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November 30, 2009

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

Subject: Third 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 Third Quarter 2009 Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, August through October 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 Third Quarter 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 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.

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

Sincerely,

Yvonne Meeks
Topock Project Manager

Enclosure
Third Quarter 2009 IM Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report

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Third 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

November 30, 2009

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Oakland, CA 94612

Third 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

November 30, 2009

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

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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 Environmental Protection Agency, 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
TDS	total dissolved solids
USBR	United States Bureau of Reclamation

1.0 Introduction

Pacific Gas and Electric Company (PG&E) is implementing an Interim Measure (IM) to address chromium concentrations in groundwater at the Topock Compressor Station near Needles, California. In compliance with the requirements for IM monitoring and reporting outlined in the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) IM performance directive of March 2005, and in subsequent directives from the DTSC in 2007 (DTSC, 2005; DTSC, 2007a-c), this document presents the Third Quarter 2009 Performance Monitoring Program (PMP) evaluation report for the IM monitoring activities from August 1 through October 31, 2009.

In addition, this report presents the monitoring data from PG&E's site-wide Groundwater and Surface Water Monitoring Program (GMP) collected from August 1 through October 31, 2009. This combined PMP and GMP reporting format was approved by DTSC in May 2009 (DTSC, 2009a)

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 No. 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. In October 2007, DTSC modified the reporting requirements for the PMP (DTSC 2007a) 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 program is being regulated under a Corrective Action Consent Agreement issued by the DTSC in 1996 for the Topock site (United States Environmental Protection Agency ID No. CAT080011729). Groundwater monitoring data collected between July 1997 and October 2007 are presented in the approved *Revised Final RCRA Facility Investigation and Remedial Investigation Report, Volume 2 – Hydrogeological Characterization and Results of Groundwater and Surface Water Investigation*, dated February 11, 2009 (CH2M HILL, 2009a). 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).

2.0 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 October 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 operate full time.

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

During the winter and spring of 2009, an additional investigation was conducted in an area east of the Topock Compressor Station called the East Ravine. All wells completed during this recent investigation were incorporated into the site-wide GMP and are not part of the PMP monitoring network. With the exception of well MW-59-100, all of these wells are bedrock wells, and all wells are located south of the floodplain where the IM is currently being implemented.

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 shallow, mid-depth, and deep—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 Third Quarter reporting period of August 1 through October 31, 2009 are presented in Table 2-1. (All tables are located at the end of the report.) From August 1 through October 31, 2009, the volume of groundwater extracted and treated by the IM-3 system was 15,985,333 gallons. This resulted in removal of an estimated 59.6 kilograms (or 131 pounds) of chromium from the aquifer during the third quarter reporting period. The average extraction rate for the IM system during the reporting period was 120.4 gallons per minute (gpm). The average monthly pumping rates were 131.4 gpm (August 2009), 96.5 gpm (September 2009), and 133.3 gpm (October 2009) during the reporting period.

During Third Quarter 2009, extraction wells TW-3D and PE-1 operated at a combined pump rate of 135 gpm, excluding periods of planned and unplanned downtime. Extraction well TW-2S was not operated during Third Quarter 2009. Extraction well TW-2D operated for a short period in October for groundwater sampling. The operational run-time percentage for the IM extraction system was 89.5 percent during this reporting period. The IM extraction system was shut down from September 9 through September 16, 2009 for repairs and sampling due to synthetic oil fouling of the treatment stream in operation tank T301A from the tank mixer motor. The operations log for the extraction system during Third Quarter 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 was transported to Liquid Environmental Solutions in Phoenix, Arizona for treatment and disposal. Three containers of solids from the IM-3 facility were disposed of at the Kettleman Hills Chemical Waste Management facility during Third 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 Third Quarter 2009 reporting period and prior months. Between August 2009 and October 2009, Cr(VI) concentrations in TW-3D ranged between 1,270 µg/L and 1,360 µg/L, with TDS concentrations ranging from 5,140 milligrams per liter (mg/L) to 5,530 mg/L. During the same time period, the Cr(VI) concentrations in PE-1 ranged from 17.5 µg/L to 18.6 µg/L, with TDS ranging from of 3,360 mg/L to 3,560 mg/L. Future monitoring of the extraction wells 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 Third Quarter 2009, groundwater monitoring wells in the floodplain area were sampled for Cr(VI), total chromium (Cr[T]), and field water quality parameters under biennial, annual, semiannual, quarterly, and monthly schedules in accordance with DTSC directives. Table B-1 in Appendix B presents the chromium and field parameter sampling results from October 2008 through October 2009 for all GMP wells sampled for chromium during this time period. This section 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 shallow, mid-depth, and deep wells of the Alluvial Aquifer in the performance monitoring area for September 2009 is shown in plan view and cross-section in Figure 2-2. During September 2009, the biennial groundwater monitoring event was conducted at the Topock site, and all the wells in the PMP area were sampled during this event. The Cr(VI) concentration contours shown for the Alluvial Aquifer have been updated to reflect the September 2009 groundwater sampling data.

Figure 2-3 presents the September 2009 Cr(VI) results for monitoring wells on a cross-section parallel to the Colorado River (locations of cross-sections are shown in Figure 2-1). In Figures 2-2 and 2-3, the Cr(VI) concentrations are color coded based on the groundwater background Cr(VI) concentration, which is 32 µg/L (CH2M HILL 2009b). The 20 µg/L and 50 µg/L Cr(VI) concentration contours presented on Figures 2-2 and 2-3 are shown in accordance with DTSC's 2005 IM directive and are not based on the background Cr(VI) concentration for groundwater (CH2M HILL, 2009a).

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 October 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 October 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 January 2008, concentrations at this well have shown a general downward trend, with slight increases during low river periods (November through January). 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 May 2006. Sampling data from well MW-44-125 show gradually decreasing concentrations since October 2006. Concentrations in well MW-46-175 generally decreased from March 2006 until August 2007

but have been generally stable (with seasonal fluctuation during changing river levels) since August 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-36 cluster wells during September 2009 sampling remained consistent with previous results.

In addition to the wells presented in Figure 2-4, the groundwater Cr(VI) concentrations at wells MW-31-060 and MW-35-060 declined relative to the previous quarter (Appendix B). The chromium concentrations observed in the MW-33 cluster wells remained consistent with previous results during Third Quarter 2009.

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 the IMCP wells.

2.4 Hydraulic Gradients and River Levels during Quarterly Period

During Third Quarter 2009, water levels were recorded in PMP network wells 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 Third 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 (CH2M HILL, 2005a). Groundwater elevation hydrographs (for Third Quarter 2009) for all wells with transducers are included in Appendix C. The Colorado River elevation (I-3 gage station) during Third Quarter 2009 is also shown on the hydrographs.

Average quarterly groundwater elevations (August through October 2009 inclusive) for the shallow 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 shallow interval is easterly and is consistent with the regional gradient outside of the floodplain area.

Average quarterly groundwater elevations (August through October 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 wells 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-e).

For the Third Quarter 2009 reporting period, a full set of transducer data was recorded in wells located on the Arizona side of the Colorado River. The quarterly average groundwater elevations for wells MW-55-120, MW-54-85, MW-54-140, and MW-54-195 are posted on Figure 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 Third 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 overall average monthly hydraulic gradient and individual well pair gradients that were measured between the gradient well pairs in August, September, and October 2009. For the northern (MW-31-135/MW-33-150) well pair, gradients for August and September 2009 were not calculated due to greater than 25 percent loss of data caused by transducer malfunction. Using the data that is available, the overall average gradients for all well pairs ranged from 0.0013 to 0.0065 feet per foot. This is 1.3 to 6.5 times greater than the required gradient of 0.001 feet per foot. For the individual well pairs, the gradient for the northern well pair in October 2009 was 1.7 times the target gradient of 0.001 feet per foot. For the central well pair (MW-45-95/ MW-34-100), the average landward gradient ranged from 9.6 to 12.3 times the target gradient. The southern well pair (MW-45-95/MW-27-85) gradients averaged 3.4 and 4.1 times the target gradient for the months of August and October, respectively. For the month of September 2009, the hydraulic gradient of this well pair (MW-45-095/MW-27-085) was below 0.001 feet per feet at 0.0008 feet per foot. Gradients measured for the month of September are discussed in more detail in the *IM-3 20 Percent Downtime in September 2009 Report, PG&E Topock Compressor Station* (CH2M HILL, 2009f).

Figure 2-7 presents the overall average monthly hydraulic gradient and individual well pair gradients, pumping rates and river levels during Third Quarter 2009. The monthly average pumping rates for the IM-3 system were 131.4 gpm in August 2009, 96.5 gpm in September 2009, and 133.3 gpm in October 2009.

A review of the groundwater elevation contour maps (Figures 2-5a-c) indicates strong landward hydraulic gradients within the IM capture zone throughout the floodplain. 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 October 2008 through October 2009 are presented in Table B-1 in 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 October 2009. In October 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.

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 October 2009 release (10,128 cubic feet per second [cfs]) was greater than the USBR-projected release for that month (9,500 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 November 2009 (10,200 cfs) will be slightly greater than October 2009 (10,128 cfs). Based on the regression method results, using November 11, 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 November 2009 will be slightly higher than the October 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 2009 through January 2010. Because water demand is based on climatic factors, there is more uncertainty in these projections further into the future.

2.7 Upcoming Operation and Monitoring

Reporting of the IM extraction and monitoring activities will continue as described in the PMP and under direction from DTSC. On October 12, 2007, DTSC approved PG&E's request to discontinue monthly performance monitoring reports. The next performance monitoring report will be the Fourth Quarter/Annual 2009 Combined PMP/GMP Report. The Fourth Quarter/Annual 2009 report will present operations and performance monitoring data from November 1, 2009 through January 31, 2010.

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 Fourth 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 for offsite disposal.

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

2.8 Conclusions

The overall average landward gradient measured during August, September, and October 2009 exceeded the required minimum gradient of 0.001 feet per foot. For the northern (MW-31-135/MW-33-150) well pair, gradients for August and September 2009 were not calculated due to greater than 25 percent loss of data caused by transducer malfunction. The landward gradient calculated for the southern well pair during the month

of September was less than 0.001 feet per foot due to previously reported downtime, but the average gradient for all three well pairs exceeded that threshold for the month. Performance monitoring and evaluation of the IM hydraulic containment system will continue in accordance with the PMP and as directed by the DTSC.

Approximately 15,985,333 gallons of groundwater were extracted and treated by the IM-3 system during the August through October 2009 reporting period. An estimated 59.6 kilograms (or 131 pounds) of chromium were removed and treated by the IM system during this quarter. The average pumping rate for the IM extraction system during Third Quarter 2009, including system downtime, was 120.4 gpm.

Overall, the Cr(VI) concentrations observed in the floodplain monitoring wells are either stable or decreasing. During Third Quarter 2009, the groundwater Cr(VI) concentrations at wells MW-31-060, MW-35-060, MW-39-100, and MW-44-115 declined relative to the previous quarter. Concentrations at wells MW-33-090, MW-33-150, MW-33-210, MW-36-090, MW-36-100, MW-44-125, MW-46-175, MW-46-205, and MW-47-115 remained stable during Third Quarter 2009. 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 January 2008, 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. Fluctuating concentrations were observed at MW-34-100 during Third Quarter 2009 sampling; however, the overall trend continues to be generally declining.

3.0 Groundwater Monitoring

Figure 3-1 shows the locations and sampling frequencies of the monitoring wells in the GMP as of October 2009. The complete GMP includes 107 groundwater monitoring wells, two water supply wells, two active extraction wells, and four test wells.

3.1 Monitoring Activities

3.1.1 Routine Monitoring

The following monitoring activities were conducted during Third Quarter 2009 (August 1 through October 31, 2009):

- The third quarter GMP monitoring event was conducted from September 21, 2009 though October 2, 2009 and included 90 groundwater monitoring wells, two water supply wells, two active extraction wells, and four test wells 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) and the 17 East Ravine wells was included in this event. During this GMP event, four wells (MW-10, MW-12, MW-22, and TW-1) were also sampled for California Code of Regulations Title 22 metals analyses, and two wells (MW-16 and MW-17) were sampled for background study metals.
- Monthly groundwater sampling events were conducted on August 4 and 5, 2009 and October 12 and 13, 2009. These events included sampling five GMP monitoring wells (MW-34-80, MW-34-100, MW-44-115, MW-44-125, and MW-46-175) and the active IM extraction wells (PE-1 and TW-3D) for Cr(VI) and Cr(T).

3.1.2 Other Monitoring

As directed by DTSC, the following monitoring activities were conducted at selected GMP wells during Third Quarter 2009:

- Thirty three GMP wells screened in fluvial sediments were sampled for arsenic during the September biennial sampling event as directed by DTSC in their CMS review comment No. 186 (DTSC, 2009b). Results from this sampling are located in Appendix D.
- Three wells comprising the MW-64 cluster were sampled monthly beginning September 2009 for Cr(VI) and Cr(T). This well cluster will be sampled for 6 months total as directed by DTSC in an email dated October 5, 2009 (DTSC, 2009c). Results from this sampling are located in Appendix B.

3.2 Monitoring Results

3.2.1 Cr(VI) Monitoring

The analytical results for Cr(VI), Cr(T), and field measurement of specific conductance and pH in groundwater samples collected from GMP wells during the Third Quarter 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 September 2009 Cr(VI) results for shallow, mid-depth, deep, and bedrock wells in the Alluvial Aquifer and bedrock wells, respectively. Overall, the September 2009 chromium results are in the range of concentrations observed during the prior 2007 and 2008 site-wide sampling events. In Third Quarter 2009, the maximum detected Cr(VI) and Cr(T) concentrations were 10,800 µg/L and 11,000 µg/L, respectively, at MW-20-130. Most wells exhibit either stable or decreasing concentrations of Cr(VI) and Cr(T) over the last year. Refer to Section 2.3.2 of this report for the recent concentration trends observed in wells in the area of active IM pumping.

The Arizona monitoring well samples in September 2009 were analyzed for Cr(VI), Cr(T) and field measurement of specific conductance and pH. Analytical results showed no chromium detections in the Arizona monitoring wells except for MW-55-120, which showed maximum concentrations of 3.98 µg/L, and of 5.10 µg/L, for Cr(VI) and Cr(T), respectively. These detections are consistent with the analytical results from the second quarter sampling event in May 2009 (Appendix B, Table B-1).

The East Ravine monitoring wells were sampled in September 2009 and were analyzed for Cr(VI) Cr(T) and field measurements of specific conductance and pH. The September 2009 event is the second sampling event at these newly completed East Ravine wells. With few exceptions, the September 2009 results are generally consistent with results from the first sampling event in July 2009. The exceptions are the concentration differences between the July and September 2009 sampling events at wells MW-57-070, MW-62-110, and MW-62-190. Based on historical data from other monitoring wells, it is not uncommon to have analyte concentrations shift in wells after the aquifer has reached equilibrium (after drilling and development).

3.2.2 Other Monitoring

3.2.2.1 Title 22 Metals Groundwater Analyses

Four GMP wells (MW-10, MW-12, MW-22 and TW-1) were sampled during Third 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 September 2009 groundwater sampling were arsenic, barium, copper (MW-10 and TW-1 only), molybdenum, nickel (MW-22 only), selenium, vanadium, and zinc. Excluding Cr(T), arsenic, and selenium, the dissolved concentrations of the trace metals detected during the September 2009 sampling are below their respective California drinking water standards.

3.2.2.2 Arsenic Sampling in Fluvial Wells

Thirty three fluvial wells were sampled in September 2009 for arsenic, and the results are presented in Appendix D, Table D-1. Twenty two of the 33 arsenic results were greater than the California MCL of 10 µg/L.

3.2.2.3 Monthly MW-64 Sampling

Three GMP wells (MW-64-150, MW-64-205, and MW-64-260) were sampled monthly beginning in September 2009 for Cr(VI) and Cr(T), and results are presented in Table B-1. Results for MW-64-150 were non-detect for September and October 2009, while results from MW-64-205 and MW-64-260 were either non-detect or below 2 µg/L for both months. This monthly sampling has been completed in addition to quarterly sampling at MW-64 for the purpose of determining the necessity of step-out wells at that location. Monthly sampling will continue through March 2010.

3.2.3 Data Validation and Completeness

Laboratory analytical data from the Third Quarter 2009 GMP sampling events were reviewed by the project chemists to assess data quality and to identify deviations from analytical requirements. The completeness objectives were met for all method and analyte combinations. No significant analytical deficiencies were identified in the Third Quarter 2009 GMP data.

One item noted by the laboratory in their own quality control process is the difference in Cr(T) concentrations in the sample containers collected for Cr(T) and Cr(VI) analyses at wells MW-62-110 and MW-62-190—both of which are low-yield bedrock wells. To enhance the sample collection at these low-yield bedrock wells, the standard operating procedure has been updated to allow for sample collection to first occur in a single large sample container and then for sample aliquots to be split and filtered/preserved, as needed, into the designated bottles for each requested analytical method.

3.3 Upcoming GMP Monitoring

The following GMP activities are scheduled for Fourth Quarter 2009:

- The November monthly groundwater sampling event at six monitoring wells and two extraction wells was conducted between November 2 and 4, 2009.
- The December quarterly sampling event will be conducted at 46 GMP wells, including new monitoring wells in the East Ravine area transferred into the GMP program after July 2009. This event is anticipated to occur between December 7 and 11, 2009.
- January monthly groundwater sampling event at six monitoring wells and two extraction wells will be conducted on January 11 and 12, 2009.

The results of the quarterly groundwater and surface water monitoring events and the monthly sampling events will be reported in the Fourth Quarter/Annual 2009 PMP-GMP Monitoring Report, which will be submitted by March 15, 2010.

4.0 Surface Water Monitoring

Figure 4-1 shows the locations of the shoreline and in-channel surface water monitoring stations as of September 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 in-channel locations and six shoreline locations. Beginning in September 2008, the number of shoreline sampling locations was reduced from ten 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 September 8 and 9, 2009 at six shoreline and ten in-channel sampling locations, including the new shoreline locations R-63 and SW-2. Samples were analyzed for Cr(VI), Cr(T), and water quality parameters, specific conductance, and pH were measured.

4.1 Surface Water Monitoring Results

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

4.2 Upcoming Surface Water Monitoring

Low river level surface water sampling at six shoreline and ten in-channel locations is expected to be conducted on mid-December 2009 and mid-January 2010. 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 Fourth Quarter 2009/Annual 2009 PMP-GMP Monitoring Report, which will be submitted by March 15, 2010.

5.0 References

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Tables

TABLE 2-1
Pumping Rate and Extracted Volume for IM System, August through October 2009
Third Quarter 2009 IM Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Extraction Well ID	August 2009		September 2009		October 2009		Third 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	0.29	13,168	0.10	13,168	53,104,680
TW-03D	104.96	4,685,456	78.26	3,380,954	105.59	4,713,335	96.27	12,779,745	198,160,381
PE-01	26.42	1,179,304	18.23	787,608	27.45	1,225,509	24.03	3,192,421	58,959,851
TOTAL	**131.4**	**5,864,759**	**96.5**	**4,168,561**	**133.3**	**5,952,012**	**120.4**	**15,985,333**	311,225,691
							Volume Pumped from the MW-20 Well Cluster		1,527,724
							Total Volume Pumped (gal)		312,753,415
							Total Volume Pumped (ac-ft)		959.8

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.

Please note that the Third Quarter reporting period for the PMP is August through October 2009 while the third quarter reporting period for the IM-3 Waste Discharge Requirement is July through September 2009.

TABLE 2-2
Analytical Results for Extraction Wells, May 2008 through October 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
	01-Jul-09	1,360	1,500	5,300
	05-Aug-09	1,270	1,190	5,270
	02-Sep-09	1,360	1,220	5,140
	07-Oct-09	1,340	1,330	5,530
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
	01-Jul-09	19.2	20.4	3,460
	05-Aug-09	17.5	19.2	3,560
	02-Sep-09	17.9	19.6	3,420
	07-Oct-09	18.6	20.7	3,360

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
Third 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 [a] (µg/L)	Most Recent Cr(VI) Concentration		Cr(VI) Concentration Trend 2008-2009 [c]
		(µg/L)	Date	
Shallow Zone Wells				
MW-21	20	ND (1.0)	23-Sep-09	NA
MW-32-20	20	ND (5.2)	22-Sep-09	NA
MW-32-35	20	ND (1.0)	22-Sep-09	NA
MW-33-40	20	ND (0.21)	24-Sep-09	NA
MW-39-40	20	ND (1.0)	1-Oct-09	NA
MW-47-55	150	18.8	24-Sep-09	fluctuating, decreasing in 2009
Mid-Depth Zone Wells				
MW-33-90	25	22.4	29-Sep-09	stable
MW-36-70	20	ND (0.2)	22-Sep-09	NA
MW-42-55	20	ND (1.0)	23-Sep-09	NA
MW-42-65	20	ND (1.0)	23-Sep-09	NA
MW-44-70	20	ND (0.2)	21-Sep-09	NA
Deep Zone Wells				
MW-27-85	20	ND (1.0)	1-Oct-09	NA
MW-28-90	20	ND (1.0)	24-Sep-09	NA
MW-33-150	20	12.3	29-Sep-09	stable
MW-33-210	20	11.8	29-Sep-09	stable
MW-34-80	20	ND (1.0)	13-Oct-09	NA
MW-34-100	750	211	14-Oct-09	fluctuating, overall decreasing from January 2008
MW-43-75	20	ND (1.0)	1-Oct-09	NA
MW-43-90	20	ND (1.0)	1-Oct-09	NA
MW-44-115	1,200	300	14-Oct-09	decreasing
MW-44-125	475	20.3	14-Oct-09	decreasing
MW-46-175	225	165	14-Oct-09	fluctuating
MW-46-205	20	4.86	25-Sep-09	stable
MW-47-115	31 [b]	17.2	24-Sep-09	overall stable

Notes:

(a) 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)

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

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

ND not detected at listed reporting limit

NA not applicable

TABLE 2-4
Average Hydraulic Gradients, August through October 2009
Third Quarter 2009 IM Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Location[a]	Reporting Period	Mean Landward Hydraulic Gradient[b] (feet/foot)	Days in Monthly Average[c]
Overall Average	August[d]	0.0065	NA
	September[d]	0.0013	NA
	October	0.0063	NA
Northern Gradient Pair	August	INC	10/31
MW-31-135 / MW-33-150	September	INC	10/30
	October	0.0017	27/31
Central Gradient Pair	August	0.0098	31/31
MW-45-95 / MW-34-100	September	0.0019	30/30
	October	0.0123	31/31
Southern Gradient Pair	August	0.0033	31/31
MW-45-95 / MW-27-85	September	0.0008	30/30
	October	0.0041	31/31

NOTES:

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

INC = Data incomplete, less than 75% of data available over reporting period due to rejection or field equipment malfunction

[a] Refer to Figure 2-1 for location of well pairs

[b] For IM pumping, the target landward gradient is 0.001 feet/foot

[c] Number of days transducers in both wells were operating correctly / total number of days in month.

[d] Gradient calculated using only the Central and Southern Well Pairs due to incomplete data from the Northern Well Pair.

TABLE 2-5
Predicted and Actual Monthly Average Davis Dam Discharge and Colorado River Elevation at I-3
Third 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 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	12,296	-396	454.8	455.08	0.3
September 2009	12,700	12,203	497	454.9	455.24	0.4
October 2009	9,500	10,128	-628	453.8	454.04	0.3
November 2009	10,200			454.1		

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

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

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.

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

		California MCL:	6	10	1,000	4	5	NE	50	1,000*	15	2	NE	100	50	100*	2	NE	5,000*
Well ID		**Sample Date**	**Antimony**	**Arsenic**	**Barium**	**Beryllium**	**Cadmium**	**Cobalt**	**Chromium**	**Copper**	**Lead**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Thallium**	**Vanadium**	**Zinc**
MW-10		09/22/2009	ND (10)	7.10	42.0	ND (1.0)	ND (3.0)	ND (3.0)	**348**	5.20	ND (10)	ND (0.2)	59.0	ND (5.0)	7.80	ND (3.0)	ND (0.5)	26.0	17.0
MW-12		09/24/2009	ND (10)	**49.0**	63.0	ND (1.0)	ND (3.0)	ND (3.0)	**2,780**	ND (5.0)	ND (10)	ND (0.2)	17.0	ND (5.0)	9.40	ND (3.0)	ND (0.5)	11.0	ND (10)
	FD	09/24/2009	ND (10)	**49.0**	63.0	ND (1.0)	ND (3.0)	ND (3.0)	**2,910**	ND (5.0)	ND (10)	ND (0.2)	15.0	ND (5.0)	9.90	ND (3.0)	ND (0.5)	12.0	ND (10)
MW-22		09/29/2009	ND (10)	**28.0**	67.0	ND (1.0)	ND (3.0)	ND (3.0)	ND (1.0)	ND (5.0)	ND (10)	ND (0.2)	33.0	5.40	4.90 J	ND (3.0)	ND (0.5)	ND (3.0)	17.0
TW-1		09/22/2009	ND (10)	6.20	29.0	ND (1.0)	ND (3.0)	ND (3.0)	**4,130**	25.0	ND (10)	ND (0.2)	15.0	ND (5.0)	**52.0**	ND (3.0)	ND (0.5)	ND (3.0)	56.0

Notes:

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

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

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

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

Metals analyzed by Methods SW6010B or SW6020A or SW7470A.

Analytes detected above MCL are in bold.

TABLE 4-1
Surface Water Sampling Results, August through October 2009
Third Quarter 2009 IM Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (total) (µg/L)	Specific Conductance (µS/cm)	Lab pH
In-channel Locations					
C-BNS-D	09/08/2009	ND (0.2)	ND (1.0)	982	8.24 J
C-CON-S	09/09/2009	ND (0.2)	ND (1.0)	972	8.28 J
C-CON-D	09/09/2009	ND (0.2)	ND (1.0)	979	8.29 J
C-I-3-S	09/08/2009	ND (0.2)	ND (1.0)	973	8.28 J
C-I-3-D	09/08/2009	ND (0.2)	ND (1.0)	975	8.29 J
C-MAR-S	09/08/2009	ND (0.2)	ND (1.0)	992	7.98 J
C-MAR-D	09/08/2009	ND (0.2)	ND (1.0)	1010	8.04 J
C-NR1-S	09/09/2009	ND (0.2)	ND (1.0)	970	8.27 J
C-NR1-D	09/09/2009	ND (0.2)	ND (1.0)	1010	8.24 J
C-NR3-S	09/09/2009	ND (0.2)	ND (1.0)	969	8.24 J
C-NR3-D	09/09/2009	ND (0.2)	ND (1.0)	964	8.26 J
C-NR4-S	09/09/2009	ND (0.2)	ND (1.0)	962	8.24 J
C-NR4-D	09/09/2009	ND (0.2)	ND (1.0)	975	8.25 J
C-R22a-S	09/08/2009	ND (0.2)	ND (1.0)	959	8.31 J
C-R22a-D	09/08/2009	ND (0.2)	ND (1.0)	967	8.28 J
C-R27-S	09/08/2009	ND (0.2)	ND (1.0)	965	8.28 J
C-R27-D	09/08/2009	ND (0.2)	ND (1.0)	963	8.26 J
C-TAZ-S	09/08/2009	ND (0.2)	ND (1.0)	972	8.27 J
C-TAZ-D	09/08/2009	ND (0.2)	ND (1.0)	962	8.29 J
Shoreline Samples					
R-19	09/09/2009	ND (0.2)	ND (1.0)	1000	8.31 J
R-28	09/09/2009	ND (0.2)	ND (1.0)	987	8.27 J
R-63	09/08/2009	ND (0.2)	ND (1.0)	1000	8.21 J
RRB	09/09/2009	ND (0.2)	ND (1.0)	998	8.11 J
SW1	09/09/2009	ND (0.2)	ND (1.0)	1040	7.89 J
SW2	09/09/2009	ND (0.2)	ND (1.0)	1010	8.04 J

TABLE 4-1
Surface Water Sampling Results, August through October 2009
Third Quarter 2009 IM Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Notes:

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

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

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

Figures

N

0 250 500 1,000
Feet

COLORADO RIVER

NATIONAL TRAILS HWY

FLOODPLAIN

EAST MESA INJECTION AREA

IW-2

IW-3

TREATMENT PLANT

BAT CAVE WASH

TW-3

PE-1

MW-20 BENCH

BNSF RAILROAD

INTERSTATE 40

TOPOCK, AZ

PG&E TOPOCK COMPRESSOR STATION

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

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

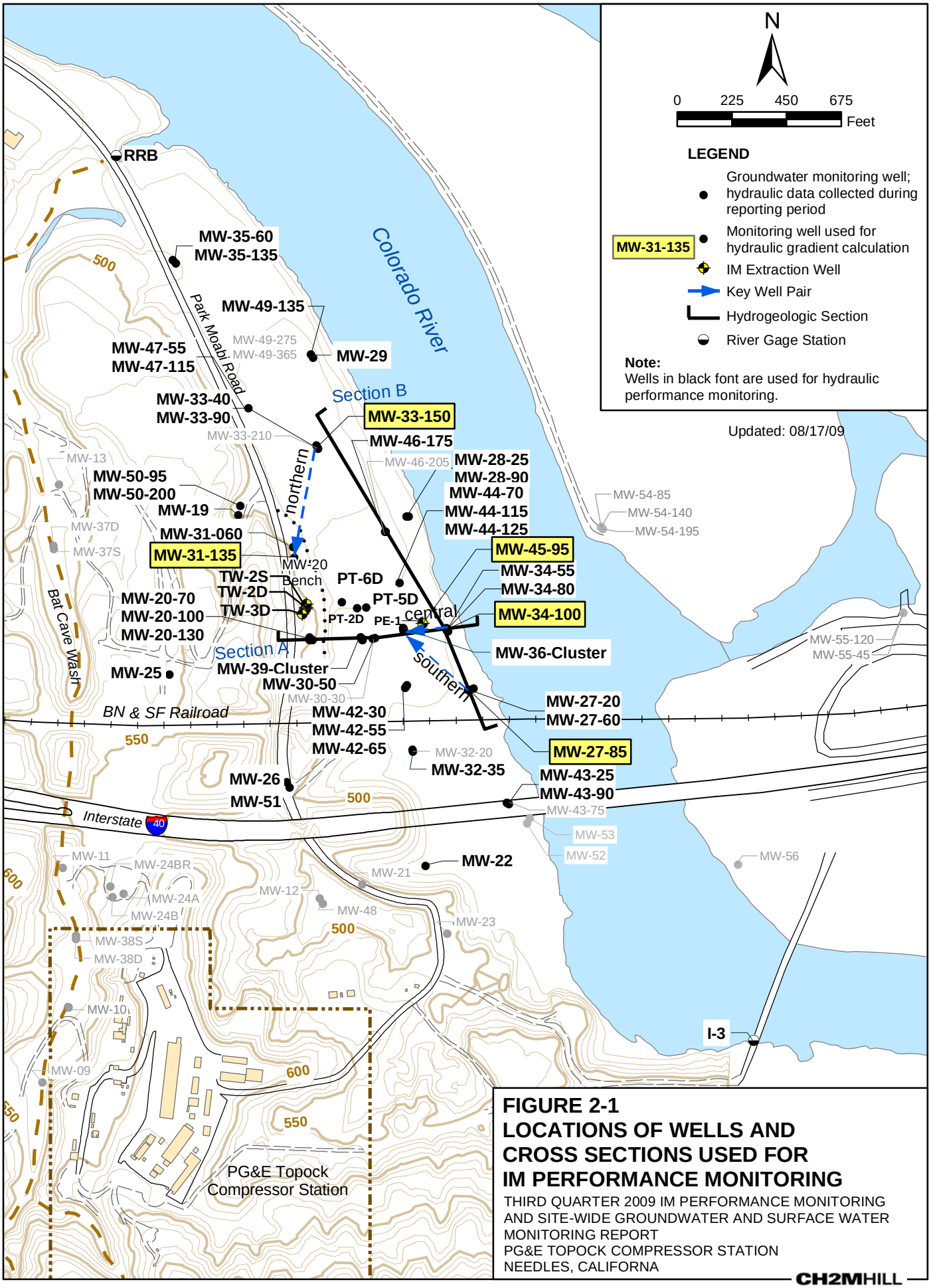

FIGURE 2-1
LOCATIONS OF WELLS AND CROSS SECTIONS USED FOR IM PERFORMANCE MONITORING

THIRD 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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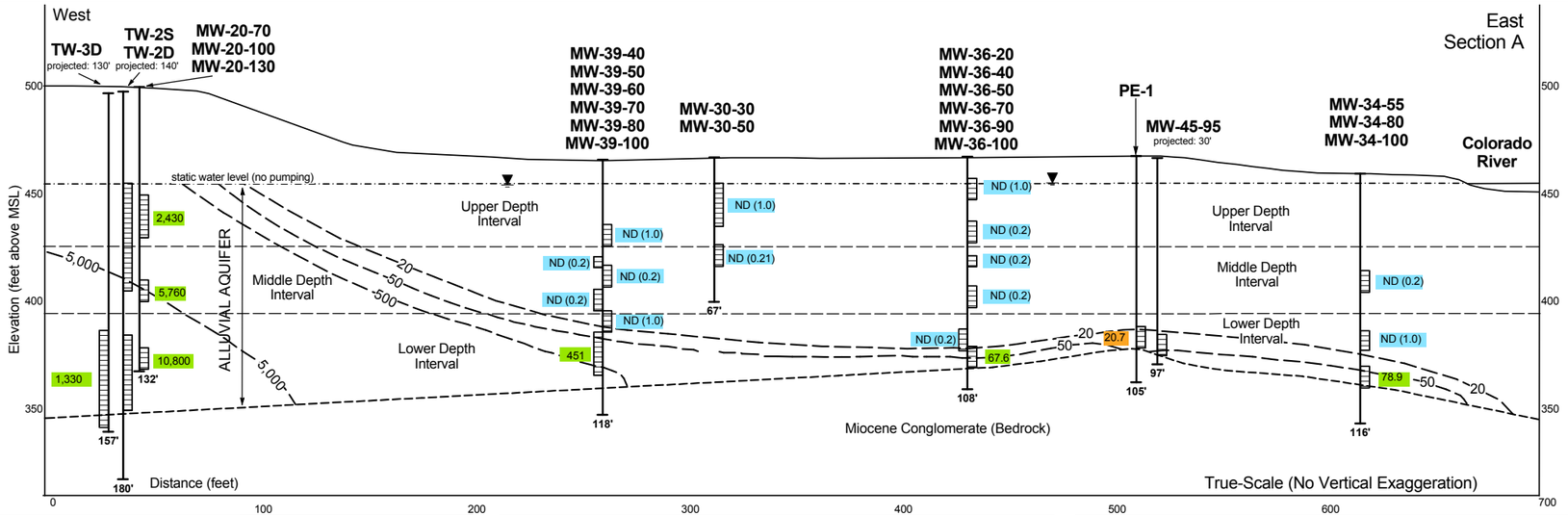
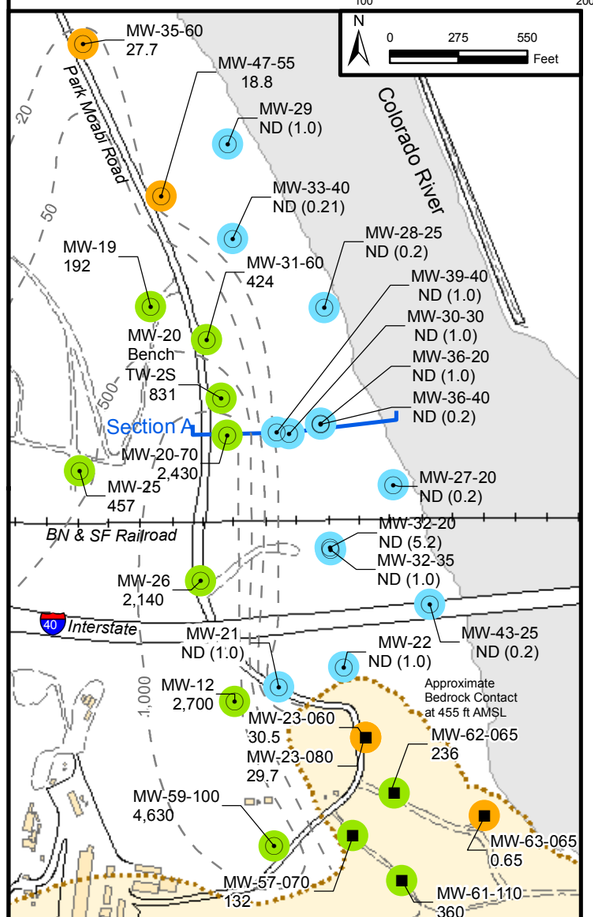
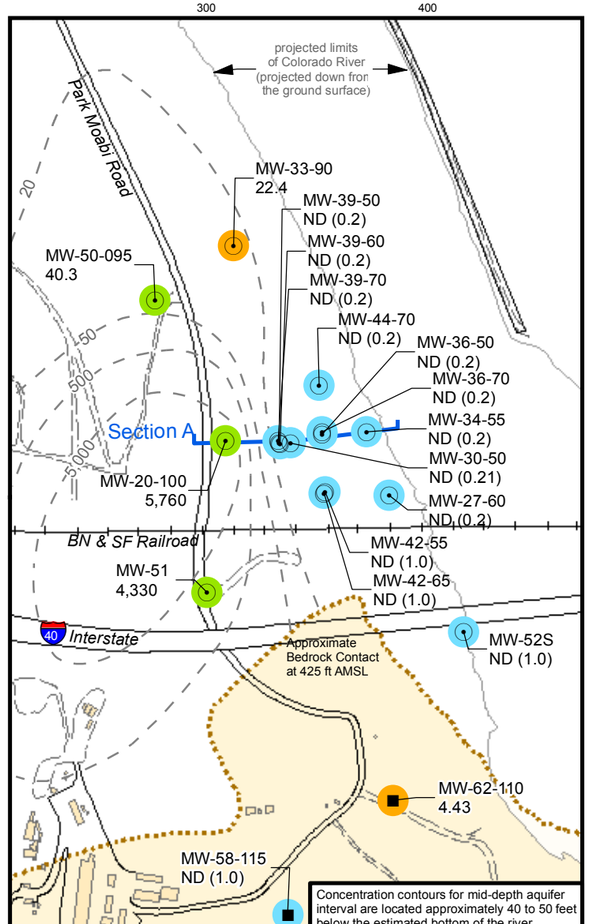
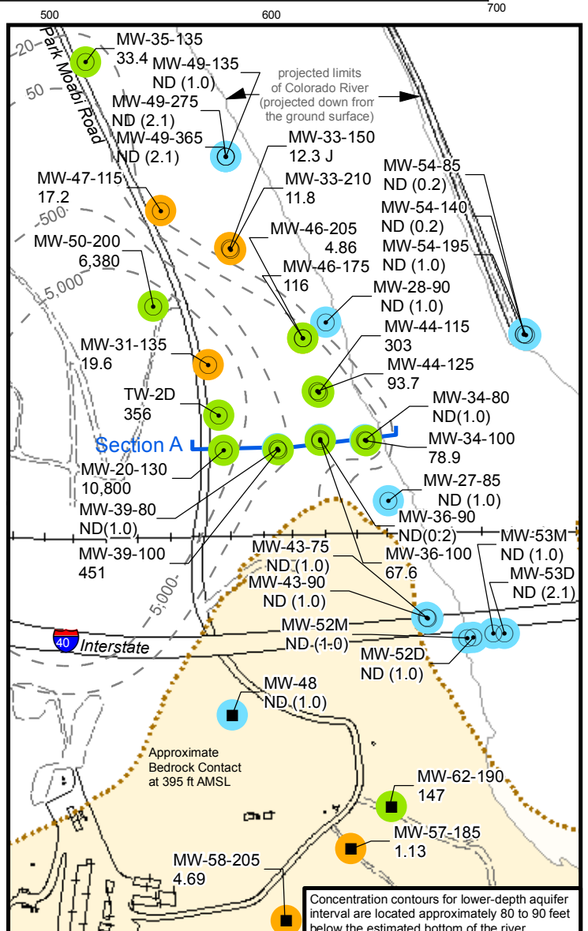




Shallow Wells (Upper Depth Interval)



Mid-Depth Wells (Mid-Depth Interval)



Deep Wells (Lower Depth Interval)

LEGEND

- Alluvial Aquifer Well Sampled During September 2009 Sampling Event
- Bedrock Well Sampled During September 2009 Sampling Event

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

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

Cr(VI) Concentrations - September 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 Alluvial aquifer depth interval based on September 2009 sampling results.
- Hydrogeologic Section A showing aquifer depth intervals and September 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.

4. The beige shading shows the area of bedrock groundwater and Cr(VI) concentrations for bedrock monitoring wells for the third quarter 2009 results presentation. The IM performance standard was established for containment of Cr(VI) concentrations greater than 20 ug/L in the floodplain portion of the Alluvial Aquifer.

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

FIGURE 2-2
MAXIMUM Cr(VI) CONCENTRATIONS IN ALLUVIAL AQUIFER, SEPTEMBER 2009
THIRD 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)

700
600
500
400
300
200
100
0

water table (average 455' MSL)

ALLUVIAL AQUIFER

Oldest Alluvium

Fluvial Deposits

Upper Depth Interval

Middle Depth Interval

Lower Depth Interval

Approximate geologic contact
between alluvial fan
and fluvial deposits

ND (0.21)
22.4
12.3J
11.8
237'

ND (0.2)
ND (1.0)
116
4.86
216'

ND (0.2)
ND (0.2)
ND (1.0)
303
93.7
134'

ND (0.2)
ND (0.2)
ND (1.0)
78.9
116'

ND (0.2)
ND (0.2)
ND (1.0)
107'

20
50

Miocene Conglomerate (Bedrock)

True-Scale (No Vertical Exaggeration)

-100 0 100 200 300 400 500 600 700 800 900 1,000 1,100 1,200 1,300 1,400
Distance (feet)

Notes:

J = concentration estimated by laboratory or data validation

Results posted are maximum Cr(VI) concentrations from September 2009 groundwater sampling.

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

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), equivalent to parts per billion (ppb).

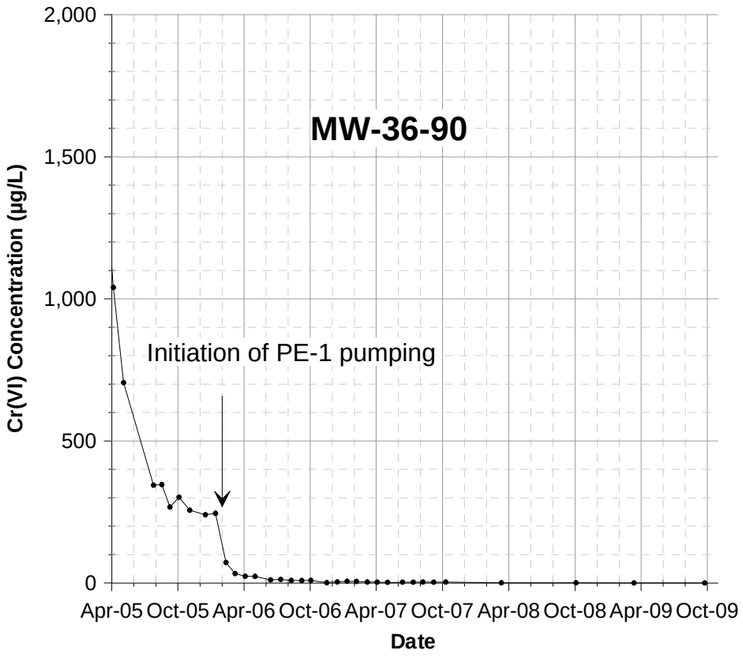
ND (1)	Not detected at listed reporting limit (ppb)
29	Less than 32 µg/L
3,810	Greater than 32 µg/L

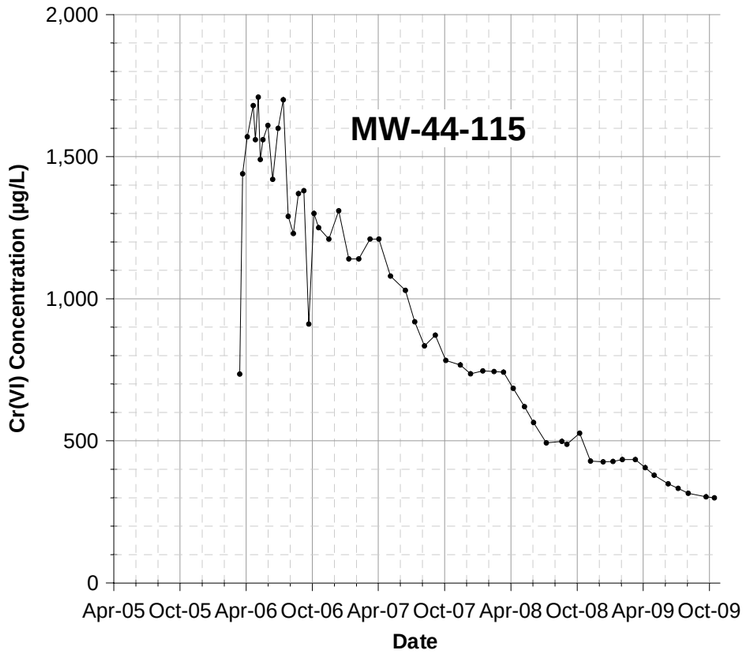
FIGURE 2-3
Cr(VI) CONCENTRATIONS
FLOODPLAIN CROSS-SECTION B,
SEPTEMBER 2009

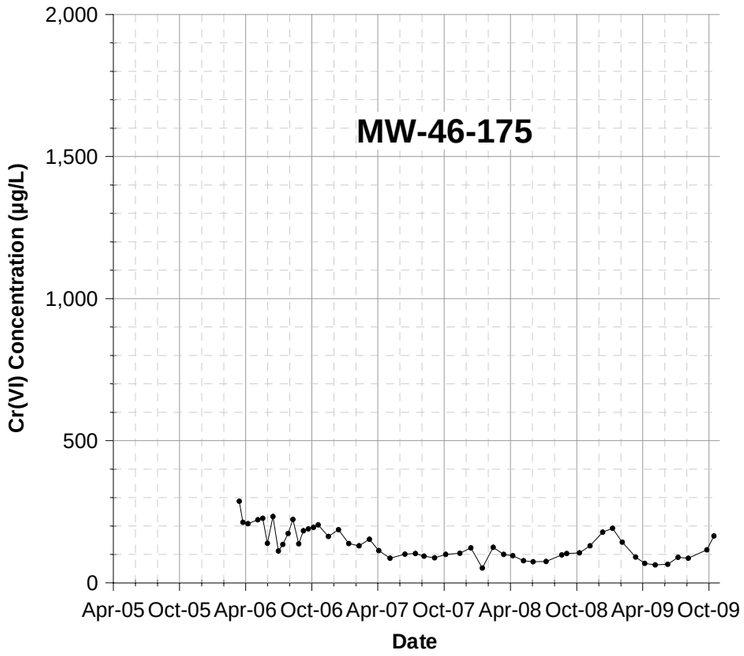
THIRD QUARTER 2009 IM PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

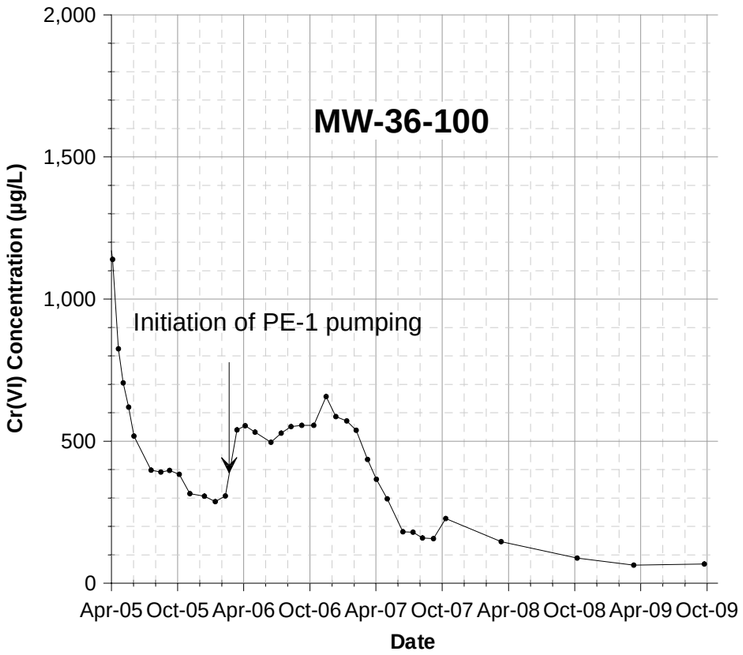
CH2MHILL

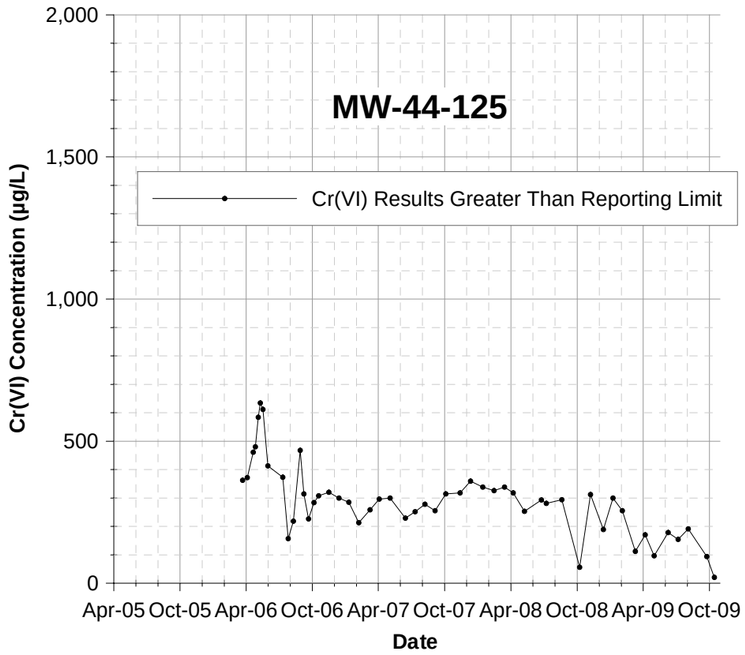
C:\DOCUMENTS AND SETTINGS\CHALL6\MY DOCUMENTS\GINT\FIGURE_2-3_XSECB_CR.GDW;

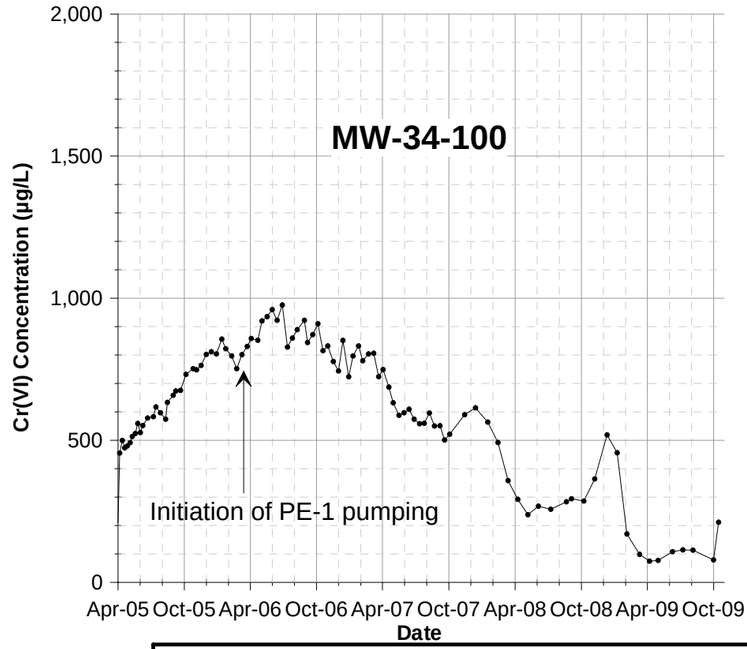












Notes
1. Hexavalent chromium [Cr(VI)] results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
3. MW-36 wells selected to monitor effects of PE-1 pumping on plume 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 OCTOBER 2009
THIRD 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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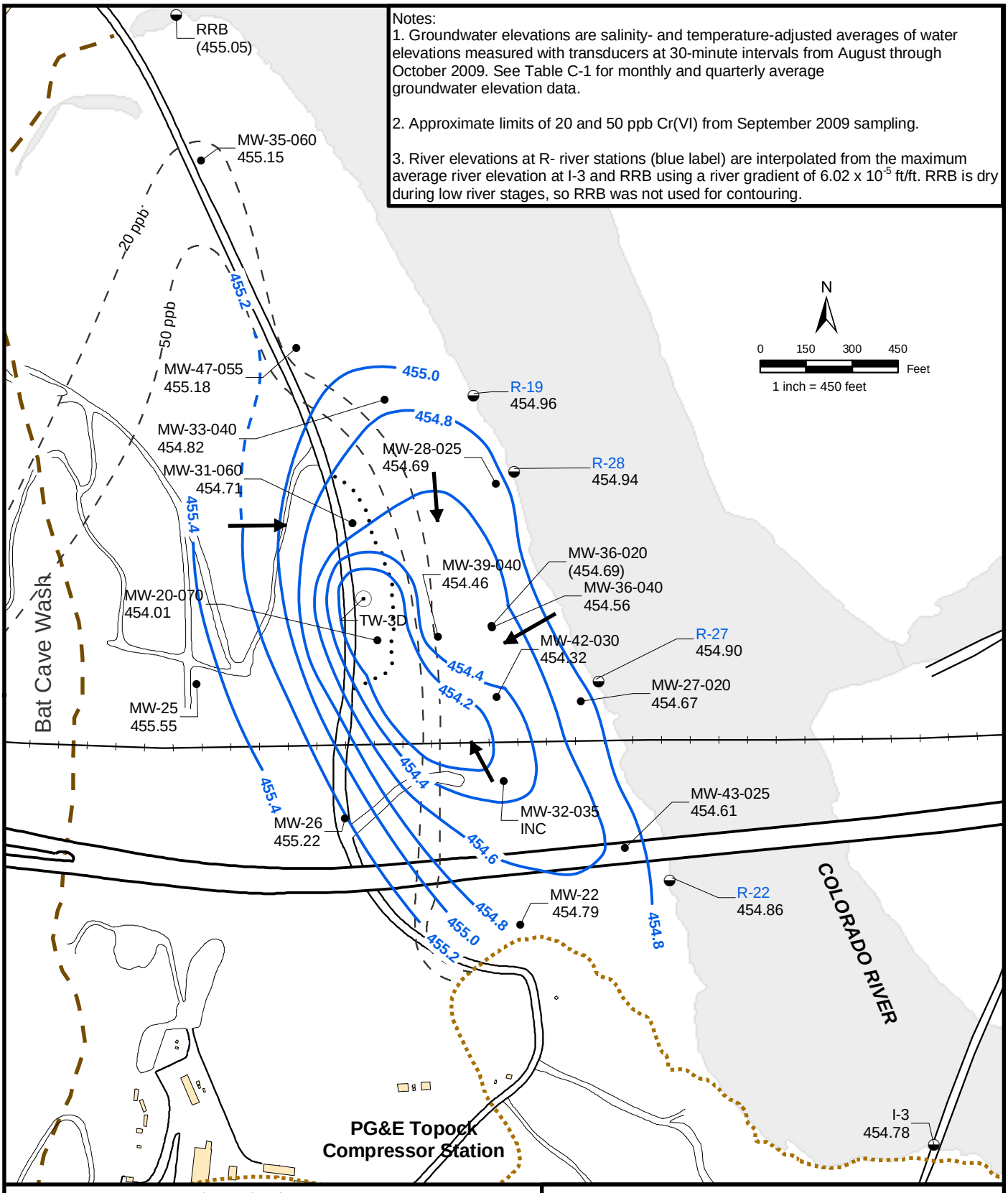

FIGURE 2-5a
AVERAGE GROUNDWATER ELEVATIONS FOR SHALLOW WELLS, AUGUST THROUGH OCTOBER 2009

THIRD 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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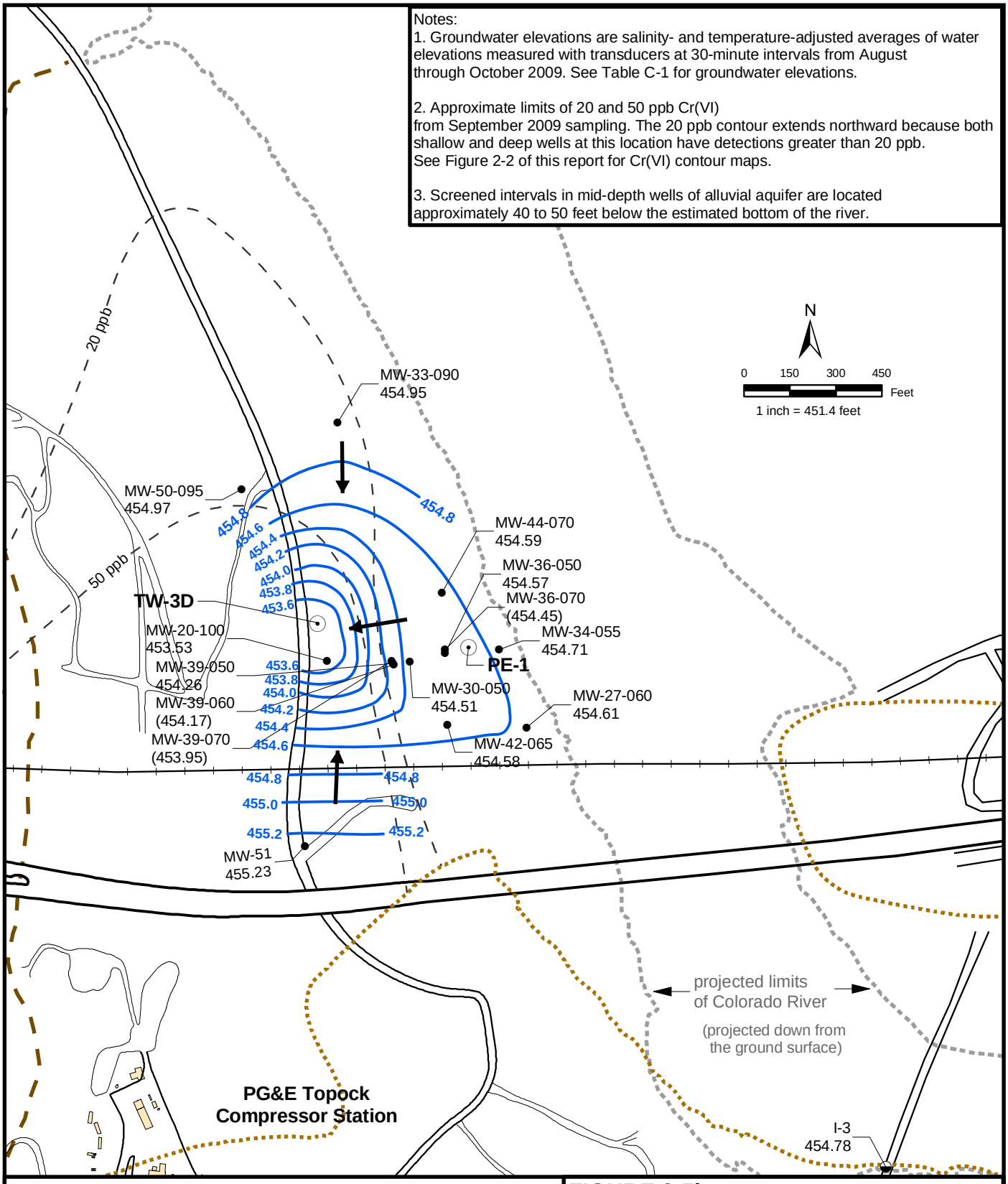

FIGURE 2-5b
AVERAGE GROUNDWATER ELEVATIONS FOR MID-DEPTH WELLS, AUGUST THROUGH OCTOBER 2009

THIRD 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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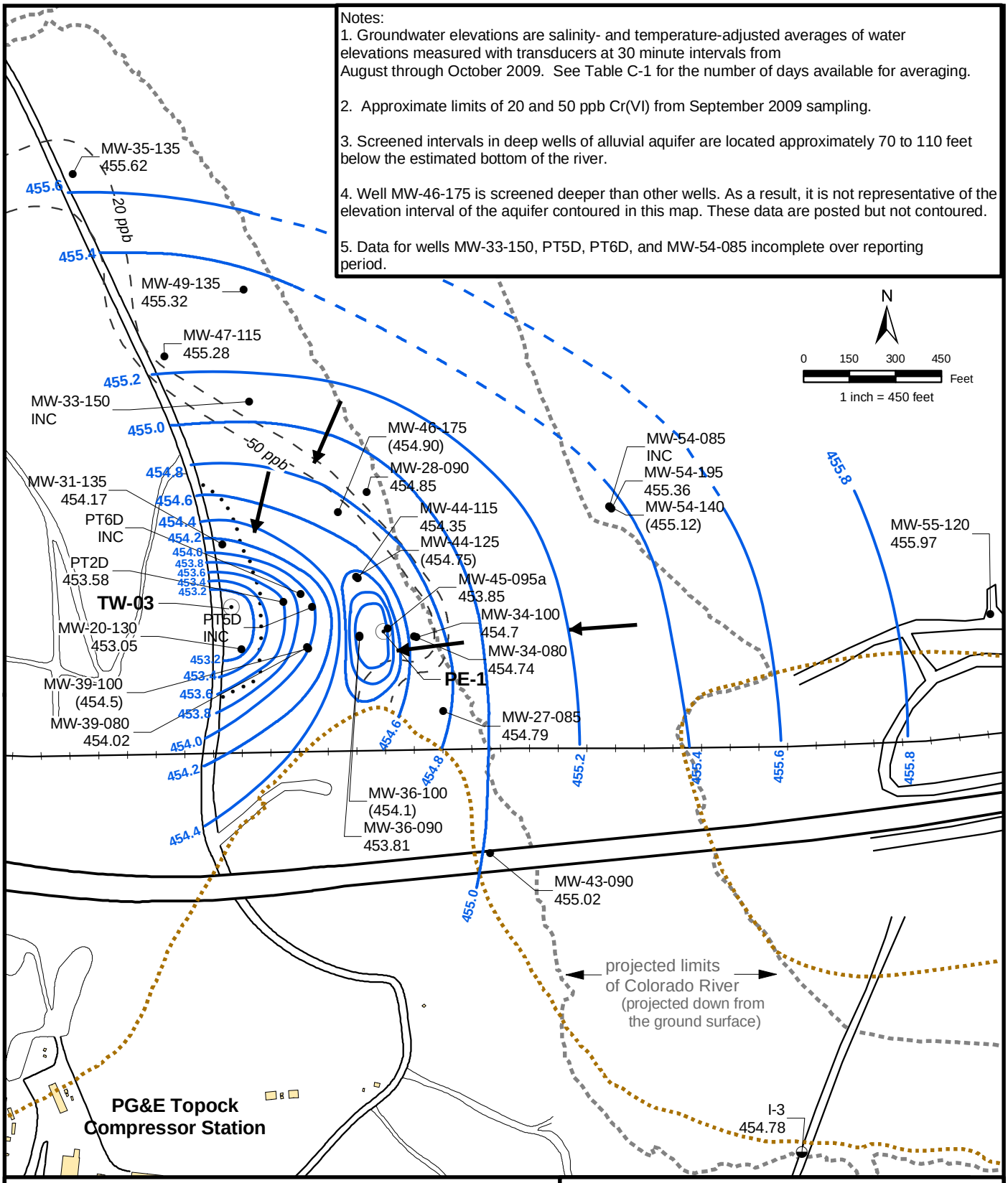

FIGURE 2-5c
AVERAGE GROUNDWATER ELEVATIONS FOR DEEP WELLS, AUGUST THROUGH OCTOBER 2009

THIRD 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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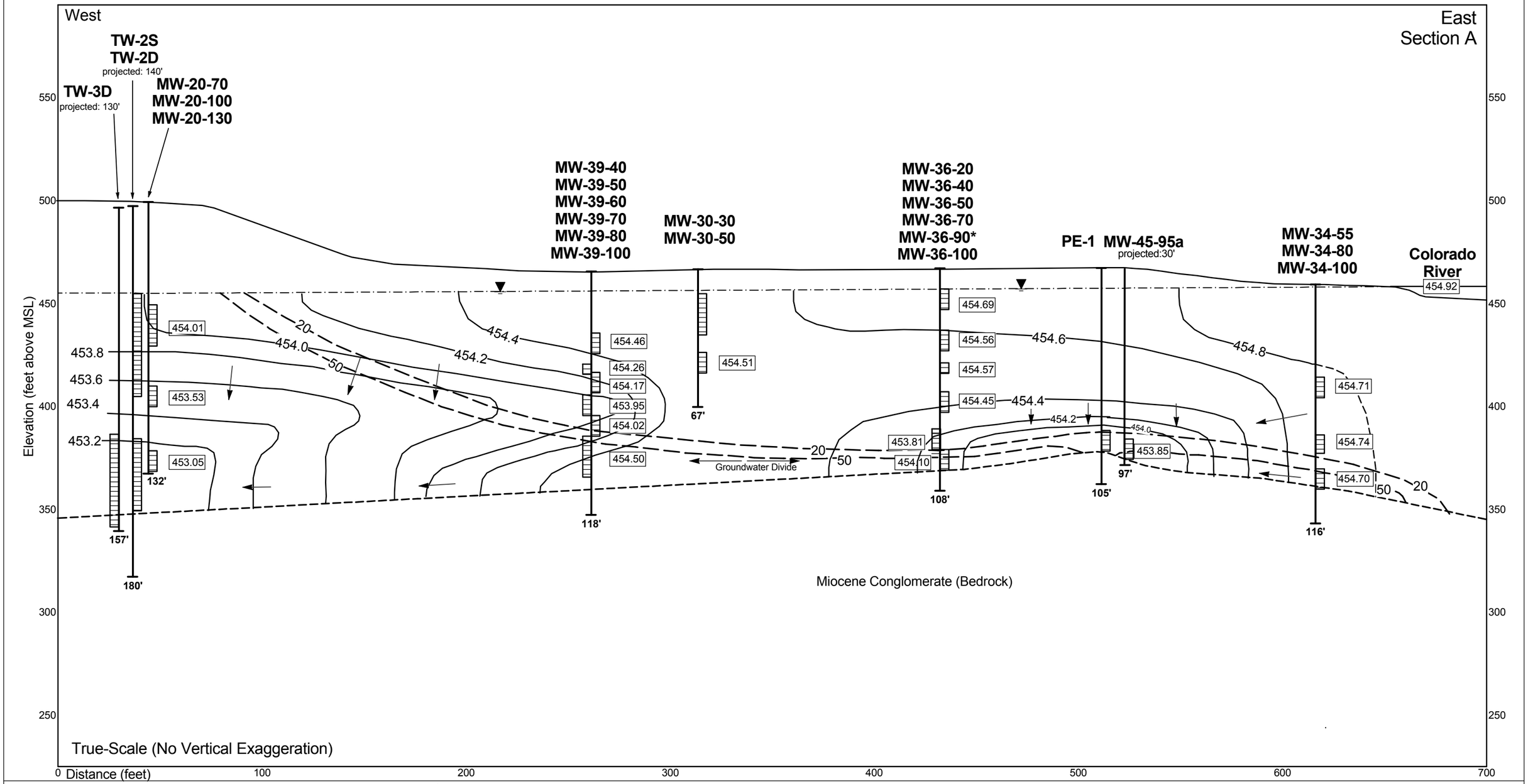


Notes:
Results show average groundwater elevations for August 1 through October 31, 2009 measured with transducers at 30 minute intervals.

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

Legend:

MW-30-50 — well screen

Inferred water table

455.23 — Monthly average groundwater head (ft AMSL)

103 — boring depth (feet)

20 — Inferred hexavalent chromium contour (ppb)

453.5 — Groundwater head contour

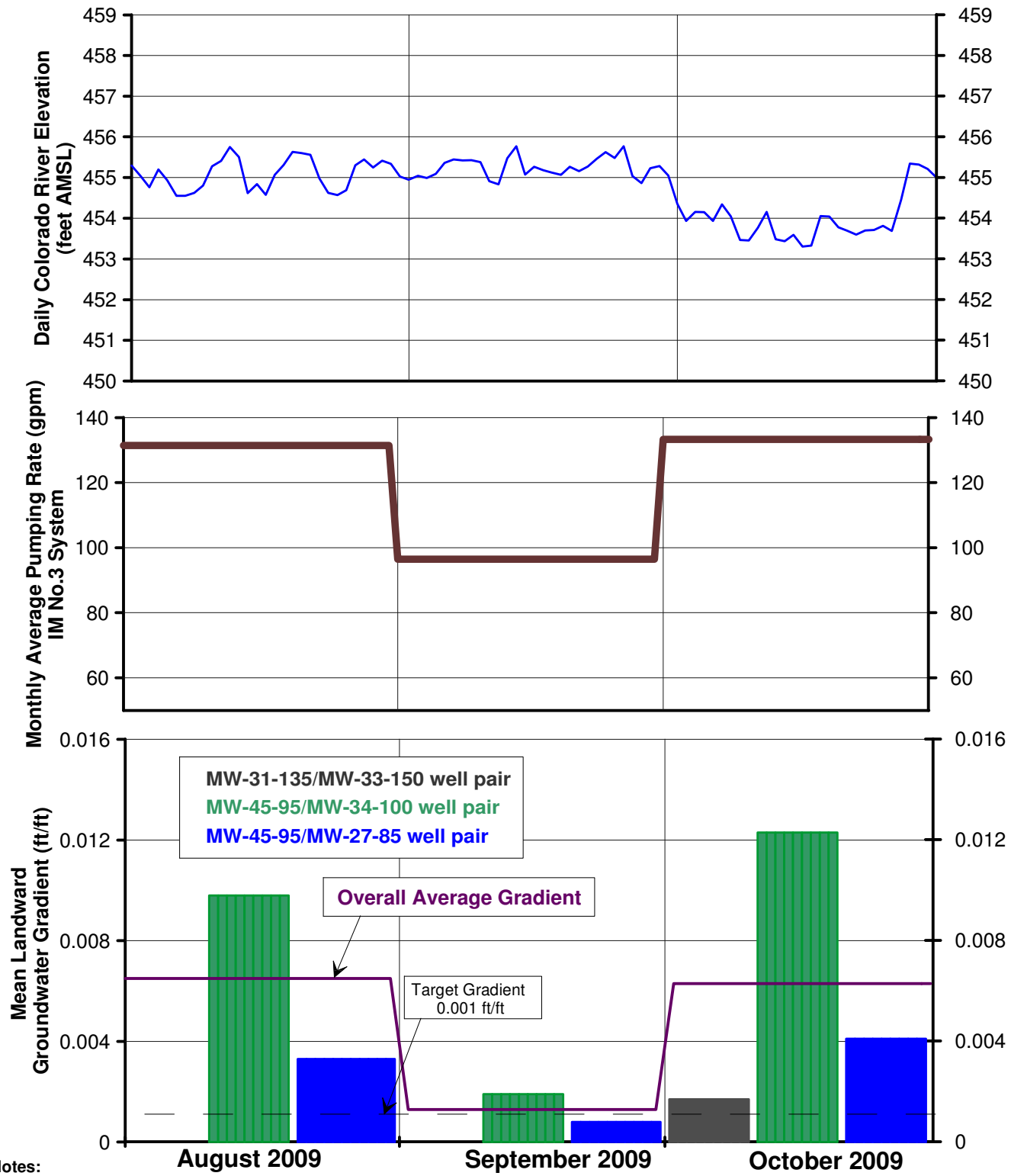
453.5 — Inferred groundwater head contour

Interpreted groundwater flow direction

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

CH2MHILL

C:\DOCUMENTS AND SETTINGS\CHALL6\MY DOCUMENTS\GINT\FIGURE_3-7_XSECA_GW.GDW;



Notes:

1) For IM pumping, the target landward gradient is 0.001 feet/foot.
2) Refer to Table 2-1 and Section 2.1 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.
5) No gradient was calculated at pair MW-31-135/ MW-33-150 due to less than 75% of data available over reporting period due to rejection or field equipment malfunction.
6) The Calculated Monthly Average for August and September was calculated without data from pair pair MW-31-135/ MW-33-150 due to less than 75% of data available.

FIGURE 2-7
MEASURED HYDRAULIC GRADIENTS, RIVER ELEVATION, AND PUMPING RATE, AUGUST THROUGH OCTOBER 2009

THIRD 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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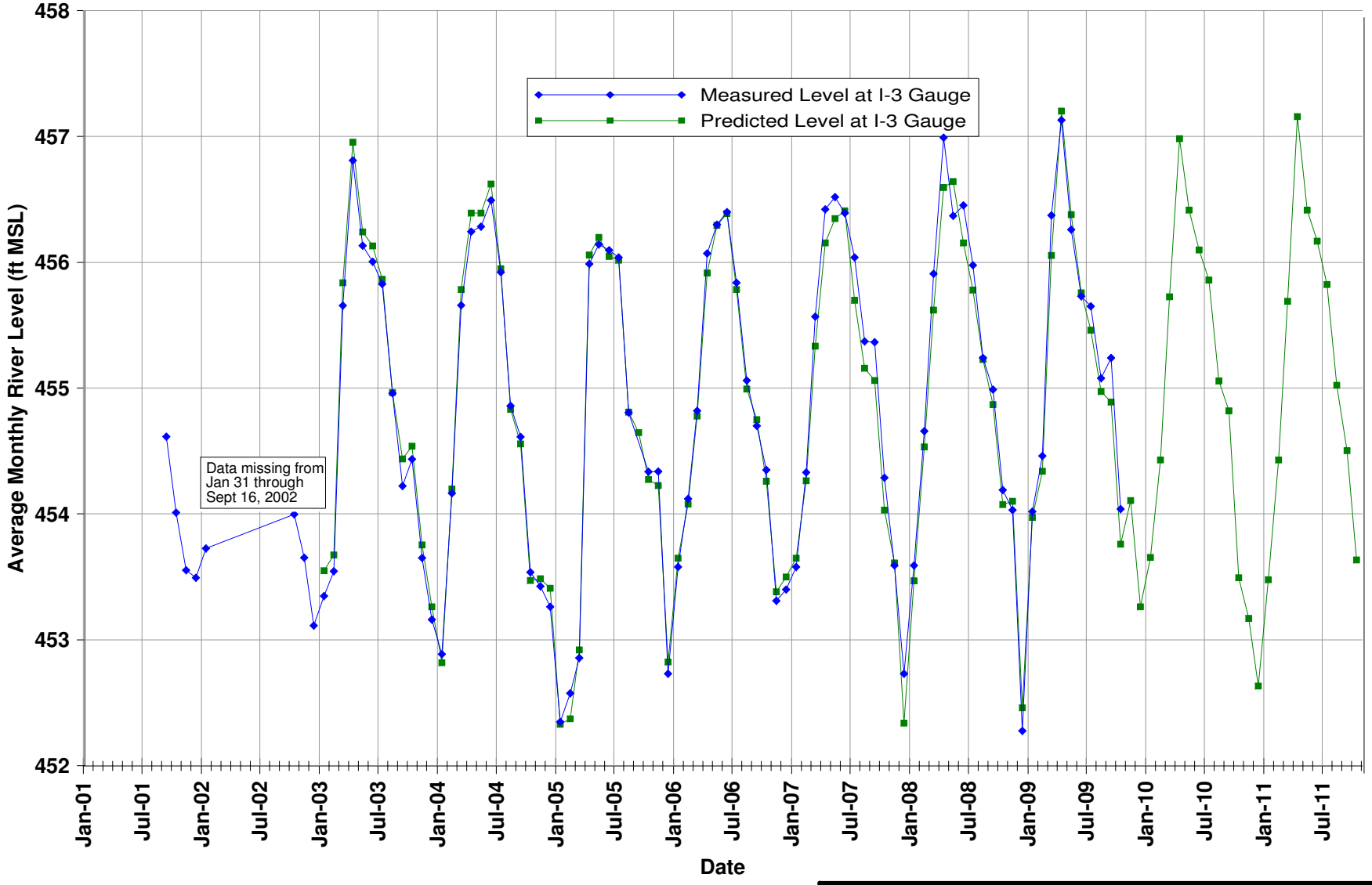

Note:
Projected river level is calculated based on monthly averages of Davis Dam release and stage in Lake Havasu as of September 9, 2009.
Measured data through October 31, 2009.
I-3 data unavailable from September 18 through October 4, 2006
River projections at I-3 are based upon November 2009 USBR projections.

FIGURE 2-8
PAST AND PREDICTED FUTURE RIVER LEVELS AT TOPOCK COMPRESSOR STATION
THIRD 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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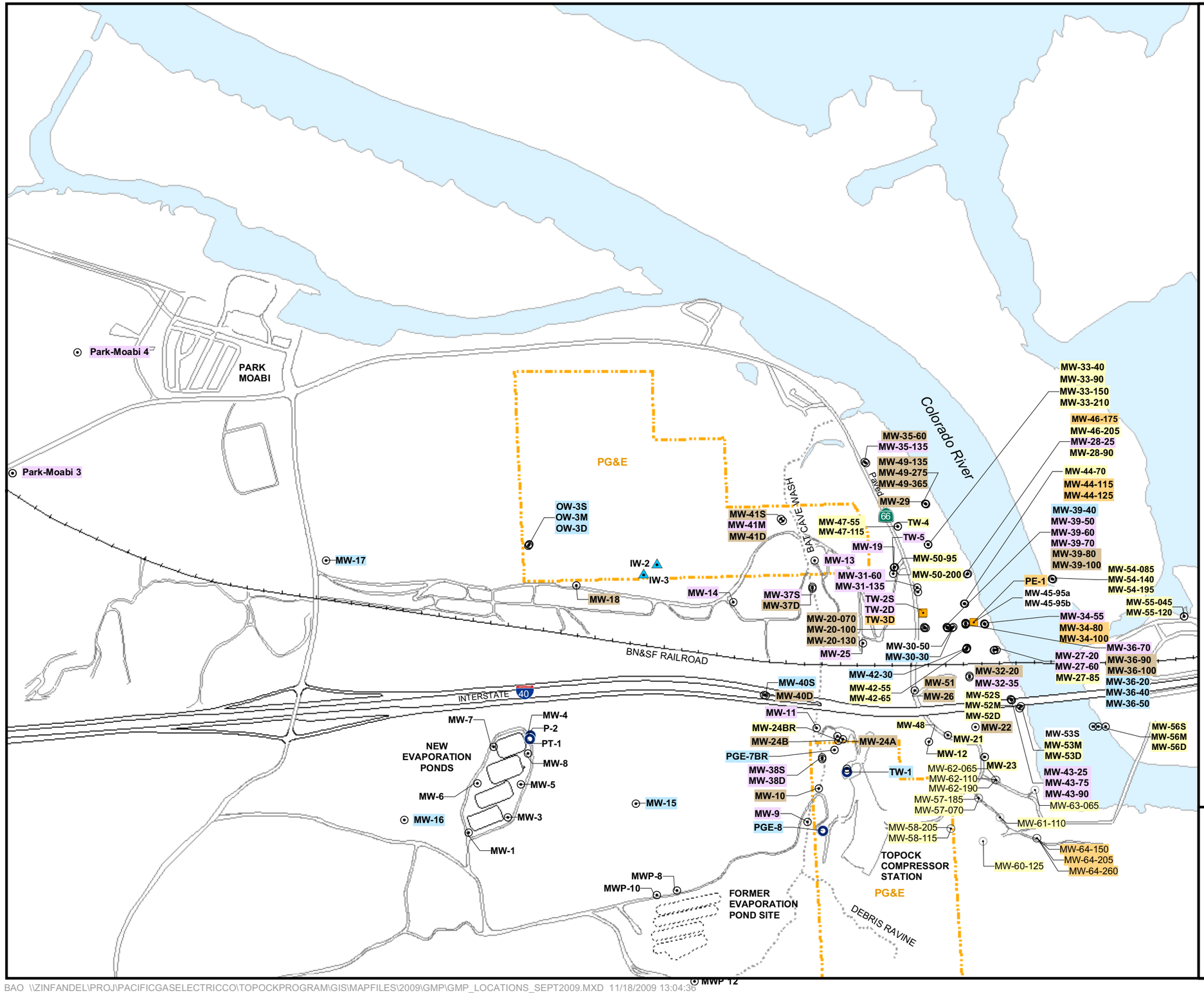

LEGEND

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

Sampling Frequency for Groundwater Monitoring Program (GMP) - September 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 SEPTEMBER 2009

THIRD 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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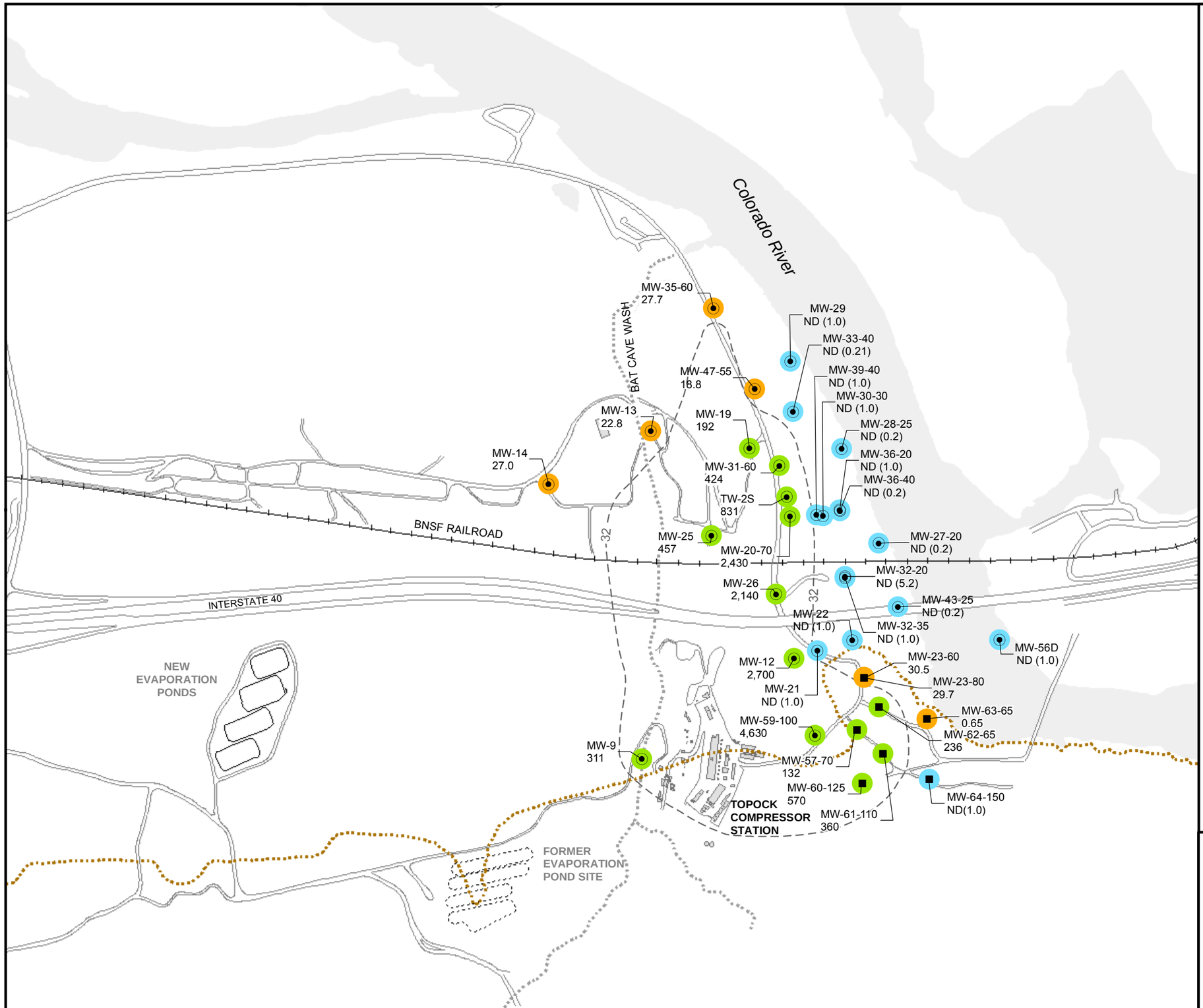

LEGEND

Alluvial Aquifer Well Sampled During September 2009 Sampling Event

Bedrock Well Sampled During September 2009 Sampling Event

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

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

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

Cr(VI) Concentrations - September 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 and Bedrock with Cr(VI) concentrations ≥ 32 µg/L based on September 2009 groundwater sampling.

Approximate bedrock contact at 455 ft MSL elevation

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

N

0 500 1,000 Feet

FIGURE 3-2a
Cr(VI) SAMPLING RESULTS, SHALLOW WELLS IN ALLUVIAL AQUIFER AND BEDROCK, SEPTEMBER 2009

THIRD 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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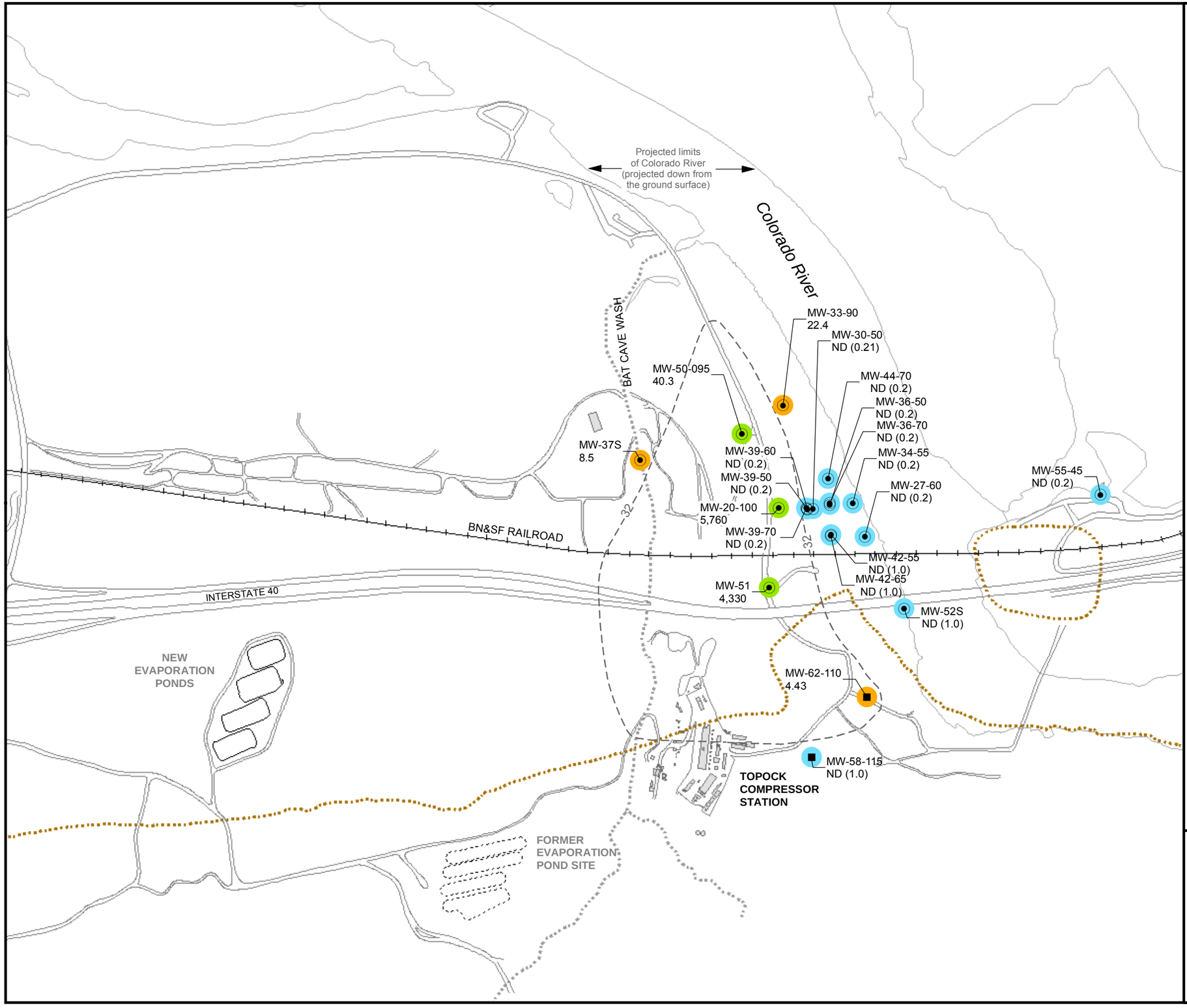

LEGEND

Alluvial Aquifer Well Sampled During September 2009 Sampling Event

Bedrock Well Sampled During September 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 and Bedrock.

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

Cr(VI) Concentrations - September 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 and Bedrock with Cr(VI) concentrations ≥ 32 µg/L based on September 2009 groundwater sampling.

Approximate bedrock contact at 425 ft MSL elevation

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

2. Approximate outline of Cr(VI) concentrations ≥ 32 µg/L in bedrock are extended around well MW-62 -110 due to sample results for the shallower (MW-62-065) and deeper (MW-62-190) wells at this location exceeding 32 µg/L.

N

0 500 1,000

Feet

FIGURE 3-2b
Cr(VI) SAMPLING RESULTS
MID-DEPTH WELLS IN ALLUVIAL AQUIFER AND BEDROCK, SEPTEMBER 2009

THIRD 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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Colorado River

Projected limits of Colorado River (projected down from the ground surface)

MW-49-135 ND (1.0)
MW-49-275 ND (2.1)
MW-49-365 ND (2.1)
MW-35-135 33.4
MW-33-150 12.3 J
MW-33-210 11.8
MW-46-175 116
MW-46-205 4.86
MW-28-90 ND (1.0)
MW-41D ND (1.0)
BAT CAVE WASH
MW-47-115 17.2
MW-50-200 6,380
MW-44-115 303
MW-44-125 93.7
MW-54-85 ND (0.2)
MW-54-140 ND (0.2)
MW-54-195 ND (1.0)
MW-31-135 19.6
MW-36-90 ND (0.2)
MW-36-100 67.6
MW-37D 308
TW-2D 356
MW-34-80 ND (1.0)
MW-34-100 78.9
MW-55-120 3.98
MW-20-130 10,800
MW-27-85 ND (1.0)
MW-39-80 ND (1.0)
BNSF RAILROAD
MW-40D 116
MW-39-100 451
MW-43-75 ND (1.0)
MW-43-90 ND (1.0)
MW-53M ND (1.0)
MW-53D ND (2.1)
MW-56M ND (0.2)
MW-56S ND (0.2)
INTERSTATE 40
MW-52M ND (1.0)
MW-52D ND (1.0)
NEW EVAPORATION PONDS
MW-48 ND (1.0)
MW-62-190 147
MW-57-185 1.13
MW-58-205 4.69
MW-64-205 ND (1.0)
MW-64-260 1.45
TOPOCK COMPRESSOR STATION
FORMER EVAPORATION POND SITE

LEGEND

- Alluvial Aquifer Well Sampled During September 2009 Sampling Event
- Bedrock Well Sampled During September 2009 Sampling Event

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

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

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

Cr(VI) Concentrations - September 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 and Bedrock with Cr(VI) concentrations ≥ 32 µg/L based on September 2009 groundwater sampling.

Approximate bedrock contact at 395 ft MSL elevation

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

2.In the floodplain area, the 32 µg/L line for Cr(VI) in deep zone (80-90 feet below Colorado River) is estimated based on available groundwater sampling, hydrogeologic and geochemical data. There are no data confirming the existence of Cr(VI) under the Colorado River.

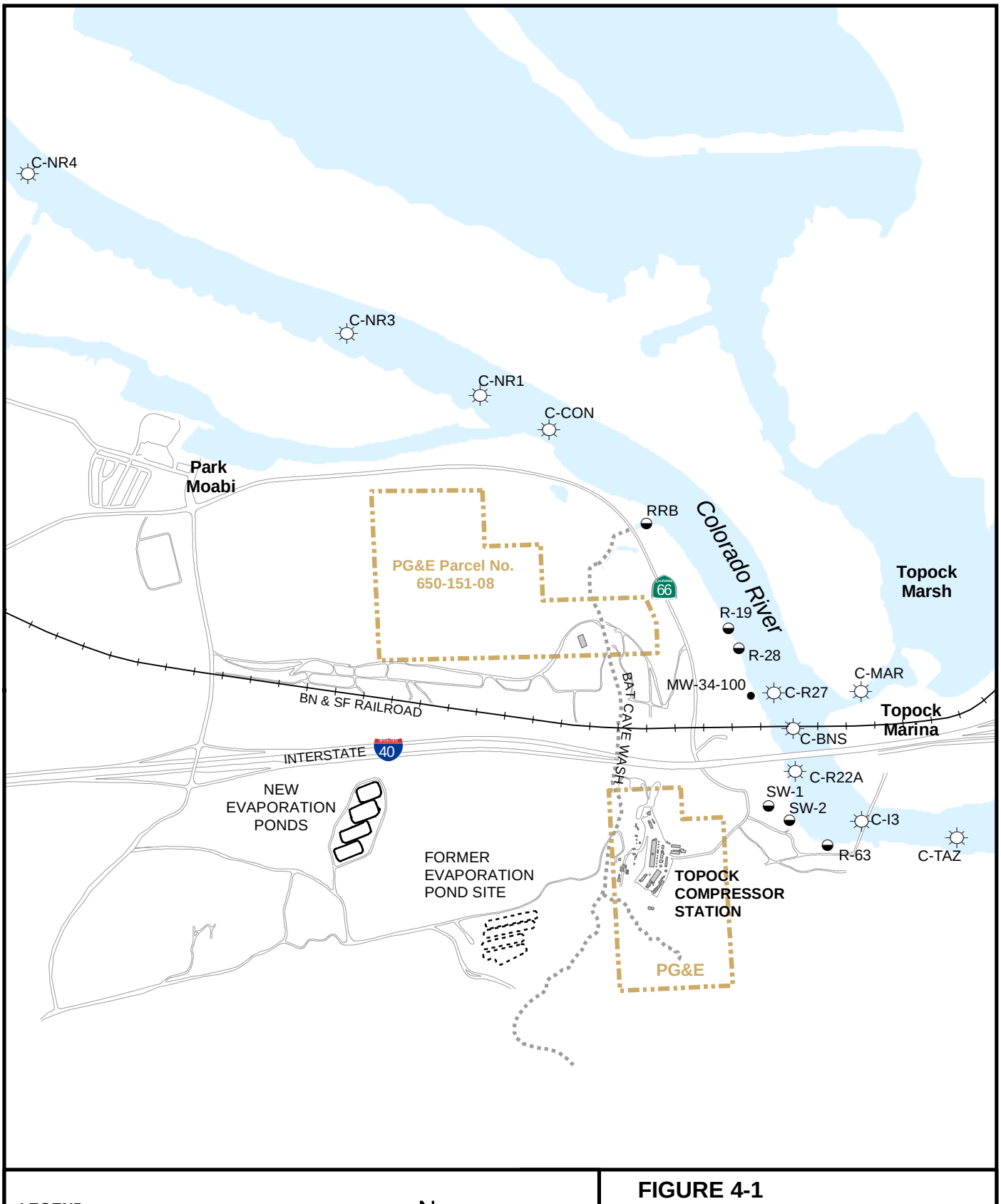
N

0 500 1,000 Feet

FIGURE 3-2c
Cr(VI) SAMPLING RESULTS, DEEP WELLS IN ALLUVIAL AQUIFER AND BEDROCK SEPTEMBER 2009

THIRD 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, SEPTEMBER 2009

THIRD 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, August through October 2009

APPENDIX A

Extraction System Operations Log for August through October 2009, PG&E Topock Interim Measures Performance Monitoring Program

During Third Quarter 2009 (August through October), 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 Third Quarter 2009. The operational run time for the Interim Measure groundwater extraction system (combined or individual pumping) was approximately 98.5 percent during Third Quarter 2009.

The Interim Measure Number 3 (IM No. 3) facility treated approximately 15,985,333 gallons of extracted groundwater during Third Quarter 2009. The IM No. 3 facility also treated approximately 1,860 gallons of water generated from the groundwater monitoring program and 27,000 gallons of water from IM No. 3 injection well development. Three containers of solids from the IM No. 3 facility were transported offsite during the reporting period.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 10.5 percent of downtime during Third Quarter 2009) are summarized below. The times shown are in Pacific Standard Time to be consistent with other data collected (e.g., water level data) at the site.

A.1 August 2009

August 1, 2009 (unplanned): The extraction well system was offline from 6:06 a.m. to 6:14 p.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 8 minutes.

August 5, 2009 (unplanned): The extraction well system was offline from 6:17 a.m. to 6:25 a.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 8 minutes.

August 7, 2009 (planned): The extraction well system was offline from 12:03 p.m. to 12:04 p.m., 12:15 p.m. to 12:20 p.m., 12:33 p.m. to 12:34 p.m., and from 12:37 p.m. to 12:38 p.m. while testing the pipeline leak detection system. Extraction system downtime was 8 minutes.

August 10, 2009 (planned): The extraction well system was offline from 11:31 a.m. to 1:16 p.m. to maintain proper levels in tanks. Extraction system downtime was 1 hour and 45 minutes.

August 11, 2009 (planned): The extraction well system was offline from 1:31 a.m. to 2:22 a.m. to maintain proper levels in tanks. Extraction system downtime was 51 minutes.

August 11, 2009 (planned): The extraction well system was offline from 7:53 a.m. to 6:15 p.m. to perform scheduled monthly maintenance. Extraction well downtime was 10 hours and 22 minutes.

August 16, 2009 (unplanned): The extraction well system was offline from 12:45 p.m. to 1:04 p.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction well downtime was 19 minutes.

August 31, 2009 (planned): The extraction well system was offline from 7:21 a.m. to 1:58 p.m. for the microfilter bank switch. Extraction well downtime was 6 hours and 37 minutes.

A.2 September 2009

September 6, 2009 (unplanned): The extraction well system was offline from 8:29 a.m. to 8:30 a.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 1 minute.

September 8, 2009 (planned): The extraction well system was offline from 11:20 a.m. to 11:28 a.m., 11:32 a.m. to 11:33 a.m., 11:41 a.m. to 11:42 a.m. , 11:47 a.m. to 11:48 a.m., 12:04 p.m. to 12:05 p.m., and 12:10 p.m. to 12:11 p.m. for testing of the pipeline leak detection alarm system. Extraction system downtime was 13 minutes.

September 8, 2009 (planned): The extraction well system was offline from 1:21 p.m. to 1:44 p.m., 1:54 p.m. to 2:17 p.m., and 2:27 p.m. to 6:59 p.m. for the microfilter bank switch. Extraction system downtime was 5 hours and 18 minutes.

September 9 -14, 2009 (unplanned): The extraction well system was offline from 11:00 a.m. on September 9 to 2:19 p.m. on September 14 due to synthetic oil fouling of the treatment stream in operation tank T301A from the tank mixer motor. Extraction system downtime was 5 days, 3 hours, and 19 minutes.

September 14 -16, 2009 (planned): The extraction well system was offline from 3:10 p.m. to 3:26 p.m. on September 14 and from 3:32 p.m. on September 14 to 3:42 p.m. on September 16 to collect samples and to maintain proper levels in tanks. Extraction system downtime was 2 days and 26 minutes.

September 23, 2009 (planned): The extraction well system was offline from 7:58 a.m. to 3:49 p.m. for the microfilter bank switch and injection line maintenance. Extraction system downtime was 6 hours and 51 minutes.

September 25, 2009 (unplanned): The extraction well system was offline from 12:12 p.m. to 2:37 p.m. due to failure of polymer feed. Extraction well downtime was 2 hours and 25 minutes.

September 26, 2009 (unplanned): The extraction well system was offline from 2:00 p.m. to 2:02 p.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction well downtime was 2 minutes.

September 27, 2009 (unplanned): The extraction well system was offline from 10:11 a.m. to 10:32 p.m. due to low pressure in the TW-3D extraction well pipeline. Extraction well downtime was 21 minutes.

September 27-28, 2009 (unplanned): The extraction well system was offline from 12:54 p.m. to 2:25 p.m. on September 27, from 5:23 a.m. to 5:27 a.m. on September 28, and 5:28 a.m. to 6:38 a.m. on September 28 due to high water level in the raw water tank T-100. Extraction well downtime was 3 hours and 45 minutes.

September 28, 2009 (planned): The extraction well system was offline from 7:43 a.m. to 12:32 p.m. to install new modules in the microfilter. Extraction well downtime was 4 hours and 49 minutes.

A.3 October 2009

October 1, 2009 (planned): The extraction well system was offline from 3:42 p.m. to 3:43 p.m. to purge TW-2S and TW-3D in preparation for sampling. Extraction system downtime was 1 minute.

October 4-5, 2009 (unplanned): The extraction well system was offline from 11:37 p.m. on October 4 to 12:50 a.m. on October 5 to install new modules in the microfilter. Extraction system downtime was 1 hour and 13 minutes.

October 14, 2009 (planned): The extraction well system was offline from 8:47 a.m. to 8:48 a.m., from 8:51 a.m. to 8:52 a.m., from 9:04 a.m. to 9:05 a.m., and from 9:15 a.m. to 9:16 a.m. for testing of the pipeline leak detection alarm system. Extraction system downtime was 4 minutes.

October 21, 2009 (planned): The extraction well system was offline from 7:33 a.m. to 3:49 p.m., from 3:50 p.m. to 3:52 p.m., and from 3:54 p.m. to 4:56 p.m. to perform scheduled monthly maintenance. Extraction system downtime was 9 hours and 20 minutes.

October 26, 2009 (unplanned): The extraction well system was offline from 12:32 p.m. to 12:58 p.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 26 minutes.

October 27, 2009 (unplanned): The extraction well system was offline from 12:52 p.m. to 12:54 p.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 2 minutes.

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

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

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (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
		24-Sep-09	311	260	60.4	3,180	7.55
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
		22-Sep-09	341	348	16.3	3,200	7.73
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
		24-Sep-09	2,490	2,780	18.8	6,650	8.26
		24-Sep-09 FD	2,700	2,910	FD	FD	FD
MW-13	SA	02-Oct-08	23.2	23.0	61.9	2,070	7.00
		21-Sep-09	22.8	22.5	49.9	1,980	7.53
MW-14	SA	03-Oct-08	27.9 J	29.1	125	1,620	7.57
		21-Sep-09	27.0	26.6	37.7	1,510	7.71
MW-15	SA	30-Sep-09	12.3	10.4	45.5	1,750	7.81
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
		28-Sep-09	9.12	8.56	56.5	1,110	7.90
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
		30-Sep-09	10.6	10.1	27.4	1,760	7.91
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
		22-Sep-09	22.3	20.2	48.2	1,410	7.71
MW-19	SA	07-Oct-08	682	786	72.4	2,510	7.31
		22-Sep-09	192	193	51.2	2,370	7.45
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
		25-Sep-09	2,430	2,650	106	3,140	7.58
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
		25-Sep-09	5,760	6,790	93.7	3,500	7.41
MW-20-130	DA	08-Oct-08	8,990	11,700	97.9	13,200	7.29

Refer to table footnotes for data qualifier explanation.

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					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-20-130	DA	13-Mar-09	7,500	7,720	134	14,300	7.42
		25-Sep-09	10,800	11,000	81.7	12,600	7.52
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
		04-Aug-09	---	---	76.0	9,060	7.53
		23-Sep-09	ND (1.0)	2.70	48.8	12,800	7.17
MW-22	SA	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
		29-Sep-09	ND (1.0)	ND (1.0)	-61	20,800	6.90
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
		12-Mar-09	32.6	32.6	43.0	18,400	7.10
MW-23-060	BR	21-Jul-09	26.0	30.0	146	16,400	8.43
		24-Sep-09	30.5	25.6	24.1	17,000	9.37
MW-23-080	BR	21-Jul-09	34.0	44.0	87.9	16,900	11.0
		23-Sep-09	29.7	28.1	-5.4 R	17,700	11.3
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
		28-Sep-09	ND (2.1)	ND (1.0)	-65.1	15,100	8.06
MW-25	SA	07-Oct-08	544	618	122	1,300	7.27
		07-Oct-08 FD	552	572	FD	FD	FD
		21-Sep-09	455	495	85.6	1,270	7.29
		21-Sep-09 FD	457	482	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
		22-Sep-09	2,140	2,180	43.8	3,940	7.45
MW-27-20	SA	03-Oct-08	ND (0.2)	ND (1.0)	-66.2	1,100	7.64
		01-Oct-09	ND (0.2)	ND (1.0)	-158	1,040	7.60
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
		01-Oct-09	ND (0.2)	ND (1.0)	-103	1,820 R	7.80

Refer to table footnotes for data qualifier explanation.

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					ORP (mV)	Specific Conductance (µS/cm)	Field pH
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
		01-Oct-09	ND (1.0)	ND (1.0)	-31.5	15,200	7.12
MW-28-25	SA	08-Oct-08	ND (0.2)	ND (1.0)	14.0	1,250	7.68
		24-Sep-09	ND (0.2)	ND (1.0)	-115	1,140	7.42
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
		24-Sep-09	ND (1.0)	ND (1.0)	-163	7,560	7.47
MW-29	SA	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
		24-Sep-09	ND (1.0)	ND (1.0)	-175	2,620	7.53
MW-30-30	SA	04-Aug-09	---	---	-236	11,900	7.62
		24-Sep-09	ND (1.0)	ND (1.0)	-131	19,500	7.27
MW-30-50	MA	24-Sep-09	ND (0.21)	ND (1.0)	-89.8	1,590	7.96
MW-31-60	SA	06-Oct-08	534	498	124	3,340	7.30
		21-Sep-09	424	417	54.9	3,320	7.58
MW-31-135	DA	06-Oct-08	ND (8.6)	20.3	103	11,300	7.52
		21-Sep-09	19.6	20.4	65.4	11,300	7.85
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
		22-Sep-09	ND (5.2)	ND (1.0)	-150	53,300	6.77
MW-32-35	SA	03-Oct-08	ND (0.2)	ND (1.0)	-51.5	22,400	6.94
		22-Sep-09	ND (1.0)	ND (1.0)	-189	21,900	7.03
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
		24-Sep-09	ND (0.21)	ND (1.0)	-125	6,600	8.07
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
		29-Sep-09	22.4	21.1	62.4	10,500	7.55
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

Refer to table footnotes for data qualifier explanation.

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					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-33-150	DA	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
		29-Sep-09	9.28 J	8.88	140	16,900	7.58
		29-Sep-09 FD	12.3 J	9.26	FD	FD	FD
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
		29-Sep-09	11.8	11.4	59.3	19,600	7.40
MW-34-55	MA	07-Oct-08	ND (0.2)	ND (1.0)	-108	1,110	7.54
		30-Sep-09	ND (0.2)	ND (1.0)	-122	1,060	7.85
MW-34-80	DA	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
		04-Aug-09	ND (0.2)	ND (1.0)	-295	6,850	7.90
		30-Sep-09	ND (1.0)	ND (1.0)	-46.6	8,230	7.43
		13-Oct-09	ND (1.0)	ND (1.0)	-4.1	8,200	7.48
MW-34-100	DA	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
		04-Aug-09	113	112	-250	11,700	7.87
		30-Sep-09	78.4	70.8	-6.0	18,400	7.50
		30-Sep-09 FD	78.9	72.6	FD	FD	FD
		14-Oct-09	211	208	-71.3	18,600	7.76
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

Refer to table footnotes for data qualifier explanation.

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Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (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
		24-Sep-09	27.7	23.2	77.9	7,410	7.56
		24-Sep-09 FD	25.3	23.6	FD	FD	FD
MW-35-135	DA	07-Oct-08	32.0	32.8	168	10,500	7.58
		24-Sep-09	33.4	30.8	100	9,920	7.95
MW-36-20	SA	23-Sep-09	ND (1.0)	ND (1.0)	-188	3,920	8.07
MW-36-40	SA	30-Sep-09	ND (0.2)	ND (1.0)	-179	3,730	7.94
MW-36-50	MA	30-Sep-09	ND (0.2)	ND (1.0)	-133	1,230	7.93
MW-36-70	MA	03-Oct-08	ND (0.2)	ND (1.0)	-29	1,630	7.83
		22-Sep-09	ND (0.2)	ND (1.0)	36.8	12,800	3.28
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
		23-Sep-09	ND (0.2)	ND (1.0)	-56.9	1,490	8.18
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
		23-Sep-09	67.6	64.5	-165	11,500	7.12
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
		23-Sep-09	7.93	8.23	38.0	5,150	7.91
		23-Sep-09 FD	8.50	7.91	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
		23-Sep-09	308	336	48.8	15,700	7.92
MW-39-40	SA	01-Oct-09	ND (1.0)	ND (1.0)	-125	8,490	7.40
MW-39-50	MA	01-Oct-08	ND (0.2)	ND (1.0)	-231	2,700	7.76
		01-Oct-09	ND (0.2)	ND (1.0)	5.30 R	1,990	8.07
MW-39-60	MA	01-Oct-08	ND (0.2)	ND (1.0)	-215	3,520	7.62
		01-Oct-09	ND (0.2)	ND (1.0)	38.2	2,720	7.88
MW-39-70	MA	01-Oct-08	ND (0.2)	ND (1.0)	-279	5,190	7.42
		01-Oct-09	ND (0.2)	ND (1.0)	48.9	4,090	7.59
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
		01-Oct-09	ND (1.0)	1.44	33.8	10,800	7.07
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
		29-Sep-09	451	451	61.0	20,900	6.76
MW-40S	SA	28-Sep-09	6.85	6.87	77.5	2,250	7.69
MW-40D	DA	06-Oct-08	ND (100)	102	180	17,300	7.30

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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-40D	DA	11-Mar-09	115	135	-44.8	17,000	7.49
		28-Sep-09	116	114	53.4	16,300	7.53
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
		23-Sep-09	18.7	18.9	32.0	5,220	8.04
		23-Sep-09 FD	19.5	17.8	FD	FD	FD
MW-41M	DA	03-Oct-08	10.2	11.4	60.4	16,000	7.39
		23-Sep-09	10.3	10.8	29.4	15,500	7.69
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
		23-Sep-09	ND (1.0)	2.19	62.8	22,400	7.90
MW-42-30	SA	23-Sep-09	---	---	-176	6,150	7.69
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
		23-Sep-09	ND (1.0)	ND (1.0)	-187	10,600	7.42
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
		23-Sep-09	ND (1.0)	ND (1.0)	-111	12,800	7.10
MW-43-25	SA	02-Oct-08	ND (0.2)	ND (1.0)	-98.1	1,360	7.49
		01-Oct-09	ND (0.2)	ND (1.0)	-171	1,300	7.46
MW-43-75	DA	02-Oct-08	ND (0.2)	ND (1.0)	-90.3	14,000	7.63
		01-Oct-09	ND (1.0)	ND (1.0)	-140	11,900	7.57
MW-43-90	DA	02-Oct-08	ND (0.2)	ND (1.0)	-85.2	19,500	6.92
		01-Oct-09	ND (1.0)	ND (1.0)	-94.5	18,900	6.86
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
		21-Sep-09	ND (0.2)	ND (1.0)	-191	3,030	7.72
MW-44-115	DA	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

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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-44-115	DA	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
		03-Aug-09	316	300	-358	10,400	8.18
		21-Sep-09	302	304	-249	12,000	8.10
		21-Sep-09 FD	303	296	FD	FD	FD
		14-Oct-09	300	295	-110	12,300	8.03
MW-44-125	DA	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
		03-Aug-09	191	184	-375	11,000	8.35
		23-Sep-09	93.7	90.3	-198	12,700	7.95
		14-Oct-09	20.3	176	-117	13,400	8.12
MW-45-095a	DA	29-Sep-09	---	---	-0.9	9,700	7.61
MW-46-175	DA	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
		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
		04-Aug-09	86.6	86.6	-304	11,300	8.59
		25-Sep-09	116	105	-122	17,600	8.38
		14-Oct-09	160	159	-98.7	17,700	8.56
		14-Oct-09 FD	165	155	FD	FD	FD
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

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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-46-205	DA	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
		25-Sep-09	4.86	5.64	-91.4	21,500	8.37
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
		24-Sep-09	18.8	17.4	50.8	4,910	7.65
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
		04-Aug-09	15.8	15.0	-204	9,310	7.76
		04-Aug-09 FD	15.8	13.5	FD	FD	FD
		24-Sep-09	17.2	16.3	46.2	13,200	7.69
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
		23-Sep-09	ND (1.0)	ND (1.0)	122	18,300	7.33
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
		22-Sep-09	ND (1.0)	ND (1.0)	84.6 R	13,500	7.85
MW-49-275	DA	11-Mar-09	ND (1.0)	ND (1.0)	-237	27,500	8.88
		22-Sep-09	ND (2.1)	1.76	-154	24,400	8.16
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
		22-Sep-09	ND (2.1)	ND (1.0)	-230	37,900	8.03
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
		24-Sep-09	40.3	39.6	55.6	5,120	8.08
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
		13-Mar-09	9,910	12,400	156	24,200	7.70

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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	06-May-09	9,010	10,900	-19.7	22,100	7.84
		06-May-09 FD	9,400	10,800	FD	FD	FD
		25-Sep-09	6,380	7,450	76.6	20,900	8.02
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
		24-Sep-09	4,330	4,760	42.2	11,300	7.47
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
		29-Sep-09	ND (1.0)	ND (1.0)	-130	11,300	7.37
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
		29-Sep-09	ND (1.0)	ND (1.0)	-146	17,400	7.72
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
		29-Sep-09	ND (1.0)	ND (1.0)	-150	22,600	8.04
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
		29-Sep-09	ND (1.0)	ND (1.0)	-159	20,700	8.39
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
		29-Sep-09	ND (2.1)	ND (1.0)	-195	27,300	8.60
MW-54-85	DA	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
		22-Sep-09	ND (0.2)	ND (1.0)	-200	10,800	7.59
MW-54-140	DA TLI	01-Oct-08	ND (1.0)	ND (1.0)	---	---	---
		01-Oct-08	ND (0.2)	1.36	-155	13,300	7.74
		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
		22-Sep-09	ND (0.2)	ND (1.0)	-53	13,400	7.94

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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	01-Oct-08	ND (1.0)	1.27	-208	19,900	7.80
	TLI	01-Oct-08	ND (1.0) J	ND (1.0)	---	---	---
		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
		22-Sep-09	ND (1.0)	ND (1.0)	-216	20,000	8.16
MW-55-45	MA	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
		22-Sep-09	ND (0.2)	ND (1.0)	-157	1,550	7.82
MW-55-120	DA	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
		22-Sep-09	3.97	5.08	-89.4	9,400	8.02
		22-Sep-09 FD	3.98	5.10	FD	FD	FD
MW-56S	SA	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
		30-Sep-09	ND (0.2)	ND (1.0)	-119	6,510	7.41
MW-56M	DA	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
		30-Sep-09	ND (0.2)	ND (1.0)	-107	15,000	7.38
MW-56D	DA	02-Oct-08	ND (2.0)	ND (1.0)	-179	27,200	7.70
		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
		30-Sep-09	ND (1.0)	ND (1.0)	-119	21,700	7.87
MW-57-070	BR	21-Jul-09	340	350	287	3,140	6.60
		24-Sep-09	132	139	34.2	3,160	7.22
MW-57-185	BR	20-Jul-09	1.40	ND (4.9)	194	18,300	8.19
		23-Sep-09	1.13	2.38	-42.2 R	19,000	8.90
MW-58-115	BR	22-Jul-09	ND (1.0)	3.00	-319	6,590	6.78
		29-Sep-09	ND (1.0)	ND (1.0)	-156	12,300	7.30

Refer to table footnotes for data qualifier explanation.

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

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (total) (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
MW-58-205	BR	22-Jul-09	ND (1.0)	6.30	-337	16,300	7.38
		29-Sep-09	4.69	9.70	-250	4,550	7.41
MW-59-100	SA	22-Jul-09	5,100	4,900	90.1	10,800	6.92
		22-Jul-09 FD	5,100	4,800	FD	FD	FD
		24-Sep-09	4,630	5,300	62.5	11,900	6.99
MW-60-125	BR	21-Jul-09	780	810	70.6	8,200	7.24
		05-Aug-09	---	---	-138	6,220	7.58
		24-Sep-09	570	619	-13.6	8,240	7.54
MW-61-110	BR	21-Jul-09	240	260	-9.6	15,100	7.27
		24-Sep-09	360	363	-20	15,900	7.73
MW-62-065	BR	22-Jul-09	290	300	51.8	5,810	7.31
		24-Sep-09	236	251	29.0	5,780	7.60
MW-62-110	BR	22-Jul-09	74.0	71.0	-94	8,950	8.09
		29-Sep-09	4.43	31.3	-134	8,580	7.78
MW-62-190	BR	22-Jul-09	ND (1.0)	2.00	-305	28,800	7.71
		29-Sep-09	147	50.3	-226	18,600	7.58
MW-63-065	BR	20-Jul-09	0.54	ND (2.9)	308	6,650	6.49
		20-Jul-09 FD	0.54	ND (3.0)	FD	FD	FD
		22-Sep-09	0.65	1.24	66.1	6,930	7.26
		22-Sep-09 FD	0.54	1.93	FD	FD	FD
MW-64-150	BR	22-Jul-09	ND (1.0)	5.20	-30	8,860	7.37
		29-Sep-09	ND (1.0)	1.55	-202	9,760	6.77
		12-Oct-09	ND (1.0)	ND (1.0)	-316	9,760	7.05
MW-64-205	BR	22-Jul-09	5.70	17.0	26.0	14,800	7.34
		29-Sep-09	ND (1.0)	2.47	-239	14,200	6.74
		12-Oct-09	1.58	6.01	-302	13,800	7.07
MW-64-260	BR	22-Jul-09	ND (1.0)	4.80	29.0	10,900	7.33
		29-Sep-09	1.45	1.42	-282	14,200	6.82
		12-Oct-09	ND (1.0)	1.28	-308	13,300	7.18
PE-1	DA	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	---	---	---
		01-Jul-09	20.4	19.2	---	---	---
		05-Aug-09	19.2	17.5	---	---	---
		02-Sep-09	19.6	17.9	---	---	---

Refer to table footnotes for data qualifier explanation.

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

Location ID	Aquifer Zone	Sample Date	Hexavalent Chromium (µg/L)	Dissolved Chromium (total) (µg/L)	Selected Field Parameters		
					ORP (mV)	Specific Conductance (µS/cm)	Field pH
PE-1	DA	01-Oct-09	---	---	216	5,630	7.49
		07-Oct-09	20.7	18.6 LF	---	---	---
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
		01-Oct-09	9.86	9.50	345	1,430	7.72
Park Moabi-4	MA	02-Oct-08	20.6	18.5 UF	-7.0	1,970	7.44
		01-Oct-09	21.0	18.0	726	1,870	7.91
TW-1	MA	08-Oct-08	---	2,320	85.9	6,730	7.05
		22-Sep-09	3,740	4,130	87.5	7,180	7.39
TW-2S	MA	03-Oct-08	860	748	134	5,850	7.43
		01-Oct-09	831	880	230	2,530	7.70
TW-2D	DA	03-Oct-08	561	644	100	15,500	7.22
		01-Oct-09	356	352	253	8,690	7.22
TW-3D	DA	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	---	---	---
		01-Jul-09	1,500	1,360	---	---	---
		05-Aug-09	1,190	1,270	---	---	---
		02-Sep-09	1,220	1,360	---	---	---
		07-Oct-09	1,330	1,340 LF	---	---	---
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
		23-Sep-09	10.7	11.1	40.5	21,800	7.71
		23-Sep-09 FD	10.1	10.5	FD	FD	FD
TW-5	DA	02-Oct-08	9.76	8.89	187	11,700	7.62
		23-Sep-09	10.4	9.61	-29.6	13,800	7.97

Refer to table footnotes for data qualifier explanation.

Notes

ND = not detected at listed reporting limit (RL)
FD = field duplicate sample
UF = unfiltered
LF = lab filtered
R = result exceeded analytical criteria for precision and accuracy; should not be used for project decision-making.
J = concentration or RL estimated by laboratory or data validation
TLI = Sample analyzed by TLI Laboratories
(---) = 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.

Sampling results from East Ravine wells prior to August 1, 2009 can be found in the ERGI Report.

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

Chemical Performance Monitoring Analytical Results, March 2005 through October 2009
Third Quarter 2009 IM Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-20-70	10-Mar-05	1940	-7.1	-59.0	740	378	9.98	ND (1.0)	81.7	198	55.4	9.89	431	0.412
	15-Jun-05	1980	-7.0	-60.0	749	388	9.79	ND (1.0)	73.8	189	55.4	10.5	433	0.414
	15-Jun-05 FD	2050	-8.3	-57.0	760	392	9.81	ND (1.0)	71.3	204	60.7	11.4	468	0.445
	11-Oct-05	1950	-7.2	-57.0	737	359	9.48	0.641	69.9	198	49.9	14.6	323	0.402
	15-Dec-05	1830	-7.1	-49.0	645	326	9.90	ND (1.0)	77.8	138	42.3	14.5	267	0.441
	10-Mar-06	1940	-7.2	-54.0	679	358	10.5	ND (0.5)	82.2	161	48.6	9.22	424	0.427
	05-May-06	1750	-8.2	-55.9	696	376	9.86	0.574	74.5	162	49.2	9.55	461	0.476
	03-Oct-06	1890	-8.1	-60.4	677	357	13.0	ND (5.0)	85.0	158	47.6	9.82	472	0.535
	03-Oct-06 FD	1840	-8.1	-60.5	669	352	12.9	ND (5.0)	80.0	154	45.9	9.51	466	0.515
	13-Dec-06	1910	-7.6	-61.2	678	352	12.7	0.699	77.5	149	44.3	9.09	458	0.459
	14-Mar-07	1740	-8.5	-64.3	689	358	13.7	0.641	80.0	139	42.2	8.83	451	0.503
	03-May-07	1750	-8.4	-66.7	697	344	25.1	ND (1.0)	77.5	139	41.2	8.65	390	0.477
	11-Oct-07	1820	-8.2	-63.9	699	367	15.6	ND (1.0)	80.0	130	39.1	11.0	600	0.54
	12-Mar-08	1790	-7.6	-65.2	695	360	22.1	ND (1.0)	77.0	139	41.2	10.7	403	0.51
	07-Oct-08	1900	-8.5	-64.4	650	360	15.0	0.61	83.0	136	37.9	10.5	400	0.608
	12-Mar-09	1900	-7.74	-60.8	670	330	17.0	ND (1.0)	79.0	128	40.2	9.95	496	0.549
	25-Sep-09	1700	-8.73	-66.4	700	310	16.0	ND (2.5)	74.0	130	33.0	9.70	390	0.42
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

TABLE B-2

Chemical Performance Monitoring Analytical Results, March 2005 through October 2009
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Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-20-100	10-Oct-07	2160	-7.2	-57.2	858	468	3.25	ND (1.0)	92.0	190	32.0	15.0	560	0.81
	12-Mar-08	2470	-6.9	-58.3	827	442	19.2	ND (1.0)	870	218	35.4	11.9	469	0.702
	08-Oct-08	2200	-7.9	-60.2	760	420	16.0	ND (1.0)	90.0	215	36.8	10.3	453	0.669
	13-Mar-09	2200	-7.08	-58.2	770	420	16.0	ND (1.0)	97.0	213	36.4	11.6	543	0.89
	25-Sep-09	2000	-7.27	-62.8	750	400	16.0	ND (2.5)	89.0	200	30.0	12.0	430	0.70
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
	25-Sep-09	6500	-7.4	-61.7	3500	1100	13.0	ND (2.5)	76.0	280	17.0	33.0	2400	2.00
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

TABLE B-2

Chemical Performance Monitoring Analytical Results, March 2005 through October 2009
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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-25	14-Dec-05	838	-8.4	-55.0	224	158	3.74	ND (0.5)	153	75.5	14.5	9.80	143	0.396
	14-Dec-05 FD	896	-8.4	-50.0	219	155	3.75	ND (0.5)	156	73.0	14.1	9.71	151	0.382
	09-Mar-06	910	-8.4	-64.1	245	164	3.83	ND (0.5)	170	76.4	15.6	6.97	210	0.39
	03-May-06	907	-9.0	-59.4	272	172	3.95	ND (0.5)	150	78.0	17.3	7.38	222	0.418
	03-May-06 FD	924	-9.0	-61.0	274	173	3.94	ND (0.5)	155	79.7	17.8	7.53	245	0.431
	03-Oct-06	892	-8.9	-62.7	222	158	4.09	ND (0.5)	163	73.3	15.0	7.25	206	0.466
	06-Mar-07	843	-9.0	-66.9	221	164	3.95	ND (0.5)	160	72.9	14.4	6.85	203	0.459
	02-Oct-07	796	-9.0	-65.8	189	155	4.58	ND (1.0)	180	66.0	14.0	7.90	200	0.49
	02-Oct-07 FD	758	-9.0	-65.7	195	157	4.40	ND (1.0)	190	63.0	13.0	7.70	220	0.46
	07-Oct-08	740	-9.9	-68.5	170	150	4.30	ND (0.5)	200	59.2	12.9	9.89	143	0.559
	07-Oct-08 FD	730	-10.1	-69.1	170	150	4.40	ND (0.5)	210	58.4	12.9	10.2	144	0.559
	21-Sep-09	660	-8.87	-69.9	180	130	4.30	ND (0.5)	200	64.0	12.0	7.20	180	0.46
	21-Sep-09 FD	650	-8.82	-69.5	180	130	4.30	ND (0.5)	200	64.0	12.0	7.90	190	0.47
MW-26	08-Mar-05	1840	-8.8	-70.0	756	370	4.48	ND (0.5)	98.7	166	41.6	10.7	439	0.557
	08-Mar-05 FD	1800	-8.7	-70.0	708	338	4.45	ND (0.5)	96.1	166	40.9	11.4	438	0.559
	13-Jun-05	2130	-8.2	-65.0	847	371	4.90	ND (0.5)	103	178	44.6	14.0	511	0.663
	04-Oct-05	2120	-7.8	-68.0	779	372	4.88	0.601	109	166	40.4	19.8	352	0.526
	12-Dec-05	2610	-8.5	-55.0	788	372	4.88	0.546	99.7	162	39.9	20.3	349	0.613
	08-Mar-06	2070	-8.6	-60.4	772	324	4.90	ND (0.5)	121	155	38.1	11.7	434 J	0.621
	01-May-06	2130	-8.9	-62.7	927	382	4.87	ND (0.5)	121	165	42.0	12.8	555	0.723
	03-Oct-06	2220	-8.8	-63.0	894	370	6.22	ND (2.5)	105	170	43.9	12.8	510	0.692
	12-Mar-07	2280	-9.0	-67.0	917	387	6.02	0.646	90.0	163	41.6	12.9	621	0.622
	02-Oct-07	2180	-8.6	-66.3	945	391	7.84	ND (1.0)	100	170	42.0	15.0	620	0.66
	12-Mar-08	2500	-8.1	-67.2	908	398	10.7 J	ND (1.0)	103	176	44.1 J	16.2 J	498	0.589
	12-Mar-08 FD	2420	-8.9	-68.2	905	398	7.61 J	ND (1.0)	102	160	32.8 J	12.7 J	462	0.601
	08-Oct-08	2400	-8.7	-66.5	930	440	10.0	ND (1.0)	110	183	45.8	14.6	555	0.591
	10-Mar-09	2300	-8.41	-65.3	870	440 J	9.80	1.40	100	172	47.9	14.8	585	0.604
	10-Mar-09 FD	2300	-8.68	-65.8	860	440 J	9.70	1.50	100	174	46.2	15.6	631	0.65
	22-Sep-09	2200	-8.93	-68.3	870	450	10.0	ND (1.0)	100	170	39.0	14.0	550	0.59

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-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)
	03-Oct-06	600	-13.1	-96.6	90.8	261	ND (0.5)	ND (0.5)	160	102	34.5	6.45	113	ND (0.2)
	02-Oct-07	802	-12.5	-96.3	102	320	ND (1.0)	ND (1.0)	170	97.0	34.0	5.30	150	0.22
	03-Oct-08	---	---	---	94.0	240	ND (0.5)	---	---	87.9	29.5	---	110	---
	01-Oct-09	---	---	---	88.0	230	ND (0.5)	---	130	84.0	25.0	---	87.0	---
MW-28-25	10-Mar-05	880	-12.2	-95.0	112	302	ND (0.5)	ND (0.5)	204	129	36.3	3.50	122	ND (0.2)
	15-Jun-05	974	-11.6	-91.0	108	359	ND (0.5)	ND (0.5)	221	133	38.9	6.54	117	ND (0.2)
	06-Oct-05	884	-11.7	-95.0	99.8	300	ND (0.5)	ND (0.5)	197	123	37.0	6.61	88.7	ND (0.2)
	16-Dec-05	1010	-11.4	-90.0	128	348	ND (0.5)	ND (0.5)	212	134	41.5	6.46	107	ND (0.2)
	09-Mar-06	746	-11.5	-93.9	84.4	225	ND (0.5)	ND (0.5)	244	98.5	27.5	4.15 J	88.5	ND (0.2)
	05-May-06	741	-11.4	-90.3	110	302	ND (0.5)	ND (0.5)	216	117	35.7	5.77	118	ND (0.2)
	11-Oct-06	1050	-12.2	-95.0	86.3	247	ND (0.5)	ND (0.5)	225	133	40.8	5.47	132	ND (0.2)
	04-Oct-07	812	-12.1	-98.7	110	307	ND (1.0)	ND (1.0)	230	120	37.0 J	4.80	150	0.26 J
	08-Oct-08	---	---	---	100	280	ND (0.5)	---	220	109	34.7	---	102	---
	24-Sep-09	---	---	---	94.0	240	ND (0.5)	---	200	100	27.0	---	100 J	---
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
	24-Sep-09	---	---	---	5800	1700	ND (5.0)	---	550	280	220	---	3800	---
MW-30-50	10-Mar-05	6470 J	-8.3	-68.0	4660	672	ND (0.5)	1.03	324	335	107	16.5	2040	1.15

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Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-30-50	07-Oct-05	6860	-9.4	-79.0	3060	857	ND (0.5)	0.899 J	252	438	101	37.0	1780	1.27
	16-Dec-05	5850	-10.5	-65.0	2360	578	ND (0.5)	0.645	212	265	77.9	32.9	1260	1.19
	09-Mar-06	5380	-9.8	-83.5	2420	651	ND (0.5)	ND (0.5)	275	226	66.2	14.6	1640	1.18
	02-May-06	5420	-10.4	-73.6	2380	612	ND (0.5)	3.41	261	243	70.3	16.4	1750	1.22
	11-Oct-06	4170	-10.7	-82.2	1980	468	ND (0.5)	ND (0.5)	290	171	48.5	14.0	1370	1.11
	11-Oct-06 FD	3930	-11	-82.6	1810	462	ND (0.5)	ND (0.5)	298	163	46.1	14.1	1340	1.08
	24-Sep-09	---	---	---	---	---	---	---	220	19.0	4.80	---	270	---
MW-31-60	09-Mar-05	1540	-8.6	-63.0	649	210	4.94	ND (0.5)	76.6	108	17.3	5.97	424	0.401
	13-Jun-05	1660	-8.2	-65.0	745	207	4.12	ND (0.5)	70.0	121	18.9	6.57	403	0.388
	06-Oct-05	1660	-8.6	-65.0	691	206	4.01	ND (0.5)	77.3	109	16.5	9.75	308	0.462
	13-Dec-05	1620	-8.7	-54.0	669	199	4.14	ND (0.5)	73.0	87.0	15.4	9.32	275	0.359
	15-Mar-06	1560 J	-8.6	-65.6	661	191	4.37	ND (0.5)	89.3	106	17.5	7.30	403	0.393
	15-Mar-06 FD	1640 J	-8.6	-64.9	662	192	4.34	ND (0.5)	81.9	101	16.8	6.94	391	0.383
	01-May-06	1630	-9.6	-63.2	691	209	4.58	ND (0.5)	79.6	118	20.1	7.78	467	0.449
	05-Oct-06	1620	-9.4	-66.3	687	205	5.00	ND (0.5)	80.0	113	20.6	9.60 J	325	0.464
	12-Mar-07	1750	-9.3	-69.0	757	222	4.93	ND (0.5)	72.5	116	20.3	6.05	454	0.402 J
	04-Oct-07	1720	-9.4	-69.6	799	208	5.15	ND (1.0)	80.0	150	26.0	7.30	580	0.64
	06-Oct-08	2000	-10.2	-72.2	810	240	4.20	ND (1.0)	81.0	150	26.0	9.39	460	0.399
	21-Sep-09	1800	-9.18	-72.1	870	220	3.70	ND (1.0)	75.0	160	26.0	9.60	480	0.43
MW-32-20	09-Mar-05	12500	-7.2	-65.0	6930	1660	ND (0.5)	3.51	123	838	302	36.9	4000	2.76
	17-Jun-05	10200	-9.0	-67.0	4810	690	ND (0.5)	ND (2.5)	676	566	231	23.3	2620	1.75
	04-Oct-05	28800	-7.8	-65.0	14200	2420	ND (5.0)	6.19	733	1380 J	613 J	91.1 J	5400 J	4.75 J
	16-Dec-05	24600	-7.8	-61.0	12200	2140	ND (1.0)	3.48	861	1470	552	90.4	4950	4.16
	10-Mar-06	20900	-8.3	-65.5	10600	1970	ND (0.5)	ND (0.5)	432	1350	530	56.1	6440	3.54
	04-May-06	16900	-8.1	-64.9	9430	1380	ND (0.5)	2.35	218	937	445	46.0	4780	2.87
	02-Oct-06	46200 J	-8.6	-67.1	20200	3190	ND (2.5)	7.30	660	1870	1070	87.0	11300	6.34
	11-Dec-06	37900	-8.0	-67.0	17900	3020	ND (5.0)	7.67	825	1530	785	81.7	8420	4.98
	06-Mar-07	27600	-8.7	-72.7	16200	2210	0.925	5.93	765	1460	635	64.4	7110	3.92
	30-Apr-07	17700	-9.6	-78.1	9820	1310	ND (0.2)	3.78	770	965	484	51.4	5520	3.02

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										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-32-20	01-Oct-07	37200	-8.3	-70.1	20600	3160	ND (1.0)	6.44	700	1800	1100	93.0	9900	5.70
	10-Mar-08	26000	-9.4	-72.6	15800	2280	ND (1.0)	5.66	800	1190	710	67.4	11600	2.31
	03-Oct-08	---	---	---	21000	3500	ND (5.0)	---	640	1700	1080	---	9550	---
	10-Mar-09	29000	-8.91	-70.5	15000	2100 J	ND (5.0)	15.0	750	1620	970	96.6	7020	3.53
	22-Sep-09	---	---	---	20000	3600	ND (5.0)	---	730	1800	740	---	9300	---
MW-32-35	09-Mar-05	3560	-8.2	-68.0	1770	465	ND (0.5)	0.845	260	312	85.5	13.0	944	1.07
	17-Jun-05	7550	-9.5	-72.0	3520	787	ND (0.5)	ND (2.5)	223	506	120	14.8	2110	1.18
	04-Oct-05	8340	-8.3	-70.0	3840	765	ND (0.5)	ND (5.0)	208	567	134	29.3	1530	1.26
	16-Dec-05	7660	-8.8	-63.0	3510	710	ND (1.0)	1.02	219	606	128	30.0	1580	1.25
	10-Mar-06	9230	-8.6	-74.0	4210	1010	ND (0.5)	ND (0.5)	234	654	129	19.2	2360	1.13
	04-May-06	9840	-9.1	-67.8	4960	1130	ND (0.5)	ND (0.5)	218	693	148	19.5	2800	1.38
	02-Oct-06	11200	-9.4	-71.4	5430	1050	ND (2.5)	ND (2.5)	290	839	165	23.9	3260	1.48
	11-Dec-06	10400	-9.0	-70.4	5090	1000	ND (0.5)	1.90	338	845	173	22.5	2620	1.43
	06-Mar-07	12600	-10.2	-75.4	6070	1200	ND (0.5)	2.65	360	1080	209	23.5	2910	1.35
	30-Apr-07	12100	-9.9	-78.7	6610	1280	ND (0.2)	2.60	475	1250	273	26.2	3280	1.35
	01-Oct-07	13700	-8.9	-72.7	6830	1120	ND (1.0)	2.62	490	1000	390	29.0	4000	1.70
	03-Oct-08	15000	-9.8	-73.1	7600	1300	ND (2.5)	3.10	550	829	150	52.3	3490	1.49
	22-Sep-09	13000	-9.18	-75.2	6900	1400	ND (2.5)	2.80	530	880	400	53.0	3100	1.70
MW-34-55	10-Mar-05	6230	-10.8	-82.0	2620	739	ND (0.5)	0.654	240	366	71.3	29.1	1900	1.19
	15-Jul-05	---	-10.3	-84.0	2250	607	ND (0.5)	ND (0.5)	242	247	52.0	16.5	1420	1.02
	05-Oct-05	5150	-10.6	-88.0	2170	619	ND (0.5)	ND (0.5)	232	272	59.1	25.8	1230	1.20
	14-Dec-05	5100	-10.8	-74.0	2150	552	ND (0.5)	0.588	236	217	45.0	27.2	965	0.937
	08-Mar-06	4850	-10.8	-86.8	2080	593	ND (0.5)	ND (0.5)	272	256	54.2	13.5	1640	0.956
	03-May-06	4320	-11.5	-84.3	2070	500	ND (0.5)	ND (0.5)	302	198	44.8	11.1	1360	0.846
	04-Oct-06	1680 J	-12.2	-94.8	443	230	ND (0.5)	ND (0.5)	368	37.6	8.08	4.59	536	0.54
	03-Oct-07	730	-11.3	-96.6	109	266	ND (1.0)	ND (1.0)	190	15.0	3.30	3.30	290	0.26
	07-Oct-08	700	-13	-100.0	100	250	ND (0.5)	---	170	72.4	16.9	5.26	192	0.248
	30-Sep-09	700	-10.9	-101.0	---	---	---	---	160	77.0	17.0	4.40	120	0.15
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

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										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-34-80	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
	07-Oct-08	5300	-11.8	-87.6	2400	720	ND (2.0)	ND (2.0)	250	223	46.3	22.0	1220	0.765
	10-Dec-08	5300	-11	-93.1	2190	698	ND (1.0)	ND (1.0)	253	147	45.2	20.6	3880	1.11
	10-Mar-09	5100	-10.9	-84.8	2300	700 J	ND (2.5)	ND (2.5)	240	219	46.3	22.2	1480	1.08
	30-Apr-09	5830	-11.5	-85.8	2340	768	ND (1.0)	ND (1.0)	237	219	50.0	24.6	1510	1.11
	30-Sep-09	4000	-9.6	-88.9	2300	710	ND (1.0)	ND (1.0)	230	240	46.0	22.0	1500	0.98
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

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										Calcium	Magnesium	Potassium	Sodium	Boron
Monitoring Wells														
MW-34-100	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)
	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)

TABLE B-2

Chemical Performance Monitoring Analytical Results, March 2005 through October 2009
Third Quarter 2009 IM Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Location	Sample Date	Total Dissolved Solids	Oxygen-18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Alkalinity (total)	Dissolved Metals				
										Calcium	Magnesium	Potassium	Sodium	Boron
Surface Water Stations														
R-28	09-May-07	690	-13	-102.0	95.8	271	ND (0.5)	ND (0.5)	143	86.1	30.5	5.92	103	ND (0.2)
	12-Sep-07	682	-12.4	-99.4	106	296	0.372	ND (0.2)	122	73.8	29.9	6.36	89.2	ND (0.2)
	06-Dec-07	---	-11.7	-98.6	96.5	258	0.345	ND (0.2)	139	75.7	30.4	6.62	79.4	ND (0.2)
	02-Apr-08	---	---	---	92.5	309	ND (1.0)	ND (1.0)	137	84.7	31.4	5.58	108	0.467
	18-Jun-08	672	-13.2	-102.0	89.4	248	ND (1.0)	ND (1.0)	132	43.3	31.1	6.95	93.9	ND (0.2)
	17-Sep-08	640	---	---	91.4	256	ND (0.5)	ND (0.5)	132	83.4	31.2	6.48	78.0	ND (0.2)
	04-Dec-08	649	-11.9	-97.0	97.4	260	ND (1.0)	ND (1.0)	135	81.7	30.0	5.95	114	0.262
	21-Jan-09	652	-12	-96.7	91.5	253	ND (0.5)	ND (0.5)	134	79.2	27.8	6.01	91.7	ND (0.2)
	09-Apr-09	643	-12.4	-97.8	92.7	250	ND (1.0)	ND (0.5)	138	79.6	28.8	5.44	97.0	ND (0.2)
	08-Jul-09	632	-12.8	-98.6	84.5	239	ND (0.5)	ND (0.5)	131	79.6	27.3	6.17	86.9	ND (0.2)
	09-Sep-09	640	-12.5	-99.1	86.0	236	ND (1.0)	ND (1.0)	131	74.8	26.2	6.01	78.7	ND (0.2)

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

Data for MW-34-055 and MW-34-100 not shown in this table were not available at the time of this report.
This data will be presented in the Fourth Quarter/Annual 2009 Combined PMP/GMP Report.

General chemistry results in milligrams per liter (mg/L), except Oxygen-18 and Deuterium, which are expressed as differences from global standards in parts per thousand.

Alkalinity (total) reported as calcium carbonate. Nitrate reported as Nitrogen (N).

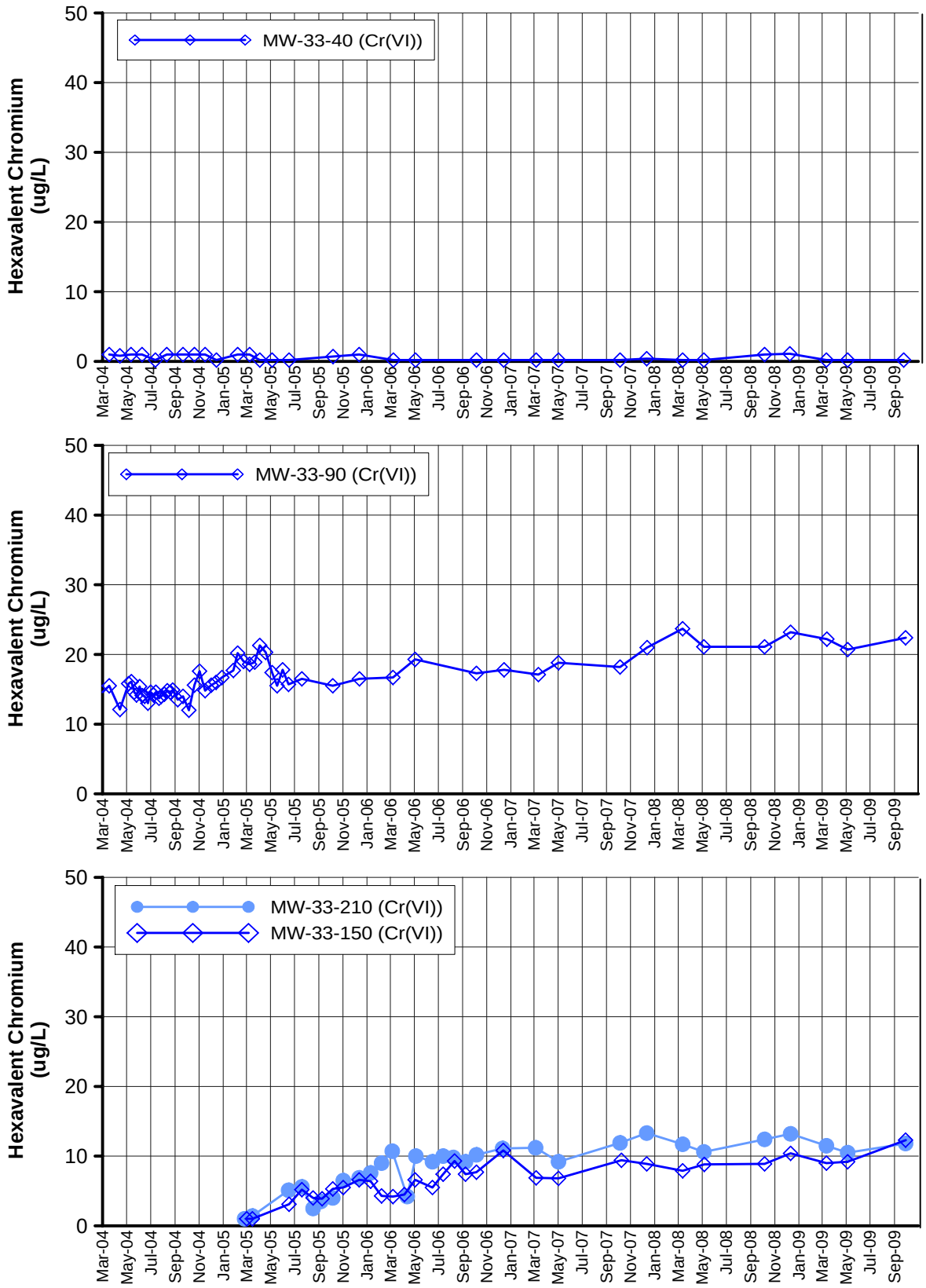

FIGURE B-1
HEXAVALENT CHROMIUM
IN MW-33 CLUSTER

THIRD 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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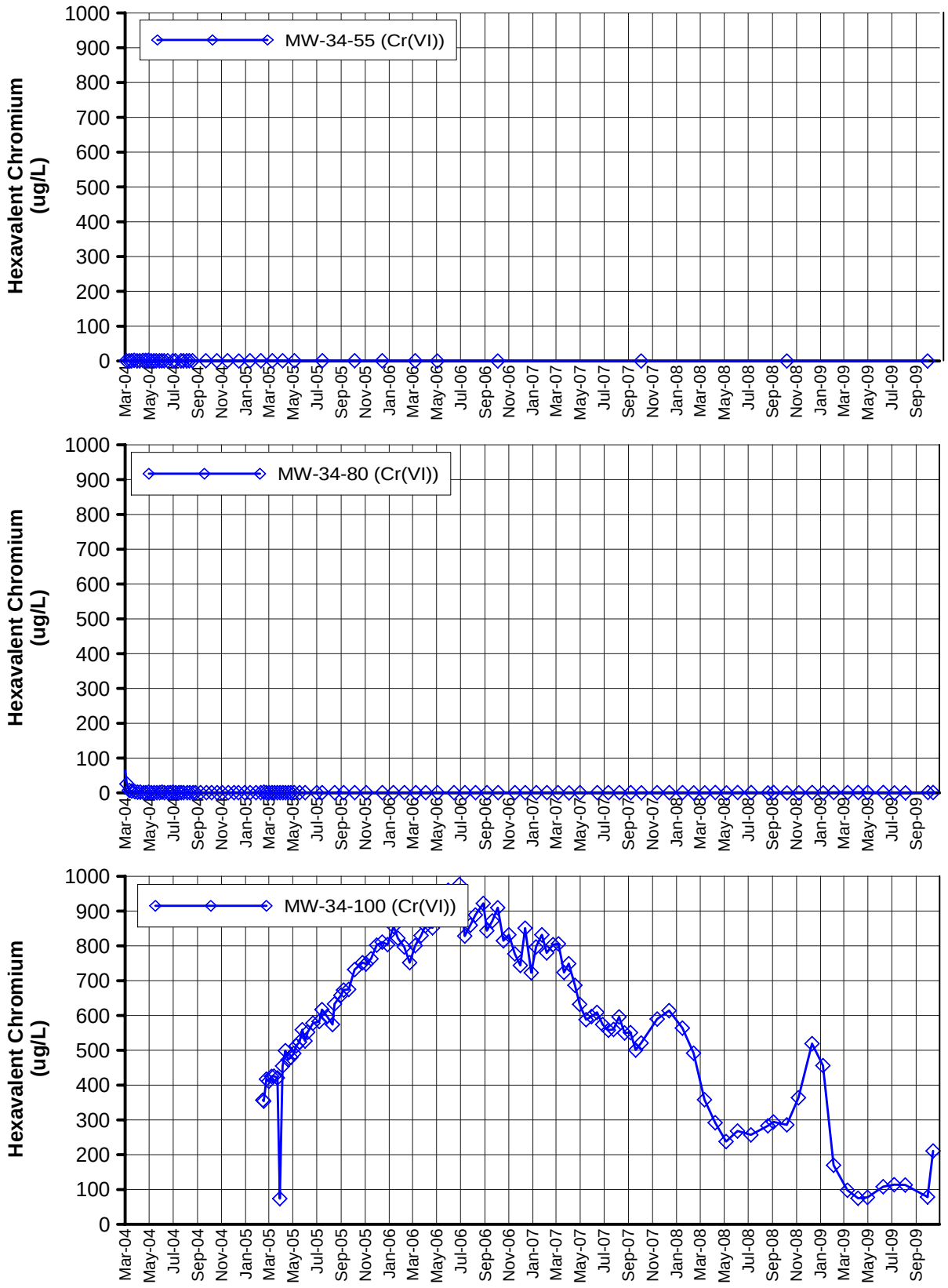

FIGURE B-2
HEXAVALENT CHROMIUM
IN MW-34 CLUSTER

THIRD 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\3Q-Report\Draft\Appedices\B_Cr6_Data_GenChem

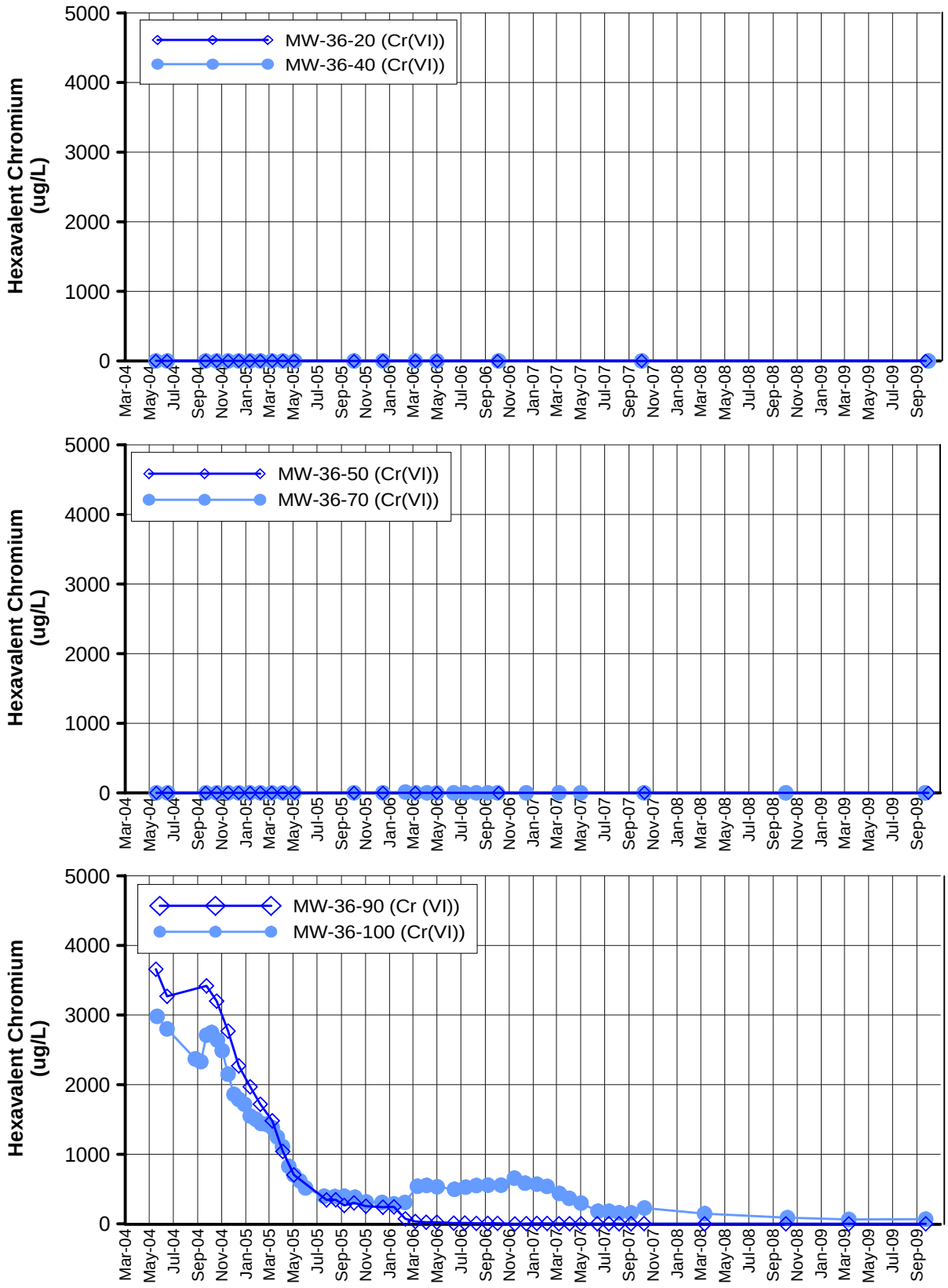

FIGURE B-3
HEXAVALENT CHROMIUM
IN MW-36 CLUSTER

THIRD 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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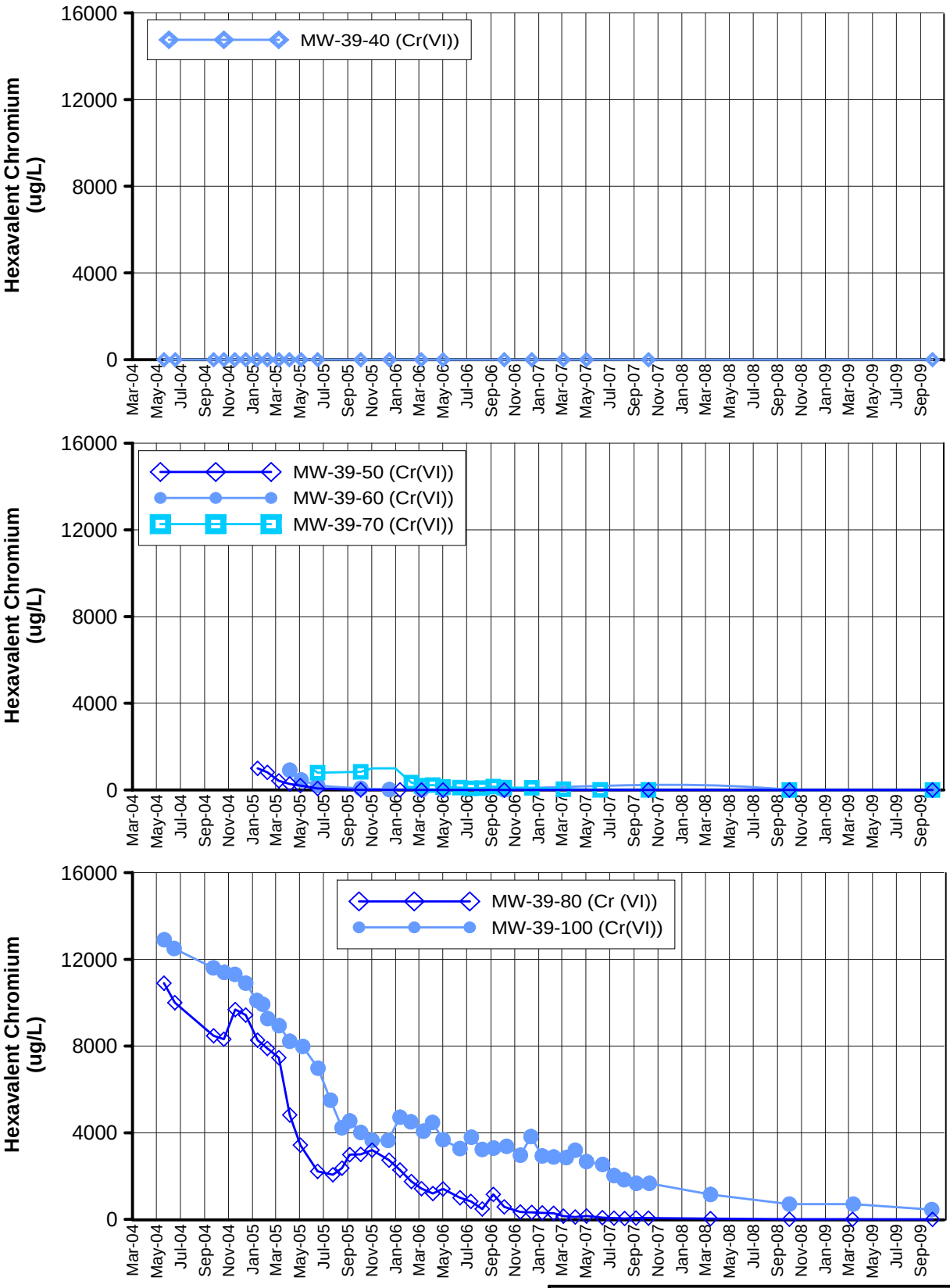

FIGURE B-4
HEXAVALENT CHROMIUM
IN MW-39 CLUSTER

THIRD 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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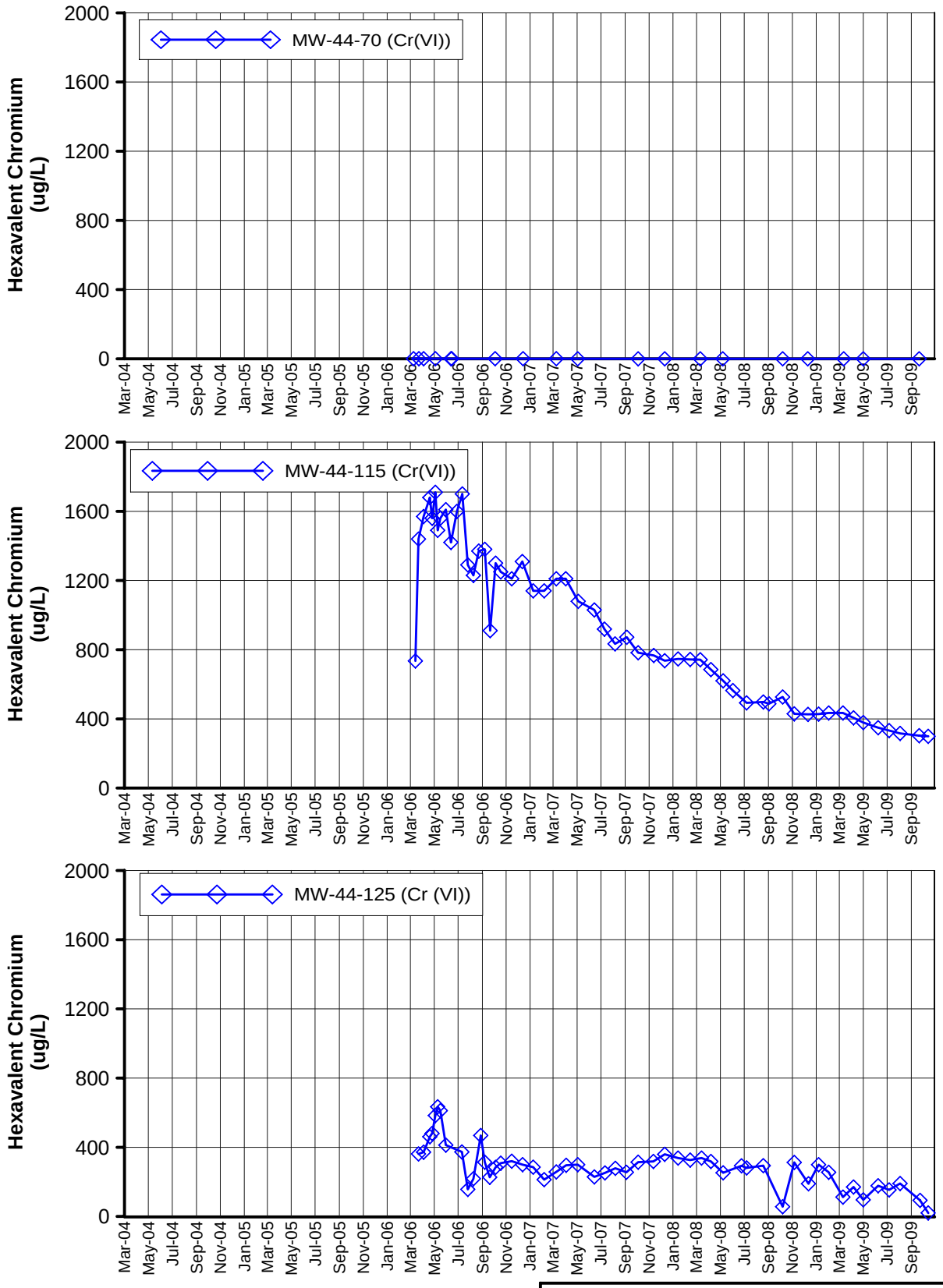

FIGURE B-5
HEXAVALENT CHROMIUM
IN MW-44 CLUSTER

THIRD 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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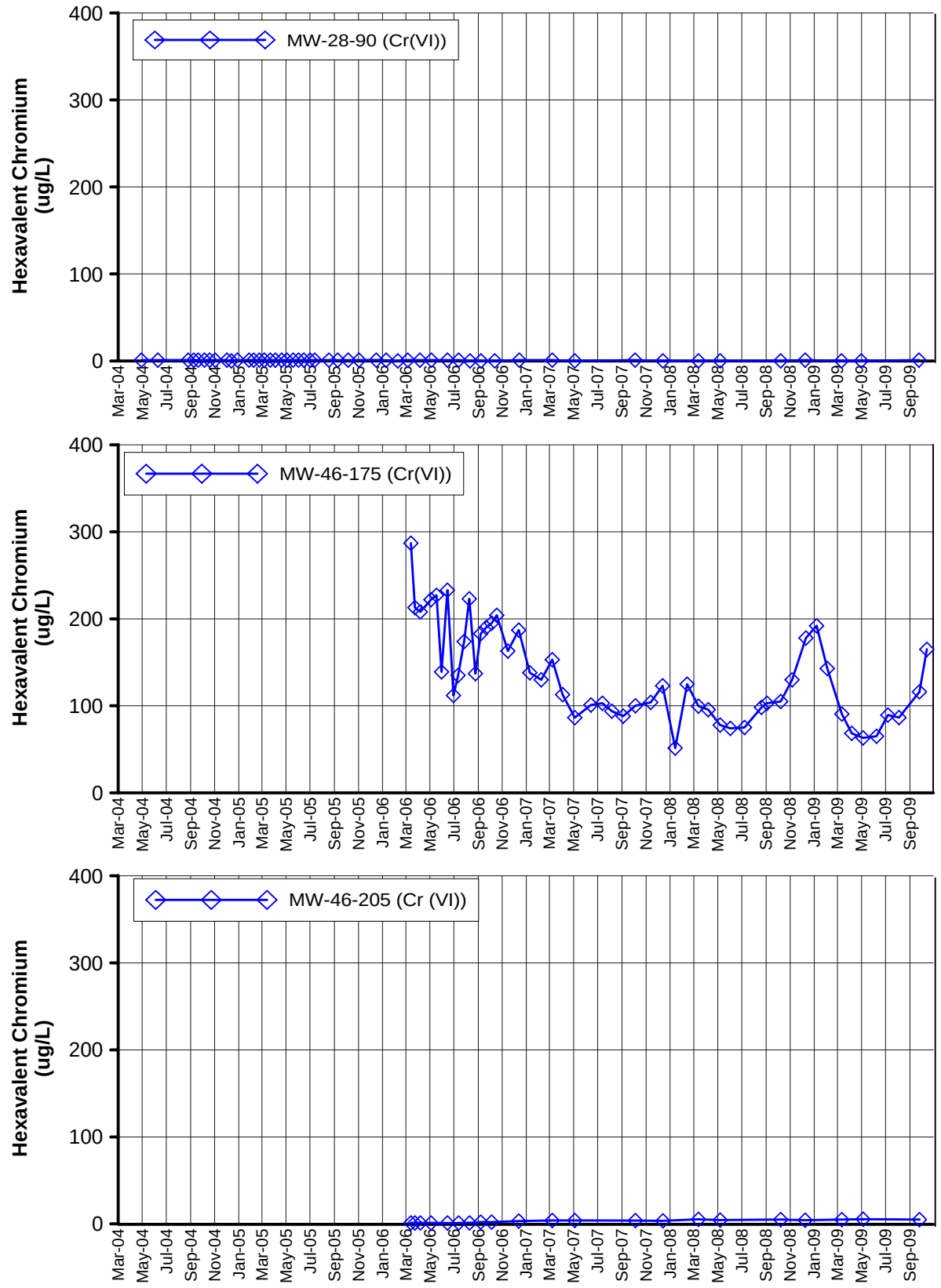

FIGURE B-6
HEXAVALENT CHROMIUM
IN MW-46 CLUSTER

THIRD 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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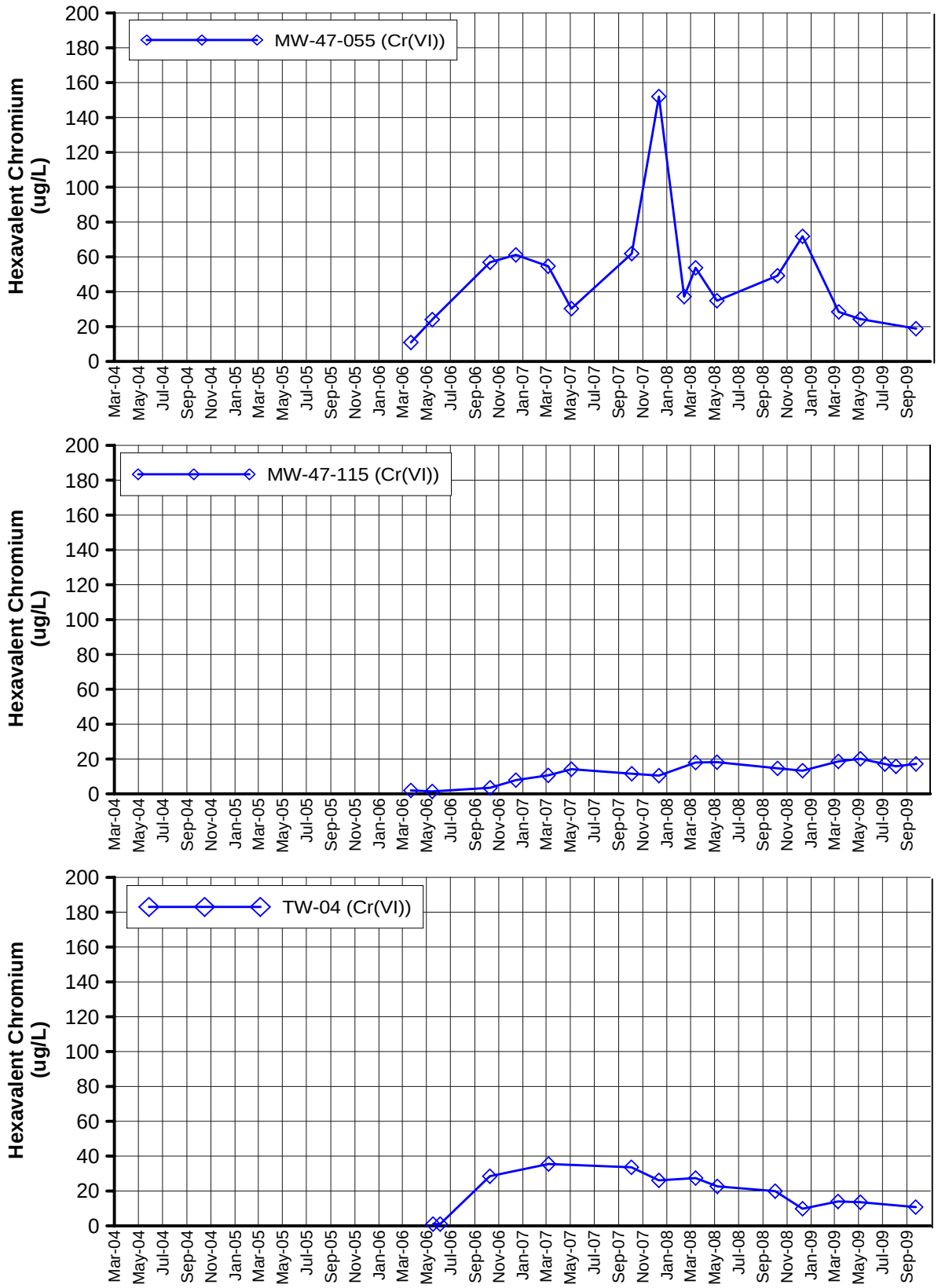

FIGURE B-7
HEXAVALENT CHROMIUM
IN MW-47 CLUSTER AND TW-04

THIRD 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 C
Hydraulic Data for Interim Measure Reporting Period

TABLE C-1

Average Monthly and Quarterly Groundwater Elevations, August through October 2009

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

Well ID	Aquifer Zone	August 2009	September 2009	October 2009	Quarter Average	Days in Quarter Average
I-3	River Station	455.08	455.24	454.04	454.78	92
MW-20-070	Shallow Zone	454.18	454.48	453.37	454.01	92
MW-20-100	Middle Zone	453.65	454.09	452.87	453.53	92
MW-20-130	Deep Wells	453.06	453.54	452.56	453.05	92
MW-22	Shallow Zone	455.03	455.03	454.33	454.79	91
MW-25	Shallow Zone	455.75	455.69	455.22	455.55	92
MW-26	Shallow Zone	455.42	455.39	454.84	455.22	92
MW-27-020	Shallow Zone	454.95	455.10	453.89	454.67	88
MW-27-060	Middle Zone	454.89	455.04	453.86	454.61	88
MW-27-085	Deep Wells	455.07	455.25	454.05	454.79	92
MW-28-025	Shallow Zone	454.99	455.14	453.97	454.69	92
MW-28-090	Deep Wells	455.14	455.29	454.13	454.85	92
MW-30-050	Middle Zone	454.76	454.98	453.74	454.51	88
MW-31-060	Shallow Zone	454.93	455.05	454.16	454.71	92
MW-31-135	Deep Wells	INC	454.64	453.57	454.17	70
MW-32-035	Shallow Zone	454.93	455.04	INC	INC	65
MW-33-040	Shallow Zone	455.09	455.16	454.22	454.82	92
MW-33-090	Middle Zone	455.21	455.31	454.34	454.95	92
MW-33-150	Deep Wells	455.40	INC	454.40	INC	68
MW-34-055	Middle Zone	454.98	455.16	453.91	454.71	88
MW-34-080	Deep Wells	454.98	455.25	453.92	454.74	88
MW-34-100	Deep Wells	454.95	455.22	453.96	454.70	92
MW-35-060	Shallow Zone	455.43	455.49	454.56	455.15	92
MW-35-135	Deep Wells	455.87	455.87	455.14	455.62	92
MW-36-020	Shallow Zone	454.96	455.10	453.94	454.69	89
MW-36-040	Shallow Zone	454.81	455.00	453.81	454.56	89
MW-36-050	Middle Zone	454.82	455.02	453.82	454.57	89
MW-36-070	Middle Zone	454.70	454.90	453.68	454.45	89
MW-36-090	Deep Wells	453.97	454.38	453.02	453.81	89
MW-36-100	Deep Wells	454.31	454.67	453.26	454.10	89
MW-39-040	Shallow Zone	454.66	454.89	453.77	454.46	88
MW-39-050	Middle Zone	454.47	454.72	453.53	454.26	88
MW-39-060	Middle Zone	454.38	454.67	453.42	454.17	88
MW-39-070	Middle Zone	454.11	454.50	453.19	453.95	89
MW-39-080	Deep Wells	454.18	454.56	453.25	454.02	88
MW-39-100	Deep Wells	454.76	455.13	453.53	454.50	88
MW-42-030	Shallow Zone	454.55	454.72	453.63	454.32	88
MW-42-065	Middle Zone	454.82	455.00	453.88	454.58	88
MW-43-025	Shallow Zone	454.92	455.04	453.82	454.61	88
MW-43-090	Deep Wells	455.35	455.48	454.18	455.02	88
MW-44-070	Middle Zone	454.84	455.04	453.87	454.59	90
MW-44-115	Deep Wells	454.53	454.81	453.67	454.35	90
MW-44-125	Deep Wells	454.96	455.25	454.00	454.75	90
MW-45-095a	Deep Wells	453.94	454.95	452.69	453.85	92
MW-46-175	Deep Wells	455.08	455.27	454.35	454.90	92
MW-47-055	Shallow Zone	455.44	455.48	454.63	455.18	92

TABLE C-1

Average Monthly and Quarterly Groundwater Elevations, August through October 2009

Second Quarter 2009 IM Performance Monitoring and Site-Wide

Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station, Needles, California

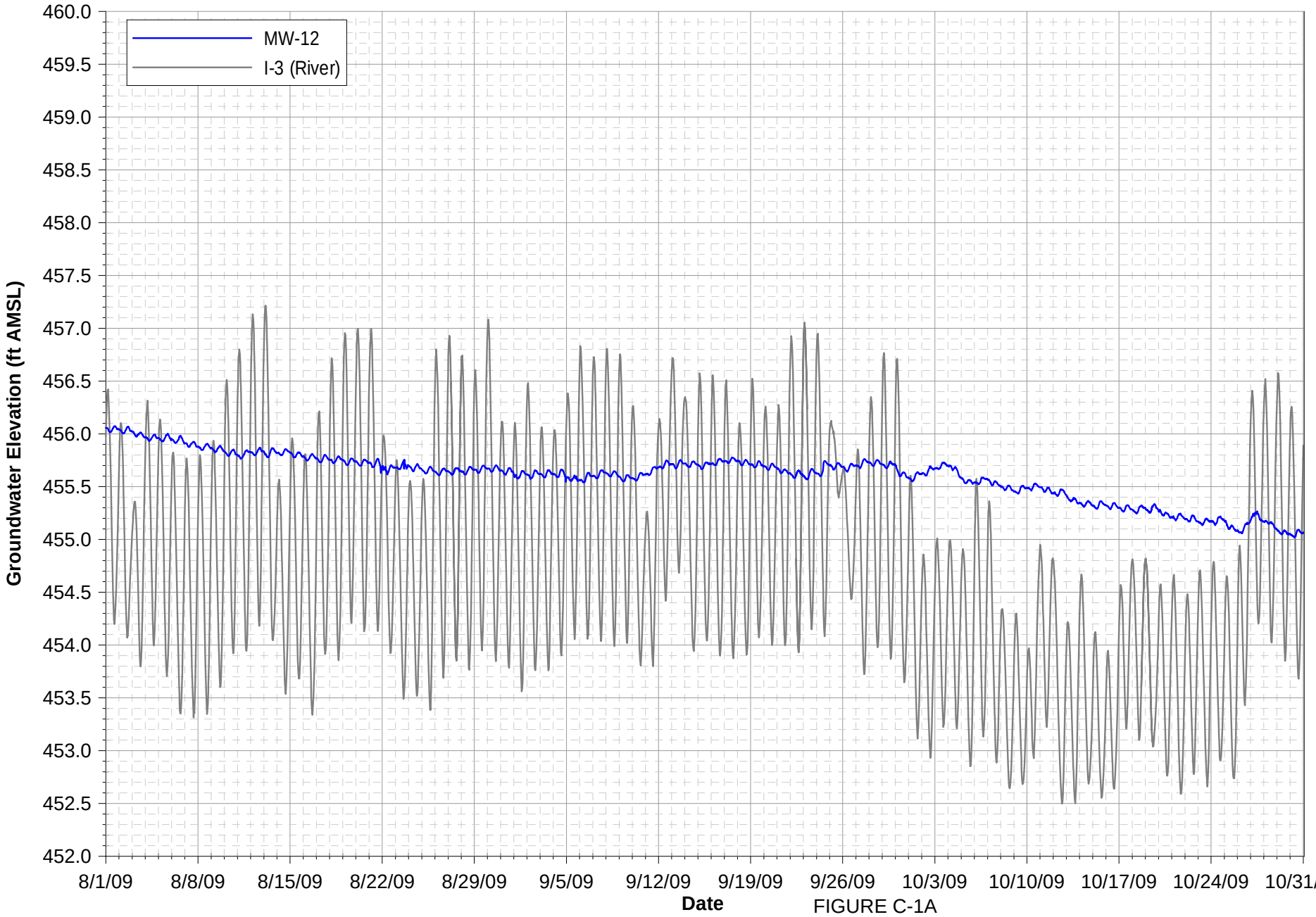
Well ID	Aquifer Zone	August 2009	September 2009	October 2009	Quarter Average	Days in Quarter Average
MW-47-115	Deep Wells	455.53	455.58	454.75	455.28	92
MW-49-135	Deep Wells	455.58	455.65	454.73	455.32	92
MW-50-095	Middle Zone	455.21	455.27	454.44	454.97	92
MW-51	Middle Zone	455.41	455.45	454.84	455.23	92
MW-54-085	Deep Wells	INC	INC	454.20	INC	50
MW-54-140	Deep Wells	455.38	455.46	454.46	455.12	89
MW-54-195	Deep Wells	455.61	455.67	454.74	455.36	89
MW-55-045	Middle Zone	456.00	455.98	455.36	455.78	92
MW-55-120	Deep Wells	456.19	456.14	455.58	455.97	92
PT2D	Deep Wells	453.75	454.15	452.82	453.58	90
PT5D	Deep Wells	453.69	453.99	INC	INC	61
PT6D	Deep Wells	455.54	INC	INC	INC	45
RRB	River Station	455.28	455.49	454.40	455.05	92

NOTES:

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

Quarterly Average = average of daily averages over reporting period

INC = Data incomplete, less than 75% of data available over reporting period due to rejection or field equipment malfunction



Note:
Data subject to review.

FIGURE C-1A
MW-12 HYDROGRAPH
THIRD 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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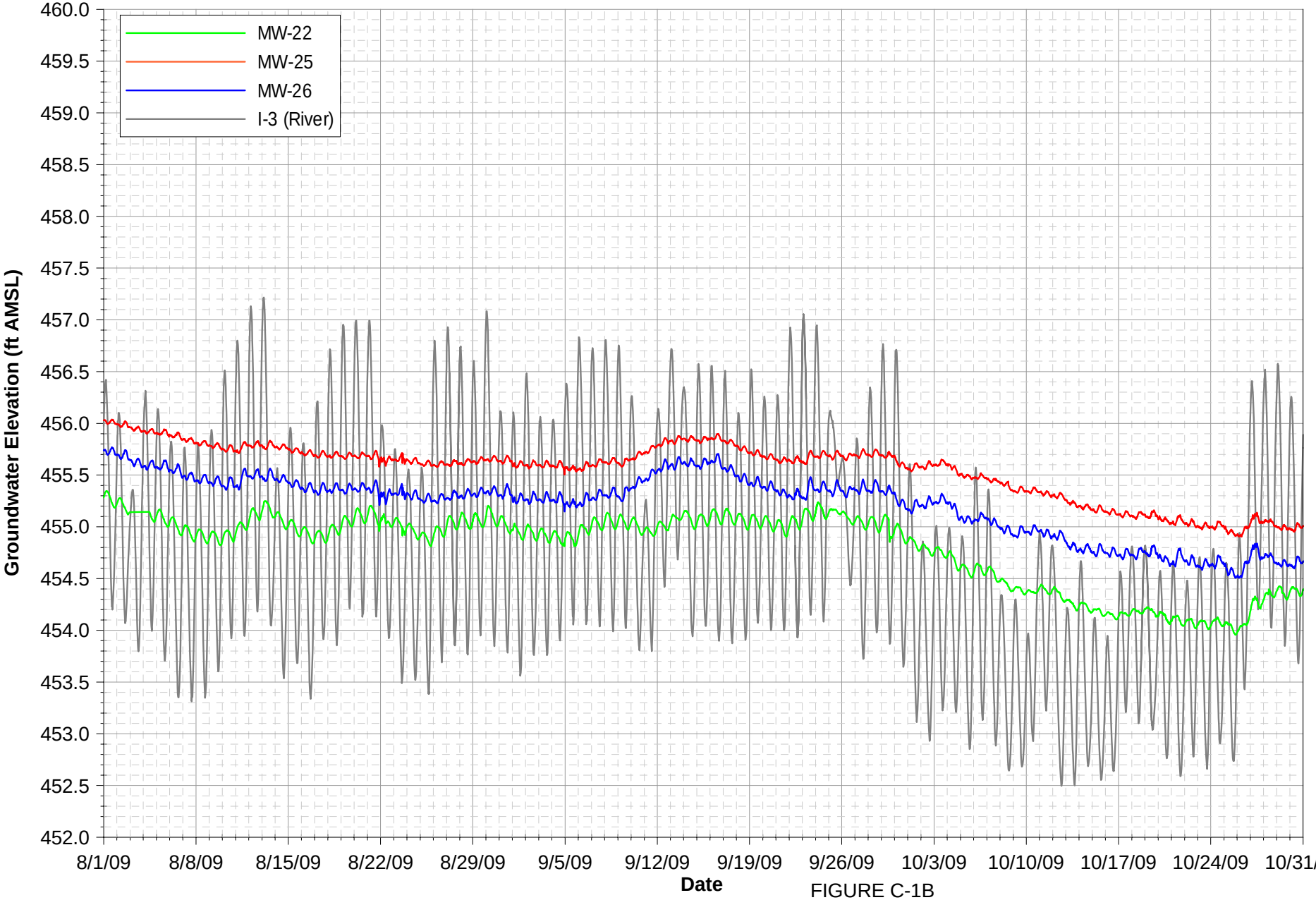
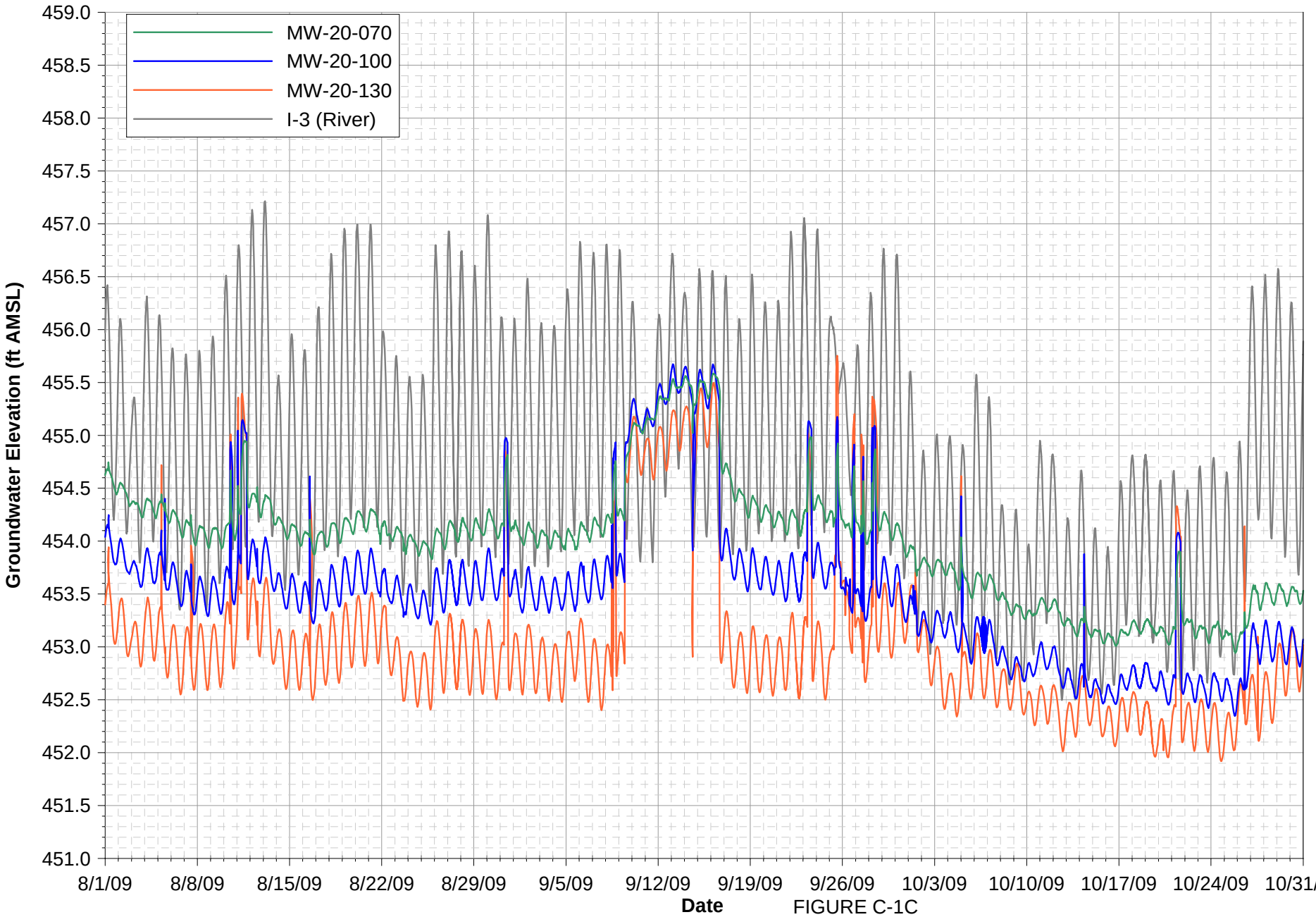


Notes:
Data subject to review.

FIGURE C-1B
MW-22, MW-25, AND MW-26 HYDROGRAPHS
THIRD 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
THIRD 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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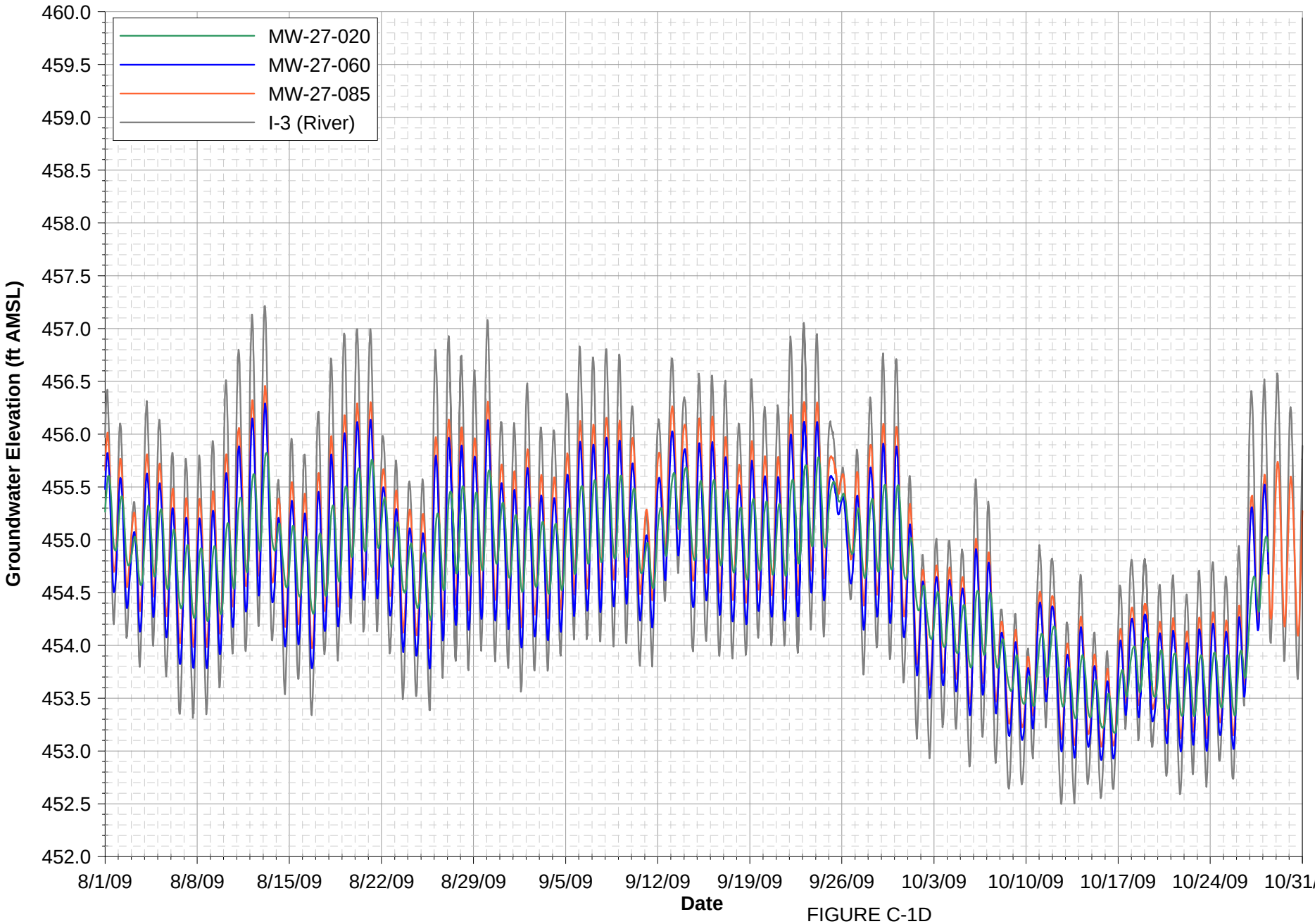
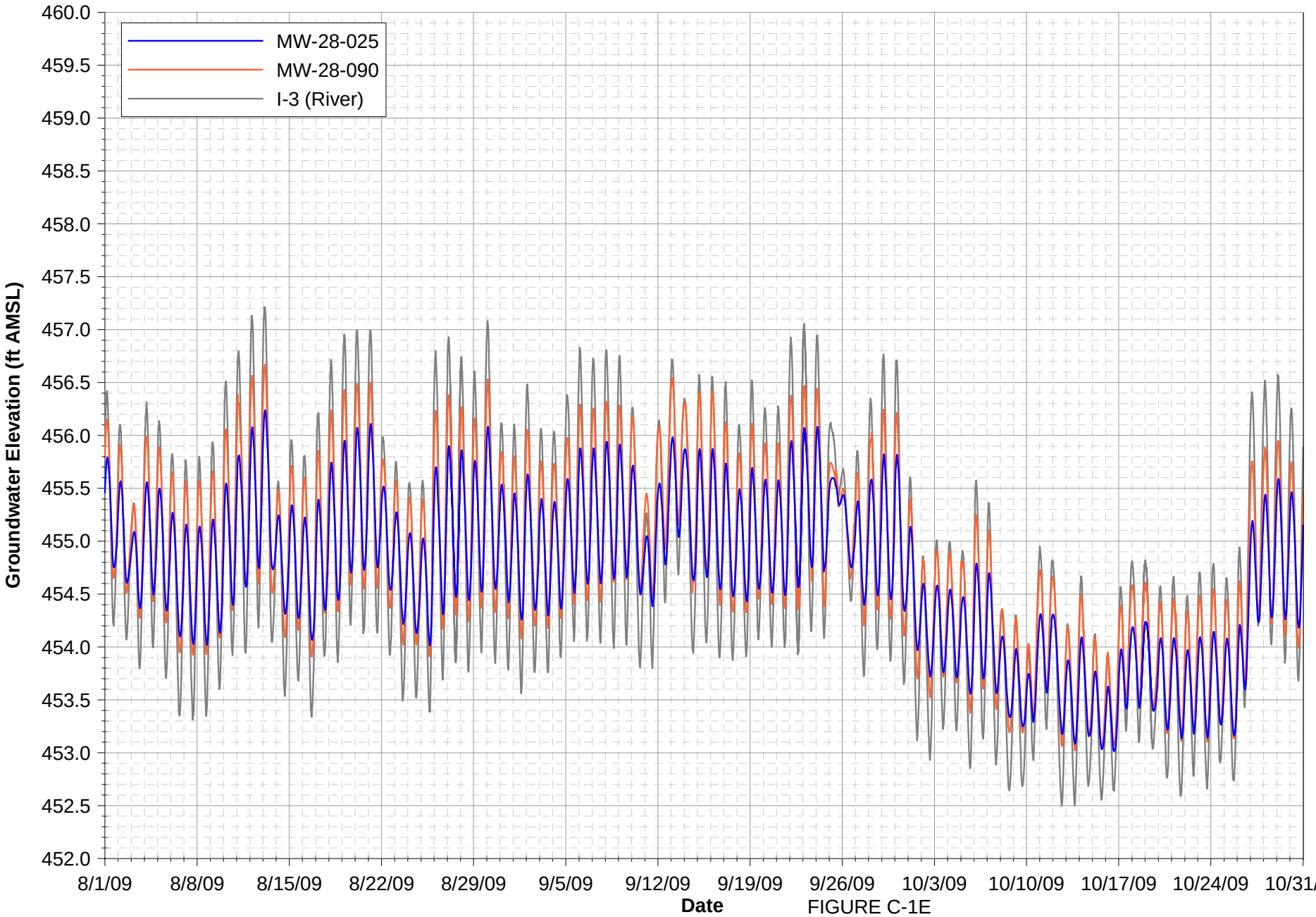


Notes:
Data subject to review.

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

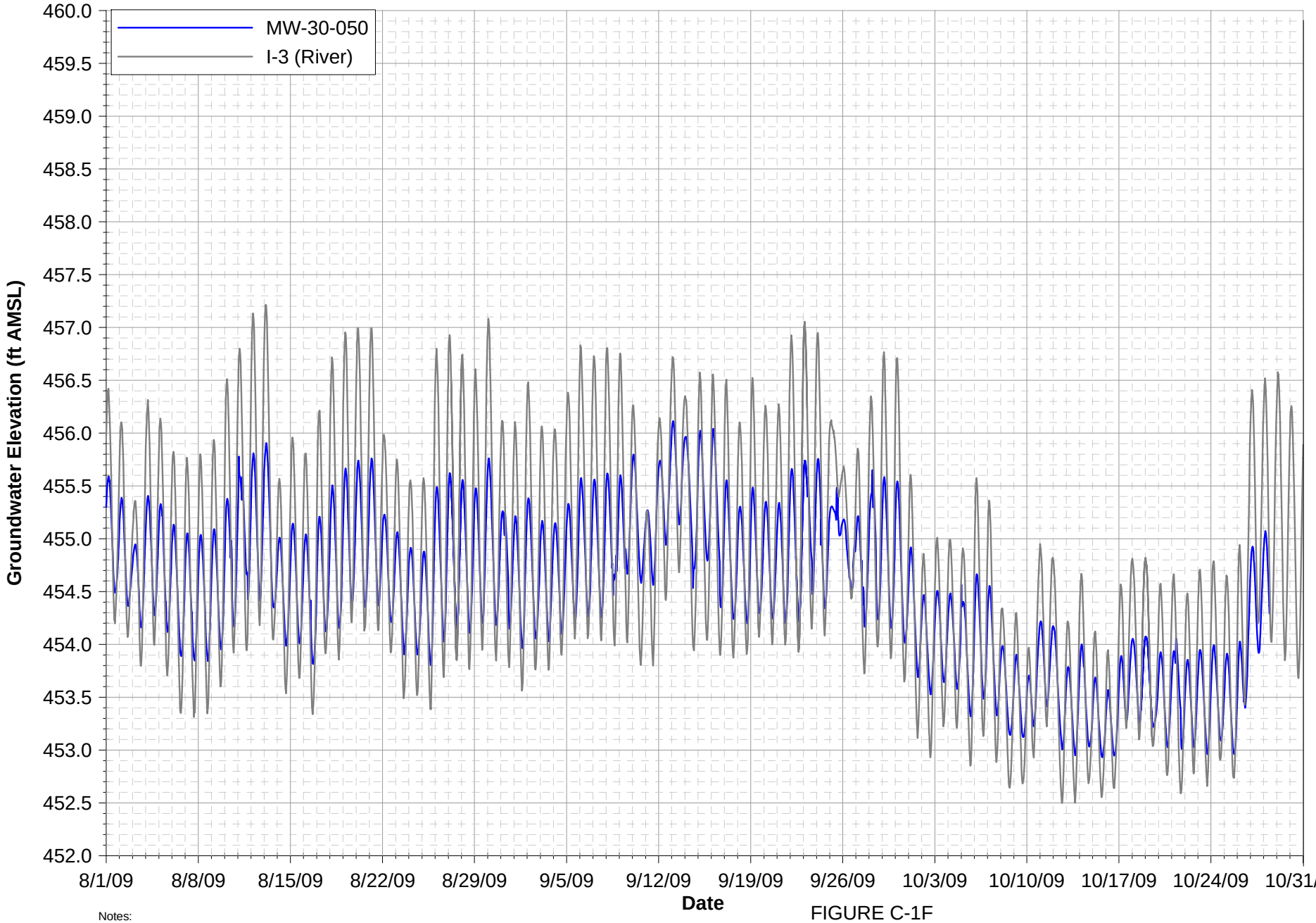
CH2MHILL



Notes:
Data subject to review.

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

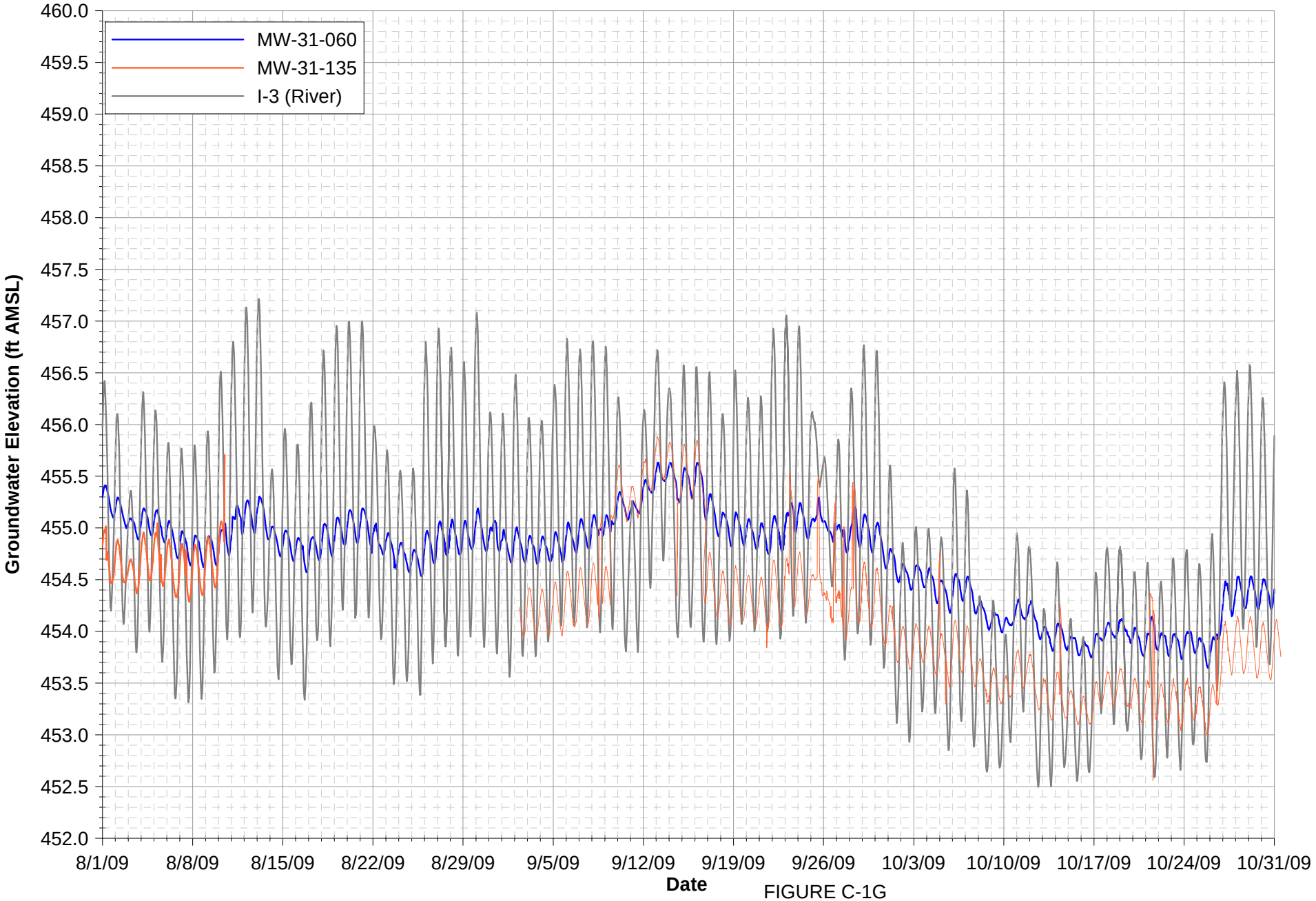
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1F
MW-30-50 WELL HYDROGRAPH
THIRD 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.
No data for MW-31-135 from August 10, 2009 to September 2, 2009 due to transducer failure.

FIGURE C-1G
MW-31 WELL HYDROGRAPHS
THIRD 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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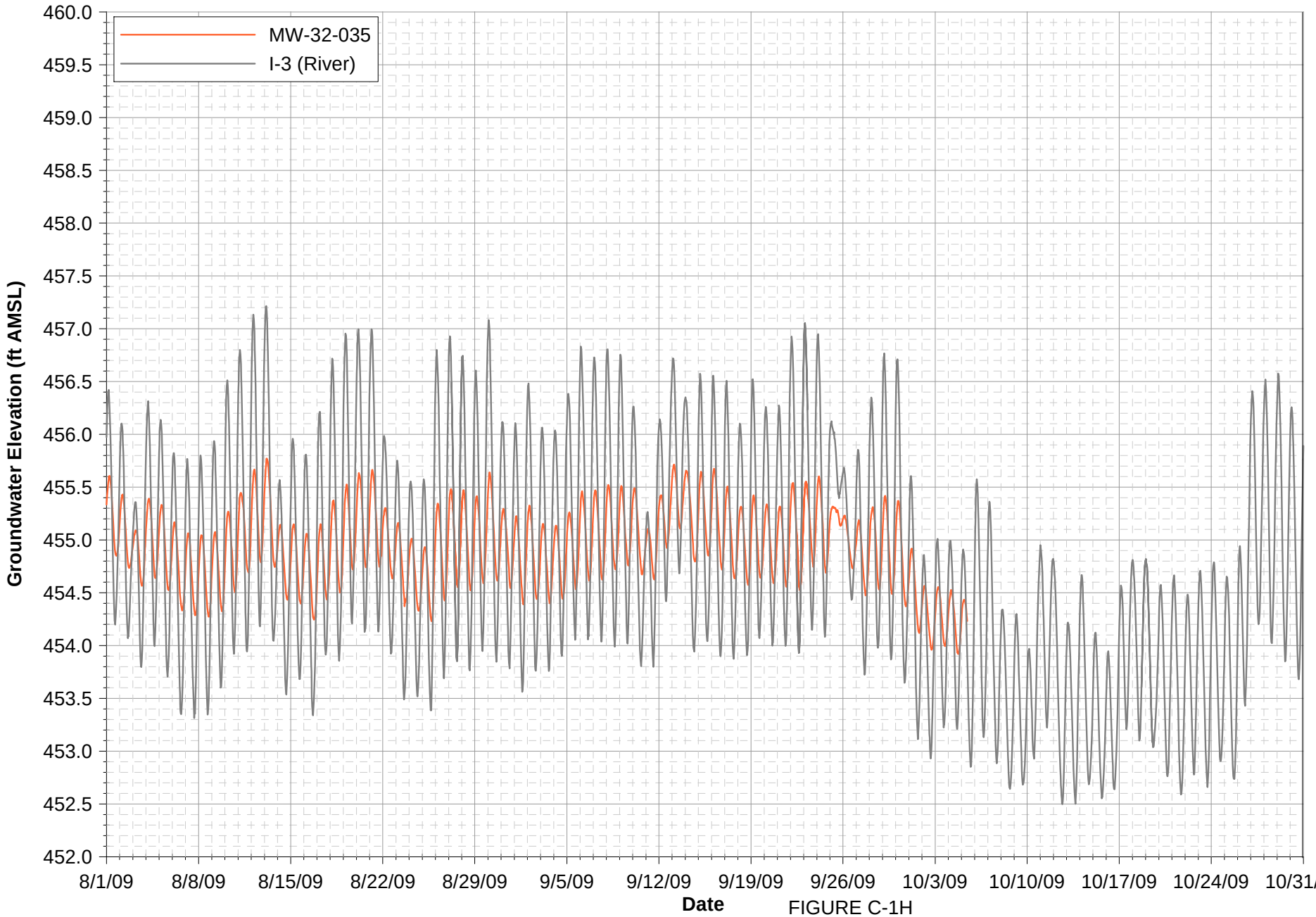

Notes:
Data subject to review.
No Data for MW-32-035 from October 5, 2009 to October 31, 2009 due to transducer failure.

FIGURE C-1H
MW-32-035 WELL HYDROGRAPH
THIRD 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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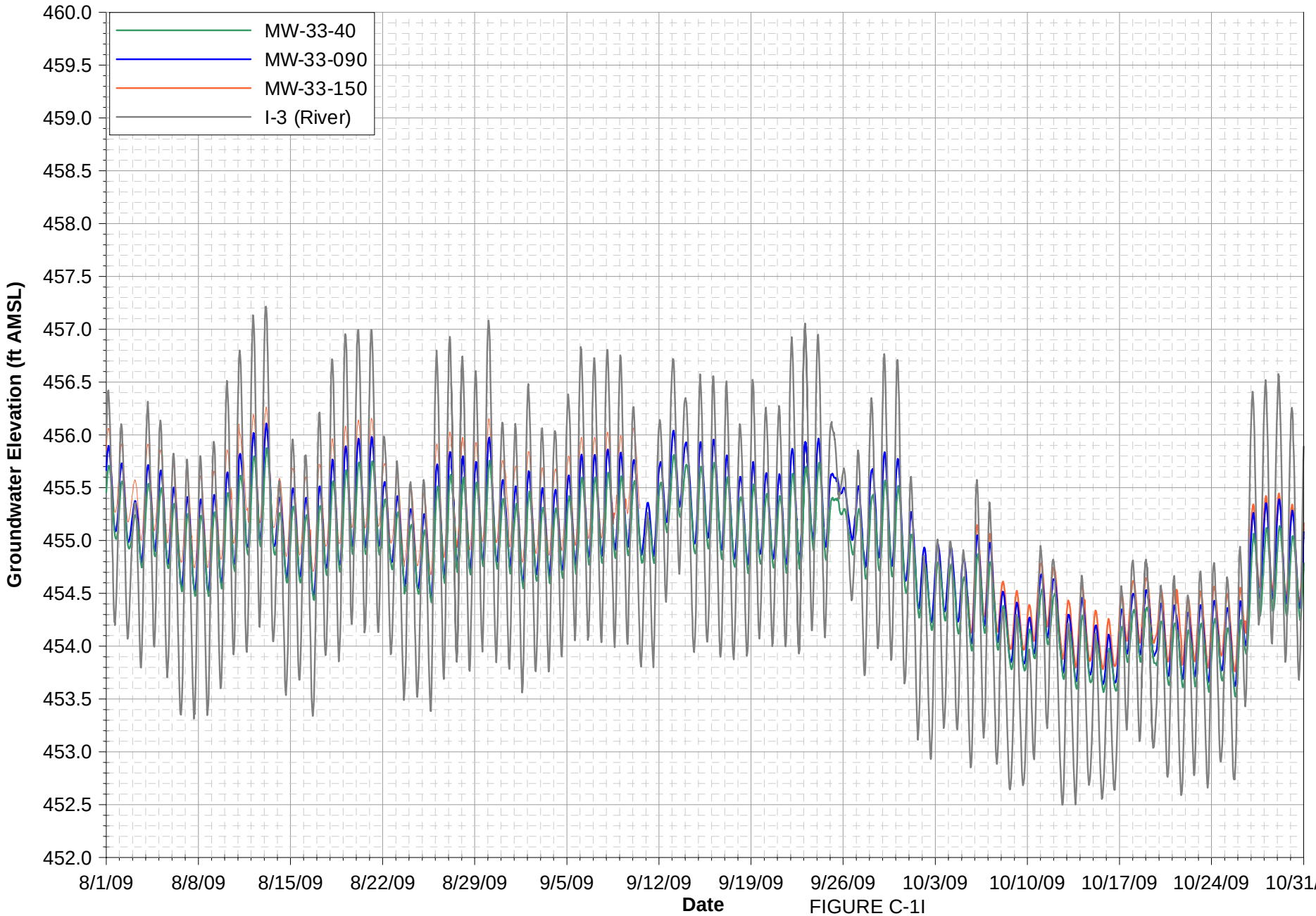
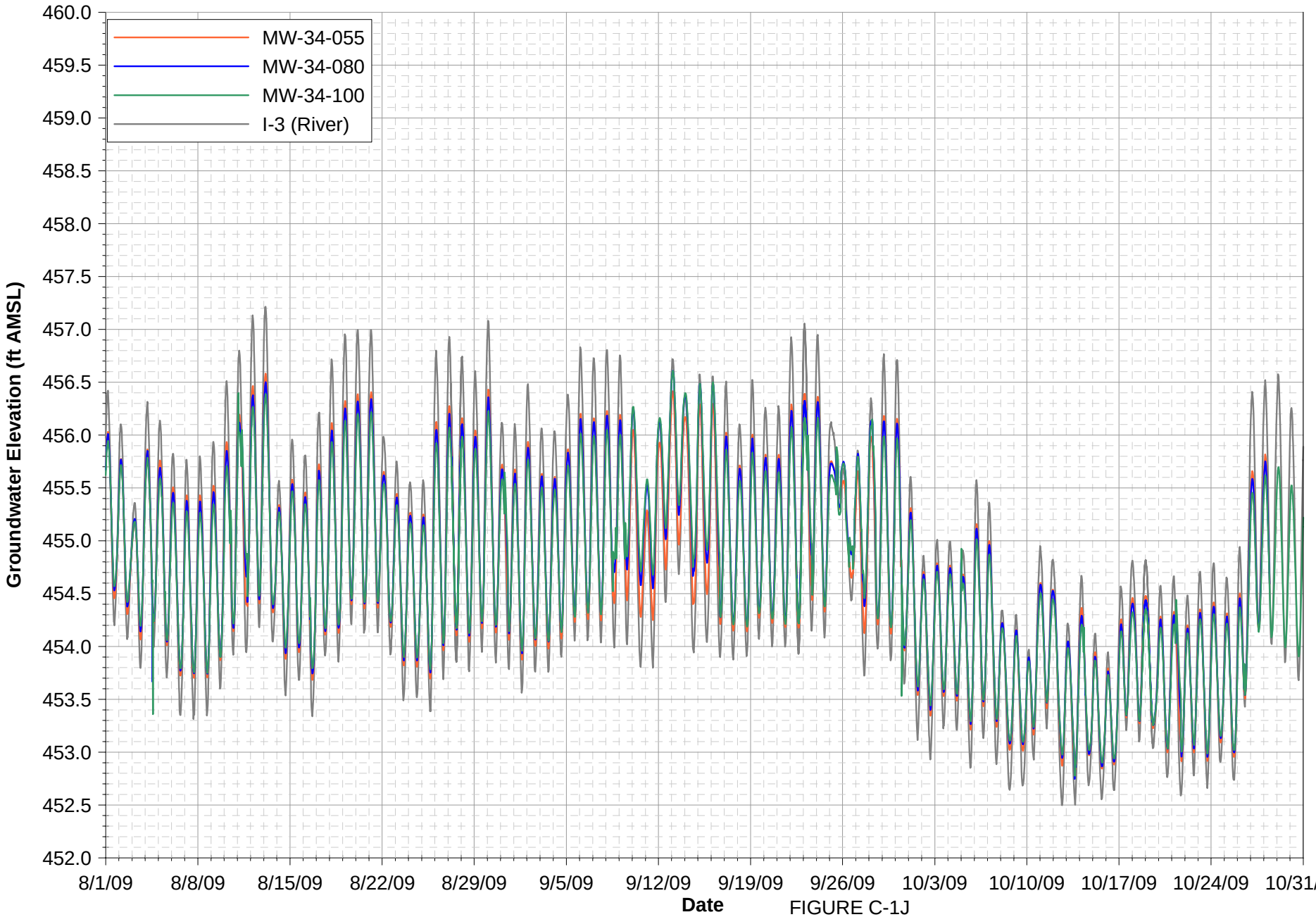


Notes:
Data subject to review.
No Data for MW-33-150 from September 10, 2009 to October 5, 2009 due to tranducer failure.

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

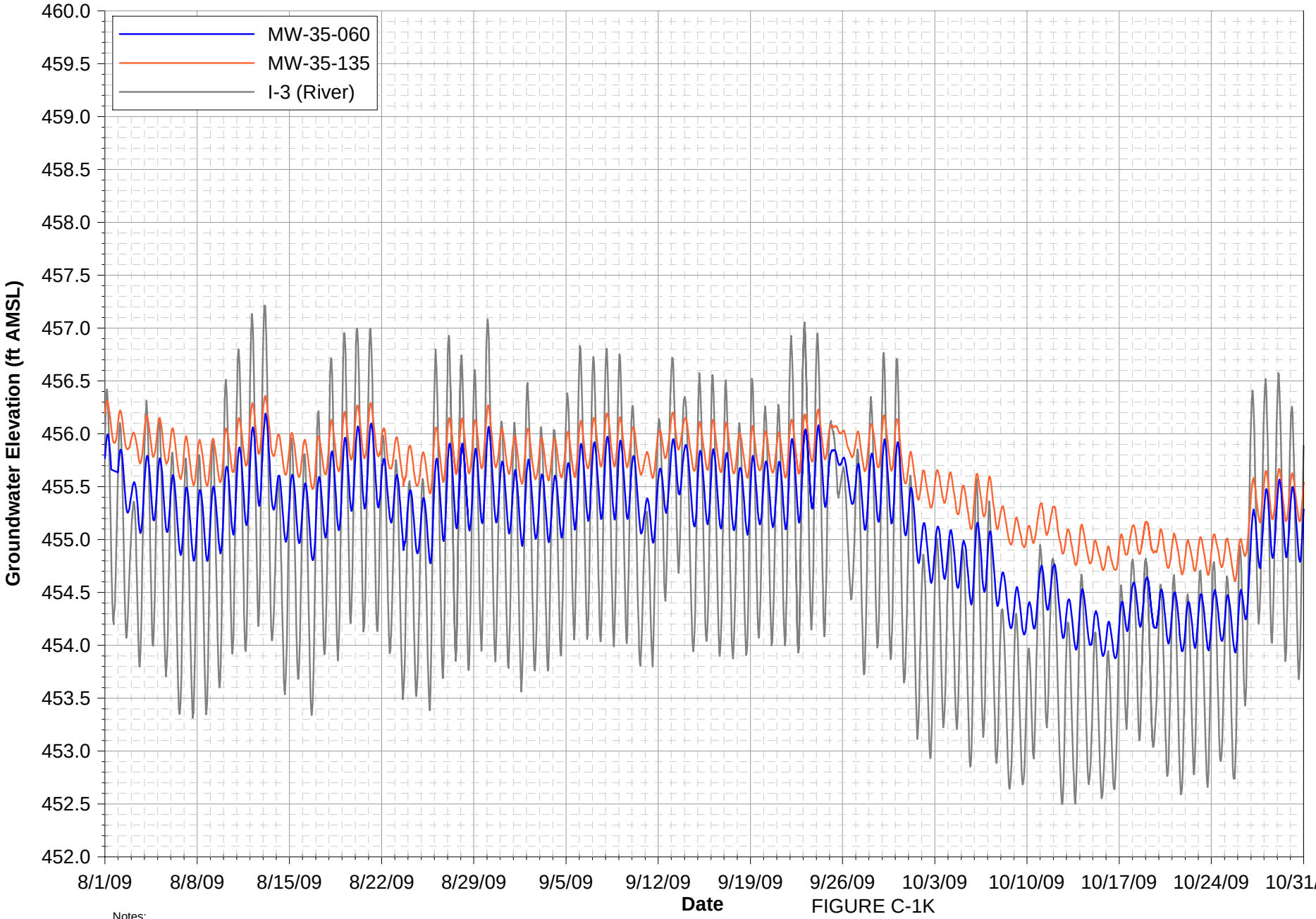
CH2MHILL



Notes:
Data subject to review.

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

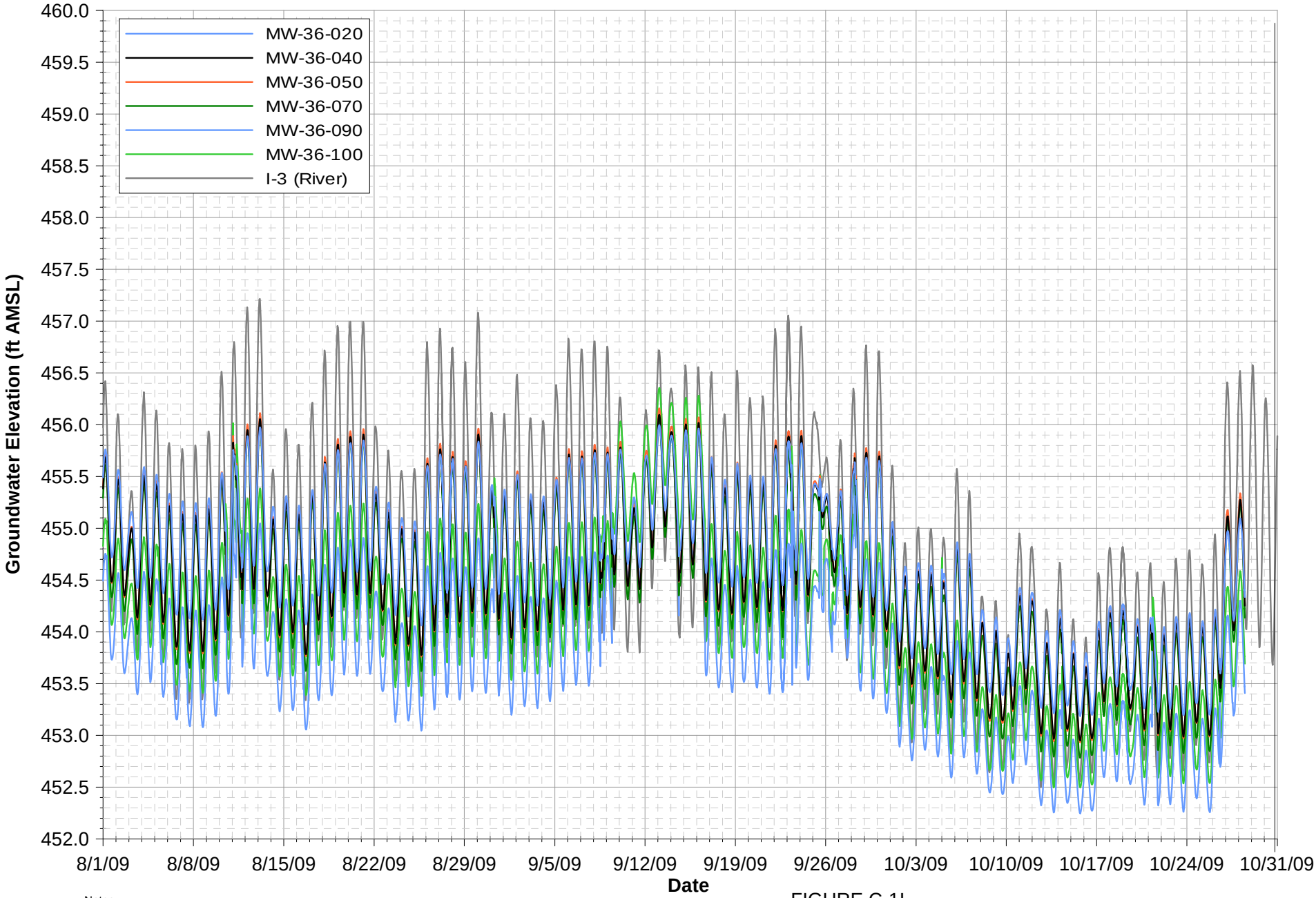
CH2MHILL



Notes:
Data subject to review.

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

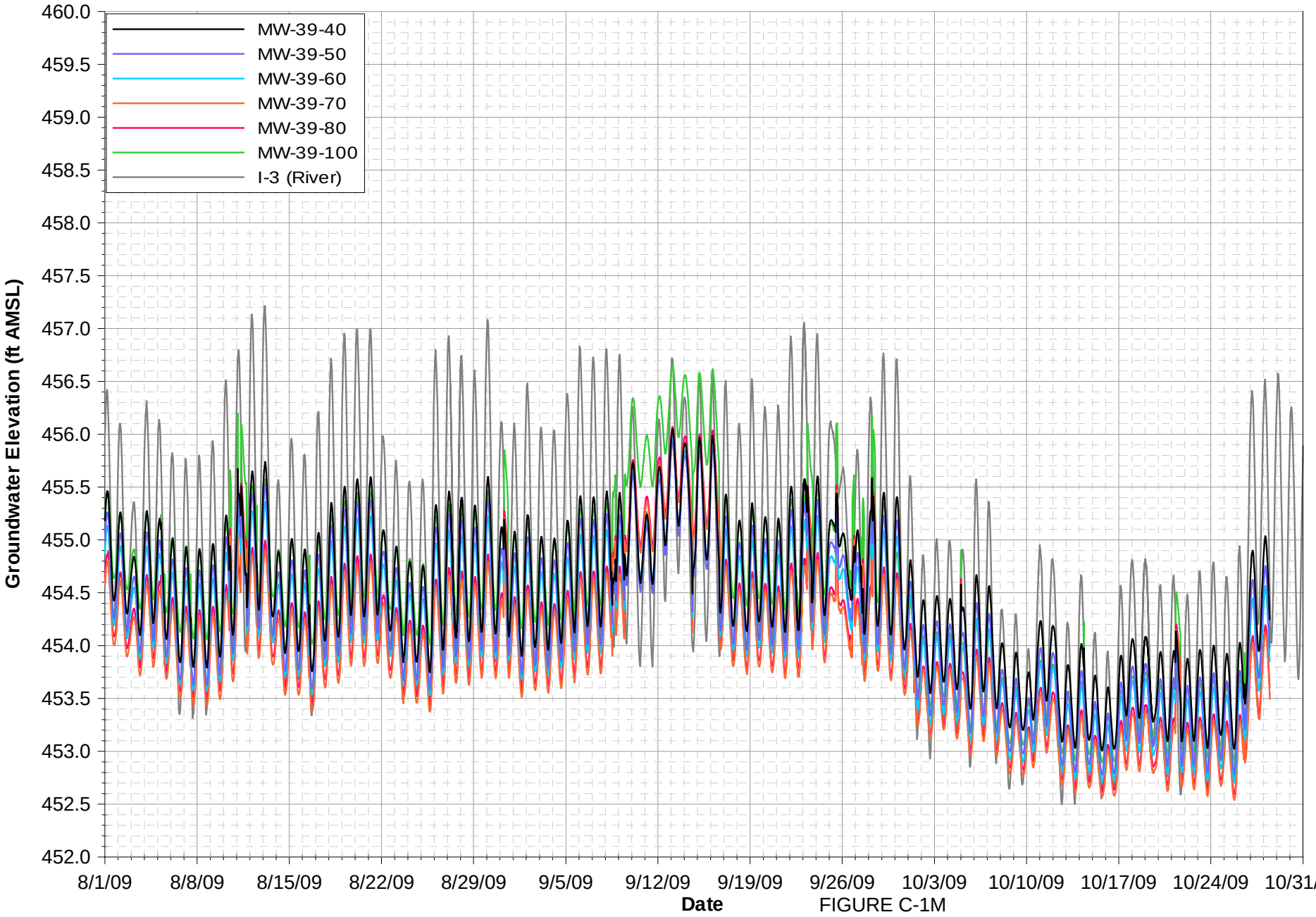
CH2MHILL



Notes:
Data subject to review..

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

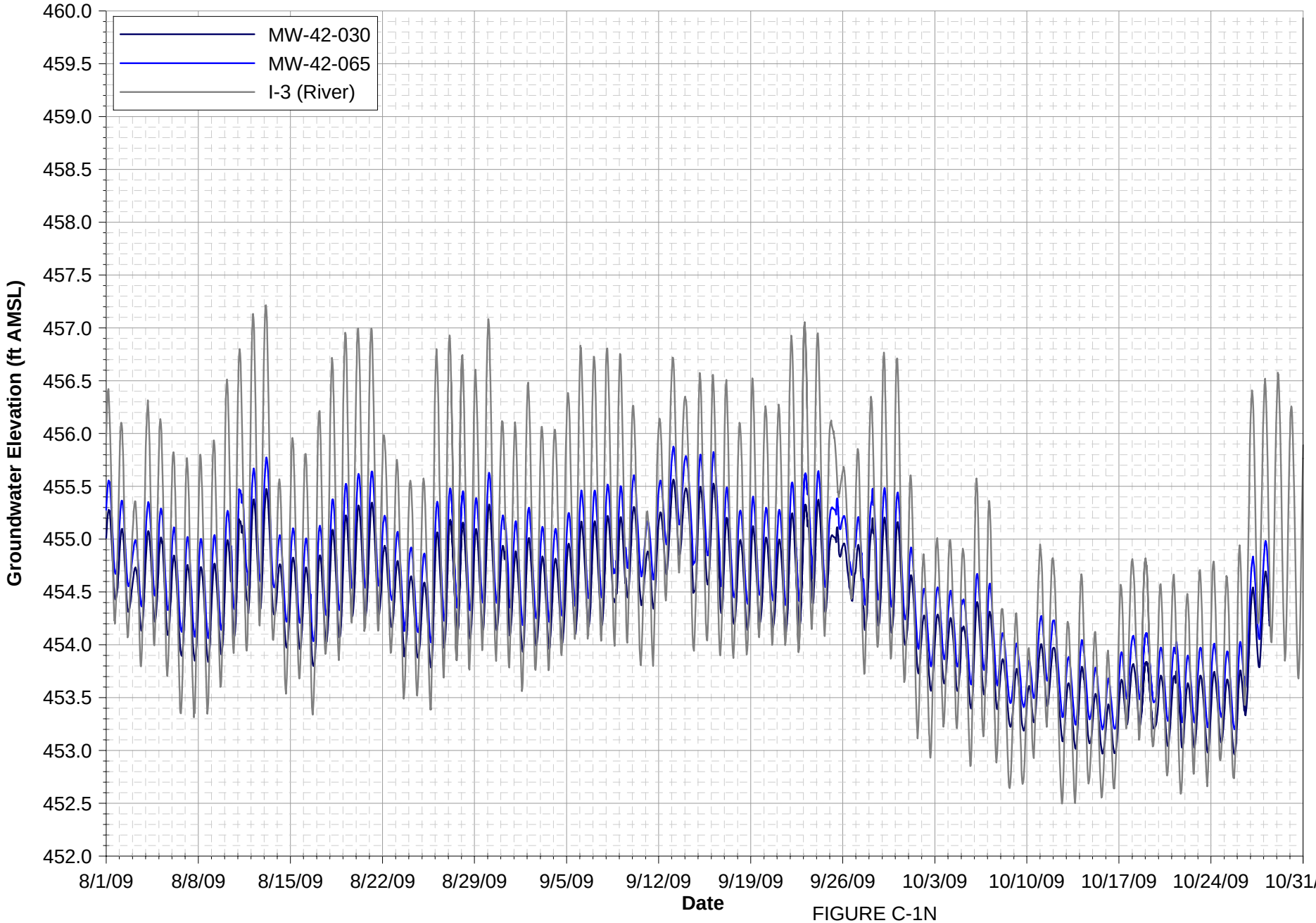
CH2MHILL



Notes:
Data subject to review.

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

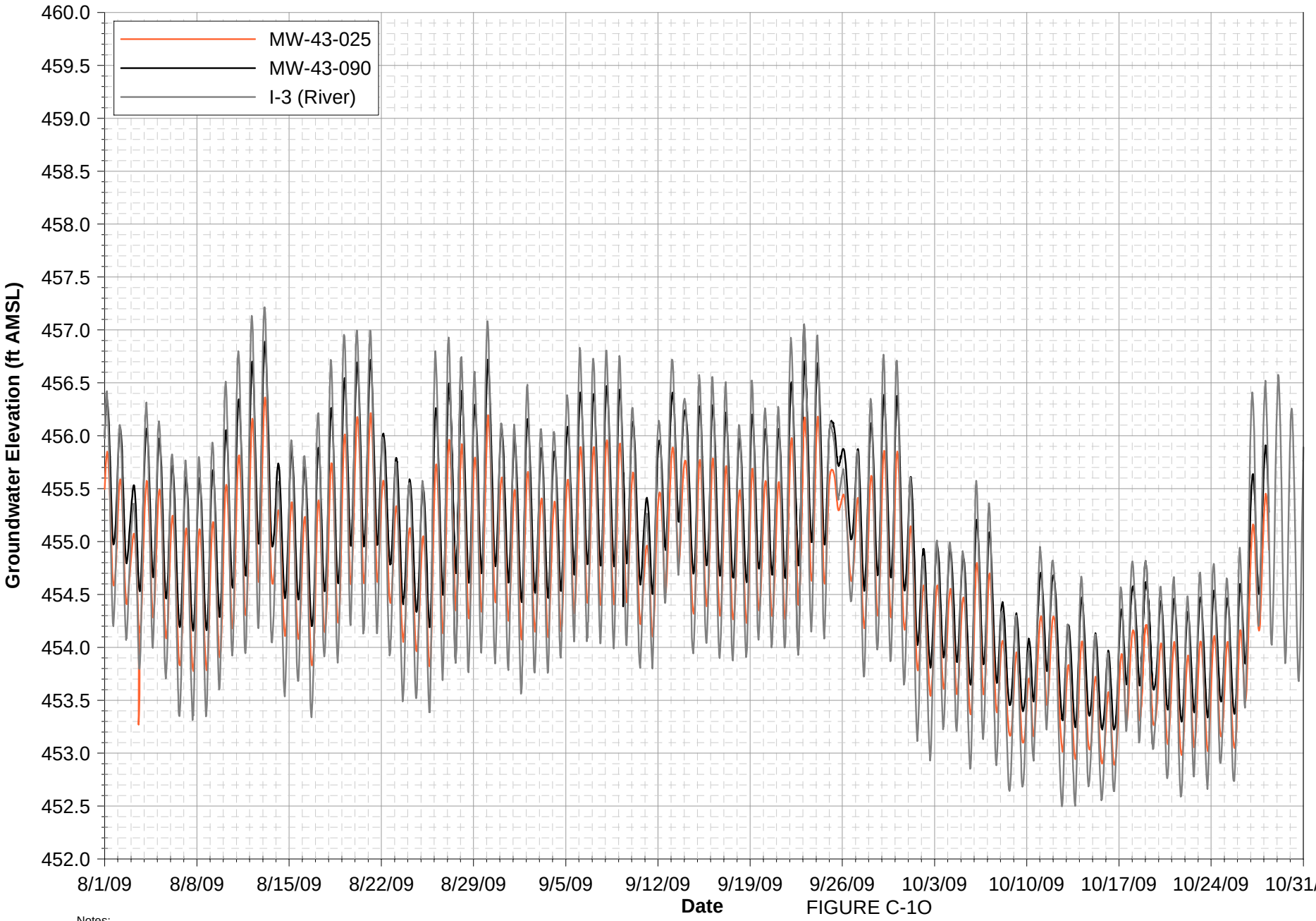
CH2MHILL



Notes:
Data subject to review.

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

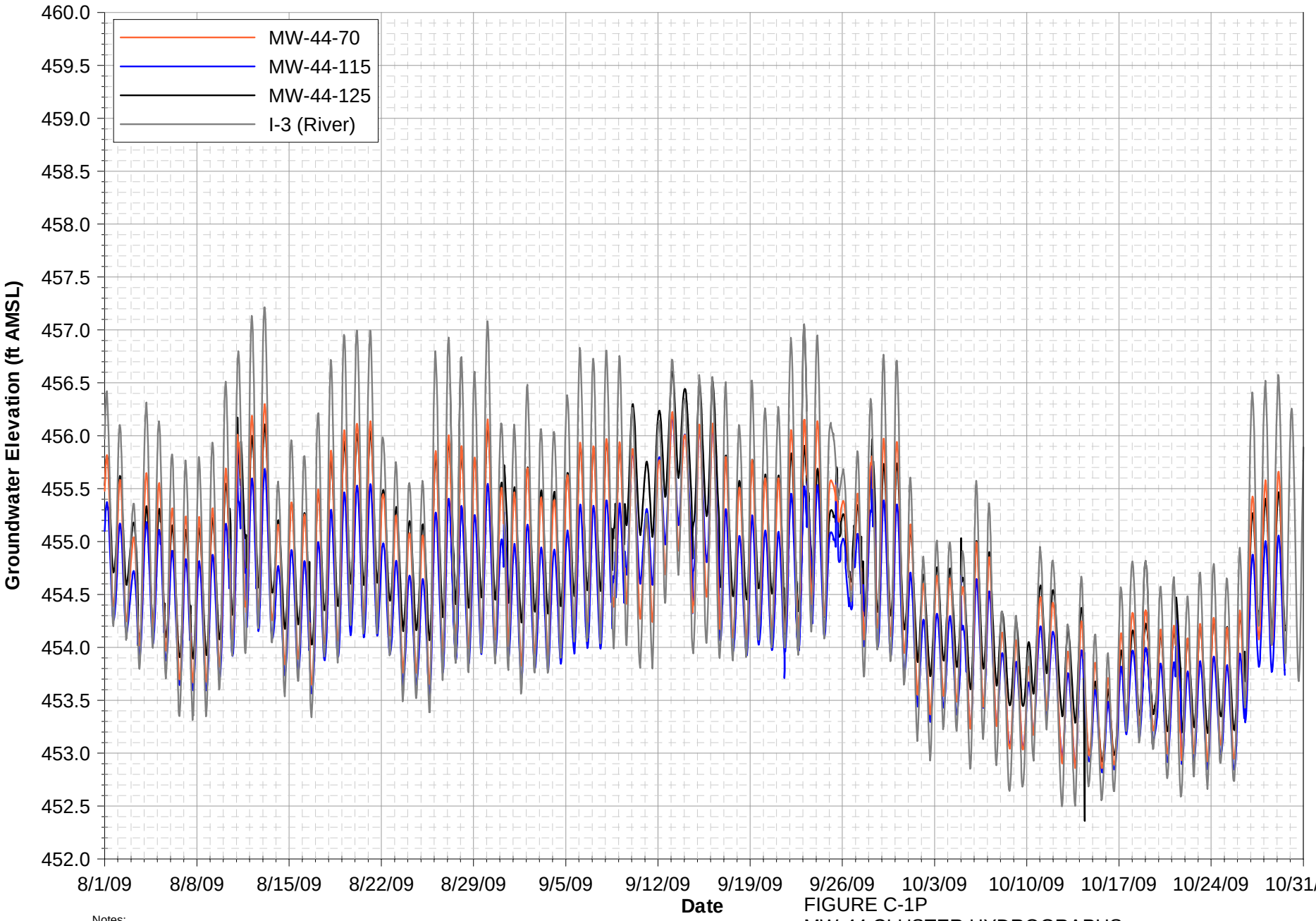
CH2MHILL



Notes:
Data subject to review.

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

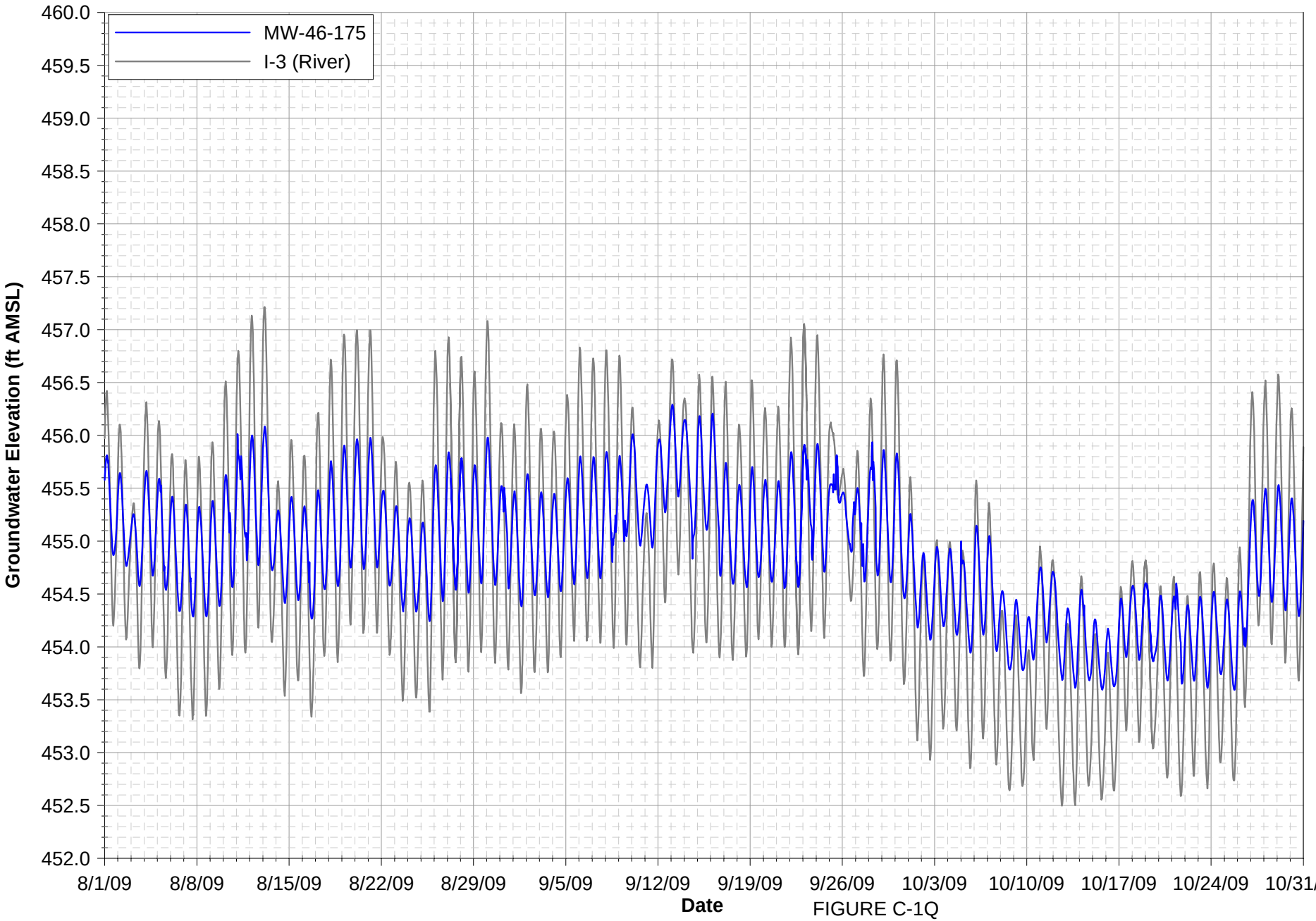
CH2MHILL



Notes:
Data subject to review.

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

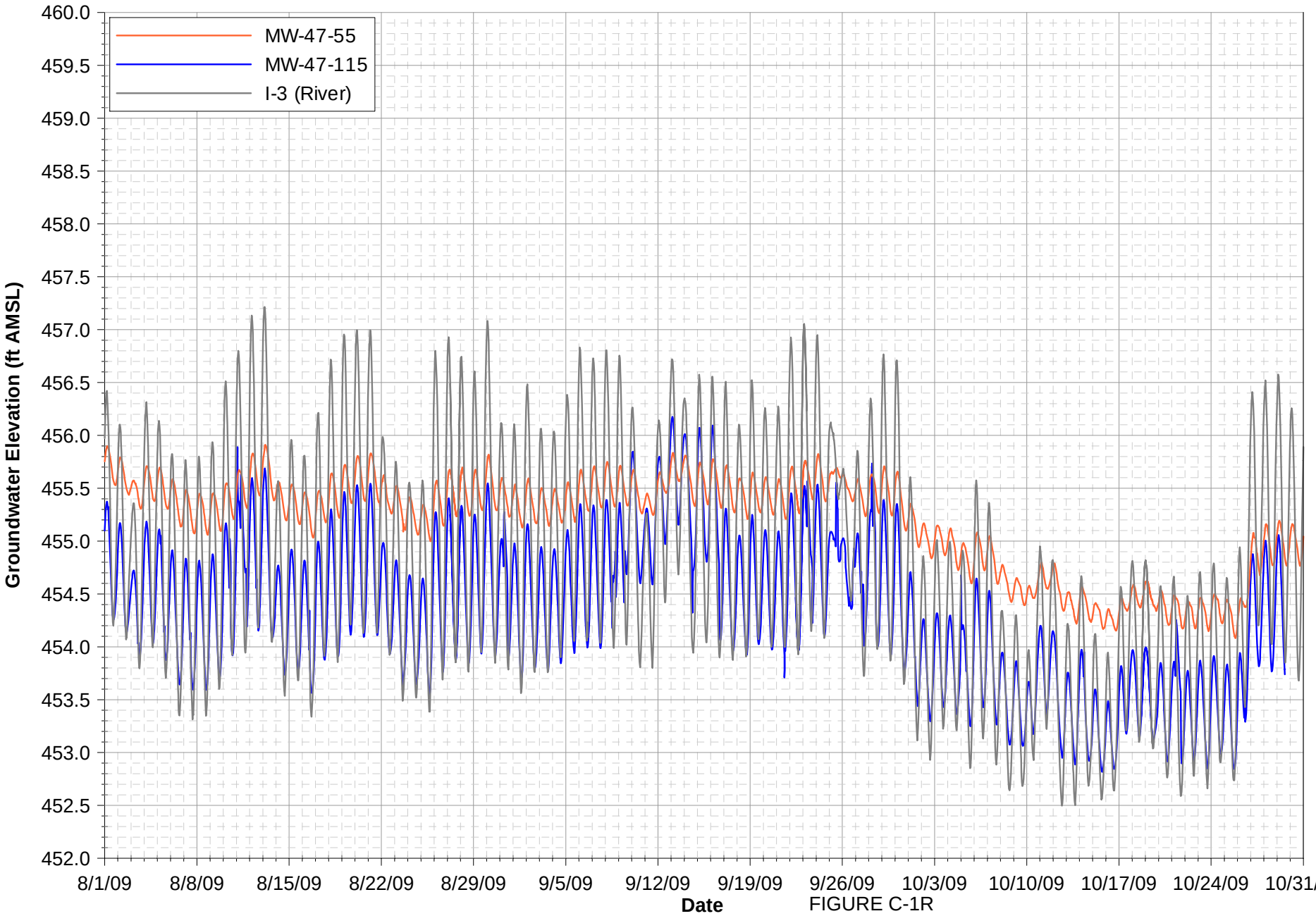
CH2MHILL



Notes:
Data subject to review.

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

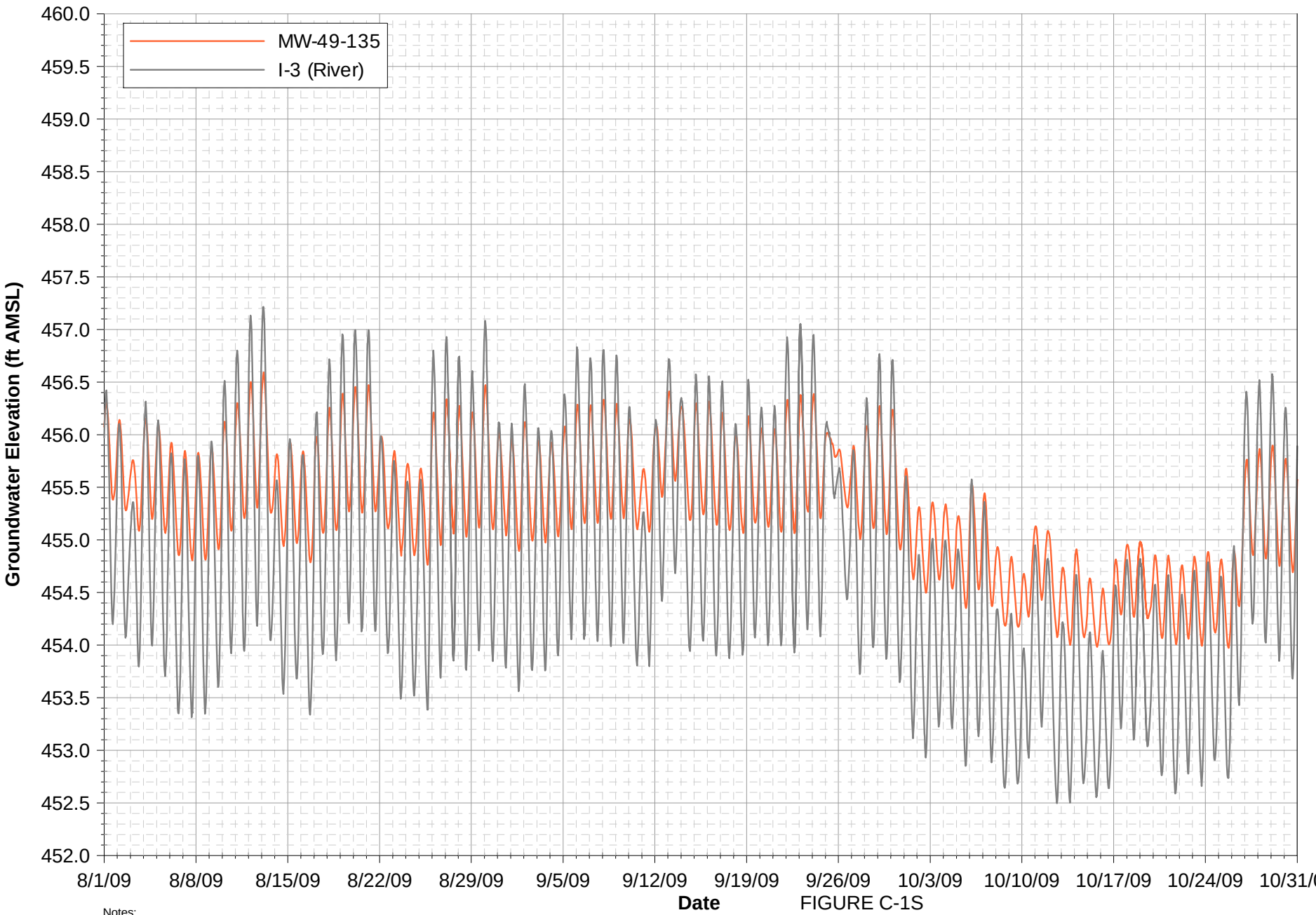
CH2MHILL



Notes:
Data subject to review.

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

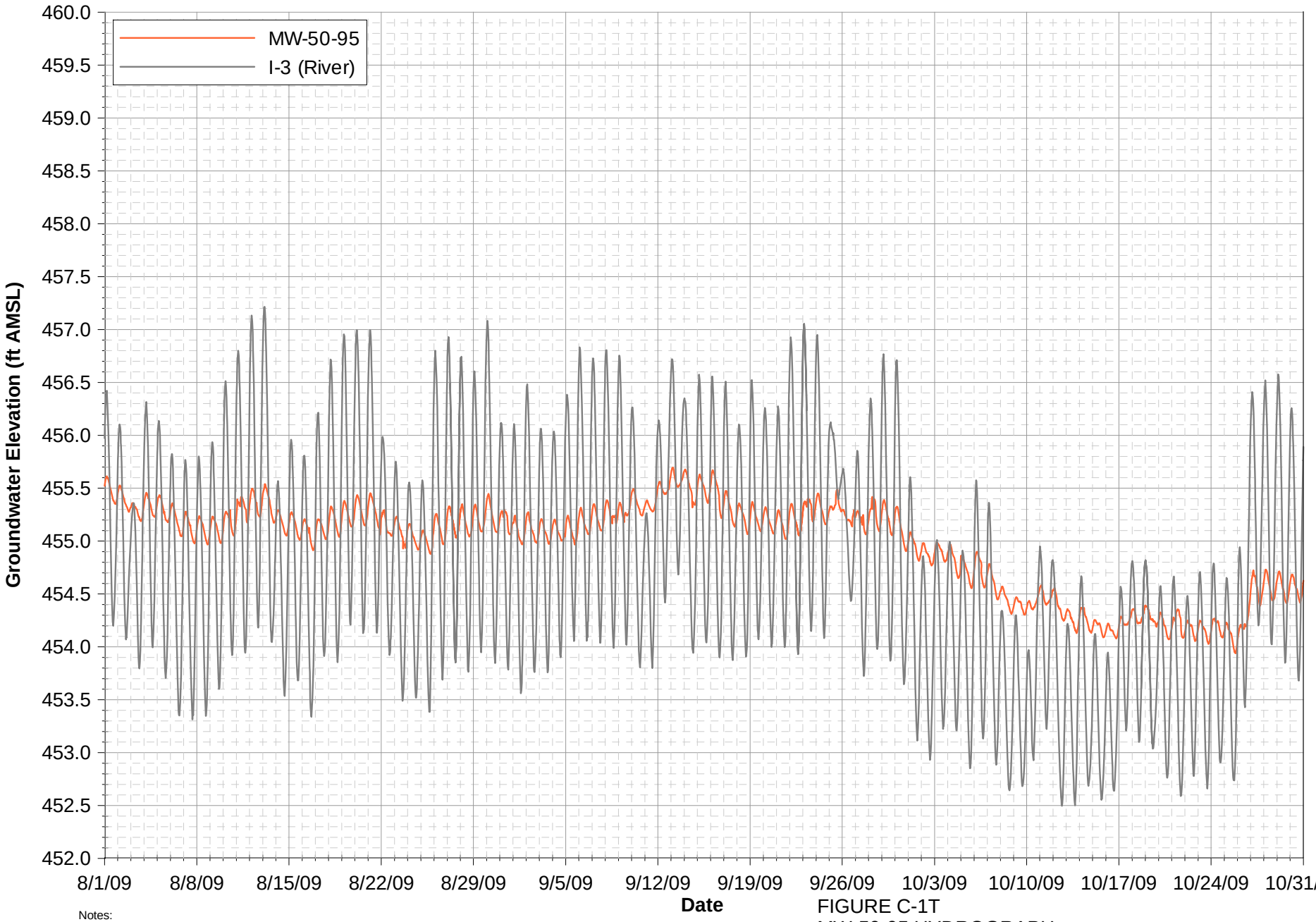
CH2MHILL



Notes:
Data subject to review.

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

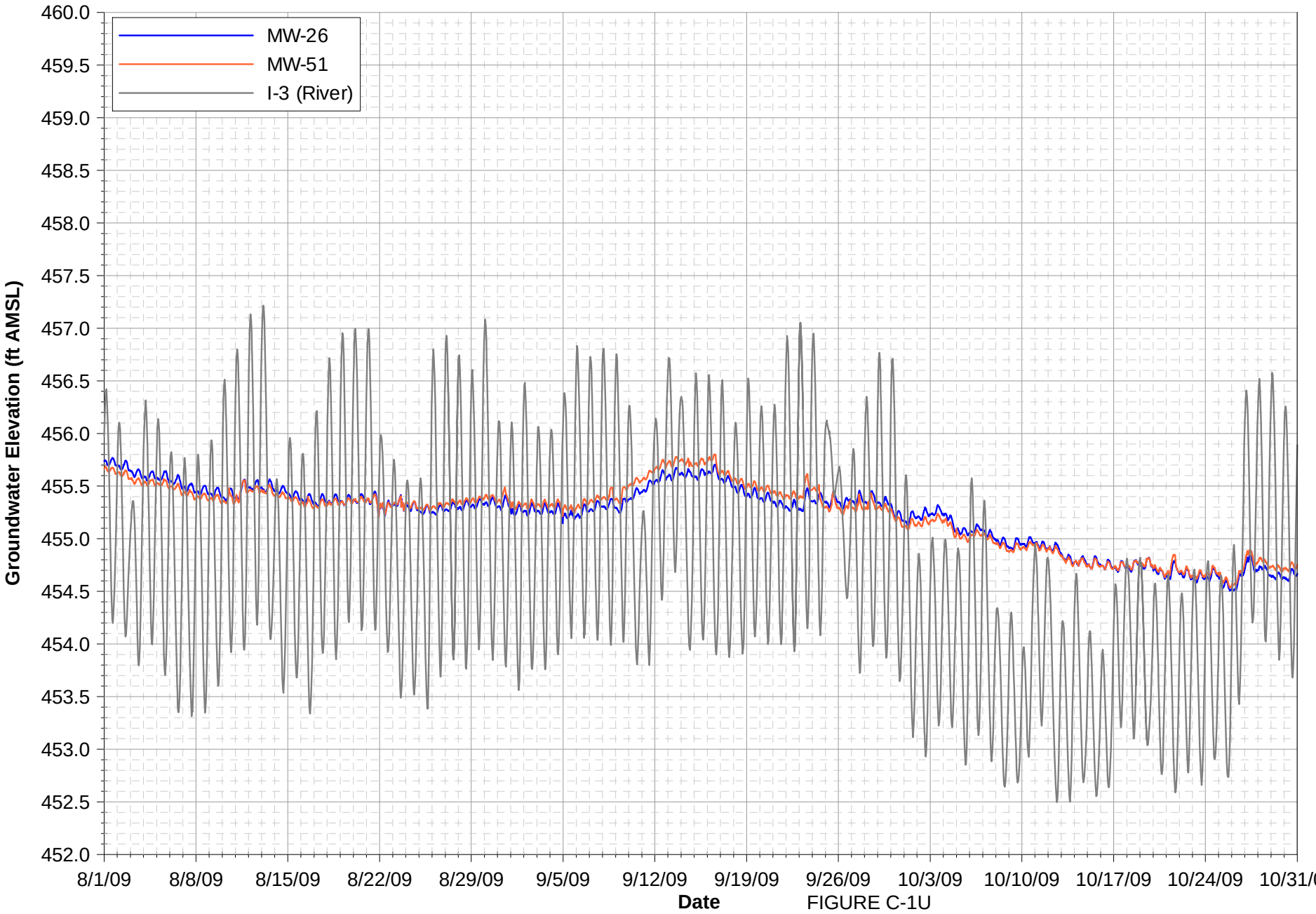
CH2MHILL



Notes:
Data subject to review.

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

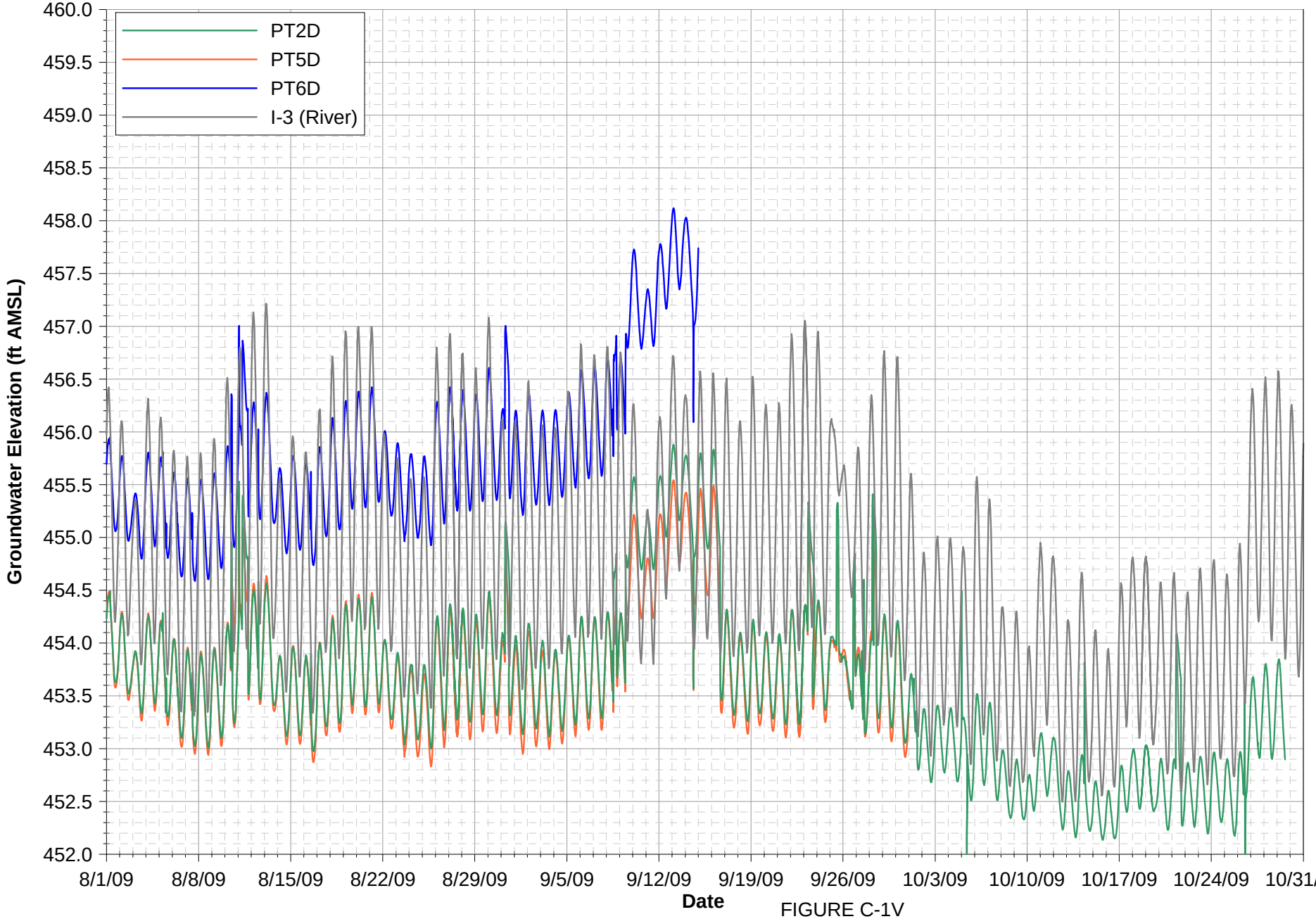
CH2MHILL



Notes:
Data subject to review.

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

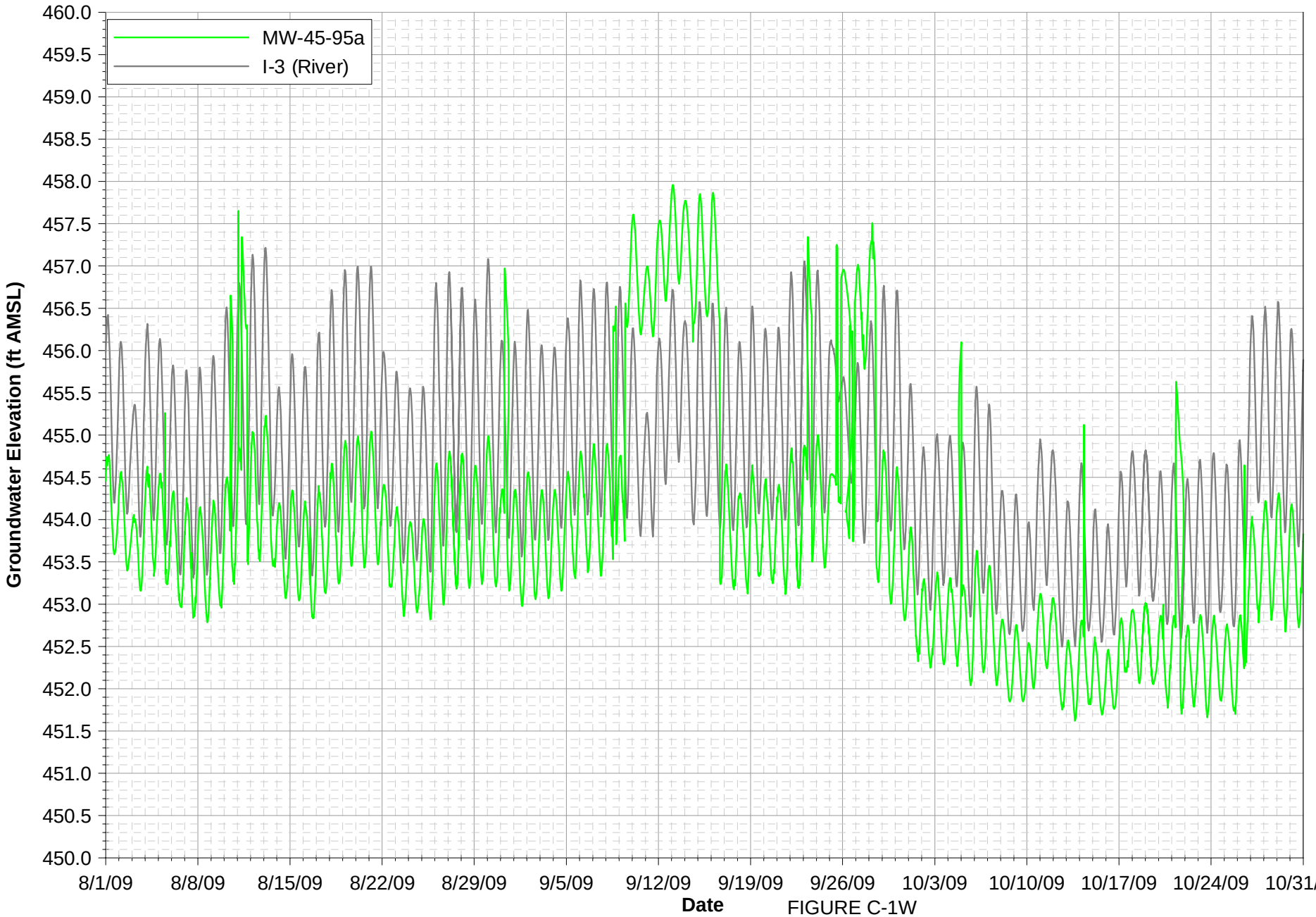
CH2MHILL



Note:
Data subject to review.
No data for PT6D from 9/14/09 until 10/31/09 due to transducer failure.
No data for PT5D from 10/1/09 until 10/31/09 due to transducer failure.

FIGURE C-1V
INSITU PILOT STUDY WELL HYDROGRAPHS
THIRD 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-45-95a HYDROGRAPH
THIRD 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 D
Other Groundwater Monitoring Results

TABLE D-1
Arsenic Results in Fluvial Wells, September 2009
Third Quarter 2009 IM Performance Monitoring and Site-Wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Well ID	Sample Date		Dissolved Arsenic (µg/L)
MW-22	29-Sep-09		28.0
MW-28-25	24-Sep-09		2.40
MW-28-90	24-Sep-09		7.60
MW-29	24-Sep-09		19.0
MW-30-30	24-Sep-09		19.0
MW-30-50	24-Sep-09		9.20
MW-32-20	22-Sep-09		65.0
MW-32-35	22-Sep-09		53.0
MW-33-40	24-Sep-09		19.0
MW-34-55	30-Sep-09		2.80
MW-34-80	30-Sep-09		7.30
MW-34-100	30-Sep-09		14.0
MW-34-100	30-Sep-09	FD	15.0
MW-36-20	23-Sep-09		3.30
MW-36-40	30-Sep-09		7.70
MW-36-50	30-Sep-09		4.20
MW-36-70	22-Sep-09		10.0
MW-36-90	23-Sep-09		16.0
MW-36-100	23-Sep-09		14.0
MW-39-40	01-Oct-09		15.0
MW-39-50	01-Oct-09		7.80
MW-42-30	23-Sep-09		6.50
MW-42-55	23-Sep-09		19.0
MW-42-65	23-Sep-09		14.0
MW-43-25	01-Oct-09		20.0
MW-43-75	01-Oct-09		17.0
MW-43-90	01-Oct-09		25.0
MW-44-70	21-Sep-09		4.20
MW-45-095a	29-Sep-09		10.0
MW-52D	29-Sep-09		23.0
MW-52M	29-Sep-09		17.0
MW-52S	29-Sep-09		9.70
MW-53D	29-Sep-09		23.0
MW-53M	29-Sep-09		18.0

NOTES

µg/L = micrograms per liter
FD = field duplicate

Appendix E
Groundwater and Surface Water Sampling and Chain of Custody Records, August through October 2009
(Provided on CD with hard copy Submittal)