Topock Project Executive Abstract

Document Title: Second Quarter 2009 IM Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report

Submitting Agency: DTSC

Final Document? ☒ Yes ☐ No

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PG&E

Priority Status: ☐ HIGH ☒ MED ☐ LOW
Is this time critical? ☐ Yes ☒ No

Action Required:
☒ Information Only ☐ Review & Comment
Return to: _____ _____

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☐ Other / Explain:

Type of Document:
☐ Draft ☒ Report ☐ Letter ☐ Memo

☐ 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 (PMP) and the groundwater and surface water monitoring program (GMP). 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 elevation and hydraulic gradient data at compliance well pairs, monitoring the direction of groundwater flow away from the Colorado River, and towards the pumping centers on site; (2) Chromium (VI) data for monitoring wells on the floodplain, and (3) Pumping rates and volumes from the IM extraction system; (4) GMP monitoring activities and results.

Based on the data and evaluation presented in this report, the IM performance standard has been met for the first quarter. The average groundwater gradients in the compliance well pairs exceeded the minimum landward gradient target (0.001 ft/ft) for each of the three months in the quarter (May, June and July 2009). Hexavalent Chromium (Cr(VI)) concentrations observed in the floodplain monitoring wells are either stable or decreasing. The average pumping rate for the IM extraction system was 113.7 gallons per minute and an estimated 64.5 kilograms (or 142.2 pounds) of chromium were removed during this quarter.

Written by: PG&E

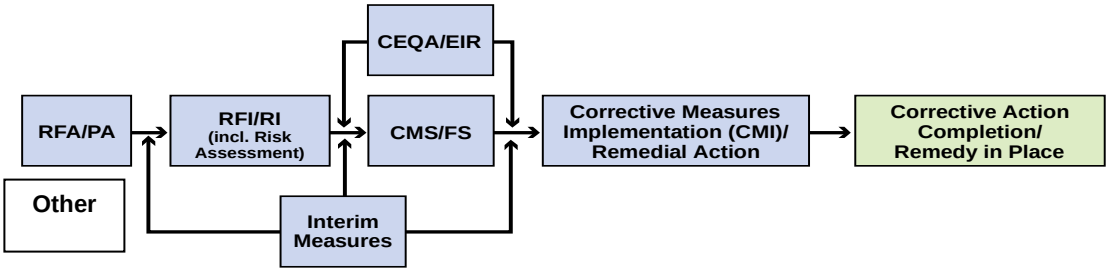
Recommendations:
Performance monitoring and evaluation of the IM hydraulic containment system will continue in accordance with the Performance Monitoring Plan and as directed by the DTSC. This report is for information only.

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?

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). **The link to the Documents Library is currently UNDER CONSTRUCTION.**



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 28, 2009

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

Subject: Second Quarter 2009 IM Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Dear Mr. Yue:

Enclosed is the Quarterly Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, May through July 2009 for PG&E's Interim Measures (IM) Performance Monitoring Program (PMP) and the Groundwater and Surface Water Monitoring Program (GMP) for the Topock project. This report presents the Second Quarter (May through July 2009) 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 and results related to the GMP. The GMP portion of this report includes data from April through July, 2009 to bring the two reporting schedules into synchronization for this first combined PMP/GMP report.

The IM quarterly performance monitoring report is submitted in conformance with the reporting requirements in DTSC's Interim Measure directive dated February 14, 2005, and includes updates and modifications approved by DTSC in letters dated October 12, 2007, July 14, 2008, and July 17, 2008.

This report also presents water level monitoring data collected from the Arizona monitoring wells MW-54 and MW-55 beginning in Second Quarter 2008.

Please contact me at (805) 546-5243 if you have any questions on the combined monitoring report. Comments regarding the new report format and contents are welcomed.

Sincerely,

Yvonne Meeks

Enclosure
Topock Combined Monitoring Report

Second Quarter 2009 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station Needles, California

Prepared for

California Department of Toxic Substances Control

on behalf of

Pacific Gas and Electric Company

August 28, 2009

CH2MHILL
155 Grand Ave. Ste. 1000
Oakland, CA 94612

Second Quarter 2009 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 28, 2009

This report was prepared under the supervision of a California Certified Engineering Geologist

Paul Bertucci, C.E.G. No. 1977
Project Hydrogeologist

Jay Piper
CH2M HILL Project Manager

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Acronyms and Abbreviations

µg/L	micrograms per liter
cfs	cubic feet per second
Cr(VI)	hexavalent chromium
Cr(T)	total chromium
DTSC	California Department of Toxic Substances Control
GMP	Groundwater and Surface Water Monitoring Program
gpm	gallons per minute
IM	Interim Measure
IMCP	Interim Measure Contingency Plan
IM-3	Interim Measure Number 3
mg/L	milligrams per liter
PG&E	Pacific Gas and Electric Company
PMP	Performance Monitoring Program
RCRA	Resource Conservation and Recovery Act
RFI	RCRA facility investigation
TDS	total dissolved solids
USBR	United States Bureau of Reclamation

1 Introduction

Pacific Gas and Electric Company (PG&E) is implementing an Interim Measure (IM) to address chromium concentrations in groundwater at the Topock Compressor Station near Needles, California, as shown on Figure 1-1. This document presents the Second Quarter 2009 Performance Monitoring Program (PMP) evaluation report for the IM. This report additionally presents the monitoring data from PG&E's site-wide Groundwater and Surface Water Monitoring Program (GMP) collected during the Second Quarter 2009 reporting period.

In a letter to PG&E dated May 26, 2009, the California Department of Toxic Substances Control (DTSC) granted approval to combine the quarterly and annual IM PMP monitoring reports with the site-wide GMP quarterly and annual monitoring reports for the Topock Compressor Station (DTSC, 2009a). This new combined report is intended to reduce data reporting duplication and more efficiently utilize technical resources by centralizing monitoring data.

This quarterly report has been prepared in compliance with DTSC's requirements for IM monitoring and reporting outlined in DTSC's IM performance directive of March 2005 and in subsequent directives from DTSC in 2007 (DTSC, 2005; DTSC, 2007a-c). The second quarter reporting period covers IM monitoring activities from May 1 through July 31, 2009.

This report also presents the results of Second Quarter 2009 groundwater and surface water monitoring activities conducted at the PG&E Topock Compressor Station. The monitoring activities are conducted as part of PG&E's GMP for the Topock site. The second quarter reporting period covers GMP monitoring activities from April 1 through July 31, 2009. The GMP portion of this report contains data for an additional month to synchronize the two reporting schedules.

1.1 Interim Measure Performance Monitoring Program

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. 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 Measure 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. (All figures are located at the end of the report.)

In a letter dated February 14, 2005, DTSC established the criteria for evaluating the performance of the IM (DTSC, 2005). 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, 2005). A draft *Performance Monitoring Plan for Interim Measures in the Floodplain Area* (CH2M HILL, 2005a) 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. The reporting requirements for the PMP were modified by DTSC, via e-mail approval, in August 2007 to discontinue submittals of the 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).

1.2 Groundwater and Surface Water Monitoring Program

The Topock GMP is part of a Resource Conversation and Recovery Act (RCRA) facility investigation (RFI) being performed under a Corrective Action Consent Agreement issued by the DTSC in 1996 for the Topock site (United States Environmental Protection Agency ID No. CAT080011729).

The Topock GMP was initiated in 1998 as a continuation of the RFI groundwater investigations. The purpose of the Topock RFI is to identify and evaluate the nature and extent of hazardous waste and constituent releases at the compressor station. Since 1996, there have been six phases of investigation at the Topock site to collect data for the RFI. These phases have included well installation, soil sampling, pore water and sediment sampling, and ongoing groundwater and surface water sampling. Groundwater monitoring data collected between July 1997 and October 2007 are presented in the approved *Revised Final RCRA Facility Investigation and Remedial Investigation Report, Volume 2 – Hydrogeological Characterization and Results of Groundwater and Surface Water Investigation*, dated February 10, 2009 (CH2M HILL, 2009a). For a description of the current groundwater and surface water sampling, analyses, and monitoring program, refer to PG&E's *Groundwater and Surface Water Monitoring Report, Fourth Quarter 2008 and Annual Summary, PG&E Topock Compressor Station*, dated March 6, 2009 (CH2M HILL, 2009b).

2 Interim Measures Performance Monitoring

2.1 Performance Monitoring Network

Figure 2-1 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 July 2009 are defined as:

- **Floodplain Wells** (monitoring wells on the Colorado River floodplain): MW-22, MW-27 cluster (three wells), MW-28 cluster (two wells), MW-30-50, MW-32-35, MW-33 cluster (three wells), MW-34 cluster (three wells), MW-36 cluster (six wells), MW-39 cluster (six wells), MW-42 cluster (two wells), MW-43 cluster (two wells), MW-44 cluster (three wells), MW-45-95, MW-46-175, and MW-49-135. Additionally, three pilot test wells installed on the floodplain (PT-2D, PT-5D, and PT-6D) are used to supplement hydraulic monitoring but are not formally part of the PMP.
- **Intermediate Wells** (monitoring wells located immediately north, west, and southwest of the floodplain): MW-20 cluster (three wells), MW-26, MW-31 cluster (two wells), MW-35 cluster (two wells), MW-47 cluster (two wells), MW-50-95, and MW-51.
- **Interior Wells** (monitoring wells located upgradient of IM pumping): MW-25.

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 2-1. Currently, both extraction wells TW-3D and PE-1 are in full-time operation.

Additional groundwater monitoring wells were installed on the Arizona side of the Colorado River in March-April 2008. These wells are not formally part of the PMP, but some of the new wells have been used for collecting groundwater elevation data for evaluating the hydraulic gradient on the Arizona side of the river (CH2M HILL, 2008a).

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, middle, and lower—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.

2.2 Extraction System Operations

Pumping data for the IM-3 groundwater extraction system for the period of May 1, 2009 through July 31, 2009 are presented in Table 2-1. (All tables are presented at the end of the report.) From May 1 through July 31, 2009 (considered Second Quarter 2009), 15,035,713 gallons of groundwater were extracted and treated by the IM-3 system. This resulted in removal of an estimated 64.5 kilograms (or 142.2 pounds) of chromium from the aquifer during the second quarter reporting period. The average extraction rate for the IM system during the reporting period, including system downtime, was 113.7 gallons per minute (gpm). The average monthly pumping rates were 123.9 gpm (May 2009), 131.1 gpm (June 2009), and 86.0 gpm (July 2009) during the reporting period.

During Second Quarter 2009, extraction wells TW-3D and PE-1 operated at a combined target pump rate of 135 gpm, excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during Second Quarter 2009. The operational run time percentage for the IM extraction system was 84.5 percent during this reporting period. The IM extraction system was shut down from July 22 through July 27, 2009 to complete commissioning and startup of the new reverse osmosis system. An operations log for the extraction system during Second Quarter of 2009, including planned and unplanned downtime, is included in Appendix A.

The concentrate (i.e., saline water) from the reverse osmosis system was shipped offsite as a RCRA non-hazardous waste and 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 2009. Daily inspections included general facility inspections, flow measurements, and site security monitoring. Daily logs with documentation of inspections are maintained onsite.

Table 2-2 summarizes the chromium and total dissolved solids (TDS) analytical results in groundwater samples collected from the IM extraction well system during the Second Quarter 2009 reporting period and prior months. Between May 2008 and July 2009, Cr(VI) concentrations in TW-3D ranged between 1,650 µg/L and 1,270 µg/L, with an average TDS concentration of 5,469 milligrams per liter (mg/L). During the same time period, the Cr(VI) concentrations in PE-1 ranged from 33.4 µg/L to 16.0 µg/L, with an average TDS of 3,700 mg/L. Future monitoring of the extraction well(s) water quality will be completed at the frequency required by the Waste Discharge Requirements issued for the IM-3 treatment facility.

2.3 Cr(VI) Monitoring Results for Floodplain Area

During Second Quarter 2009, groundwater monitoring wells in the floodplain area were sampled for Cr(VI), total chromium (Cr[T]), and field water quality parameters under semiannual, quarterly, and monthly schedules in accordance with the approved groundwater monitoring plan and DTSC directives. Table B-1 Appendix B presents the chromium and field parameter sampling results from July 2008 through July 2009 for all GMP wells sampled for chromium during this time period. Section 3.0 provides a

description of the GMP activities and sampling frequencies for wells in the performance monitoring area.

2.3.1 Cr(VI) Distribution

The distribution of Cr(VI) in the upper-, middle-, and lower-depth intervals of the Alluvial Aquifer in the performance monitoring area for May 2009 is shown in plan view and cross-section in Figure 2-2; to put these results in context, the Cr(VI) concentration contours shown for the Alluvial Aquifer on this figure are based on results from more comprehensive groundwater sampling conducted in March 2009. The Third Quarter 2009 PMP/GMP Monitoring Report will include the Cr(VI) concentration contours based on the upcoming September 2009 biennial sampling event. Note that the September 2009 biennial sampling event will include sampling at the new East Ravine monitoring wells (locations MW-57 through MW-64). Per agency approval (DTSC, 2009c), these wells were last sampled under the East Ravine groundwater Investigation program in July 2009, and any post-July 2009 sampling will be integrated into the site-wide GMP.

Figure 2-3 presents the May 2009 Cr(VI) results on a cross-section parallel to the Colorado River (locations of cross-sections are shown in Figure 2-1). Cr(VI) contours shown in Figure 2-3 are based on the May 2009 sampling results. The 20 µg/L and 50 µg/L Cr(VI) contours shown in Figures 2-2 and 2-3 are shown in accordance with DTSC's 2005 IM directive and are not based on current background Cr(VI) concentrations at the PG&E Topock Compressor Station site.

2.3.2 Cr(VI) Concentration Trends

Figure 2-4 presents Cr(VI) concentration trend graphs for selected deep monitoring wells in the floodplain area through July 2009. 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 2-1. Appendix B includes Cr(VI) concentration trend graphs for selected monitoring well clusters in the floodplain area through July 2009.

The concentration trend for MW-34-100, as shown in Figure 2-4, has shown both short-term declines and increases in concentrations since PE-1 pumping commenced. However, since June 2006, concentrations at this well have shown a general downward trend. The Cr(VI) result from April 6, 2009 sampling of MW-34-100 (74.7 µg/L) is the lowest concentration measured at this well since regular sampling began in April 2005. Concentrations have generally shown slight increases during low river periods (November through January), as shown in Figure 2-4. 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.

Monitoring well clusters MW-44 and MW-46 are located within the Cr(VI) plume (approximately 190 feet and 400 feet north of PE-1). The concentration trend for well MW-44-115, shown in Figure 2-4, has been generally downward since July 2006. Sampling data from well MW-44-125 show generally stable concentrations since October 2006. Concentrations in well MW-46-175 generally decreased from March 2006 until May 2007 but have been generally stable since May 2007. The MW-44 and MW-46 well clusters are within

the hydraulic capture of IM pumping (see Section 2.4). The chromium concentrations observed in the MW-33 cluster wells remained consistent with previous results during the quarterly reporting period.

2.3.3 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 2-3. Appendix B includes Cr(VI) concentration trend graphs for all IMCP wells. Modifications were made to the trigger level at MW-47-115 pursuant to a DTSC email dated June 24, 2009 (DTSC, 2009b).

2.4 Hydraulic Gradients and River Levels during Quarterly Period

During Second Quarter 2009 (considered May through July), water levels were recorded at intervals of 30 minutes with pressure transducers in 54 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 2-1 and are listed in Section 2.1.

Daily average groundwater and river elevations have been calculated from the pressure transducer data for the second quarter 2009 reporting period and are summarized in Appendix C. Due to the variation in groundwater salinity at the site, the water level measurements need to be adjusted (density-corrected) to equivalent freshwater hydraulic heads prior to calculating groundwater elevations and gradients. The methods and procedures used for adjusting the performance monitoring water level data for salinity and temperature differences are described in the performance monitoring plan. Groundwater elevation hydrographs (for Second Quarter 2009) for all wells with transducers are included in Appendix C. The Colorado River elevation (I-3 gage station) during Second Quarter 2009 is also shown on the hydrographs.

Average quarterly groundwater elevations (May through July 2009 inclusive) for the upper depth interval and mid-depth wells are presented and contoured in plan view in Figure 2-5a and Figure 2-5b. To the west of the TW-3D and PE-1 pumping area, the hydraulic gradient in the upper depth interval is easterly and consistent with the regional gradient outside of the floodplain area.

Average quarterly groundwater elevations (May through July 2009 inclusive) for the deep wells are presented and contoured in plan view in Figure 2-5c. The average quarterly groundwater elevations are also presented and contoured in floodplain cross-section A, as shown in Figure 2-6. The floodplain cross-section also shows the locations and depths where the current IM pumping in the deep interval of the Alluvial Aquifer is occurring at TW-3D and PE-1. The landward hydraulic gradients for the deep monitoring wells presented in Figure 2-5c and Figure 2-6 are consistent with the strong landward gradients measured in prior 2008 and 2009 monitoring reports (CH2M HILL, 2008a-b, 2009c-d).

In April 2008, pressure transducers were installed in five of the new wells located on the Arizona side of the Colorado River. For the Second Quarter 2009 reporting period, a full set of transducer data was recorded in these wells. The quarterly average groundwater elevations for wells MW-55-120, MW-54-85, MW-54-140, and MW-54-195 are posted on Figure 2-5c 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. The screened intervals of wells MW-54-140 and MW-55-120 are of the most similar elevation ranges and therefore best lend themselves to water level contouring. Well MW-55-45 is screened over the boundary between the shallow and middle intervals. Because this is the single data point in this depth interval on the Arizona side, this area was not included in contouring of the shallow and middle intervals.

Deep zone water levels shown in Figure 2-5c indicate that potentiometric levels in monitoring wells in Arizona are higher than those in wells across the river on the California floodplain. This means that the hydraulic gradient on the Arizona side of the river is directed to the west, and as a result, groundwater flow would also be towards the west in that area. This is consistent with the site conceptual model and with the current numerical groundwater flow model.

Hydraulic gradients were measured during the first quarter period for well pairs selected for performance monitoring with 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 2-4 presents the average monthly hydraulic gradients that were measured between the gradient well pairs in May, June, and July 2009. For the northern (MW-31-135/MW-33-150) well pair, gradients were landward at magnitudes from 1.3 to 2.1 times the target gradient of 0.001 feet per foot. The southern well pair (MW-45-95/MW-27-85) gradients averaged from 3.1 to 3.3 times the target gradient during the reporting period. For the central well pair (MW-45-95/ MW-34-100), the average landward gradient ranged from 8.9 to 9.9 times the target gradient during the reporting period.

Figure 2-7 presents the measured hydraulic gradients and pumping rates and river levels during the Second Quarter 2009 reporting period. The monthly average pumping rates for the IM-3 system were 123.9 gpm in May 2009, 131.1 gpm in June 2009, and 86.0 gpm in July 2009. For the Second Quarter 2009 reporting period, average monthly landward gradients above the target gradient were maintained in the gradient control well pairs.

A review of the groundwater elevation contour maps indicates very strong landward hydraulic gradients within the IM capture zone throughout the floodplain. That is, the inferred groundwater flow lines from the floodplain monitoring wells where Cr(VI) concentrations are greater than 20 μg/L are oriented towards the TW-3D and PE-1 extraction wells within the IM capture zone.

2.5 Other Water Quality Data for Floodplain Wells

Common water quality parameters (temperature, pH, oxidation-reduction potential, dissolved oxygen, and specific conductance) were measured in the field during well purging and groundwater sampling, as described in the *Sampling, Analysis, and Field Procedures Manual, Revision 1, PG&E Compressor Station* (CH2M HILL, 2005b). The field water quality data measured from July 2008 through July 2009 are presented in Table B-1 of Appendix B.

Table B-2 in Appendix B 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 2009. 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 2-1 shows the locations of the monitoring wells sampled for the performance monitoring parameters. Water samples from the selected performance monitoring locations are analyzed for 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. During Second Quarter 2009, new chemical performance monitoring data were collected at well MW-34-80 and Colorado River sampling location R-28.

2.6 Projected River Levels during the 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 (USBR). Total releases from Davis Dam follow a predictable annual cycle, with the largest monthly releases typically in spring and early summer and the 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.

The corresponding river stage at the I-3 station fluctuates in a similar pattern. The monthly average stage at I-3 typically peaks in the early summer and reaches its low point in the winter. Following Davis Dam releases, river stage also fluctuates on a diurnal cycle, though greatly attenuated. The magnitude of the daily river stage fluctuations at I-3 is less than the magnitude of the monthly average river stage fluctuations over a typical year.

Table 2-5 is a summary of the estimated and actual Davis Dam releases and river elevations since January 2006. The actual Davis Dam July 2009 release (13,579 cubic feet per second [cfs]) was almost exactly the same as the USBR-projected release for that month (13,500 cfs). The projected Colorado River elevation at I-3 (monthly average) is calculated using a multiple regression method that considers both the Davis Dam release and the Lake Havasu level. Current USBR projections show that the average Davis Dam release for August 2009 (11,900 cfs) will be less than July 2009 (13,579 cfs). Based on the regression method results, using August 14, 2009 USBR projections for both Davis Dam release and Lake Havasu

elevation, it is anticipated that the Colorado River level at the I-3 gage location in August 2009 will be lower than the July 2009 river stage.

Figure 2-8 shows river stage measured at I-3 superimposed on the projected I-3 river levels based on actual Davis Dam discharge and Lake Havasu levels. This graph shows that the formula used to calculate I-3 levels provides a good estimate of the actual levels at I-3 over a wide range of river levels. The future projections shown on this graph are based on USBR long-range projections of Davis Dam release and Lake Havasu level. The river stage data and USBR projections indicate the highest river levels of the year typically occur in April, May, and June. Current USBR projections show that the lowest water levels will occur in November through December 2009 and January 2010. Because water demand is based on climatic factors, there is more uncertainty in these projections further into the future.

2.7 Status of Operation and Monitoring

Reporting of the IM extraction and monitoring activities will continue as described in the Performance Monitoring Plan and direction from DTSC. On October 12, 2007, the DTSC approved PG&E's request to discontinue monthly performance monitoring reports. As a result, the next performance monitoring report will be the Third Quarter 2009 Performance Evaluation report. The third quarter 2009 report will present operations and performance monitoring data from August 1, 2009 through October 31, 2009.

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 2009, 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 offsite.

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.

2.8 Conclusions

The groundwater elevation and hydraulic gradient data for May, June, and July 2009 performance monitoring indicate that the minimum landward gradient target (0.001 feet/foot) was exceeded throughout the Second Quarter 2009 reporting period. As illustrated in Figure 2-7, the landward gradients measured during May, June, and July 2009 exceeded the required minimum gradient in all compliance well pairs. The current IM pumping was sufficient to meet the minimum gradient target during each month of Second Quarter 2009. The monthly average landward gradients in the IM capture zone were maintained in July 2009, which included the 5-day shutdown of the IM-3 extraction system during scheduled annual treatment system maintenance.

A total of 15,035,713 gallons of groundwater was extracted and treated by the IM-3 system during the May through July 2009 reporting period. An estimated 64.5 kilograms (or 142.2 pounds) of chromium were removed and treated by the IM system during this quarter. The

average pumping rate for the IM extraction system during Second Quarter 2009, including system downtime, was 113.7 gpm.

Overall, the Cr(VI) concentrations observed in the floodplain monitoring wells are either stable or decreasing. During Second Quarter 2009, the groundwater Cr(VI) concentrations at wells MW-33-090, MW-33-210, MW-44-115, MW-44-125, MW-44-175 and MW-46-175 declined relative to the previous quarter. Concentrations at wells MW-33-150 and MW-47-115 remained stable during the second quarter period. All of these wells are within the IM extraction system capture zone, as shown in Figures 2-5a through 2-5c.

The concentration trend for MW-34-100 has shown both short-term declines and increases in concentrations since PE-1 pumping commenced in January 2006. Since June 2006, Cr(VI) concentrations at this well have shown a general downward trend. Landward gradients have been present at this location since IM pumping began; therefore, the periodic increases in concentration observed at MW-34-100 do not indicate any movement of the plume toward the river. Overall stable concentrations were observed at MW-34-100 during Second Quarter 2009 sampling.

Based on the hydraulic and chemical performance monitoring data and evaluation presented in this report, the IM performance standard has been met for the second quarter May through July 2009 reporting period. Performance monitoring and evaluation of the IM hydraulic containment system will continue in accordance with the PMP and as directed by the DTSC.

3 Groundwater Monitoring

Figure 3-1 shows the locations and sampling frequencies of the monitoring wells in the GMP as of July 2009. The complete GMP schedule includes 108 groundwater monitoring wells, two active extraction wells, one test well. For background and description of the current groundwater and surface water sampling, analyses, and monitoring program, refer to PG&E's *Groundwater and Surface Water Monitoring Report, Fourth Quarter 2008 and Annual Summary, PG&E Topock Compressor Station*, dated March 6, 2009 (CH2M HILL, 2009b).

3.1 Monitoring Activities

3.1.1 Routine Monitoring

The following monitoring activities were conducted during Second quarter 2009 (April through July 2009):

- The second quarter GMP monitoring was conducted from April 29 though May 7, 2009 and included sampling 40 groundwater monitoring wells and one test well (TW-4) for Cr(VI), Cr(T), specific conductance, and field pH. Quarterly groundwater sampling of the Arizona monitoring wells (MW-54, MW-55, and MW-56 clusters) was included in this event. During this GMP event, two selected wells (MW-12 and MW-22) were also sampled for California Code of Regulations Title 22 metals analyses.
- Monthly groundwater sampling events were conducted from April 6 through 7, 2009, June 8 through 9, 2009, and July 6 through 7, 2009 and included sampling five monitoring wells (MW-34-80, MW-34-100, MW-44-115, MW-44-125, and MW-46-175) and two extraction wells (PE-1 and TW-3D) for Cr(VI) and Cr(T). MW-47-115 was also sampled for Cr(VI) and Cr(T) during the July monthly event.

3.1.2 Other Monitoring

As directed by DTSC on May 15, 2009 (DTSC, 2009d), the following monitoring activities were conducted at selected GMP wells during Second Quarter 2009 (April through July 2009):

- Three GMP wells (MW-9, MW-10 and MW-12) were sampled in May 2009 for dioxins and furans.
- Three GMP wells (MW-9, MW-10 and MW-12) were sampled in June 2009 for selected organics compounds. MW-9 was also sampled for trace metals.

Note that two East Ravine wells (MW-57-070 and MW-59-100) were also sampled, as directed by DTSC) for the same analyses as the GMP wells above. Their results will be incorporated in the forthcoming East Ravine Investigation Report.

3.2 Monitoring Results

3.2.1 Cr(VI) Monitoring

The analytical results for Cr(VI), Cr(T), specific conductance, and field pH in groundwater samples collected from GMP wells during May 2009 are presented in Appendix B Table B-1. Groundwater sampling forms and chain-of-custody forms are included in Appendix E.

Figures 3-2a through 3-2c present the May 2009 Cr(VI) results for wells monitoring the shallow, mid-depth, and deep intervals of the Alluvial Aquifer, respectively. Overall, Second Quarter 2009 chromium results are in the range of concentrations observed during the prior 2007 and 2008 sampling events. In Second Quarter 2009, the maximum detected Cr(VI) and Cr(T) concentrations were 9,400 µg/L and 10,900 µg/L, respectively, at MW-50-200. Most wells exhibit either stable or decreasing concentrations of Cr(VI) and Cr(T). Refer to Section 2.3.2 of this report for the recent concentration trends observed in wells in the area of active interim measure pumping.

The Arizona monitoring well samples from March were analyzed for Cr(VI), Cr(T), specific conductance, and field pH. Analytical results showed no chromium detections in the Arizona monitoring wells except for MW-55-120, which showed concentrations of 2.93 µg/L and 3.72 µg/L for Cr(VI) and Cr(T), respectively. These detections are consistent with the analytical results from the March 2009 event (Appendix B, Table B-1).

3.2.2 Other Monitoring

3.2.2.1 Title 22 Metals Groundwater Analyses

Two GMP wells (MW-12 and MW-22) were sampled during Second Quarter 2009 for California Code of Regulations Title 22 metals, and the results are presented in Table 3-1. In addition to Cr(T), the trace metals detected during the May 2009 groundwater sampling were arsenic, barium, copper (MW-12 only), molybdenum, silver (MW-22 only), and vanadium (MW-12 only). Excluding Cr(T) and arsenic, the dissolved concentrations of the trace metals detected during the May 2009 sampling are below their respective California drinking water standards.

3.2.2.2 Dioxins and Furans

Three GMP wells (MW-9, MW-10 and MW-12) were sampled in May 2009 for dioxins and furans, and the results are presented in Appendix D, Table D-1. All results are below reporting limits.

3.2.2.3 Organics and Trace Metals

Three GMP wells (MW-9, MW-10 and MW-12) were sampled in June 2009 for organics and MW-9 was sampled for trace metals, and the results are presented in Appendix D, Table D-2. The organic results are all below reporting limits. In addition to Cr(T), arsenic was detected above the reporting limit during the June 2009 sampling. Excluding Cr(T) and arsenic, the dissolved concentrations of the trace metals detected during the May 2009 sampling are below their respective California drinking water standards.

3.2.3 Data Validation and Completeness

The laboratory analytical data from GMP sampling during Second Quarter 2009 were independently 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 Second Quarter 2009 monitoring data.

3.3 Upcoming GMP Monitoring

The following GMP activities are scheduled for the Third Quarter 2009 monitoring period:

- The August monthly groundwater sampling event at six monitoring wells and two extraction wells was conducted on August 3 and 4, 2009.
- The September biennial sampling event will be conducted at 122 GMP wells, including new monitoring wells in the East Ravine area transferred into the GMP program after July 2009. This event will be is anticipated to occur September 21, 2009 through October 2, 2009.
- October monthly groundwater sampling event at five monitoring wells and two extraction wells will be conducted on October 12 and 13, 2009.

The results of the quarterly groundwater and surface water monitoring events and the monthly sampling events will be reported in the Third Quarter 2009 PMP-GMP Monitoring Report.

4 Surface Water Monitoring

Figure 4-1 shows the locations of the shoreline and in-channel surface water monitoring stations as of April 2009. All surface water monitoring locations are sampled during three quarterly events and twice during the low-river stage between November and January. Sampling locations consist of 10 channel locations and six shoreline locations. Beginning in September 2008, the number of shoreline sampling locations was reduced from 10 to four locations. In April 2009, shoreline sampling locations R-63 and SW-2 were added in response to new data collected in the East Ravine.

Quarterly surface water sampling was conducted on April 9 and 10, 2009 and on July 7 and 8, 2009 at six shoreline and 10 in-channel sampling locations, including the new shoreline locations R-63 and SW-2. Samples were analyzed for Cr(VI), Cr(T), specific conductance, and pH.

4.1 Surface Water Monitoring Results

Table 4-1 presents the sampling results of chromium and other analytes from the April and July 2009 surface water monitoring events, including in-channel locations and shoreline stations. Cr(VI) and Cr(T) were not detected above the reporting limit at any in-channel or shoreline locations during the April or July 2009 event.

4.2 Upcoming RMP Monitoring

Quarterly surface water sampling at six shoreline and 10 in-channel locations is expected to be conducted on September 8 and 9, 2009. Samples will be analyzed for Cr(VI), Cr(T), specific conductance, and pH.

The results of the quarterly surface water monitoring event will be reported in the Third Quarter 2009 PMP-GMP Monitoring Report, which will be submitted by November 30, 2009.

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Tables

TABLE 2-1

Pumping Rate and Extracted Volume for IM System May 2009 through July 2009
Second Quarter 2009 IM Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station
Needles, California

Extraction Well ID	May 2009		June 2009		July 2009		Second Quarter 2009		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	53,091,512
TW-03D	99.36	4,435,577	105.13	4,541,652	68.64	3,063,892	91.04	12,041,122	185,380,636
PE-01	24.55	1,095,753	25.99	1,122,582	17.39	776,256	22.64	2,994,591	55,767,430
TOTAL	**123.9**	**5,531,330**	**131.1**	**5,664,235**	**86.0**	**3,840,148**	**113.7**	**15,035,713**	295,240,358
							Volume Pumped from the MW-20 Well Cluster		1,527,724
							Total Volume Pumped (gal)		296,768,082
							Total Volume Pumped (ac-ft)		910.7

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 2-2
Analytical Results for Extraction Wells, May 2008 through July 2009
Second Quarter 2009 IM Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station

Well ID	Sample Date	Dissolved Chromium (total) (µg/L)	Hexavalent Chromium (µg/L)	Total Dissolved Solids (mg/L)
TW-3D	08-May-08	1,740	1,540	5,320
	04-Jun-08	1,700	1,460	5,220
	02-Jul-08	1,780	1,460	5,660
	06-Aug-08	1,450	1,440	5,270
	04-Sep-08	1,380	1,490	5,250
	01-Oct-08	1,300	1,460	5,640
	06-Nov-08	1,810	1,650	5,350
	04-Dec-08	1,360	1,570	5,430
	09-Jan-09	1,300	1,570	5,770
	04-Feb-09	1,620	1,330	5,970
	04-Mar-09	1,280	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
PE-1	08-May-08	29.3	26.4	4,100
	04-Jun-08	33.4	16.0	3,560
	02-Jul-08	28.7	25.7	4,060
	06-Aug-08	27.4	28.2	4,090
	04-Sep-08	28.0	29.7	3,810
	01-Oct-08	27.5	27.6	3,600
	06-Nov-08	27.7	29.8	3,520
	04-Dec-08	32.3	28.8	3,700
	09-Jan-09	27.6	33.4	3,740
	04-Feb-09	25.5	26.3	3,500
	04-Mar-09	22.4	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

NOTES:

µg/L = concentration in micrograms per liter
mg/L = concentration in milligrams per liter

Analytical results from inactive extraction wells are presented in Table B-2.

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

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

TABLE 2-3

Assessment Monitoring Wells and Trigger Levels for IM Performance Monitoring

Second Quarter 2009 IM 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 [1] (µg/L)	Most Recent Cr(VI) Concentration		Cr(VI) Concentration Trend 2008-2009 [3]	Proposed 2009 Updated Cr(VI) Trigger Level (µg/L)
		(µg/L)	Date		
Shallow Zone Wells					
MW-21	20	1.64	6-May-09	NA	No Change
MW-32-20	20	ND (2.1)	10-Mar-09	NA	No Change
MW-32-35	20	ND (0.2)	3-Oct-08	NA	No Change
MW-33-40	20	ND (0.2)	5-May-09	NA	No Change
MW-39-40	20	ND (1.0)	8-Oct-07	NA	No Change
MW-47-55	150	24.3	6-May-09	fluctuating, overall stable	No Change
Mid-Depth Zone Wells					
MW-33-90	25	20.7	5-May-09	stable	No Change
MW-36-70	20	ND (0.2)	3-Oct-08	stable	No Change
MW-42-55	20	ND (1.05)	30-Apr-09	NA	No Change
MW-42-65	20	ND (1.05)	30-Apr-09	NA	No Change
MW-44-70	20	ND (0.2)	1-May-09	NA	No Change
Deep Zone Wells					
MW-27-85	20	ND (1.05)	30-Apr-09	NA	No Change
MW-28-90	20	ND (0.2)	30-Apr-09	NA	No Change
MW-33-150	20	9.17	5-May-09	stable	No Change
MW-33-210	20	10.5	5-May-09	stable	No Change
MW-34-80	20	ND (1.05)	9-Jun-09	NA	No Change
MW-34-100	750	108	9-Jun-09	decreasing	No Change
MW-43-75	20	ND (0.2)	2-Oct-08	NA	No Change
MW-43-90	20	ND (0.2)	2-Oct-08	NA	No Change
MW-44-115	1,200	349	8-Jun-09	decreasing	No Change
MW-44-125	475	178	8-Jun-09	decreasing	No Change
MW-46-175	225	65.1	8-Jun-09	fluctuating, overall stable	No Change
MW-46-205	20	5.44	5-May-09	stable	No Change
MW-47-115	31 [2]	17.1	8-Jul-09	increasing	No Change

Notes:

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

(2) 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.

(3) Chromium concentration plots for selected wells are included in Appendix B.

ND not detected at listed reporting limit

NA not applicable

TABLE 2-4

Average Hydraulic Gradients Measured at Well Pairs, May through July 2009
Second Quarter 2009 IM 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 [b] (feet/foot)	Measurement Dates
NorthernGradient Pair	May	0.0018	May 1 through May 31
MW-31-135 / MW-33-150	June	0.0021	June 1 through June 30
	July	0.0013	July 1 through July 31
CentralGradient Pair	May	0.0095	May 1 through May 31
MW-45-95 / MW-34-100	June	0.0089	June 1 through June 30
	July	0.0099	July 1 through July 31
SouthernGradient Pair	May	0.0031	May 1 through May 31
MW-45-95 / MW-27-85	June	0.0033	June 1 through June 30
	July	0.0032	July 1 through July 31

Notes:

a Refer to Figure 2-1 for location of well pairs
b For IM pumping, the target landward gradient for the selected well pairs is 0.001 feet/foot

TABLE 2-5

Predicted and Actual Monthly Average Davis Dam Discharge and Colorado River Elevation at I-3

Second Quarter 2009 IM 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 2006	8,400	9,166	766	453.2	453.6	0.4
February 2006	11,100	10,790	-310	454.1	454.1	0.1
March 2006	13,000	12,429	-571	454.7	454.8	0.2
April 2006	16,600	18,300	1700	456.0	456.1	0.0
May 2006	15,500	16,818	1318	456.0	456.3	0.3
June 2006	16,100	17,547	1447	456.2	456.4	0.2
July 2006	14,700	15,171	-471	455.7	455.8	0.1
August 2006	12,900	12,871	29	454.9	455.1	0.1
September 2006	12,100	12,409	-309	454.7	454.7	0.0
October 2006	11,400	11,150	250	454.1	454.4	0.3
November 2006	8,300	8,222	78	452.9	453.3	0.4
December 2006	8,100	8,823	-723	453.0	453.4	0.4
January 2007	8,600	8,796	-196	453.2	453.6	0.4
February 2007	9,800	11,680	-1,880	453.6	454.3	0.7
March 2007	14,300	14,554	-254	455.1	455.6	0.5
April 2007	17,300	16,818	482	456.4	456.4	0.0
May 2007	16,800	16,199	601	456.5	456.4	-0.1
June 2007	16,000	16,212	-212	456.4	456.4	0.0
July 2007	14,900	14,897	3	455.8	456.0	0.2
August 2007	12,100	12,776	-676	454.7	455.4	0.7
September 2007	12,700	13,050	-350	454.8	455.4	0.5
October 2007	10,600	10,324	276	454.0	454.3	0.3
November 2007	9,100	8,387	713	453.6	453.6	0.0
December 2007	5,700	6,445	-745	452.3	452.7	0.4
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			454.8		

NOTES:

1) cfs = cubic feet per second; ft AMSL = feet above mean sea level

2) Predicted Colorado River elevations (river levels) at I-3 are based upon BOR projections for Davis Dam releases and Lake Havasu elevations from the preceding month, using a multiple regression between historical dam releases and measured river levels at I-3 (updated monthly). This data is reported monthly by the US Department of Interior, at http://www.usbr.gov/lc/region/g4000/24mo.pdf

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

4) I-3 elevation for the month of October 2006 limited to average of data from 10/4/2006 through 10/31/2006.

TABLE 3-1
Title 22 Metals Results, May 2009
Second Quarter 2009 IM Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station

	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	05/05/2009	ND (10)	**50.3**	60.7	ND (1.0)	ND (3.0)	ND (5.0)	**2,670**	9.22	ND (10)	ND (0.2)	12.6	ND (10)	ND (10)	ND (5.0)	ND (1.0)	20.8	ND (10)
MW-22	04/29/2009	ND (10)	6.64	336	ND (2.0)	ND (3.0)	ND (5.0)	1.22	ND (5.0)	ND (10)	ND (0.2)	24.0	ND (10)	ND (10)	5.40	ND (1.0)	ND (5.0)	ND (10)

Notes:

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

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

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

The USEPA MCL for arsenic was lowered to 10 ug/L in January 2006. The California MCL of 50 ug/L is currently under review. California Division of Drinking Water and Environmental Management is proceeding with the regulatory and adoption process.

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
Surface Water Sampling Results, April through July 2009
Second Quarter 2009 IM Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (total) (µg/L)	Specific Conductance (µS/cm)	Lab pH
In-channel Locations					
C-BNS-D	04/09/2009	ND (0.2)	ND (1.0)	945	8.31 J
C-BNS-D	07/07/2009	ND (0.2)	ND (1.0)	987	8.25 J
C-CON-S	04/10/2009	ND (0.2)	ND (1.0)	978	8.32 J
C-CON-S	07/08/2009	ND (0.2)	ND (1.0)	988	8.34 J
C-CON-D	04/10/2009	ND (0.2)	ND (1.0)	969	8.31 J
C-CON-D	07/08/2009	ND (0.2)	ND (1.0)	996	8.32 J
C-I-3-S	04/09/2009	ND (0.2)	ND (1.0)	970	8.33 J
C-I-3-S	07/07/2009	ND (0.2)	ND (1.0)	992	8.30 J
C-I-3-D	04/09/2009	ND (0.2)	ND (1.0)	963	8.30 J
C-I-3-D	07/07/2009	ND (0.2)	ND (1.0)	965	8.33 J
C-MAR-S	04/09/2009	ND (0.2)	ND (1.0)	1040	7.60 J
C-MAR-S	07/07/2009	ND (0.2)	ND (1.0)	1080	7.82 J
C-MAR-D	04/09/2009	ND (0.2)	ND (1.0)	1040	7.63 J
C-MAR-D	07/07/2009	ND (0.2)	ND (1.0)	1070	7.85 J
C-NR1-S	04/10/2009	ND (0.2)	ND (1.0)	956	8.31 J
C-NR1-S	07/08/2009	ND (0.2)	ND (1.0)	981	8.28 J
C-NR1-D	04/10/2009	ND (0.2)	ND (1.0)	962	8.32 J
C-NR1-D	07/08/2009	ND (0.2)	ND (1.0)	994	8.29 J
C-NR3-S	04/10/2009	ND (0.2)	ND (1.0)	965	8.32 J
C-NR3-S	07/08/2009	ND (0.2)	ND (1.0)	977	8.27 J
C-NR3-D	04/10/2009	ND (0.2)	ND (1.0)	961	8.32 J
C-NR3-D	07/08/2009	ND (0.2)	ND (1.0)	988	8.30 J
C-NR4-S	04/10/2009	ND (0.2)	ND (1.0)	969	8.30 J
C-NR4-S	07/08/2009	ND (0.2)	ND (1.0)	987	8.29 J
C-NR4-D	04/10/2009	ND (0.2)	ND (1.0)	971	8.31 J
C-NR4-D	07/08/2009	ND (0.2)	ND (1.0)	992	8.25 J
C-R22a-S	04/09/2009	ND (0.2)	ND (1.0)	960	8.32 J
C-R22a-S	07/07/2009	ND (0.2)	ND (1.0)	988	8.35 J
C-R22a-D	04/09/2009	ND (0.2)	ND (1.0)	965	8.32 J
C-R22a-D	07/07/2009	ND (0.2)	ND (1.0)	995	8.32 J
C-R27-S	04/10/2009	ND (0.2)	ND (1.0)	963	8.32 J
C-R27-S	07/07/2009	ND (0.2)	ND (1.0)	996	8.32 J
C-R27-D	04/10/2009	ND (0.2)	ND (1.0)	975	8.33 J
C-R27-D	07/07/2009	ND (0.2)	ND (1.0)	992	8.29 J

TABLE 4-1
Surface Water Sampling Results, April through July 2009
Second Quarter 2009 IM Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (total) (µg/L)	Specific Conductance (µS/cm)	Lab pH
C-TAZ-S	04/09/2009	ND (0.2)	ND (1.0)	962	8.37 J
C-TAZ-S	07/07/2009	ND (0.2)	ND (1.0)	994	8.37 J
C-TAZ-D	04/09/2009	ND (0.2)	ND (1.0)	936	8.30 J
C-TAZ-D	07/07/2009	ND (0.2)	ND (1.0)	993	8.34 J
Shoreline Samples					
R-19	04/10/2009	ND (0.2)	ND (1.0)	967	8.33 J
R-19	07/08/2009	ND (0.2)	ND (1.0)	983	8.43 J
R-28	04/09/2009	ND (0.2)	ND (1.0)	951	8.34 J
R-28	07/08/2009	ND (0.2)	ND (1.0)	981	8.44 J
R-63	04/10/2009	ND (0.2)	ND (1.0)	1010	7.95 J
R-63	07/08/2009	ND (0.2)	ND (1.0)	1020	7.86 J
R-63	07/08/2009 FD	ND (0.2)	ND (1.0)	1020	7.92 J
RRB	04/10/2009	ND (0.2)	ND (1.0)	969	8.32 J
RRB	07/08/2009	ND (0.2)	ND (1.0)	984	8.27 J
SW1	04/10/2009	ND (0.2)	ND (1.0)	1010	7.69 J
SW1	07/08/2009	ND (0.2)	ND (1.0)	1040	7.88 J
SW2	04/09/2009	ND (0.2)	ND (1.0)	968	8.34 J
SW2	07/07/2009	ND (0.2)	ND (1.0)	990	8.47 J

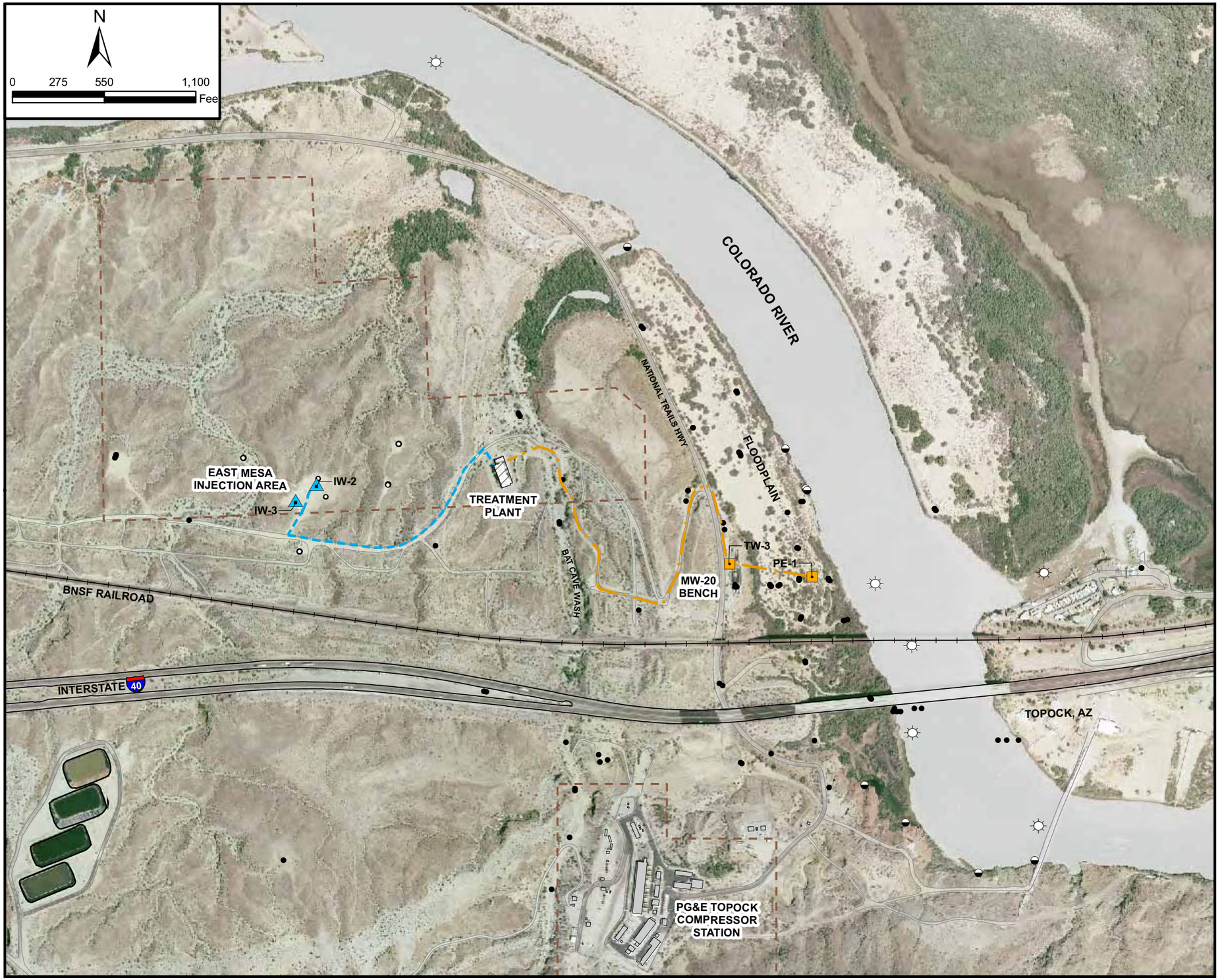
Notes:

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

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

Other analytical methods: dissolved chromium (total) - Method SW6020A, specific conductance - EPA 120.1, pH -SM4500-HB.

Figures



VICINITY MAP

LEGEND

- IM-3 Extraction Well (Active)
- IM-3 Injection Well
- Monitoring Well in 2009 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
- Groundwater Extraction/Influent Pipeline
- Treatment Plant Effluent Pipeline
- PG&E Property Line

Note: 1. Location map shows Interim Measure No.3 (IM-3) active facilities as of January 2006.

2. See Figures 3-1 and 4-1 for complete GMP and surface water locations and identifications.

FIGURE 1-1
LOCATIONS OF IM-3 FACILITIES AND GMP MONITORING LOCATIONS
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

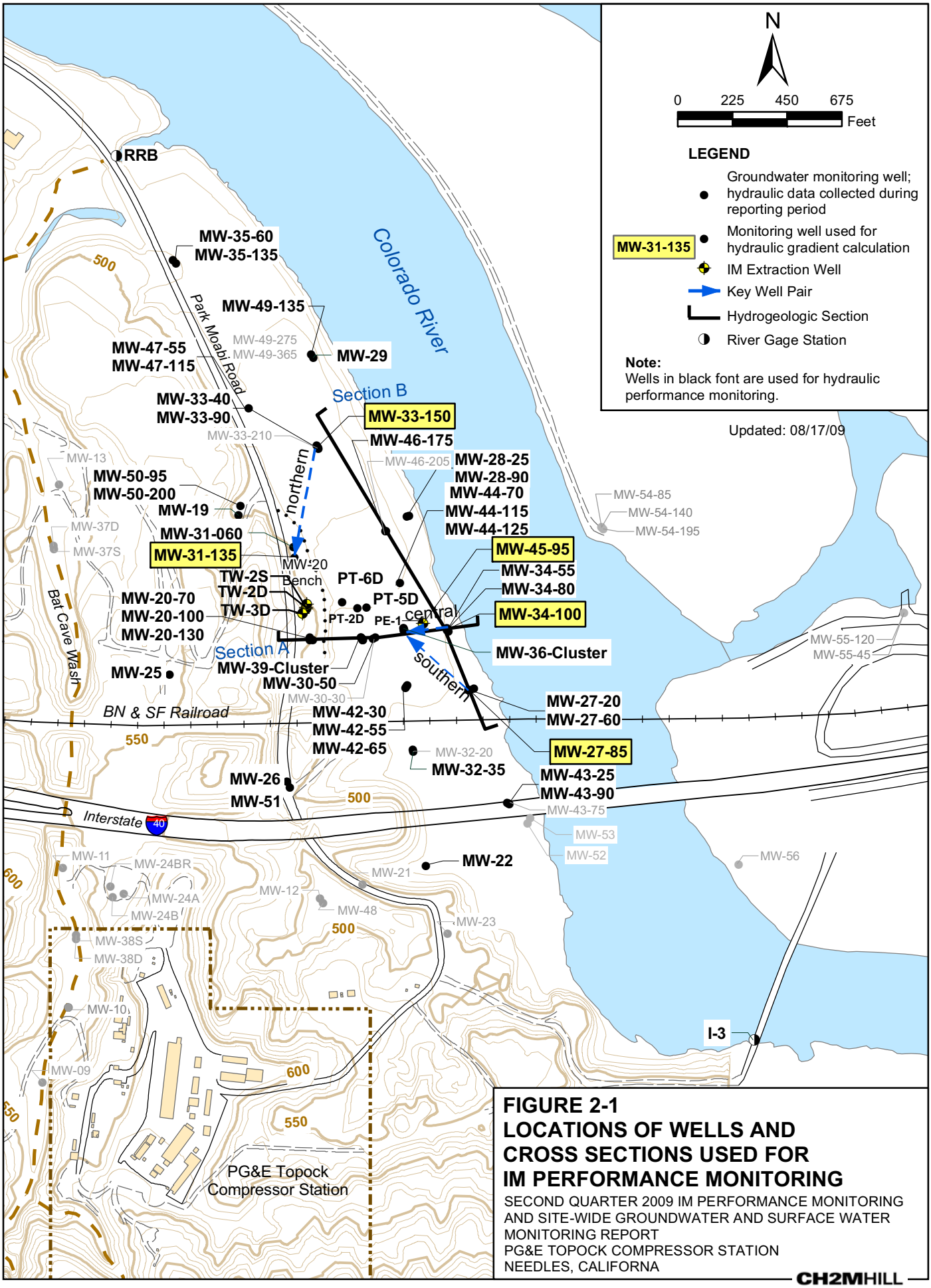


FIGURE 2-1
LOCATIONS OF WELLS AND CROSS SECTIONS USED FOR IM PERFORMANCE MONITORING

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNA

CH2MHILL

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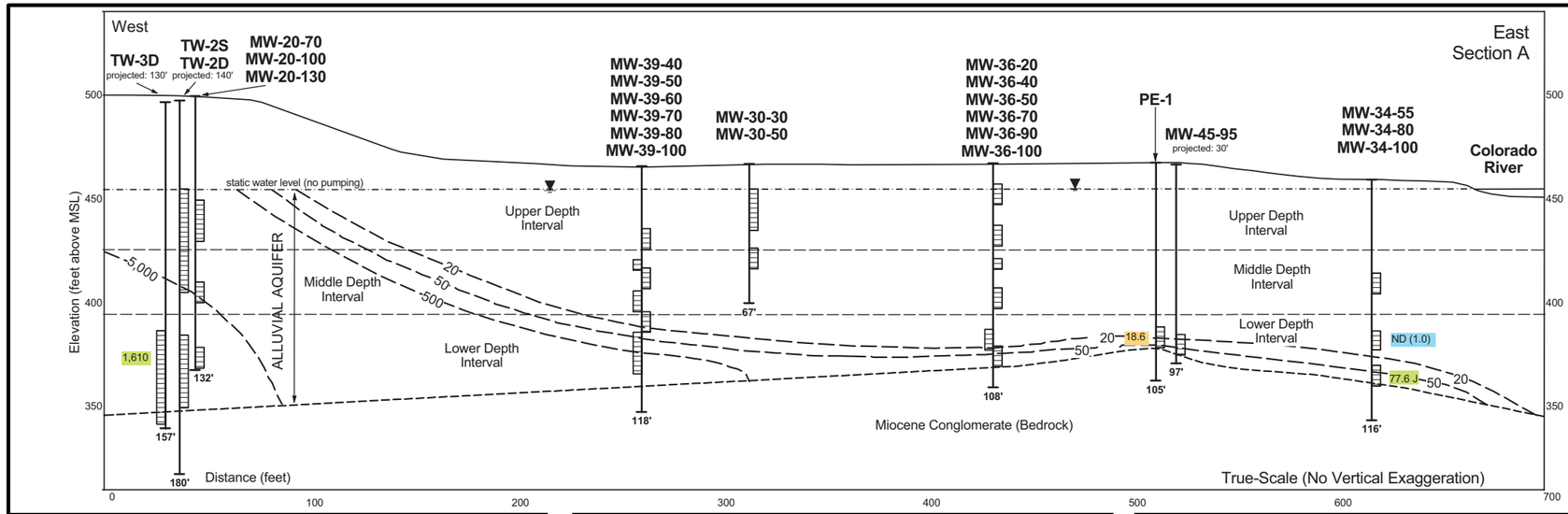
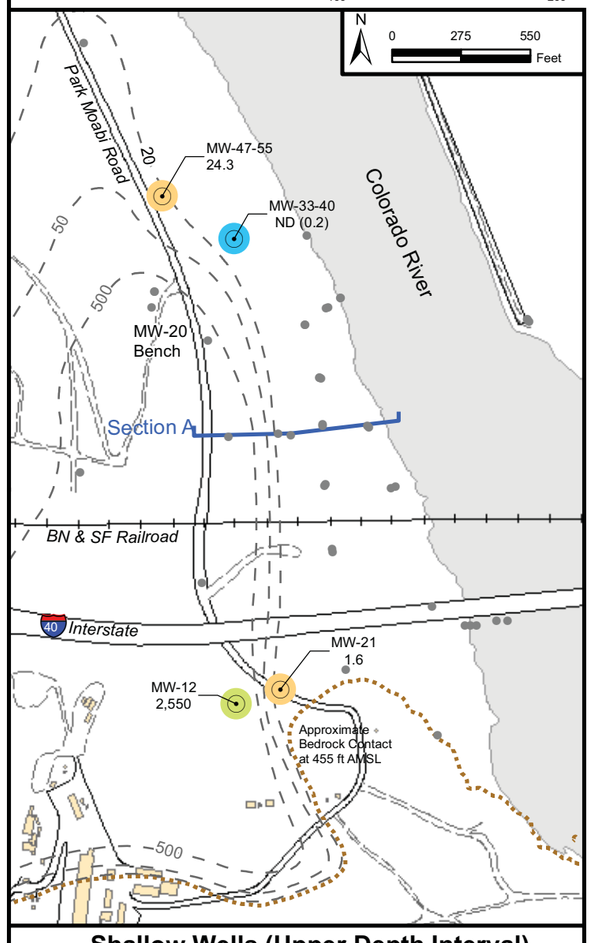
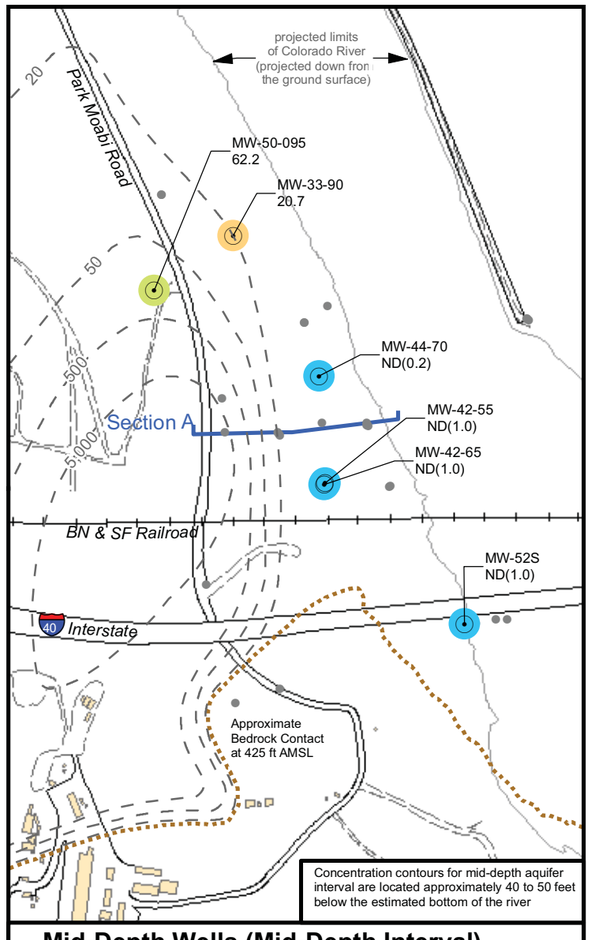
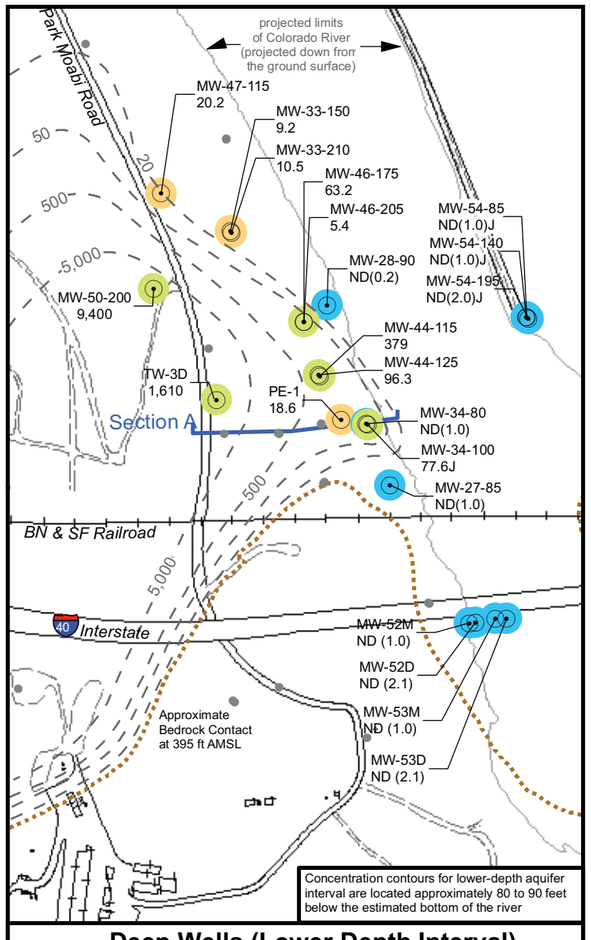




Shallow Wells (Upper Depth Interval)



Mid-Depth Wells (Mid-Depth Interval)



Deep Wells (Lower Depth Interval)

LEGEND

GMP well sampled during May 2009 quarterly monitoring event

GMP well not sampled during May 2009 event

6.48 Concentration of hexavalent chromium [Cr(VI)] in groundwater, micrograms per liter (µg/L). Results posted are maximum Cr(VI) concentrations from May 2009 groundwater sampling.

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

Cr(VI) Concentrations - May 2009

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 aquifer depth interval based on March 2009 sampling results.

Hydrogeologic Section A showing aquifer depth intervals and May 2009 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. Extraction wells PE-1, TW-3D, and TW-2D 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 2-2
MAXIMUM Cr(VI) CONCENTRATIONS IN ALLUVIAL AQUIFER, MAY 2009
SECOND QUARTER 2009 IM 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)

600
400
200
0

water table (average 454' MSL)

ALLUVIAL AQUIFER

Oldest Alluvium

Fluvial Deposits

Upper Depth Interval
Middle Depth Interval
Lower Depth Interval

ND (1.0)
20
20.7
9.2
10.5
237'

ND (0.2)
20
50
63.2
5.4
216'

ND (0.2)
379
96.3
134'

ND (1.0)
77.6 J
116'

107'

Approximate geologic contact
between alluvial fan
and fluvial deposits

Miocene Conglomerate (Bedrock)

True Scale (No Vertical Exaggeration)

0
200
400
600
800
1,000
1,200
1,400
Distance (feet)

Notes:

Results posted are maximum Cr(VI) concentrations from the groundwater sampling event in May 2009.

See Table B-1 for additional sampling data and prior results for wells on this cross section that were not sampled in May 2009.

water level
well screen
3,810
boring depth (feet)
103'

-— — 50 -— —
Inferred Cr(VI) concentration contour

Hexavalent chromium [Cr(VI)] concentration in micrograms per liter (ug/L), May 2009

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

FIGURE 2-3
Cr(VI) CONCENTRATIONS
FLOODPLAIN CROSS SECTION B,
MAY 2009

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNA

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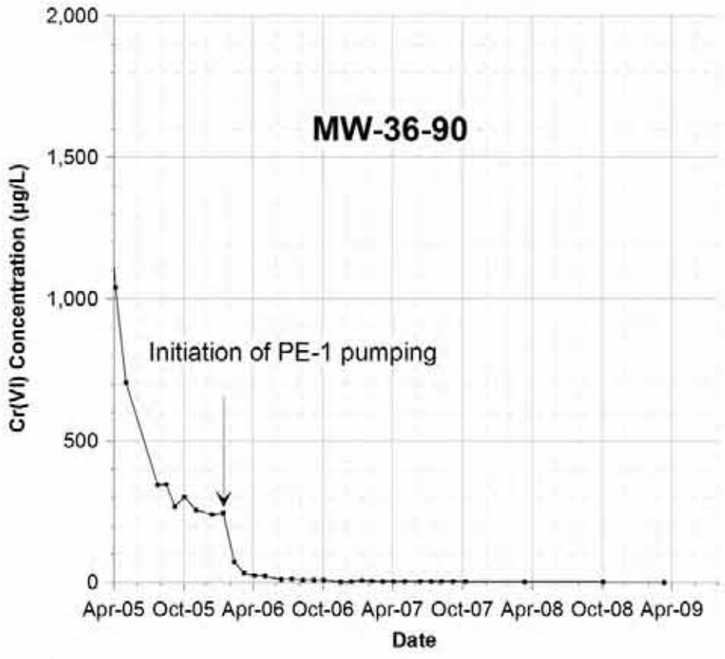

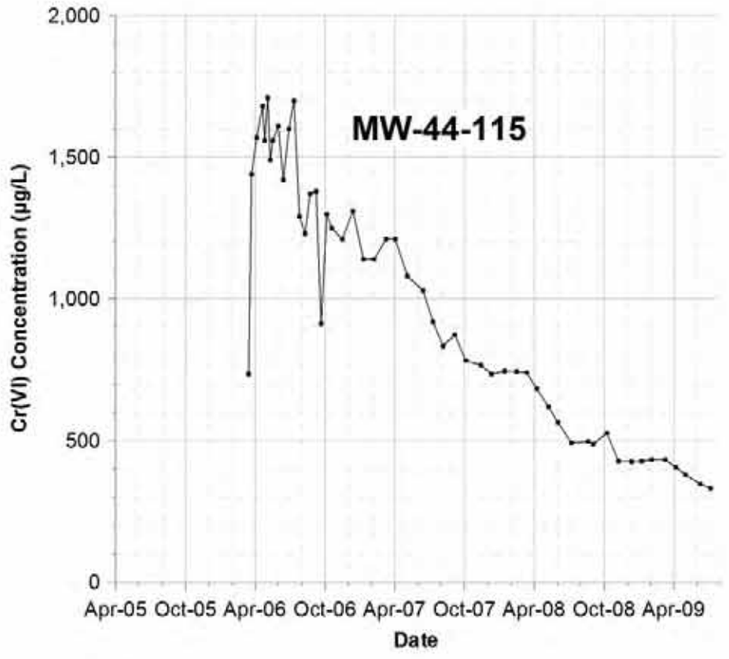

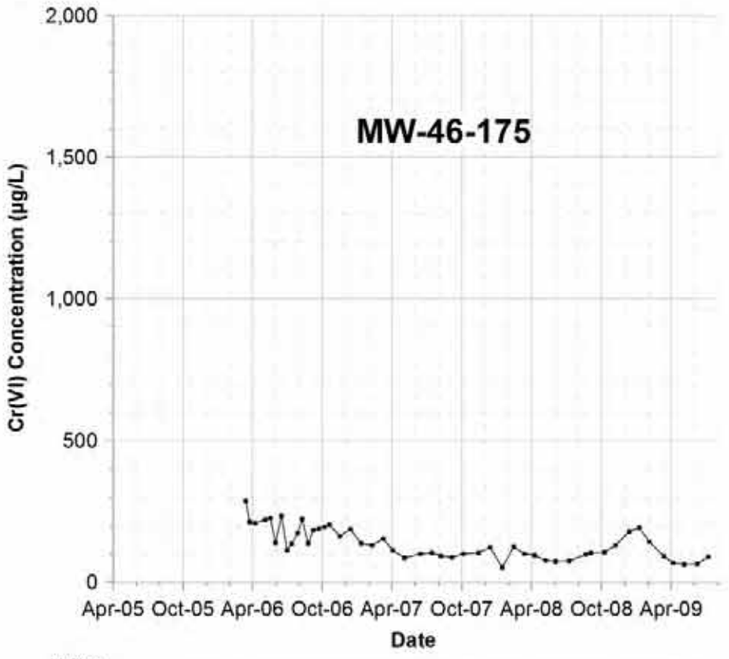

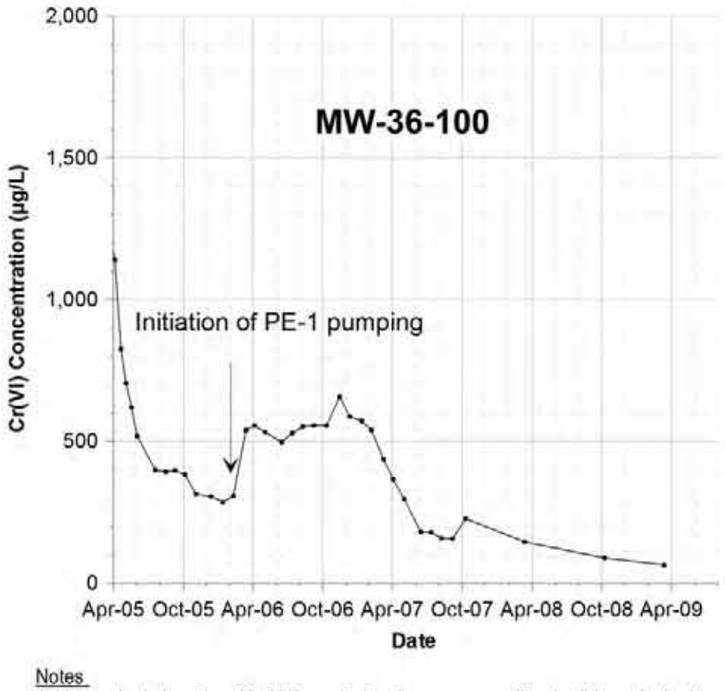

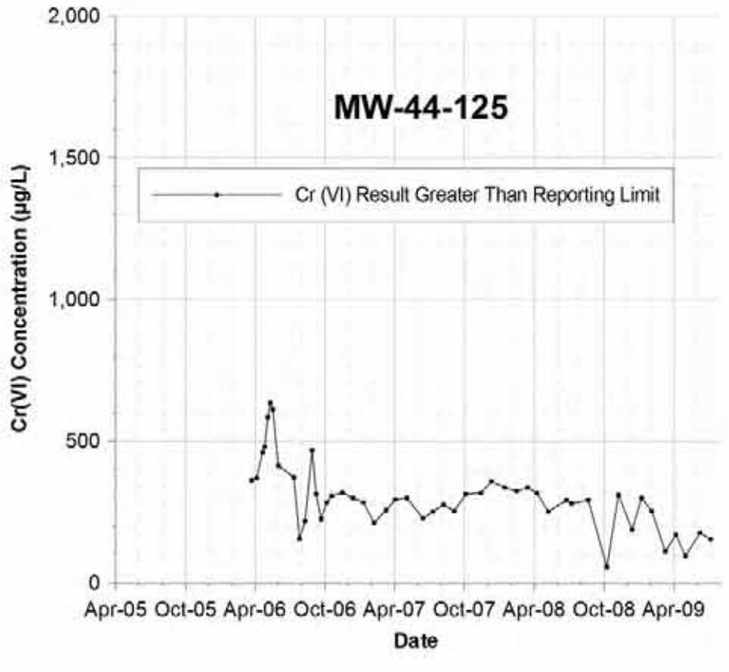

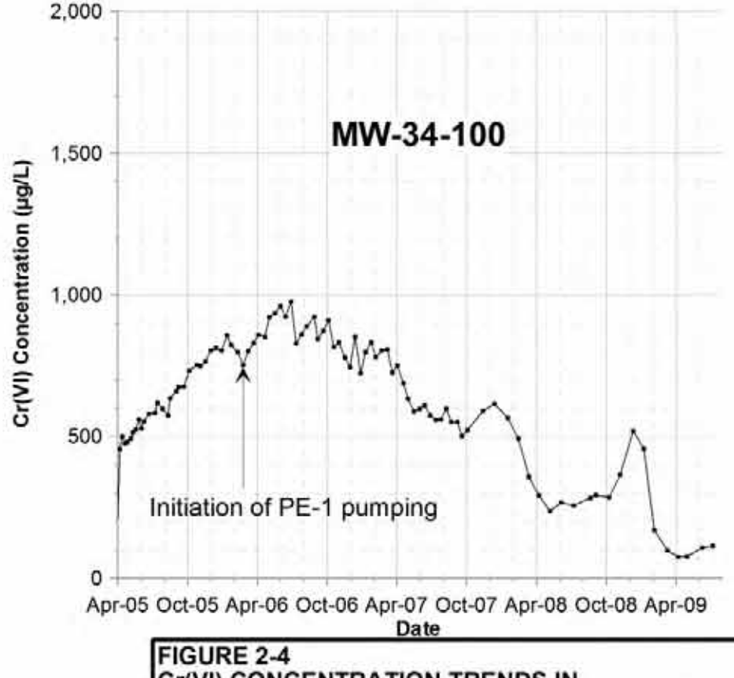

Notes
1. Hexavalent chromium [Cr(VI)] results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
3. MW-36 wells selected to monitor effects of PE-1 pumping on plume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

FIGURE 2-4
Cr(VI) CONCENTRATION TRENDS IN SELECTED PERFORMANCE MONITORING WELLS, APRIL 2005 THROUGH JULY 2009
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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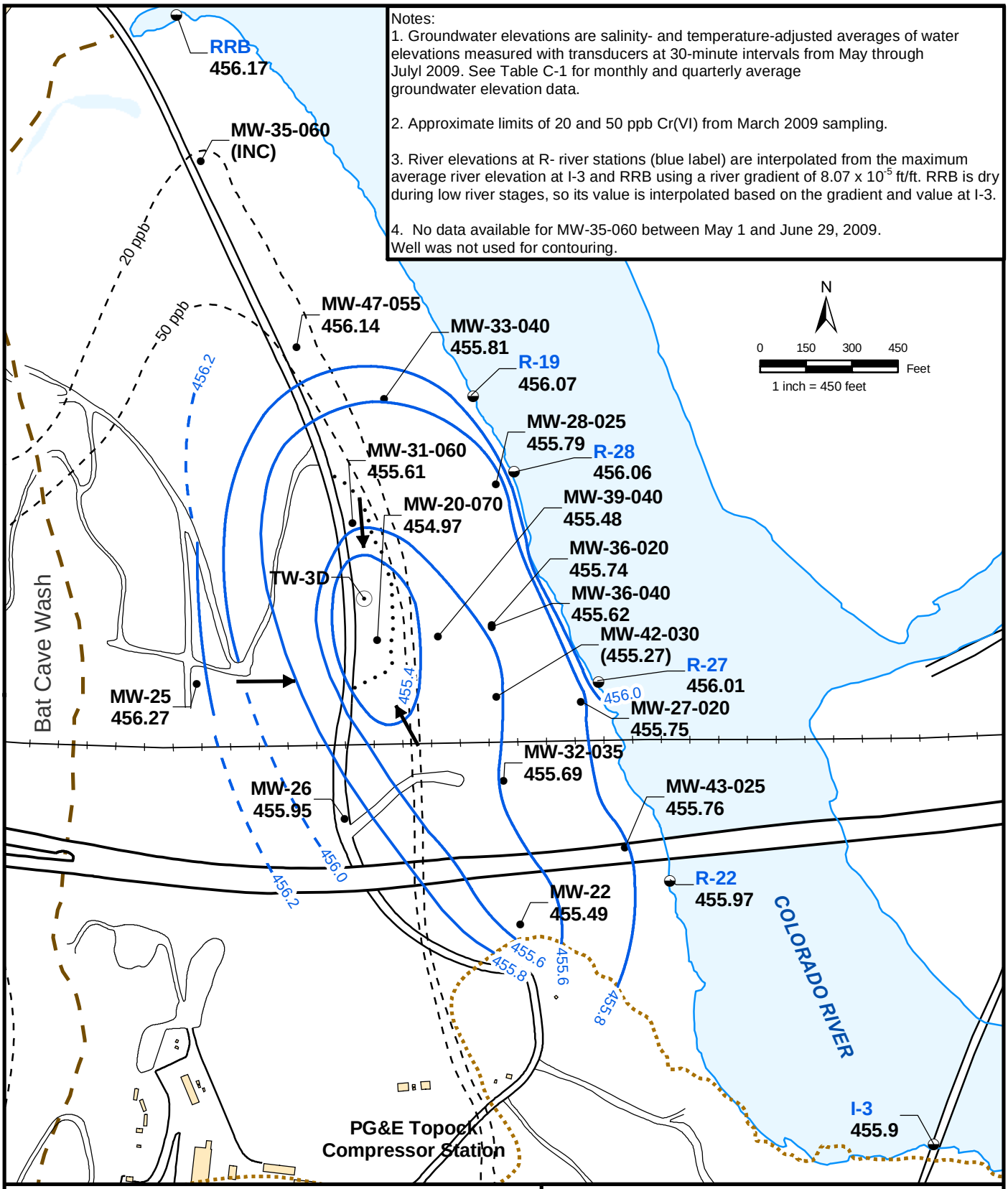

FIGURE 2-5a
AVERAGE GROUNDWATER ELEVATIONS FOR SHALLOW WELLS, MAY THROUGH JULY 2009

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNA

CH2MHILL

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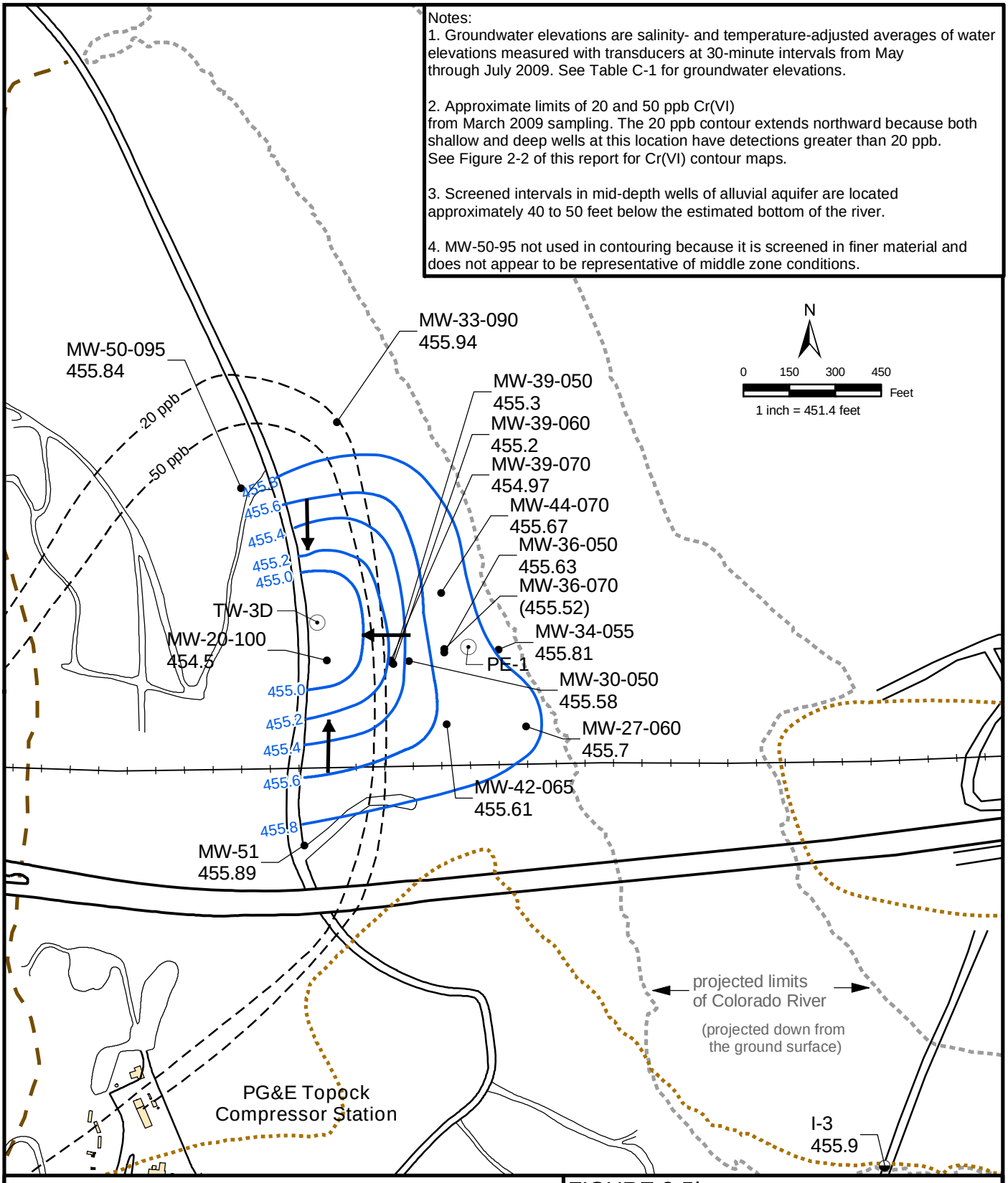

FIGURE 2-5b
AVERAGE GROUNDWATER ELEVATIONS FOR MID-DEPTH WELLS, MAY THROUGH JULY 2009

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNA

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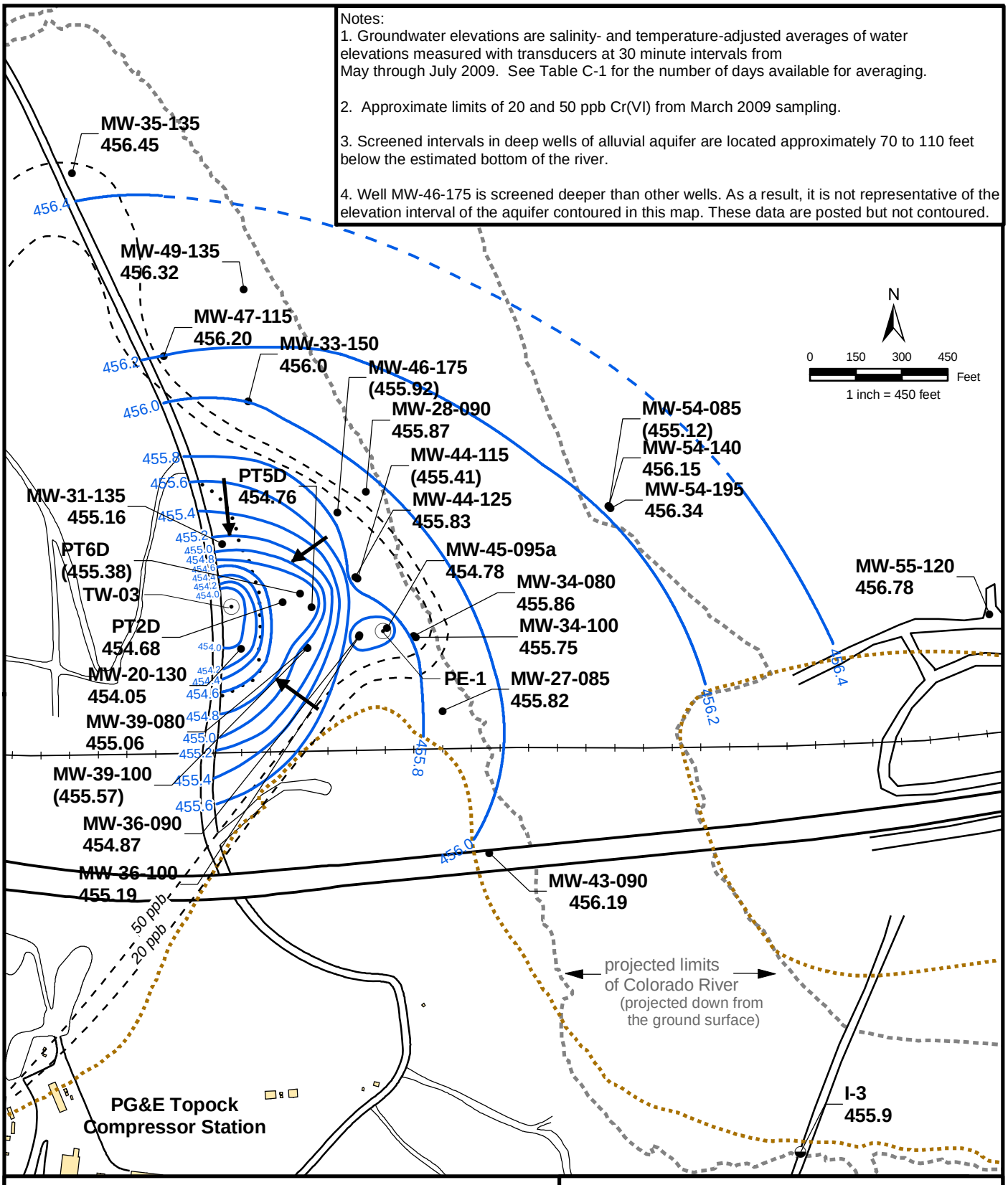

FIGURE 2-5c
AVERAGE GROUNDWATER ELEVATIONS FOR DEEP WELLS, APRIL THROUGH JULY 2009

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNA

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West

East
Section A

TW-2S
TW-2D
projected: 140'

TW-3D
projected: 130'

MW-20-70
MW-20-100
MW-20-130

MW-39-40
MW-39-50
MW-39-60*
MW-39-70
MW-39-80
MW-39-100

MW-30-30
MW-30-50

MW-36-20
MW-36-40
MW-36-50
MW-36-70
MW-36-90*
MW-36-100

PE-1

MW-45-95
projected:30'

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

Colorado River
456.0

Elevation (feet above MSL)

550
500
450
400
350
300
250

454.97
454.50
454.05
132'
157'
180'
454.8
454.6
454.4
454.2
20
455.0
50
455.2
455.48
455.30
455.20
454.97
455.06
455.57
118'
455.58
67'
455.6
455.4
455.74
455.62
455.63
455.52
454.87
455.19
108'
455.2
455.0
454.78
97'
105'
455.8
455.81
455.86
455.75
116'
Groundwater Divide
454.4

Miocene Conglomerate (Bedrock)

True-Scale (No Vertical Exaggeration)

0 Distance (feet) 100 200 300 400 500 600 700

Notes:
Results show average groundwater elevations for May 1, 2009, through July 31, 2009, measured with transducers at 30-minute intervals.

Groundwater elevations adjusted for salinity and temperature.
*Well MW-36-90 and MW-39-60 are 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)

——— 453.5 ——— Groundwater head contour

— — — 453.5 — — — Inferred groundwater head contour

← Interpreted groundwater flow direction

FIGURE 2-6
AVERAGE GROUNDWATER ELEVATIONS FOR WELLS IN FLOODPLAIN CROSS SECTION A, MAY THROUGH JULY 2009
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNA

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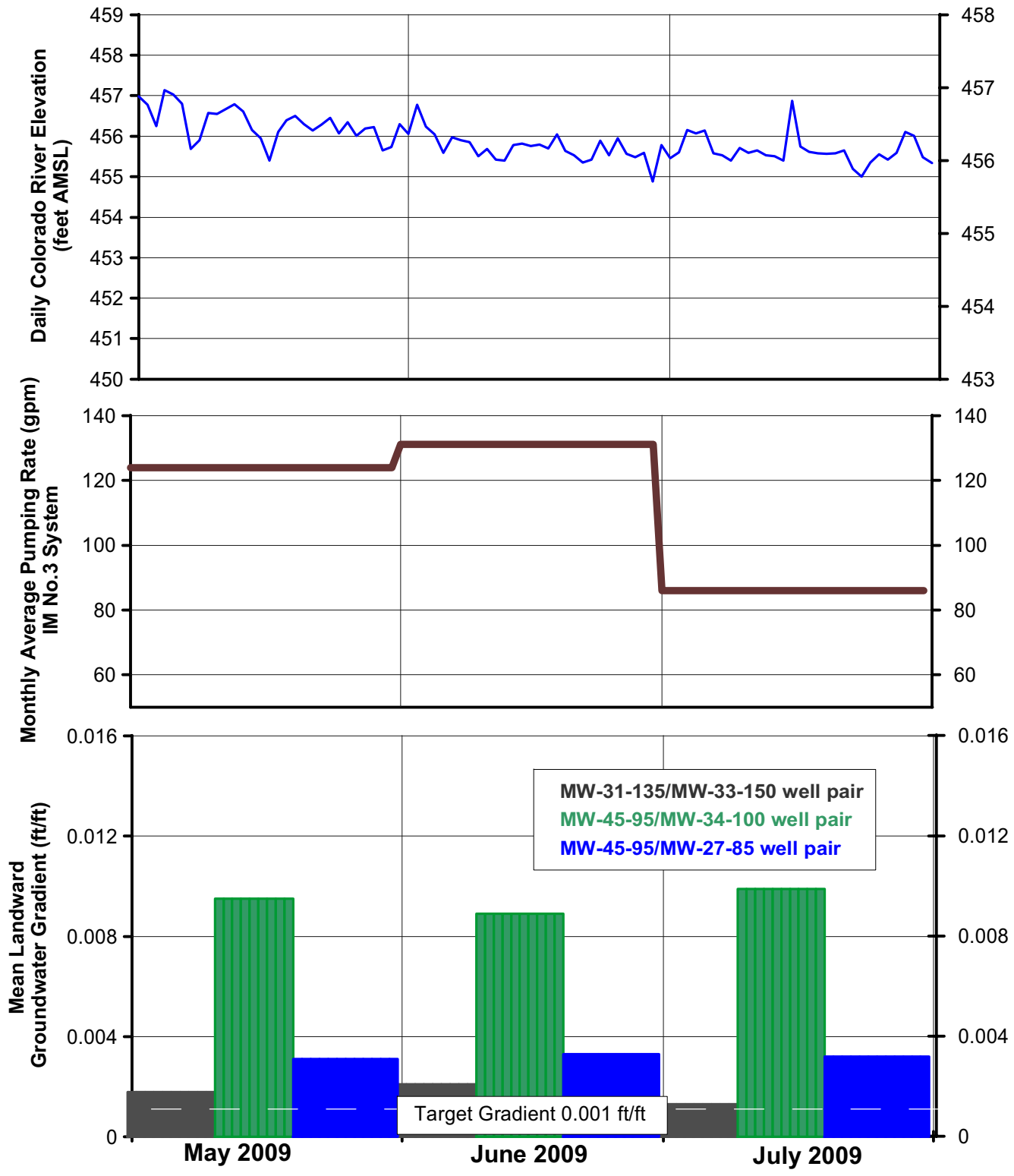

Notes:
1) For IM pumping, the target landward gradient for well pairs is 0.001 feet/foot.
2) Refer to Table 2-1 and Section 2.2 for discussion of pumping data.
3) Pumping rate plotted is the combined rate of extraction wells TW-3D and PE-1 in operation each month.
4) Refer to Table 2-4 and Section 2.4 for discussion of gradient data.

FIGURE 2-7
MEASURED HYDRAULIC GRADIENTS,
RIVER ELEVATION, AND PUMPING RATE,
MAY THROUGH JULY 2009
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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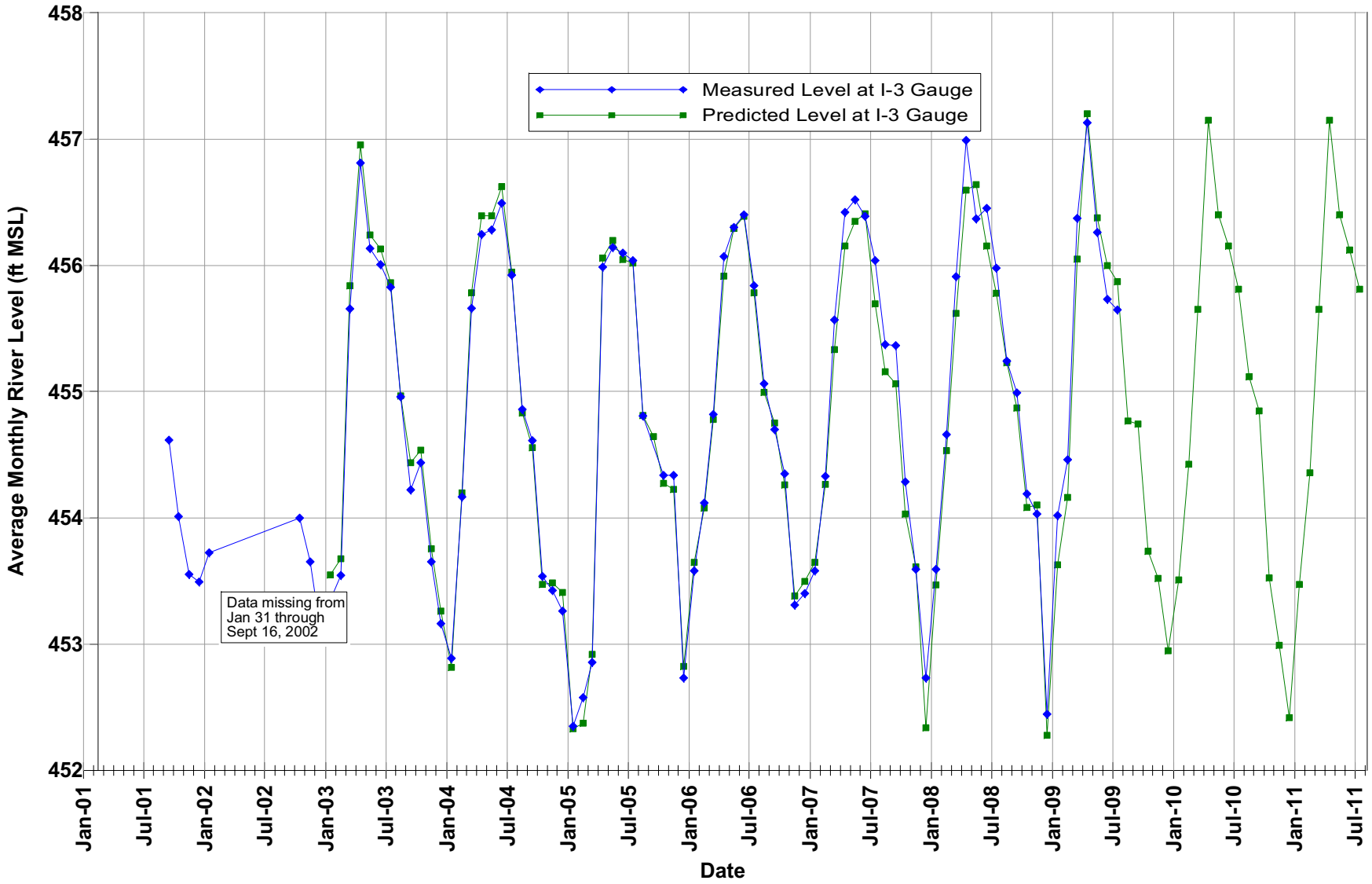

Note:
Projected river level is calculated based on monthly averages of Davis Dam release and stage in Lake Havasu as of August 14, 2009.
Measured data through July 31, 2009.
I-3 data unavailable from September 18 through October 4, 2006
River projections at I-3 are based upon August 2009 USBR projections.

FIGURE 2-8
PAST AND PREDICTED FUTURE RIVER LEVELS AT TOPOCK COMPRESSOR STATION
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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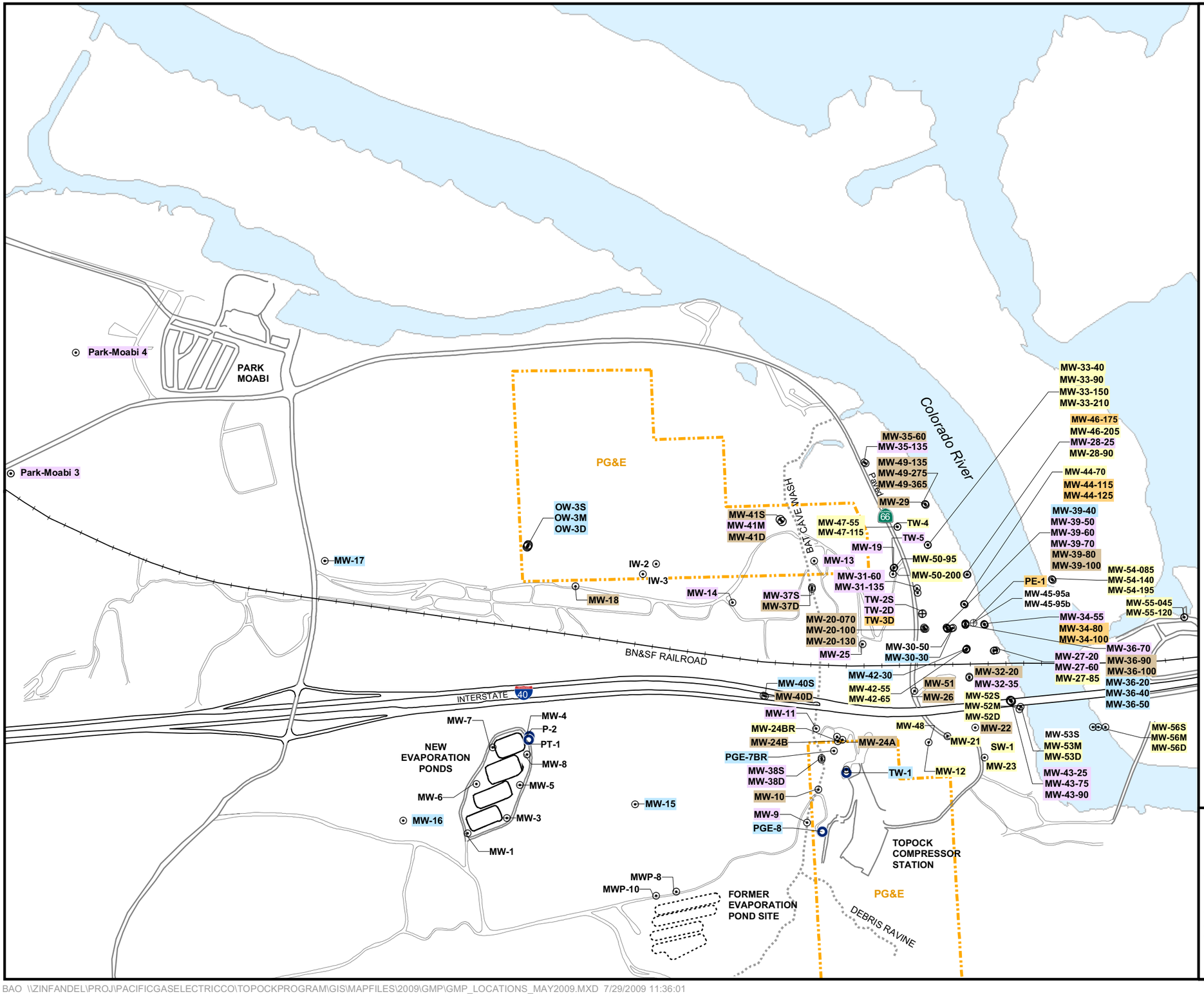


LEGEND

- Groundwater Monitoring Well
- Test Well or Supply Well (Inactive)
- Extraction Well
- PG&E Property Boundary

Sampling Frequency for Groundwater and Surface Water Monitoring Program (GMP) - May 2009

MW-17	Biennial Sampling
MW-9	Annual Sampling
MW-22	Semi-Annual Sampling
MW-12	Quarterly Sampling
MW-34-100	Monthly Sampling

N

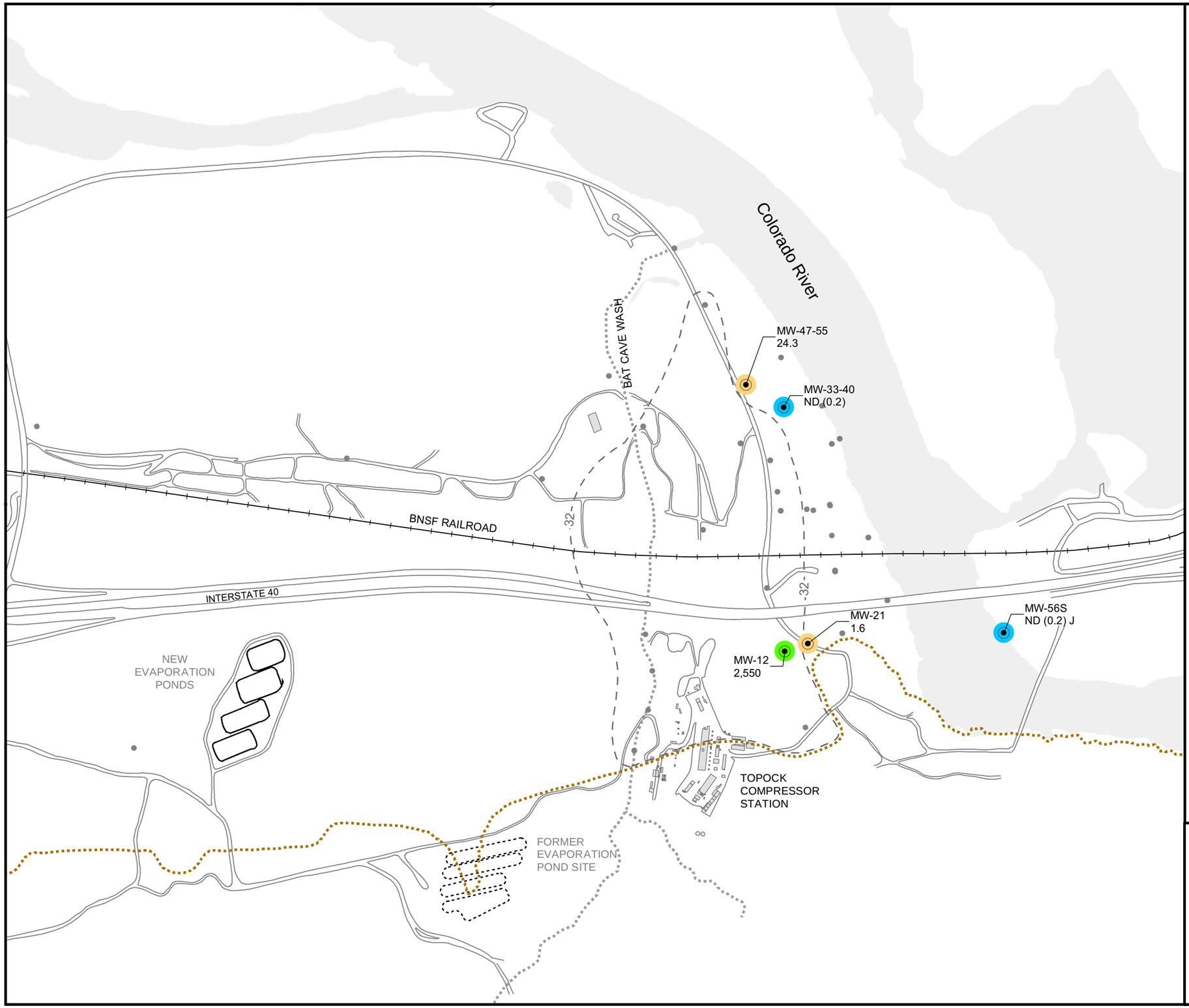
0 500 1,000 Feet

California State Plane NAD83 Zone 5 US Feet

FIGURE 3-1
MONITORING LOCATIONS AND SAMPLING FREQUENCY FOR GMP MAY 2009

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE
GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL



LEGEND

- GMP well sampled during May 2009 quarterly monitoring event
- GMP well not sampled during May 2009 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.

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

Cr(VI) Concentrations - May 2009

- 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 with Cr(VI) concentrations ≥ 32 µg/L based on March 2009 groundwater sampling

Approximate bedrock contact at 455 ft MSL elevation

N

0 500 1,000 Feet

FIGURE 3-2a
Cr(VI) SAMPLING RESULTS
SHALLOW WELLS IN ALLUVIAL AQUIFER
MAY 2009

SECOND QUARTER 2009 IM PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER
MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNA

CH2MHILL

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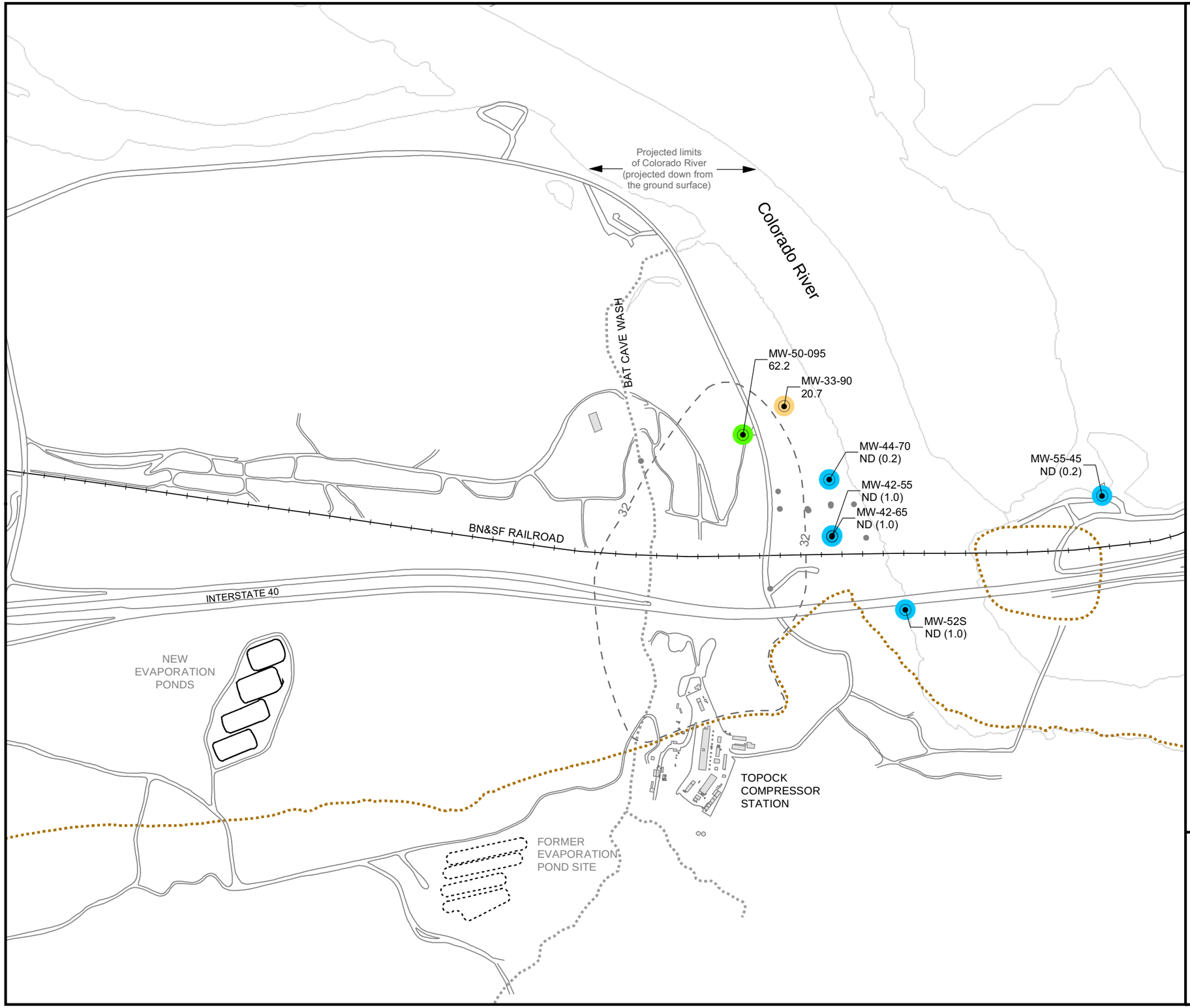

LEGEND

- GMP well sampled during May 2009 quarterly monitoring event
- GMP well not sampled during May 2009 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.

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

Cr(VI) Concentrations - May 2009

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

-32- Approximate outline of monitoring wells with Cr(VI) concentrations ≥ 32 µg/L based on March 2009 groundwater sampling

Approximate bedrock contact at 425 ft MSL elevation

N

0 500 1,000

Feet

FIGURE 3-2b
Cr(VI) SAMPLING RESULTS
MID-DEPTH WELLS IN ALLUVIAL AQUIFER
MAY 2009

SECOND QUARTER 2009 IM PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER
MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNA

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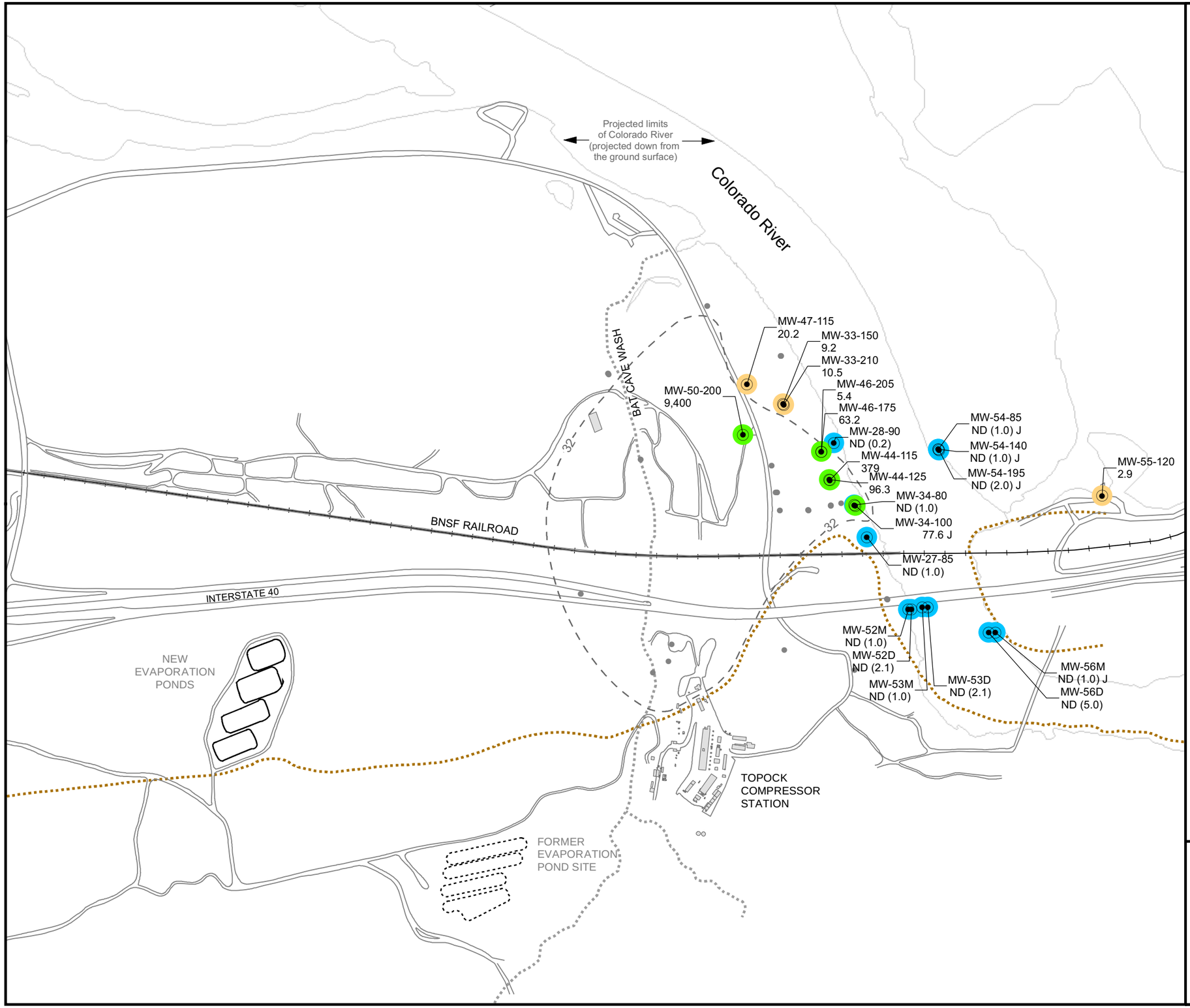


LEGEND

- GMP well sampled during May 2009 quarterly monitoring event
- GMP well not sampled during May 2009 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.

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

Cr(VI) Concentrations - May 2009

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

Approximate outline of monitoring wells in Alluvial Aquifer with Cr(VI) concentrations ≥ 32 µg/L based on March 2009 groundwater sampling

Approximate bedrock contact at 395 ft MSL elevation

Note: 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.

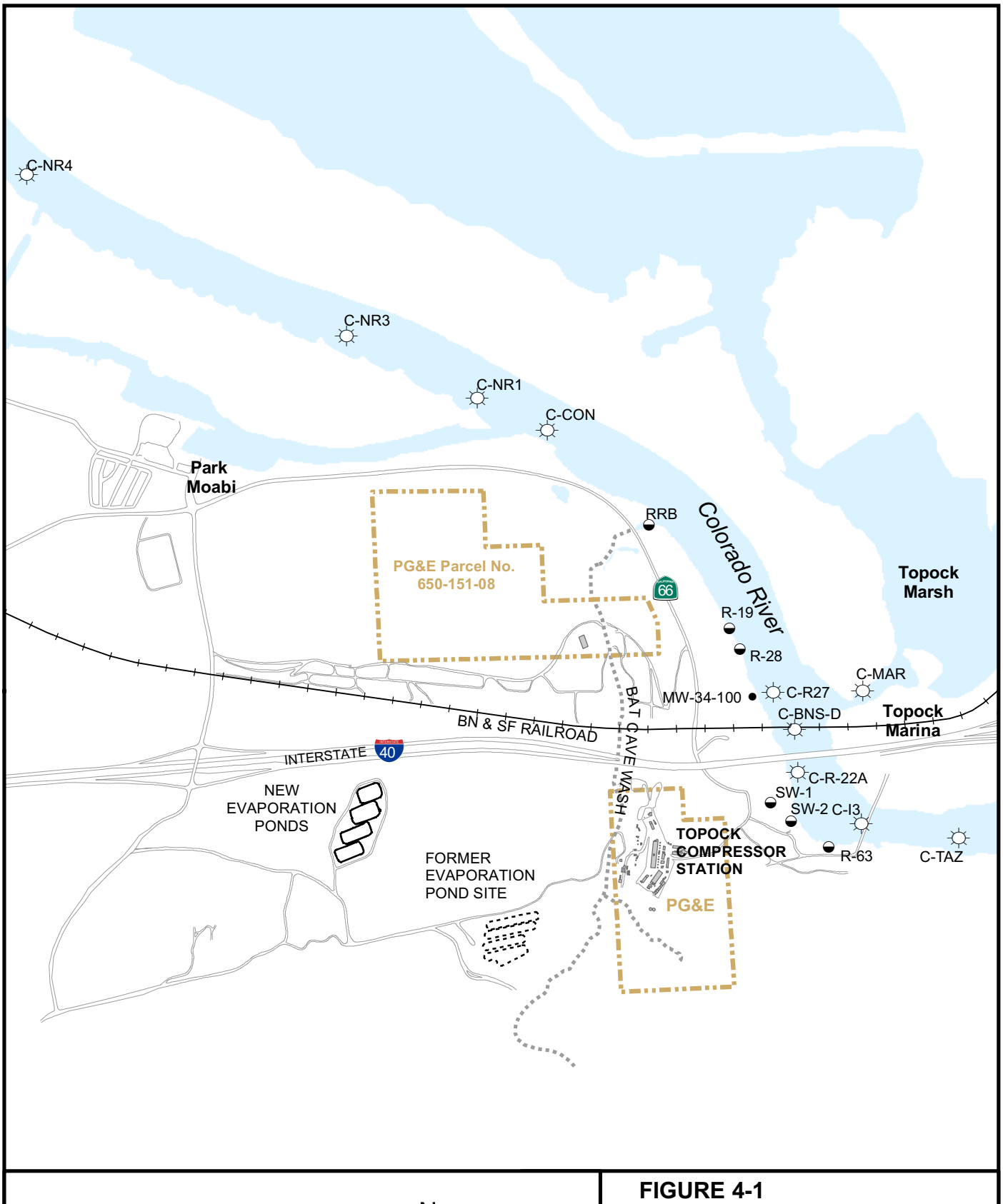
N

0 500 1,000 Feet

FIGURE 3-2c
Cr(VI) SAMPLING RESULTS
DEEP WELLS IN ALLUVIAL AQUIFER
MAY 2009

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNA

CH2MHILL



LEGEND

- Shoreline Surface Water Monitoring Location
- River Channel Surface Water Monitoring Location

* Location for SW-2 is approximate. GPS coverage was not available.

N

0 1,000 2,000 Feet

FIGURE 4-1
SURFACE WATER MONITORING LOCATIONS APRIL 2009

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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Appendix A
Interim Measure Extraction System Operations Log, May through July 2009

Appendix A
Extraction System Operations Log for May through July 2009
PG&E Topock Interim Measures Performance Monitoring Program

During the Second Quarter 2009 (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 the Second Quarter 2009. The operational run time for the IM groundwater extraction system (combined or individual pumping) was approximately 84.5 percent during Second Quarter 2009. The IM extraction system was shut down for a five day period from July 22, 2009 through July 27, 2009 for to complete commissioning and startup of the new Reverse Osmosis system.

The IM-3 facility treated approximately 15,035,713 gallons of extracted groundwater during Second Quarter 2009. The IM-3 facility also treated approximately 11,435 gallons of water generated from the groundwater monitoring program and 37,300 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 down time (that together resulted in approximately 15.5 percent of downtime during Second Quarter 2009) are summarized below. The times shown are in Pacific Standard Time (PST) to be consistent with other data collected (e.g., water level data) at the site.

May 2009

May 5, 2009 (unplanned): The extraction well system was offline from 11:40 a.m. to 6:17 p.m. due to a leak from the reverse osmosis system. Extraction system downtime was 6 hours and 37 minutes.

May 7, 2009 (planned): The extraction well system was offline from 11:35 a.m. to 12:05 p.m. for a pipeline leak investigation. Extraction system downtime was 30 minutes.

May 7, 2009 (planned): The extraction well system was offline from 12:22 p.m. to 12:23 p.m., 12:36 p.m. to 12:37 p.m., 12:56 a.m. to 12:57 p.m., and 1:03 p.m. to 1:04 p.m. when the system was shut down for testing of the leak detection system. Extraction system downtime was 4 minutes.

May 9, 2009 (unplanned): The extraction well system was offline from 2:36 p.m. to 2:44 p.m. and from 7:58 p.m. to 8:06 p.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 16 minutes.

May 10, 2009 (unplanned): The extraction well system was offline from 8:40 a.m. to 8:53 a.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 13 minutes.

May 11, 2009 (planned): The extraction well system was offline from 8:40 a.m. to 8:53 a.m. when plant power was switched from generator power to City of Needles power. Extraction system downtime was 13 minutes.

May 13 – 14, 2009 (planned): The extraction well system was offline from 7:40 a.m. on 5/13/09 to 1:20 p.m. on 5/14/09 to construct temporary RO permeate system as a part of the RO Enhancement project. Extraction system downtime was 1 day, 5 hours and 40 minutes.

May 18, 2009 (planned): The extraction well system was offline from 1:32 p.m. to 1:58 p.m. for hose replacement on the permeate tank. Extraction system downtime was 26 minutes.

May 19, 2009 (planned): The extraction well system was offline from 5:57 a.m. to 6:34 p.m. for planned maintenance. Extraction system downtime was 37 minutes.

May 20, 2009 (planned): The extraction well system was offline from 7:49 a.m. to 3:05 p.m. and from 3:06 p.m. to 9:57 p.m. for planned maintenance. Extraction system downtime was 14 hours and 7 minutes.

May 26, 2009 (planned): The extraction well system was offline from 10:44 a.m. to 4:02 p.m. for permeate tank repair. Extraction system downtime was 5 hours and 18 minutes.

May 30, 2009 (unplanned): The extraction well system was offline from 4:13 a.m. to 4:53 a.m. and 1:35 p.m. to 1:40 p.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 45 minutes.

May 30, 2009 (planned): The extraction well system was offline from 10:19 a.m. to 10:31 a.m. when plant power was switched from generator power to City of Needles power. Extraction system downtime was 12 minutes.

June 2009

June 3, 2009 (planned): The extraction well system was offline from 12:52 p.m. to 12:53 p.m., 1:10 p.m. to 1:11 p.m., 1:16 p.m. to 1:19 p.m., 1:24 p.m. to 1:28 p.m., 1:31 p.m. to 1:32 p.m., and 1:36 p.m to 1:38 p.m. when the system was shut down for testing of the leak detection system. Extraction system downtime was 12 minutes.

June 16, 2009 (planned): The extraction well system was offline from 2:18 p.m. to 3:18 p.m. for placement of new T603 permeate tank. Extraction system downtime was 1 hour.

June 17-18, 2009 (unplanned): The extraction well system was offline from 10:35 p.m. to 10:44 p.m. on 6/17/2009; 1:05 a.m. to 1:12 a.m., and 10:35 a.m. to 11:12 a.m. on 6/18/2009 when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 53 minutes.

June 18, 2009 (planned): The extraction well system was offline from 8:25 p.m. to 8:31 p.m. when plant power was switched from generator power to City of Needles power. Extraction system downtime was 6 minutes.

June 22, 2009 (planned): The extraction well system was offline from 2:01 p.m. to 2:23 p.m. for repair of the micro filter system. Extraction system downtime was 22 minutes.

June 23 - 24, 2009 (planned): The extraction well system was offline from 5:55 a.m. to 7:11 p.m., 7:53 p.m. to 9:37 p.m. and 10:33 p.m. to 12:24 a.m. on June 24, 2009 for microfilter bank switch, plant maintenance, sampling routine to bring plant back online after microfilter bank switch. Extraction system downtime was 16 hours and 51 minutes.

July 2009

July 2, 2009 (planned): The extraction well system was offline from 2:37 p.m. to 6:14 p.m. for electrical and mechanical work associated with the RO upgrade. Extraction system downtime was 3 hours and 37 minutes.

July 3, 2009 (planned): The extraction well system was offline from 2:02 p.m. to 9:41 p.m. for a microfilter repair. Extraction system downtime was 7 hours and 39 minutes.

July 4, 2009 (unplanned): The extraction well system was offline from 3:04 p.m. to 4:18 p.m. and from 11:33 p.m. to 11:44 p.m. when City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 1 hour and 25 minutes.

July 8, 2009 (planned): The extraction well system was offline from 12:24 p.m. to 12:25 p.m. and from 12:38 p.m. to 12:39 p.m. to measure and calculate the specific capacity of the extraction wells. Extraction system downtime was 2 minutes.

July 9, 2009 (planned): The extraction well system was offline from 12:54 p.m. to 12:55 p.m., 12:59 p.m. to 1:00 p.m., and 1:05 p.m. to 1:06 p.m. while testing the pipeline leak detection system. Extraction system downtime was 3 minutes.

July 10, 2009 (unplanned): The extraction well system was offline from 6:47 a.m. to 6:56 p.m. when the TVSS failed after the City of Needles power supply imbalance alarmed and shut down the extraction wells. TVSS was replaced with a spare. Since the plant was down, additional electrical work associated with the RO upgrade was completed. Extraction well downtime was 12 hours and 9 minutes.

July 13 - 16, 2009 (planned): The extraction well system was offline from 9:01 a.m. on July 13, 2009 to 4:14 p.m. on July 16, 2009 for the commissioning and startup of the new RO equipment that replaced the aging RO equipment. Extraction well downtime was 3 days, 7 hours, and 13 minutes.

July 16, 2009 (planned): The extraction well system was offline from 5:43 p.m. to 6:18 p.m. for maintenance prior to starting up the plant with the existing RO system. Extraction well downtime was 35 minutes.

July 17, 2009 (planned): The extraction well system was offline from 5:38 a.m. to 11:32 a.m. and from 11:33 a.m. to 7:45 p.m. for plant maintenance. Extraction well downtime was 14 hours and 6 minutes.

July 18 - 19, 2009 (unplanned): The extraction well system was offline from 1:27 p.m. to 1:50 p.m. on July 18, 2009 and from 11:52 p.m. on July 18, 2009 to 12:21 a.m. on July 19, 2009 when City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction well downtime was 52 minutes.

July 20, 2009 (planned): The extraction well system was offline from 10:07 a.m. to 11:04 a.m. and 11:07 a.m. to 12:24 p.m. to switch from generator power to City of Needles power. Extraction well downtime was 2 hours and 14 minutes.

July 22 - 27, 2009 (planned): The extraction well system was offline from 7:21 a.m. on July 22, 2009 to 4:13 p.m. on July 27, 2009 to complete the commissioning and startup of the new RO equipment that replaced the aging RO equipment. Extraction well downtime was 5 days, 8 hours, and 52 minutes.

July 28, 2009 (unplanned): The extraction well system was offline from 7:54 a.m. to 8:17 a.m., 10:19 a.m. to 5:09 p.m., and 5:13 p.m. to 6:29 p.m. for microfilter repairs. Extraction well downtime was 8 hours and 29 minutes.

July 30, 2009 (unplanned): The extraction well system was offline from 3:39 p.m. to 7:03 p.m. to replace a membrane element in the new primary RO. Extraction well downtime was 3 hours and 24 minutes.

July 30, 2009 (unplanned): The extraction well system was offline from 11:56 p.m. to 11:57 p.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction well downtime was 1 minute.

July 31, 2009 (planned): The extraction well system was offline from 12:00 a.m. to 12:01 a.m., from 12:06 a.m. to 12:11 a.m., 12:14 a.m. to 12:15 a.m., 12:16 a.m. to 12:21 a.m., 10:06 a.m. to 3:04 p.m., and 3:59 p.m. to 4:01 p.m. due to power supply imbalances and for plant maintenance. Extraction well downtime was 5 hours and 12 minutes.

Appendix B
Groundwater Monitoring Data for GMP and Interim Measure Monitoring Wells

Table B-1
Groundwater Sampling Results for GMP and Interim Measure Monitoring, July 2008 through July 2009

TABLE B-1
Groundwater Sampling Results, July 2008 through July 2009
Second Quarter 2009 IM Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (total) (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-9	SA	06-Oct-08	282	280	137	3,520	7.20
		09-Jun-09	---	340	32.0	3,210	7.16
		09-Jun-09 FD	---	340	FD	FD	FD
MW-10	SA	06-Oct-08	462	483	131	3,100	7.40
		12-Mar-09	265	250	145	3,580	7.58
		09-Jun-09	---	---	33.0	3,070	7.34
MW-12	SA	07-Oct-08	2,680	3,000	105	6,490	8.13
		07-Oct-08 FD	2,580	2,990	FD	FD	FD
		11-Dec-08	2,460	2,740	23.2	6,310	8.06
		12-Mar-09	2,490	2,660	67.0	6,880	8.27
		05-May-09	2,550	2,670	1.30	6,270	8.12
		10-Jun-09	---	---	35.0	6,540	8.03
MW-13	SA	02-Oct-08	23.2	23.0	61.9	2,070	7.00
MW-14	SA	03-Oct-08	27.9 J	29.1	125	1,620	7.57
MW-16	SA	03-Oct-08	9.15	6.51	154	1,190	7.85
		06-May-09	---	8.02	5.80	1,140	7.99
MW-17	SA	02-Oct-08	7.93	6.92	-37.4	1,850	7.40
		06-May-09	---	10.2	-35.7	1,780	7.79
MW-18	SA	02-Oct-08	25.5	26.4	150	1,380	6.92
		11-Mar-09	24.5	22.7	49.2	1,380	7.53
		11-Mar-09 FD	23.2	19.6	FD	FD	FD
MW-19	SA	07-Oct-08	682	786	72.4	2,510	7.31
MW-20-70	SA	07-Oct-08	2,010	2,070	110	3,190	7.44
		12-Mar-09	2,290	2,710	64.0	3,440	7.68
MW-20-100	MA	08-Oct-08	6,770	8,140	89.3	3,710	7.23
		13-Mar-09	5,490	5,470	186	3,970	7.35
MW-20-130	DA	08-Oct-08	8,990	11,700	97.9	13,200	7.29
		13-Mar-09	7,500	7,720	134	14,300	7.42
MW-21	SA	02-Oct-08	ND (1.0)	ND (1.0)	11.2	16,200	6.66
		11-Dec-08	1.86	ND (1.0)	52.2	4,410	7.66
		11-Mar-09	1.90	2.32	41.8	12,200	6.88
		06-May-09	1.64	1.39	-27	11,300	6.81
MW-22	SA	29-Jul-08	---	ND (1.0)	---	---	---
		03-Oct-08	ND (0.2)	ND (1.0)	-151	36,800	6.68
		11-Dec-08	---	10.4	-101	34,400	6.91
		12-Mar-09	ND (2.1)	2.72	-98.2	25,500	6.72
		29-Apr-09	---	1.22	-99.8	29,700	6.87
MW-23	BR	01-Oct-08	8.03	8.50	201	17,300	6.75
		11-Dec-08	5.21 J	6.46	96.8	1,830	7.27
		12-Dec-08 FD	2.53 J	6.22	FD	FD	FD

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results, July 2008 through July 2009
Second Quarter 2009 IM Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (total) (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-23	BR	12-Mar-09	32.6	32.6	43.0	18,400	7.10
MW-24A	SA	16-Oct-08	---	6.02	-254	10,600	7.01
MW-24BR	BR	02-Oct-08	ND (0.2)	ND (1.0)	-116	14,900	8.41
		10-Dec-08	ND (1.0)	ND (1.0)	-204	15,500	7.93
		11-Mar-09	ND (0.2)	ND (1.0)	-202	15,500	8.07
		07-May-09	ND (0.2)	ND (1.0)	-165	15,000	7.85
MW-25	SA	07-Oct-08	544	618	122	1,300	7.27
		07-Oct-08 FD	552	572	FD	FD	FD
MW-26	SA	08-Oct-08	2,560	2,410	97.4	4,120	7.18
		10-Mar-09	1,990	2,220	63.7	4,330	7.59
		10-Mar-09 FD	2,100	2,720	FD	FD	FD
MW-27-20	SA	03-Oct-08	ND (0.2)	ND (1.0)	-66.2	1,100	7.64
MW-27-60	MA	03-Oct-08	0.32	ND (1.0)	-83.4	4,430	7.54
		10-Dec-08	ND (0.2)	ND (1.0)	-18	4,290	7.28
MW-27-85	DA	03-Oct-08	ND (0.2)	1.72	6.60	16,300	7.07
		10-Dec-08	ND (1.0)	ND (1.0)	19.1	17,400	6.70
		11-Mar-09	ND (1.0)	ND (1.0)	-105	17,200	7.24
		30-Apr-09	ND (1.0)	ND (1.0)	-103	16,200	6.69
MW-28-25	SA	08-Oct-08	ND (0.2)	ND (1.0)	14.0	1,250	7.68
MW-28-90	DA	08-Oct-08	ND (0.2)	ND (1.0)	-83.4	7,700	7.65
		09-Dec-08	ND (1.0)	ND (1.0)	-55.4	8,240	6.79
		11-Mar-09	ND (0.2)	ND (1.0)	-160	8,110	7.60
		30-Apr-09	ND (0.2)	ND (1.0)	-181	7,600	7.42
MW-29	SA	30-Sep-08	0.38 J	1.68	-269	3,510	7.55
		10-Dec-08	ND (0.2) J	ND (1.0)	-62.5	3,330	6.85
		12-Mar-09	ND (0.2)	ND (1.0)	-162	3,270	7.20
MW-31-60	SA	06-Oct-08	534	498	124	3,340	7.30
MW-31-135	DA	06-Oct-08	ND (8.6)	20.3	103	11,300	7.52
MW-32-20	SA	03-Oct-08	ND (0.2)	ND (1.0)	-6.6	55,800	6.68
		10-Mar-09	ND (2.1)	4.56	-170	44,700	6.72
MW-32-35	SA	03-Oct-08	ND (0.2)	ND (1.0)	-51.5	22,400	6.94
MW-33-40	SA	06-Oct-08	ND (1.0)	1.08	-118	11,800	7.69
		09-Dec-08	ND (1.0)	2.10	42.4	8,830	7.25
		12-Mar-09	ND (0.2)	ND (1.0)	-35.5	6,390	8.05
		05-May-09	ND (0.2)	ND (1.0)	-72.4	5,270	8.29
MW-33-90	MA	06-Oct-08	21.1	19.2	-209	10,600	7.43
		11-Dec-08	23.2	22.6	60.8	11,000	7.32
		13-Mar-09	22.2	20.1	58.7	11,100	7.46
		05-May-09	20.7	19.9	-86.7	10,700	7.44

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results, July 2008 through July 2009
Second Quarter 2009 IM Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (total) (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-33-150	DA	06-Oct-08	8.84	9.07	-223	17,000	7.54
		06-Oct-08 FD	8.91	7.86	FD	FD	FD
		11-Dec-08	10.4	9.73	84.8	18,300	7.33
		12-Mar-09	9.00	10.9	-38.9	17,700	7.49
		05-May-09	9.17	8.82	-91.3	17,100	7.55
MW-33-210	DA	06-Oct-08	12.4	11.7	-190	19,700	7.33
		11-Dec-08	13.2	12.8	67.0	20,100	7.13
		12-Mar-09	11.5	11.8	-17.8	20,500	7.31
		05-May-09	10.5	12.4	-87.7	20,000	7.31
MW-34-55	MA	07-Oct-08	ND (0.2)	ND (1.0)	-108	1,110	7.54
MW-34-80	DA	08-Jul-08	ND (1.0)	ND (1.0)	-103	9,300	7.75
		20-Aug-08	ND (0.2)	ND (1.0)	-25.8	9,340	7.27
		03-Sep-08	ND (1.0)	ND (1.0)	-286	8,840	7.36
		07-Oct-08	ND (0.2)	1.52	-126	8,610	7.32
		06-Nov-08	ND (0.2)	ND (1.0)	23.8	8,670	6.45
		10-Dec-08	ND (1.0)	ND (1.0)	1.10	8,250	6.99
		07-Jan-09	ND (0.2)	ND (1.0)	13.8	7,610	7.18
		03-Feb-09	ND (1.0)	ND (1.0)	-30.6	7,670	7.60
		10-Mar-09	ND (1.0)	1.69	-72	8,820	7.31
		06-Apr-09	ND (1.0)	ND (1.0)	10.7	8,590	7.32
		30-Apr-09	ND (1.0)	ND (1.0)	-178	8,640	7.37
		09-Jun-09	ND (1.0)	ND (1.0)	5.30	8,170	7.16
		07-Jul-09	ND (0.2)	ND (1.0)	-38.6	7,600	7.33
MW-34-100	DA	08-Jul-08	250	266	21.7	18,900	7.61
		08-Jul-08 FD	257	268	FD	FD	FD
		20-Aug-08	283	287	74.7	19,400	7.45
		20-Aug-08 FD	250	253	FD	FD	FD
		03-Sep-08	294	308	-264	18,500	7.59
		07-Oct-08	272	245	17.1	18,100	7.35
		07-Oct-08 FD	286 J	242	FD	FD	FD
		06-Nov-08	364	447	44.9	18,700	7.28
		10-Dec-08	481	422	10.4	17,800	7.36
		10-Dec-08 FD	519	435	FD	FD	FD
		07-Jan-09	456	442	17.9	17,700	7.14
		03-Feb-09	170	152	27.4	13,500	7.64
		10-Mar-09	97.9	123	-0.9	19,300	7.40
		06-Apr-09	74.7	83.8	24.9	18,600	7.36
		30-Apr-09	61.3 J	65.5	-134	18,500	7.51
		30-Apr-09 FD	77.6 J	65.8	FD	FD	FD
		09-Jun-09	108	112	37.0	18,000	7.17
		07-Jul-09	114	115	-11.2	16,800	7.45
MW-35-60	SA	07-Oct-08	24.3	26.8	185	7,960	7.15
		07-Oct-08 FD	26.5	27.7	FD	FD	FD

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TABLE B-1
Groundwater Sampling Results, July 2008 through July 2009
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PG&E Topock Compressor Station

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (total) (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-35-60	SA	11-Mar-09	35.7	33.0	12.1	6,970	7.37
MW-35-135	DA	07-Oct-08	32.0	32.8	168	10,500	7.58
MW-36-70	MA	03-Oct-08	ND (0.2)	ND (1.0)	-29	1,630	7.83
MW-36-90	DA	03-Oct-08	0.61	1.46	-68	2,240	7.67
		12-Mar-09	ND (0.2)	ND (1.0)	-85.4	1,480	7.98
		12-Mar-09 FD	ND (0.2)	ND (1.0)	FD	FD	FD
MW-36-100	DA	07-Oct-08	88.4	89.0	-200	12,700	7.04
		12-Mar-09	63.5	90.6	-99.7	12,900	6.96
MW-37S	MA	03-Oct-08	7.59	8.74	91.4	5,430	7.58
		03-Oct-08 FD	7.68 J	7.80	FD	FD	FD
MW-37D	DA	06-Oct-08	451	542	106	16,100	7.49
		12-Mar-09	425	682	79.0	17,300	7.70
MW-39-50	MA	01-Oct-08	ND (0.2)	ND (1.0)	-231	2,700	7.76
MW-39-60	MA	01-Oct-08	ND (0.2)	ND (1.0)	-215	3,520	7.62
MW-39-70	MA	01-Oct-08	ND (0.2)	ND (1.0)	-279	5,190	7.42
MW-39-80	DA	01-Oct-08	7.58	8.05	-257	12,100	6.97
		11-Mar-09	4.67	5.66	-89.9	12,300	6.93
MW-39-100	DA	01-Oct-08	706	613	-19.1	20,900	6.72
		13-Mar-09	708	920	19.4	22,500	6.71
MW-40D	DA	06-Oct-08	ND (100)	102	180	17,300	7.30
		11-Mar-09	115	135	-44.8	17,000	7.49
MW-41S	SA	03-Oct-08	19.3	18.8	74.7	5,300	7.77
		03-Oct-08 FD	19.4 J	19.9	FD	FD	FD
		11-Mar-09	17.8	21.2	-27.5	5,280	7.80
MW-41M	DA	03-Oct-08	10.2	11.4	60.4	16,000	7.39
MW-41D	DA	03-Oct-08	ND (0.2)	ND (1.0)	-110	23,100	7.67
		11-Mar-09	ND (1.0)	2.80	-150	22,800	7.67
MW-42-55	MA	03-Oct-08	ND (0.2)	ND (1.0)	-123	13,300	7.20
		09-Dec-08	ND (1.0)	ND (1.0)	-93.2	13,600	6.64
		09-Mar-09	ND (1.0)	ND (1.0)	-167	13,300	7.18
		30-Apr-09	ND (1.0)	ND (1.0)	-174	12,200	7.40
MW-42-65	MA	03-Oct-08	ND (0.2) J	1.09	-32.2	14,100	6.91
		09-Dec-08	ND (1.0)	ND (1.0)	-12.1	15,400	6.41
		09-Mar-09	ND (1.0)	ND (1.0)	-130	15,600	6.96
		30-Apr-09	ND (1.0)	ND (1.0)	-172	13,700	7.22
MW-43-25	SA	02-Oct-08	ND (0.2)	ND (1.0)	-98.1	1,360	7.49
MW-43-75	DA	02-Oct-08	ND (0.2)	ND (1.0)	-90.3	14,000	7.63

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TABLE B-1
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PG&E Topock Compressor Station

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (total) (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-43-90	DA	02-Oct-08	ND (0.2)	ND (1.0)	-85.2	19,500	6.92
MW-44-70	MA	07-Oct-08	ND (0.2)	ND (1.0)	-159	3,510	7.65
		10-Dec-08	ND (0.2)	ND (1.0)	-87.7	3,350	7.34
		12-Mar-09	ND (0.2)	ND (1.0)	-170	3,470	7.45
		01-May-09	ND (0.2)	ND (1.0)	-137	3,470	7.35
MW-44-115	DA	07-Jul-08	493	478	-108	13,600	7.98
		19-Aug-08	498 J	555	-65.9	13,700	7.82
		02-Sep-08	488	489	-274	13,600	11.9
		07-Oct-08	456	502	-185	12,900	8.03
		07-Oct-08 FD	527 J	466	FD	FD	FD
		06-Nov-08	429	529	38.6	13,400	6.86
		11-Dec-08	426	403	20.1	13,100	7.62
		07-Jan-09	428	425	13.9	12,800	7.15
		02-Feb-09	434	433	-61.4	10,700	7.77
		02-Feb-09 FD	434	425	FD	FD	FD
		10-Mar-09	434	472	-142	13,300	7.24
		06-Apr-09	406	425	4.50	12,700	7.77
		06-Apr-09 FD	406	428	FD	FD	FD
		01-May-09	379	365	-211	12,900	7.90
		08-Jun-09	348	322	-20	12,700	7.65
		08-Jun-09 FD	349	351	FD	FD	FD
		06-Jul-09	333	308	-148	12,000	7.86
MW-44-125	DA	07-Jul-08	281	291	-155	13,900	8.03
		19-Aug-08	294	297	-64.7	10,900	7.60
		02-Sep-08	---	---	77.1	4,380	6.77
		07-Oct-08	55.9	64.5	-150	3,250	7.75
		06-Nov-08	312	317	51.7	14,300	7.65
		06-Nov-08 FD	301	316	FD	FD	FD
		12-Dec-08	189	200	55.7	14,400	7.91
		07-Jan-09	300	290	-31.9	14,400	7.35
		02-Feb-09	255	250	-77.5	11,000	8.00
		10-Mar-09	112	126	-194	12,500	7.93
		06-Apr-09	170	166	-5.1	12,800	7.71
		01-May-09	96.3	117	-192	13,400	7.87
		08-Jun-09	178	175	-35.2	13,000	7.73
		06-Jul-09	154	169	-149	12,600	7.93
MW-46-175	DA	08-Jul-08	75.3	83.4	-192	17,700	8.29
		20-Aug-08	98.2	91.4	-103	18,500	8.25
		03-Sep-08	100	112	-314	17,800	8.37
		03-Sep-08 FD	103	102	FD	FD	FD
		08-Oct-08	105	87.2	-207	17,600	8.77
		06-Nov-08	130	171	5.60	18,200	8.43
		11-Dec-08	178	167	1.00	17,800	8.14

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TABLE B-1
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PG&E Topock Compressor Station

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (total) (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-46-175	DA	07-Jan-09	190	196	-4.9	16,900	9.01
		07-Jan-09 FD	192	205	FD	FD	FD
		03-Feb-09	143	136	7.00	12,600	8.39
		12-Mar-09	90.5	89.2	-213	18,200	8.28
		06-Apr-09	68.5	77.0	-8.0	17,700	8.20
		05-May-09	63.2	55.0	-164	17,800	8.33
		08-Jun-09	65.1	65.6	-26	18,200	8.15
		07-Jul-09	89.6	82.8	-133	15,900	8.37
MW-46-205	DA	08-Oct-08	ND (4.9)	4.32	-127	21,500	8.66
		09-Dec-08	4.28	4.47	57.9	22,400	7.79
		12-Mar-09	4.98	5.95	-74.6	22,300	8.29
		05-May-09	4.94	5.78	-100	21,600	8.27
		05-May-09 FD	5.44	5.34	FD	FD	FD
MW-47-55	SA	08-Oct-08	ND (49)	50.3	-119	4,270	8.26
		10-Dec-08	71.8	72.7	52.2	4,410	7.66
		12-Mar-09	28.4	27.0	110	4,510	7.55
		12-Mar-09 FD	27.6	30.2	FD	FD	FD
		06-May-09	24.3	22.1	-17	4,440	7.53
MW-47-115	DA	08-Oct-08	ND (15)	15.6	-174	13,800	8.22
		10-Dec-08	13.3	13.6	-18	15,100	7.68
		11-Mar-09	18.6	20.8	-73	13,900	7.58
		06-May-09	20.2	18.7	42.0	13,300	7.53
		07-Jul-09	17.0	17.8	76.1	12,100	7.55
		07-Jul-09 FD	17.1	14.8	FD	FD	FD
MW-48	BR	01-Oct-08	ND (1.0)	ND (1.0)	187	18,500	6.83
		10-Dec-08	ND (1.0)	ND (1.0)	7.70	19,300	7.30
		11-Mar-09	ND (0.2)	ND (1.0)	41.3	20,100	7.22
		06-May-09	ND (1.0)	---	-10	17,600	7.37
MW-49-135	DA	06-Oct-08	ND (0.2)	1.59	-147	13,700	7.68
		11-Mar-09	ND (1.0)	ND (1.0)	-97.2	15,100	7.80
MW-49-275	DA	30-Sep-08	ND (1.0)	ND (1.0)	-322	24,000	8.21
		11-Mar-09	ND (1.0)	ND (1.0)	-237	27,500	8.88
MW-49-365	DA	06-Oct-08	ND (1.0)	ND (1.0)	-296	38,400	7.78
		11-Mar-09	ND (5.2)	ND (1.0)	-240	42,100	8.15
MW-50-095	MA	06-Oct-08	ND (89)	87.7	90.9	5,580	7.67
		10-Dec-08	82.2	73.4	55.0	5,260	7.93
		10-Dec-08 FD	78.2	74.5	FD	FD	FD
		12-Mar-09	60.1	72.6	100	5,420	7.83
		12-Mar-09 FD	61.2	71.1	FD	FD	FD
		06-May-09	62.2	72.2	-42.3	5,260	7.79
MW-50-200	DA	07-Oct-08	7,390	8,890	101	21,400	7.61
		12-Dec-08	8,040	8,700	60.4	21,400	7.58

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TABLE B-1
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PG&E Topock Compressor Station

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (total) (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-50-200	DA	13-Mar-09	9,910	12,400	156	24,200	7.70
		06-May-09	9,010	10,900	-19.7	22,100	7.84
		06-May-09 FD	9,400	10,800	FD	FD	FD
MW-51	MA	08-Oct-08	4,160	4,600	111	11,800	7.27
		12-Mar-09	3,990	5,000	73.0	12,500	7.44
MW-52S	MA	01-Oct-08	ND (1.0)	ND (1.0)	-173	17,800	7.19
		11-Dec-08	ND (1.0)	ND (1.0)	-169	11,900	7.70
		12-Mar-09	ND (1.0)	ND (1.0)	-100	11,500	6.56
		29-Apr-09	ND (1.0)	ND (1.0)	-145	10,700	7.20
MW-52M	DA	01-Oct-08	ND (1.0)	ND (1.0)	-191	23,400	7.26
		11-Dec-08	ND (1.0)	ND (1.0)	-73	17,400	6.94
		12-Mar-09	ND (1.0)	ND (1.0)	-174	14,500	7.67
		29-Apr-09	ND (1.0)	ND (1.0)	-156	17,200	7.91
MW-52D	DA	01-Oct-08	ND (1.0)	ND (1.0)	-262	28,600	7.78
		11-Dec-08	ND (1.0)	ND (1.0)	-193	22,800	8.10
		12-Mar-09	ND (1.0)	6.63	-111	21,900	7.34
		29-Apr-09	ND (2.1)	ND (1.0)	-117	21,800	7.66
MW-53M	DA	01-Oct-08	ND (1.0)	ND (1.0)	-153	25,900	8.06
		11-Dec-08	ND (1.0)	ND (1.0)	-204	20,600	8.30
		12-Mar-09	ND (1.0)	ND (2.0)	-173	17,200	8.16
		29-Apr-09	ND (1.0)	ND (1.0)	-182	20,000	8.10
MW-53D	DA	01-Oct-08	ND (1.0)	ND (1.0)	-279	34,000	8.37
		11-Dec-08	ND (1.0)	ND (1.0)	-12.9	27,300	8.79
		12-Mar-09	ND (2.1)	ND (2.0)	-19.3	26,800	8.46
		29-Apr-09	ND (2.1)	ND (1.0)	-203	27,000	8.59
MW-54-85	DA	09-Jul-08	ND (0.2)	ND (1.0)	-178	10,900	7.39
		19-Aug-08	ND (0.2)	ND (1.0)	-159	11,400	7.35
		04-Sep-08	ND (0.2)	ND (1.0)	-151	10,900	7.25
		01-Oct-08	ND (0.2)	ND (1.0)	-144	10,800	7.40
		08-Dec-08	ND (1.0)	ND (5.0)	-160	10,900	7.45
		09-Mar-09	ND (0.2)	ND (1.0)	-251	11,400	7.73
		05-May-09	ND (1.0) J	ND (1.0)	-174	10,100	7.30
MW-54-140	DA	09-Jul-08	ND (1.0)	ND (1.0)	-164	13,300	7.72
		19-Aug-08	ND (1.0)	ND (1.0)	-126	13,800	7.73
		04-Sep-08	ND (1.0)	ND (1.0)	-154	13,400	7.76
		01-Oct-08	ND (0.2)	1.36	-155	13,300	7.74
MW-54-140-TLI		01-Oct-08	ND (1.0)	ND (1.0)	---	---	---
MW-54-140		08-Dec-08	ND (1.0)	ND (5.0)	-131	13,400	7.87
		09-Mar-09	ND (1.0)	ND (1.0)	-235	14,000	8.09
		05-May-09	ND (1.0) J	ND (1.0)	-151	12,500	7.69
MW-54-195	DA	09-Jul-08	ND (1.0)	ND (1.0)	-210	20,300	8.09
		19-Aug-08	ND (1.0)	ND (1.0)	-172	20,800	7.94

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PG&E Topock Compressor Station

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (total) (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-54-195	DA	04-Sep-08	ND (1.0)	ND (1.0)	-184	19,500	7.45
		01-Oct-08	ND (1.0)	1.27	-208	19,900	7.80
MW-54-195-TLI		01-Oct-08	ND (1.0) J	ND (1.0)	---	---	---
MW-54-195		09-Dec-08	ND (1.0) J	ND (5.0)	-234	20,500	8.05
		09-Mar-09	ND (2.0)	ND (1.0)	-260	21,200	8.42
		05-May-09	ND (2.0) J	ND (1.0)	-236	18,900	8.01
MW-55-45	MA	08-Jul-08	ND (1.0)	ND (1.0)	-179	1,580	7.77
		18-Aug-08	ND (0.2)	ND (1.0)	-187	1,630	7.54
		03-Sep-08	ND (0.2)	ND (1.0)	-167	1,540	7.40
		02-Oct-08	ND (0.2)	ND (1.0)	-130	1,540	7.48
		08-Oct-08	---	---	-101	1,590	7.50
		08-Dec-08	ND (0.2)	ND (5.0)	-169	1,530	7.71
		09-Mar-09	ND (0.2)	ND (1.0)	-271	1,550	7.65
		04-May-09	ND (0.2)	ND (1.0)	-171	1,550	7.63
MW-55-120	DA	08-Jul-08	ND (0.2)	ND (1.0)	-169	8,990	7.90
		18-Aug-08	ND (0.2)	ND (1.0)	-249	2,430	7.86
MW-55-120-TLI		03-Sep-08	0.60 J	ND (1.0)	---	---	---
MW-55-120		03-Sep-08	0.614	1.17	-81.8	8,500	7.61
		02-Oct-08	0.402	1.13	-52.4	8,540	7.63
		08-Dec-08	3.45	4.38	71.6	9,340	7.55
		08-Dec-08 FD	3.22	4.34	FD	FD	FD
		09-Mar-09	3.23	4.12	-142	9,740	7.85
		09-Mar-09 FD	3.09	4.04	FD	FD	FD
		04-May-09	2.93	3.69	-87.2	9,110	7.87
		04-May-09 FD	2.92	3.72	FD	FD	FD
MW-56S	SA	09-Jul-08	ND (0.2)	ND (1.0)	-118	7,110	7.29
		18-Aug-08	ND (0.2)	ND (1.0)	-139	7,230	7.36
		03-Sep-08	ND (0.2)	ND (1.0)	-127	6,880	6.78
		02-Oct-08	ND (0.2)	ND (1.0)	-179	7,400	7.19
		08-Dec-08	ND (0.2) J	ND (5.0)	-117	6,290	7.39
		13-Mar-09	ND (0.2)	ND (1.0)	-71	6,480	7.25
		04-May-09	ND (0.2) J	ND (1.0)	-143	6,490	7.29
MW-56M	DA	09-Jul-08	ND (1.0)	ND (1.0)	-173	20,500	7.53
		18-Aug-08	ND (1.0)	ND (1.0)	-133	15,100	7.38
		03-Sep-08	ND (1.0)	ND (1.0)	-157	14,800	7.58
		02-Oct-08	ND (0.2)	ND (1.0)	-167	20,300	7.36
		08-Dec-08	ND (1.0)	ND (5.0)	-65.1	14,300	7.34
		13-Mar-09	ND (1.0)	ND (1.0)	-58.2	15,100	7.14
		04-May-09	ND (1.0) J	ND (1.0)	-133	14,700	7.27
MW-56D	DA	09-Jul-08	ND (5.0)	ND (1.0)	-142	21,500	7.92
		18-Aug-08	ND (1.0)	ND (1.0)	-154	22,600	7.75
		03-Sep-08	ND (1.0)	ND (1.0)	-138	28,000	7.45
		02-Oct-08	ND (2.0)	ND (1.0)	-179	27,200	7.70

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PG&E Topock Compressor Station

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (total) (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-56D	DA	08-Dec-08	ND (2.0) J	ND (5.0)	-110	21,900	7.54
		13-Mar-09	ND (2.0)	ND (1.0)	-38	21,300	7.71
		04-May-09	ND (5.0)	ND (1.0)	-234	21,500	8.53
PE-1	DA	02-Jul-08	25.7	28.7	---	---	---
		06-Aug-08	28.2	27.4	---	---	---
		04-Sep-08	29.7	28.0	---	---	---
		01-Oct-08	27.6	27.5	---	---	---
		06-Nov-08	29.8	27.7	---	---	---
		04-Dec-08	28.8	32.3	---	---	---
		09-Jan-09	33.4	27.6	---	---	---
		04-Feb-09	26.3	25.5	---	---	---
		04-Mar-09	23.5	22.4 LF	---	---	---
		01-Apr-09	21.4	20.8	---	---	---
		06-May-09	18.6	18.1	---	---	---
		03-Jun-09	18.7	19.8	---	---	---
PGE-7BR	BR	07-Oct-08	ND (0.2)	ND (1.0)	-94.7	20,900	9.48
Park Moabi-3	MA	02-Oct-08	8.74	8.35 UF	-30	1,550	7.42
Park Moabi-4	MA	02-Oct-08	20.6	18.5 UF	-7.0	1,970	7.44
TW-2S	MA	03-Oct-08	860	748	134	5,850	7.43
TW-2D	DA	03-Oct-08	561	644	100	15,500	7.22
TW-3D	DA	02-Jul-08	1,460	1,780	---	---	---
		06-Aug-08	1,440	1,450	---	---	---
		04-Sep-08	1,490	1,380	---	---	---
		01-Oct-08	1,460	1,300	---	---	---
		06-Nov-08	1,650	1,810	---	---	---
		04-Dec-08	1,570	1,360	---	---	---
		09-Jan-09	1,570	1,300	---	---	---
		04-Feb-09	1,330	1,620	---	---	---
		04-Mar-09	1,280	1,280 LF	---	---	---
		01-Apr-09	1,270	1,320	---	---	---
		06-May-09	1,610	1,450	---	---	---
		03-Jun-09	1,470	1,500	---	---	---
TW-4	DA	02-Oct-08	19.9	17.5	-94.2	21,300	7.51
		02-Oct-08 FD	19.0	20.5	FD	FD	FD
		10-Dec-08	9.81	10.0	30.5	23,000	7.82
		10-Mar-09	14.0	13.0	31.3	23,400	7.51
		06-May-09	13.5	14.4	-68	20,700	7.65
TW-5	DA	02-Oct-08	9.76	8.89	187	11,700	7.62

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results, July 2008 through July 2009
Second Quarter 2009 IM Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station

NOTES:

ND = not detected at listed reporting limit (RL)
FD = field duplicate sample
UF = unfiltered
LF = lab filtered
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

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.

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

Table B-2
IM Chemical Performance Monitoring Analytical Results, March 2005 through May 2009

TABLE B-2

Chemical Performance Monitoring Analytical Results, March 2005 through July 2009

Second Quarter 2009 IM Performance Monitoring and Site-Wide

Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-20-70	10-Mar-05	1940	-7.1	-59.0	740	378	9.98	ND (1.0)	81.7	198	55.4	9.89	431	0.412
	15-Jun-05	1980	-7.0	-60.0	749	388	9.79	ND (1.0)	73.8	189	55.4	10.5	433	0.414
	15-Jun-05 FD	2050	-8.3	-57.0	760	392	9.81	ND (1.0)	71.3	204	60.7	11.4	468	0.445
	11-Oct-05	1950	-7.2	-57.0	737	359	9.48	0.641	69.9	198	49.9	14.6	323	0.402
	15-Dec-05	1830	-7.1	-49.0	645	326	9.90	ND (1.0)	77.8	138	42.3	14.5	267	0.441
	10-Mar-06	1940	-7.2	-54.0	679	358	10.5	ND (0.5)	82.2	161	48.6	9.22	424	0.427
	05-May-06	1750	-8.2	-55.9	696	376	9.86	0.574	74.5	162	49.2	9.55	461	0.476
	03-Oct-06	1890	-8.1	-60.4	677	357	13.0	ND (5.0)	85.0	158	47.6	9.82	472	0.535
	03-Oct-06 FD	1840	-8.1	-60.5	669	352	12.9	ND (5.0)	80.0	154	45.9	9.51	466	0.515
	13-Dec-06	1910	-7.6	-61.2	678	352	12.7	0.699	77.5	149	44.3	9.09	458	0.459
	14-Mar-07	1740	-8.5	-64.3	689	358	13.7	0.641	80.0	139	42.2	8.83	451	0.503
	03-May-07	1750	-8.4	-66.7	697	344	25.1	ND (1.0)	77.5	139	41.2	8.65	390	0.477
	11-Oct-07	1820	-8.2	-63.9	699	367	15.6	ND (1.0)	80.0	130	39.1	11.0	600	0.54
	12-Mar-08	1790	-7.6	-65.2	695	360	22.1	ND (1.0)	77.0	139	41.2	10.7	403	0.51
	07-Oct-08	1900	-8.5	-64.4	650	360	15.0	0.61	83.0	136	37.9	10.5	400	0.608
	12-Mar-09	1900	-7.74	-60.8	670	330	17.0	ND (1.0)	79.0	128	40.2	9.95	496	0.549
MW-20-100	10-Mar-05	2490	-5.2	-49.0	466	511	9.98	ND (1.0)	84.2	133	19.8	8.98	712	0.859
	15-Jun-05	2500	-4.7	-46.0	921	506	9.02	ND (1.0)	84.0	137	21.3	9.06	592	0.713
	11-Oct-05	2400	-5.3	-48.0	887	484	8.87	0.731	82.3	170	23.7	15.2	500	0.718
	15-Dec-05	2340	-5.4	-40.0	813	404	9.65	ND (1.0)	82.7	136	21.4	14.8	406	0.709
	10-Mar-06	2500	-5.6	-50.3	861	475	9.94	ND (0.5)	92.5	171	27.0	7.75	597	0.803
	05-May-06	2260	-5.1	-46.4	927	522	9.99	ND (1.0)	82.5	193	32.0	10.8	577	0.716
	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

TABLE B-2

Chemical Performance Monitoring Analytical Results, March 2005 through July 2009

Second Quarter 2009 IM Performance Monitoring and Site-Wide

Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station

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	12-Mar-08	2470	-6.9	-58.3	827	442	19.2	ND (1.0)	870	218	35.4	11.9	469	0.702
	08-Oct-08	2200	-7.9	-60.2	760	420	16.0	ND (1.0)	90.0	215	36.8	10.3	453	0.669
	13-Mar-09	2200	-7.08	-58.2	770	420	16.0	ND (1.0)	97.0	213	36.4	11.6	543	0.89
MW-20-130	09-Mar-05	5520	-5.8	-56.0	3120	1080	10.9	ND (1.0)	68.9	219	12.1	24.7	2250	1.90
	09-Mar-05 FD	6200	-5.4	-51.0	3080	1080	10.9	ND (1.0)	68.9	231	12.8	25.4	2390	1.99
	15-Jun-05	7790	-5.0	-48.0	3410	1230	11.1	ND (1.0)	68.7	352	23.2	31.3	2980	2.75
	07-Oct-05	7330	-5.0	-47.0	3010	1210	10.9	1.04 J	72.4	349	13.9	38.4	2070	2.41
	16-Dec-05	7860	-5.8	-43.0	3260	1000	10.7	ND (2.5)	63.2	324	16.3	44.4	1780	1.98
	10-Mar-06	8610	-5.5	-48.8	3370	1250	10.6	ND (0.5)	74.5	312	18.9	27.7	2730	2.03
	05-May-06	7700	-5.3	-47.2	3900	1280	8.95	ND (1.0)	69.2	349	20.3	27.7	2810	2.40
	18-Oct-06	8450	-6.3	-51.4	3680	1100	11.5	ND (5.0)	70.0	358	20.9	28.0	2870	2.28
	13-Dec-06	7890	-6.0	-54.9	3970	1250	10.6	0.896	72.5	335	19.7	27.6	2900	2.31
	13-Dec-06 FD	8250	-5.9	-54.4	3950	1260	10.5	1.09	72.5	328	19.1	27.3	2830	2.24
	08-Mar-07	8450	-6.5	-57.7	3930	1240	11.3	1.08	70.0	353	21.3	27.0	2760	2.24
	08-Mar-07 FD	8510	-6.6	-57.4	3900	1210	11.3	1.06	72.5	351	21.3	26.8	2750	2.19
	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
MW-25	09-Mar-05	877	-8.4	-62.0	247	169	3.64	ND (0.5)	158	77.6	16.1	6.24	211	0.441
	14-Jun-05	942	-8.6	-61.0	289	183	3.89	ND (0.5)	137	93.5	20.0	8.91	253	0.464
	14-Jun-05 FD	980	-7.2	-59.0	294	185	3.94	ND (0.5)	137	100	20.9	9.06	268	0.475
	04-Oct-05	950	-8.2	-68.0	252	171	3.77	ND (0.5)	141	83.3	14.9	9.93	164	0.362
	04-Oct-05 FD	910	-8.3	-60.0	251	171	3.75	ND (0.5)	146	94.6	15.3	10.2	185	0.371
	14-Dec-05	838	-8.4	-55.0	224	158	3.74	ND (0.5)	153	75.5	14.5	9.80	143	0.396
	14-Dec-05 FD	896	-8.4	-50.0	219	155	3.75	ND (0.5)	156	73.0	14.1	9.71	151	0.382
	09-Mar-06	910	-8.4	-64.1	245	164	3.83	ND (0.5)	170	76.4	15.6	6.97	210	0.39

TABLE B-2

Chemical Performance Monitoring Analytical Results, March 2005 through July 2009

Second Quarter 2009 IM Performance Monitoring and Site-Wide

Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station

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	03-May-06	907	-9.0	-59.4	272	172	3.95	ND (0.5)	150	78.0	17.3	7.38	222	0.418
	03-May-06 FD	924	-9.0	-61.0	274	173	3.94	ND (0.5)	155	79.7	17.8	7.53	245	0.431
	03-Oct-06	892	-8.9	-62.7	222	158	4.09	ND (0.5)	163	73.3	15.0	7.25	206	0.466
	06-Mar-07	843	-9.0	-66.9	221	164	3.95	ND (0.5)	160	72.9	14.4	6.85	203	0.459
	02-Oct-07	796	-9.0	-65.8	189	155	4.58	ND (1.0)	180	66.0	14.0	7.90	200	0.49
	02-Oct-07 FD	758	-9.0	-65.7	195	157	4.40	ND (1.0)	190	63.0	13.0	7.70	220	0.46
	07-Oct-08	740	-9.9	-68.5	170	150	4.30	ND (0.5)	200	59.2	12.9	9.89	143	0.559
	07-Oct-08 FD	730	-10.1	-69.1	170	150	4.40	ND (0.5)	210	58.4	12.9	10.2	144	0.559
MW-26	08-Mar-05	1840	-8.8	-70.0	756	370	4.48	ND (0.5)	98.7	166	41.6	10.7	439	0.557
	08-Mar-05 FD	1800	-8.7	-70.0	708	338	4.45	ND (0.5)	96.1	166	40.9	11.4	438	0.559
	13-Jun-05	2130	-8.2	-65.0	847	371	4.90	ND (0.5)	103	178	44.6	14.0	511	0.663
	04-Oct-05	2120	-7.8	-68.0	779	372	4.88	0.601	109	166	40.4	19.8	352	0.526
	12-Dec-05	2610	-8.5	-55.0	788	372	4.88	0.546	99.7	162	39.9	20.3	349	0.613
	08-Mar-06	2070	-8.6	-60.4	772	324	4.90	ND (0.5)	121	155	38.1	11.7	434 J	0.621
	01-May-06	2130	-8.9	-62.7	927	382	4.87	ND (0.5)	121	165	42.0	12.8	555	0.723
	03-Oct-06	2220	-8.8	-63.0	894	370	6.22	ND (2.5)	105	170	43.9	12.8	510	0.692
	12-Mar-07	2280	-9.0	-67.0	917	387	6.02	0.646	90.0	163	41.6	12.9	621	0.622
	02-Oct-07	2180	-8.6	-66.3	945	391	7.84	ND (1.0)	100	170	42.0	15.0	620	0.66
	12-Mar-08	2500	-8.1	-67.2	908	398	10.7 J	ND (1.0)	103	176	44.1 J	16.2 J	498	0.589
	12-Mar-08 FD	2420	-8.9	-68.2	905	398	7.61 J	ND (1.0)	102	160	32.8 J	12.7 J	462	0.601
	08-Oct-08	2400	-8.7	-66.5	930	440	10.0	ND (1.0)	110	183	45.8	14.6	555	0.591
	10-Mar-09	2300	-8.41	-65.3	870	440 J	9.80	1.40	100	172	47.9	14.8	585	0.604
	10-Mar-09 FD	2300	-8.68	-65.8	860	440 J	9.70	1.50	100	174	46.2	15.6	631	0.65
MW-27-20	08-Mar-05	1250	-12	-102.0	190	432	ND (0.5)	ND (0.5)	215	137	56.6	4.89	195	ND (0.2)
	18-Jul-05	---	-11.9	-98.0	81.9	228	ND (0.5)	ND (0.5)	160	96.1	30.1	4.27	94.8	ND (0.2)
	05-Oct-05	742	-11.8	-102.0	91.1	252	ND (0.5)	ND (0.5)	175	88.6	31.4	5.48	81.0	ND (0.2)
	14-Dec-05	1020	-11.7	-91.0	118	347	ND (0.5)	ND (0.5)	216	116	41.8	6.96	116	ND (0.2)
	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)

TABLE B-2

Chemical Performance Monitoring Analytical Results, March 2005 through July 2009

Second Quarter 2009 IM Performance Monitoring and Site-Wide

Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station

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-27-20	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	---
MW-28-25	10-Mar-05	880	-12.2	-95.0	112	302	ND (0.5)	ND (0.5)	204	129	36.3	3.50	122	ND (0.2)
	15-Jun-05	974	-11.6	-91.0	108	359	ND (0.5)	ND (0.5)	221	133	38.9	6.54	117	ND (0.2)
	06-Oct-05	884	-11.7	-95.0	99.8	300	ND (0.5)	ND (0.5)	197	123	37.0	6.61	88.7	ND (0.2)
	16-Dec-05	1010	-11.4	-90.0	128	348	ND (0.5)	ND (0.5)	212	134	41.5	6.46	107	ND (0.2)
	09-Mar-06	746	-11.5	-93.9	84.4	225	ND (0.5)	ND (0.5)	244	98.5	27.5	4.15 J	88.5	ND (0.2)
	05-May-06	741	-11.4	-90.3	110	302	ND (0.5)	ND (0.5)	216	117	35.7	5.77	118	ND (0.2)
	11-Oct-06	1050	-12.2	-95.0	86.3	247	ND (0.5)	ND (0.5)	225	133	40.8	5.47	132	ND (0.2)
	04-Oct-07	812	-12.1	-98.7	110	307	ND (1.0)	ND (1.0)	230	120	37.0 J	4.80	150	0.26 J
	08-Oct-08	---	---	---	100	280	ND (0.5)	---	220	109	34.7	---	102	---
MW-30-30	10-Mar-05	38800	-9.8	-79.0	16000	4270	ND (5.0)	7.91	421	1590	1600	95.4	13600	4.97
	07-Oct-05	36400	-8.5	-75.0	17600	4000	ND (0.5)	ND (10)	521	1020	842	93.6	7650	5.20
	15-Dec-05	35700	-8.7	-59.0	19700	4070	ND (1.0)	3.13	504	1060	894	110	8540	6.14
	13-Mar-06	39700 J	-8.8	-70.5	18600	4530	ND (0.5)	ND (50)	650	1050	892	77.2	11300	4.62
	02-May-06	32400	-10.3	-70.7	15400	3300	ND (0.5)	ND (5.0)	756	882	828	59.4	10300	3.95
	10-Oct-06	29400	-9.4	-68.7	17800	4400	ND (2.5)	ND (2.5)	550	729	653	55.0	10200	4.32
	08-Oct-07	27400	-9.0	-73.9	13700	3370	ND (1.0)	3.88	800	650	540	56.0	9600	4.50
MW-30-50	10-Mar-05	6470 J	-8.3	-68.0	4660	672	ND (0.5)	1.03	324	335	107	16.5	2040	1.15
	07-Oct-05	6860	-9.4	-79.0	3060	857	ND (0.5)	0.899 J	252	438	101	37.0	1780	1.27
	16-Dec-05	5850	-10.5	-65.0	2360	578	ND (0.5)	0.645	212	265	77.9	32.9	1260	1.19
	09-Mar-06	5380	-9.8	-83.5	2420	651	ND (0.5)	ND (0.5)	275	226	66.2	14.6	1640	1.18
	02-May-06	5420	-10.4	-73.6	2380	612	ND (0.5)	3.41	261	243	70.3	16.4	1750	1.22
	11-Oct-06	4170	-10.7	-82.2	1980	468	ND (0.5)	ND (0.5)	290	171	48.5	14.0	1370	1.11
	11-Oct-06 FD	3930	-11	-82.6	1810	462	ND (0.5)	ND (0.5)	298	163	46.1	14.1	1340	1.08
MW-31-60	09-Mar-05	1540	-8.6	-63.0	649	210	4.94	ND (0.5)	76.6	108	17.3	5.97	424	0.401
	13-Jun-05	1660	-8.2	-65.0	745	207	4.12	ND (0.5)	70.0	121	18.9	6.57	403	0.388
	06-Oct-05	1660	-8.6	-65.0	691	206	4.01	ND (0.5)	77.3	109	16.5	9.75	308	0.462

TABLE B-2

Chemical Performance Monitoring Analytical Results, March 2005 through July 2009

Second Quarter 2009 IM Performance Monitoring and Site-Wide

Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station

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-31-60	13-Dec-05	1620	-8.7	-54.0	669	199	4.14	ND (0.5)	73.0	87.0	15.4	9.32	275	0.359
	15-Mar-06	1560 J	-8.6	-65.6	661	191	4.37	ND (0.5)	89.3	106	17.5	7.30	403	0.393
	15-Mar-06 FD	1640 J	-8.6	-64.9	662	192	4.34	ND (0.5)	81.9	101	16.8	6.94	391	0.383
	01-May-06	1630	-9.6	-63.2	691	209	4.58	ND (0.5)	79.6	118	20.1	7.78	467	0.449
	05-Oct-06	1620	-9.4	-66.3	687	205	5.00	ND (0.5)	80.0	113	20.6	9.60 J	325	0.464
	12-Mar-07	1750	-9.3	-69.0	757	222	4.93	ND (0.5)	72.5	116	20.3	6.05	454	0.402 J
	04-Oct-07	1720	-9.4	-69.6	799	208	5.15	ND (1.0)	80.0	150	26.0	7.30	580	0.64
	06-Oct-08	2000	-10.2	-72.2	810	240	4.20	ND (1.0)	81.0	150	26.0	9.39	460	0.399
MW-32-20	09-Mar-05	12500	-7.2	-65.0	6930	1660	ND (0.5)	3.51	123	838	302	36.9	4000	2.76
	17-Jun-05	10200	-9.0	-67.0	4810	690	ND (0.5)	ND (2.5)	676	566	231	23.3	2620	1.75
	04-Oct-05	28800	-7.8	-65.0	14200	2420	ND (5.0)	6.19	733	1380 J	613 J	91.1 J	5400 J	4.75 J
	16-Dec-05	24600	-7.8	-61.0	12200	2140	ND (1.0)	3.48	861	1470	552	90.4	4950	4.16
	10-Mar-06	20900	-8.3	-65.5	10600	1970	ND (0.5)	ND (0.5)	432	1350	530	56.1	6440	3.54
	04-May-06	16900	-8.1	-64.9	9430	1380	ND (0.5)	2.35	218	937	445	46.0	4780	2.87
	02-Oct-06	46200 J	-8.6	-67.1	20200	3190	ND (2.5)	7.30	660	1870	1070	87.0	11300	6.34
	11-Dec-06	37900	-8.0	-67.0	17900	3020	ND (5.0)	7.67	825	1530	785	81.7	8420	4.98
	06-Mar-07	27600	-8.7	-72.7	16200	2210	0.925	5.93	765	1460	635	64.4	7110	3.92
	30-Apr-07	17700	-9.6	-78.1	9820	1310	ND (0.2)	3.78	770	965	484	51.4	5520	3.02
	01-Oct-07	37200	-8.3	-70.1	20600	3160	ND (1.0)	6.44	700	1800	1100	93.0	9900	5.70
	10-Mar-08	26000	-9.4	-72.6	15800	2280	ND (1.0)	5.66	800	1190	710	67.4	11600	2.31
	03-Oct-08	---	---	---	21000	3500	ND (5.0)	---	640	1700	1080	---	9550	---
	10-Mar-09	29000	-8.91	-70.5	15000	2100 J	ND (5.0)	15.0	750	1620	970	96.6	7020	3.53
MW-32-35	09-Mar-05	3560	-8.2	-68.0	1770	465	ND (0.5)	0.845	260	312	85.5	13.0	944	1.07
	17-Jun-05	7550	-9.5	-72.0	3520	787	ND (0.5)	ND (2.5)	223	506	120	14.8	2110	1.18
	04-Oct-05	8340	-8.3	-70.0	3840	765	ND (0.5)	ND (5.0)	208	567	134	29.3	1530	1.26
	16-Dec-05	7660	-8.8	-63.0	3510	710	ND (1.0)	1.02	219	606	128	30.0	1580	1.25
	10-Mar-06	9230	-8.6	-74.0	4210	1010	ND (0.5)	ND (0.5)	234	654	129	19.2	2360	1.13
	04-May-06	9840	-9.1	-67.8	4960	1130	ND (0.5)	ND (0.5)	218	693	148	19.5	2800	1.38
	02-Oct-06	11200	-9.4	-71.4	5430	1050	ND (2.5)	ND (2.5)	290	839	165	23.9	3260	1.48

TABLE B-2

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Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-32-35	11-Dec-06	10400	-9.0	-70.4	5090	1000	ND (0.5)	1.90	338	845	173	22.5	2620	1.43
	06-Mar-07	12600	-10.2	-75.4	6070	1200	ND (0.5)	2.65	360	1080	209	23.5	2910	1.35
	30-Apr-07	12100	-9.9	-78.7	6610	1280	ND (0.2)	2.60	475	1250	273	26.2	3280	1.35
	01-Oct-07	13700	-8.9	-72.7	6830	1120	ND (1.0)	2.62	490	1000	390	29.0	4000	1.70
	03-Oct-08	15000	-9.8	-73.1	7600	1300	ND (2.5)	3.10	550	829	150	52.3	3490	1.49
MW-34-55	10-Mar-05	6230	-10.8	-82.0	2620	739	ND (0.5)	0.654	240	366	71.3	29.1	1900	1.19
	15-Jul-05	---	-10.3	-84.0	2250	607	ND (0.5)	ND (0.5)	242	247	52.0	16.5	1420	1.02
	05-Oct-05	5150	-10.6	-88.0	2170	619	ND (0.5)	ND (0.5)	232	272	59.1	25.8	1230	1.20
	14-Dec-05	5100	-10.8	-74.0	2150	552	ND (0.5)	0.588	236	217	45.0	27.2	965	0.937
	08-Mar-06	4850	-10.8	-86.8	2080	593	ND (0.5)	ND (0.5)	272	256	54.2	13.5	1640	0.956
	03-May-06	4320	-11.5	-84.3	2070	500	ND (0.5)	ND (0.5)	302	198	44.8	11.1	1360	0.846
	04-Oct-06	1680 J	-12.2	-94.8	443	230	ND (0.5)	ND (0.5)	368	37.6	8.08	4.59	536	0.54
	03-Oct-07	730	-11.3	-96.6	109	266	ND (1.0)	ND (1.0)	190	15.0	3.30	3.30	290	0.26
	07-Oct-08	700	-13	-100.0	100	250	ND (0.5)	---	170	72.4	16.9	5.26	192	0.248
MW-34-80	08-Mar-05	6940	-10.4	-83.0	4180	1040	ND (0.5)	1.01	304	439	68.1	28.0	2750	1.65
	15-Mar-05	8980	---	---	3920	ND (5.0)	ND (1.0)	---	288	445	65.7	29.7	2990	---
	30-Jun-05	7840	-8.4	-82.0	3910	979	ND (0.5)	ND (0.5)	302	497	76.5	27.7	2670	1.66
	05-Oct-05	10200	-10.1	-85.0	3880	1060	ND (0.5)	ND (0.5)	302	429	72.5	47.4	1660	1.57
	14-Dec-05	8800	-10.2	-71.0	3700	880	ND (0.5)	0.854	297	432	68.3	54.9	1710	1.54
	09-Mar-06	7830	-9.9	-86.8	3520	986	ND (0.5)	ND (0.5)	313	383	65.8	24.0	2420	1.49
	03-May-06	7950	-11.7	-77.6	3700	921	ND (0.5)	ND (0.5)	297	425	70.3	23.9	2480	1.38
	04-Oct-06	7080	-11.3	-81.8	3210	786	ND (0.5)	0.737	268	341	65.4	21.1	2170	1.31
	12-Dec-06	6510	-10.5	-80.9	3190	789	ND (0.5)	0.742	288	298	62.9	18.9	2040	1.26
	05-Mar-07	6360 J	-11.5	-85.8	3300	783	ND (0.5)	0.72	205	315	68.3	19.4	2020	1.29
	30-Apr-07	6390	-11.5	-88.9	3320 J	889 J	ND (0.2)	ND (1.0)	245	282	57.0	18.6	2080	1.33
	03-Oct-07	5490	-11.3	-87.8	2630	696	ND (1.0)	ND (1.0)	240	220	53.0	21.0	2000	1.20
	13-Dec-07	5420	-10.9	-88.6	2380	698	ND (1.0)	ND (1.0)	264	193	49.1	25.4	1450	1.09
	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

TABLE B-2

Chemical Performance Monitoring Analytical Results, March 2005 through July 2009

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PG&E Topock Compressor Station

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-34-80	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
MW-34-100	14-Mar-05	10800	---	---	5010	1210	ND (1.0)	---	175	221	17.4	34.1	3600	---
	21-Jun-05	11300	-9.7	-75.0	5350	1270	1.05	ND (0.5)	179	229	17.4	27.1	3510	2.22
	21-Jun-05 FD	10900 J	-9.5	-77.0	4920	1180	1.03	ND (0.5)	179	243	18.2	32.1	3740	2.36
	05-Oct-05	10400	-9.9	-83.0	4530	1150	1.20	ND (0.5)	172	171	13.8	55.2	2450	2.57
	05-Oct-05 FD	10400	-9.9	-83.0	4680	1200	1.21	ND (0.5)	172	228	14.1	50.9	2730	2.57
	14-Dec-05	---	---	---	---	---	---	---	---	226	14.9	62.9	2530	2.32
	14-Dec-05 FD	---	---	---	---	---	---	---	---	220	15.1	64.2	2530	2.40
	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
Surface Water Stations														
R-27	07-Mar-05	669	-12.3	-102.0	92.7	244	ND (0.5)	ND (0.5)	136	82.8	31.3	4.72	108	ND (0.2)
	14-Jun-05	686	-11.4	-92.0	90.9	266	ND (0.5)	ND (0.5)	127	81.9	29.8	6.04	98.9	ND (0.2)
	05-Oct-05	678	-11.6	-94.0	85.1	255	ND (0.5)	ND (0.5)	130	101	36.2	6.56	91.2	ND (0.2)
	16-Dec-05	718	-11.7	-87.0	87.9	253	ND (0.5)	ND (0.5)	126	85.5	29.5	5.99	75.6	ND (0.2)
	06-Mar-06	656	-11.8	-92.1	90.6	268	ND (0.5)	ND (0.5)	144	83.5	29.4	5.44 J	101	ND (0.2)
	03-May-06	567	-12.8	-93.9	93.1	267	ND (0.5)	ND (0.5)	139	87.0	31.1	3.12 J	106	ND (0.2)
	04-Oct-06	752 J	-12.2	-94.9	91.5	261	ND (0.5)	ND (0.5)	128	82.9	31.5	6.24 J	98.1	ND (0.2)
	20-Dec-06	680	-12.7	-98.1	94.5	266	ND (0.5)	ND (0.5)	138	83.2	30.9	3.64	106	ND (0.2)
	13-Mar-07	750 J	-13	-99.5	96.5	267	0.537	ND (0.5)	130	86.9	31.3	4.73	106	ND (0.2)

TABLE B-2

Chemical Performance Monitoring Analytical Results, March 2005 through July 2009

Second Quarter 2009 IM Performance Monitoring and Site-Wide

Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Surface Water Stations														
R-27	08-May-07	715 J	-12.9	-104.0	92.6	269	ND (0.5)	ND (0.5)	143	84.3	29.8	5.55	100	ND (0.2)
	11-Sep-07	650	-12.5	-101.0	89.4	253	0.336	ND (0.2)	132	74.2	28.9	5.47	86.5	ND (0.2)
	05-Dec-07	---	-11.7	-99.0	94.7	256	ND (1.0)	ND (0.2)	137	89.8	31.7	6.60	93.4	0.157
	02-Apr-08	---	---	---	93.0	267	ND (1.0)	ND (1.0)	136	80.2	30.7	5.50	106	0.432
	17-Jun-08	682	-13	-101.0	91.6	254	ND (1.0)	ND (1.0)	134	76.2	31.8	6.69	89.7	ND (0.2)
R-28	08-Mar-05	651	-12.5	-102.0	90.4	231	ND (13)	ND (0.5)	132	83.7	31.4	5.02	107	ND (0.2)
	14-Jun-05	680	-11.6	-95.0	91.2	268	ND (0.5)	ND (0.5)	127	78.5	28.5	5.08	94.5	ND (0.2)
	05-Oct-05	672	-11.6	-94.0	85.5	255	ND (0.5)	ND (0.5)	122	85.7	30.4	6.30	77.0	ND (0.2)
	16-Dec-05	710	-11.5	-83.0	88.1	254	ND (0.5)	ND (0.5)	126	87.2	29.8	6.11	76.8	ND (0.2)
	06-Mar-06	675	-12.3	-93.4	91.0	270	ND (0.5)	ND (0.5)	146	76.6	26.6	5.22 J	91.5	ND (0.2)
	03-May-06	586	-13	-92.1	93.4	270	ND (0.5)	ND (0.5)	136	88.1	31.4	4.04 J	107	ND (0.2)
	04-Oct-06	644 J	-12.6	-95.3	90.9	259	ND (0.5)	ND (0.5)	133	84.2	32.1	6.17 J	96.5	ND (0.2)
	20-Dec-06	615	-12.4	-99.6	93.3	262	ND (0.5)	ND (0.5)	143	85.7	32.0	4.66	108	ND (0.2)
	14-Mar-07	710	-12.8	-100.0	96.7	268	0.534	ND (0.5)	133	87.9	31.0	5.71	105	ND (0.2)
	09-May-07	690	-13	-102.0	95.8	271	ND (0.5)	ND (0.5)	143	86.1	30.5	5.92	103	ND (0.2)
	12-Sep-07	682	-12.4	-99.4	106	296	0.372	ND (0.2)	122	73.8	29.9	6.36	89.2	ND (0.2)
	06-Dec-07	---	-11.7	-98.6	96.5	258	0.345	ND (0.2)	139	75.7	30.4	6.62	79.4	ND (0.2)
	02-Apr-08	---	---	---	92.5	309	ND (1.0)	ND (1.0)	137	84.7	31.4	5.58	108	0.467
	18-Jun-08	672	-13.2	-102.0	89.4	248	ND (1.0)	ND (1.0)	132	43.3	31.1	6.95	93.9	ND (0.2)
	17-Sep-08	640	---	---	91.4	256	ND (0.5)	ND (0.5)	132	83.4	31.2	6.48	78.0	ND (0.2)
	04-Dec-08	649	-11.9	-97.0	97.4	260	ND (1.0)	ND (1.0)	135	81.7	30.0	5.95	114	0.262
	21-Jan-09	652	-12	-96.7	91.5	253	ND (0.5)	ND (0.5)	134	79.2	27.8	6.01	91.7	ND (0.2)
	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)

TABLE B-2

Chemical Performance Monitoring Analytical Results, March 2005 through July 2009

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PG&E Topock Compressor Station

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).

Appendix B Figures
Cr(VI) Concentration Graphs for Selected Interim Measure Monitoring Wells

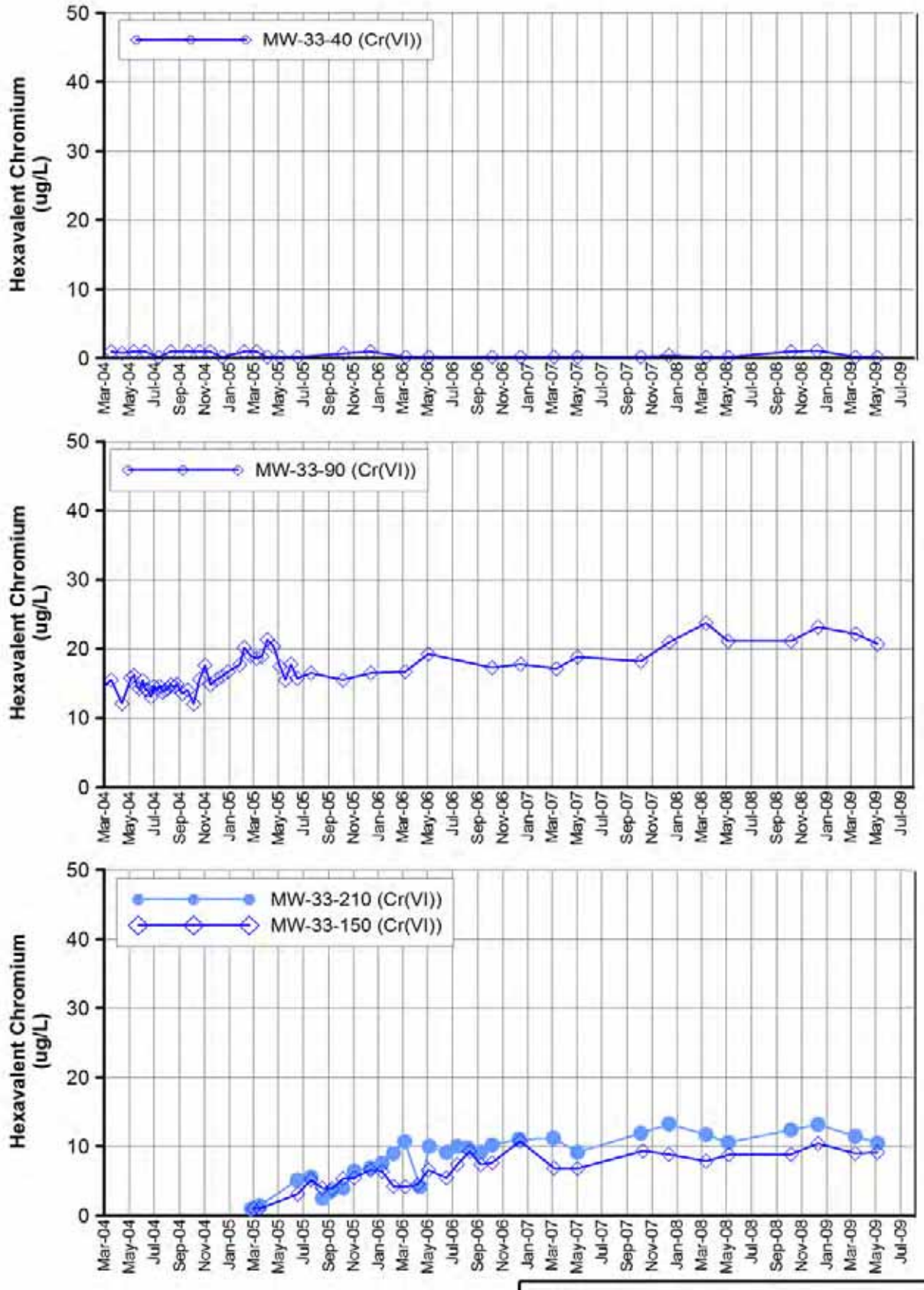

FIGURE B-1
HEXAVALENT CHROMIUM
IN MW-33 CLUSTER

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

\\Zinfandel\Proj\PacificGasElectricCo\TopockProgram\Project_2009_CombinedMonitoring\Reporting\GMP_PMP\2Q - Report\PMR_Q2_August2009\Draft\Appendices\B_Cr6_Data_GenChem\Work Files

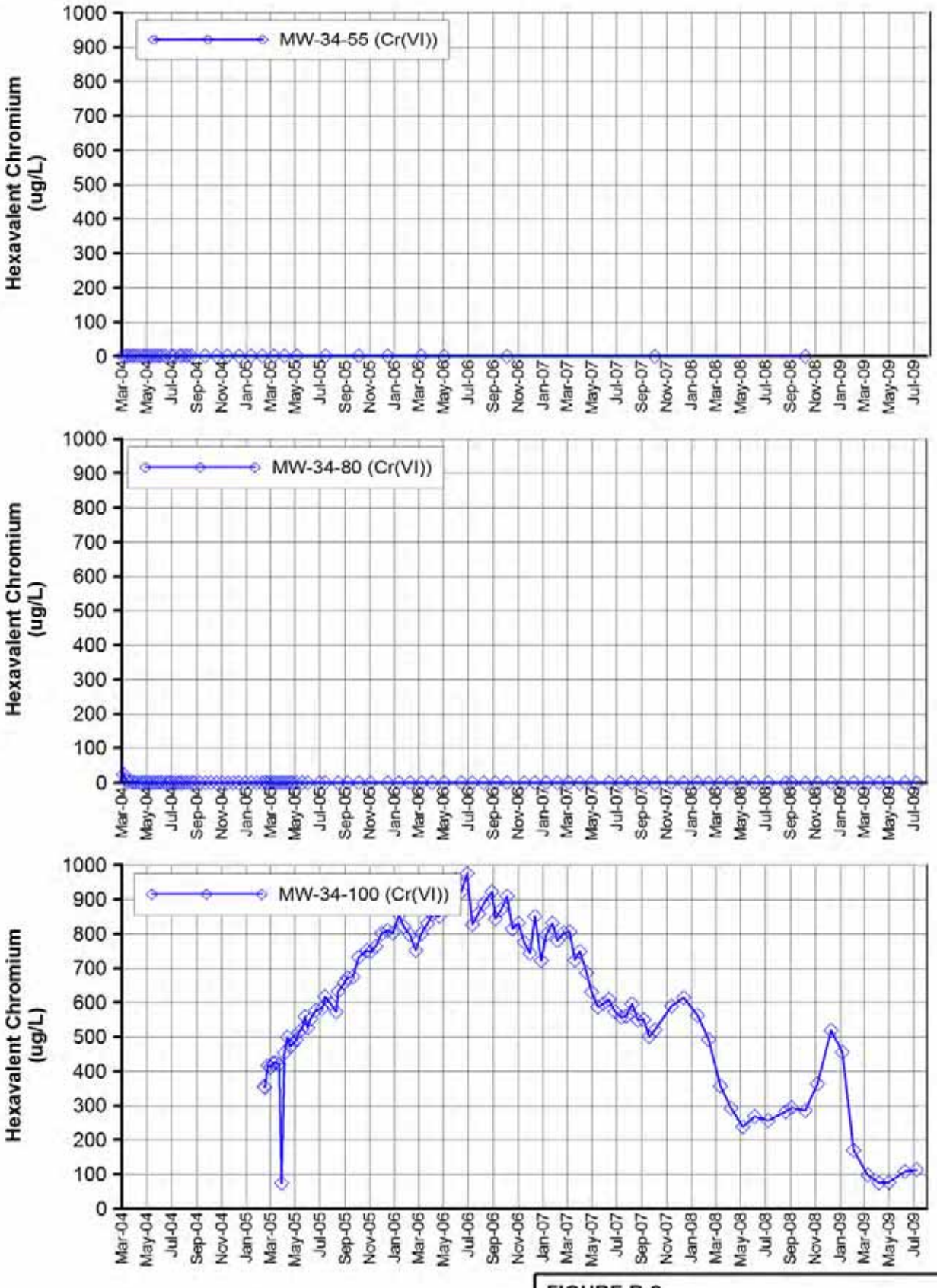

FIGURE B-2
HEXAVALENT CHROMIUM
IN MW-34 CLUSTER

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

\\Zinfandel\Proj\PacificGasElectricCo\TopockProgram\Project_2009_CombinedMonitoring\Reporting\GMP_PMP\2Q - Report\PMR_Q2_August2009\Draft\Appendices\B_Cr6_Data_GenChem\Work Files

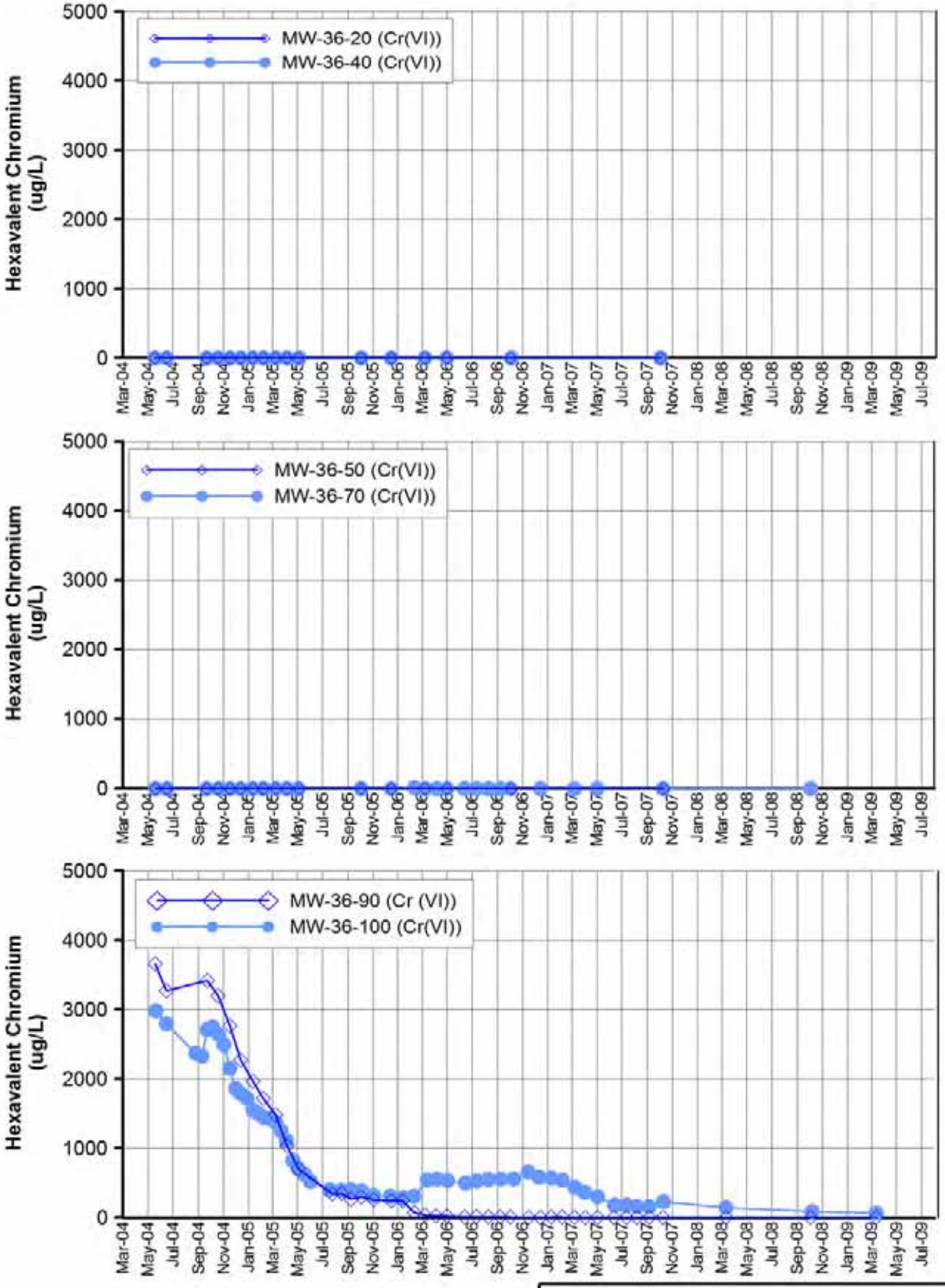

FIGURE B-3
HEXAVALENT CHROMIUM
IN MW-36 CLUSTER

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

\\Zinfandel\Proj\PacificGasElectricCo\TopockProgram\Project_2009_CombinedMonitoring\Reporting\GMP_PMP\2Q - Report\PMR_Q2_August2009\Draft\Appendices\B_Cr6_Data_GenChem\Work Files

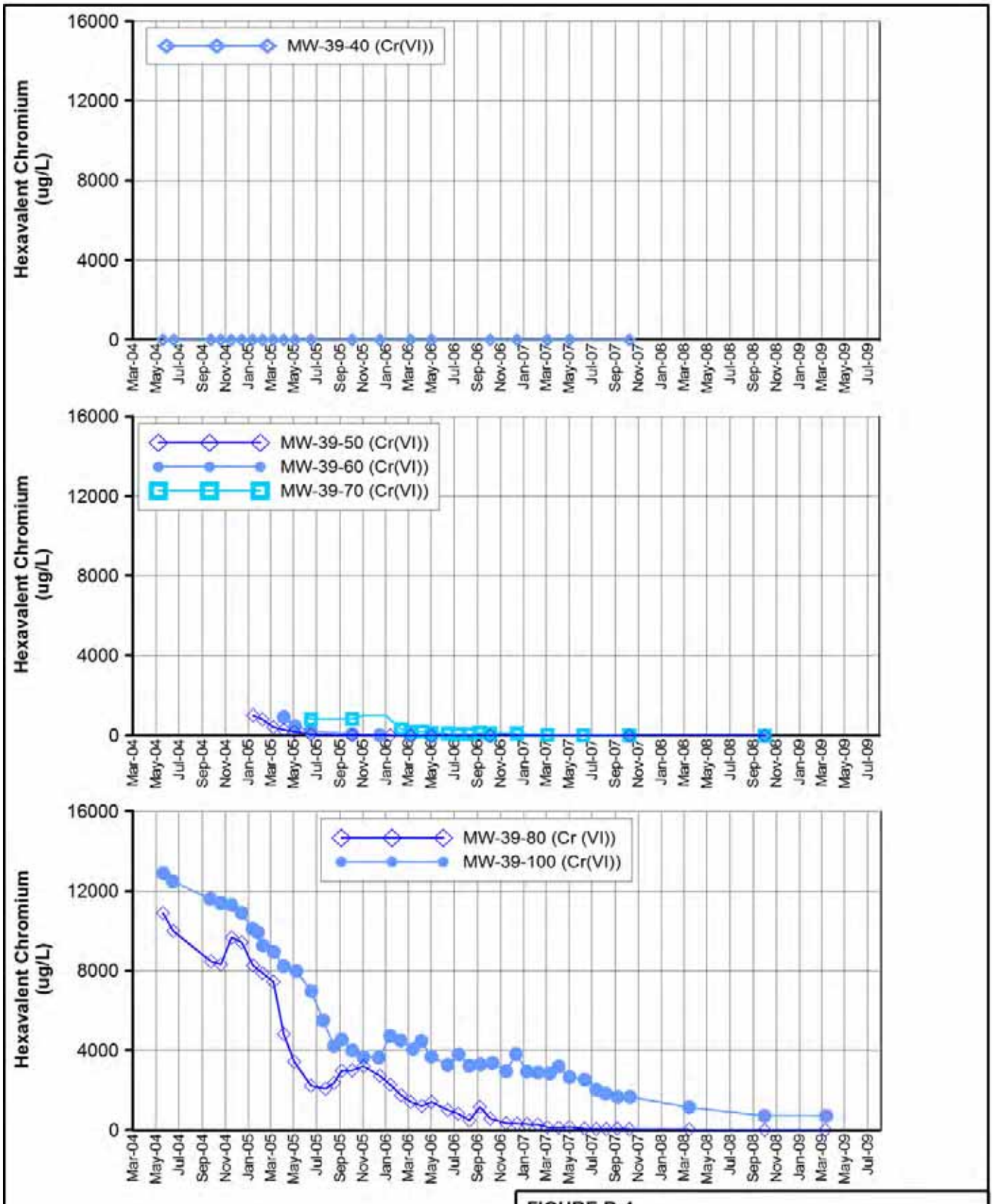

FIGURE B-4
HEXAVALENT CHROMIUM
IN MW-39 CLUSTER

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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\\Zinfandel\Proj\PacificGasElectricCo\TopockProgram\Project_2009_CombinedMonitoring\Reporting\GMP_PMP\2Q - Report\PMR_Q2_August2009\Draft\Appendices\B_Cr6_Data_GenChem\Work Files

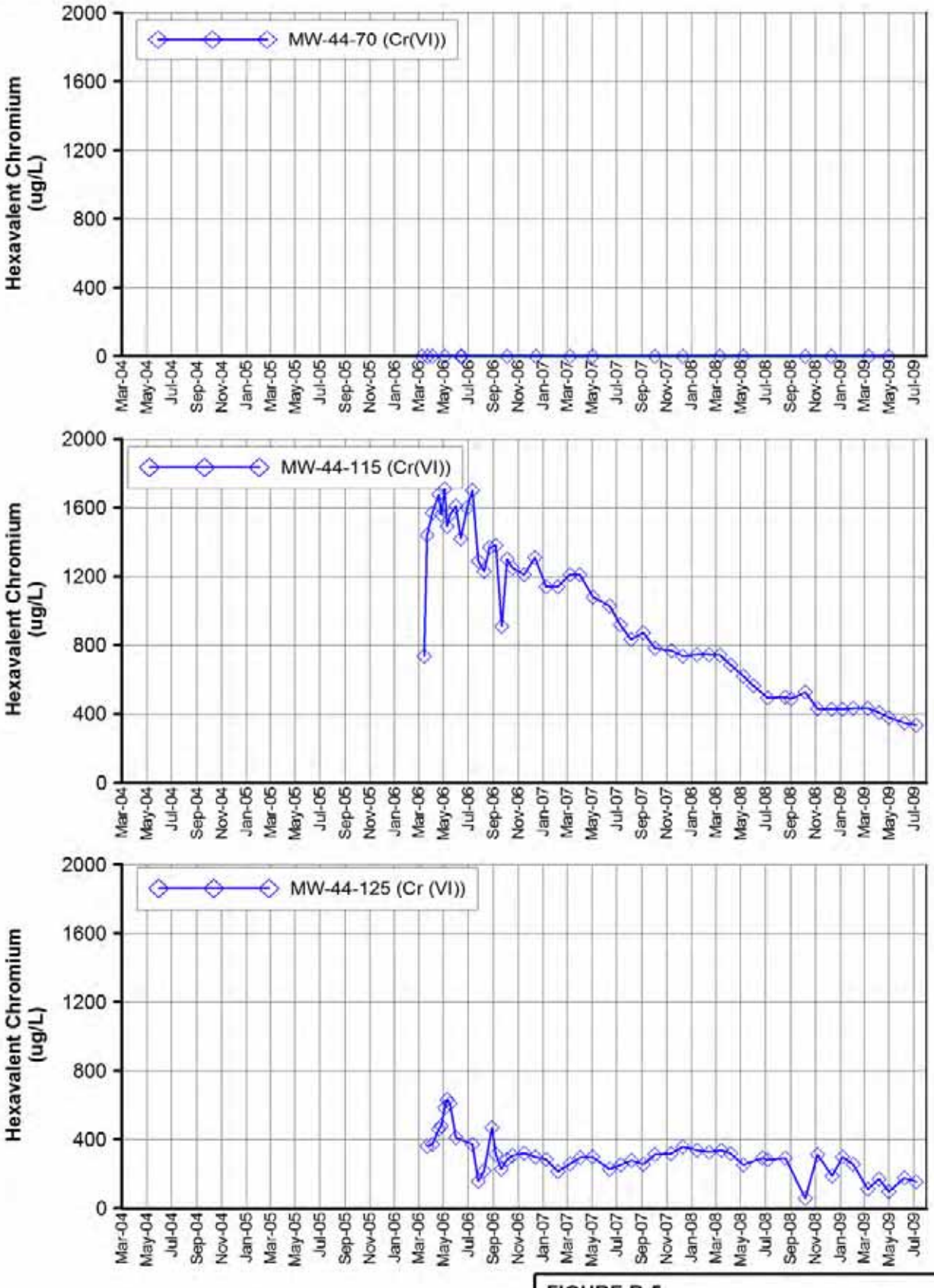

FIGURE B-5
HEXAVALENT CHROMIUM
IN MW-44 CLUSTER

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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\\Zinfandel\Proj\PacificGasElectricCo\TopockProgram\Project_2009_CombinedMonitoring\Reporting\GMP_PMP\2Q - Report\PMR_Q2_August2009\Draft\Appendices\B_Cr6_Data_GenChem\Work Files

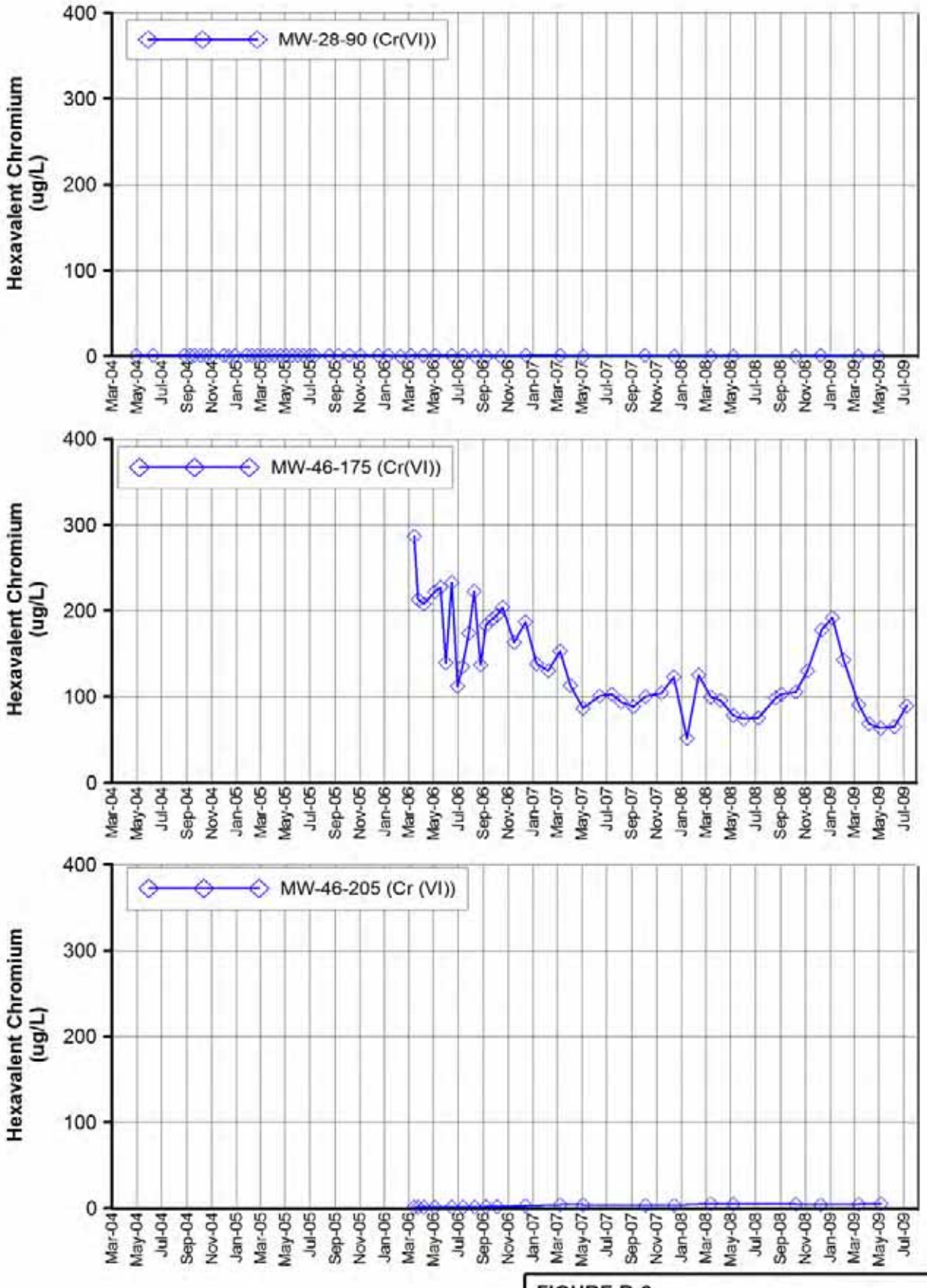


FIGURE B-6
HEXAVALENT CHROMIUM
IN MW-46 CLUSTER

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

\\Zinfandel\Proj\PacificGasElectricCo\TopockProgram\Project_2009_CombinedMonitoring\Reporting\GMP_PMP\2Q - Report\PMR_Q2_August2009\Draft\Appendices\B_Cr6_Data_GenChem\Work Files

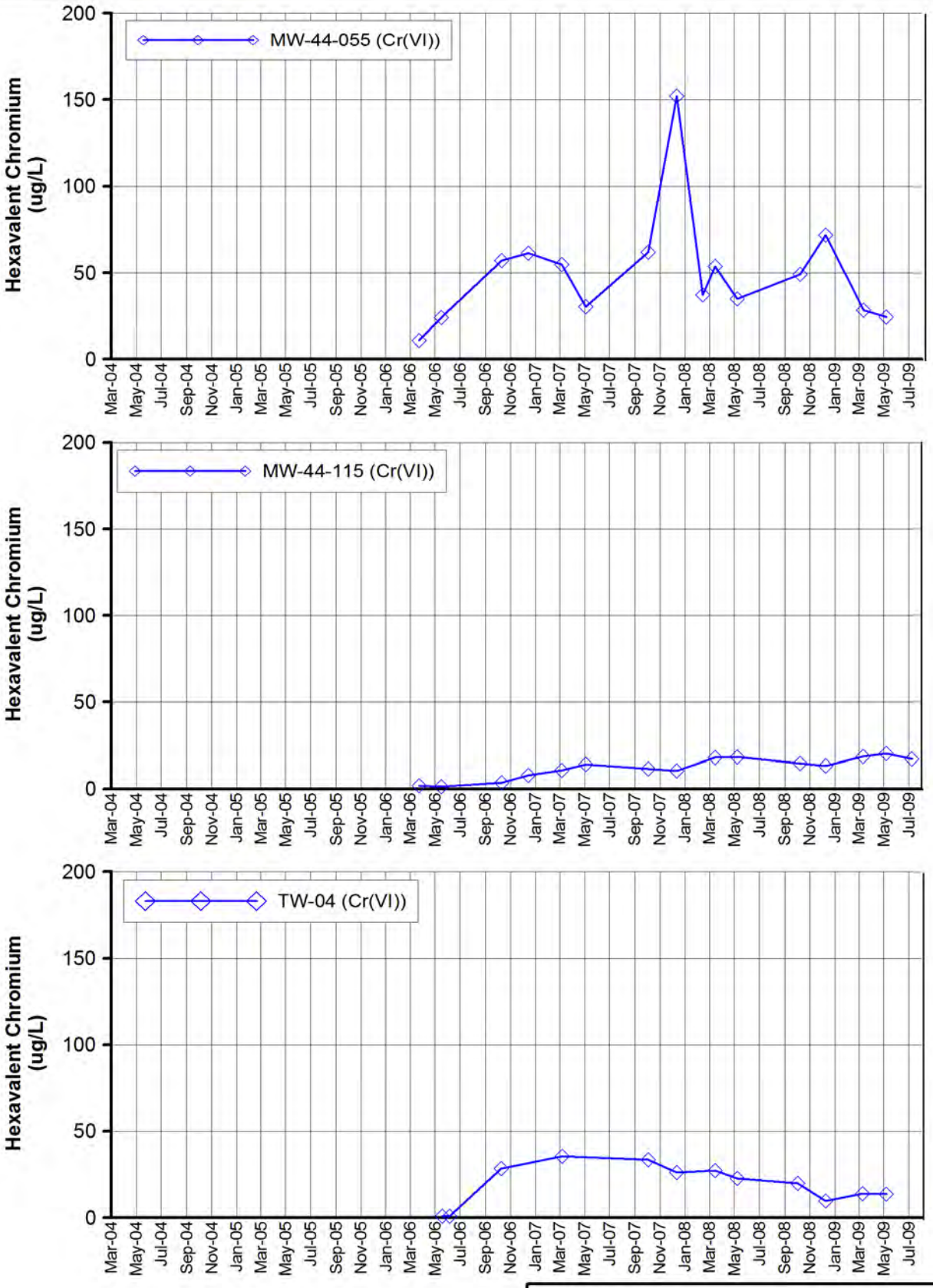


FIGURE B-7
HEXAVALENT CHROMIUM
IN MW-47 CLUSTER AND TW-04

SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

Appendix C
Hydraulic Data for Interim Measure Reporting Period

Table C-1
Average Monthly and Quarterly Groundwater Elevations, May through July 2009

TABLE C-1
Average Monthly and Quarterly Groundwater Elevations, May through July 2009
Second Quarter 2009 IM Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station

Well ID	Aquifer Zone	May 2009	June 2009	July 2009	Quarter Average	Days in Quarter Average
I-3	River Station	456.32	455.73	455.65	455.90	92
MW-20-070	Shallow Zone	455.21	454.70	454.98	454.97	92
MW-20-100	Middle Zone	454.70	454.17	454.63	454.50	92
MW-20-130	Deep Wells	454.28	453.67	454.19	454.05	92
MW-22	Shallow Zone	455.89	455.34	455.24	455.49	92
MW-25	Shallow Zone	456.49	456.22	456.10	456.27	92
MW-26	Shallow Zone	456.17	455.87	455.81	455.95	92
MW-27-020	Shallow Zone	456.17	455.56	455.49	455.75	91
MW-27-060	Middle Zone	456.12	455.52	455.46	455.70	91
MW-27-085	Deep Wells	456.16	455.67	455.63	455.82	91
MW-28-025	Shallow Zone	456.20	455.60	455.55	455.79	91
MW-28-090	Deep Wells	456.22	455.65	455.74	455.87	91
MW-30-050	Middle Zone	455.96	455.35	455.42	455.58	91
MW-31-060	Shallow Zone	455.94	455.44	455.45	455.61	92
MW-31-135	Deep Wells	455.45	454.85	455.18	455.16	91
MW-32-035	Shallow Zone	456.10	455.52	455.44	455.69	92
MW-33-040	Shallow Zone	456.18	455.66	455.58	455.81	91
MW-33-090	Middle Zone	456.30	455.78	455.72	455.94	91
MW-33-150	Deep Wells	456.32	455.85	455.82	456.00	91
MW-34-055	Middle Zone	456.21	455.61	455.61	455.81	91
MW-34-080	Deep Wells	456.22	455.63	455.72	455.86	91
MW-34-100	Deep Wells	456.13	455.49	455.61	455.75	91
MW-35-060	Shallow Zone	INC	INC	455.87	455.85	33
MW-35-135	Deep Wells	456.81	456.35	456.18	456.45	92
MW-36-020	Shallow Zone	456.12	455.55	455.54	455.74	91
MW-36-040	Shallow Zone	456.01	455.41	455.43	455.62	91
MW-36-050	Middle Zone	456.01	455.42	455.45	455.63	91
MW-36-070	Middle Zone	455.90	455.31	455.34	455.52	91
MW-36-090	Deep Wells	455.17	454.57	454.87	454.87	91
MW-36-100	Deep Wells	455.47	454.89	455.21	455.19	91
MW-39-040	Shallow Zone	455.83	455.25	455.34	455.48	91
MW-39-050	Middle Zone	455.64	455.06	455.18	455.30	91
MW-39-060	Middle Zone	455.52	454.94	455.13	455.20	91
MW-39-070	Middle Zone	455.24	454.66	455.00	454.97	91
MW-39-080	Deep Wells	455.34	454.76	455.08	455.06	91
MW-39-100	Deep Wells	455.78	455.28	455.63	455.57	91
MW-42-030	Shallow Zone	455.66	455.07	455.06	455.27	91
MW-42-065	Middle Zone	455.99	455.41	455.42	455.61	91
MW-43-025	Shallow Zone	456.24	455.58	455.47	455.76	92
MW-43-090	Deep Wells	456.65	456.01	455.91	456.19	92
MW-44-070	Middle Zone	456.07	455.45	455.46	455.67	91
MW-44-115	Deep Wells	455.73	455.19	455.31	455.41	91
MW-44-125	Deep Wells	456.13	455.61	455.73	455.83	91
MW-45-095a	Deep Wells	455.15	454.57	454.60	454.78	91
MW-46-175	Deep Wells	456.23	455.75	455.78	455.92	91
MW-47-055	Shallow Zone	456.51	456.01	455.88	456.14	91
MW-47-115	Deep Wells	456.52	456.06	456.00	456.20	91

TABLE C-1

Average Monthly and Quarterly Groundwater Elevations, May through July 2009

Second Quarter 2009 IM Performance Monitoring and Site-Wide

Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station

Well ID	Aquifer Zone	May 2009	June 2009	July 2009	Quarter Average	Days in Quarter Average
MW-49-135	Deep Wells	456.69	456.17	456.08	456.32	91
MW-50-095	Middle Zone	456.15	455.72	455.66	455.84	92
MW-51	Middle Zone	456.13	455.80	455.74	455.89	92
MW-54-085	Deep Wells	454.35	455.12	455.87	455.12	92
MW-54-140	Deep Wells	456.56	456.01	455.87	456.15	92
MW-54-195	Deep Wells	456.71	456.22	456.08	456.34	92
MW-55-045	Middle Zone	457.00	456.49	456.31	456.60	92
MW-55-120	Deep Wells	457.12	456.70	456.51	456.78	92
PT2D	Deep Wells	454.91	454.35	454.75	454.68	91
PT5D	Deep Wells	455.13	454.47	454.67	454.76	91
PT6D	Deep Wells	455.29	455.03	455.83	455.38	91
RRB	River Station	456.60	455.97	455.92	456.17	91

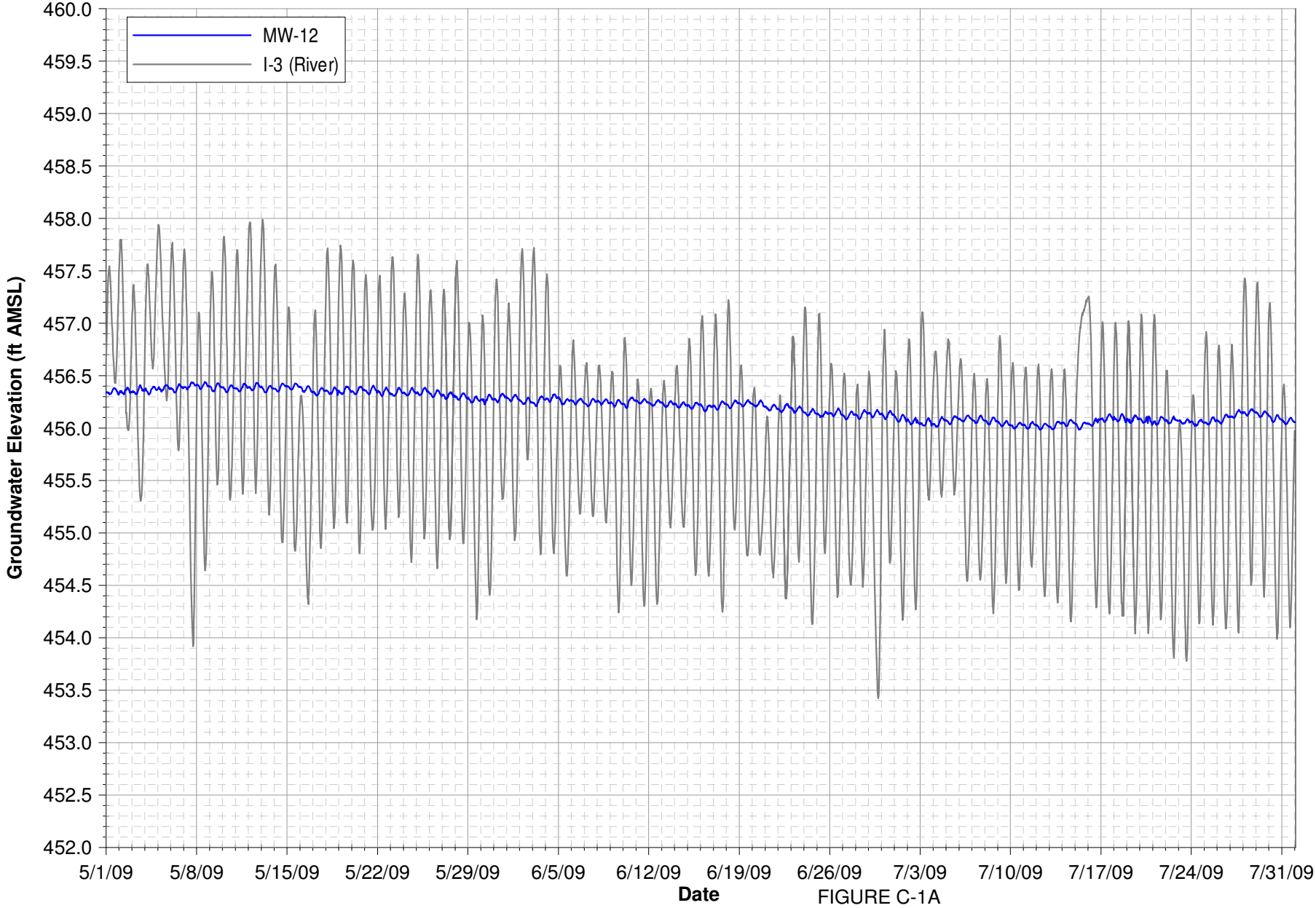
NOTES

Averages include data collected from May 2009 through July 2009.

Averages reported in ft AMSL (feet above mean sea level).

INC = data incomplete over reporting period.

Figure C-2
Hydrographs



Note:
Data subject to review.

FIGURE C-1A
MW-12 HYDROGRAPH
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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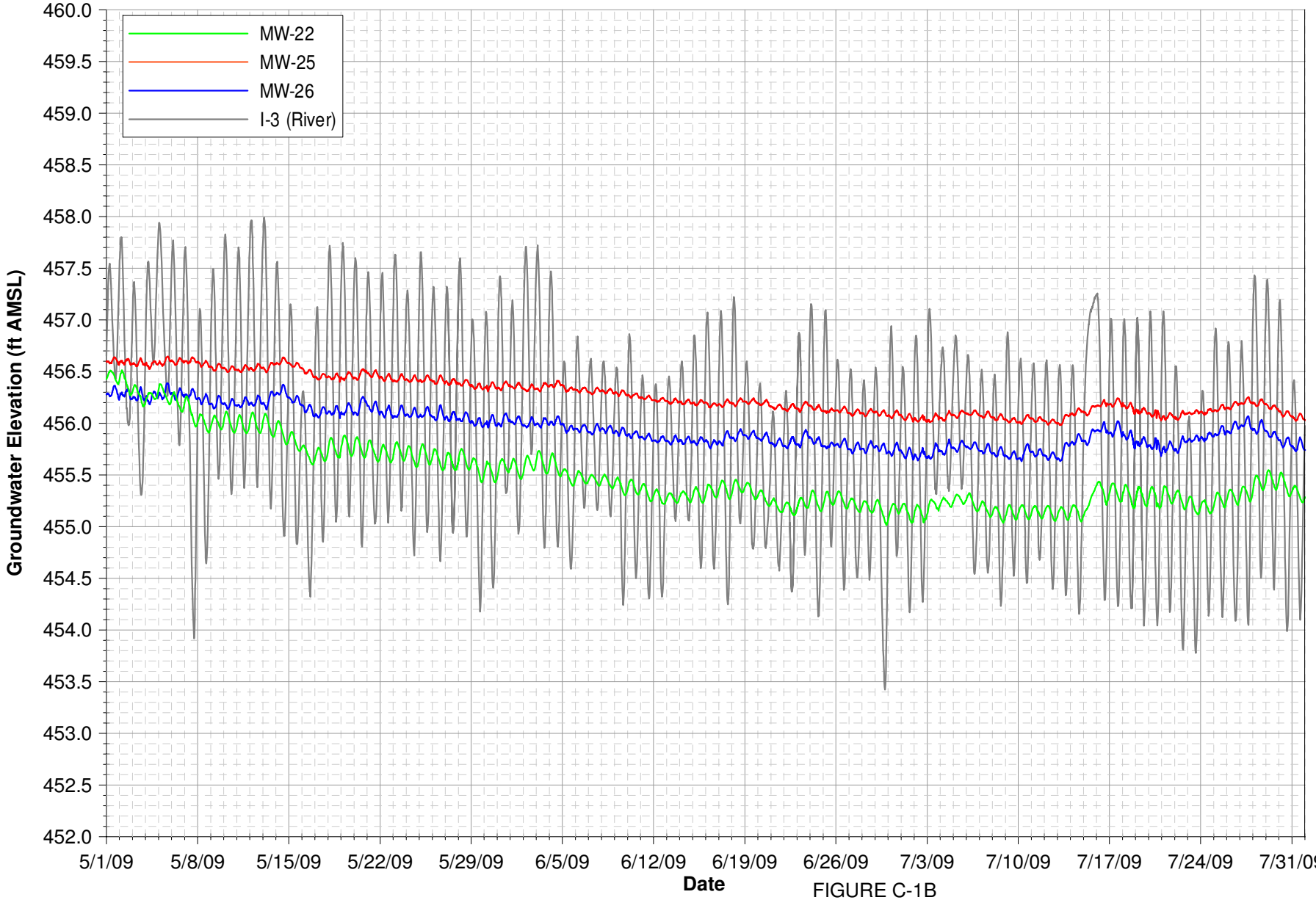
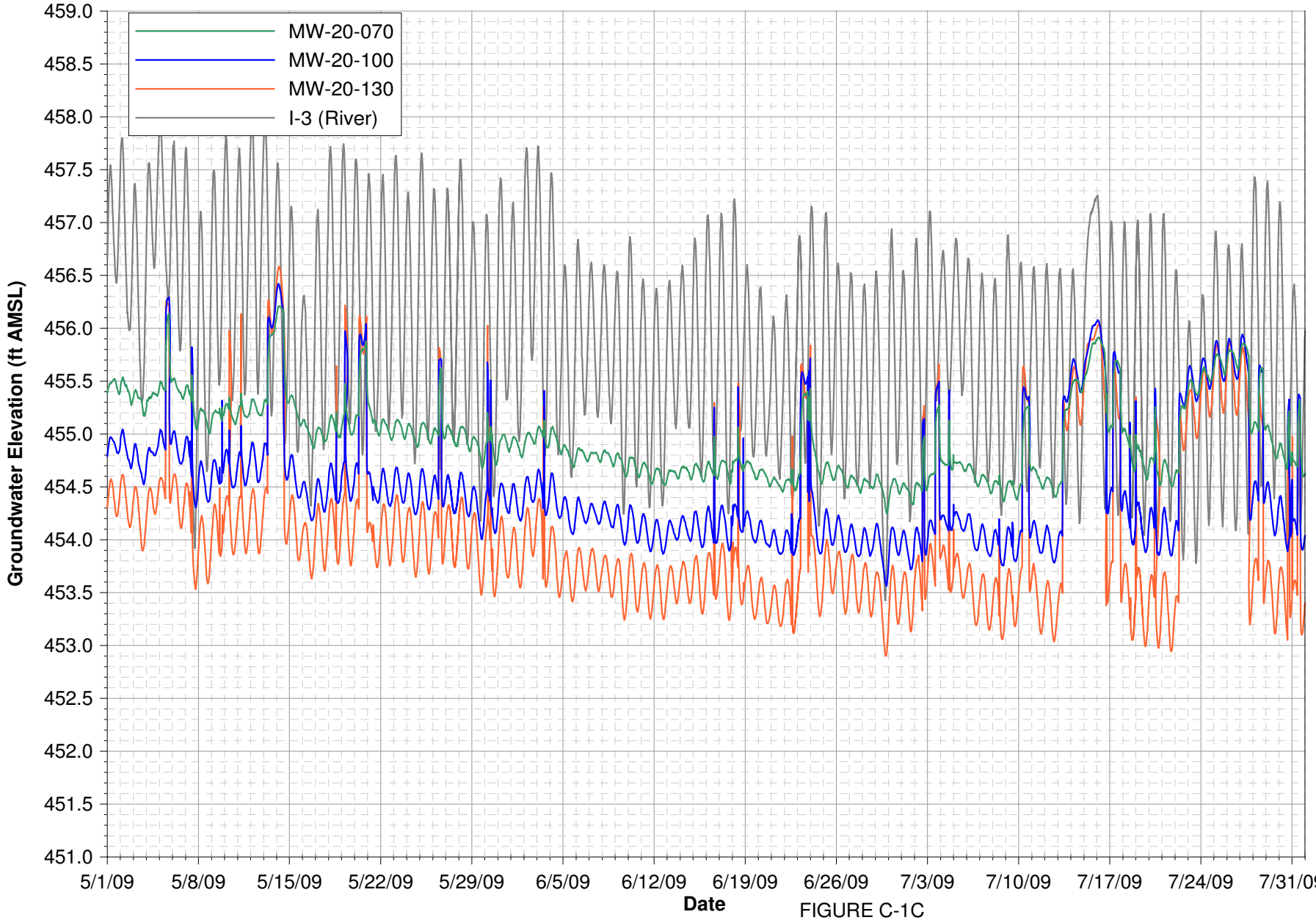


Notes:
Data subject to review.

FIGURE C-1B
MW-22, MW-25, AND MW-26 HYDROGRAPHS
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

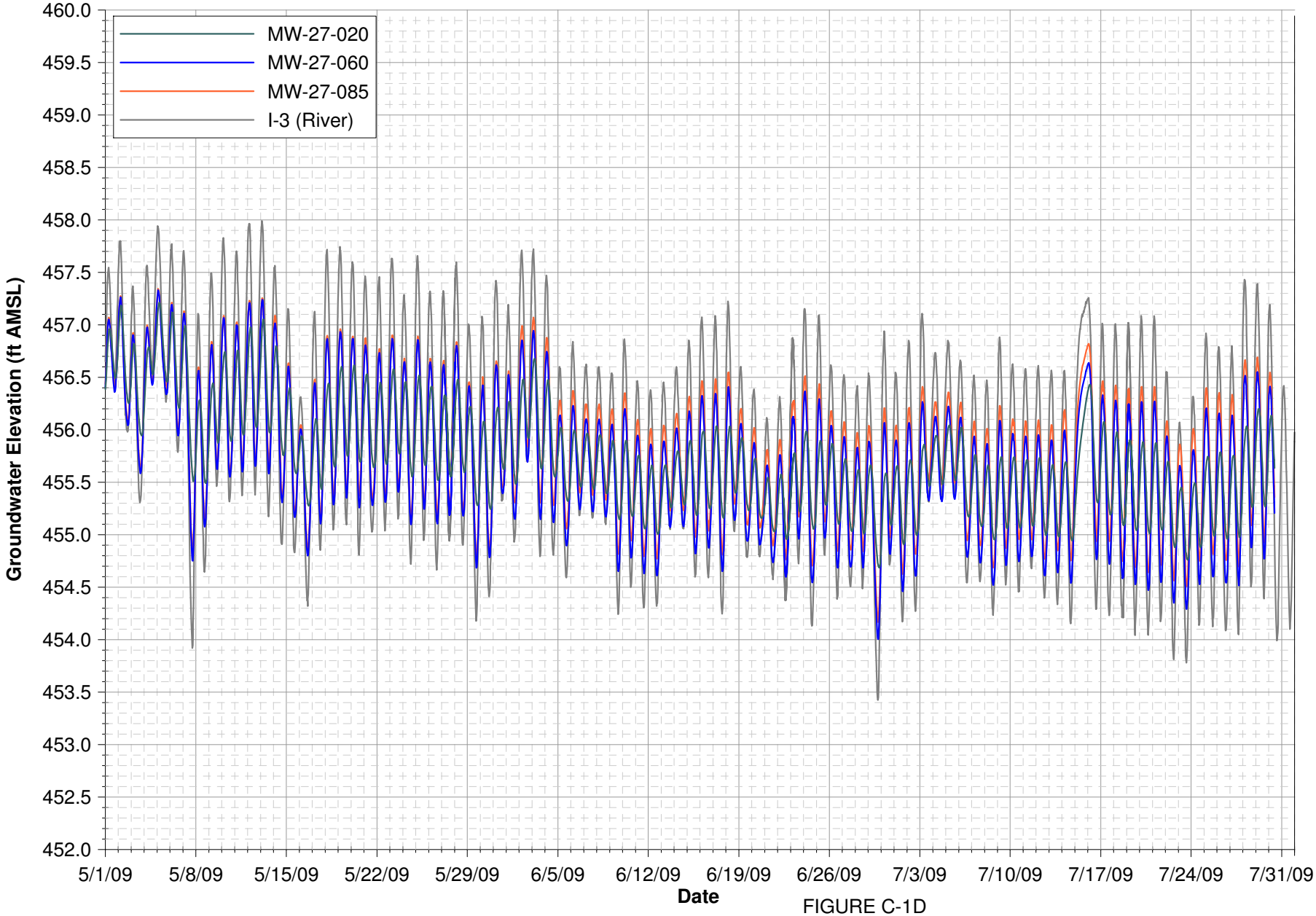
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1C
MW-20 CLUSTER HYDROGRAPHS
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG& E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

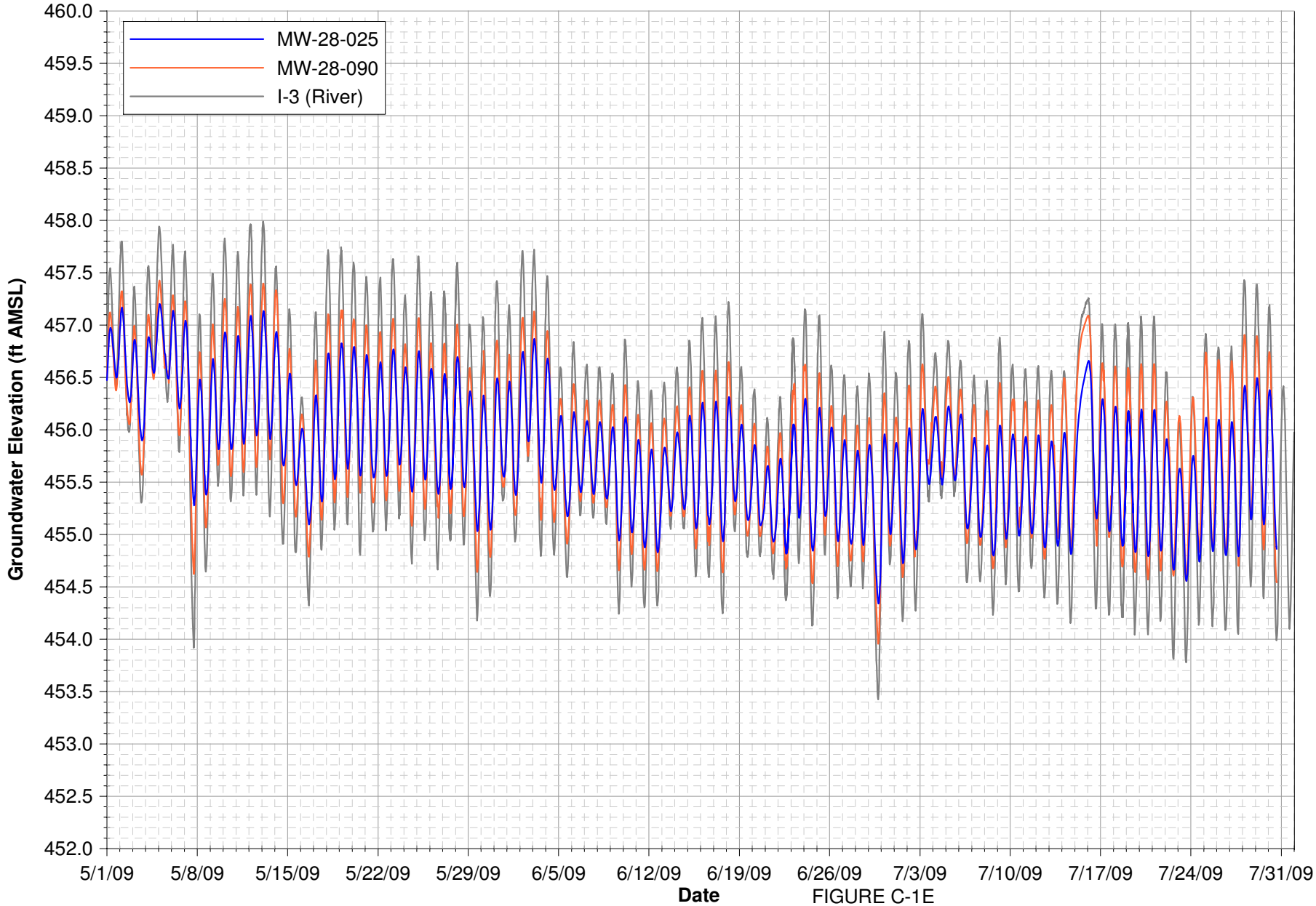
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1D
MW-27 CLUSTER HYDROGRAPHS
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

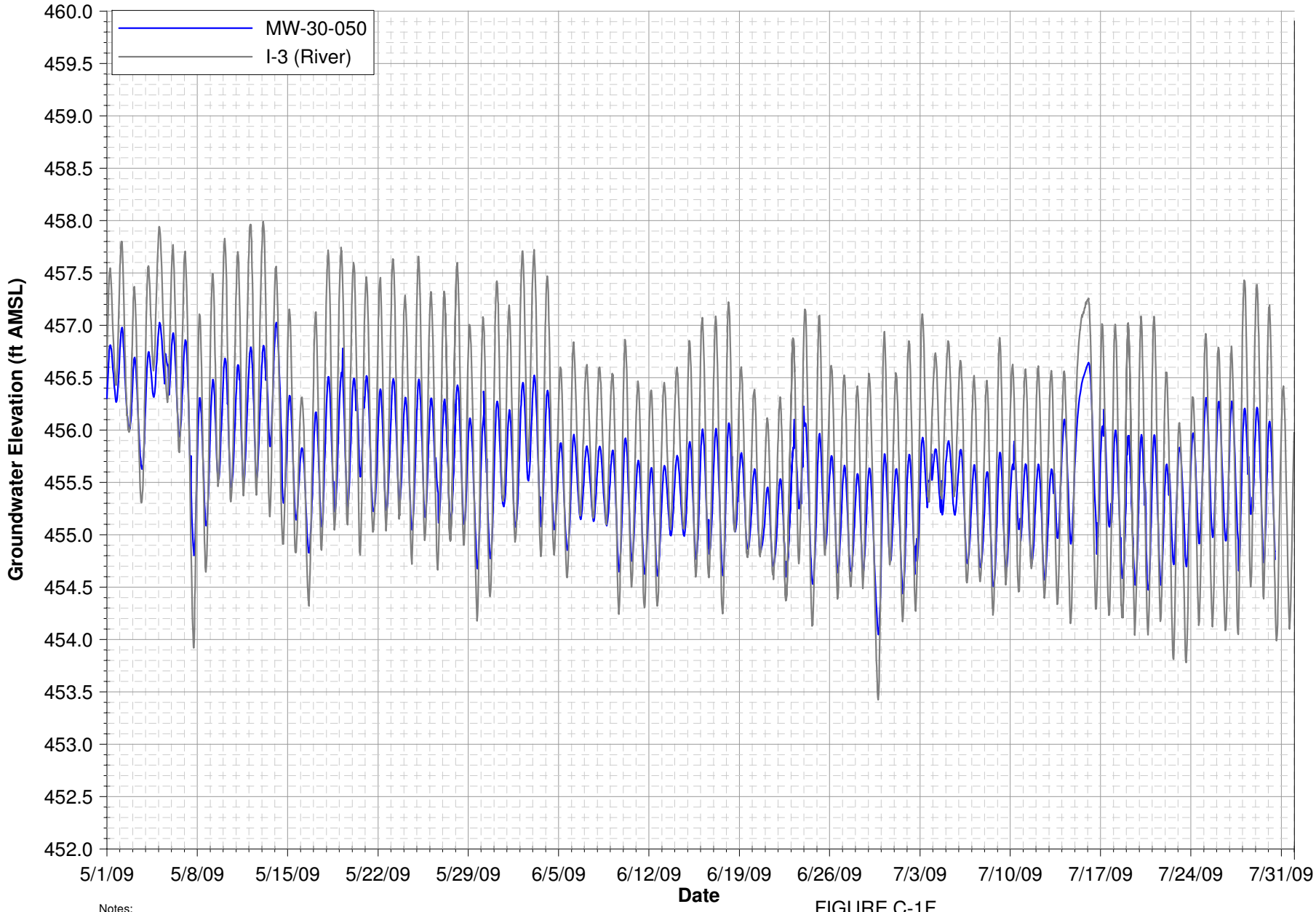
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1E
MW-28 WELL HYDROGRAPHS
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

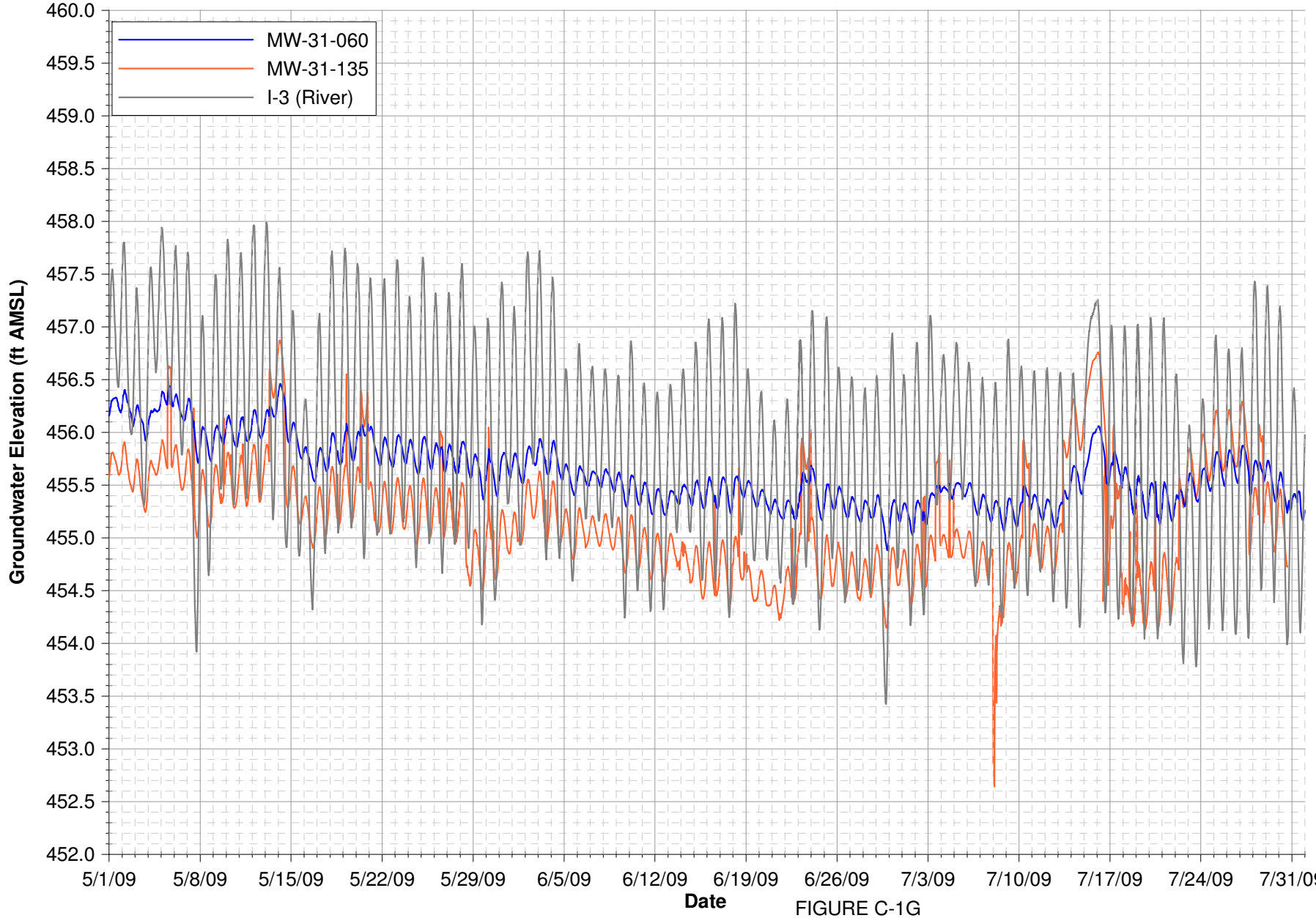
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1F
MW-30-50 WELL HYDROGRAPH
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

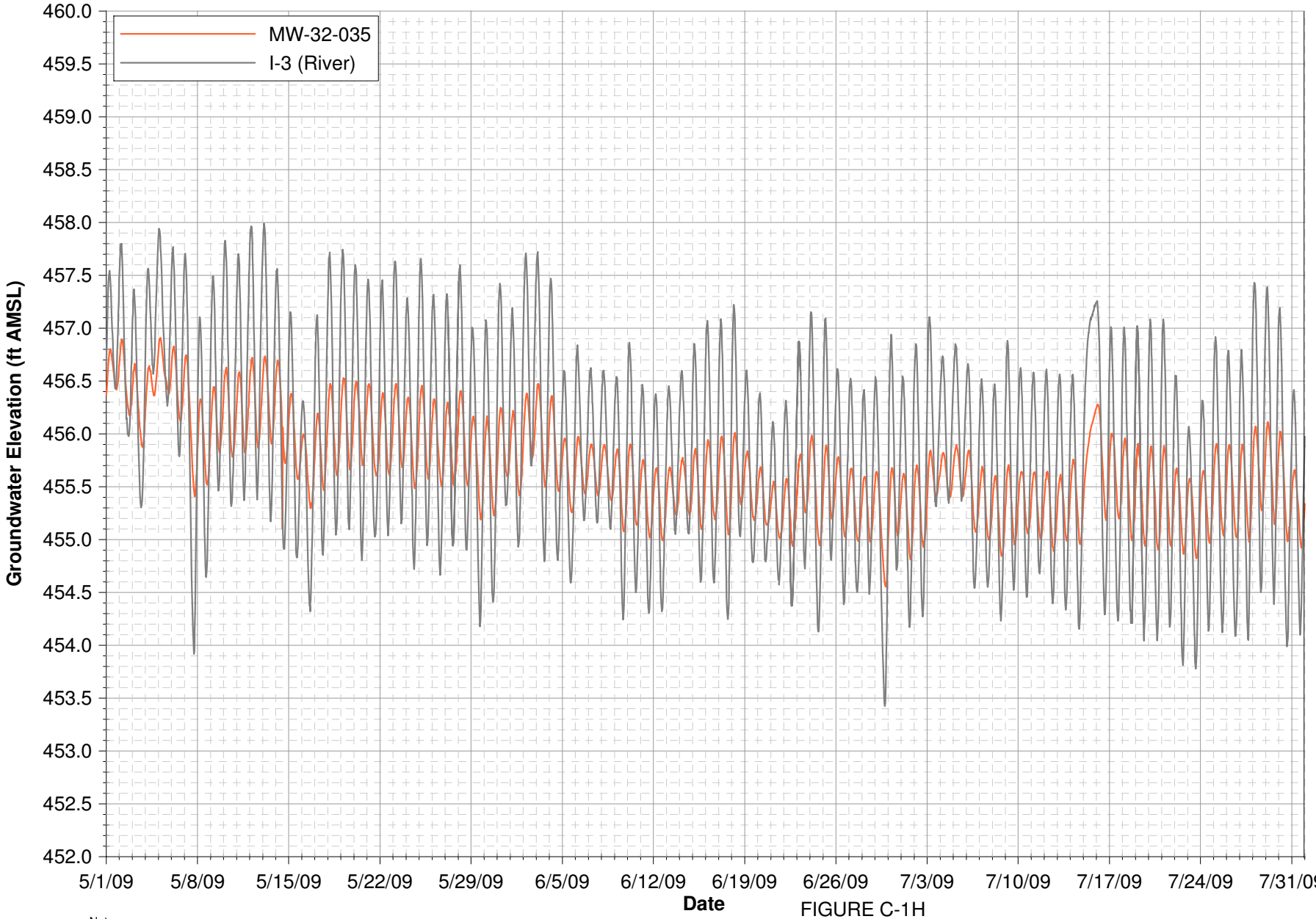
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1G
MW-31 WELL HYDROGRAPHS
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

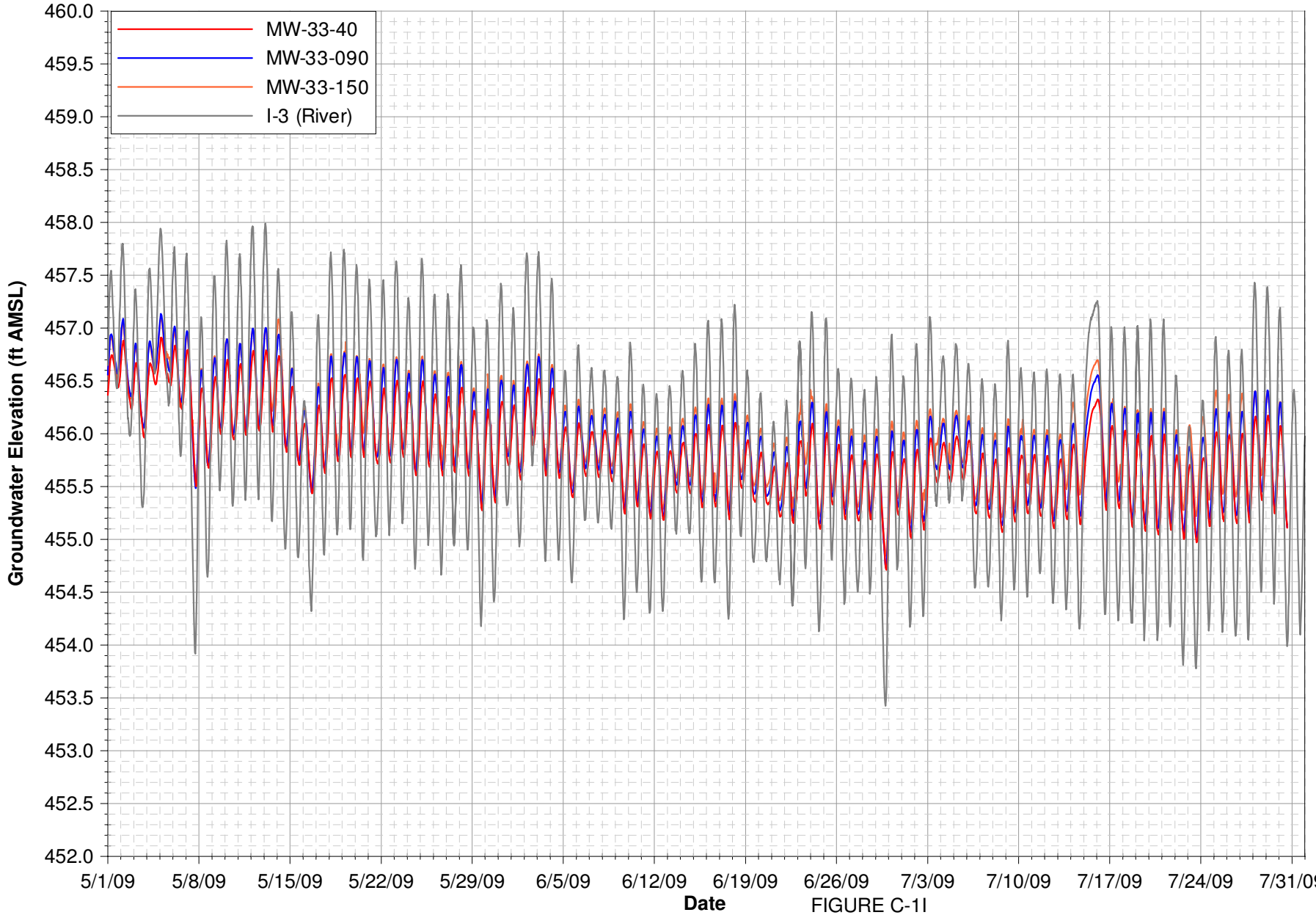
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1H
MW-32-035 WELL HYDROGRAPH
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

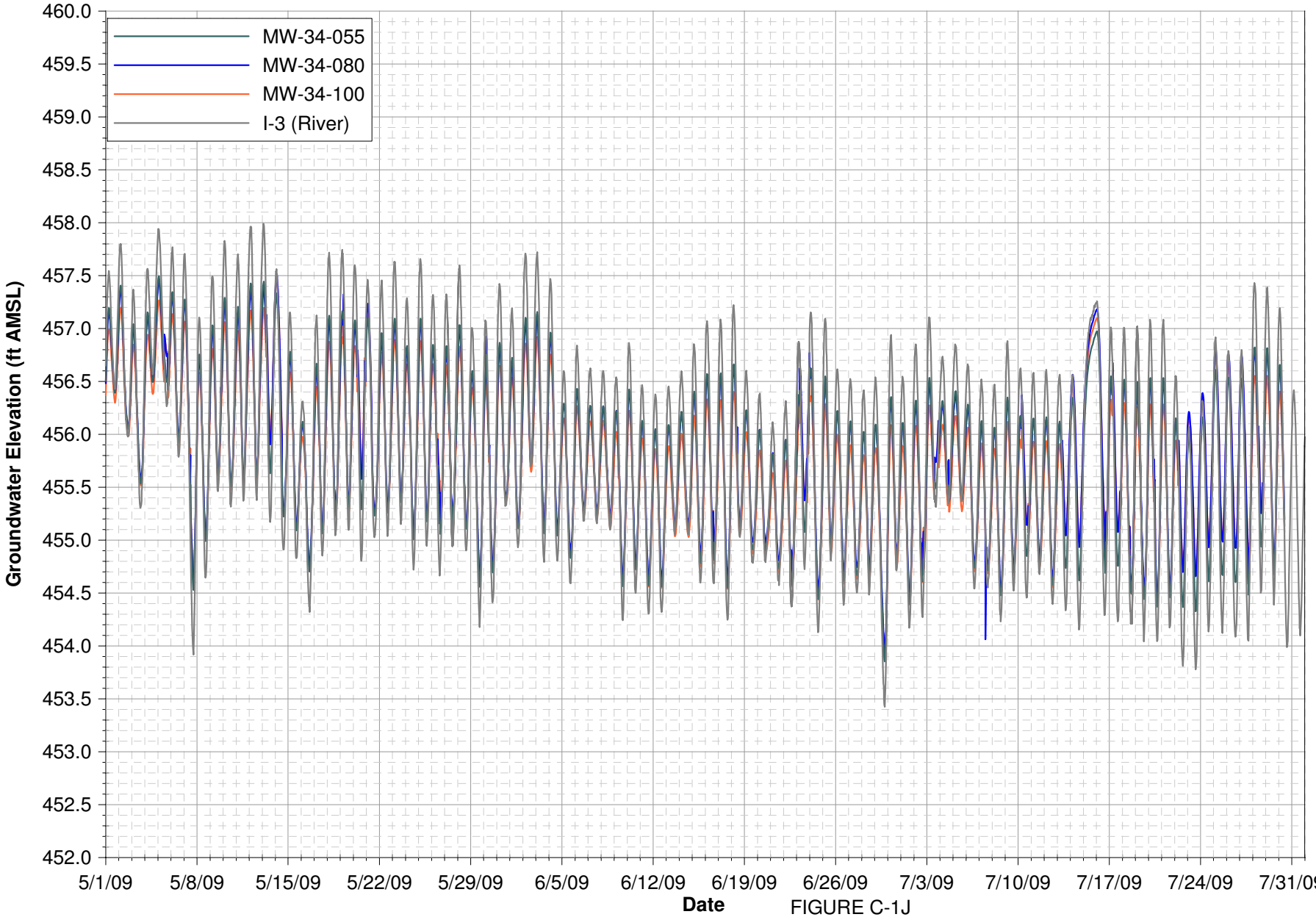
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1I
MW-33 CLUSTER HYDROGRAPHS
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

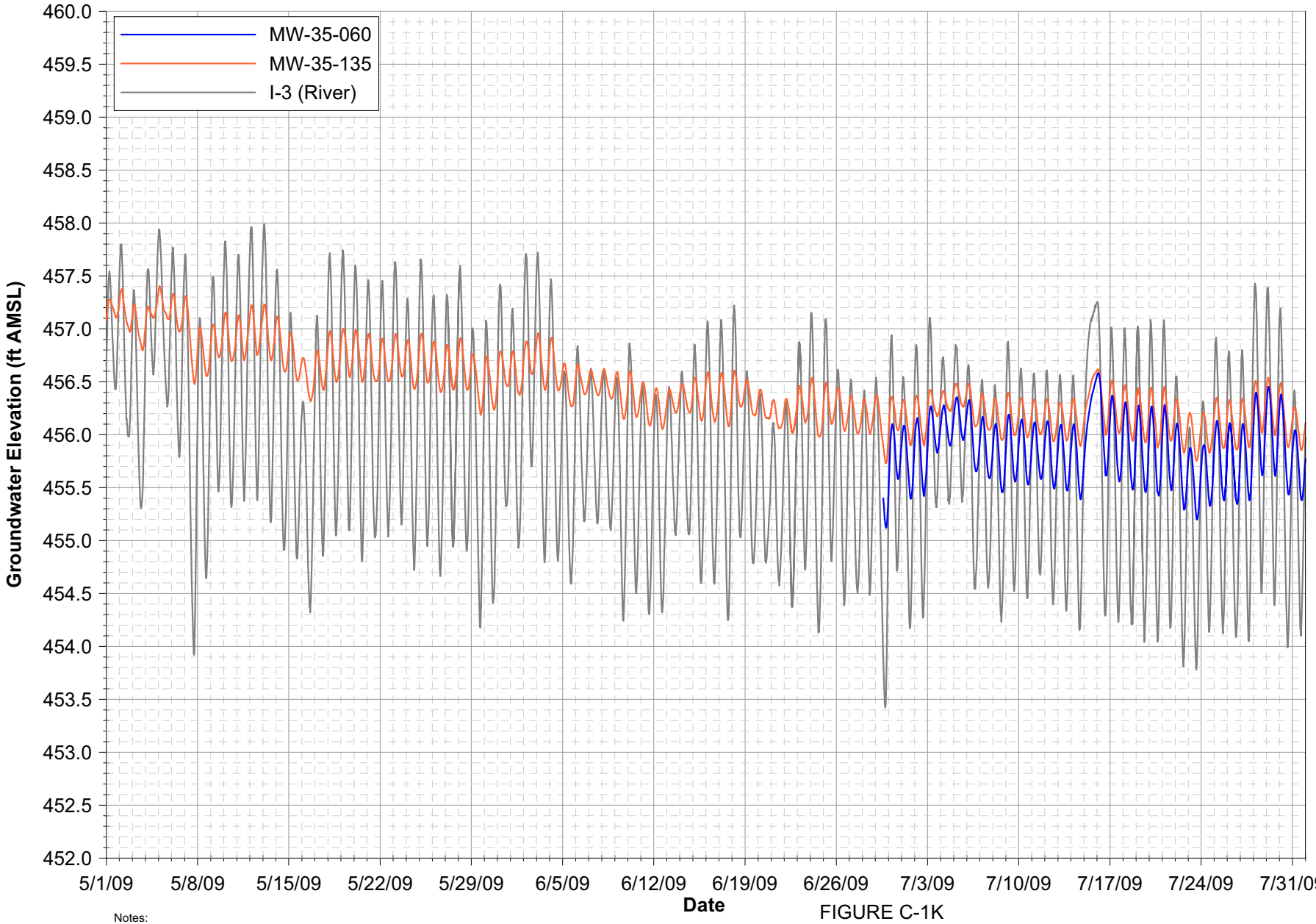
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1J
MW-34 CLUSTER HYDROGRAPHS
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

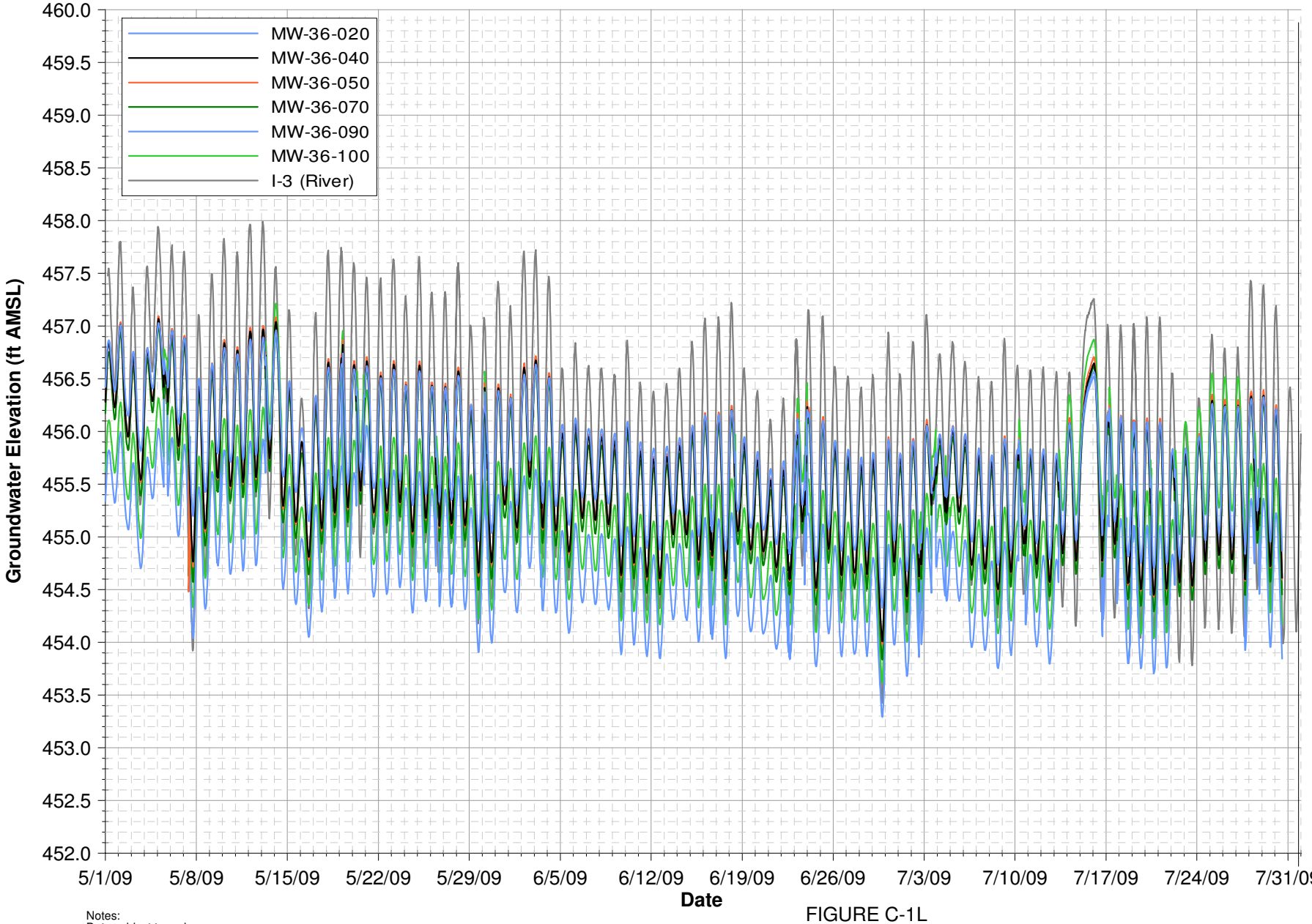
CH2MHILL



Notes:
Data subject to review.
MW-35-060 data unavailable from 4/2/2009 through 6/29/09.

FIGURE C-1K
MW-35 WELL HYDROGRAPHS
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

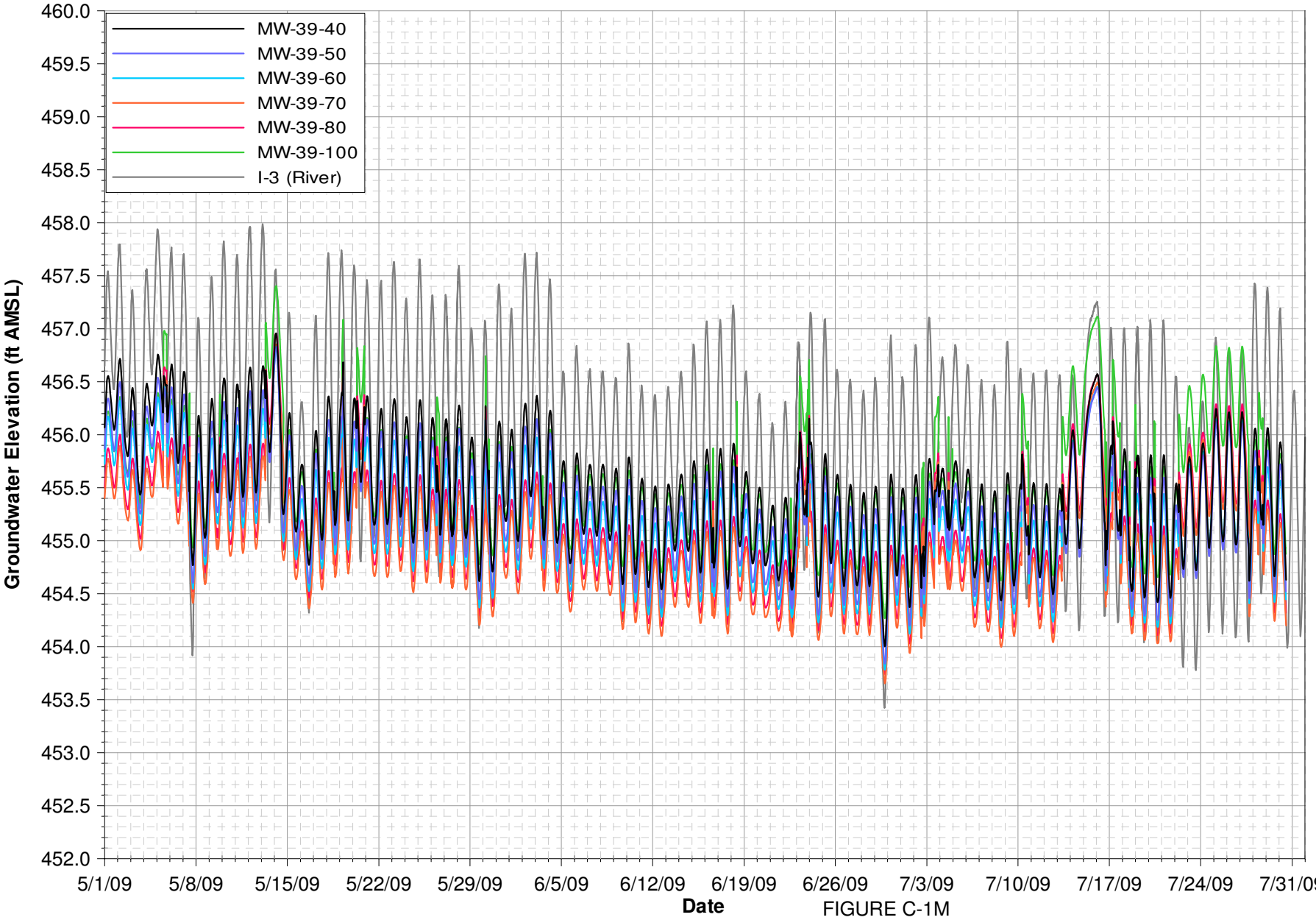
CH2MHILL



Notes:
Data subject to review..

FIGURE C-1L
MW-36 CLUSTER
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

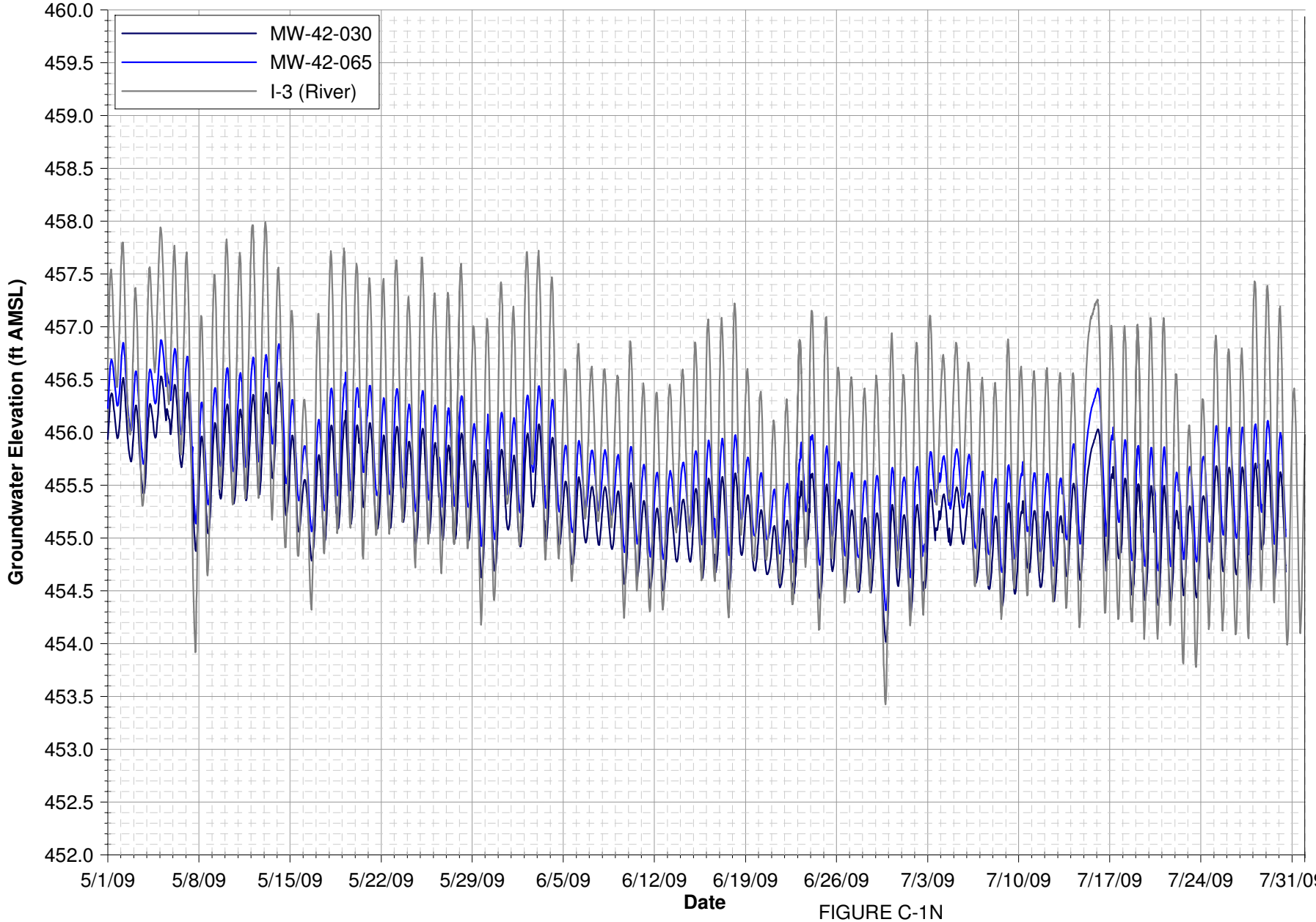
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1M
MW-39 CLUSTER HYDROGRAPHS
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG & E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

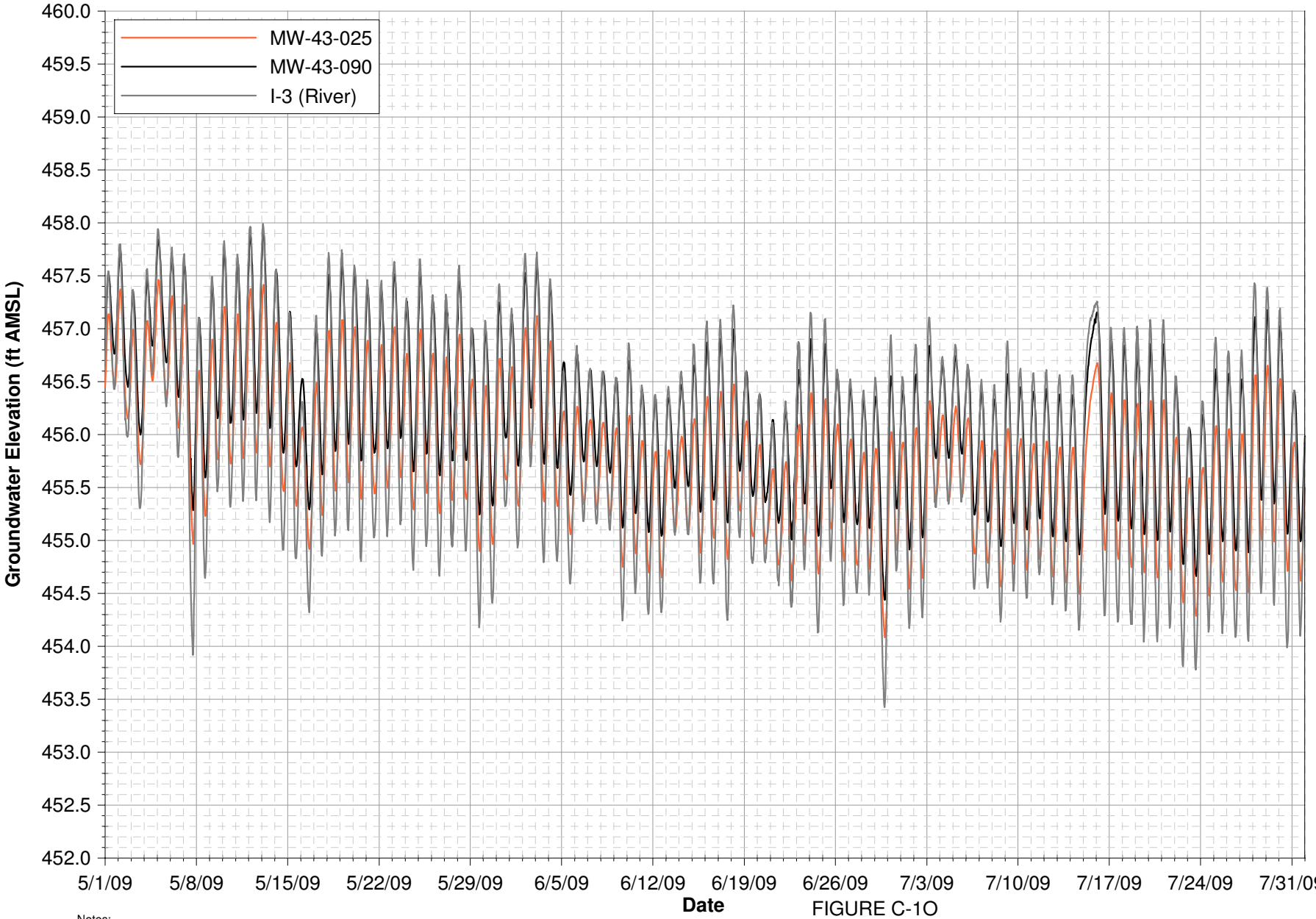
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1N
MW-42 CLUSTER HYDROGRAPHS
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

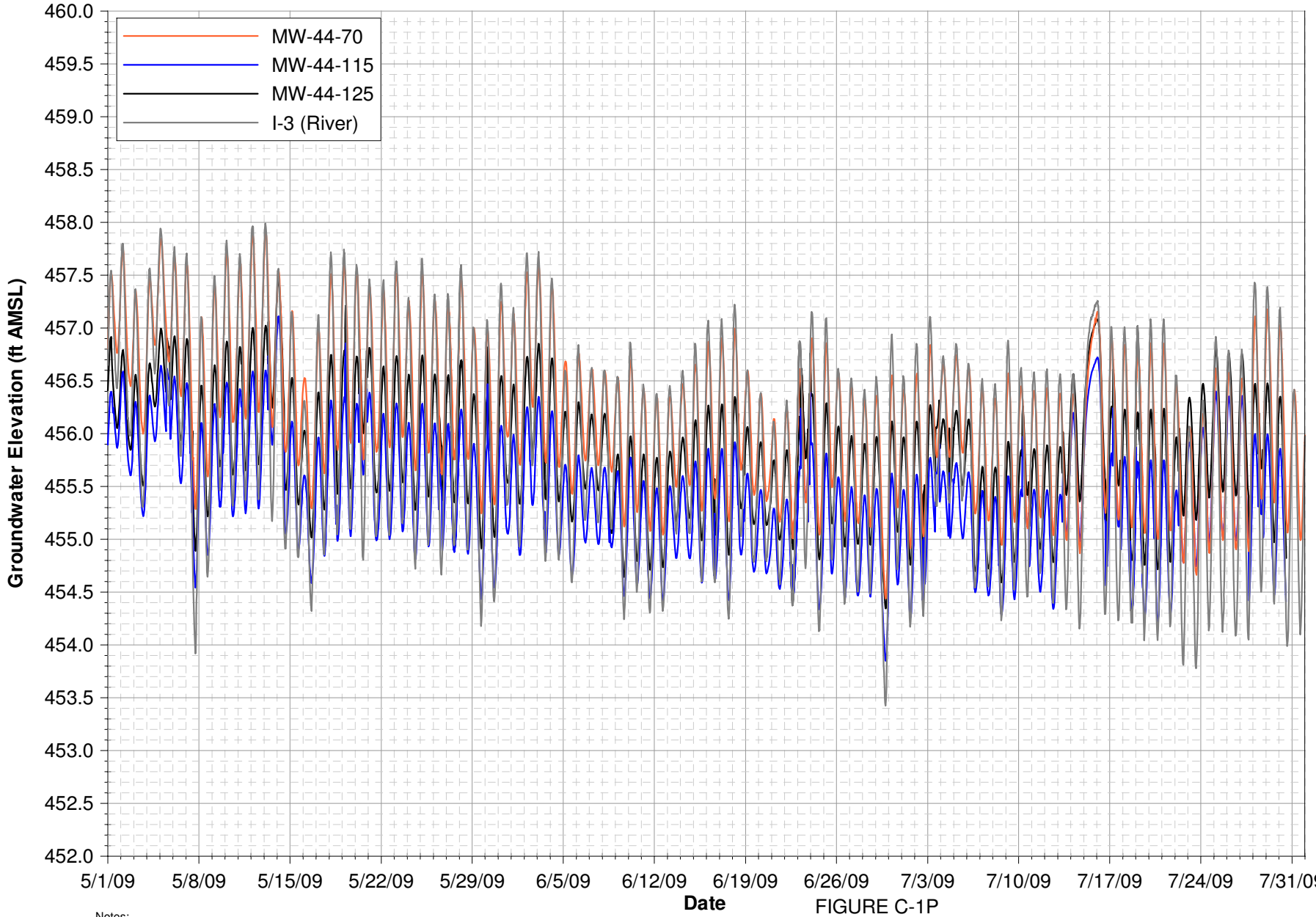
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1O
MW-43 CLUSTER HYDROGRAPHS
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

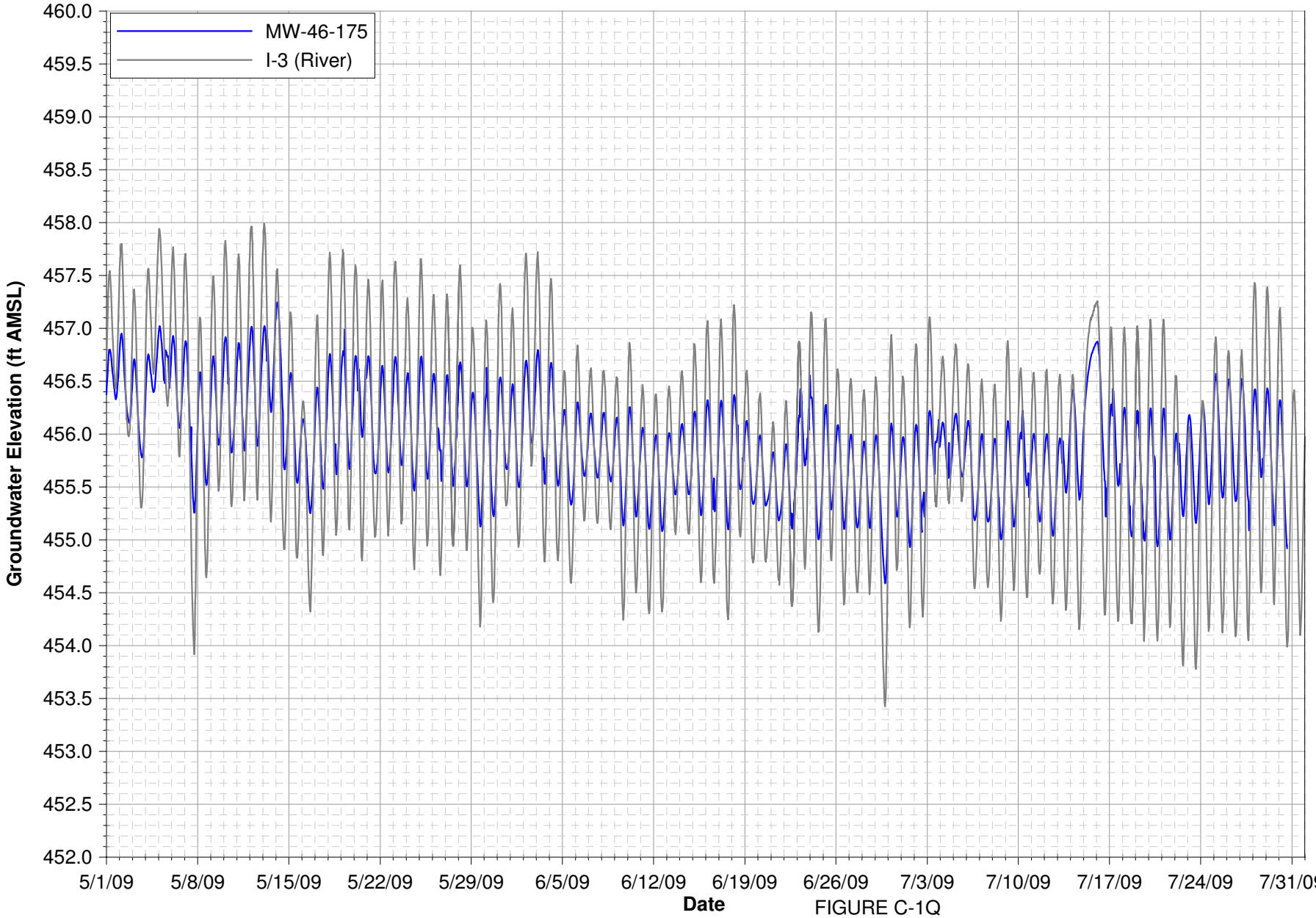
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1P
MW-44 CLUSTER HYDROGRAPHS
SECOND QUARTER 2009 IM 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 C-1Q
MW-46-175 HYDROGRAPH
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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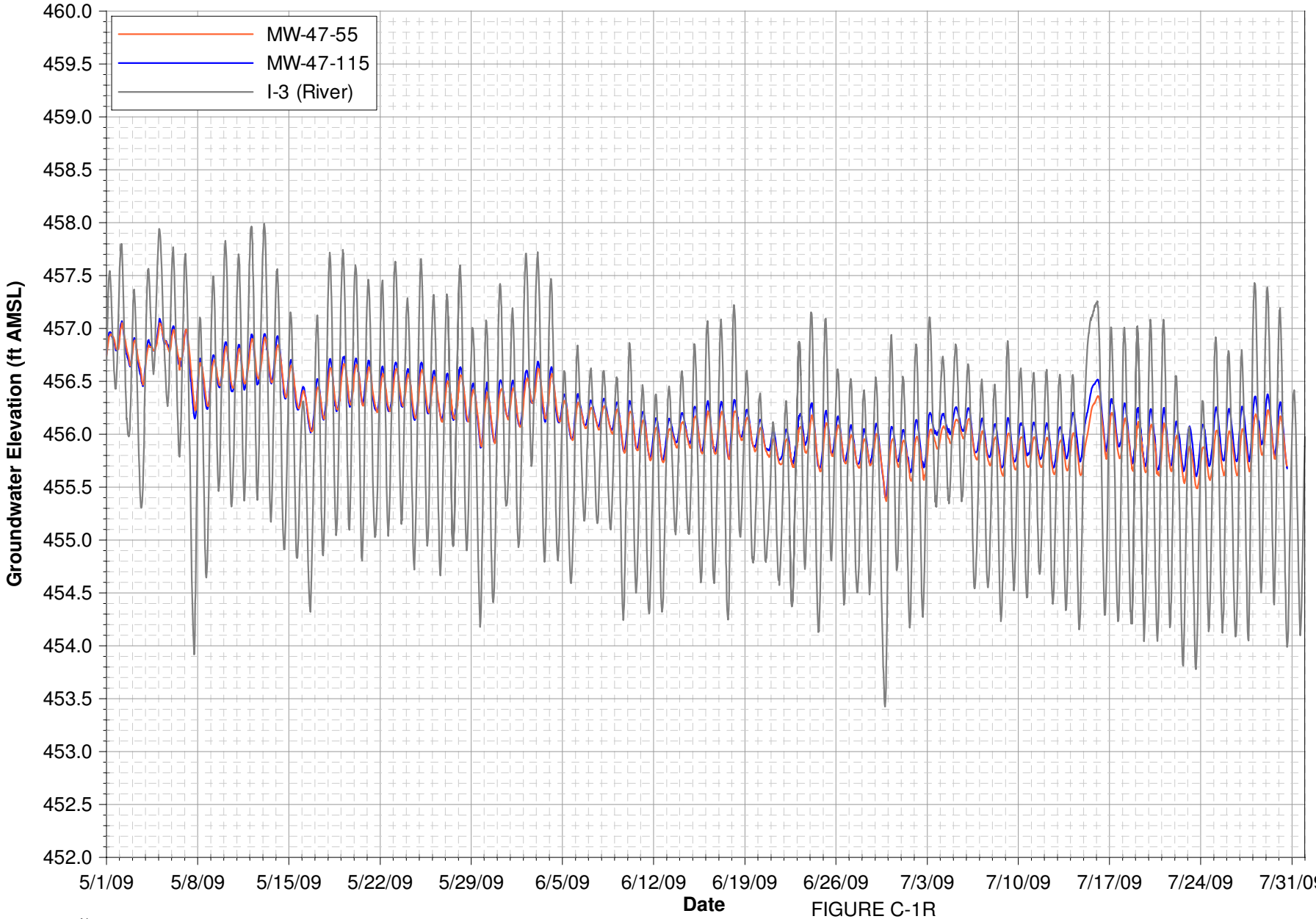
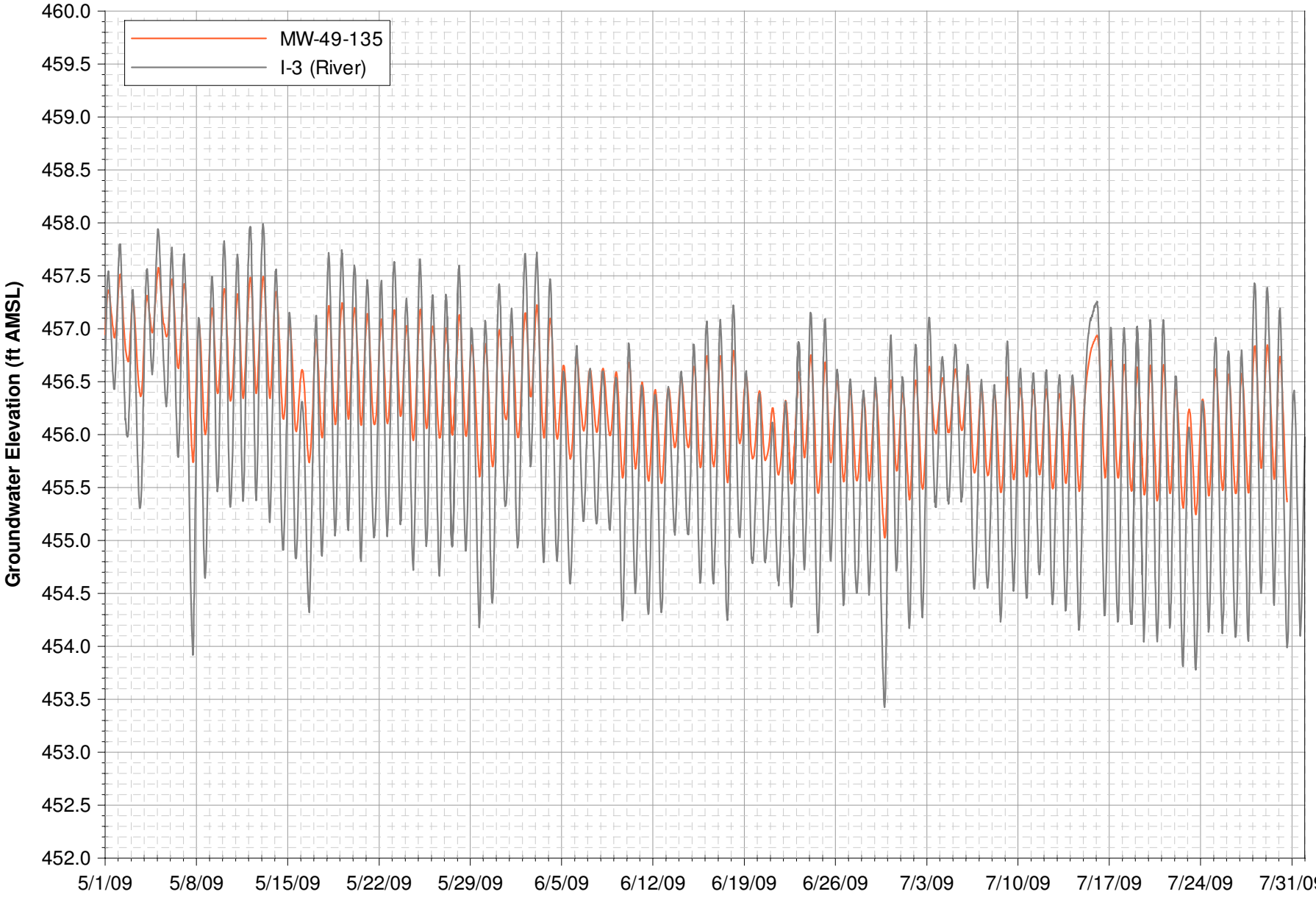


Notes:
Data subject to review.

FIGURE C-1R
MW-47 CLUSTER HYDROGRAPHS
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

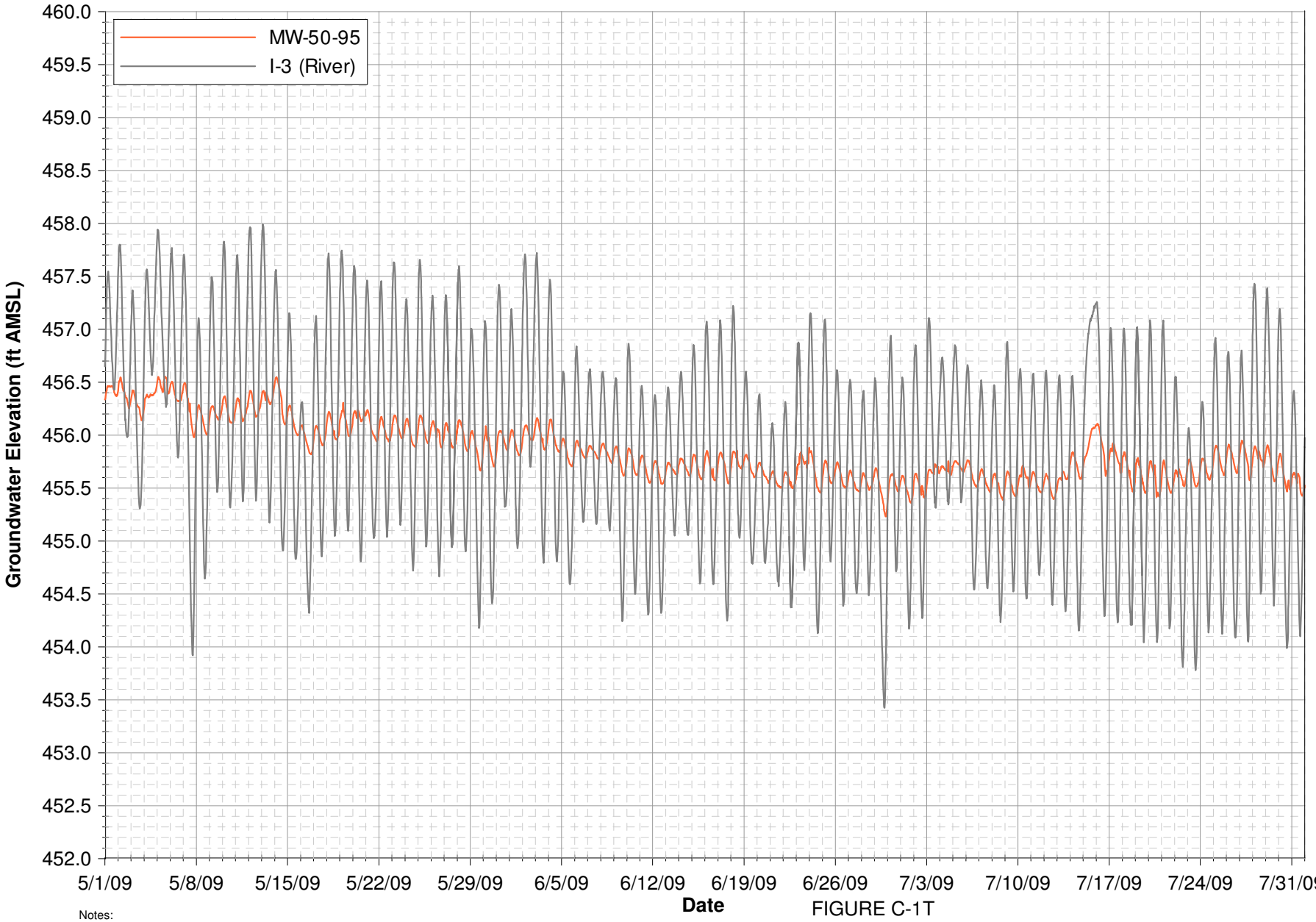
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1S
MW-49-135 HYDROGRAPH
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

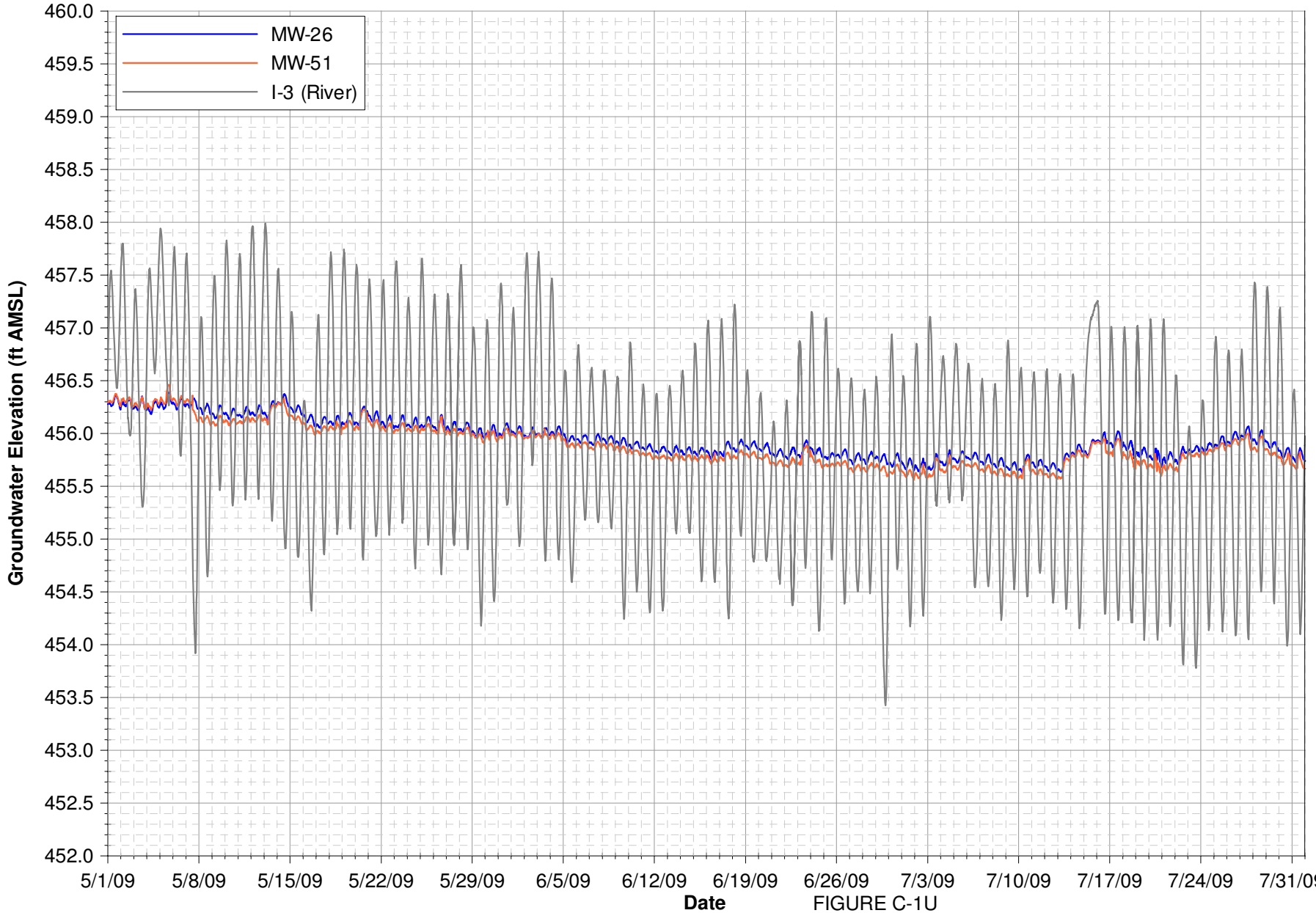
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1T
MW-50-95 HYDROGRAPH
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

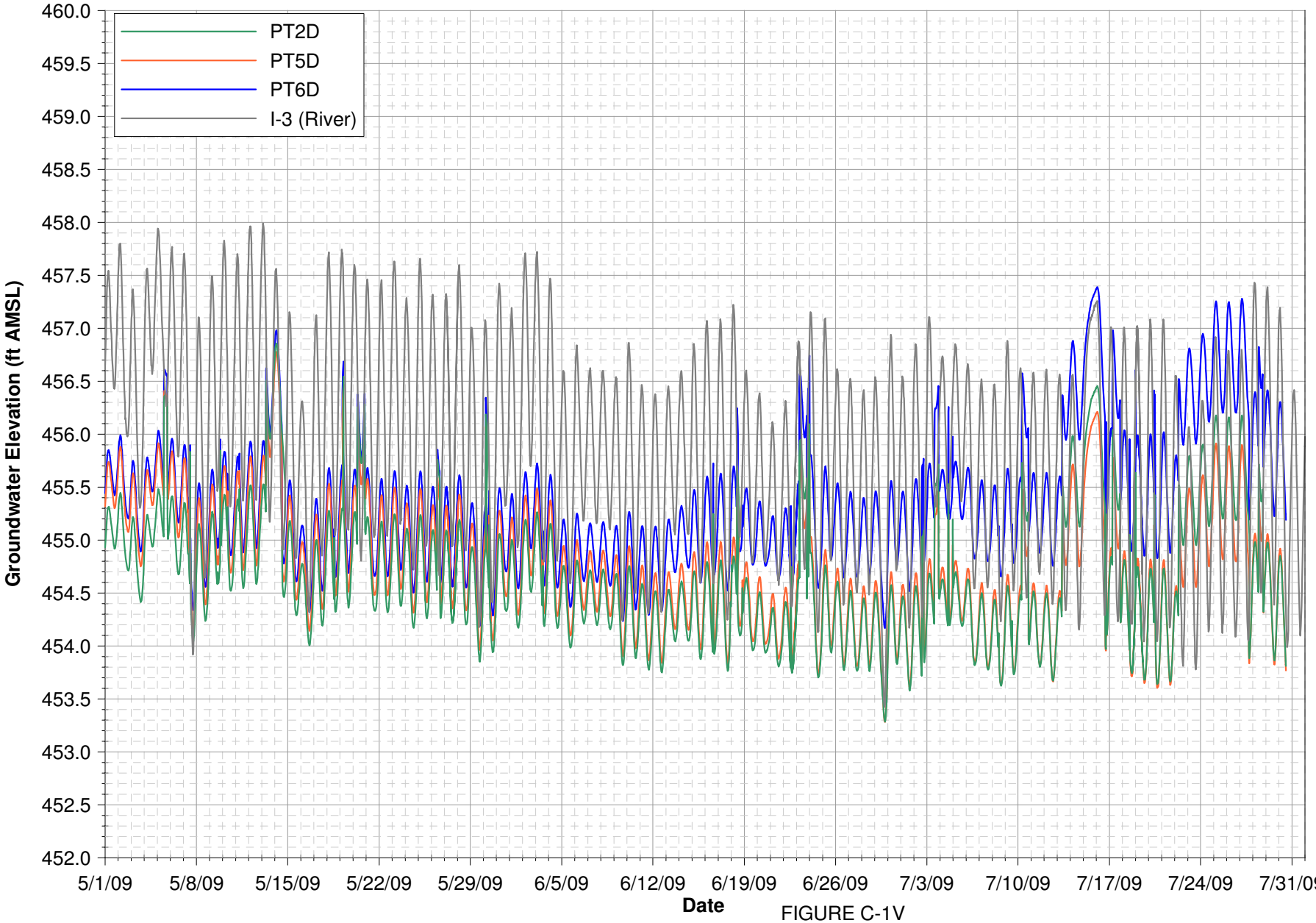
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1U
MW-51 & MW-26 HYDROGRAPHS
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

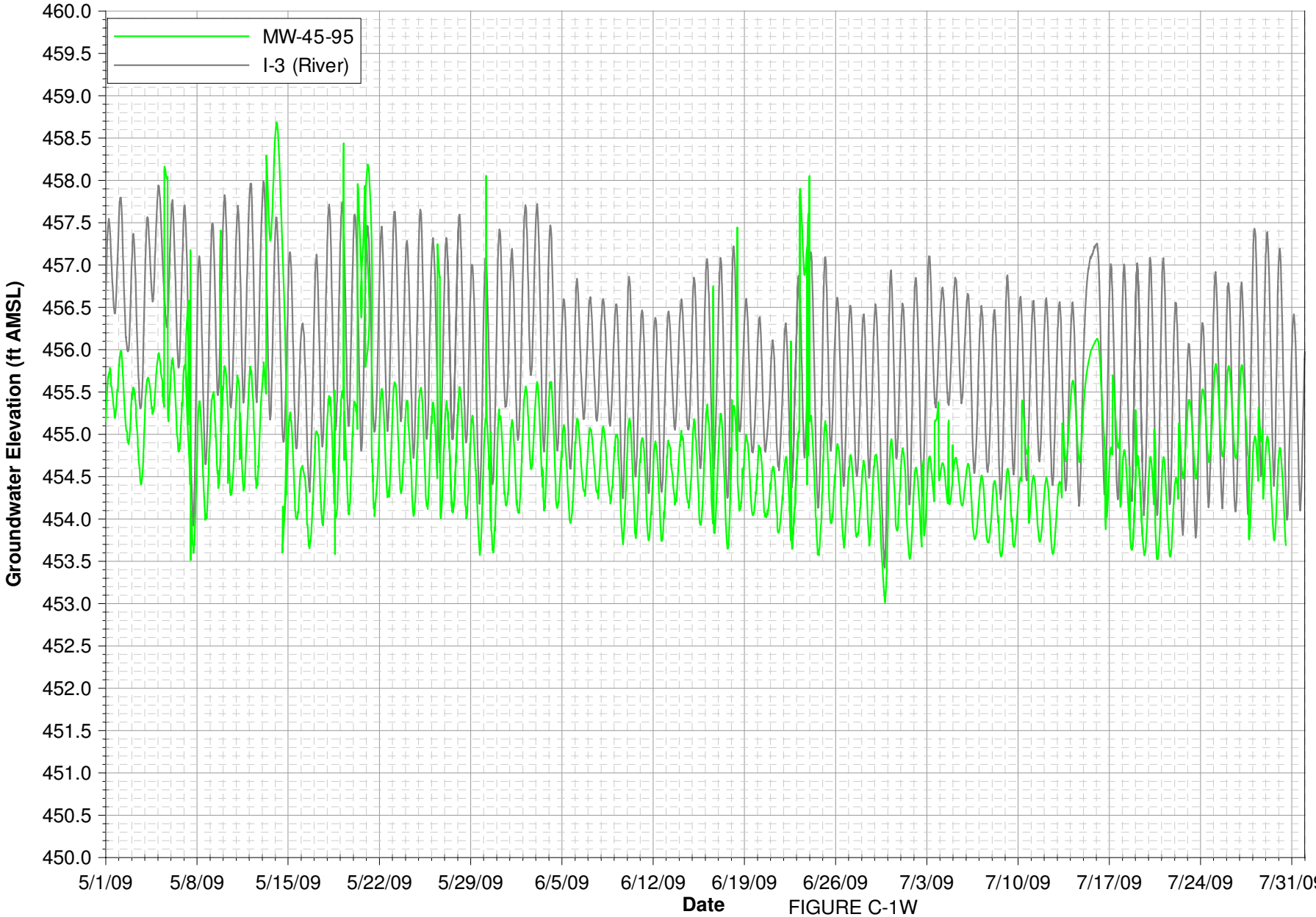
CH2MHILL



Note:
Data subject to review.

FIGURE C-1V
INSITU PILOT STUDY WELL HYDROGRAPHS
SECOND QUARTER 2009 IM 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 C-1W
MW-45-95 HYDROGRAPH
SECOND QUARTER 2009 IM PERFORMANCE MONITORING AND
SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
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Appendix D
Other Sampling Results

Table D-1
Dioxins and Furans Sampling Results, May 2009

TABLE D-1
Summary of Groundwater Dioxins and Furans Analytical Results, May 2009
Second Quarter 2009 IM Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station

			Dioxin/Furans (pg/L)																
Location	**Date**	**Sample Type**	**1,2,3,4,6,7,8-HpCDD**	**1,2,3,4,6,7,8-HpCDF**	**1,2,3,4,7,8,9-HpCDF**	**1,2,3,4,7,8-HxCDD**	**1,2,3,4,7,8-HxCDF**	**1,2,3,6,7,8-HxCDD**	**1,2,3,6,7,8-HxCDF**	**1,2,3,7,8,9-HxCDD**	**1,2,3,7,8,9-HxCDF**	**1,2,3,7,8-PeCDD**	**1,2,3,7,8-PeCDF**	**2,3,4,6,7,8-HxCDF**	**2,3,4,7,8-PeCDF**	**2,3,7,8-TCDD**	**2,3,7,8-TCDF**	**OCDD**	**OCDF**
MW-9	05/04/09	N	ND (2.4)	ND (3.3)	ND (1.2)	ND (0.94)	ND (0.61)	ND (1)	ND (0.56)	ND (2.1)	ND (3.2)	ND (3.1)	ND (0.51)	ND (0.65)	ND (2.5)	ND (0.51)	ND (0.48)	ND (1.6)	ND (1.2)
MW-10	05/04/09	N	ND (1.7)	ND (1.1)	ND (1.7)	ND (1.6)	ND (2.9)	ND (1.6)	ND (3)	ND (1.6)	ND (0.88)	ND (2)	ND (0.52)	ND (2.3)	ND (0.53)	ND (0.61)	ND (0.45)	ND (20)	ND (1.2)
MW-12	05/05/09	N	ND (6.8)	ND (1.2)	ND (1.8)	ND (1.5)	ND (0.5)	ND (1.5)	ND (3.3)	ND (1.6)	ND (0.7)	ND (3.2)	ND (4.5)	ND (2.8)	ND (1.1)	ND (0.8)	ND (1.6)	ND (22)	ND (1.4)
MW-12	05/05/09	FD	ND (3.1)	ND (1)	ND (1.5)	ND (1)	ND (0.64)	ND (1)	ND (0.4)	ND (1.1)	ND (0.59)	ND (1.9)	ND (0.39)	ND (1)	ND (0.4)	ND (1.4)	ND (0.54)	ND (13)	ND (3.7)

Notes:

ND	not detected at the listed reporting limit
pg/L	picograms per liter
N	primary sample
FD	field duplicate

Table D-2
Organics and Trace Metals Sampling Results, June 2009

TABLE D-2
Summary of Groundwater Organics and Trace Metals Analytical Results, June 2009
Second Quarter 2009 IM Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station

Analyte	Method	Units	MW-09 6/09/09	MW-09 6/09/2009 (FD)	MW-10 6/09/2009	MW-12 6/10/2009
Metals						
Antimony, dissolved	6010B	µg/L	ND (10)	ND (10)	---	---
Arsenic, dissolved	6020A	µg/L	3.70	3.80	---	---
Barium, dissolved	6010B	µg/L	55.0	55.0	---	---
Beryllium, dissolved	6010B	µg/L	ND (3.0)	ND (3.0)	---	---
Boron, dissolved	6010B	µg/L	700	660	---	---
Cadmium, dissolved	6010B	µg/L	ND (3.0)	ND (3.0)	---	---
Calcium, dissolved	6010B	µg/L	170,000	170,000	---	---
Chromium, dissolved	6020A\6010B	µg/L	340	340	---	---
Cobalt, dissolved	6010B	µg/L	ND (3.0)	ND (3.0)	---	---
Copper, dissolved	6020A	µg/L	ND (5.0)	ND (5.0)	---	---
Iron, dissolved	6010B	µg/L	ND (50)	ND (50)	---	---
Lead, dissolved	6010B	µg/L	ND (10)	ND (10)	---	---
Magnesium, dissolved	6010B	µg/L	42,000	43,000	---	---
Manganese, dissolved	6010B	µg/L	ND (10)	ND (10)	---	---
Mercury, dissolved	7470A	µg/L	ND (0.2)	ND (0.2)	---	---
Molybdenum, dissolved	6010B	µg/L	6.70	7.10	---	---
Nickel, dissolved	6010B	µg/L	ND (5.0)	ND (5.0)	---	---
Potassium, dissolved	6010B	µg/L	22,000	22,000	---	---
Selenium, dissolved	6020A	µg/L	7.50	7.90	---	---
Silver, dissolved	6010B	µg/L	ND (3.0)	ND (3.0)	---	---
Thallium, dissolved	6020A	µg/L	ND (0.5)	ND (0.5)	---	---
Vanadium, dissolved	6010B	µg/L	11.0	11.0	---	---
Zinc, dissolved	6010B	µg/L	ND (41)	ND (14)	---	---
Polyaromatic Hydrocarbons						
1-Methylnaphthalene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
2-Methylnaphthalene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Acenaphthene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Acenaphthylene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Anthracene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo (a) anthracene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo (a) pyrene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo (b) fluoranthene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo (ghi) perylene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzo (k) fluoranthene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Chrysene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Dibenzo (a,h) anthracene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)

TABLE D-2
Summary of Groundwater Organics and Trace Metals Analytical Results, June 2009
Second Quarter 2009 IM Performance Monitoring and Site-Wide
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Analyte	Method	Units	MW-09 6/09/09	MW-09 6/09/2009 (FD)	MW-10 6/09/2009	MW-12 6/10/2009
Polyaromatic Hydrocarbons						
Fluoranthene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Fluorene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Indeno (1,2,3-cd) pyrene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Naphthalene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Phenanthrene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Pyrene	8270SIM	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Polychlorinated Biphenyls						
Aroclor 1016	8082	µg/L	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Aroclor 1221	8082	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Aroclor 1232	8082	µg/L	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Aroclor 1242	8082	µg/L	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Aroclor 1248	8082	µg/L	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Aroclor 1254	8082	µg/L	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Aroclor 1260	8082	µg/L	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Pesticides						
4,4-DDD	8081A	µg/L	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
4,4-DDE	8081A	µg/L	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
4,4-DDT	8081A	µg/L	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Aldrin	8081A	µg/L	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.025)
alpha-BHC	8081A	µg/L	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.025)
alpha-Chlordane	8081A	µg/L	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.025)
beta-BHC	8081A	µg/L	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.025)
delta-BHC	8081A	µg/L	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.025)
Dieldrin	8081A	µg/L	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Endo sulfan I	8081A	µg/L	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.025)
Endo sulfan II	8081A	µg/L	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Endosulfan sulfate	8081A	µg/L	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Endrin	8081A	µg/L	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Endrin aldehyde	8081A	µg/L	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
gamma-BHC	8081A	µg/L	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.025)
gamma-Chlordane	8081A	µg/L	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.025)
Heptachlor	8081A	µg/L	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.025)
Heptachlor Epoxide	8081A	µg/L	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.025)
Methoxy chlor	8081A	µg/L	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Toxaphene	8081A	µg/L	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)
Semivolatile Organic Compounds						

TABLE D-2
Summary of Groundwater Organics and Trace Metals Analytical Results, June 2009
Second Quarter 2009 IM Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station

Analyte	Method	Units	MW-09 6/09/09	MW-09 6/09/2009 (FD)	MW-10 6/09/2009	MW-12 6/10/2009
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
1,2-Dichlorobenzene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
1,3-Dichlorobenzene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
1,4-Dichlorobenzene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
2,4,5-Trichlorophenol	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
2,4,6-Trichlorophenol	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
2,4-Dichlorophenol	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
2,4-Dimethylphenol	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
2,4-Dinitrophenol	8270C	µg/L	ND (50)	ND (50)	ND (50)	ND (50)
2,4-Dinitrotoluene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
2,6-Dinitrotoluene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
2-Chloronaphthalene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
2-Chlorophenol	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
2-Methylnaphthalene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
2-Methylphenol	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
2-Nitroaniline	8270C	µg/L	ND (50)	ND (50)	ND (50)	ND (50)
2-Nitrophenol	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
3,3-Dichlorobenzidene	8270C	µg/L	ND (20)	ND (20)	ND (20)	ND (20)
3-Nitroaniline	8270C	µg/L	ND (50)	ND (50)	ND (50)	ND (50)
4,6-Dinitro-2-methylphenol	8270C	µg/L	ND (50)	ND (50)	ND (50)	ND (50)
4-Bromophenyl phenyl ether	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
4-Chloro-3-methylphenol	8270C	µg/L	ND (50)	ND (50)	ND (50)	ND (50)
4-Chloroaniline	8270C	µg/L	ND (20)	ND (20)	ND (20)	ND (20)
4-Chlorophenyl phenyl ether	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
4-Methylphenol	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
4-Nitroaniline	8270C	µg/L	ND (20)	ND (20)	ND (20)	ND (20)
4-Nitrophenol	8270C	µg/L	ND (50)	ND (50)	ND (50)	ND (50)
Acenaphthene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Acenaphthylene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Anthracene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Benzo (a) anthracene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Benzo (a) pyrene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Benzo (b) fluoranthene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Benzo (ghi) perylene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Benzo (k) fluoranthene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Benzoic acid	8270C	µg/L	ND (50)	ND (50)	ND (50)	ND (50)

TABLE D-2
Summary of Groundwater Organics and Trace Metals Analytical Results, June 2009
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Analyte	Method	Units	MW-09 6/09/09	MW-09 6/09/2009 (FD)	MW-10 6/09/2009	MW-12 6/10/2009
Semivolatile Organic Compounds						
Benzyl alcohol	8270C	µg/L	ND (20)	ND (20)	ND (20)	ND (20)
Bis (2-chloroethoxy) methane	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Bis (2-chloroethyl) ether	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Bis (2-chloroisopropyl) ether	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Bis (2-ethylhexyl) phthalate	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Butyl benzyl phthalate	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Chrysene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Dibenzo (a,h) anthracene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Dibenzofuran	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Diethyl phthalate	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Dimethyl phthalate	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Di-N-butyl phthalate	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Di-N-octyl phthalate	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Fluoranthene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Fluorene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Hexachlorobenzene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Hexachlorobutadiene	8270C	µg/L	ND (20)	ND (20)	ND (20)	ND (20)
Hexachloroethane	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Indeno (1,2,3-cd) pyrene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Isophorone	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Naphthalene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Nitrobenzene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
N-Nitroso-di-n-propylamine	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
N-nitrosodiphenylamine	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Pentachloro phenol	8270C	µg/L	ND (50)	ND (50)	ND (50)	ND (50)
Phenanthrene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Phenol	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Pyrene	8270C	µg/L	ND (10)	ND (10)	ND (10)	ND (10)
Total Petroleum Hydrocarbons						
TPH as diesel	8015M	µg/L	ND (50)	ND (50)	ND (50)	ND (50)
TPH as motor oil	8015M	µg/L	ND (50)	ND (50)	ND (50)	ND (50)

NOTES:

ND not detected at listed reporting limit
ug/L micrograms per liter
FD field duplicates

Appendix E
Groundwater and Surface Water Sampling and Chain of Custody Records, April through July 2009

Appendix E - Groundwater and Surface Water Sampling and Chain of Custody Records will be provided on CD with the hard copy submittal of this report.