** The extraction well system was offline from 9:54 a.m. to 9:56 a.m., 10:18 a.m. to 10:22 a.m., 10:32 a.m. to 10:34 a.m. and 10:38 a.m. to 10:42 a.m. for testing of the pipeline leak detection alarm system. Extraction system downtime was 12 minutes.
- **July 10, 2010 (unplanned):** The extraction well system was offline from 12:16 a.m. to 12:18 a.m. due to reduced microfilter performance. Extraction system downtime was 2 minutes.
- **July 11, 2010 (unplanned):** The extraction well system was offline from 1:40 p.m. to 2:18 p.m. due to low ferrous chloride flow. Extraction system downtime was 38 minutes.
- **July 13, 2010 (planned):** The extraction well system was offline from 7:20 a.m. to 9:14 for microfilter bank switch and maintenance. Extraction system downtime was 1 hour and 54 minutes.
- **July 14, 2010 (planned):** The extraction well system was offline from 7:38 a.m. to 9:00 a.m. to replace a valve on CIP skid. Extraction system downtime was 1 hour and 22 minutes.
- **July 14, 2010 (unplanned):** The extraction well system was offline from 1:36 p.m. to 3:28 p.m. due to low ferrous chloride flow. Extraction system downtime was 1 hour and 52 minutes.
- **July 14, 2010 (planned):** The extraction well system was offline from 6:12 p.m. to 7:08 p.m. to replace valve on CIP skid. Extraction system downtime was 56 minutes.
- **July 15, 2010 (unplanned):** The extraction well system was offline from 5:40 p.m. to 5:44 p.m. due to reduced microfilter performance. Extraction system downtime was 4 minutes.

- **July 21, 2010 (unplanned):** The extraction well system was offline from 8:16 a.m. to 8:34 a.m. and 9:28 a.m. to 9:30 a.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 20 minutes.
- **July 23, 2010 (planned):** The extraction well system was offline from 10:04 a.m. to 2:16 p.m. for microfilter bank switch and maintenance. Extraction system downtime was 4 hours and 12 minutes.
- **July 23, 2010 (planned):** The extraction well system was offline from 7:56 p.m. to 10:00 p.m. to collect routine process control samples after microfilter bank switch. Extraction system downtime was 2 hours and 4 minutes.
- **July 31, 2010 (planned):** The extraction well system was offline from 5:30 a.m. to 5:50 p.m. for microfilter maintenance. Extraction system downtime was 20 minutes.

Appendix E
Hydraulic Data for Interim Measures Reporting Period

Table E-1
Average Monthly and Quarterly Groundwater Elevations, May through July 2010
Second Quarter 2010 Interim Measures Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	May 2010	June 2010	July 2010	Quarter Average	Days in Quarter Average
I-3	River Station	456.41	456.50	456.34	456.42	88
MW-20-070	Shallow Zone	454.72	454.97	455.03	454.90	88
MW-20-100	Middle Zone	454.28	454.55	454.62	454.48	88
MW-20-130	Deep Wells	453.97	454.27	454.33	454.19	88
MW-22	Shallow Zone	455.59	455.75	455.73	455.69	88
MW-25	Shallow Zone	455.97	456.23	456.36	456.18	88
MW-26	Shallow Zone	455.69	455.93	456.05	455.88	89
MW-27-020	Shallow Zone	456.17	456.27	456.10	456.18	87
MW-27-060	Middle Zone	456.12	456.21	456.05	456.13	87
MW-27-085	Deep Wells	456.26	456.35	456.12	456.24	92
MW-28-025	Shallow Zone	456.22	456.34	456.17	456.24	86
MW-28-090	Deep Wells	456.23	456.45	456.30	456.33	88
MW-30-050	Middle Zone	455.83	455.95	455.87	455.89	87
MW-31-060	Shallow Zone	455.64	455.84	455.84	455.77	88
MW-31-135	Deep Wells	455.02	455.25	455.29	455.19	92
MW-32-035	Shallow Zone	455.91	456.03	455.89	455.95	88
MW-33-040	Shallow Zone	455.98	456.13	456.07	456.06	88
MW-33-090	Middle Zone	456.17	456.29	456.26	456.24	88
MW-33-150	Deep Wells	456.19	456.36	456.29	456.28	92
MW-34-055	Middle Zone	456.28	456.38	456.25	456.31	87
MW-34-080	Deep Wells	456.16	456.24	456.16	456.18	87
MW-34-100	Deep Wells	456.07	456.20	456.02	456.10	92
MW-35-060	Shallow Zone	456.64	456.76	456.53	456.65	88
MW-35-135	Deep Wells	456.62	456.79	456.75	456.72	88
MW-36-020	Shallow Zone	455.95	456.08	455.99	456.00	88
MW-36-040	Shallow Zone	455.98	456.09	455.97	456.02	88
MW-36-050	Middle Zone	455.95	456.07	455.95	455.99	88
MW-36-070	Middle Zone	455.87	455.99	455.87	455.91	88
MW-36-090	Deep Wells	455.01	455.20	455.13	455.11	88
MW-36-100	Deep Wells	455.32	455.52	455.45	455.43	88
MW-39-040	Shallow Zone	455.71	455.85	455.76	455.77	88
MW-39-050	Middle Zone	455.46	455.61	455.53	455.53	88
MW-39-060	Middle Zone	455.31	455.48	455.48	455.42	88
MW-39-070	Middle Zone	454.92	455.12	455.10	455.04	88
MW-39-080	Deep Wells	455.04	455.25	455.24	455.17	88
MW-39-100	Deep Wells	455.70	455.91	455.90	455.83	88
MW-42-030	Shallow Zone	455.62	455.71	455.58	455.64	87
MW-42-065	Middle Zone	455.86	455.99	455.90	455.92	87
MW-43-025	Shallow Zone	456.30	456.37	456.16	456.28	88
MW-43-090	Deep Wells	456.74	456.81	456.60	456.72	88
MW-44-070	Middle Zone	456.09	456.27	456.14	456.17	88
MW-44-115	Deep Wells	455.58	455.73	455.65	455.65	88
MW-44-125	Deep Wells	456.08	456.32	INC	INC	58
MW-45-095a	Deep Wells	454.98	455.26	455.09	455.11	92
MW-46-175	Deep Wells	456.10	456.22	456.15	456.16	88
MW-47-055	Shallow Zone	456.32	456.50	456.48	456.43	88

Table E-1
Average Monthly and Quarterly Groundwater Elevations, May through July 2010
Second Quarter 2010 Interim Measures Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

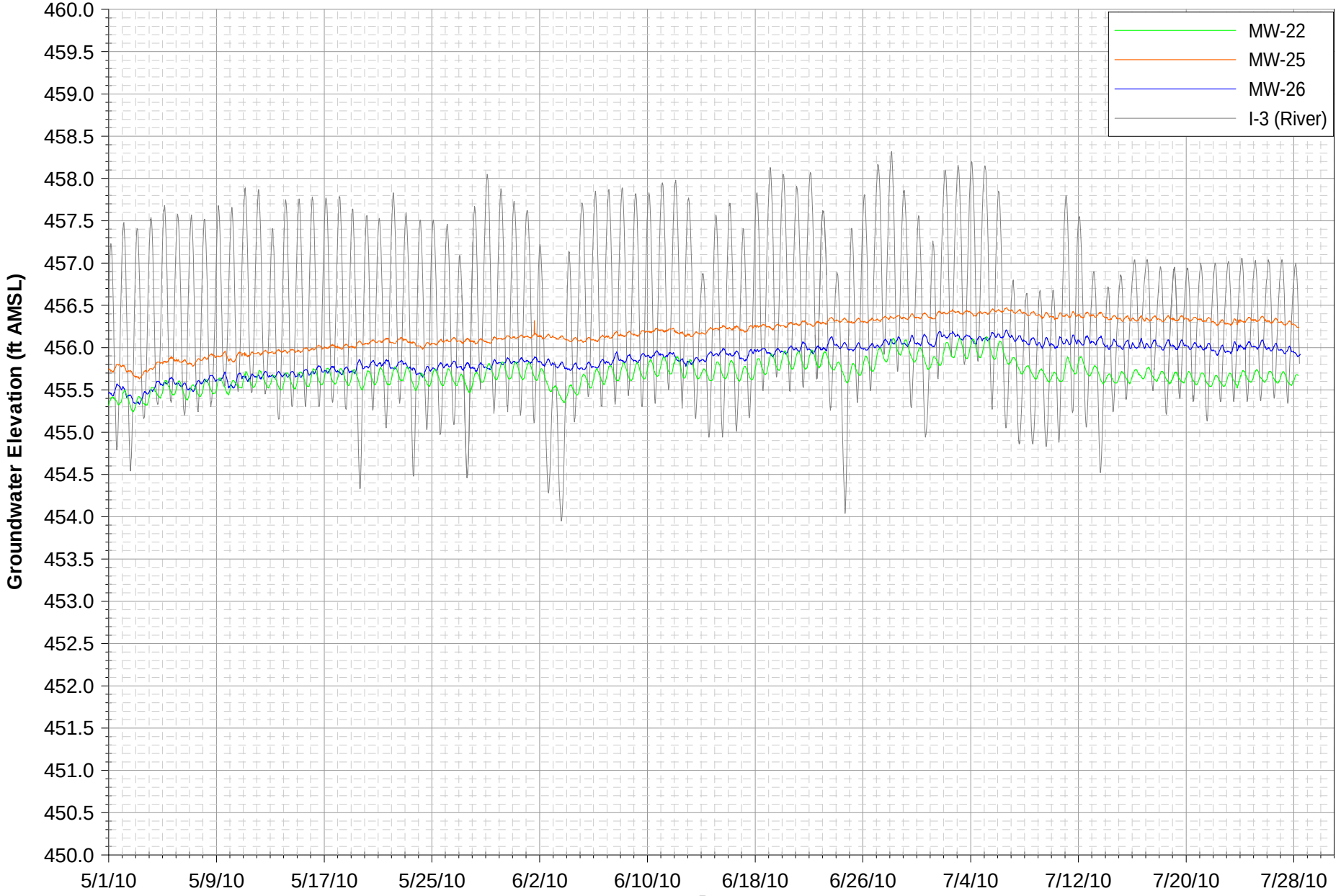
Well ID	Aquifer Zone	May 2010	June 2010	July 2010	Quarter Average	Days in Quarter Average
MW-47-115	Deep Wells	456.27	456.45	456.42	456.38	88
MW-49-135	Deep Wells	456.60	456.75	456.67	456.67	88
MW-50-095	Middle Zone	455.81	456.04	456.06	455.97	88
MW-51	Middle Zone	455.70	455.91	456.02	455.88	87
MW-54-085	Deep Wells	456.55	456.64	456.47	456.55	89
MW-54-140	Deep Wells	456.64	456.92	457.10	456.88	89
MW-54-195	Deep Wells	456.77	456.85	456.69	456.77	89
MW-55-045	Middle Zone	456.97	457.03	456.85	456.95	89
MW-55-120	Deep Wells	457.06	457.11	456.99	457.06	89
PT2D	Deep Wells	454.67	454.89	454.88	454.81	88
PT5D	Deep Wells	455.12	455.31	455.27	455.23	88
PT6D	Deep Wells	455.15	455.35	455.32	455.27	88
RRB	River Station	456.72	456.81	456.65	456.73	89

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



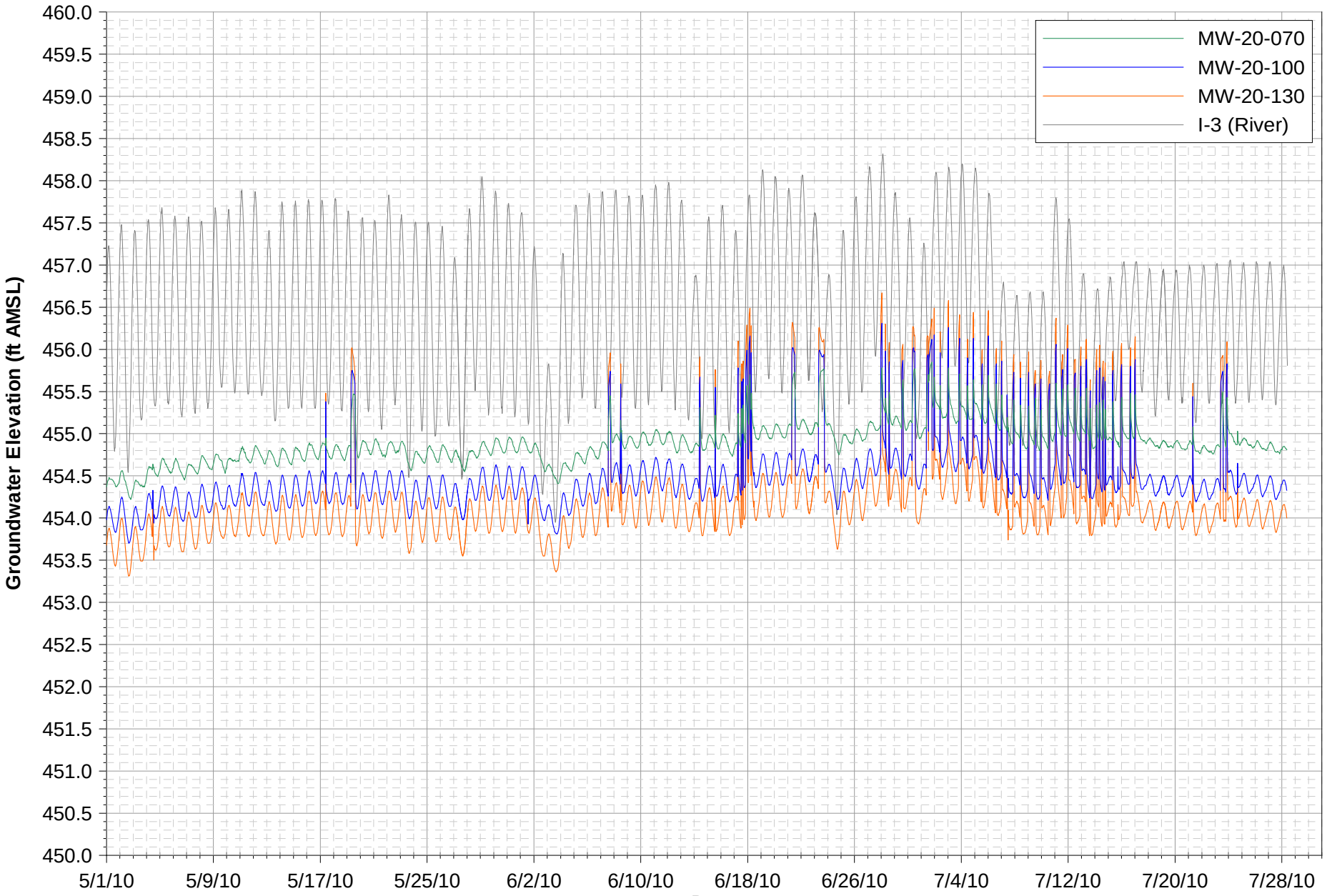
Notes:
Data subject to review.

FIGURE E-1A

MW-22, MW-25, AND MW-26 HYDROGRAPHS

SECOND QUARTER 2010 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-20 CLUSTER HYDROGRAPHS
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

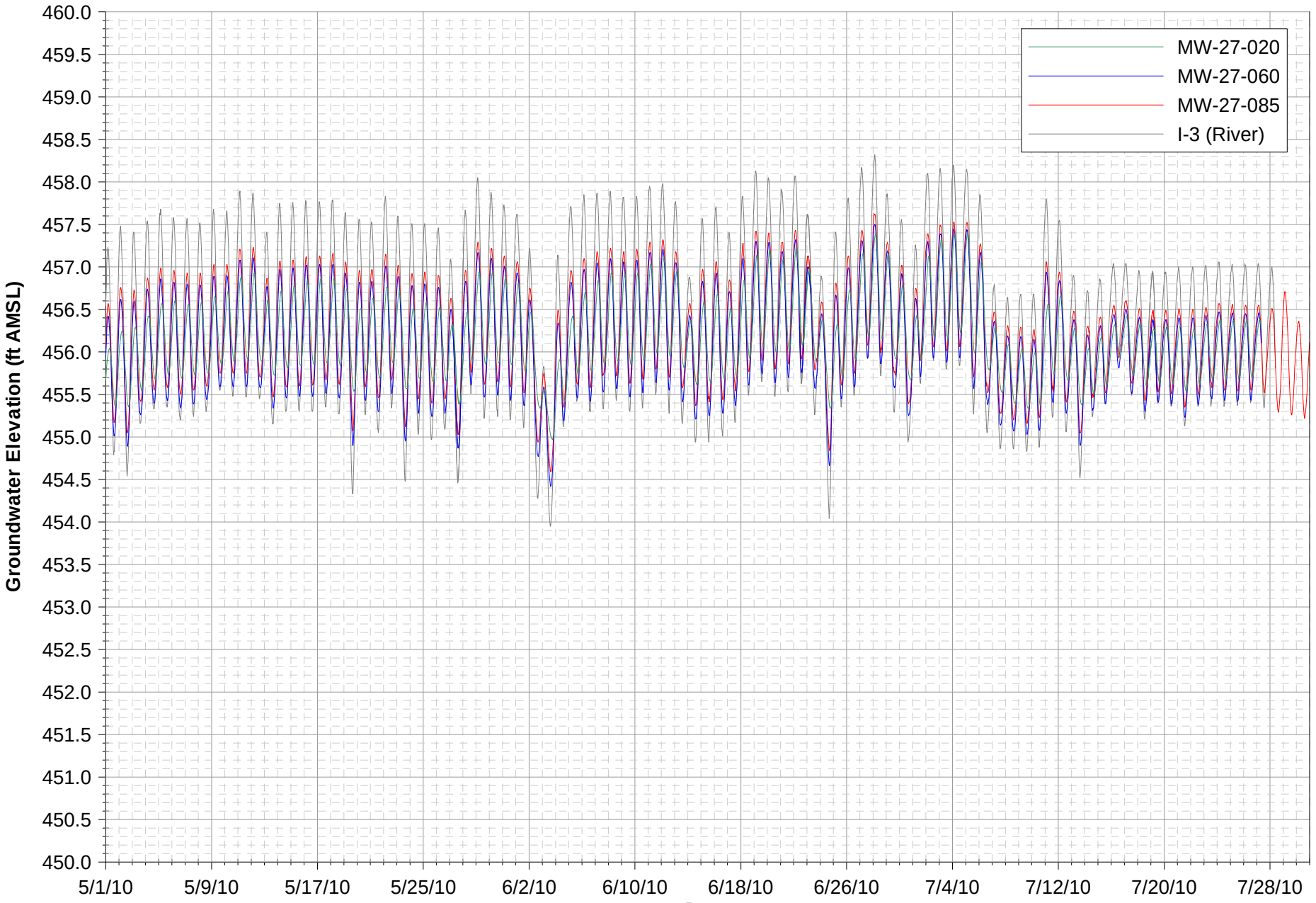


FIGURE E-1C
MW-27 CLUSTER HYDROGRAPHS
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Notes:
Data subject to review.

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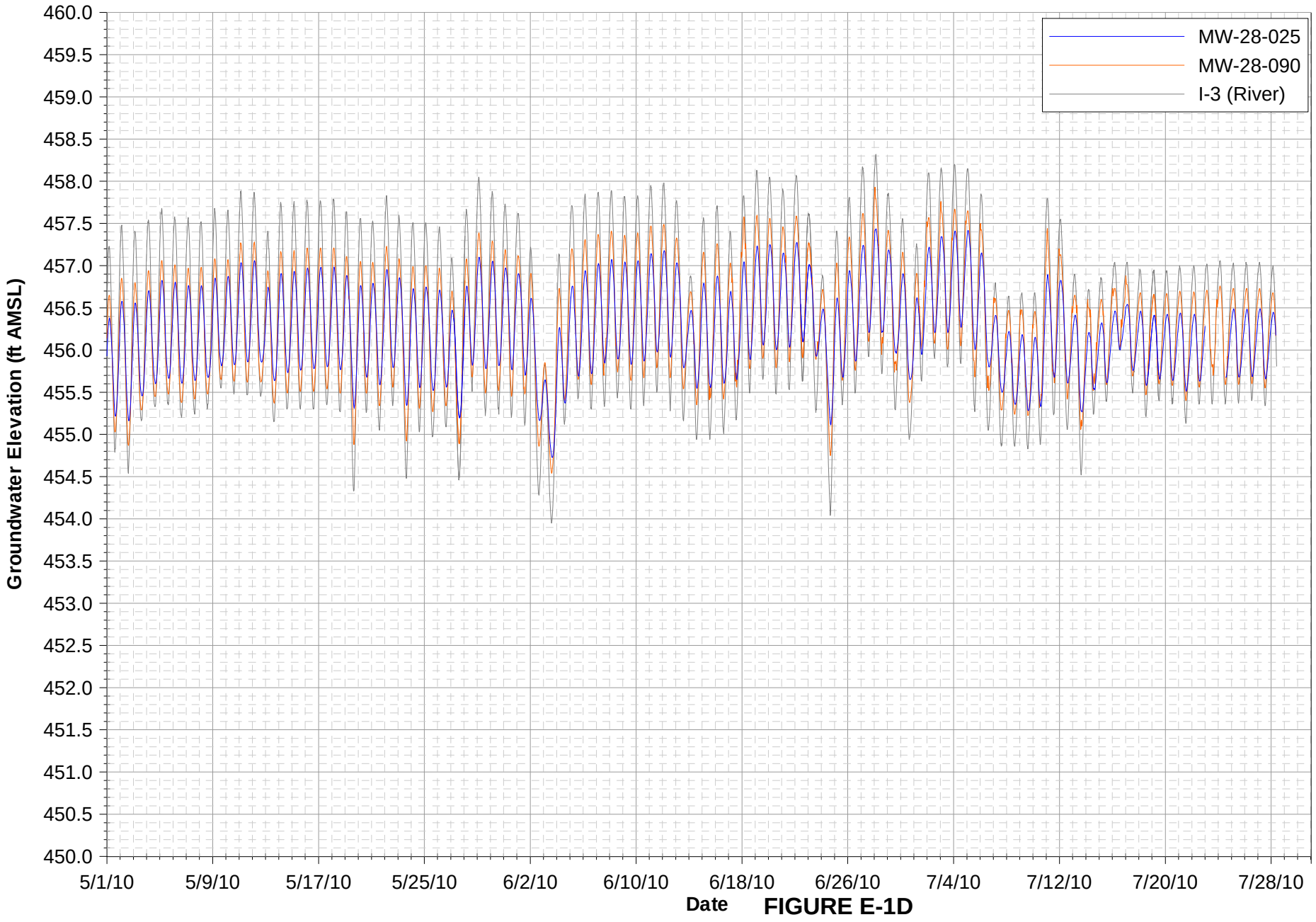
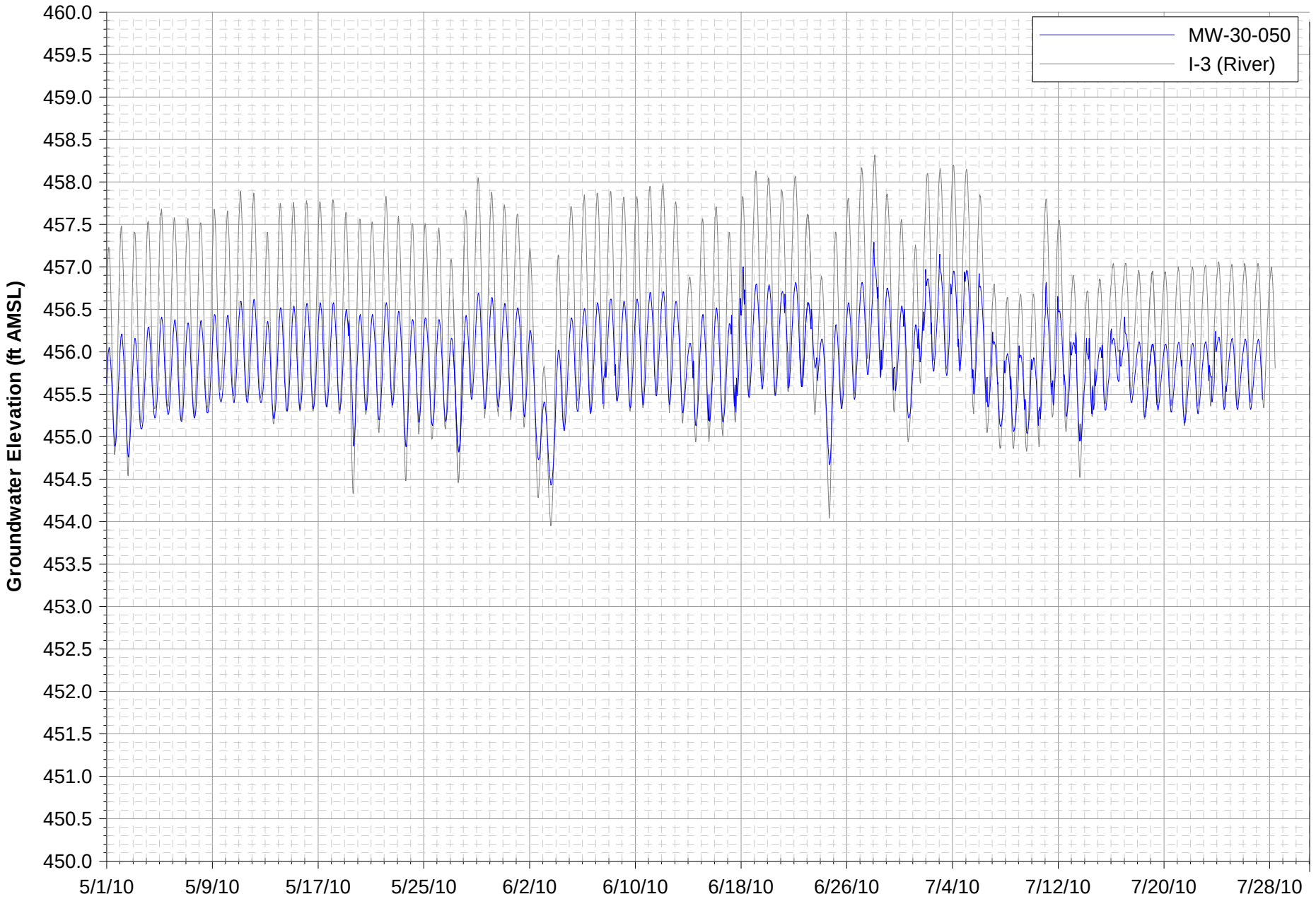


Notes:
Data subject to review.
MW-28-025 data unavailable from July 23, 2010 until July 24, 2010 due to transducer failure.

FIGURE E-1D
MW-28 CLUSTER HYDROGRAPHS

SECOND QUARTER 2010 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
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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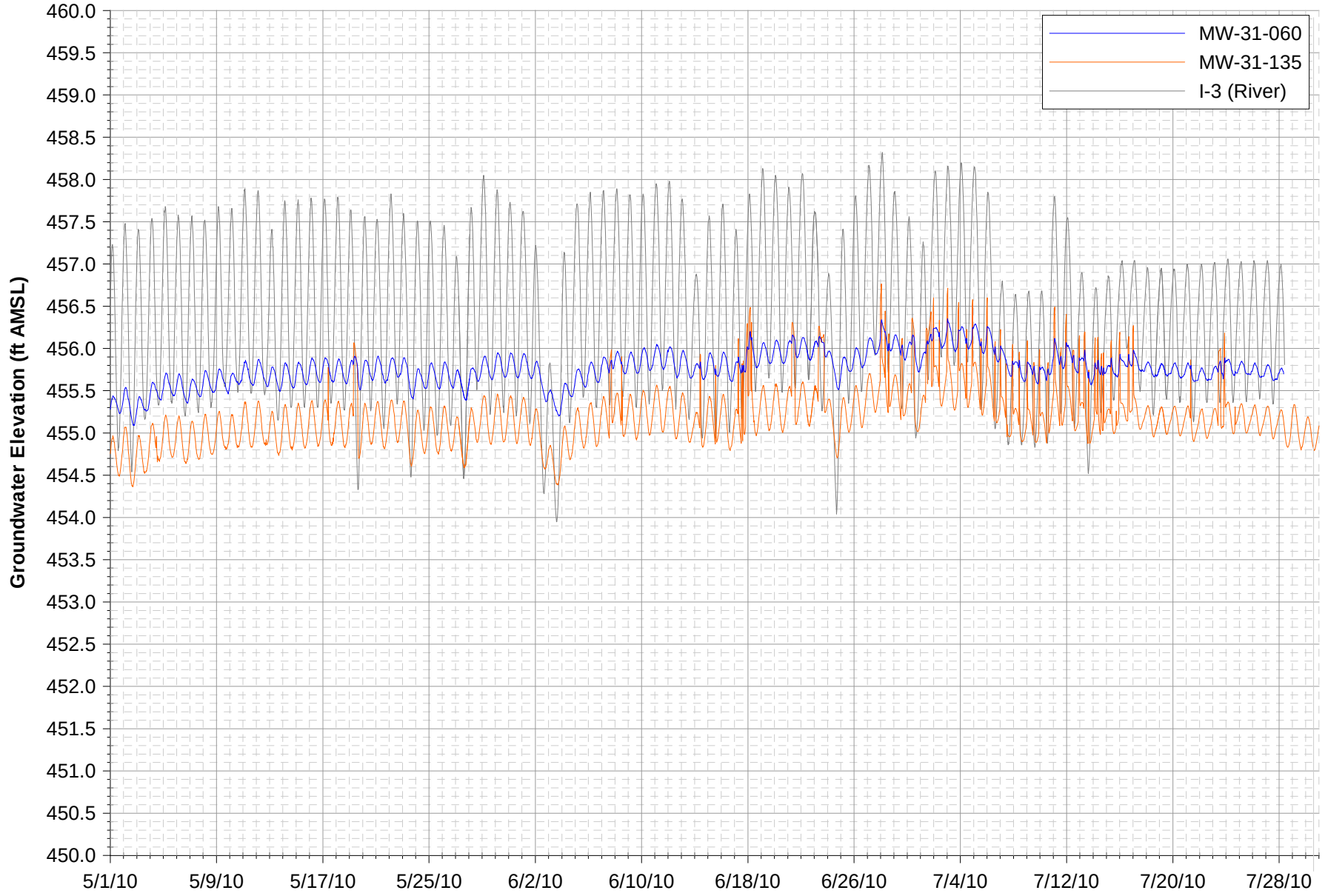


Notes:
Data subject to review.

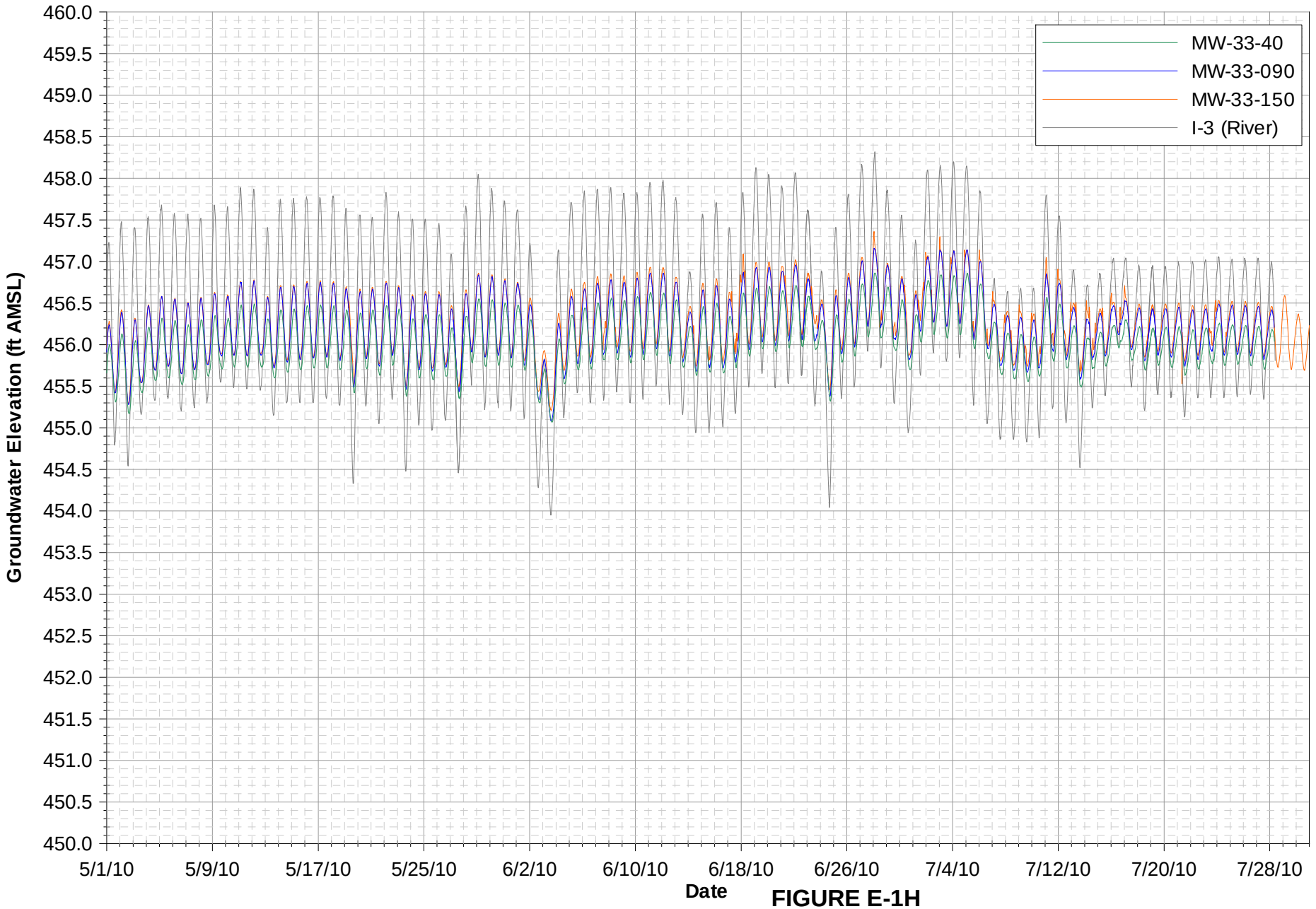
FIGURE E-1F
MW-31 CLUSTER HYDROGRAPHS
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

Notes:
Data subject to review.

FIGURE E-1G
MW-32 HYDROGRAPH
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

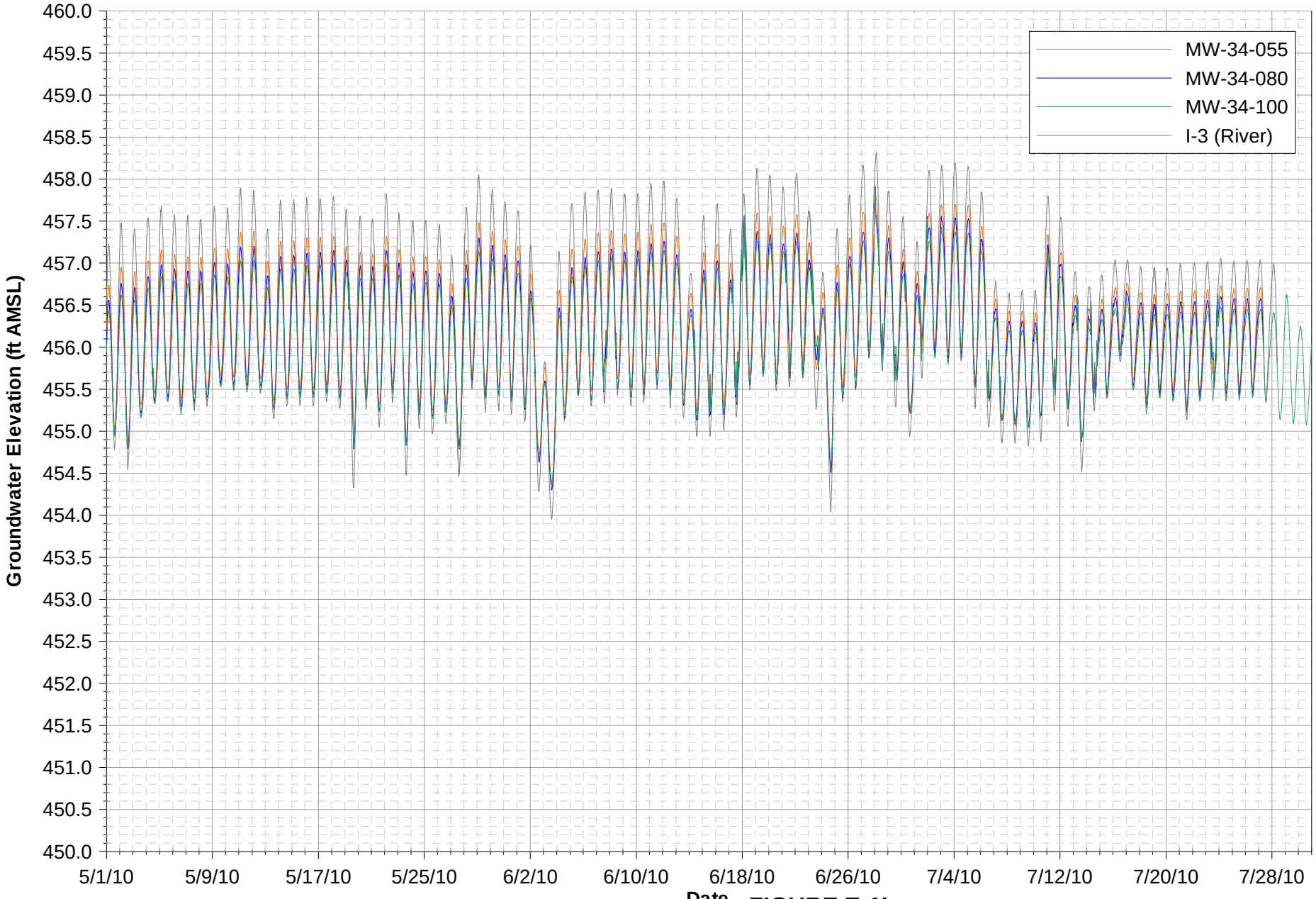
CH2MHILL



Notes:
Data subject to review.

FIGURE E-1H
MW-33 CLUSTER HYDROGRAPHS
SECOND QUARTER 2010 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
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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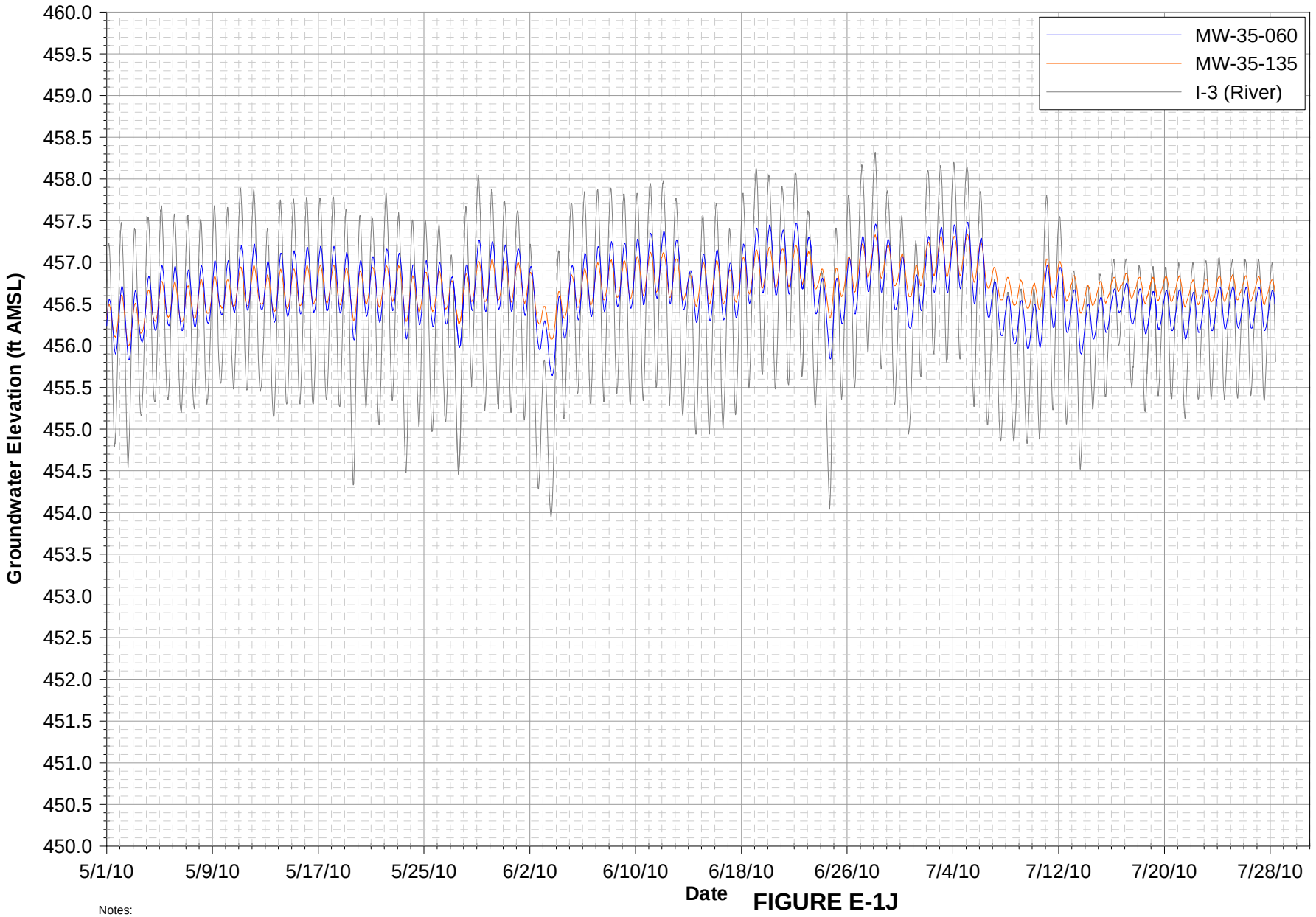
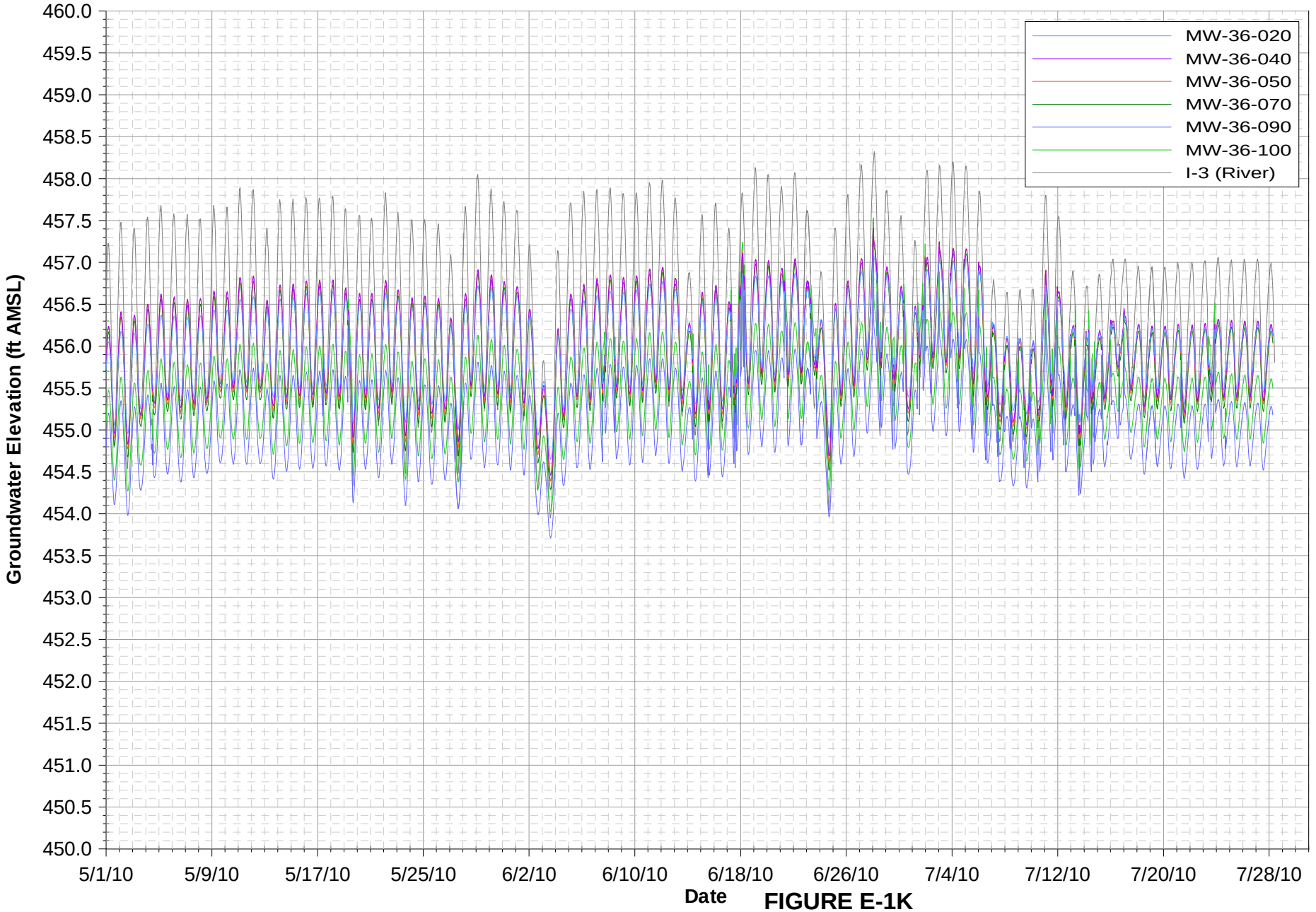


Notes:
Data subject to review.

FIGURE E-1J
MW-35 CLUSTER HYDROGRAPHS
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

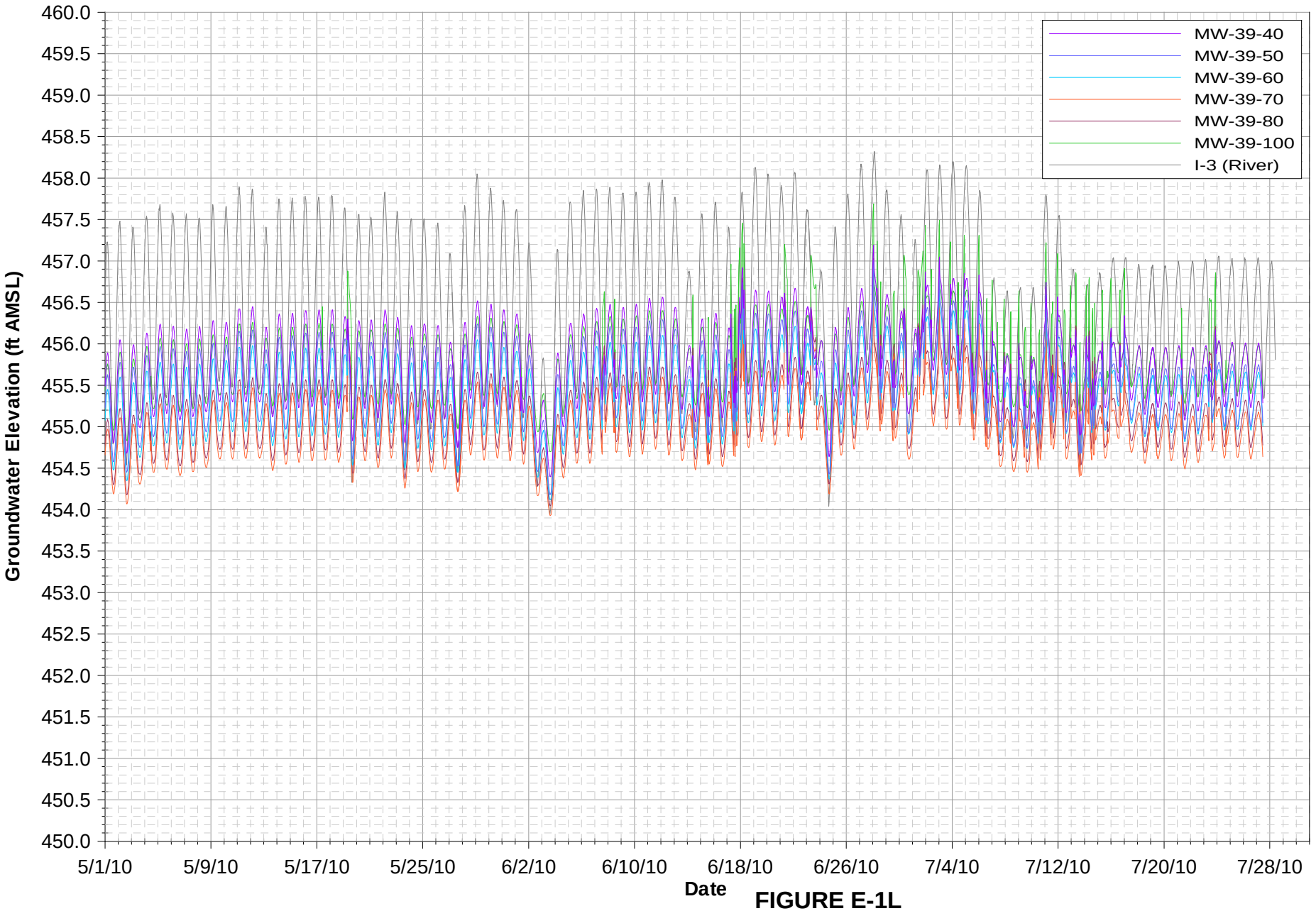
CH2MHILL



Notes:
Data subject to review.

FIGURE E-1K
MW-36 CLUSTER HYDROGRAPHS
SECOND QUARTER 2010 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
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

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FIGURE E-1M
MW-42 CLUSTER HYDROGRAPHS
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Notes:
Data subject to review.

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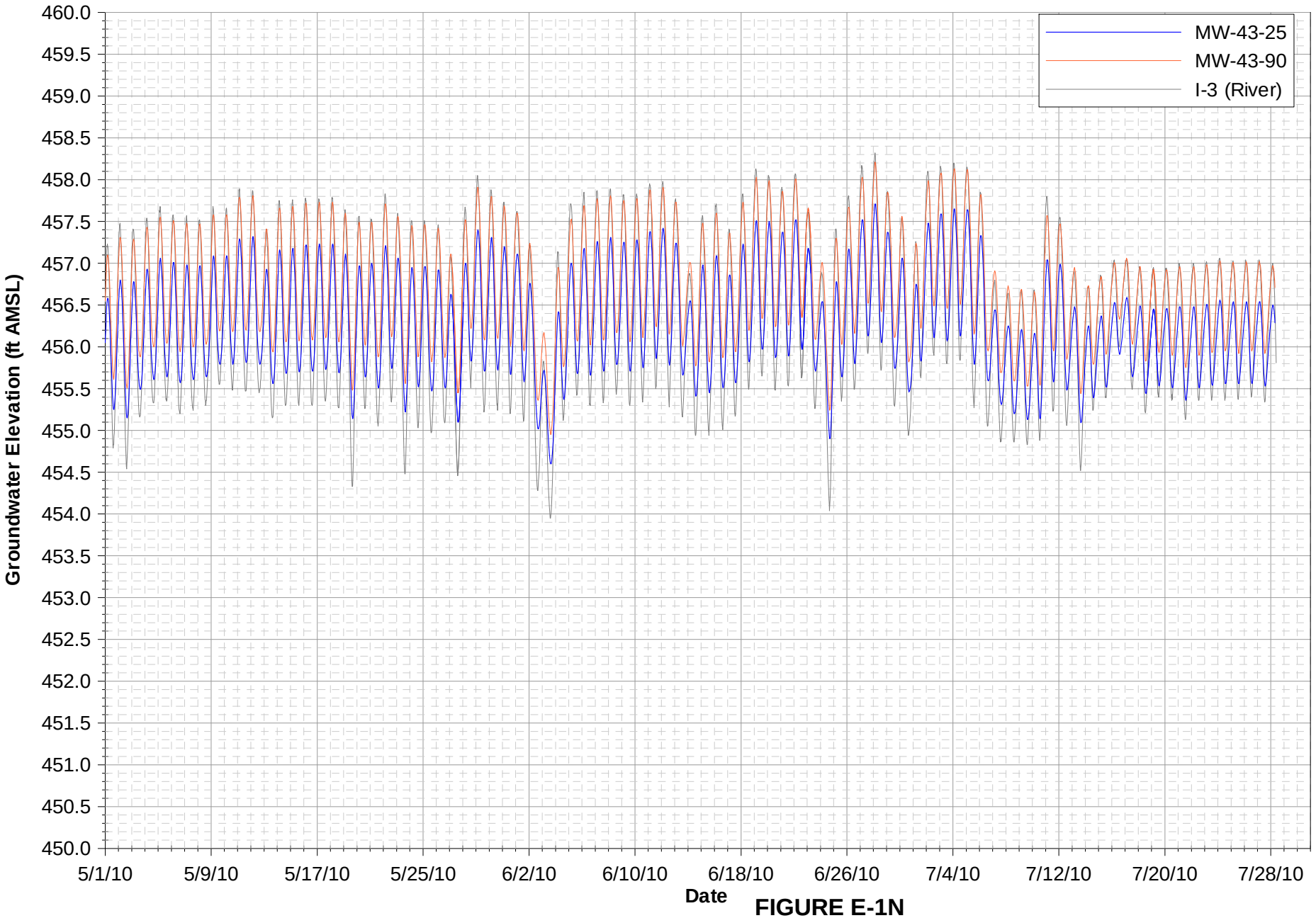

Notes:
Data subject to review.

FIGURE E-1N
MW-43 CLUSTER HYDROGRAPHS
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

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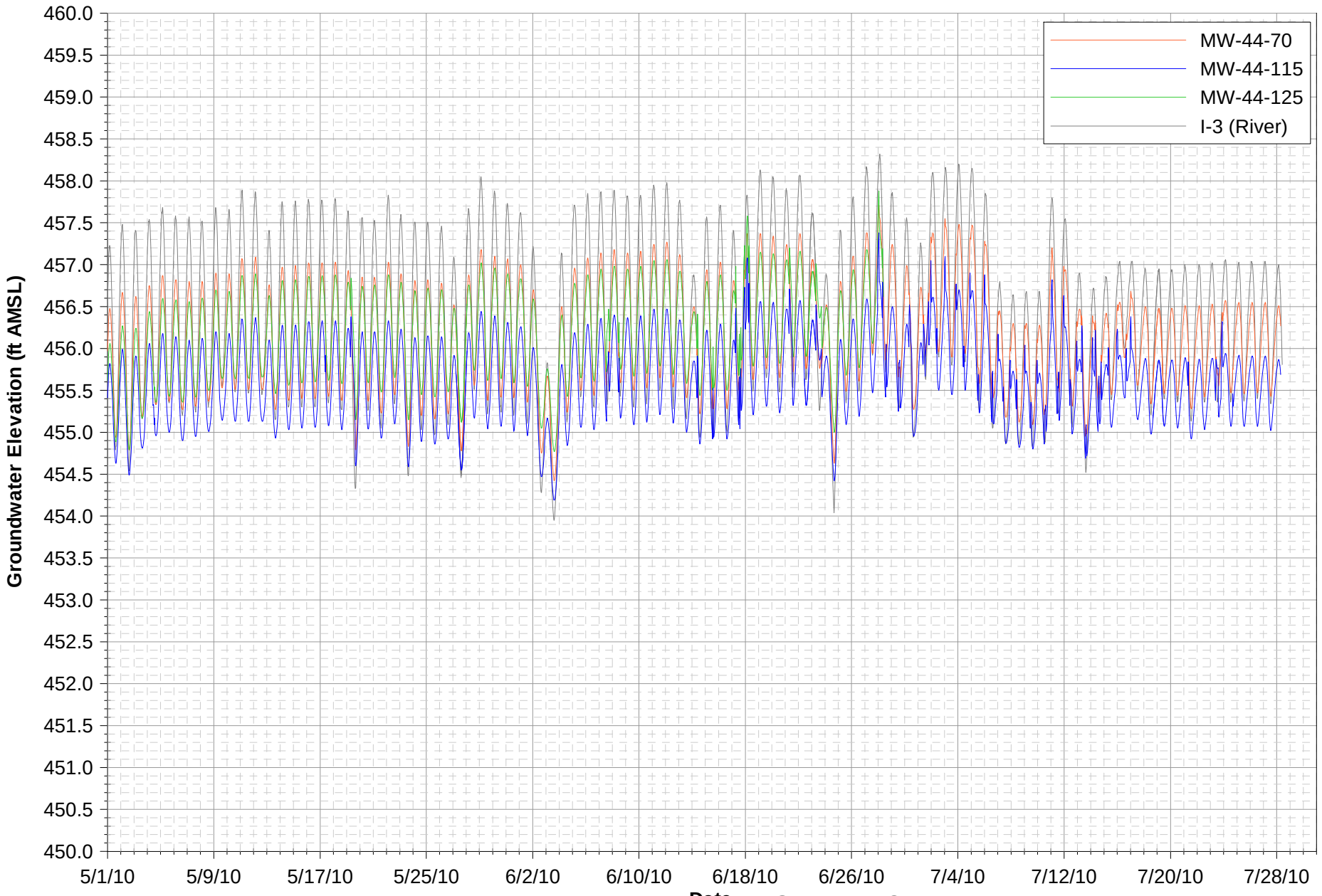

Notes:
Data subject to review.
MW-44-125 data unavailable from June 28, 2010 until July 31, 2010 due to transducer failure.

FIGURE E-1O
MW-44 CLUSTER HYDROGRAPHS
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

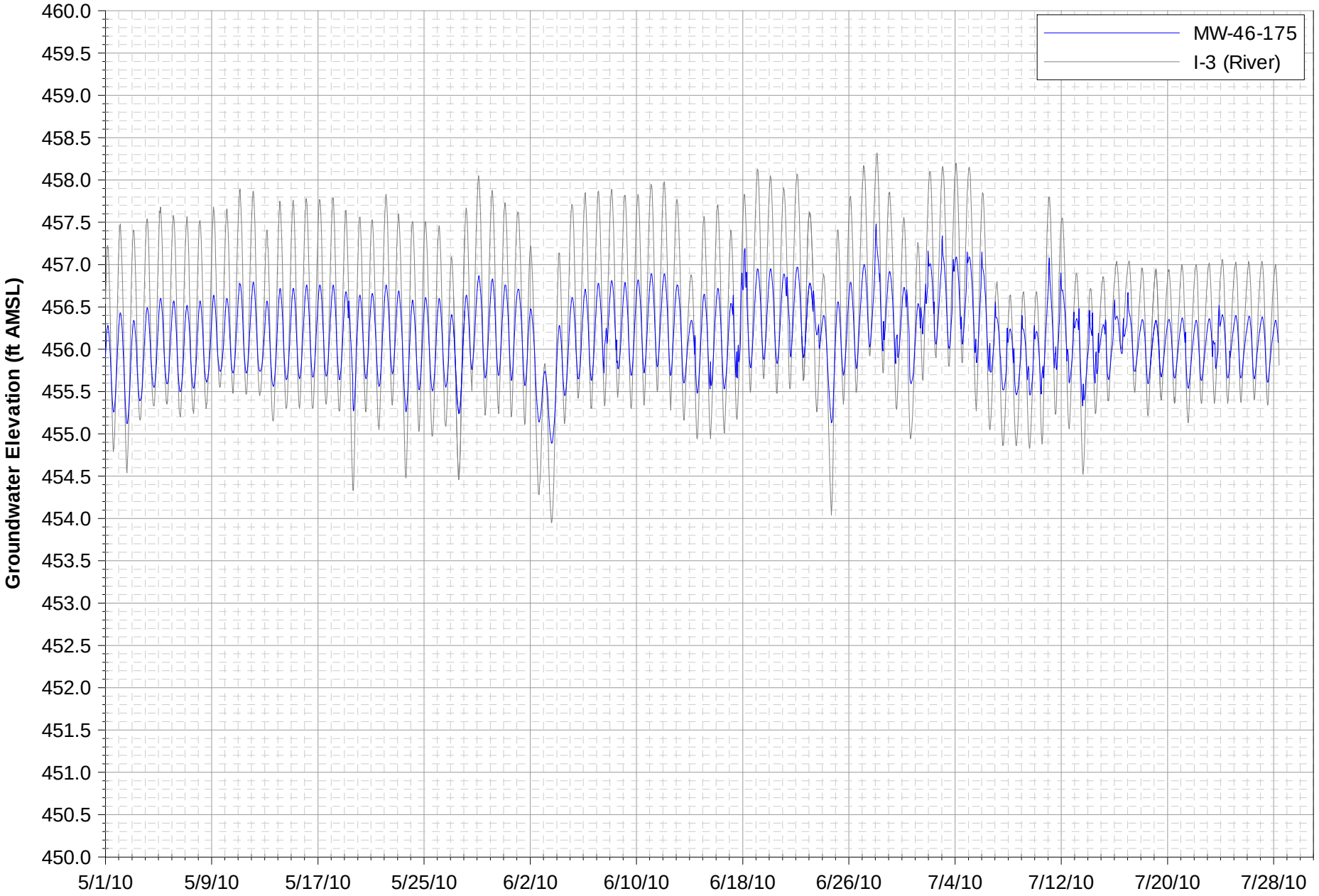

FIGURE E-1P
MW-46 HYDROGRAPH
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Notes:
Data subject to review.

Notes:
Data subject to review.

FIGURE E-1Q
MW-47 CLUSTER HYDROGRAPHS
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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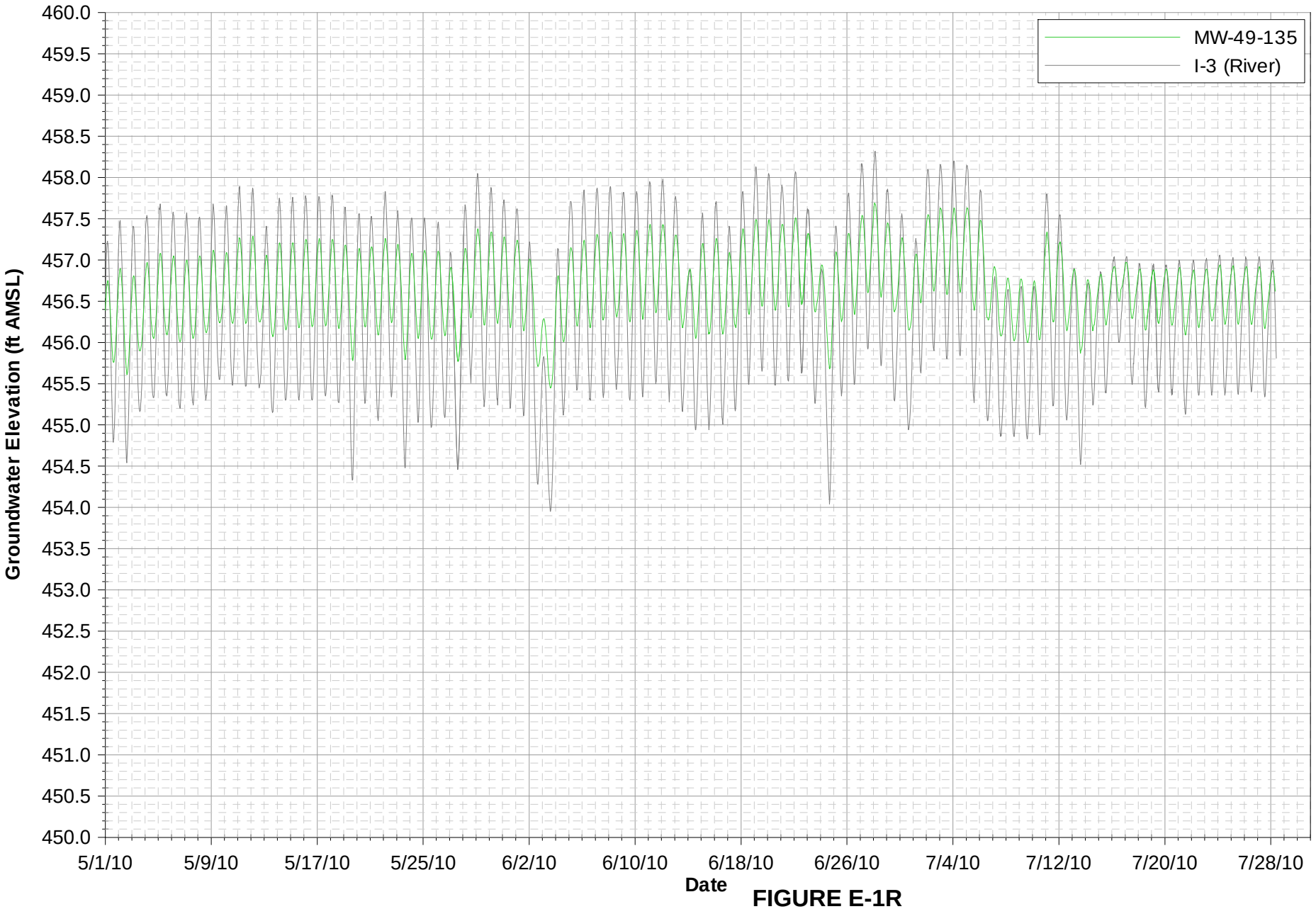
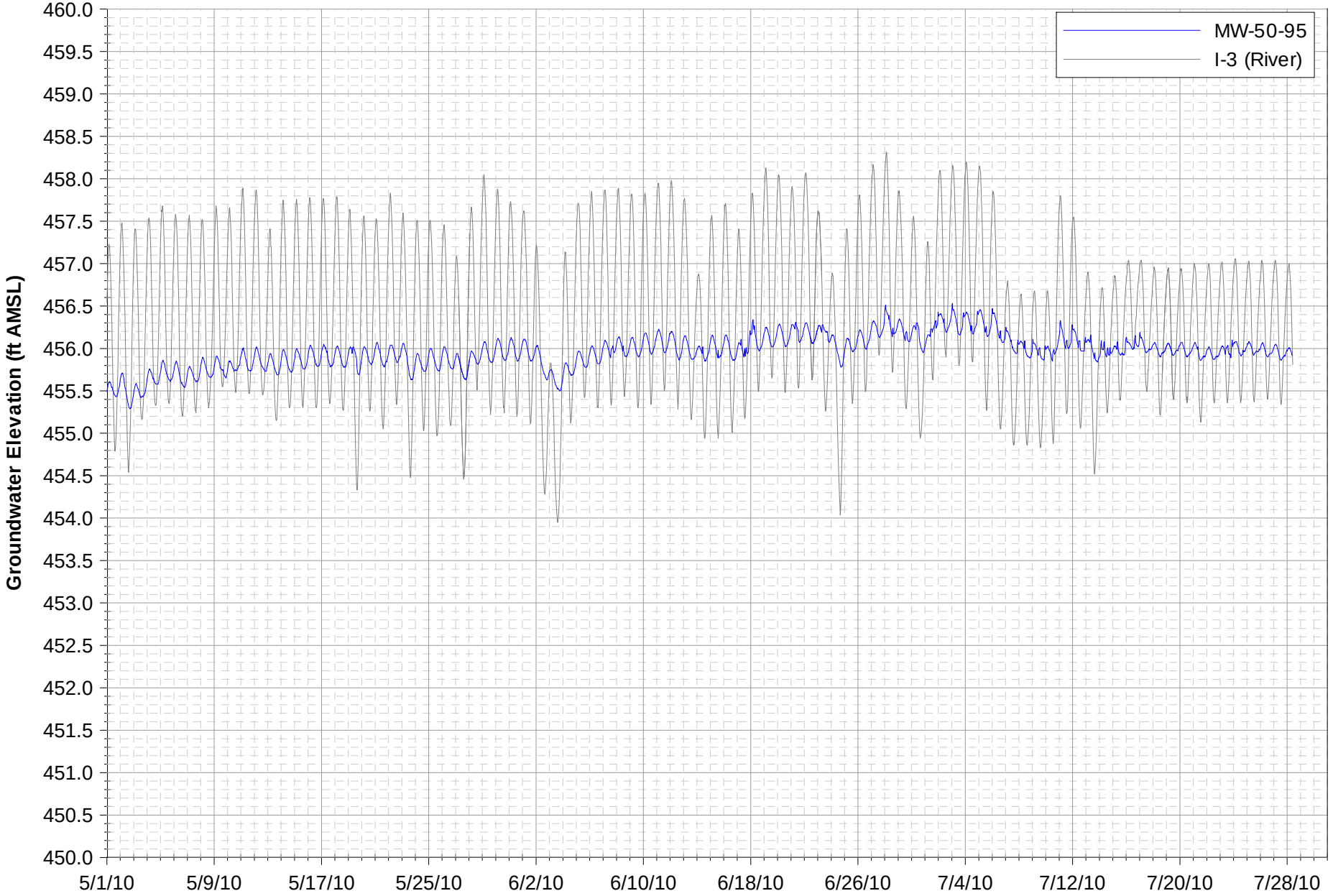


Notes:
Data subject to review.

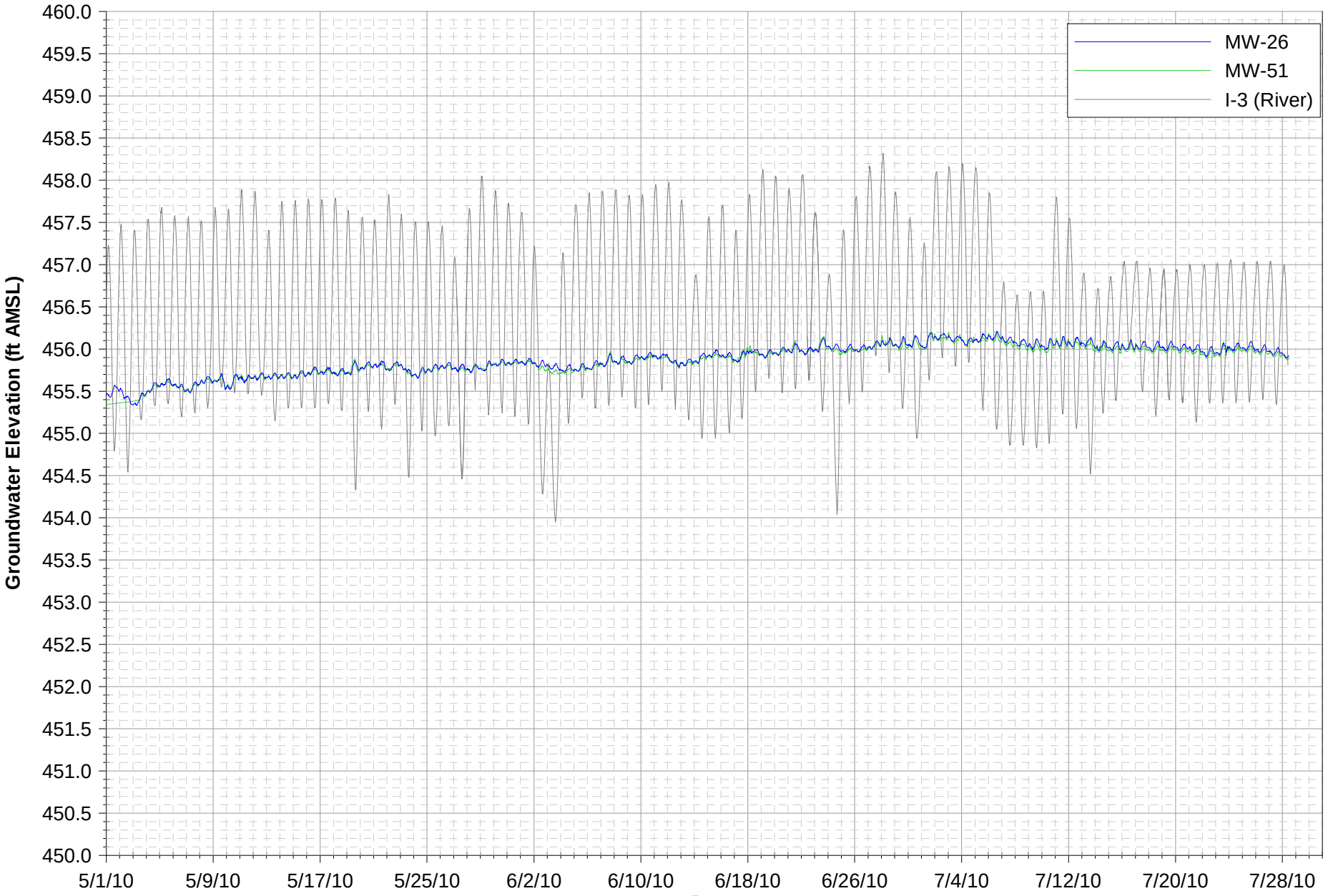
FIGURE E-1R
MW-49 HYDROGRAPH
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:
Data subject to review.

FIGURE E-1S
MW-50HYDROGRAPH
SECOND QUARTER 2010 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-26 & MW-51 HYDROGRAPHS

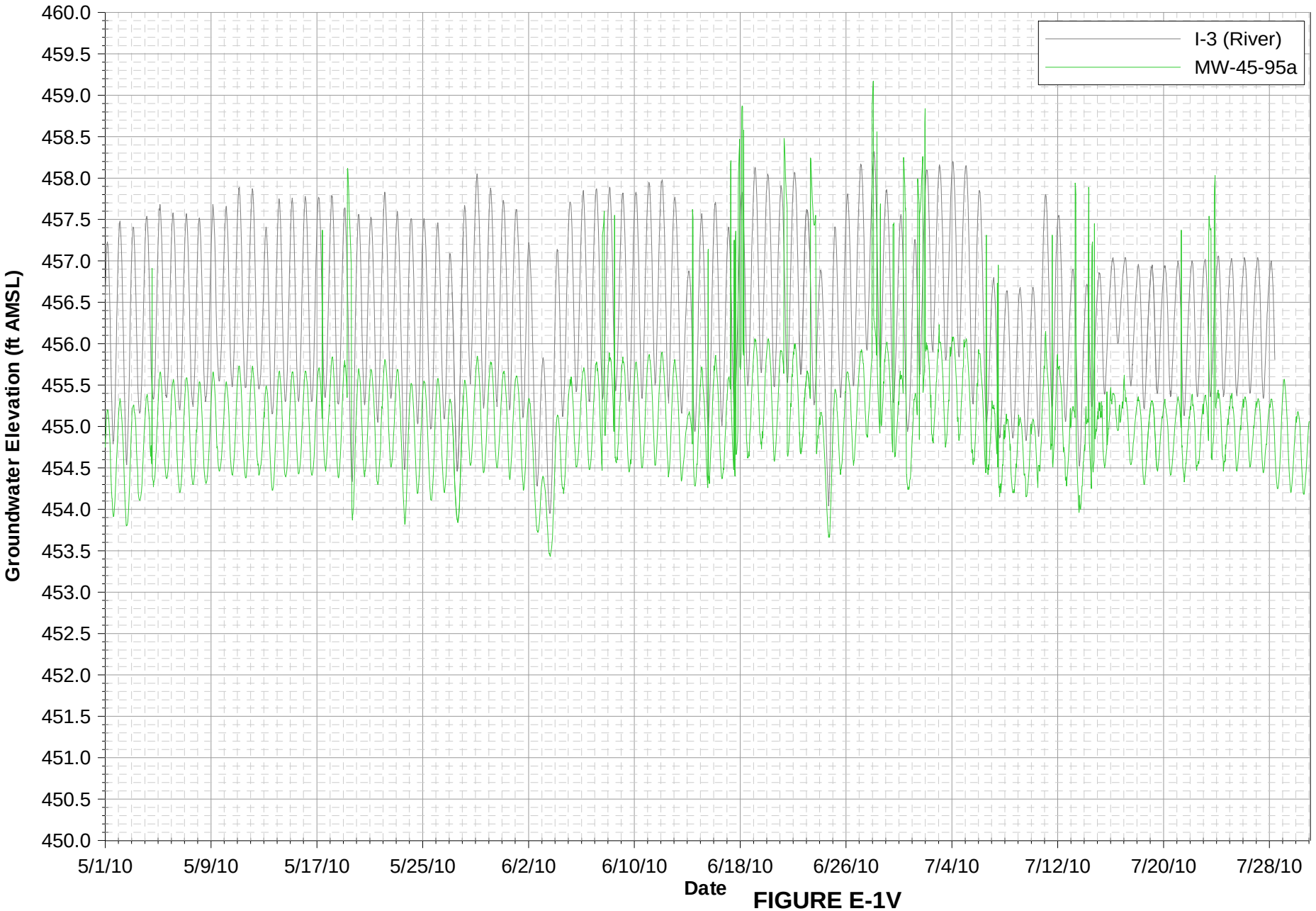
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

Note:
Data subject to review.

FIGURE E-1U
INSITU PILOT STUDY WELL HYDROGRAPHS
SECOND QUARTER 2010 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-1V
MW-45-95a HYDROGRAPH
SECOND QUARTER 2010 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL