Topock Project Executive Abstract

Document Title: Quarterly Performance Monitoring Report and Evaluation, May through July 2008

Submitting Agency/Authored by: DTSC

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PG&E

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Draft **X** Report ☐ Letter ☐ Memo

☐ Other / Explain:

Action Required:

X Information Only Review & Comment

Return to:

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☐ Other / Explain:

What does this information pertain to?

☐ Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA)

☐ RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment)

☐ Corrective Measures Study (CMS)/Feasibility Study (FS)

☐ Corrective Measures Implementation (CMI)/Remedial Action

☐ California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR)

X Interim Measures

☐ Other / Explain:

Is this a Regulatory Requirement?

X Yes

☐ No

If no, why is the document needed?

What is the consequence of NOT doing this item?

Be out of compliance with DTSC's requirement.

What is the consequence of DOING this item?

Be in compliance with DTSC's requirement..

Other Justification/s:

☐ Permit ☐ Other / Explain:

Brief Summary of attached document:

This quarterly report documents the monitoring activities and performance evaluation of the Interim Measure (IM) hydraulic containment system. Hydraulic and chemical monitoring data were collected and used to evaluate system performance based on a set of standards approved by DTSC. Key items included in this report are: (1) Measured groundwater elevation and hydraulic gradient data at compliance well pairs, monitoring the direction of groundwater flow away from the Colorado River, and towards the pumping centers on site; (2) Chromium (VI) data for monitoring wells on the floodplain, and (3) Pumping rates and volumes from the IM extraction system.

Based on the data and evaluation presented in this report, the IM performance standard has been met for the second quarter. The average groundwater gradients in the compliance well pairs exceeded the minimum landward gradient target (0.001 ft/ft) for each of the three months in the quarter (May, June, July 2008). Cr(VI) concentrations observed in the floodplain monitoring wells are either stable or decreasing. The average pumping rate for the IM extraction system was 130.6 gallons per minute and an estimated 89.5 kilograms (or 197 pounds) of chromium were removed during this quarter.

Written by: PG&E

Recommendations:

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

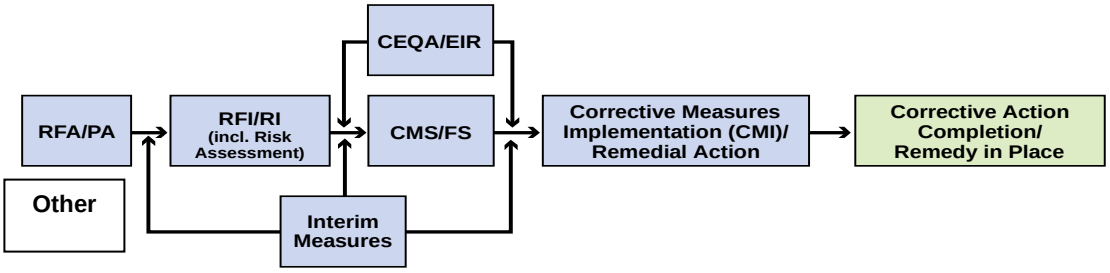
How is this information related to the Final Remedy or Regulatory Requirements:

This report is required by DTSC as part of the Interim Measures Performance Monitoring Program.

Other requirements of this information?
None.

Related Reports and Documents:

Click any boxes in the Regulatory Road Map (below) to be linked to the Documents Library on the DTSC Topock Web Site (www.dtsc-topock.com). **The link to the Documents Library is currently UNDER CONSTRUCTION.**



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

Pacific Gas and Electric Company

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August 29, 2008

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

Subject: Second Quarter 2008 Performance Monitoring Report
Interim Measures Performance Monitoring Program
PG&E Topock Compressor Station, Needles, California

Dear Mr. Yue:

Enclosed is the *Quarterly Performance Monitoring Report and Evaluation, May through July 2008* for PG&E's Interim Measures (IM) performance monitoring program for the Topock project. This report presents the Second Quarter (May through July 2008) performance monitoring results for the IM hydraulic containment system and summarizes the operations and performance evaluation for the reporting period. The 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 a letter dated October 12, 2007.

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

Please contact me at (805) 546-5243 if you have any questions on the performance monitoring report.

Sincerely,

Yvonne Meeks

Enclosure
Interim Measure

Quarterly Performance Monitoring Report and Evaluation, May through July 2008

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

Prepared for

California Department of Toxic Substances Control

on behalf of

Pacific Gas and Electric Company

August 29, 2008

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155 Grand Ave. Ste. 1000
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Quarterly Performance Monitoring Report and Evaluation, May through July 2008

Interim Measures Performance Monitoring Program
PG&E Topock Compressor Station
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On behalf of

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August 29, 2008

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

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

Jay Piper
CH2M HILL Project Manager

Contents

Appendices

Acronyms and Abbreviations

µg/L	micrograms per liter (essentially the same as parts per billion [ppb])
cfs	cubic feet per second
Cr(VI)	hexavalent chromium
DTSC	California Department of Toxic Substances Control
gpm	gallons per minute
IM	Interim Measure
IM No. 3	Interim Measure Number 3
PG&E	Pacific Gas and Electric Company
PMP	Performance Monitoring Program
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. The 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 No. 3). Currently, the IM No. 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, the California Department of Toxic Substances Control (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 site monitoring, data evaluation, reporting, and response actions required under the February 2005 DTSC directive are collectively referred to as the IM Performance Monitoring Program (PMP) for the floodplain area.

The February 2005 DTSC directive also defined the monitoring and reporting requirements for the IM. The reporting requirements for the PMP were modified by DTSC, via e-mail approval, in August 2007 to discontinue submittals of the monthly performance monitoring reports (the quarterly and annual reporting requirements were unchanged). Additional updates and modifications to the PMP were approved by DTSC in a letter dated October 12, 2007 (DTSC, 2007a).

This quarterly report has been prepared in compliance with DTSC's requirements and documents the monitoring activities and performance evaluation of the IM hydraulic containment system. The second quarter reporting period covers monitoring activities from May 1 through July 31, 2008.

1.1 Report Organization

This second quarter 2008 monitoring report presents:

- Description of the wells included in the performance monitoring network (Section 2.0).

- Evaluation of performance data, including the extraction system, chromium trends in the floodplain monitoring wells, hydraulic gradients, and river levels during the quarterly period, May through July 2008 (Section 3.0).
- Conclusions (Section 4.0).

2.0 Performance Monitoring Network

Figure 2-1 shows the locations of wells used for IM extraction, performance monitoring, and hydraulic gradient measurements. The performance monitoring wells that were in service/active as of July 2008 are defined as:

- **Floodplain Wells** (monitoring wells on the Colorado River floodplain): MW-22, MW-27 cluster (three), MW-28 cluster (two), MW-30-50, MW-32 cluster (two), MW-33 cluster (four), MW-34 cluster (three), MW-36 cluster (six), MW-39 cluster (six), MW-42 cluster (three), MW-43 cluster (three), MW-44 cluster (three), MW-45-95, MW-46 cluster (two), and MW-49 cluster (three). 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-19, MW-20 cluster (three), MW-26, MW-31 cluster (two), MW-35 cluster (two), MW-47 cluster (two), MW-50 cluster (two), and MW-51.
- **Interior Wells** (monitoring wells located upgradient of IM pumping): MW-10 and MW-25.

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

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

3.0 Quarterly Performance Evaluation for May through July 2008

3.1 Extraction System Operations

Pumping data for the IM No. 3 groundwater extraction system for the period of May 1 through July 31, 2008 are presented in Table 3-1. (All tables are presented at the end of the report.) From May 1 through July 31, 2008 (considered second quarter 2008), 17,304,624 gallons of groundwater were extracted and treated by the IM No. 3 system. This resulted in removal of an estimated 89.5 kilograms (or 197 pounds) of chromium from the aquifer during the second quarter reporting period. The average extraction rate for the IM system during the quarter, including system downtime, was 130.6 gallons per minute (gpm). The average monthly pumping rates were 129.5 gpm (May 2008), 132.4 gpm (June 2008), and 130.1 gpm (July 2008) during the quarterly reporting period.

During second quarter 2008, extraction wells TW-2D, TW-3D and PE-1 operated at a combined target pump rate of 135 gpm, excluding periods of planned and unplanned downtime. Extraction well TW-2D only operated for a short period on June 5, 2008. Extraction well TW-2S was not operated during the second quarter 2008. The operational run time percentage for the IM extraction system was 98 percent during this reporting period. An operations log for the extraction system during the second quarter of 2008, including planned and unplanned downtime, is included in Appendix A.

The concentrate (i.e., saline water) from the reverse osmosis system was shipped offsite with shipping papers as a Resource Conservation and Recovery Act non-hazardous waste and transported to Liquid Environmental Solutions in Phoenix, Arizona for treatment and disposal. Four containers of solids from the IM No. 3 facility were disposed of at the Kettleman Hills Chemical Waste Management facility during second quarter 2008. Daily inspections included general facility inspections, flow measurements, and site security monitoring. Daily logs with documentation of inspections are maintained onsite.

Table 3-2 summarizes the chromium and total dissolved solids (TDS) analytical results in groundwater samples collected from the IM extraction well system during the second quarter 2008 reporting period and prior months. Chromium concentrations have been gradually decreasing at well PE-1 since February 2008. TDS concentrations have increased slightly at well TW-3D compared to March and April, 2008. Future monitoring of the extraction well(s) water quality will be completed at the frequency required by the Waste Discharge Requirements issued for the IM No. 3 treatment facility.

3.2 Cr(VI) Distribution and Trends in the Floodplain Area

During second quarter 2008, groundwater monitoring wells in the floodplain area were sampled for Cr(VI), total chromium, and field water quality parameters under semiannual,

quarterly, and monthly schedules, in accordance with the approved groundwater monitoring plan and DTSC directives. Refer to PG&E's Topock *Groundwater and Surface Water Monitoring Report, Fourth Quarter 2007 and Annual Report* (CH2M HILL, 2008a) for description of the 2007 groundwater monitoring activities and sampling frequencies for wells in the performance monitoring area. The sampling frequencies for the site groundwater monitoring wells were updated by DTSC in a letter dated September 28, 2007 (DTSC, 2007c).

The distribution of Cr(VI) in the upper, middle, and lower depth intervals of the Alluvial Aquifer in the performance monitoring area for May 2008 is shown in plan view and cross-section on Figure 3-1. The Cr(VI) concentration contours shown for the Alluvial Aquifer are based on the May 2008 groundwater sampling data and incorporate Cr(VI) distribution results from prior March 2008 sampling. Due to the DTSC-approved reduction in the number of wells sampled during quarterly sampling events, the May 2008 data posted on Figure 3-1 is not sufficient for contouring of concentrations above 50 µg/L. The third quarter 2008 Performance Monitoring Report will show additional contours, based on data from the annual groundwater sampling event, which will take place in October 2008.

Overall, the Cr(VI) concentration contours for May 2008 are similar to the Cr(VI) distribution maps issued in the prior IM performance monitoring reports (CH2M HILL, 2007b-c, 2008b). Figure 3-2 presents the May 2008 Cr(VI) results on a cross-section parallel to the Colorado River (locations of cross-sections shown on Figure 2-1). With the exception of MW-33-40, all of the wells shown on Figure 3-2 were sampled in May 2008. Cr(VI) contours shown on Figure 3-2 are based on the May 2008 sampling results. Tables B-1 and B-2 in Appendix B present the chromium and field parameter sampling results from July 2007 through July 2008 for the wells in the PMP area.

Figure 3-3 presents Cr(VI) concentration trend graphs for selected deep monitoring wells in the floodplain area through the July 2008 sampling. 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.

The effects of IM No. 3 pumping are evident in the sampling data from wells MW 36-90 and MW-36-100, as shown in Figure 3-3. Since the initiation of IM pumping, the Cr(VI) concentrations at MW-36-90 have decreased. When PE-1 was placed into service, concentrations decreased further and have remained steady at fewer than 10 µg/L since August 2006. Concentrations in the deeper well MW-36-100 (well screen at the same level as the PE-1 well screen) decreased under IM No. 3 pumping, initially increased upon initiation of pumping at PE-1, and now have steadily decreased since January 2007. The concentration trend for MW-34-100, shown in Figure 3-3, has shown both short-term declines and increases in concentrations since PE-1 pumping commenced. However, since July 2006, concentrations at this well have shown a general downward trend. The Cr(VI) result from May 6, 2008 sampling of MW-34-100 (234 µg/L) is the lowest concentration measured at this well since initial sampling in March 2005.

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 has been generally downward since July 2006. Sampling data from well MW-44-125 show stable concentrations since October 2006. Concentrations in well

MW-46-175 generally decreased from March 2006 until May 2007 but have been generally stable since May 2007. The MW-44 and MW-46 well clusters are within the hydraulic capture of IM pumping (see Section 3.4). Stable or decreasing concentrations were observed in the other wells in the floodplain area where Cr(VI) has been detected in prior monitoring (Table B-1).

In addition to the wells presented in Figure 3-3, declining Cr(VI) concentrations have been observed at the MW-39-70 and MW-39-80 wells, as shown in Appendix B, Table B-1, reflecting the pumping influence from TW-3D. The chromium concentrations observed in the MW-33 cluster wells remained consistent with previous results during the quarterly reporting period.

3.3 Hydraulic Gradients and River Levels during Quarterly Period

During second quarter 2008 (considered May through July), water levels were recorded at intervals of 30 minutes with pressure transducers in 62 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 2.0.

Daily average groundwater and river elevations have been calculated from the pressure transducer data for the second quarter 2008 reporting period and are summarized in Appendix C. Due to the variation in groundwater salinity at the site, the water level measurements need to be adjusted (density-corrected) to equivalent freshwater hydraulic heads prior to calculating groundwater elevations and gradients. The methods and procedures used for adjusting the performance monitoring water level data for salinity and temperature differences are described in the Performance Monitoring Plan. Groundwater elevation hydrographs (for second quarter 2008) for all wells with transducers are included in Appendix C. The Colorado River elevation (I-3 gage station) during the second quarter 2008 is also shown on the hydrographs.

Average quarterly groundwater elevations (May through July 2008 inclusive) for the upper depth interval and mid-depth wells are presented and contoured in plan view in Figure 3-4 and Figure 3-5. To the west of the TW-3D and PE-1 pumping area, the hydraulic gradient in the upper depth interval is easterly and consistent with the regional gradient outside of the floodplain area.

Average quarterly groundwater elevations (May through July 2008 inclusive) for the deep wells are presented and contoured in plan view in Figure 3-6. The average quarterly groundwater elevations are also presented and contoured in floodplain cross-section A, as shown in Figure 3-7. The floodplain cross-section also shows the locations and depths where the current IM pumping in the deep interval of the Alluvial Aquifer is occurring at TW-3D and PE-1. The landward hydraulic gradients for the deep monitoring wells presented in Figure 3-6 and Figure 3-7 are consistent with the strong landward gradients measured and presented in the 2006 and 2007 monitoring reports (CH2M HILL, 2007b-c).

In April 2008, pressure transducers were installed in five of the new wells located on the Arizona side of the Colorado River. For the second quarter 2008 reporting period, a full set of transducer data was recorded in these wells. The quarterly average groundwater elevations for wells MW-55-45, MW-55-120, MW-54-85, MW-54-140, and MW-54-195 are posted on Figures 3-5 and 3-6, 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 on Figure 3-6 indicate that potentiometric levels in monitoring wells in Arizona are higher than those in wells across the river on the California floodplain. This means that the hydraulic gradient on the Arizona side of the river is directed to the west and as a result, groundwater flow would also be towards the west in that area. This is consistent with the site conceptual model and with the current numerical groundwater flow model.

Hydraulic gradients were measured during the second quarter 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 3-3 presents the average monthly hydraulic gradients that were measured between the gradient well pairs in May, June, and July 2008. For the northern (MW-31-135/MW-33-150) well pair, gradients were landward at magnitudes from 2.1 to 2.5 times the target gradient of 0.001 feet per foot. The southern well pair (MW-45-95 / MW-27-85) gradient for May 27 – May 31 was 0.0019. Due to transducer failure, data for MW-27-85 was not available May 1 – May 27, 2008. Gradients for June and July at this location were greater than 4 times the target gradient. For the central well pair (MW-45-95/MW-34-100), the average landward gradient ranged from 0.0104 to 0.0126 (more than 10 times the target gradient) during the reporting period.

Figure 3-8 presents a graphical display of the measured hydraulic gradients and pumping rates and river levels during the second quarter 2008 reporting period. During May through July 2008, the average daily river levels remained fairly consistent. The monthly average pumping rates for the IM No. 3 system ranged from 129.5 gpm in May 2008 to 130.1 gpm in July 2008. For the second quarter 2008 reporting period, consistent average monthly landward gradients above the target gradient were maintained in the gradient control well pairs.

A review of the groundwater elevation contour maps indicates very strong landward hydraulic gradients within the IM capture zone throughout the floodplain. That is, the

inferred groundwater flow lines from the floodplain monitoring wells where Cr(VI) concentrations are greater than 20 µg/L are oriented towards the TW-3D and PE-1 extraction wells within the IM capture zone.

3.4 Other Water Quality Data for Floodplain Wells

Common water quality parameters (temperature, pH, oxidation-reduction potential, dissolved oxygen, and specific conductance) were measured in the field during well purging and groundwater sampling, as described in the *Sampling, Analysis, and Field Procedures Manual, Revision 1, PG&E Compressor Station* (CH2M HILL, 2005b). The field water quality data measured from July 2005 through July 2008 are presented in Tables B-1 and B-2 of Appendix B.

Table D-1 in Appendix D presents the results of the general chemistry and stable isotope analyses for 14 PMP monitoring wells and two river stations during sampling events from March 2005 through July 2008. Figure 2-1 shows the locations of the monitoring wells sampled for the performance monitoring parameters. Water samples were 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.

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

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 3-4 is a summary of the estimated and actual Davis Dam releases and river elevations since February 2005. The actual Davis Dam July 2008 release (14,574 cubic feet per second [cfs]) was almost exactly the same as the USBR-projected release for the July reporting period (14,500 cfs). The projected Colorado River elevation at I-3 (monthly average) is calculated using a multiple regression method that considers both the Davis Dam release and the Lake Havasu level. Current USBR projections show that the average Davis Dam release for August 2008 (13,100 cfs) will be less than July 2008 (14,574 cfs). Based on the regression method results, using August 12, 2008 USBR projections for both Davis Dam

release and Lake Havasu elevation, it is anticipated that the Colorado River level at the I-3 gage location in August 2008 will be slightly lower than the July 2008 river stage.

Figure 3-9 shows river stage measured at I-3 superimposed on the projected I-3 river levels based on actual Davis Dam discharge and Lake Havasu levels. This graph shows that the formula used to calculate I-3 levels provides a good estimate of the actual levels at I-3 over a wide range of river levels. The future projections shown on this graph are based on USBR long-range projections of Davis Dam release and Lake Havasu level. The river stage data and USBR projections indicate the highest river levels of the year typically occur in April, May, and June. Current USBR projections show that the lowest water levels will occur in November through December 2008 and January 2009. Because water demand is based on climatic factors, there is more uncertainty in these projections further into the future.

3.6 Status of Operation and Monitoring

Reporting of the IM extraction and monitoring activities will continue as described in the Performance Monitoring Plan and direction from DTSC. On October 12, 2007, the DTSC approved PG&E's request to discontinue monthly performance monitoring reports. As a result, the next performance monitoring report will be third quarter 2008. The third quarter 2008 report will present operations and performance monitoring data from August 1, 2008 through October 31, 2008. During the second quarter 2008, DTSC approved several modifications to the PMP (DTSC, 2008c-d). These modifications will be implemented beginning with third quarter PMP monitoring and reporting.

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 the third quarter 2008, except for periods when planned and unplanned downtime occurs. Extracted groundwater treated at the IM No. 3 facility will be discharged into the IM No. 3 injection wells in accordance with Waste Discharge Requirements Order No. R7-2006-0060. Saline water and solids generated as byproducts of the treatment process will continue to be transported offsite.

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

4.0 Conclusions

The groundwater elevation and hydraulic gradient data for May, June, and July 2008 performance monitoring indicate that the minimum landward gradient target (0.001 feet/foot) was exceeded throughout the second quarter reporting period. As illustrated in Figure 3-8, the landward gradients measured during May, June, and July 2008 exceeded the required minimum gradient in all compliance well pairs. The current IM pumping was sufficient to meet the minimum gradient target during each month of the second quarter 2008.

A total of 17,304,624 gallons of groundwater was extracted and treated by the IM No. 3 system during the May through July 2008 reporting period. An estimated 89.5 kilograms (or 197 pounds) of chromium were removed and treated by the IM system during this quarter. The average pumping rate for the IM extraction system during second quarter 2008, including system downtime, was 130.6 gpm.

Overall, the Cr(VI) concentrations observed in the floodplain monitoring wells are either stable or decreasing. During second quarter 2008, the groundwater Cr(VI) concentrations at wells MW-34-100, MW-36-100, MW-39-70, MW-39-80, and MW-39-100 declined relative to the previous quarter. Concentrations at wells MW-46-175 and the MW-44 cluster remained stable during the second quarter period. All of these wells are within the IM extraction system capture zone, as shown in Figure 3-6.

Chromium concentrations at well MW-34-100 have shown a steady downward trend since July 2006, as shown in Figure 3-3. The recent May 6, 2008 Cr(VI) sampling result of 234 µg/L is the lowest concentration measured since initial sampling in 2005.

Based on the hydraulic and chemical performance monitoring data and evaluation presented in this report, the IM performance standard has been met for the second quarter May through July 2008 reporting period. Performance monitoring and evaluation of the IM hydraulic containment system will continue in accordance with the Performance Monitoring Plan and as directed by the DTSC.

5.0 References

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Tables

TABLE 3-1
Pumping Rate and Extracted Volume for IM System May through July 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Extraction Well ID	May 2008		June 2008		July 2008		Second Quarter 2008		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	1,000,779
TW-02D	0.00	0	0.02	1,067	0.00	0	0.01	1,067	53,059,717
TW-03D	99.62	4,447,202	101.01	4,363,823	100.57	4,489,231	100.40	13,300,256	134,001,874
PE-01	29.83	1,331,581	31.36	1,354,951	29.50	1,316,769	30.23	4,003,301	42,593,309
TOTAL	**129.5**	**5,778,784**	**132.4**	**5,719,841**	**130.1**	**5,806,000**	**130.6**	**17,304,624**	230,655,679
							Volume Pumped from the MW-20 Well Cluster		1,527,724
							Total Volume Pumped (gal)		232,183,403
							Total Volume Pumped (ac-ft)		712.5

NOTES:

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

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

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

TABLE 3-2
Analytical Results for Extraction Wells, February through July 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Well ID	Sample Date	Dissolved Total Chromium µg/L	Hexavalent Chromium µg/L	Total Dissolved Solids mg/L
TW-3D	06-Feb-08	1600	1760	5690
TW-3D	05-Mar-08	1740	1810	4730
TW-3D	02-Apr-08	2010	1550	4450
TW-3D	08-May-08	1740	1540	5320
TW-3D	04-Jun-08	1700	1460	5220
TW-3D	02-Jul-08	1780	1460	5660
PE-1	06-Feb-08	44.1	42.8	4360
PE-1	05-Mar-08	40.8	39.5	4080
PE-1	02-Apr-08	37.1	29.0	4180
PE-1	08-May-08	29.3	26.4	4100
PE-1	04-Jun-08	33.4	16.0	3560
PE-1	02-Jul-08	28.7	25.7	4060

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.

TABLE 3-3

Average Hydraulic Gradients Measured at Well Pairs, May through July 2008

Interim Measures Performance Monitoring

PG&E Topock Compressor Station

Well Pair[a]	Reporting Period	Mean Landward Hydraulic Gradient[b] (feet/foot)	Measurement Dates 2008
Northern Gradient Pair			
MW-31-135 / MW-33-150	May	0.0021	May 1 through May 31
	June	0.0025	June 1 through June 30
	July	0.0024	July 1 through July 28
Central Gradient Pair[c]			
MW-45-95 / MW-34-100	May	0.0104	May 1 through May 31
	June	0.0126	June 1 through June 30
	July	0.0113	July 1 through July 29
Southern Gradient Pair[d]			
MW-45-95 / MW-27-85	May	0.0019	May 27 through May 31
	June	0.0047	June 1 through June 30
	July	0.0042	July 1 through July 29

NOTES:

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

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

[c] With approval of DTSC, this well pair replaced MW-20-130 / MW-34-80.

[d] With approval of DTSC, this well pair replaced MW-20-130 / MW-42-65

TABLE 3-4

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

Interim Measures Performance Monitoring

PG&E Topock Compressor Station

	Davis Dam Release			Colorado River Elevation at I-3		
Month	Projected (cfs)	Actual (cfs)	Difference (cfs)	Predicted (ft AMSL)	Actual (ft AMSL)	Difference (feet)
February 2005	8,000	4,820	-3,180	453.1	452.6	-0.5
March 2005	15,600	7,110	-8,490	455.8	452.9	-2.9
April 2005	16,700	16,306	-394	455.9	456.0	0.1
May 2005	16,700	15,579	-1,121	456.2	456.1	-0.1
June 2005	14,600	15,223	623	455.8	456.1	0.3
July 2005	15,400	15,612	212	456.0	456.0	0.0
August 2005	11,700	11,544	-156	454.6	454.8	0.2
September 2005	12,400	12,335	-65	454.6	NA	NA
October 2005	12,300	11,201	-1,099	454.5	454.3	-0.2
November 2005	10,900	10,216	-684	454.3	454.3	0.0
December 2005	6,900	6,745	-155	452.8	452.7	-0.1
January 2006	8,400	9,166	766	453.2	453.6	0.4
February 2006	11,100	10,790	-310	454.1	454.1	0.1
March 2006	13,000	12,429	-571	454.7	454.8	0.2
April 2006	16,600	18,300	1700	456.0	456.1	0.0
May 2006	15,500	16,818	1318	456.0	456.3	0.3
June 2006	16,100	17,547	1447	456.2	456.4	0.2
July 2006	14,700	15,171	-471	455.7	455.8	0.1
August 2006	12,900	12,871	29	454.9	455.1	0.1
September 2006	12,100	12,409	-309	454.7	454.7	0.0
October 2006	11,400	11,150	250	454.1	454.4	0.3
November 2006	8,300	8,222	78	452.9	453.3	0.4
December 2006	8,100	8,823	-723	453.0	453.4	0.4
January 2007	8,600	8,796	-196	453.2	453.6	0.4
February 2007	9,800	11,680	-1,880	453.6	454.3	0.7
March 2007	14,300	14,554	-254	455.1	455.6	0.5
April 2007	17,300	16,818	482	456.4	456.4	0.0
May 2007	16,800	16,199	601	456.5	456.4	-0.1
June 2007	16,000	16,212	-212	456.4	456.4	0.0
July 2007	14,900	14,897	3	455.8	456.0	0.2
August 2007	12,100	12,776	-676	454.7	455.4	0.7
September 2007	12,700	13,050	-350	454.8	455.4	0.5
October 2007	10,600	10,324	276	454.0	454.3	0.3
November 2007	9,100	8,387	713	453.6	453.6	0.0
December 2007	5,700	6,445	-745	452.3	452.7	0.4
January 2008	9,300	8,900	400	453.5	453.6	0.1
February 2008	10,100	12,463	-2,363	454.5	454.7	0.1
March 2008	15,200	15,837	-637	455.6	455.9	0.3
April 2008	17,600	18,554	-954	456.6	457.0	0.4
May 2008	17,200	16,155	1,045	456.6	456.4	-0.3
June 2008	15,400	15,655	-255	456.2	456.5	0.3
July 2008	14,500	14,574	-74	455.8	456.0	0.2
August 2008	13,100	--		455.2	--	

NOTES:

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

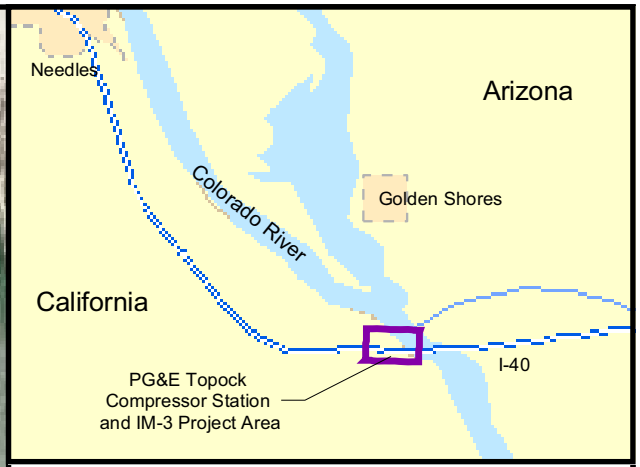
2) Predicted Colorado River elevations (river levels) at I-3 are based upon BOR projections for Davis Dam releases and Lake Havasu elevations from the preceding month, using a multiple regression between historical dam releases and measured river levels at I-3 (updated monthly). This data is reported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

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

4) NA = I-3 transducer data unavailable for month of September 2005 due to damage by debris.

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

Figures



N

0 550 1,100 Feet

1 inch equals 550 feet

LEGEND

- PG&E Property Line
- Existing IM Extraction Well
- Existing IM Injection Well
- Treatment Facility Pipeline

Notes: Location map shows Interim Measures No.3 (IM-3) facilities as of of January 2006. Aerial photography taken May 2005.

FIGURE 1-1
LOCATIONS OF IM NO. 3 GROUNDWATER EXTRACTION, CONVEYANCE, AND TREATMENT FACILITIES

INTERIM MEASURES PERFORMANCE MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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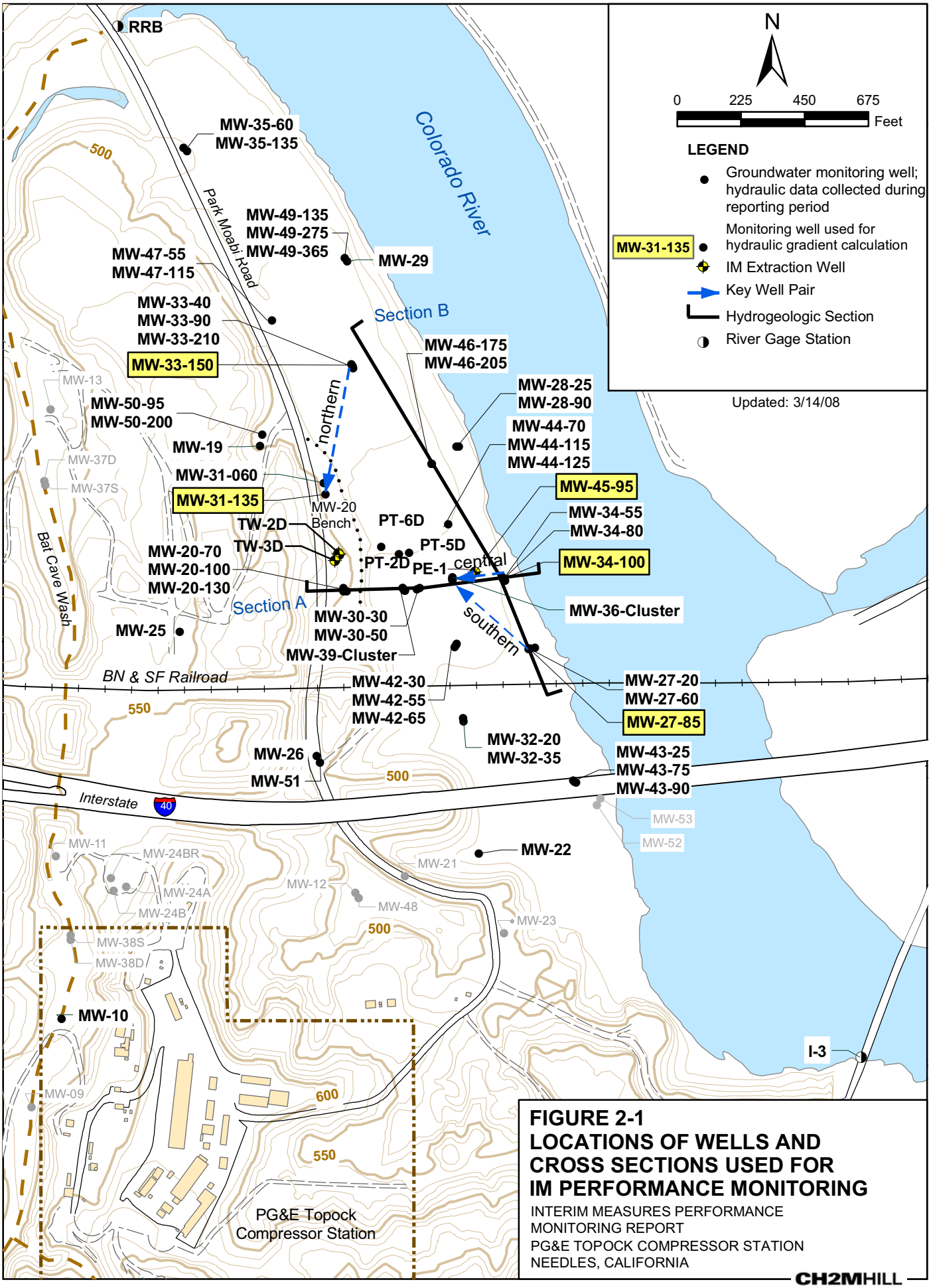

FIGURE 2-1
LOCATIONS OF WELLS AND CROSS SECTIONS USED FOR IM PERFORMANCE MONITORING

INTERIM MEASURES PERFORMANCE MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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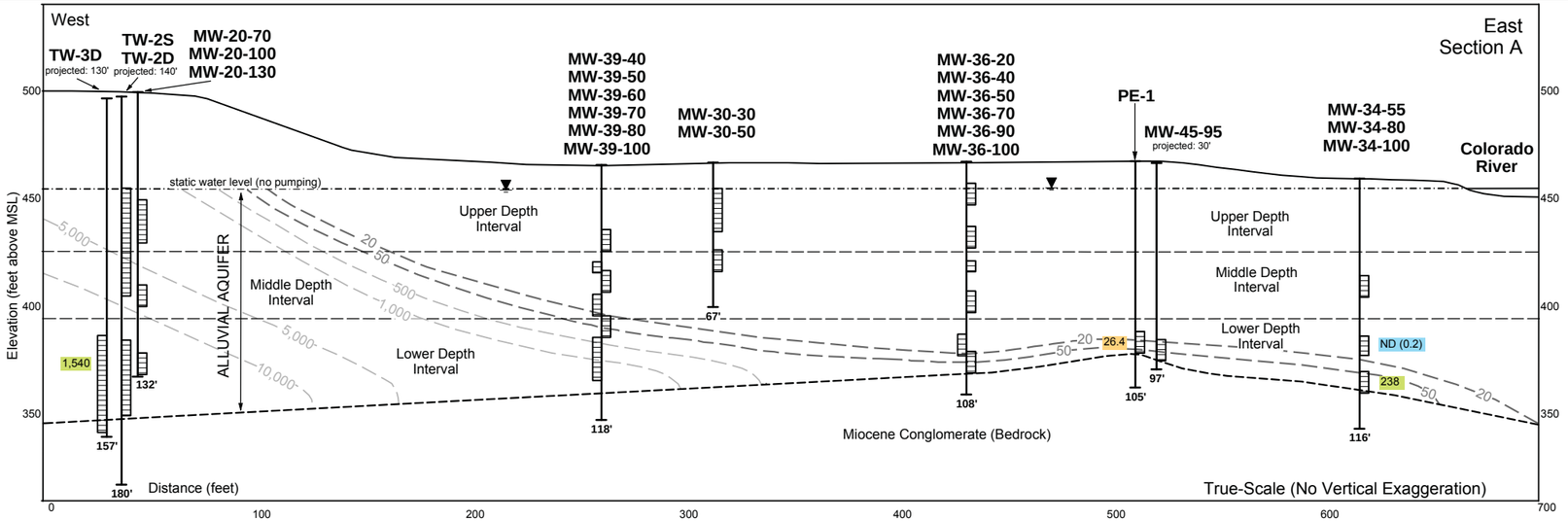
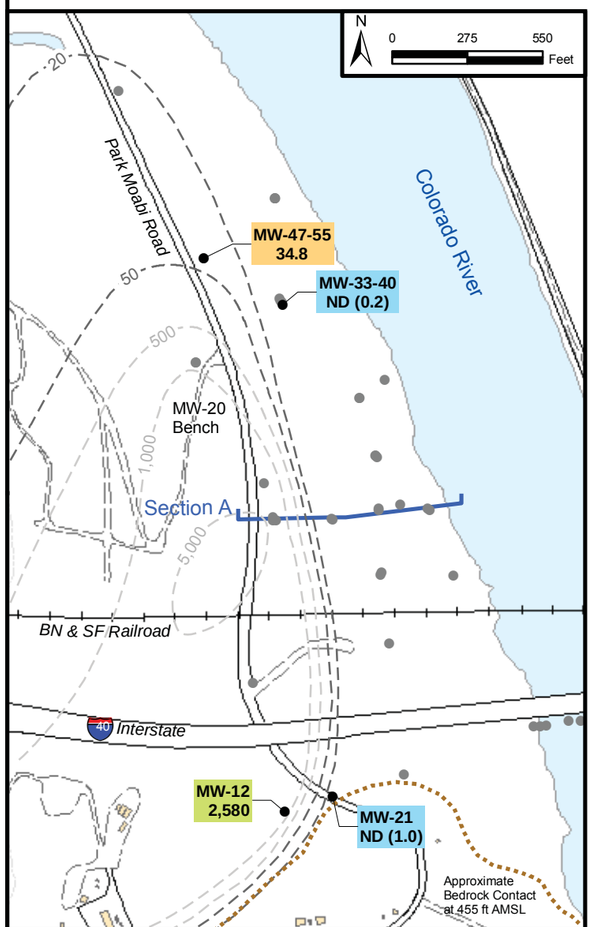
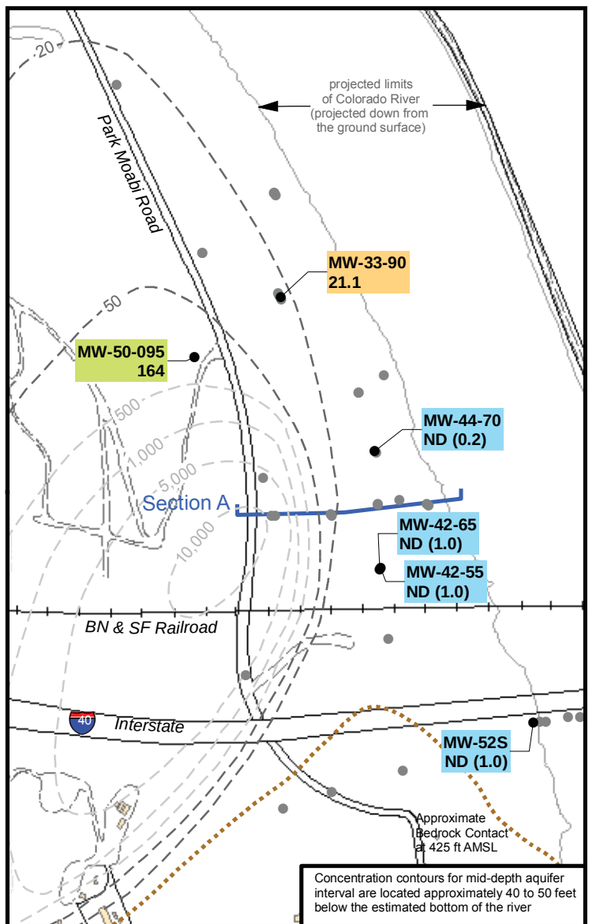
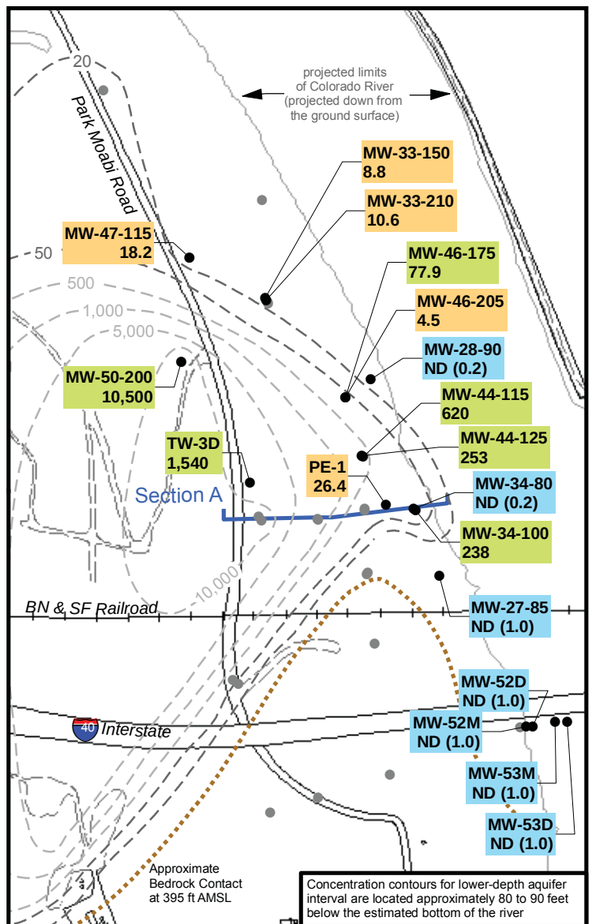




Shallow Wells (Upper Depth Interval)



Intermediate Wells (Middle Depth Interval)



Deep Wells (Lower Depth Interval)

LEGEND

Maximum Hexavalent Chromium [Cr(VI)] Concentrations in Groundwater, May 2008

Results posted are maximum Cr(VI) concentrations from May 2008 groundwater sampling. Concentrations in micrograms per liter (µg/L) approximately equivalent to parts per billion (ppb).

See Tables B-1 and B-2 for additional sampling data and prior results for wells that were not sampled in May - July 2008 reporting period.

ND (1) Not detected at listed reporting limit (ppb)

41 Less than 50 ppb

3,810 Greater than 50 ppb

— — 50 — — Inferred Cr(VI) concentration contour within aquifer depth interval based on May 2008 sampling results.

— — 500 — — Inferred Cr(VI) concentration contour based on March 2008 sampling results (See first quarter 2008 PMR).

The contours depicted for May 2008 reflect the maximum concentration for wells within each depth interval and incorporate Cr(VI) distribution results from prior March 2008 sampling (Tables B-1 and B-2).

Hydrogeologic Section A showing aquifer depth intervals and Cr(VI) sampling results

NOTES ON CONTOUR MAPS

1. The Cr(VI) contour maps for IM performance monitoring incorporate data from new wells and water quality data trends for the floodplain area. The contour maps provide additional interpretation of plume limits and do not reflect plume migration during performance monitoring.

2. The locations of the Cr(VI) contours shown for depths 80-90 feet below the Colorado River (east and southeast of well clusters MW-34) are estimated based on hydrogeologic and geochemical conditions documented in site investigations. The actual locations of contours beyond well control points in these areas are not certain, but are inferred using available site data (bedrock structure, hydraulic gradients, observed distribution of geochemically reducing conditions and Cr(VI) concentration gradients). There are no data confirming the existence of Cr(VI) under the Colorado River.

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

FIGURE 3-1
MAXIMUM Cr(VI) CONCENTRATIONS IN ALLUVIAL AQUIFER, MAY 2008

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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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 454' MSL)

ALLUVIAL AQUIFER

Upper Depth Interval
Middle Depth Interval
Lower Depth Interval

Oldest Alluvium

Fluvial Deposits

Approximate geologic contact
between alluvial fan
and fluvial deposits

ND (0.2)*
20
21.1
8.8
10.6
237'

ND (0.2)
20
50
77.9
4.5
216'

ND (0.2)
500
620
253
134'

ND (0.2)
238
116'

Upper Depth Interval
Middle Depth Interval
Lower Depth Interval
ND (1.0)
107'

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:

* Result posted is from March 2008 groundwater sampling.

Results posted are maximum Cr(VI) concentrations from May 2008 groundwater sampling.

See Table B-1 for additional sampling data and prior results for wells on this cross-section that were not sampled in the May - July 2008 reporting period.

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

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

The contours depicted for March 2008 incorporate Cr(VI) distribution results from prior October-December 2007 sampling (Table B-1).

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)
42	Less than 50 ppb
3,810	Greater than 50 ppb

FIGURE 3-2
Cr(VI) CONCENTRATIONS
FLOODPLAIN CROSS-SECTION B,
MAY 2008

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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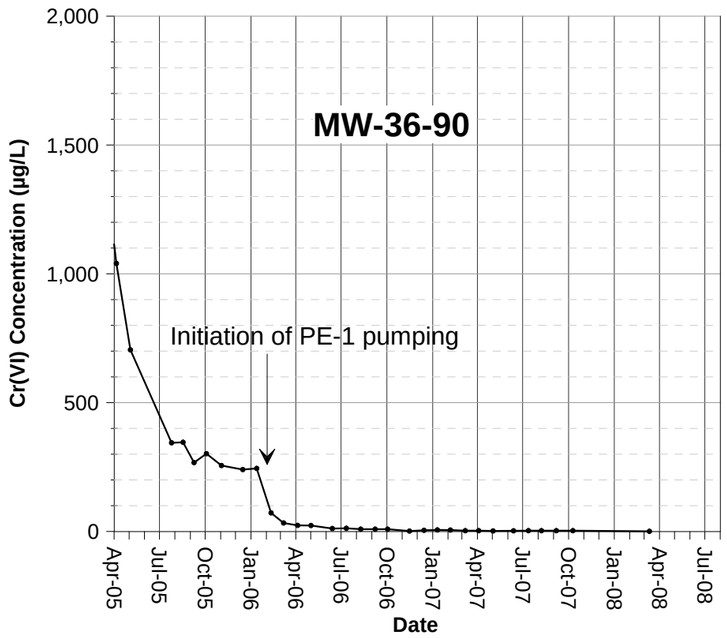

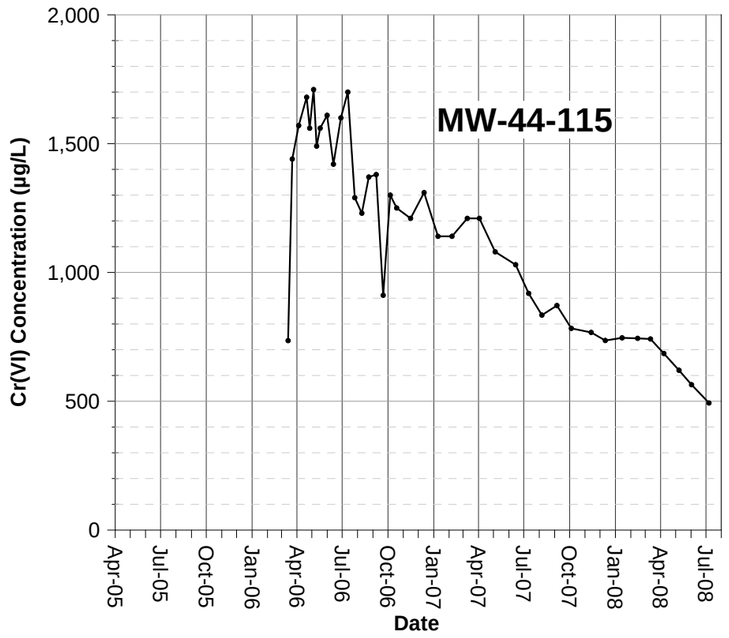

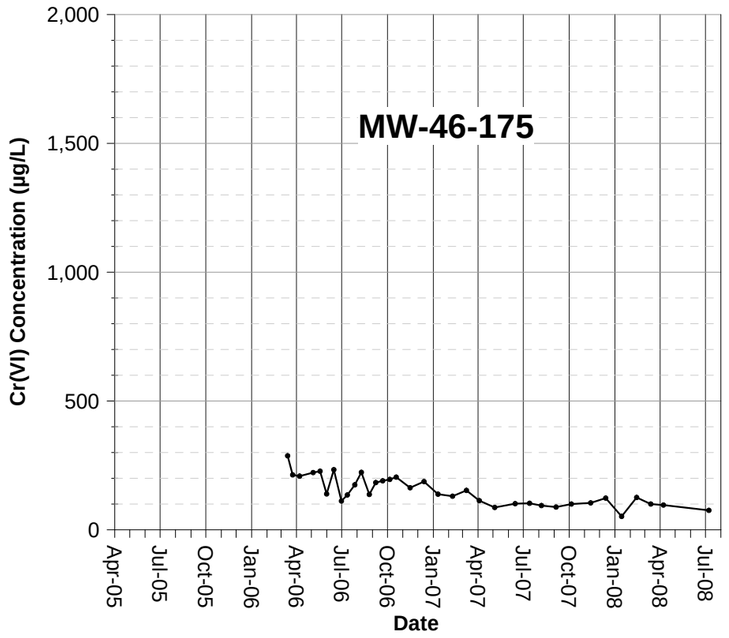

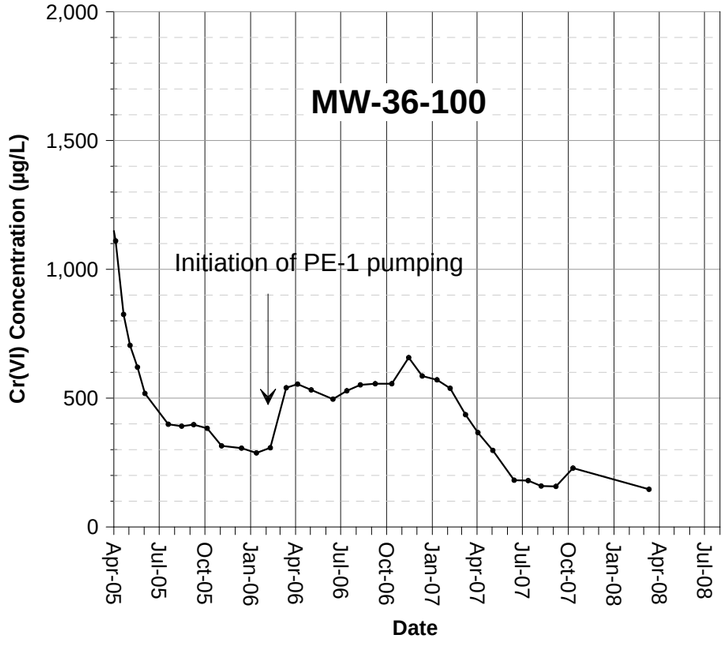

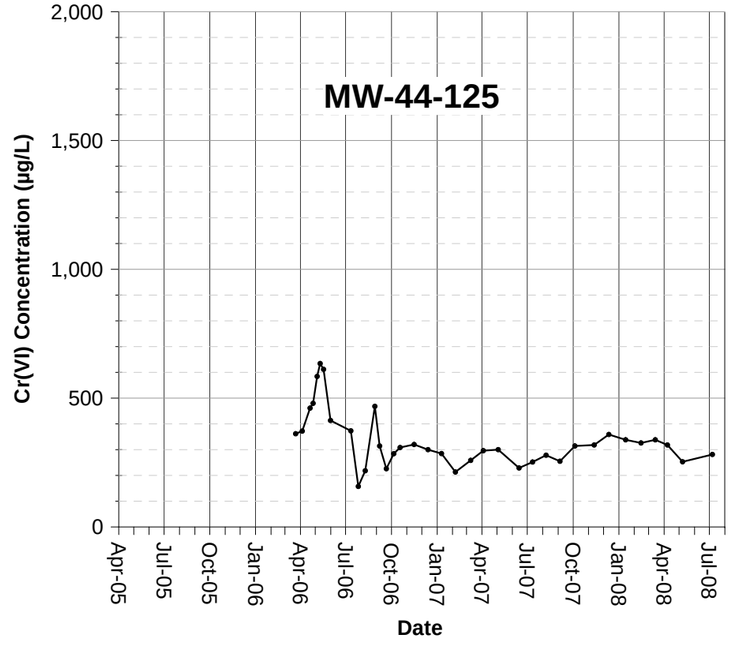

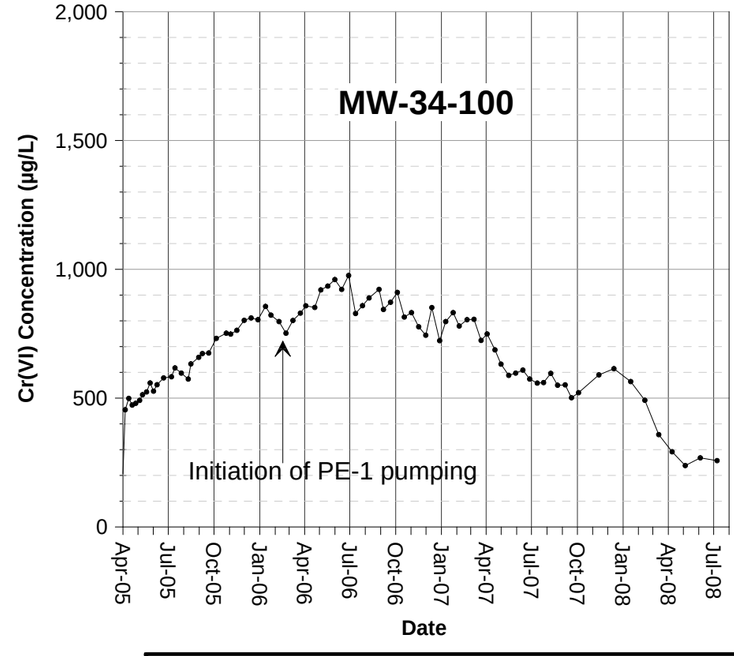

Notes
1. Hexavalent chromium [Cr(VI)] results in micrograms per liter (µg/L), approximately equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
3. MW-36 wells selected to monitor effects of PE-1 pumping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

FIGURE 3-3
Cr(VI) CONCENTRATION TRENDS IN SELECTED PERFORMANCE MONITORING WELLS APRIL 2005 THROUGH JULY 2008
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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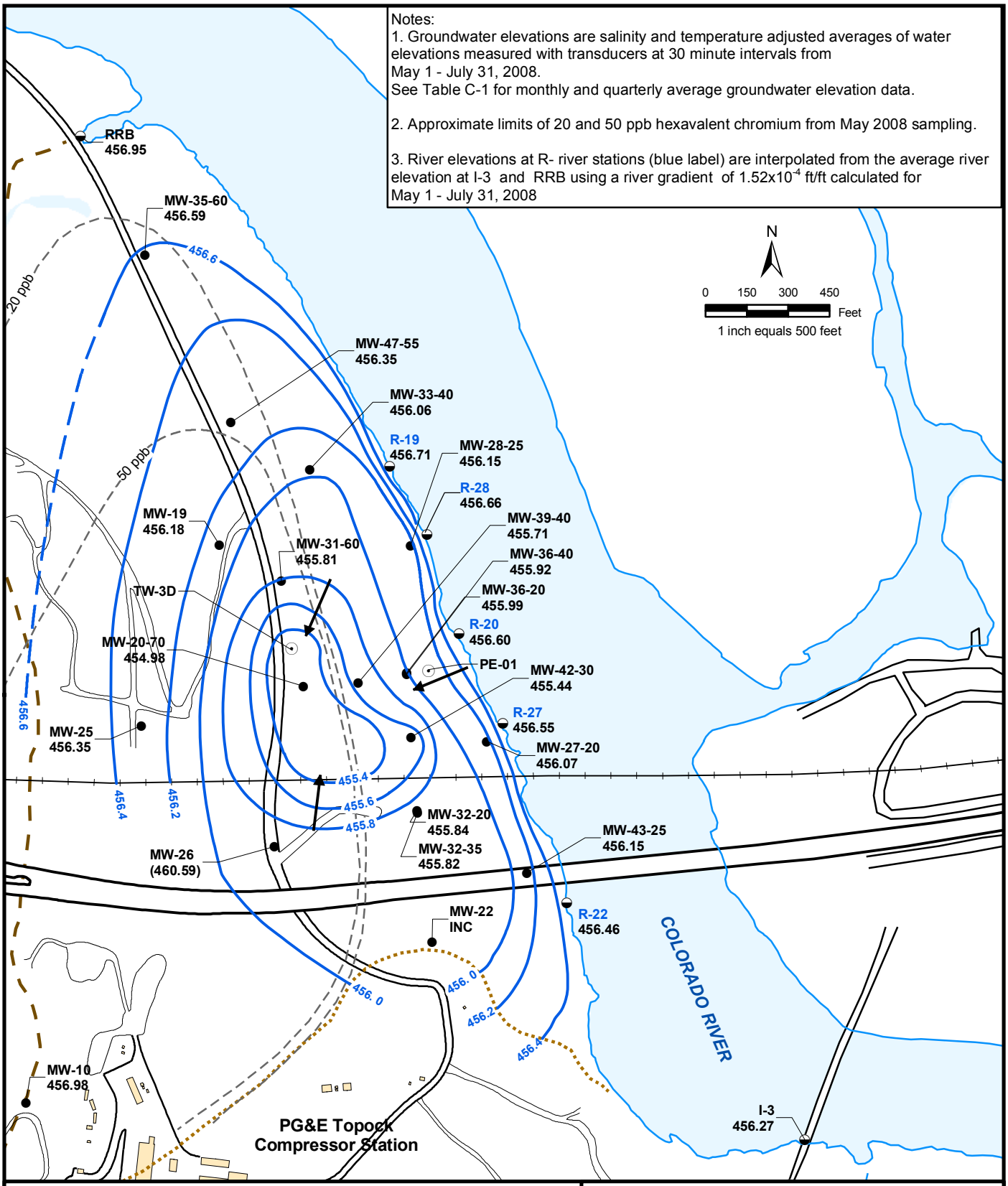

FIGURE 3-4
AVERAGE GROUNDWATER ELEVATIONS SHALLOW WELLS AND RIVER ELEVATIONS, MAY THROUGH JULY 2008

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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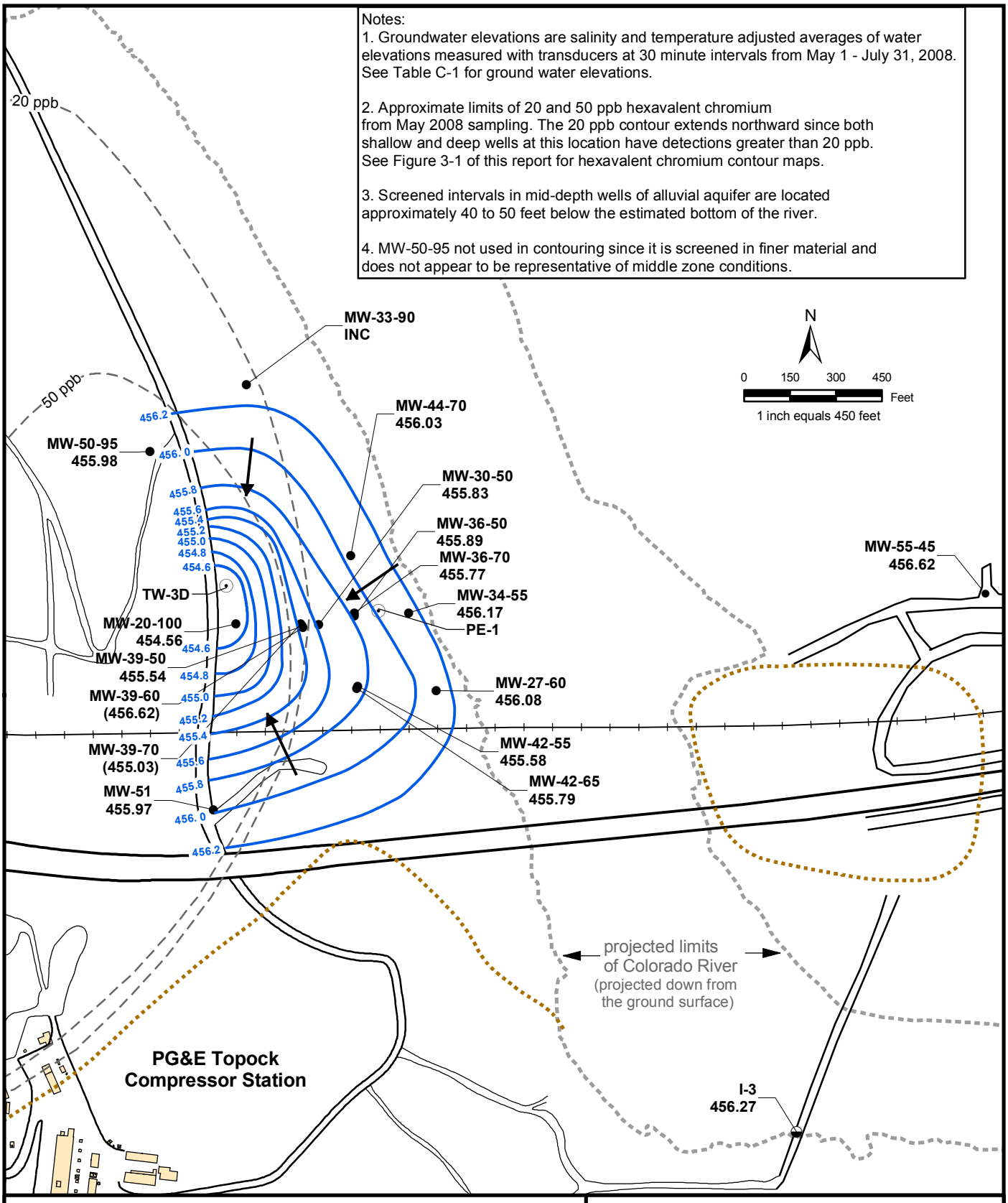

FIGURE 3-5
AVERAGE GROUNDWATER ELEVATIONS MID-DEPTH WELLS MAY THROUGH JULY 2008

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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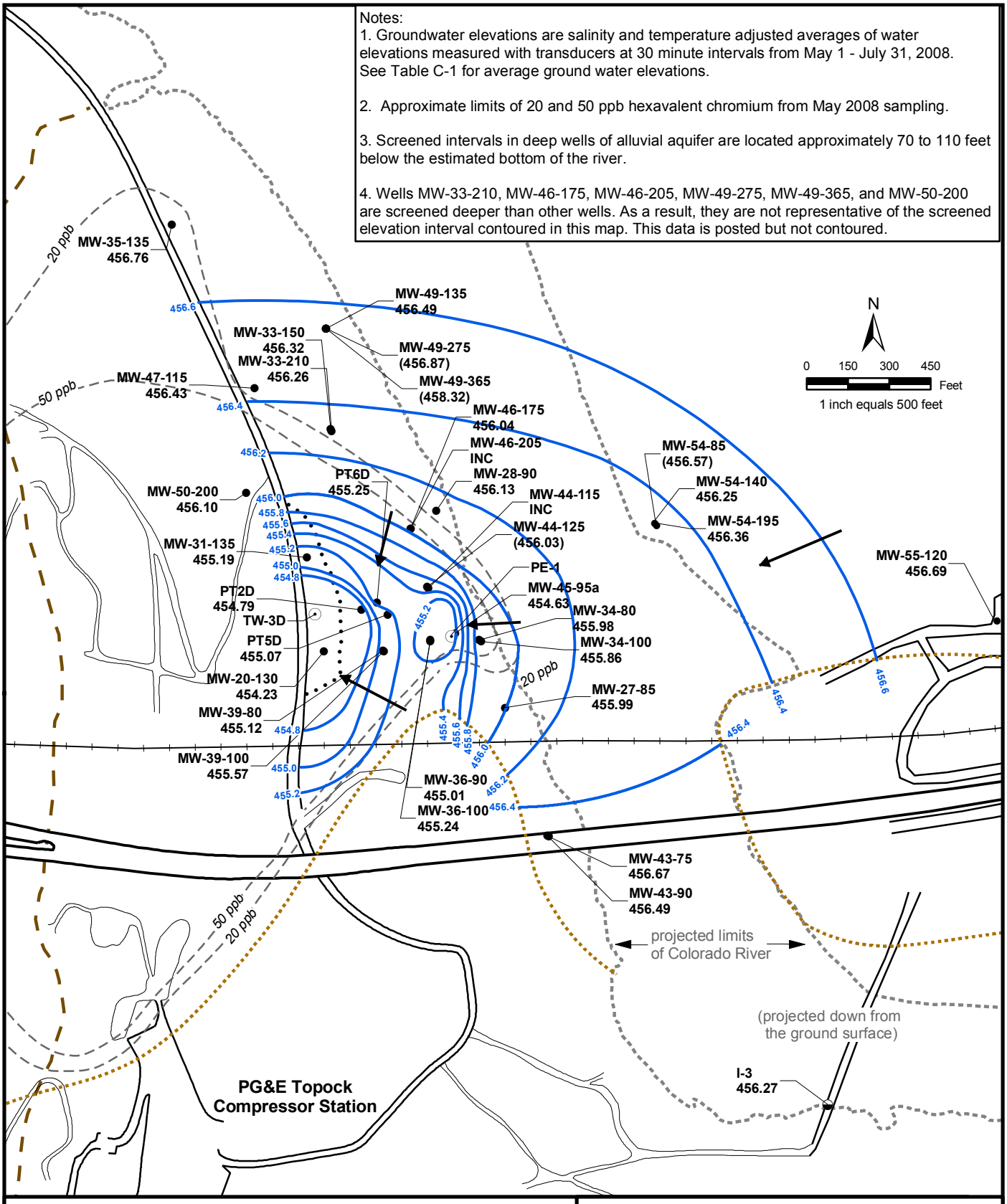

FIGURE 3-6
AVERAGE GROUNDWATER ELEVATIONS DEEP WELLS MAY THROUGH JULY 2008

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

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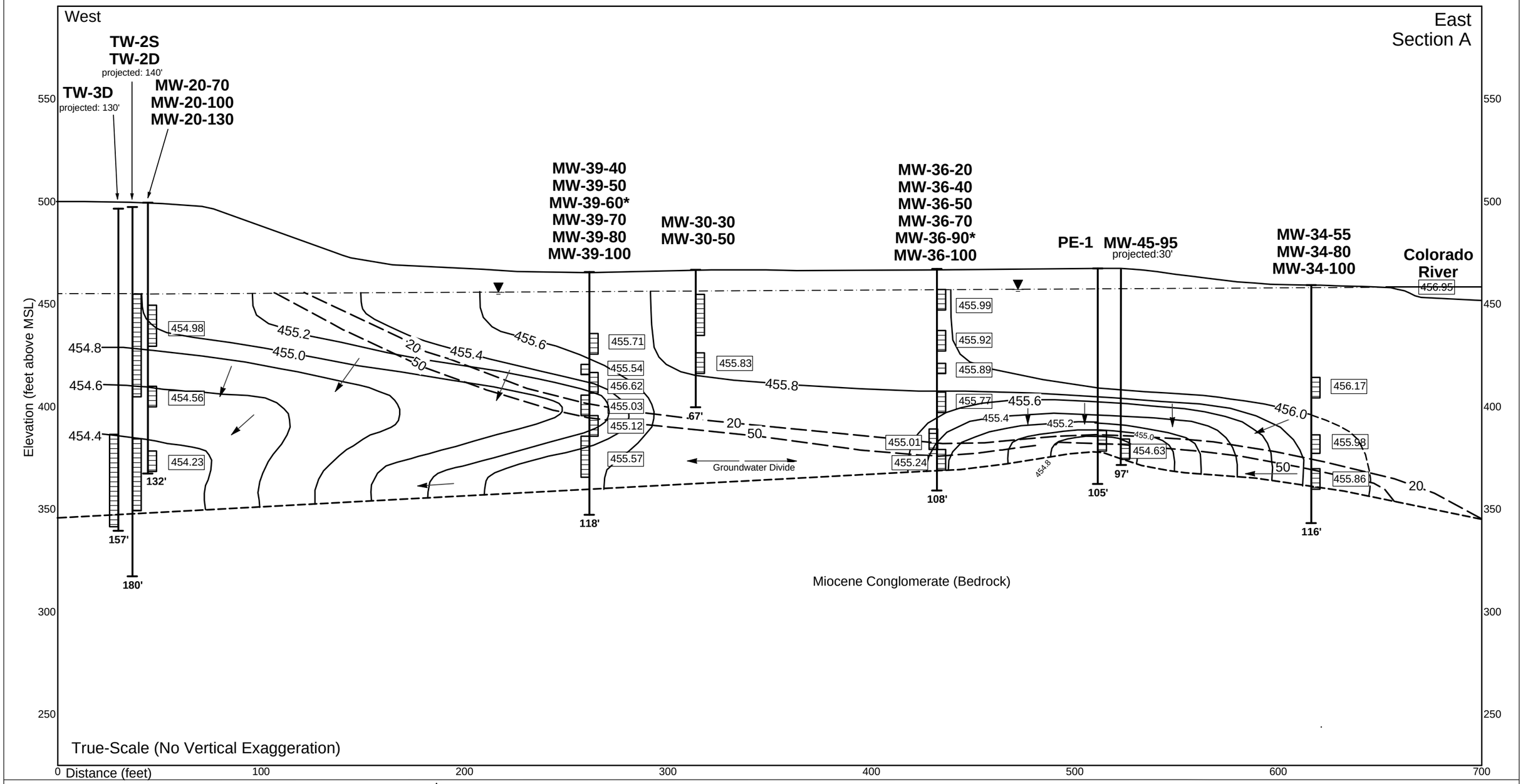

Notes:
Results show average groundwater elevations for February 1 through April 30, 2008 measured with transducers at 30 minute intervals.

Groundwater elevations adjusted for salinity and temperature.
Well MW-36-90* and MW-39-60* are excluded from contouring.
River elevation (R-20) is the calculated average river level based upon the river gradient between RRB and I-3.

Legend:

MW-30-50

Inferred water table

well screen

455.23 Monthly average groundwater head (ft AMSL)

103 boring depth (feet)

20 Inferred hexavalent chromium contour (ppb)

453.5 Groundwater head contour

453.5 Inferred groundwater head contour

Interpreted groundwater flow direction

FIGURE 3-7
AVERAGE GROUNDWATER ELEVATIONS FOR WELLS ON FLOODPLAIN CROSS-SECTION A MAY THROUGH JULY 2008

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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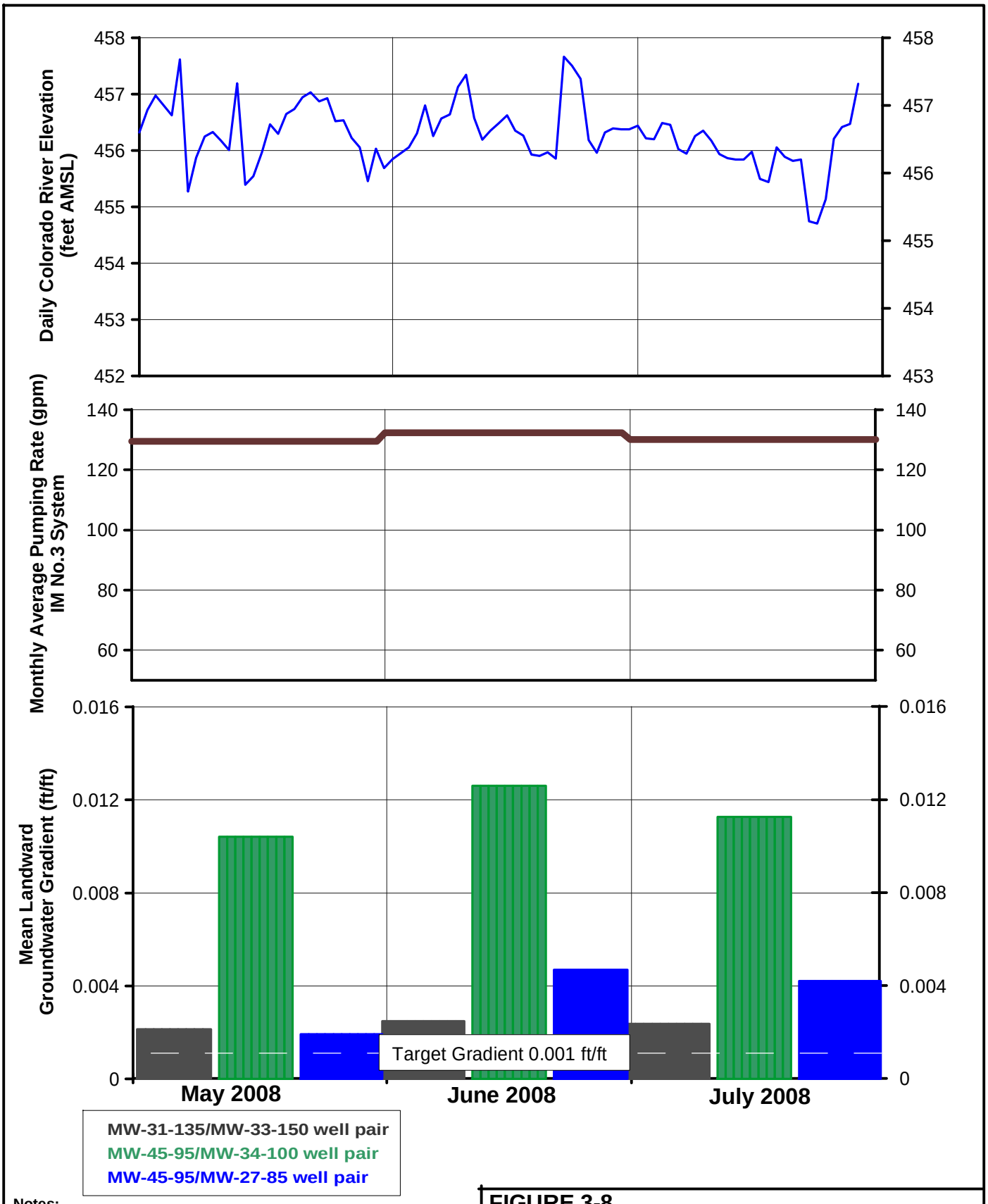

Notes:

1) For IM pumping, the target landward gradient for well pairs is 0.001 feet/foot.
2) Refer to Table 3-1 and Section 3.1 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 3-3 and Section 3.4 for discussion of gradient data.

FIGURE 3-8
MEASURED HYDRAULIC GRADIENTS, RIVER ELEVATION AND PUMPING RATE MAY 2008 THROUGH JULY 2008
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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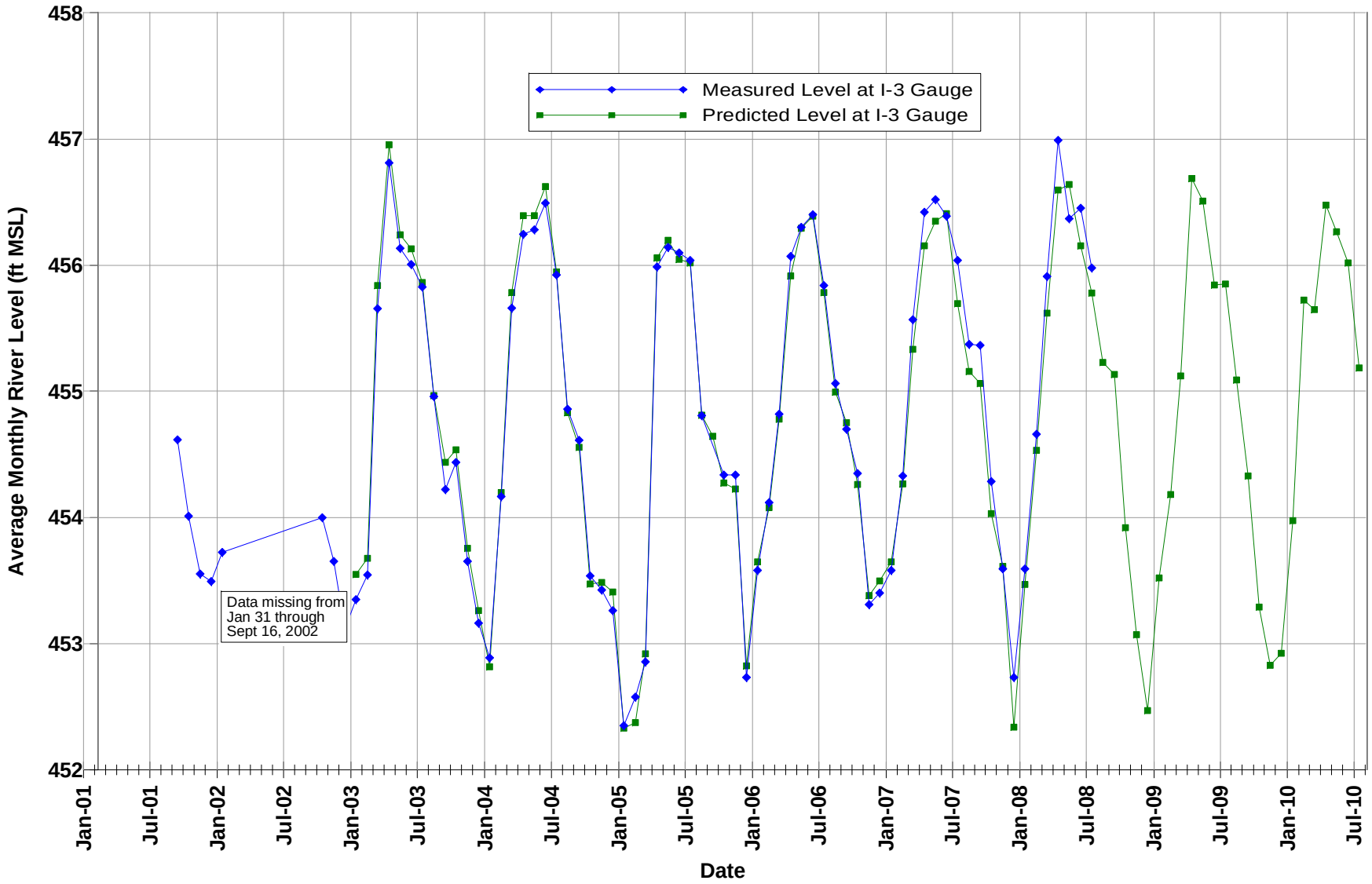

Note:
Projected river level is calculated based on monthly averages of Davis Dam release and stage in Lake Havasu as of August 12, 2008.
Measured data through July 28, 2008.
I-3 data unavailable from September 18 through October 4, 2006
River projections at I-3 are based upon August 2008 USBR projections.

FIGURE 3-9
PAST AND PREDICTED FUTURE RIVER LEVELS AT TOPOCK COMPRESSOR STATION

INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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Appendix A
Extraction System Operations Log for May through July 2008

Appendix A
Extraction System Operations Log for May 2008 through July 2008
PG&E Topock Interim Measures Performance Monitoring Program

During the 2nd Quarter 2008 (May through July), extraction wells TW-2D, 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 well TW-2D only ran for a short period on June 5, 2008. Extraction well TW-2S was not operated during 2nd Quarter 2008. The operational run time for the IM groundwater extraction system (combined or individual pumping) was approximately 98 percent during the 2nd Quarter 2008.

The IM No. 3 facility treated approximately 17,304,624 gallons of extracted groundwater during the 2nd Quarter 2008. The IM No. 3 facility also treated approximately 4,335 gallons of water generated from the groundwater monitoring program and 65,800 gallons of water from IM No. 3 injection well development. Four containers of solids from the IM No. 3 facility were transported offsite during the 2nd Quarter 2008.

Periods of planned and unplanned extraction system down time (that together resulted in approximately 2 percent of downtime during the 2nd Quarter 2008) are summarized below. The times shown are in Pacific Standard Time (PST) to be consistent with other data collected (e.g., water level data) at the site.

MAY 2008

- **May 1, 2008 (unplanned):** The extraction well system was offline from 12:10 a.m. to 12:13 a.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 3 minutes.
- **May 8, 2008 (planned):** The extraction well system was offline from 9:06 a.m. to 1:53 p.m. when switching the microfilter from the east bank to the west bank. Extraction system downtime was 4 hours and 47 minutes.
- **May 20, 2008 (unplanned):** The extraction well system was offline from 5:41 p.m. to 6:34 p.m. when a programming error caused the microfilter to shutdown. Extraction system downtime was 53 minutes.
- **May 23, 2008 (unplanned):** The extraction well system was offline from 12:18 a.m. to 12:35 a.m., from 6:20 a.m. to 6:30 a.m., from 1:23 a.m. to 1:38 p.m., and from 7:56 p.m. to 8:02 p.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 48 minutes.
- **May 29-30, 2008 (planned):** The extraction well system was offline from 3:00 p.m. to 11:59 p.m. on May 29th, and it was offline from 12:00 a.m. to 7:10 a.m. and from 10:03 a.m. to 10:04 a.m. on May 30th due to aquifer testing for Arizona wells. Extraction system downtime was 16 hours and 10 minutes.

JUNE 2008

- **June 11, 2008 (planned):** The extraction well system was offline from 1:55 p.m. to 2:03 p.m. and from 3:19 p.m. to 3:27 p.m. when emergency generator checks were performed. Extraction system downtime was 17 minutes.
- **June 18, 2008 (planned):** The extraction well system was offline from 7:02 a.m. to 2:34 p.m. and from 3:54 p.m. to 4:30 p.m. for scheduled monthly maintenance. Extraction system downtime was 8 hours and 8 minutes.
- **June 21, 2008 (unplanned):** The extraction well system was offline from 9:42 a.m. to 9:48 a.m. and from 8:05 p.m. to 8:17 p.m. when emergency generator was brought online due to storm events. Extraction system downtime was 18 minutes.
- **June 23, 2008 (planned):** The extraction well system was offline from 6:42 a.m. to 6:43 a.m. and from 7:40 a.m. to 9:22 a.m. when the City of Needles installed taps to onsite transformer. Extraction system downtime was 1 hour and 43 minutes.

JULY 2008

- **July 10, 2008 (unplanned):** The extraction well system was offline from 4:46 p.m. until 4:54 p.m. and from 11:55 p.m. to July 11, 2008 12:01 a.m. when the City of Needles power supply imbalance alarmed and shut down the extraction wells. Extraction system downtime was 14 minutes.
- **July 16, 2008 (planned):** The extraction well system was offline from 2:08 a.m. to 7:20 p.m. to perform scheduled monthly maintenance. Extraction system downtime was 17 hours and 12 minutes.
- **July 20, 2008 (unplanned):** The extraction well system was offline from 7:35 a.m. to 12:41 p.m. when lightening struck the plant causing the extraction well system to shutdown. Extraction system downtime was 5 hours and 6 minutes.

Appendix B
Chromium Sampling Results for Monitoring Wells in Floodplain Area

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, July 2007 through July 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters			Groundwater and River Elevations at Sampling Time	
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm	Groundwater Elevation salinity-adjusted feet MSL	River Elevation Downstream I-3 Station
Shallow Zone								
MW-27-020	02-Oct-07	ND (0.2)	2.20	-170	0.2	1,133	454.5	453.6
MW-28-025	04-Oct-07	ND (1.0)	ND (1.0)	-61	0.5	1,394	454.8	454.5
MW-29	04-Oct-07	ND (1.0)	ND (1.0)	-112	0.5	3,172	455.3	454.3
	12-Mar-08	ND (1.0)	ND (1.0)	-132	0.4	4,490	455.4	455.0
MW-30-030	08-Oct-07	ND (1.0)	ND (1.0) LF	-97	0.5	42,690	454.6	454.1
MW-32-020	01-Oct-07	ND (2.0)	ND (1.0)	-101	0.5	50,258	455.0	454.2
	10-Mar-08	ND (2.1)	ND (1.0)	-121	0.3	45,930	454.8	454.6
MW-32-035	01-Oct-07	ND (1.0)	1.20	-141	0.2	19,607	454.7	454.1
	10-Dec-07	---	ND (2.0)	-145	0.2	19,800	452.7	452.3
	10-Mar-08	---	ND (1.0)	-145	0.1	25,210	455.0	454.5
	06-May-08	---	1.90	-120	0.1	25,580	456.4	457.4
MW-33-040	05-Oct-07	ND (0.2)	1.10	109	0.6	8,015	455.2	454.6
	12-Dec-07	0.40	4.10	22	0.2	8,969	453.0	452.5
	12-Mar-08	ND (0.2)	ND (1.0)	-30	0.3	6,112	455.2	454.8
	05-May-08	ND (0.2)	ND (1.0)	59	3.0	5,564	456.1	455.5
MW-36-020	03-Oct-07	ND (1.0)	ND (1.0)	-216	0.7	25,659	456.7	453.7
MW-36-040	03-Oct-07	ND (1.0)	ND (1.0)	-249	0.3	9,051	454.1	453.6
MW-39-040	08-Oct-07	ND (1.0)	ND (1.0)	-181	0.0	14,900	454.0	453.9
MW-42-030	04-Oct-07	ND (1.0)	ND (1.0)	-130	0.1	21,073	453.8	453.6
MW-43-025	02-Oct-07	ND (1.0)	ND (1.0)	-166	0.3	1,226	454.8	454.3
	10-Dec-07	---	ND (1.0)	-171	0.1	1,333	452.3	452.4
	10-Mar-08	---	ND (1.0)	-161	0.2	1,614	455.1	454.8
	07-May-08	---	ND (1.0)	-165	0.2	1,617	455.8	454.6
Middle Zone								
MW-27-060	02-Oct-07	ND (0.2)	ND (1.0)	-109	0.4	7,542	454.5	453.9
MW-33-090	05-Oct-07	18.2	19.4	206	0.1	9,719	455.1	454.8
	13-Dec-07	21.0	22.7	138	0.1	10,680	453.0	452.6
	13-Dec-07 FD	20.6	21.3	FD	FD	FD	FD	FD
	12-Mar-08	23.7	22.5	-66	0.2	11,390	455.2	454.4
	05-May-08	21.1	20.2	45	0.1	11,160	456.1	455.4
MW-34-055	03-Oct-07	ND (0.2)	ND (1.0)	-207	0.4	1,116	455.0	454.6
MW-36-050	10-Oct-07	ND (0.2)	2.00	-172	0.0	3,810	454.4	454.1
MW-36-070	09-Oct-07	ND (0.2)	ND (1.0)	-150	0.0	1,800	454.0	453.5
MW-39-050	08-Oct-07	ND (0.2)	ND (1.0)	-90	0.0	3,780	453.9	453.5
MW-39-060	08-Oct-07	ND (0.2)	ND (1.0)	-83	0.1	5,211	453.6	453.4
MW-39-070	08-Oct-07	5.50	6.20	19	0.2	6,159	453.7	453.9
MW-42-055	04-Oct-07	ND (1.0)	ND (1.0)	-128	0.1	13,972	454.3	453.8
	11-Dec-07	ND (1.0)	ND (1.0)	-132	0.2	14,960	452.3	452.1

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, July 2007 through July 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters			Groundwater and River Elevations at Sampling Time	
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm	Groundwater Elevation salinity-adjusted feet MSL	River Elevation Downstream I-3 Station
Middle Zone								
MW-42-055	11-Mar-08	ND (1.0)	ND (1.0)	-126	0.3	15,890	454.9	455.7
	06-May-08	ND (1.0)	ND (1.0)	-100	0.2	15,580	456.4	457.4
MW-42-065	03-Oct-07	ND (1.0)	ND (1.0)	-81	0.4	12,290	454.3	453.6
	11-Dec-07	ND (1.0)	ND (1.0)	-59	0.1	16,470	452.5	452.1
	11-Mar-08	ND (1.0)	ND (1.0)	-50	0.2	17,980	455.1	455.5
	06-May-08	ND (1.0)	ND (1.0)	-23	0.1	16,680	456.5	457.6
MW-44-070	04-Oct-07	ND (0.2)	ND (1.0)	-404	0.2	4,816	454.5	454.0
	11-Dec-07	ND (0.2)	ND (1.0)	-147	0.1	4,448	452.3	452.1
	11-Mar-08	ND (0.2)	ND (1.0)	-128	0.3	4,663	454.8	454.6
	07-May-08	ND (0.2)	ND (1.0)	-107	0.1	4,321	454.5	457.4
MW-52S	12-Jul-07	ND (1.0)	ND (1.0)	-226	3.1	14,800	---	455.6
	08-Aug-07	ND (1.0)	ND (1.0)	-173	1.1	11,544	---	455.8
	05-Sep-07	ND (1.0)	ND (1.0)	-154	0.6	11,800	---	454.7
	11-Oct-07	ND (1.0)	ND (1.0)	-175	0.2	12,740	---	453.7
	17-Dec-07	ND (1.0)	ND (1.0)	-232	0.0	14,800	---	453.3
	13-Mar-08	ND (1.0)	ND (1.0)	-176	0.5	11,390	---	455.0
	07-May-08	ND (1.0)	ND (1.0)	-226	0.0	15,500	---	453.8
Deep Wells								
MW-27-085	11-Jul-07	ND (1.0)	ND (1.0)	-54	0.0	20,100	453.9	455.8
	08-Aug-07	ND (1.0)	ND (1.0)	-26	0.2	16,800	455.3	454.7
	08-Aug-07 FD	ND (1.0)	ND (1.0)	FD	FD	FD	FD	FD
	05-Sep-07	ND (1.0)	ND (1.0)	-37	0.5	18,000	454.8	454.1
	02-Oct-07	ND (1.0)	ND (1.0)	-53	0.3	16,793	454.6	453.7
	11-Dec-07	ND (1.0)	ND (1.0)	-44	0.1	18,240	452.5	452.1
	10-Mar-08	ND (1.0)	ND (1.0)	-64	0.2	18,550	454.8	454.5
	06-May-08	ND (1.0)	ND (1.0)	16	0.4	18,720	456.7	457.0
MW-28-090	04-Oct-07	ND (1.0)	ND (1.0)	-123	0.3	8,091	454.9	454.8
	14-Dec-07	ND (0.2)	ND (1.0)	-133	0.2	7,932	452.7	452.9
	13-Mar-08	ND (0.2)	ND (1.0)	-117	0.2	8,048	455.4	455.4
	07-May-08	ND (0.2)	ND (1.0)	-112	0.2	7,956	455.0	454.3
MW-33-150	09-Oct-07	8.90	8.30	3	0.1	18,600	454.9	453.7
	09-Oct-07 FD	9.40	7.90	FD	FD	FD	FD	FD
	12-Dec-07	8.90	10.0	-67	0.1	17,920	453.4	452.4
	12-Mar-08	7.87	8.06	1	0.6	18,180	455.1	454.2
	06-May-08	8.83	9.21	24	0.1	18,150	456.9	457.7
MW-33-210	05-Oct-07	11.9	11.5	-27	0.2	18,138	455.6	455.1
	12-Dec-07	13.3	14.3	-14	0.0	19,800	453.7	452.4
	12-Mar-08	11.7	11.5	-31	0.1	21,180	455.3	454.3
	05-May-08	10.6	9.93	139	0.2	21,150	456.4	455.6
MW-34-080	11-Jul-07	ND (1.0)	ND (1.0)	-79	0.0	14,800	456.1	455.3
	08-Aug-07	ND (1.0)	ND (1.0)	-24	0.2	9,050	455.7	455.5

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, July 2007 through July 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters			Groundwater and River Elevations at Sampling Time	
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm	Groundwater Elevation salinity-adjusted feet MSL	River Elevation Downstream I-3 Station
Deep Wells								
MW-34-080	06-Sep-07	ND (1.0)	ND (1.0)	-23	0.2	9,600	455.5	455.0
	03-Oct-07	ND (0.2)	ND (1.0)	-63	0.2	8,443	454.9	454.3
	12-Nov-07	ND (1.0)	ND (1.0)	-327	0.1	9,046	453.8	453.0
	13-Dec-07	ND (1.0)	ND (1.0)	-34	0.1	5,648	452.7	452.4
	16-Jan-08	ND (1.0)	ND (1.0)	-26	0.1	9,135	453.9	453.6
	16-Jan-08 FD	ND (1.0)	1.20	FD	FD	FD	FD	FD
	13-Feb-08	ND (0.2)	ND (1.0)	-52	0.2	9,412	455.0	454.7
	12-Mar-08	ND (0.2)	10.9	-62	0.1	9,779	455.5	455.5
	08-Apr-08	ND (1.0)	ND (1.0)	29	0.3	9,061	457.3	457.7
	06-May-08	ND (0.2)	ND (1.0)	-3	0.2	9,911	456.7	457.1
	04-Jun-08	ND (1.0)	ND (1.0)	-114	1.0	9,403	456.1	456.1
	08-Jul-08	ND (1.0)	ND (1.0)	-103	0.2	9,300	455.8	456.2
MW-34-100	12-Jul-07	557	520	45	0.0	25,000	455.9	456.0
	12-Jul-07 FD	558	521	FD	FD	FD	FD	FD
	25-Jul-07	560	627	52	0.0	18,000	455.7	455.5
	08-Aug-07	596	670	-17	0.1	16,070	455.1	454.9
	22-Aug-07	550	490	72	0.0	18,100	455.4	455.3
	06-Sep-07	551	581	112	0.3	17,400	455.2	455.5
	06-Sep-07 FD	546	516	FD	FD	FD	FD	FD
	19-Sep-07	501	603	---	---	---	---	455.3
	03-Oct-07	521	609 J	-51	0.2	14,026	454.2	453.8
	03-Oct-07 FD	513	424 J	FD	FD	FD	FD	FD
	13-Nov-07	590	598	-68	0.1	17,040	453.3	453.3
	13-Dec-07	567	591	115	0.1	17,000	452.4	452.5
	13-Dec-07 FD	614	610	FD	FD	FD	FD	FD
	16-Jan-08	564	648	-7	0.1	17,830	453.4	453.5
	13-Feb-08	492	560	-20	0.1	18,310	454.6	454.5
	12-Mar-08	358	338	9	0.2	19,150	455.2	455.3
	08-Apr-08	280	276	20	0.2	17,878	456.8	457.6
	08-Apr-08 FD	292	274	FD	FD	FD	FD	FD
	06-May-08	234	228	52	0.2	19,660	456.5	457.2
	06-May-08 FD	238	228	FD	FD	FD	FD	FD
	04-Jun-08	268	323	70	0.7	18,918	456.0	456.4
	08-Jul-08	250	266	22	0.2	18,910	456.1	456.4
	08-Jul-08 FD	257	268	FD	FD	FD	FD	FD
MW-36-090	12-Jul-07	2.90	3.10	-135	0.0	6,530	454.9	455.5
	07-Aug-07	3.00	3.60	-44	0.1	4,100	454.3	454.4
	06-Sep-07	2.90	3.60	-60	0.2	3,800	454.1	454.4
	09-Oct-07	3.20	2.90	-30	0.1	3,832	453.4	453.5
	11-Mar-08	0.71	1.46	-54	0.2	2,918	454.0	454.9
	11-Mar-08 FD	0.703	1.24	FD	FD	FD	FD	FD
MW-36-100	12-Jul-07	180	219	-67	0.0	17,400	455.1	455.6
	07-Aug-07	159 J	187	-45	0.1	12,720	454.4	454.6

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, July 2007 through July 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters			Groundwater and River Elevations at Sampling Time	
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm	Groundwater Elevation salinity-adjusted feet MSL	River Elevation Downstream I-3 Station
Deep Wells								
MW-36-100	06-Sep-07	157	184	-141	0.1	13,700	454.2	454.3
	10-Oct-07	228	196	-27	0.1	14,740	453.9	454.1
	11-Mar-08	146	145	-170	0.2	14,550	454.2	454.8
MW-39-080	12-Jul-07	62.8	56.2	-12	0.0	16,600	454.7	455.0
	08-Aug-07	43.3	45.2	-39	1.1	11,078	455.0	454.2
	06-Sep-07	65.3	65.7	-45	0.1	13,000	454.0	454.0
	08-Oct-07	58.6	48.3	-10	0.1	13,529	453.6	453.5
	14-Mar-08	34.8	28.6	-63	0.4	14,220	454.1	455.2
MW-39-100	12-Jul-07	2020	2430	77	0.0	20,800	455.2	455.1
	07-Aug-07	1830	1780	---	0.7	19,340	454.6	454.3
	07-Sep-07	1660	1690	165	0.7	20,900	454.9	456.0
	10-Oct-07	1660	1840	87	0.2	22,110	454.3	454.5
	14-Mar-08	1150	1290	37	0.6	22,680	454.9	455.5
MW-43-075	02-Oct-07	ND (1.0)	ND (1.0)	-147	0.3	13,587	455.1	454.4
MW-43-090	02-Oct-07	ND (1.0)	ND (1.0)	-79	0.4	18,809	455.6	454.7
MW-44-115	10-Jul-07	919	1060	23	3.6	16,300	455.3	455.1
	06-Aug-07	834	924	-72	0.8	12,700	454.5	454.3
	05-Sep-07	872	850	4	0.2	13,300	454.3	453.9
	04-Oct-07	763	866	-72	0.1	12,519	454.4	454.3
	04-Oct-07 FD	783	830	FD	FD	FD	FD	FD
	13-Nov-07	766	890	-206	0.1	13,360	453.1	453.2
	13-Nov-07 FD	767	884	FD	FD	FD	FD	FD
	11-Dec-07	736	766	-60	0.1	13,420	453.0	452.1
	14-Jan-08	746	652	-48	0.1	13,550	452.9	453.0
	14-Feb-08	744	668	-48	0.1	14,300	455.1	457.1
	14-Feb-08 FD	735	706	FD	FD	FD	FD	FD
	11-Mar-08	742	596	-70	0.3	14,330	454.4	454.6
	07-Apr-08	685	689	100	0.8	13,480	455.4	455.8
	08-May-08	620	590	-2	0.1	14,330	455.4	455.1
	02-Jun-08	564	542	-142	0.1	13,811	454.9	455.3
	07-Jul-08	493	478	-108	0.2	13,570	455.3	455.7
MW-44-125	11-Jul-07	252	283	-94	0.0	17,000	456.3	456.2
	07-Aug-07	278	251	-37	0.1	11,700	455.7	455.8
	04-Sep-07	255	253	-70	0.1	11,200	455.0	454.2
	04-Oct-07	314	347	-15	0.1	12,049	455.0	454.5
	12-Nov-07	318	330	-295	0.1	13,300	453.5	452.6
	11-Dec-07	359	311	-61	0.1	14,030	452.7	452.1
	14-Jan-08	338	344	-55	0.1	13,630	453.6	453.2
	14-Feb-08	326	324	-82	0.1	13,760	455.5	457.1
	14-Mar-08	338	291	-112	0.1	13,430	455.5	455.6
	07-Apr-08	318	326	-6	0.3	10,272	455.7	455.5
	08-May-08	253	342	1	0.1	12,400	456.3	455.5

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, July 2007 through July 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters			Groundwater and River Elevations at Sampling Time	
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm	Groundwater Elevation salinity-adjusted feet MSL	River Elevation Downstream I-3 Station
Deep Wells								
MW-44-125	24-Jun-08	293	339	-77	0.0	17,300	456.7	456.7
	07-Jul-08	281	291	-155	0.2	13,860	455.5	455.2
MW-46-175	13-Jul-07	103	101	-254	0.0	20,900	456.1	455.8
	06-Aug-07	94.0	98.9	-100	0.1	16,100	455.4	454.5
	04-Sep-07	88.1	94.8	-188	0.1	16,800	455.6	454.7
	05-Oct-07	100	86.7	-96	0.1	16,392	455.4	455.2
	13-Nov-07	104	95.0	-292	0.1	17,300	453.7	452.9
	13-Dec-07	123	128	-202	0.0	17,510	453.0	452.3
	14-Jan-08	51.5	133	-159	0.1	17,520	453.6	452.9
	13-Feb-08	125	136	-146	0.1	18,300	454.1	454.5
	13-Mar-08	99.8	92.8	-174	0.1	18,300	455.3	455.6
	07-Apr-08	95.6	100	-52	0.2	17,588	455.7	455.4
	07-May-08	77.9	74.7	-121	0.1	18,470	455.1	453.6
	02-Jun-08	74.2	86.8	-225	0.1	18,176	455.6	455.5
	02-Jun-08 FD	73.6	87.0	FD	FD	FD	FD	FD
	08-Jul-08	75.3	83.4	-192	0.1	17,700	455.8	455.7
MW-46-205	05-Oct-07	3.70	4.60	2	0.1	20,051	455.7	454.8
	14-Dec-07	3.50	4.20	-12	0.1	21,470	453.6	452.8
	13-Mar-08	5.21	5.20	91	0.1	22,360	455.7	455.8
	07-May-08	4.52	4.25	57	0.1	22,620	455.8	453.8
MW-49-135	10-Oct-07	ND (1.0)	2.80	-37	1.3	14,690	455.2	453.6
	13-Mar-08	ND (1.0)	1.43	-82	8.4	14,430	455.3	454.7
MW-49-275	09-Oct-07	ND (1.0)	ND (1.0)	-178	0.1	26,890	456.3	454.1
	13-Mar-08	ND (1.0)	1.27	-191	0.1	26,350	455.9	454.7
MW-49-365	09-Oct-07	ND (2.0)	ND (1.0)	-158	0.1	41,790	458.1	454.6
	13-Mar-08	ND (1.0)	ND (1.0)	-207	0.1	40,600	457.5	454.8
MW-52D	12-Jul-07	ND (1.0)	ND (1.0)	-247	3.1	26,700	---	455.8
	08-Aug-07	ND (1.0)	ND (1.0)	-189	1.2	19,157	---	455.2
	05-Sep-07	ND (1.0)	ND (1.0)	-201	0.3	21,300	---	454.5
	11-Oct-07	ND (1.0)	ND (1.0)	-201	1.2	25,600	---	453.9
	17-Dec-07	ND (1.0)	ND (1.0)	-280	0.0	24,100	---	453.5
	13-Mar-08	ND (1.0)	ND (1.0)	-142	0.1	22,190	---	455.3
	07-May-08	ND (1.0)	ND (1.0)	-192	0.9	24,050	---	453.7
MW-52M	12-Jul-07	ND (1.0)	ND (1.0)	-246	3.0	20,800	---	455.6
	08-Aug-07	ND (1.0)	ND (1.0)	-161	0.6	15,989	---	455.5
	08-Aug-07 FD	ND (1.0)	ND (1.0)	FD	FD	FD	FD	FD
	05-Sep-07	ND (1.0)	ND (1.0)	-171	0.2	16,900	---	454.7
	11-Oct-07	ND (1.0)	ND (1.0)	-164	0.2	18,170	---	454.0
	17-Dec-07	ND (1.0)	ND (1.0)	-240	0.0	21,200	---	453.4
	13-Mar-08	ND (1.0)	ND (1.0)	-220	0.2	17,460	---	455.1
	07-May-08	ND (1.0)	ND (1.0)	-230	0.0	20,800	---	453.7
MW-53D	12-Jul-07	ND (1.0)	ND (1.0)	-270	2.9	33,700	---	455.3

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, July 2007 through July 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters			Groundwater and River Elevations at Sampling Time	
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm	Groundwater Elevation salinity-adjusted feet MSL	River Elevation Downstream I-3 Station
Deep Wells								
MW-53D	08-Aug-07	ND (1.0)	ND (1.0)	-237	1.4	25,312	---	454.7
	05-Sep-07	ND (1.0)	ND (1.0)	-200	1.8	27,000	---	455.1
	05-Sep-07 FD	ND (1.0)	ND (1.0)	FD	FD	FD	FD	FD
	11-Oct-07	ND (2.0)	2.30 J	-159	0.3	28,930	---	454.4
	11-Oct-07 FD	ND (1.0)	ND (1.0) J	FD	FD	FD	FD	FD
	17-Dec-07	ND (1.0)	ND (1.0)	-283	0.0	30,000	---	453.2
	13-Mar-08	ND (1.0)	ND (1.0)	-241	0.4	27,630	---	454.7
	07-May-08	ND (1.0)	ND (1.0)	-160	0.0	37,300	---	453.6
MW-53M	12-Jul-07	ND (1.0)	ND (1.0)	-171	3.5	20,100	---	455.1
	08-Aug-07	ND (1.0)	ND (1.0)	-188	6.1	16,339	---	454.7
	05-Sep-07	ND (1.0)	ND (1.0)	-135	2.2	17,300	---	454.9
	11-Oct-07	ND (1.0)	ND (1.0)	-160	7.4	21,500	---	454.3
	17-Dec-07	ND (1.0)	ND (1.0)	-176	0.0	22,000	---	453.2
	13-Mar-08	ND (1.0)	ND (1.0)	-140	6.9	18,890	---	454.7
	07-May-08	ND (1.0)	ND (1.0)	-167	1.7	20,940	---	453.6

NOTES:

ND = not detected at listed reporting limit (RL)
FD = field duplicate
MSL = mean sea level
LF = lab filtered
J = concentration or RL estimated by laboratory or data validation
(---) = data not collected, available, rejected, or field instrumentation malfunctioned
µg/L= micrograms per liter
mV = oxidation-reduction potential (ORP)
µS/cm = microSiemens per centimeter

Samples taken after February 1, 2008, were field filtered due to the approved change from analysis method 7199 to 218.6 for Cr(VI) analyses (DTSC, 2008b).

Beginning in July 2005, samples analyzed for total chromium by EPA Method 6010B or 6020 were filtered and preserved in the field after sample collection, as per DTSC's June 30, 2005 letter.

The RLs for certain hexavalent chromium results from Method 7199 analyses have been elevated above the standard RL of 0.2 µg/L due to required sample dilution to accommodate matrix interferences.

Groundwater and river elevations in feet above mean sea level (MSL) rounded to 0.1 foot. River elevations from presssure transducer record at I-3.

Refer to table footnotes for data qualifier explanation.

TABLE B-2
Groundwater Sampling Results for Other Monitoring Wells in PMP Area, July 2007 through July 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Well ID	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters		
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm
Shallow Zone						
MW-12	04-Oct-07	2830	2700	15.6	5.76	5820
	04-Oct-07 FD	2970	2800	FD	FD	FD
	13-Dec-07	2530	2930	-14.1	6.15	5740
	10-Mar-08	2760	2860	-51.3	7.58	5980
	05-May-08	2580	2800	-7.0	6.43	6780
MW-19	05-Oct-07	1390	1510	33.9	6.67	2260
MW-20-070	11-Oct-07	2400	2140	147	9.14	3230
	12-Mar-08	2580	2260	86.1	7.91	3210
MW-21	04-Oct-07	ND (5.0)	ND (1.0)	18.0	0.98	15200
	11-Dec-07	ND (1.0)	ND (1.0)	80.7	1.71	14500
	11-Mar-08	ND (1.0)	1.80	-81.9	0.49	14100
	06-May-08	ND (1.0)	3.01	-84.9	0.68	15100
MW-22	10-Oct-07	ND (1.0)	ND (1.0)	-72	0.21	28500
	17-Dec-07	---	1.50	-129	0.00	33500
	11-Mar-08	ND (1.0)	ND (1.0)	-93.5	2.29	30800
	29-Jul-08	---	ND (1.0)	---	---	---
MW-24A	12-Dec-07	---	3300	145	1.96	2950
	12-Mar-08	---	2000	-201	0.20	9760
	08-May-08	---	10.0	-367	0.28	11300
MW-25	02-Oct-07	895	805	33.0	6.67	1320
	02-Oct-07 FD	933	884	FD	FD	FD
MW-26	02-Oct-07	3510	3740	25.0	6.90	3790
	11-Dec-07	---	2980	148	4.89	3870
	12-Mar-08	2980	2560	180	3.90	4380
	12-Mar-08 FD	2720	2640	FD	FD	FD
	05-May-08	---	2600	9.10	19.1	4220
MW-31-060	04-Oct-07	726 J	669	94.4	6.10	3040
MW-35-060	01-Oct-07	24.8	21.3	52.2	0.80	7430
	01-Oct-07 FD	24.8	20.6	FD	FD	FD
	11-Mar-08	35.8	35.4	-181	0.94	6930
MW-47-055	04-Oct-07	61.9	59.2	50.6	2.50	3880
	12-Dec-07	152	134	30.3	2.15	4040
	14-Feb-08	37.1	39.0	5.00	2.42	4450
	14-Feb-08 FD	37.2	39.4	FD	FD	FD
	14-Mar-08	53.7	46.1	84.9	2.82	3840
	14-Mar-08 FD	48.4	42.6	FD	FD	FD
	07-May-08	34.8	32.7	-0.1	2.20	4350
TW-02S	04-Oct-07	1250	1220	9.00	4.80	4830
Middle Zone						
MW-20-100	10-Oct-07	9000	10700	55.2	4.75	3980
	12-Mar-08	9690	7910	96.2	2.95	3770

TABLE B-2
Groundwater Sampling Results for Other Monitoring Wells in PMP Area, July 2007 through July 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Well ID	Sample Date	Hexavalent Chromium µg/L	Dissolved Total Chromium µg/L	Selected Field Parameters		
				ORP mV	Dissolved Oxygen mg/L	Specific Conductance µS/cm
MW-50-095	04-Oct-07	217	216	68.0	2.00	5320
	11-Dec-07	173	163	83.5	2.30	5120
	12-Mar-08	150	160	80.4	2.29	5160
	12-Mar-08 FD	148	160	FD	FD	FD
	07-May-08	154	187	-53	2.34	5630
	07-May-08 FD	164	192	FD	FD	FD
MW-51	05-Oct-07	4500	4340	127	2.20	10600
	11-Dec-07	---	4460	89.0	3.78	10900
	11-Mar-08	4940	4590	-70.6	0.97	12300
	08-May-08	---	4600	74.9	1.78	12700
Deep Wells						
MW-20-130	05-Oct-07	12200	13000	80.3	1.60	12100
	12-Mar-08	13300	11300	101	1.75	8850
MW-31-135	01-Oct-07	33.2	29.4	14.4	0.80	10000
MW-35-135	01-Oct-07	32.4	28.9	37.6	0.60	9470
MW-47-115	04-Oct-07	11.6	12.2	63.4	0.20	13000
	12-Dec-07	10.3	10.9	52.8	0.10	15000
	12-Dec-07 FD	10.5	11.3	FD	FD	FD
	14-Mar-08	18.0	16.5	57.8	0.23	13500
	07-May-08	18.2	18.3	-37.2	0.24	14200
MW-50-200	04-Oct-07	9430	9780	70.0	4.30	24100
	11-Dec-07	8930	9340	123	2.86	21300
	12-Mar-08	10900	11800	101	1.29	21800
	08-May-08	10500	11000	47.9	2.86	23800
TW-02D	04-Oct-07	210	228	18.0	1.30	6970
TW-04	03-Oct-07	33.4	32.2	21.6	0.10	20300
	03-Oct-07 FD	33.6	32.7	FD	FD	FD
	12-Dec-07	26.1	23.2	78.1	0.05	21900
	14-Mar-08	27.4	28.4	16.4	0.13	22000
	08-May-08	22.6	23.2	-107	0.13	22700
TW-05	04-Oct-07	6.60	7.50	53.0	0.40	16800

TABLE B-2
Groundwater Sampling Results for Other Monitoring Wells in PMP Area, July 2007 through July 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

NOTES:

Analytical results are validated.
ND = not detected at listed reporting limit (RL)
FD = field duplicate
(---) = data not collected, available, or field instrumentation malfunctioned
µg/L= micrograms per liter
mg/L = milligrams per liter
mV = oxidation-reduction potential (ORP)
µS/cm = microSiemens per centimeter

PMP = Interim Measure Performance Monitoring Program

Samples taken after February 1, 2008, were field filtered due to the approved change from analysis method 7199 to 218.6 for Cr(VI) analyses (DTSC, 2008b).

Samples analyzed for total chromium by EPA Method 6010B or 6020 were filtered and preserved in the field after sample collection, as per DTSC's June 30, 2005 letter.

Monitoring wells MW-24A, MW-24B were excluded from the sampling program during the uplands in-situ pilot study.

Appendix C
Hydraulic Data for Reporting Period

TABLE C-1
Average Monthly and Quarterly Groundwater Elevations, May through July 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Well ID	Aquifer Zone	May 2008	June 2008	July 2008	Quarter Average	Days in Quarter Average
I-3	River Station	456.37	456.45	455.98	456.27	89
MW-10	Shallow Zone	456.89	457.02	457.02	456.98	89
MW-19	Shallow Zone	456.28	456.23	456.04	456.18	92
MW-20-070	Shallow Zone	455.08	455.02	454.83	454.98	92
MW-20-100	Middle Zone	454.67	454.60	454.40	454.56	92
MW-20-130	Deep Wells	454.32	454.28	454.08	454.23	92
MW-22	Shallow Zone	455.71	455.74	455.60	455.68	64
MW-25	Shallow Zone	456.40	456.38	456.28	456.35	92
MW-26	Shallow Zone	458.64	461.20	462.00	460.59	91
MW-27-020	Shallow Zone	456.24	456.17	455.78	456.07	90
MW-27-060	Middle Zone	456.23	456.19	455.80	456.08	90
MW-27-085	Deep Wells	455.81	456.18	455.83	455.99	64
MW-28-025	Shallow Zone	456.31	456.27	455.85	456.15	89
MW-28-090	Deep Wells	456.26	456.25	455.85	456.13	89
MW-30-050	Middle Zone	455.98	455.92	455.57	455.83	89
MW-31-060	Shallow Zone	455.93	455.86	455.64	455.81	91
MW-31-135	Deep Wells	455.32	455.23	455.02	455.19	91
MW-32-020	Shallow Zone	456.02	455.88	455.61	455.84	89
MW-32-035	Shallow Zone	456.00	455.89	455.54	455.82	89
MW-33-040	Shallow Zone	456.17	456.15	455.85	456.06	89
MW-33-090	Middle Zone	458.98	463.76	456.00	458.47	69
MW-33-150	Deep Wells	456.40	456.41	456.13	456.32	89
MW-33-210	Deep Wells	456.37	456.33	456.06	456.26	89
MW-34-055	Middle Zone	456.31	456.29	455.90	456.17	90
MW-34-080	Deep Wells	456.17	456.12	455.62	455.98	90
MW-34-100	Deep Wells	456.02	455.95	455.61	455.86	90
MW-35-060	Shallow Zone	456.74	456.66	456.34	456.59	89
MW-35-135	Deep Wells	456.86	456.80	456.63	456.76	89
MW-36-020	Shallow Zone	456.16	456.08	455.73	455.99	90
MW-36-040	Shallow Zone	456.08	456.01	455.65	455.92	90
MW-36-050	Middle Zone	456.04	455.99	455.63	455.89	90
MW-36-070	Middle Zone	455.94	455.86	455.50	455.77	90
MW-36-090	Deep Wells	455.16	455.08	454.79	455.01	90
MW-36-100	Deep Wells	455.35	455.32	455.04	455.24	90
MW-39-040	Shallow Zone	455.86	455.80	455.45	455.71	89
MW-39-050	Middle Zone	455.69	455.63	455.29	455.54	89
MW-39-060	Middle Zone	455.89	456.63	457.42	456.62	89
MW-39-070	Middle Zone	455.19	455.08	454.79	455.03	89
MW-39-080	Deep Wells	455.27	455.19	454.89	455.12	89
MW-39-100	Deep Wells	455.67	455.64	455.39	455.57	89
MW-42-030	Shallow Zone	455.61	455.51	455.18	455.44	89
MW-42-055	Middle Zone	455.74	455.67	455.32	455.58	89
MW-42-065	Middle Zone	455.93	455.87	455.53	455.79	89
MW-43-025	Shallow Zone	456.31	456.27	455.84	456.15	90
MW-43-075	Deep Wells	456.76	456.79	456.45	456.67	90
MW-43-090	Deep Wells	456.64	456.62	456.20	456.49	90
MW-44-070	Middle Zone	456.19	456.09	455.79	456.03	90
MW-44-115	Deep Wells	455.34	455.59	455.38	455.48	63

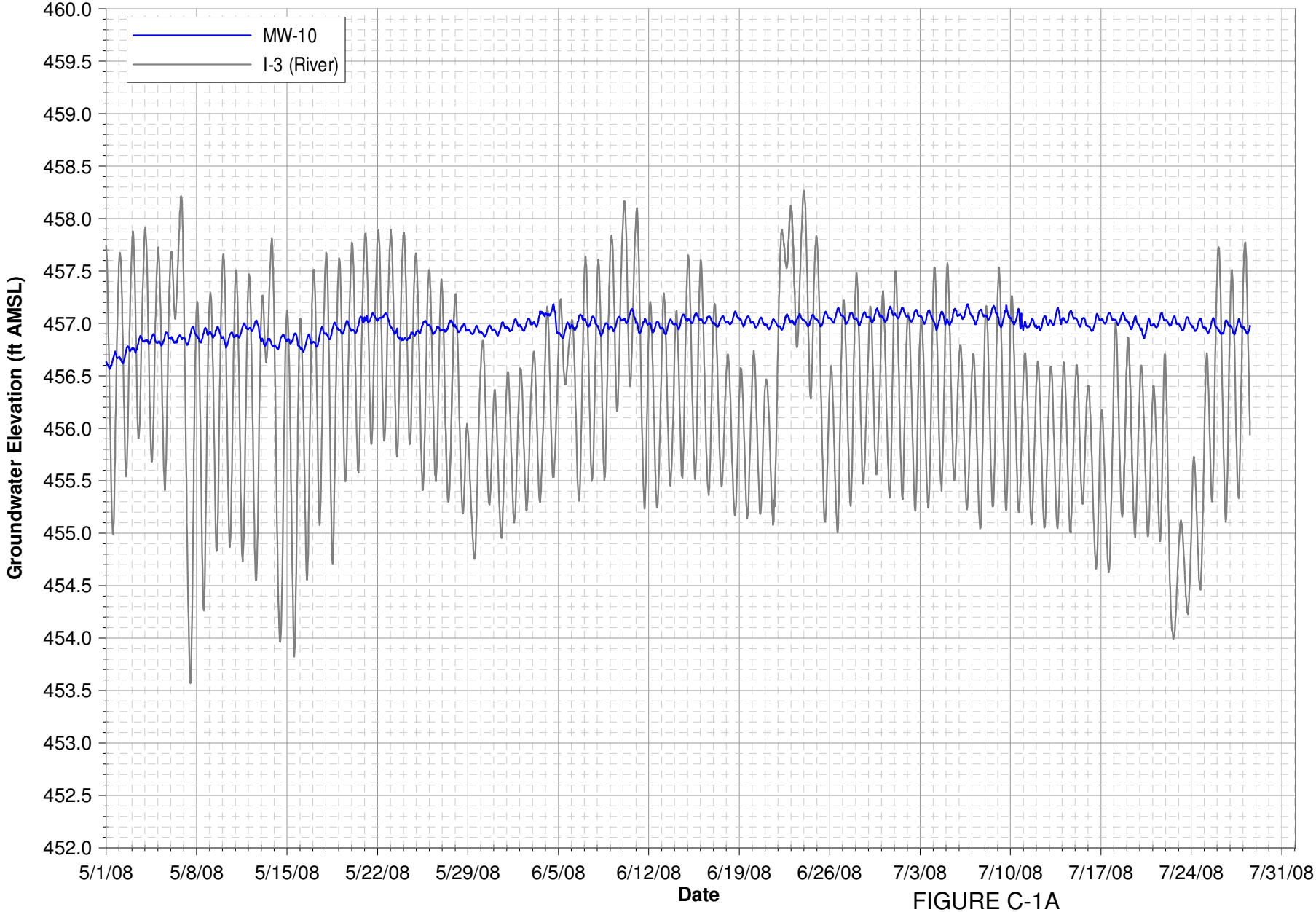
TABLE C-1
Average Monthly and Quarterly Groundwater Elevations, May through July 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Well ID	Aquifer Zone	May 2008	June 2008	July 2008	Quarter Average	Days in Quarter Average
MW-44-125	Deep Wells	456.16	456.14	455.79	456.03	90
MW-45-095a	Deep Wells	454.81	454.64	454.45	454.63	90
MW-46-175	Deep Wells	456.01	456.21	455.90	456.04	89
MW-46-205	Deep Wells	456.36	456.52	456.24	456.38	63
MW-47-055	Shallow Zone	456.50	456.40	456.12	456.35	89
MW-47-115	Deep Wells	456.53	456.49	456.25	456.43	89
MW-49-135	Deep Wells	456.60	456.58	456.26	456.49	89
MW-49-275	Deep Wells	456.96	456.94	456.70	456.87	89
MW-49-365	Deep Wells	458.40	458.39	458.17	458.32	89
MW-50-095	Middle Zone	456.06	456.04	455.84	455.98	91
MW-50-200	Deep Wells	456.15	456.16	456.00	456.10	91
MW-51	Middle Zone	455.99	456.00	455.92	455.97	91
PT2D	Deep Wells	454.94	454.85	454.56	454.79	90
PT5D	Deep Wells	455.22	455.14	454.84	455.07	90
PT6D	Deep Wells	455.37	455.31	455.04	455.25	90
RRB	River Station	457.00	457.11	456.73	456.95	91

NOTES

Averages include data collected from May 2008 through July 2008

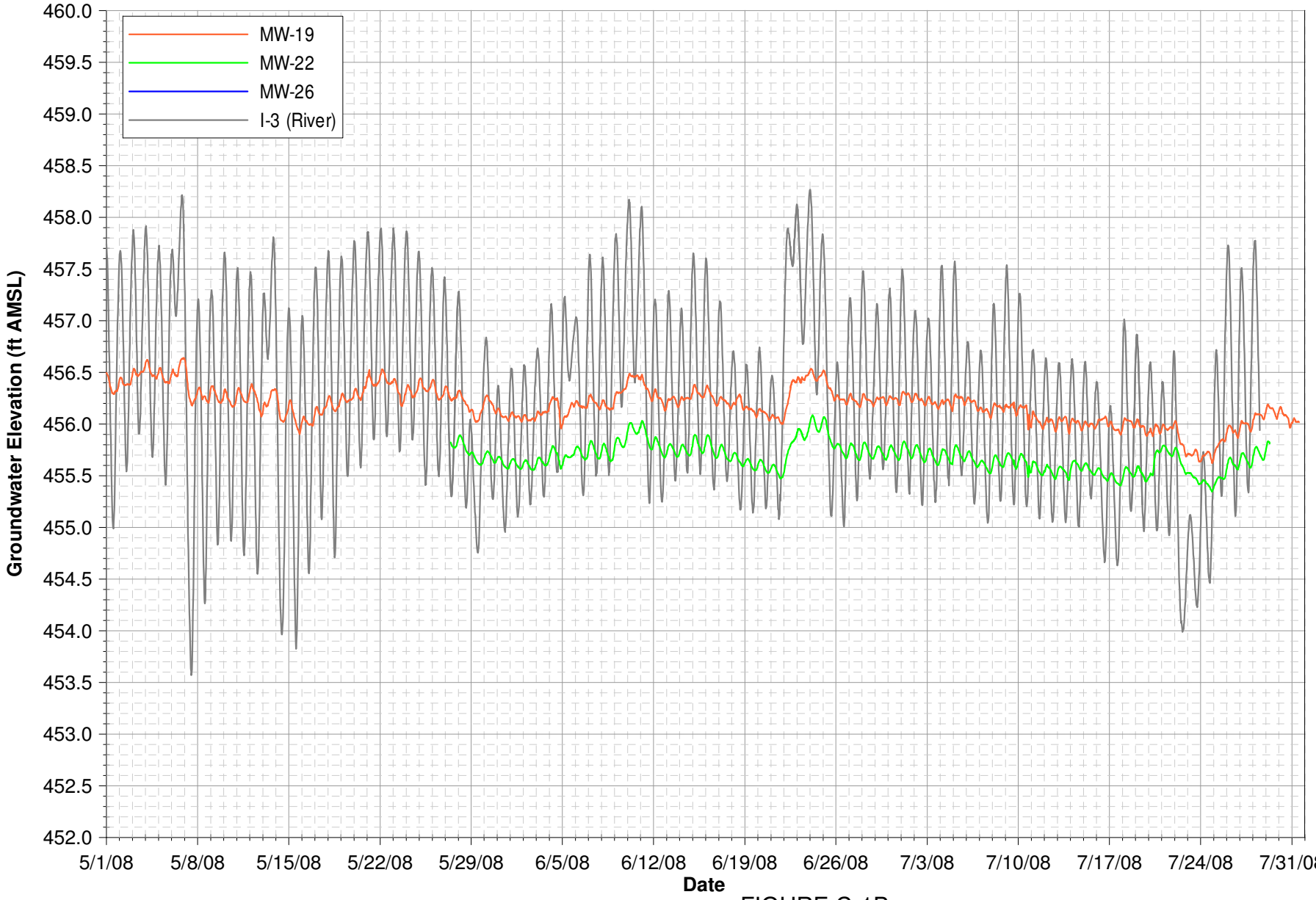
Averages reported in ft AMSL (feet above mean sea level)



Note:
Data subject to review.

FIGURE C-1A
MW-10 HYDROGRAPH
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

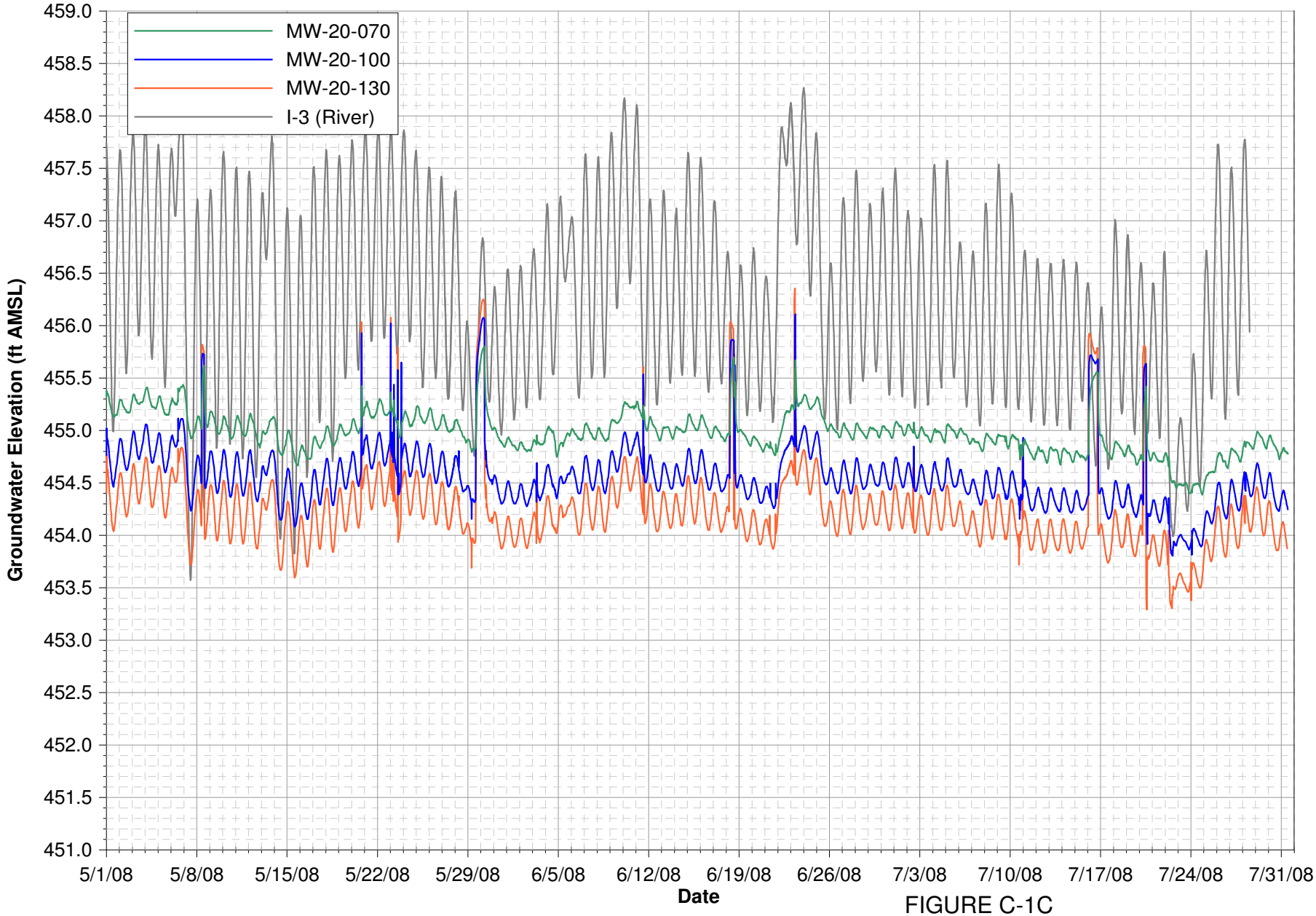
CH2MHILL



Notes:
Data subject to review.
MW-22 data unavailable from 4/30/2008 to 5/27/2008
MW-26 data unavailable from 5/1/08 to present.

FIGURE C-1B
MW-19, MW-22, AND MW-26 HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

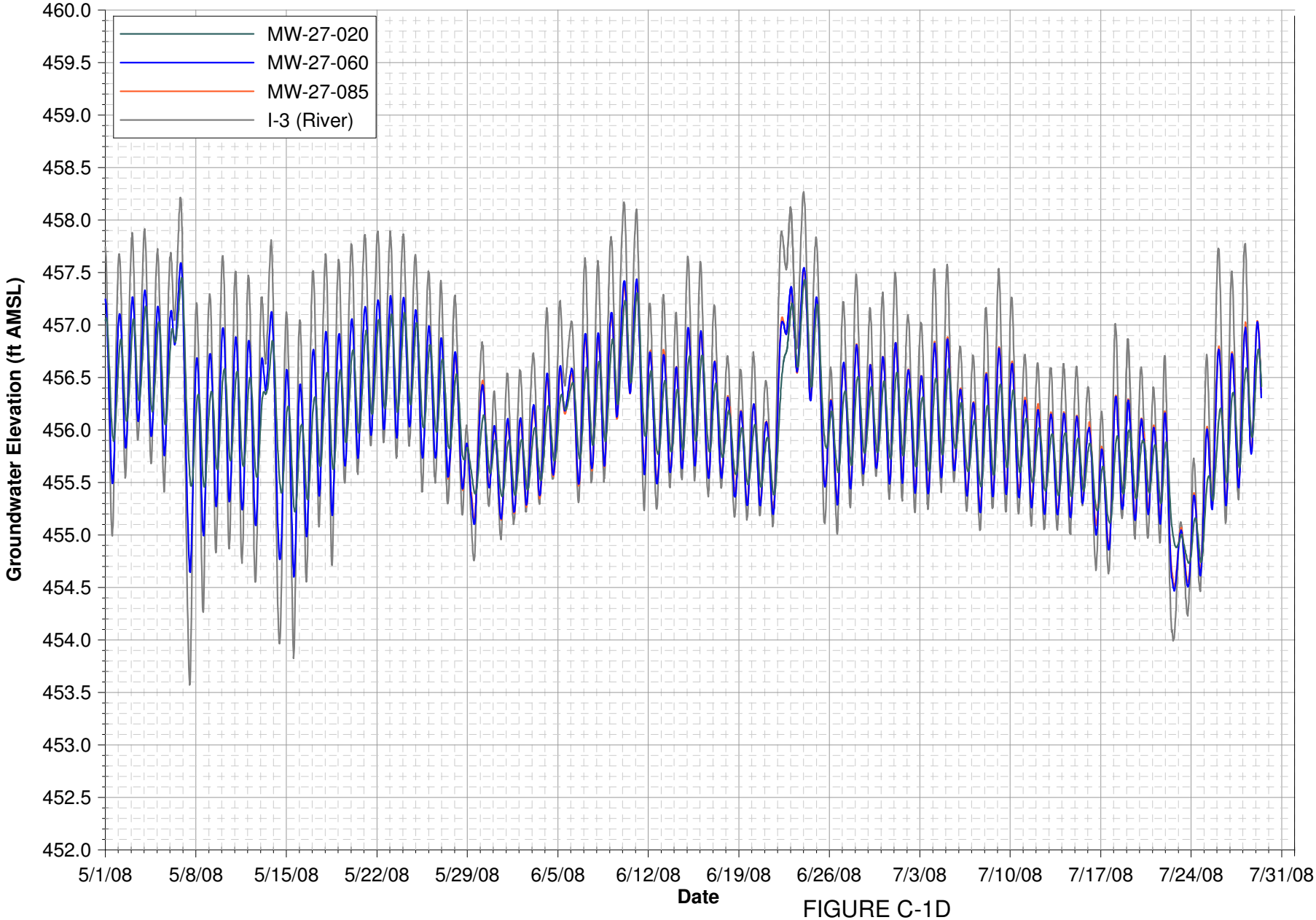
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1C
MW-20 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG& E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

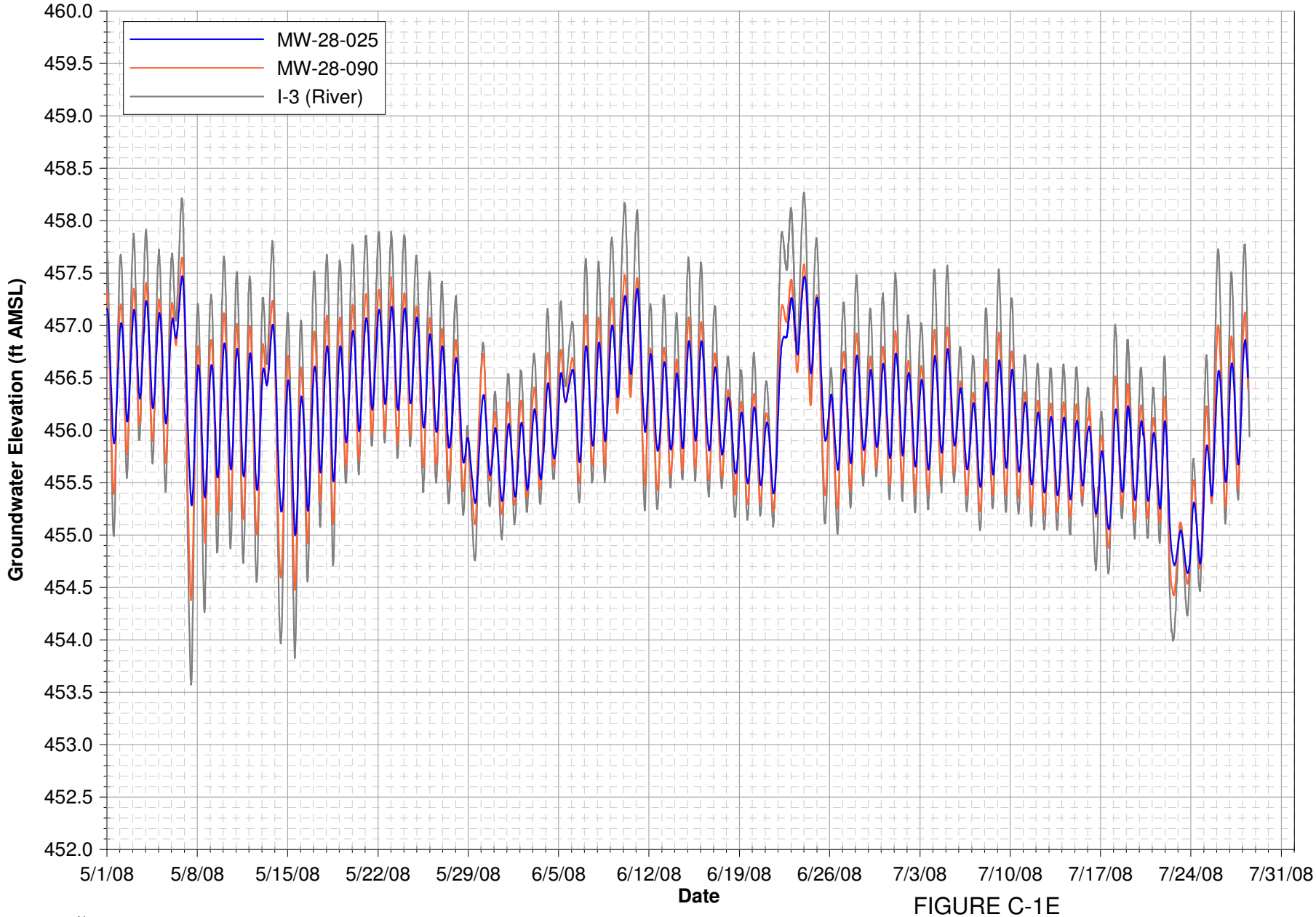
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1D
MW-27 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

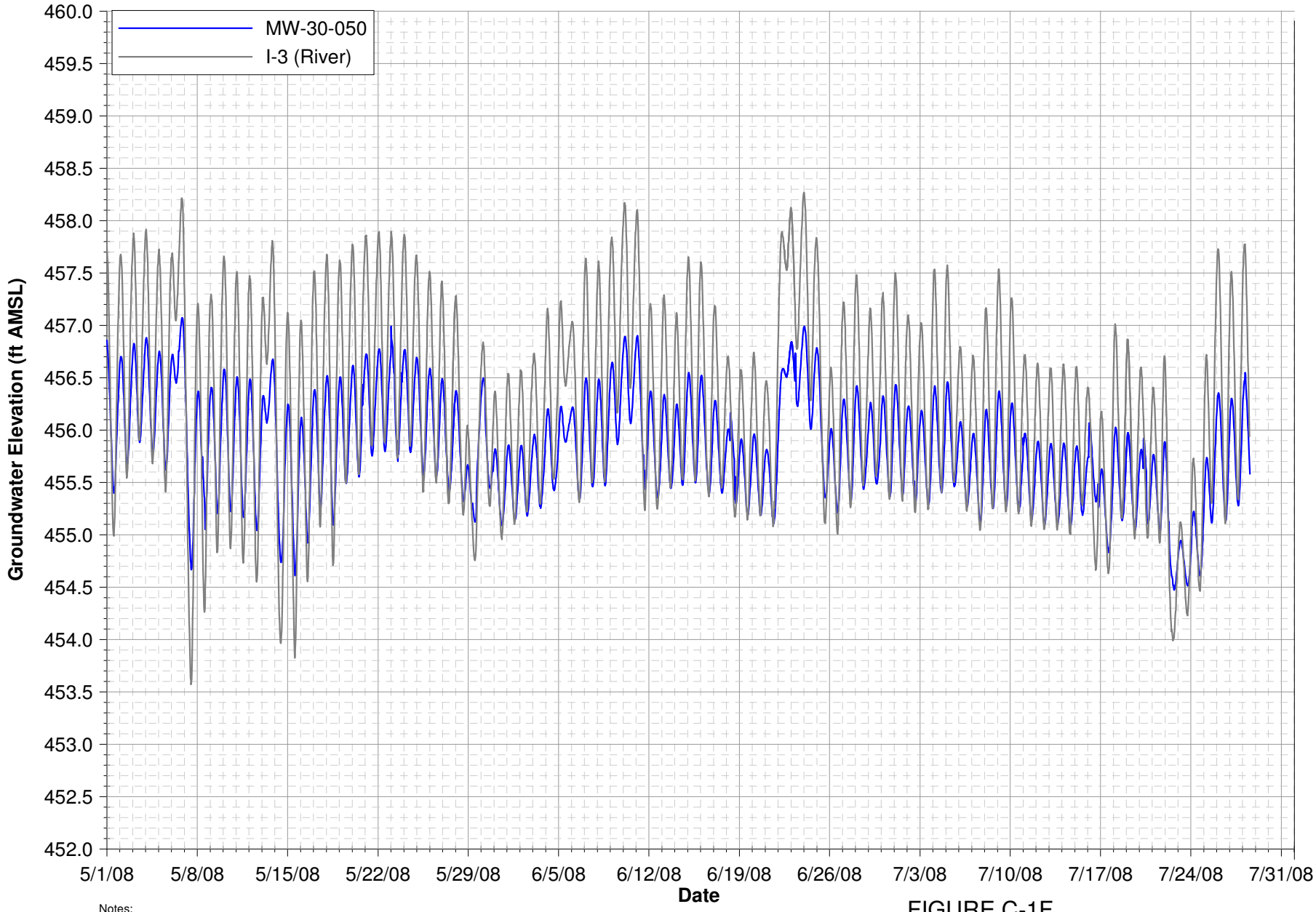
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1E
MW-28 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

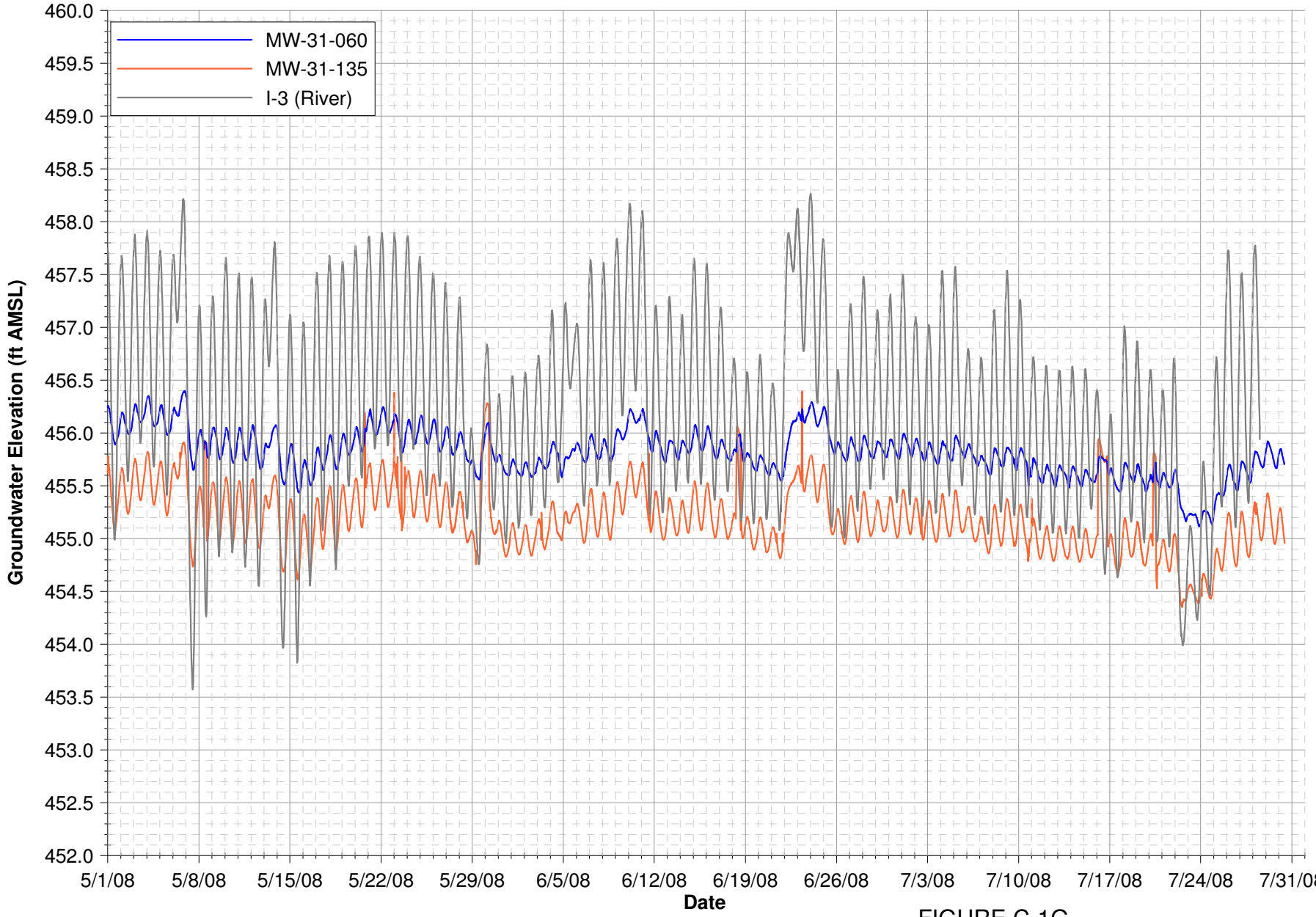
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1F
MW-30-50 WELL HYDROGRAPH
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

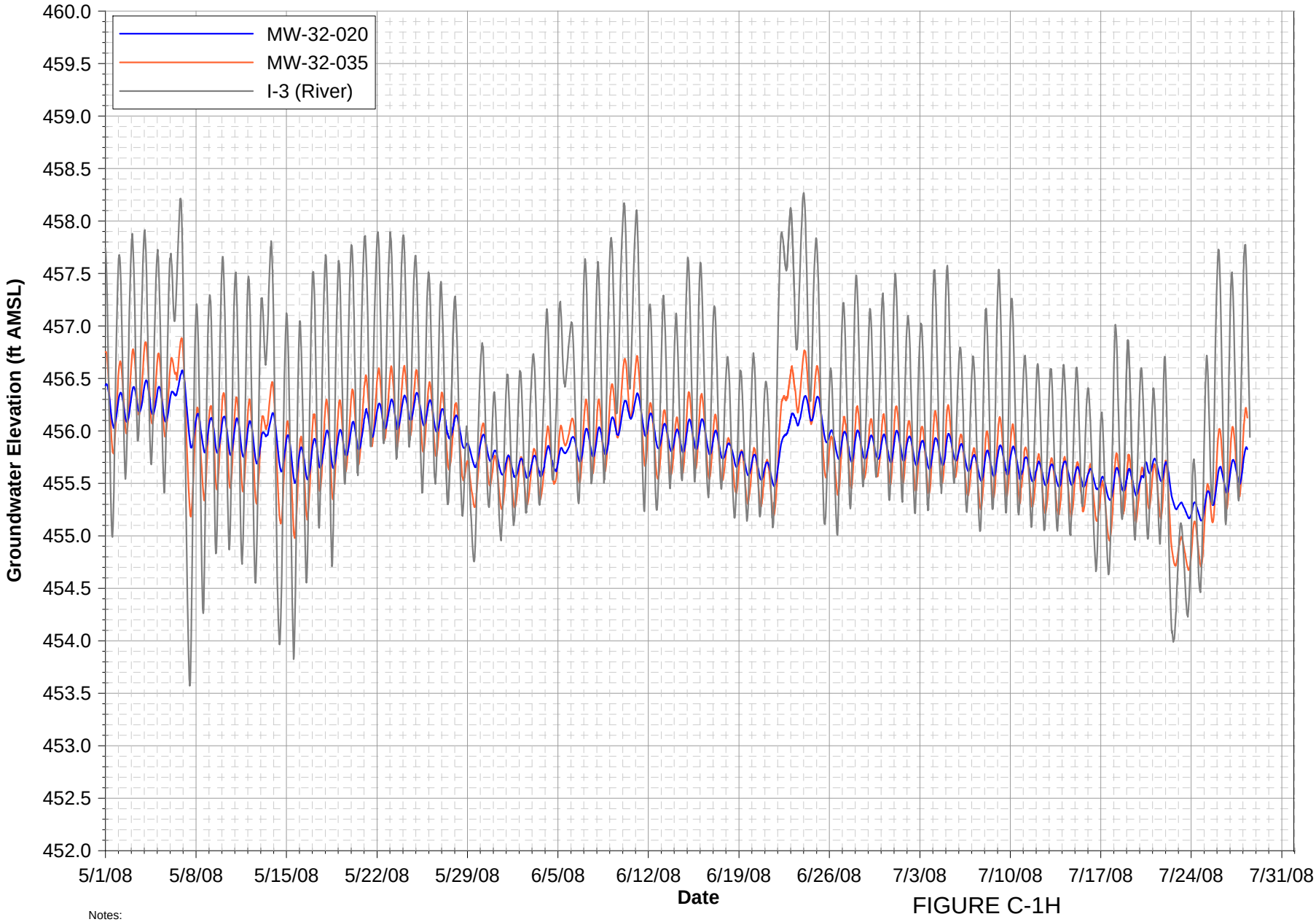
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1G
MW-31 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

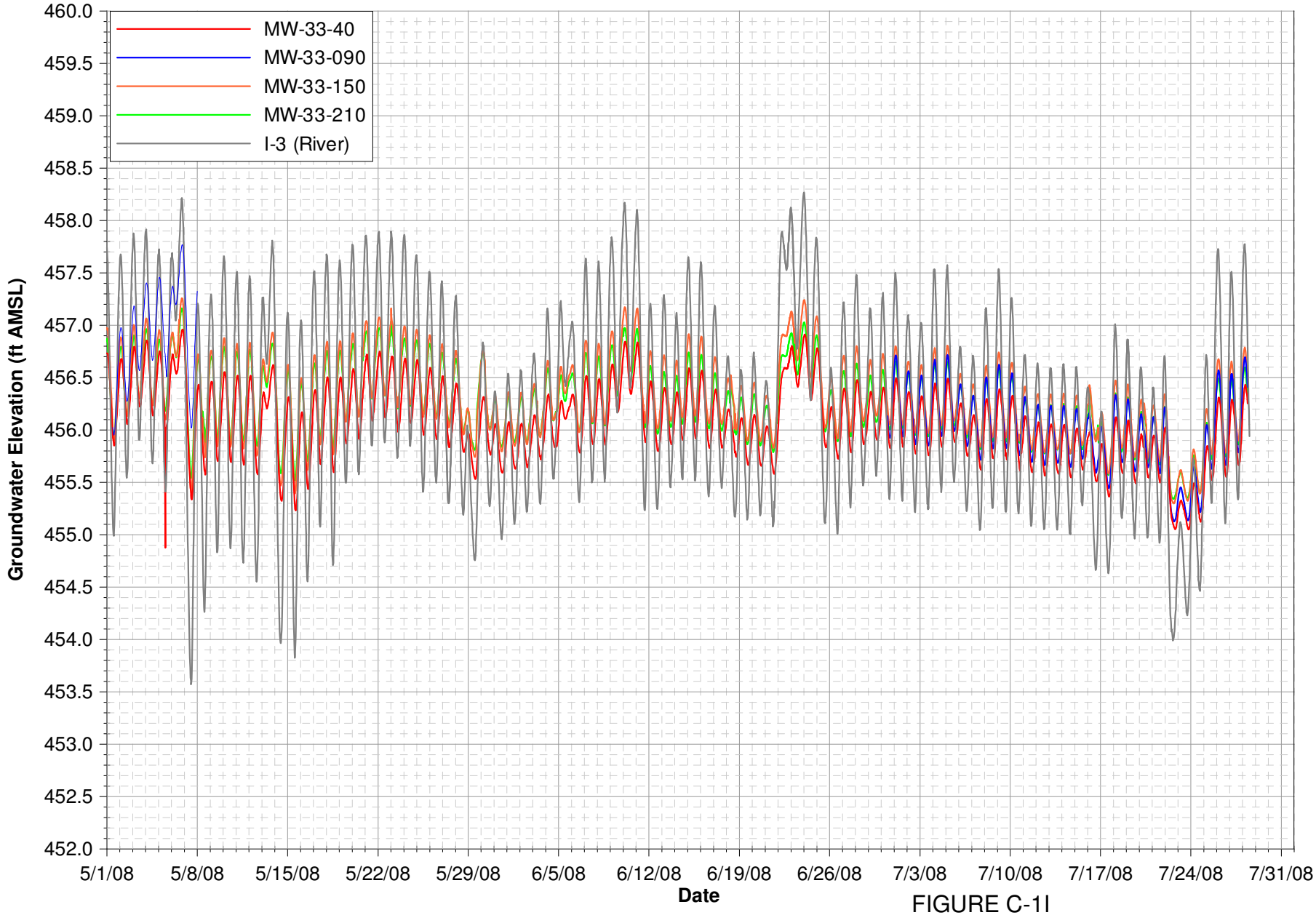
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1H
MW-32 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

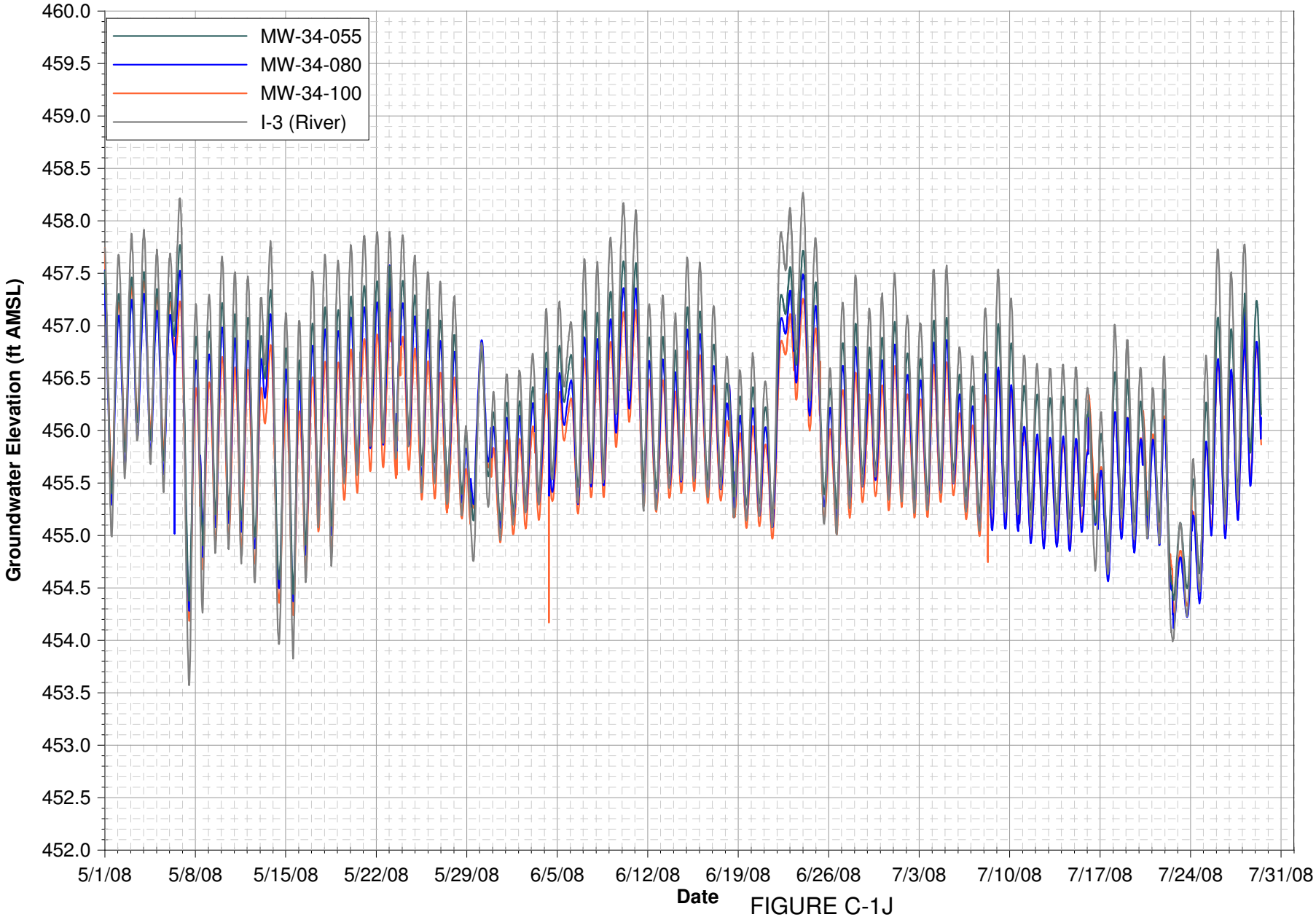
CH2MHILL



Notes:
Data subject to review.
MW-33-090 data unavailable from 5/8/08 to present

FIGURE C-1I
MW-33 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

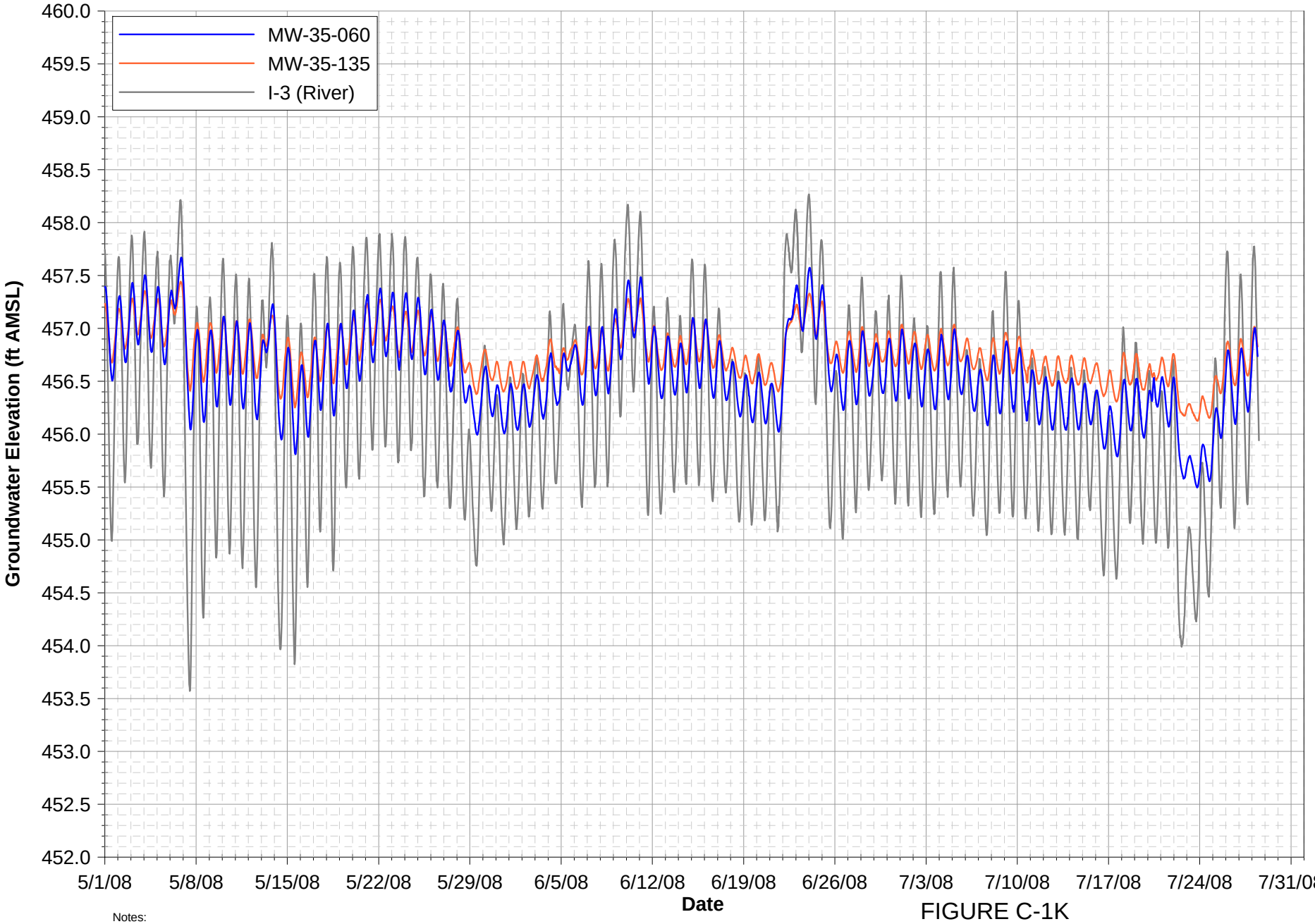
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1J
MW-34 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

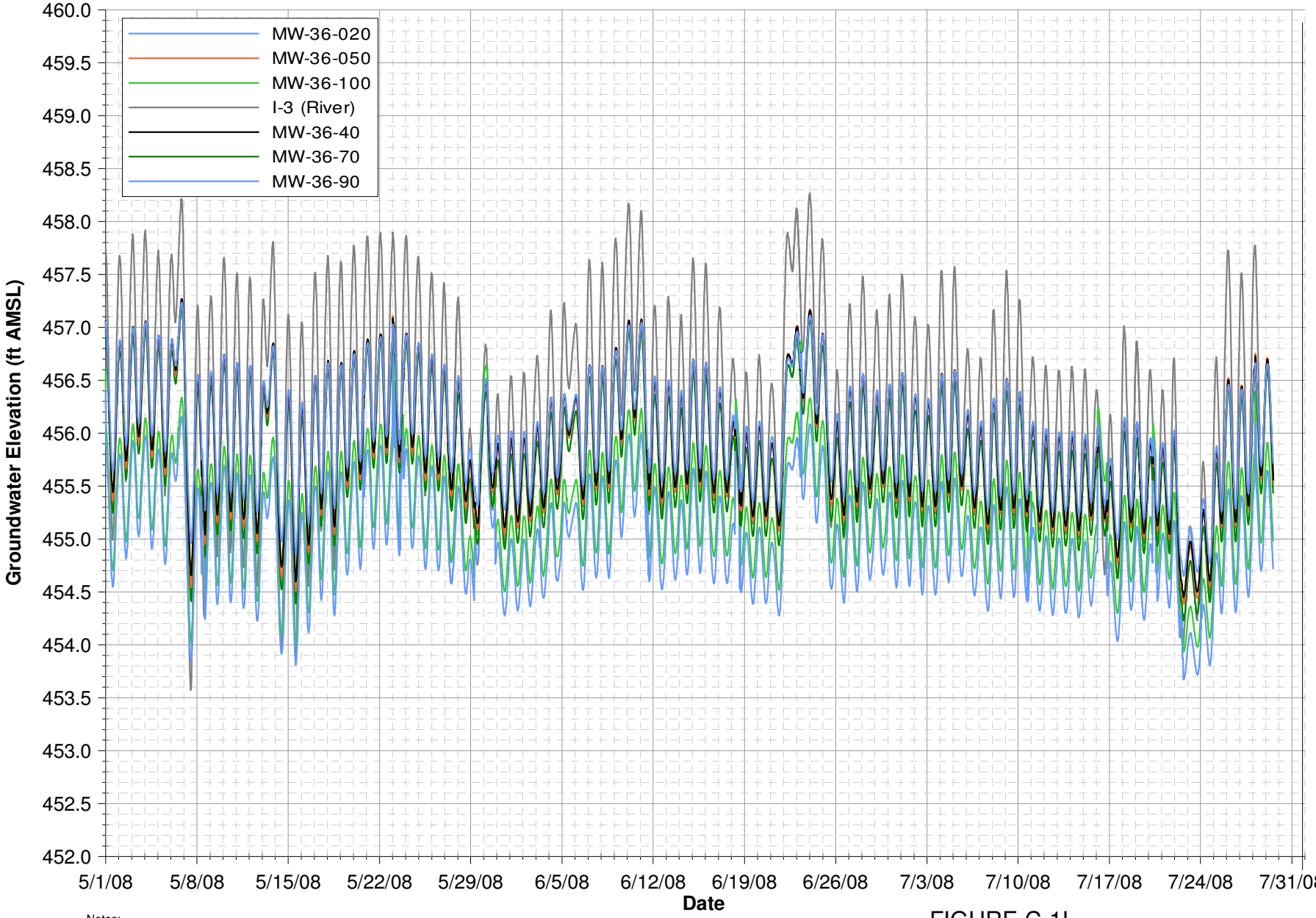
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1K
MW-35 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

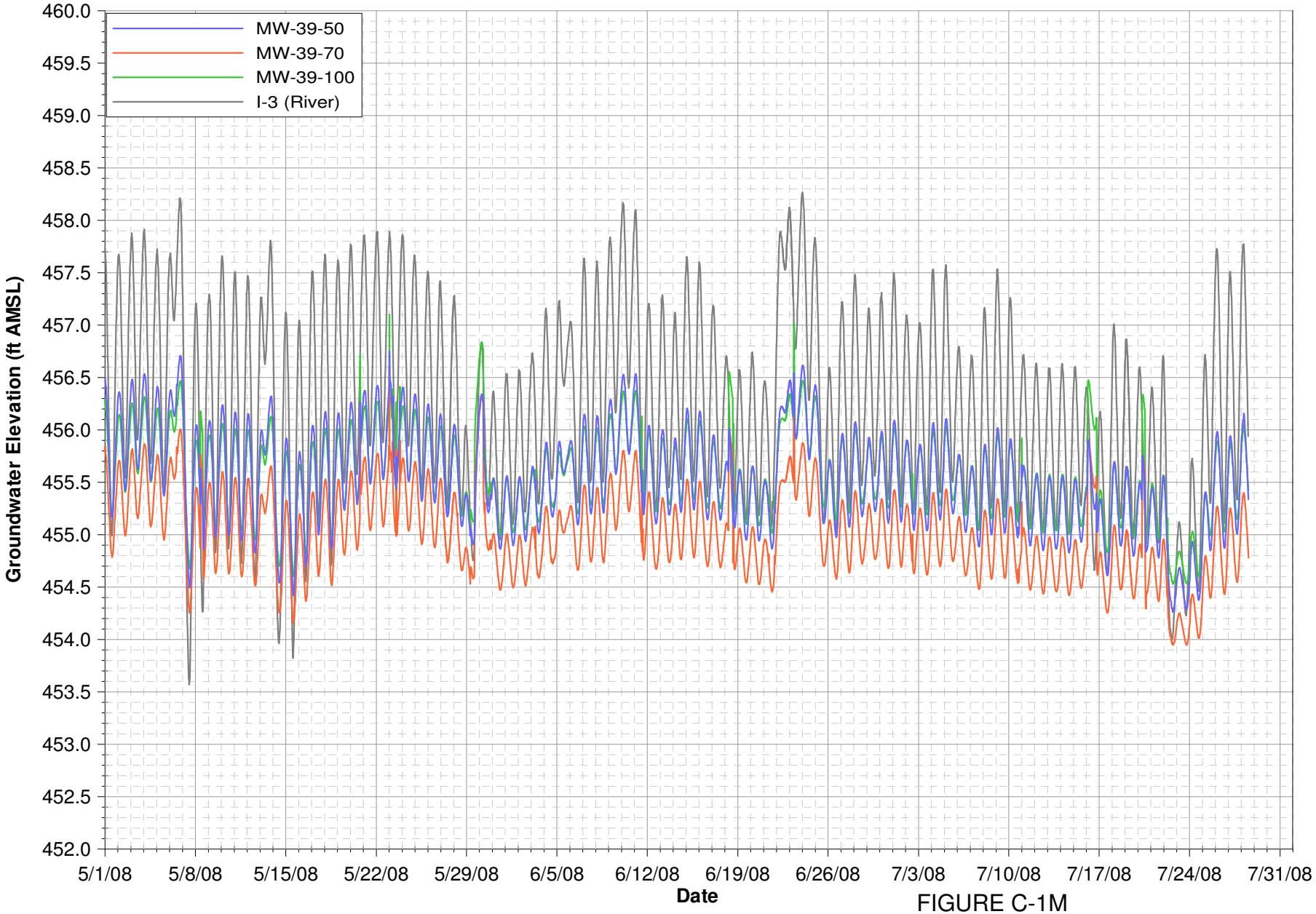
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1L
MW-36 CLUSTER
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

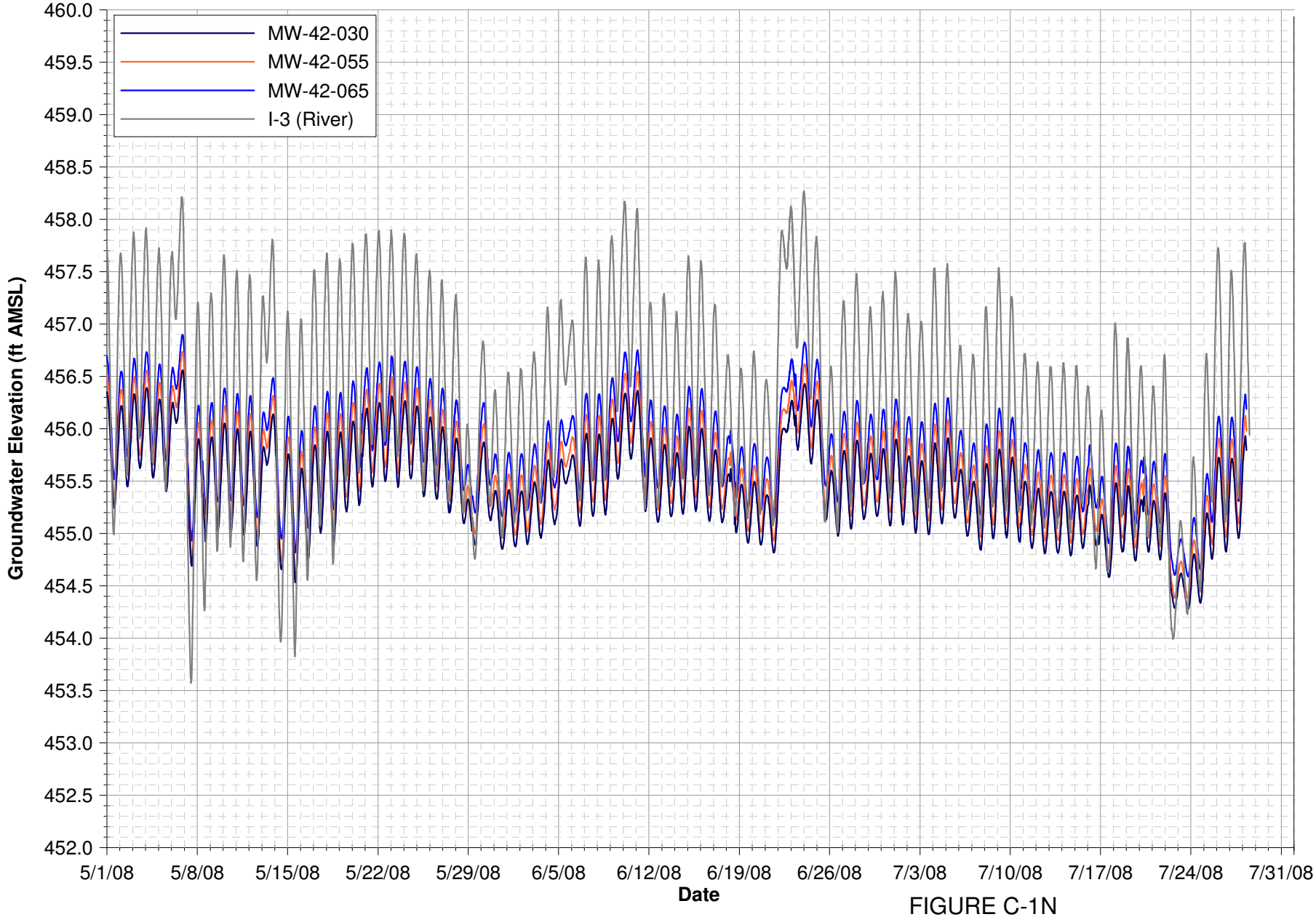
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1M
MW-39 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG & E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

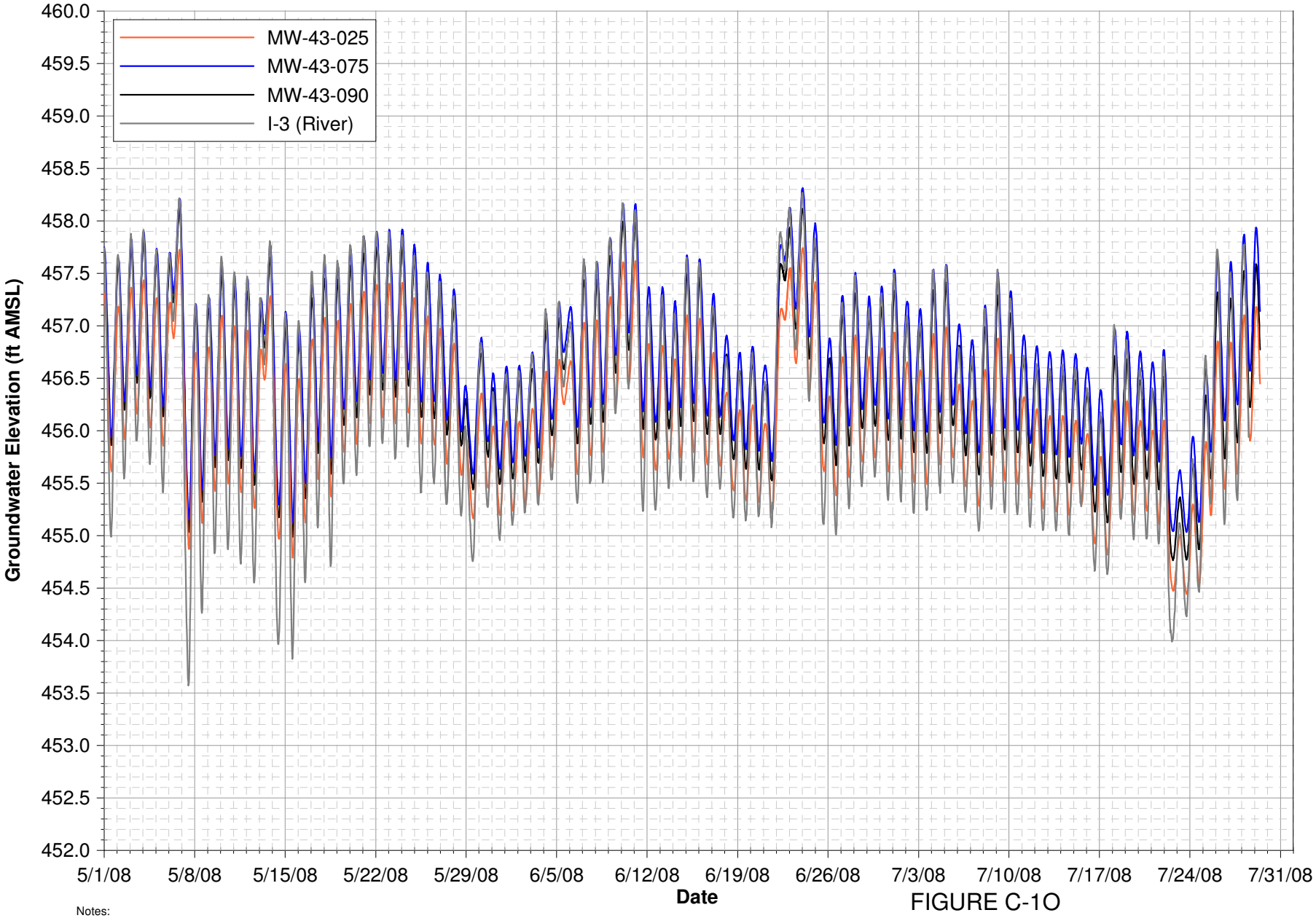
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1N
MW-42 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

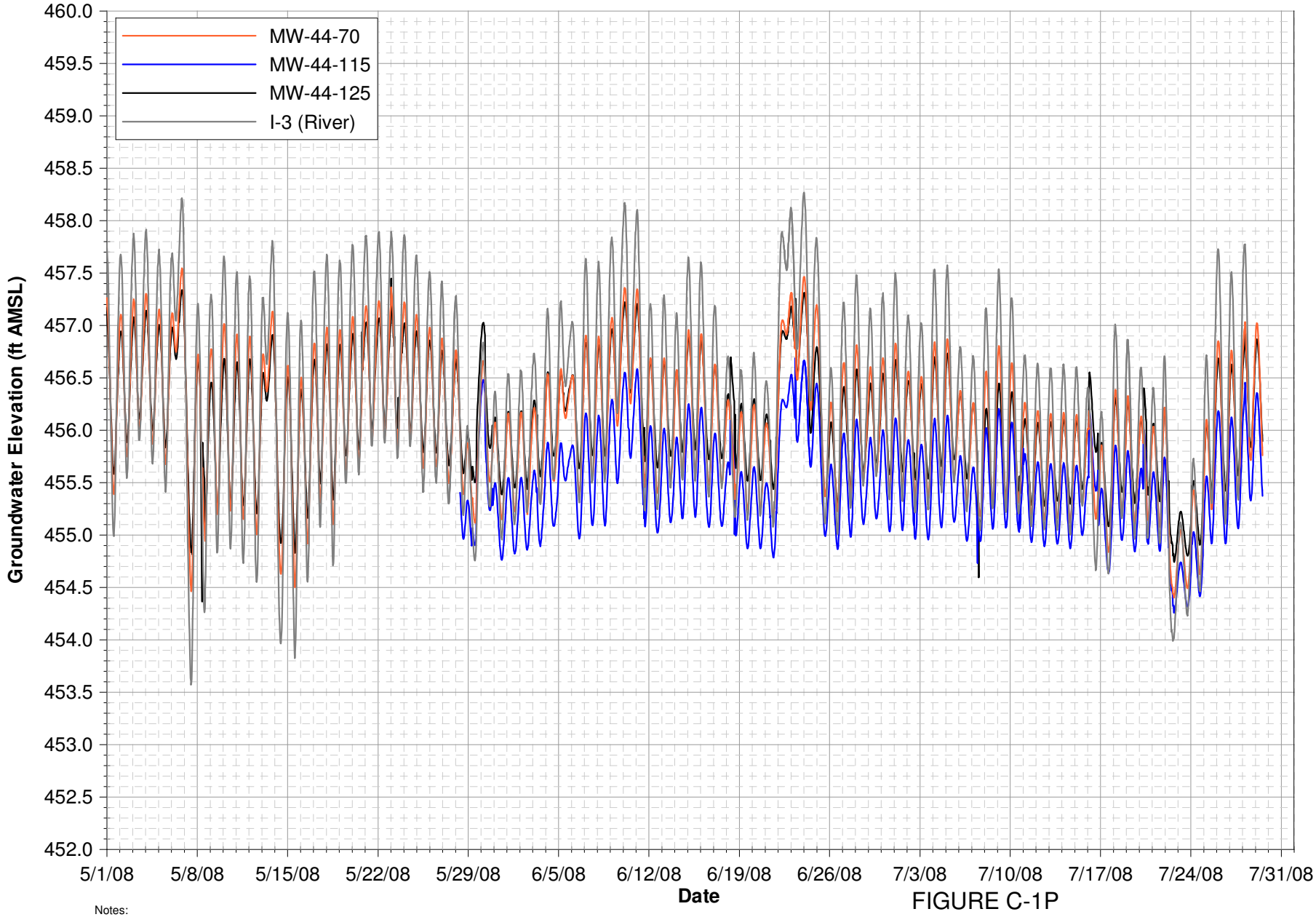
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1O
MW-43 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

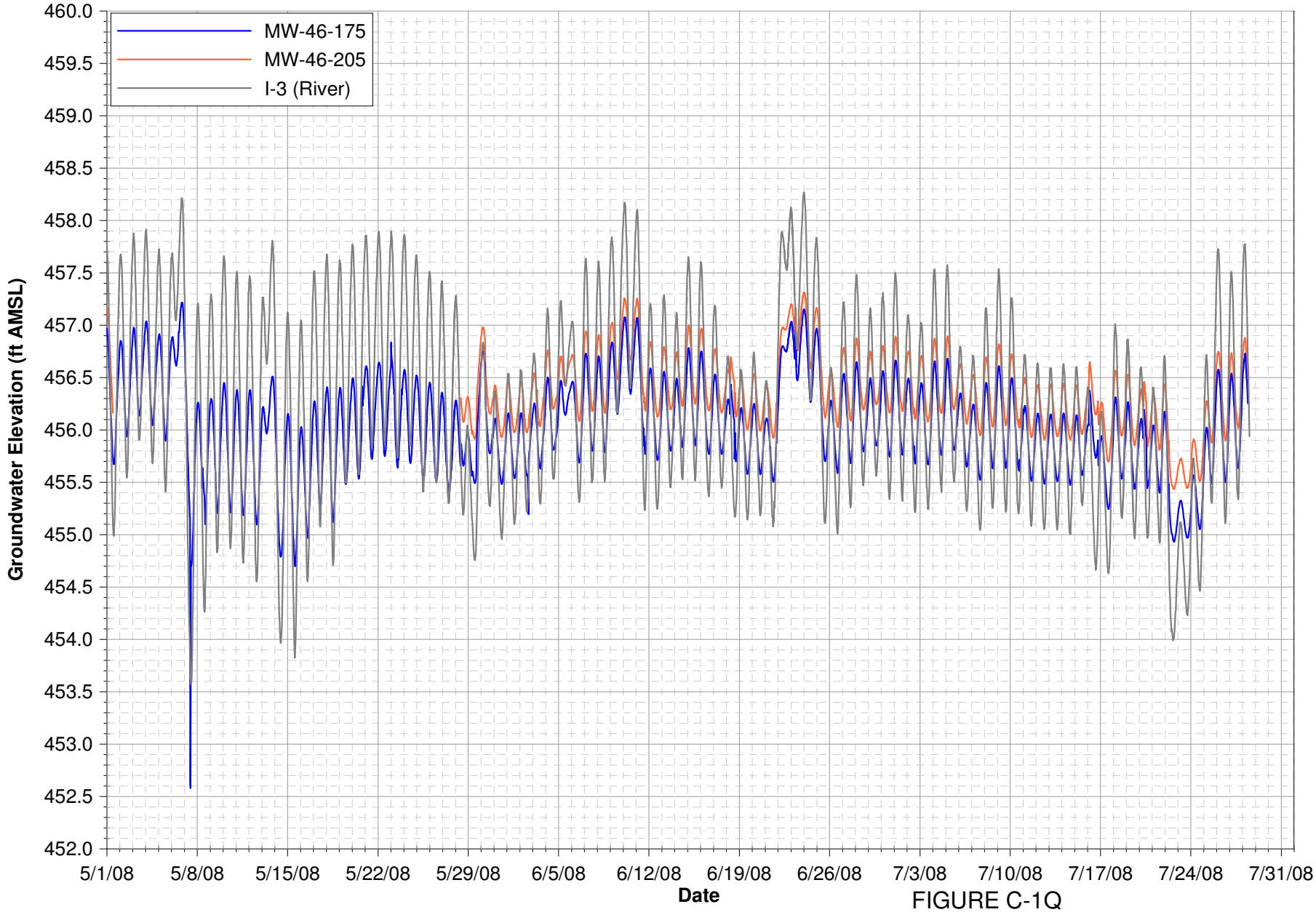
CH2MHILL



Notes:
Data subject to review.
MW-44-115 data unavailable from 4/30/2008 to 5/28/2008.

FIGURE C-1P
MW-44 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

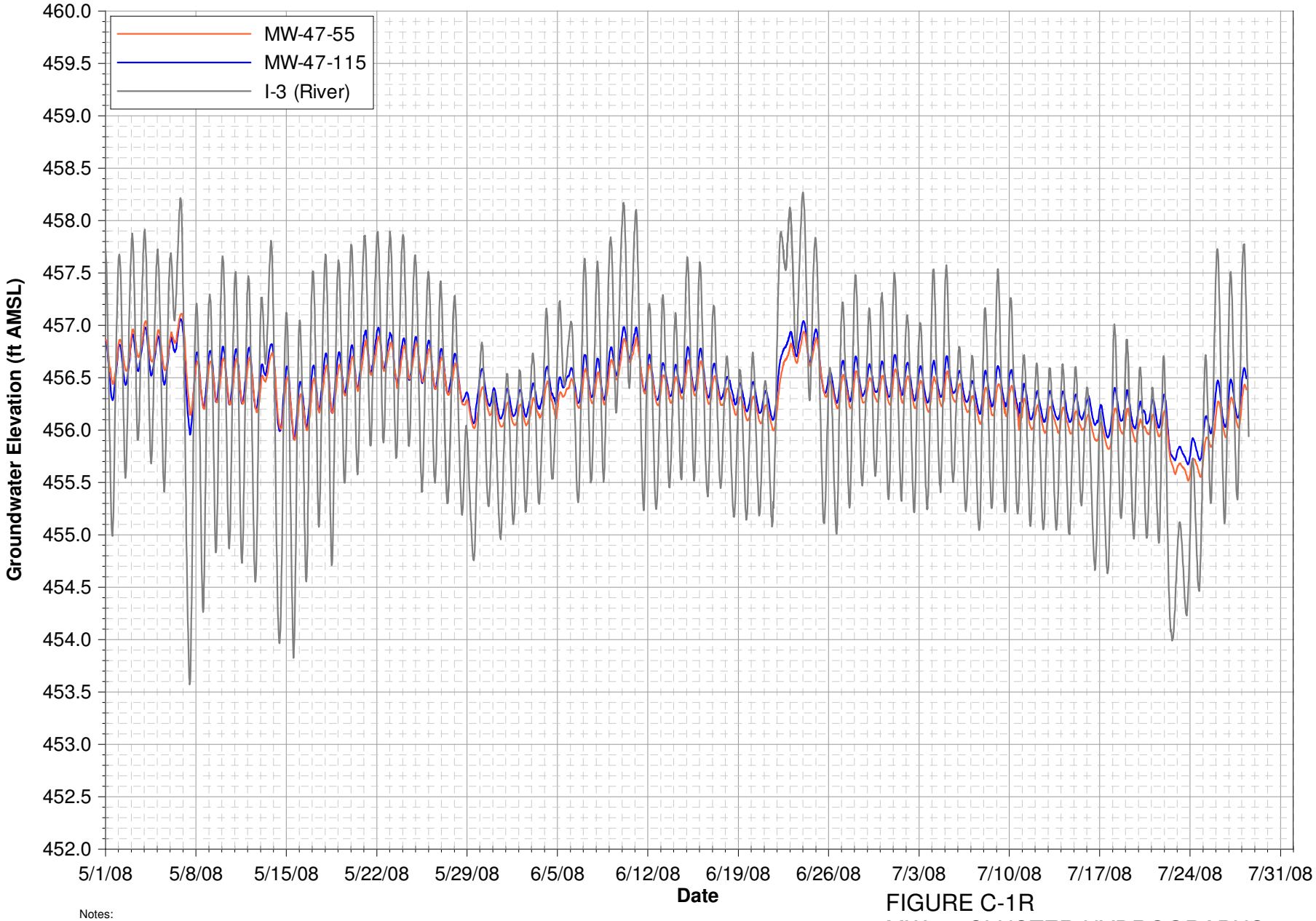
CH2MHILL



Notes:
Data subject to review.
MW-46-205 data unavailable from 5/1/2008 to 5/28/2008.

FIGURE C-1Q
MW-46 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

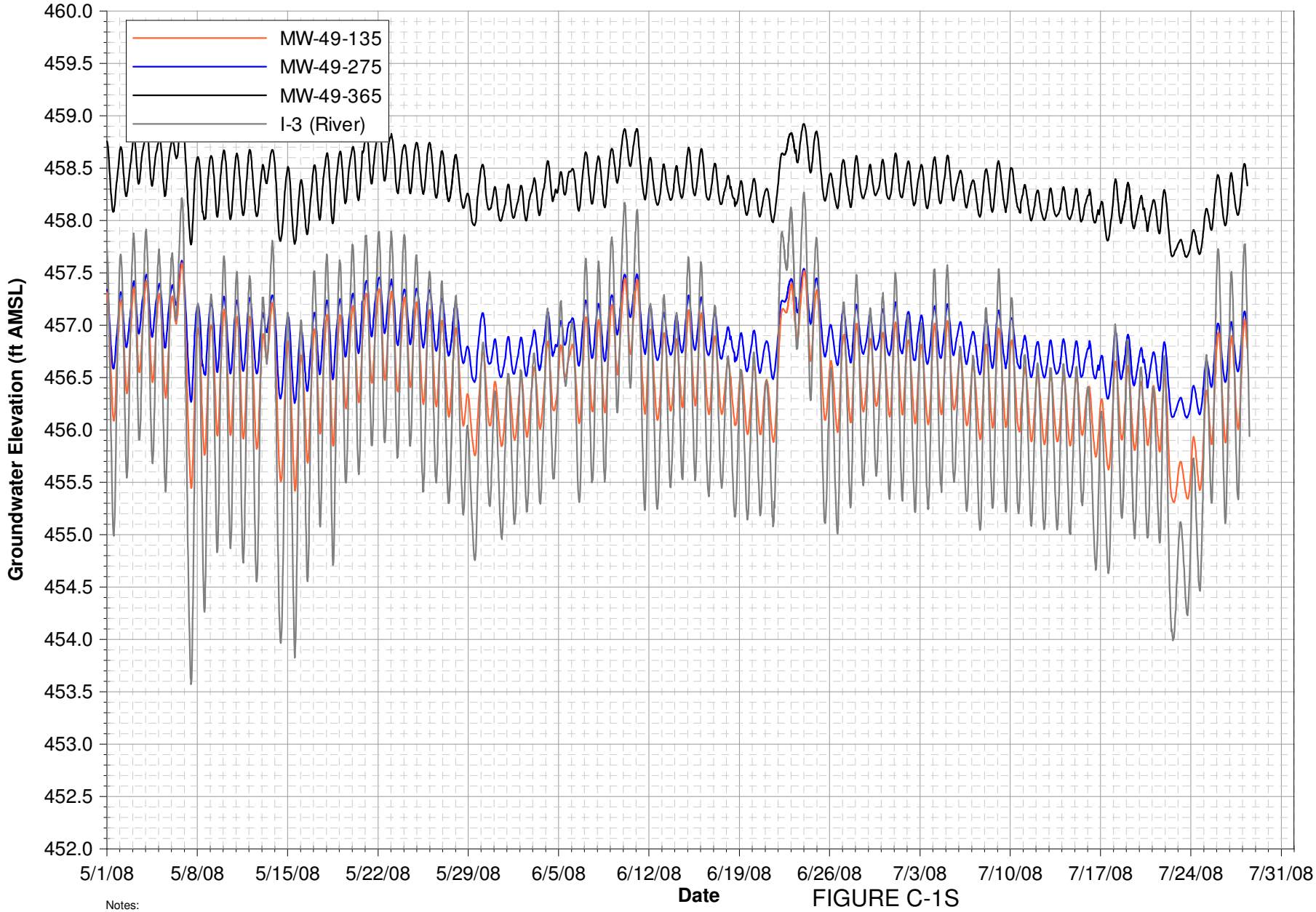
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1R
MW-47 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

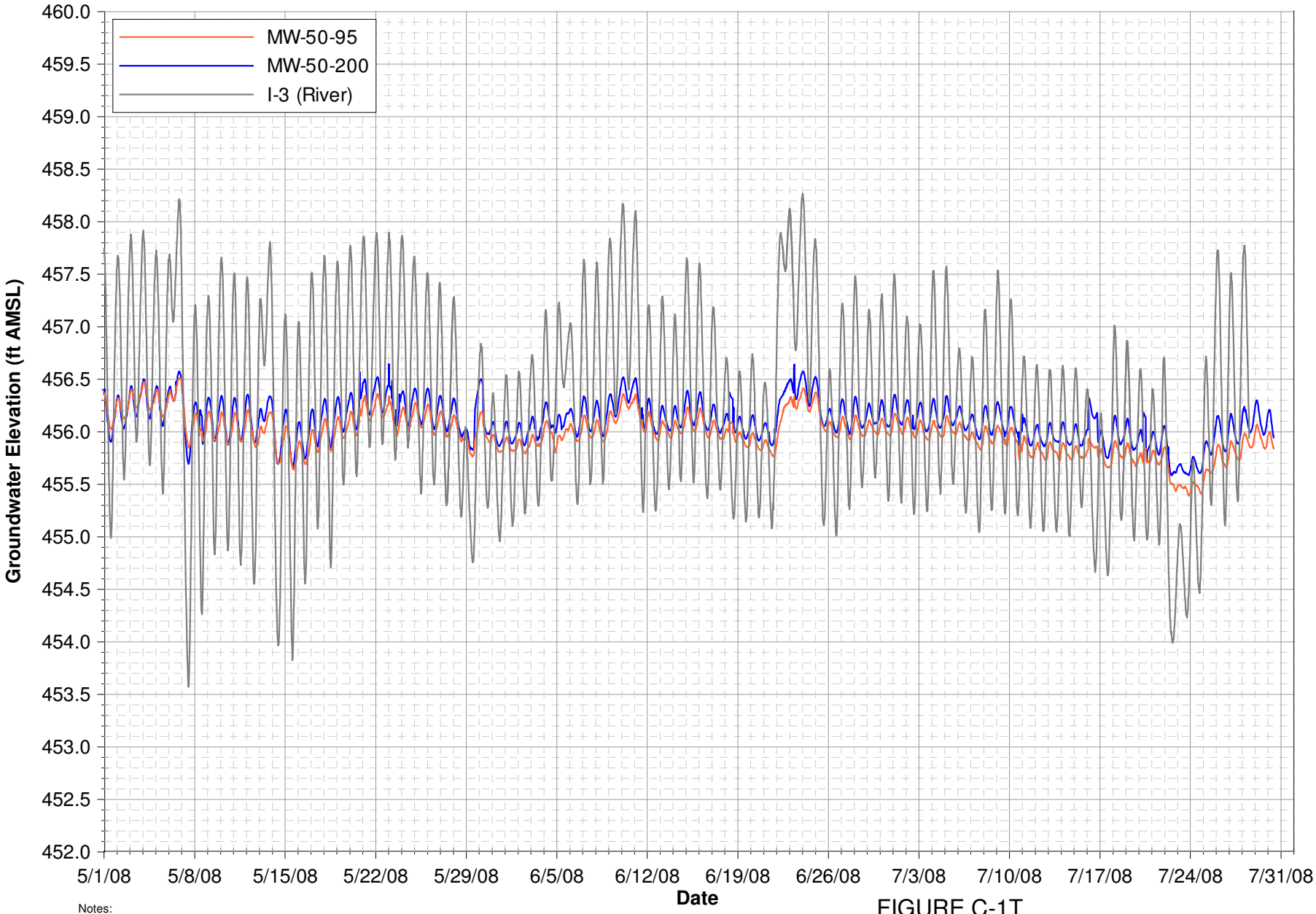
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1S
MW-49 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

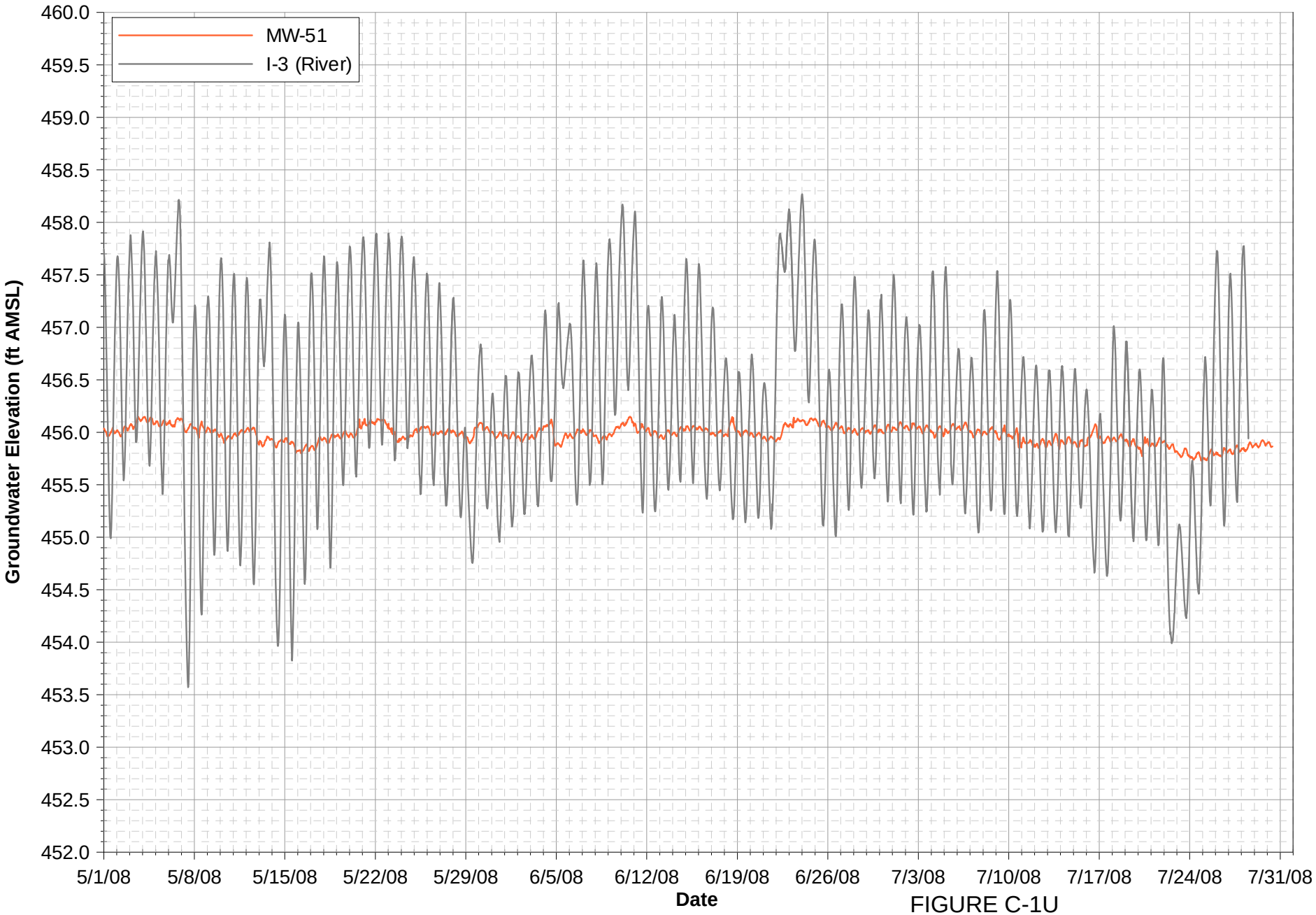
CH2MHILL



Notes:
Data subject to review.

FIGURE C-1T
MW-50 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

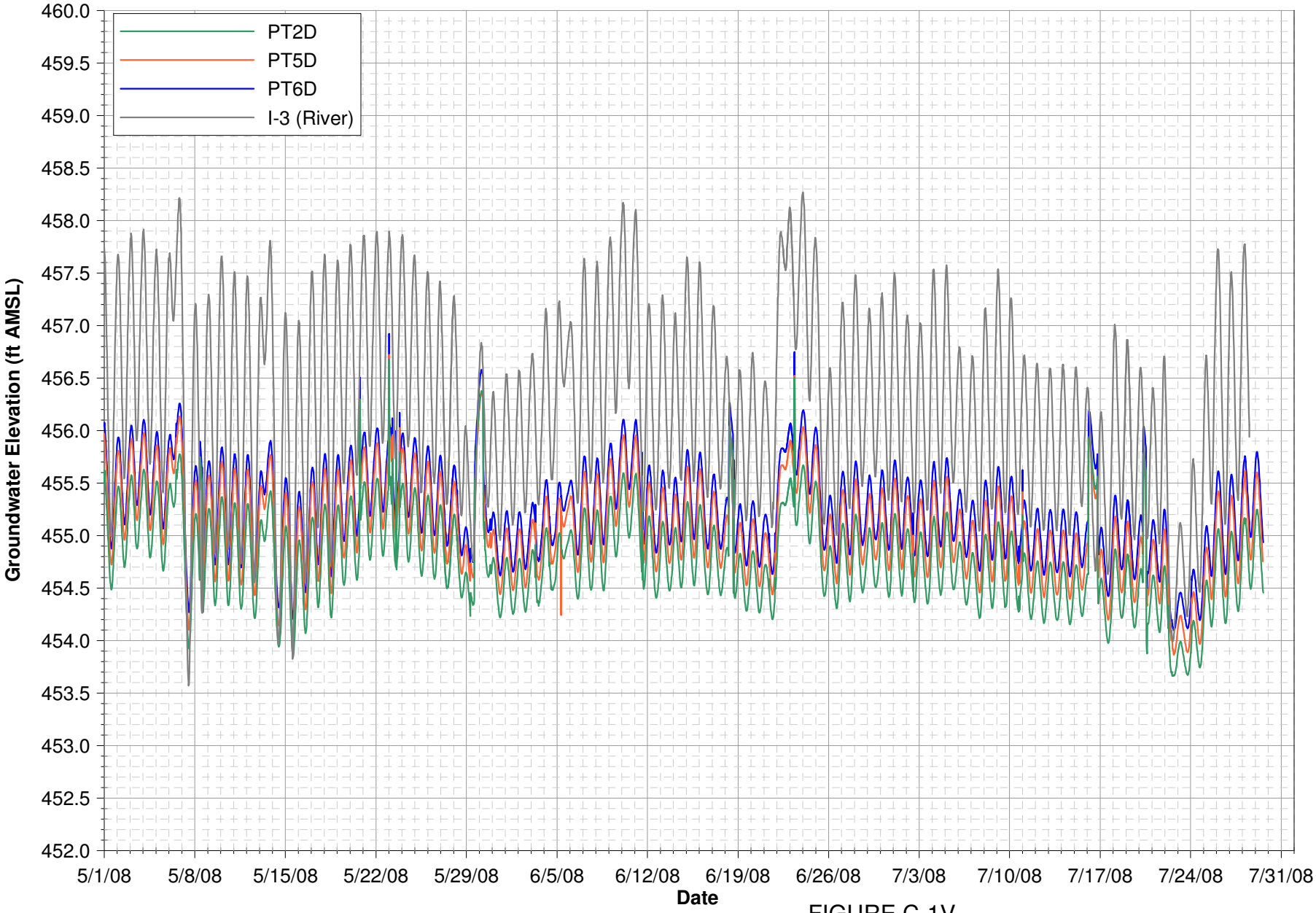
CH2MHILL



Notes:
Data subject to review.
MW-26 data unavailable from 4/2/2008 to present.

FIGURE C-1U
MW-51 HYDROGRAPH
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL



Note:
Data subject to review.

FIGURE C-1V
INSITU PILOT STUDY WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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Notes:
Data subject to review.

FIGURE C-1W
MW-45-95 HYDROGRAPH
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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Appendix D
Chemical Performance Monitoring Analytical Results

TABLE D-1
Chemical Performance Monitoring Results, March 2005 through June 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Location	Sample Date	Total Dissolved Solids	Oxygen 18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Calcium	Magnesium	Potassium	Sodium	Boron	Alkalinity
Monitoring Wells														
MW-20-70	10-Mar-05	1940	-7.1	-59.0	740	378	9.98	ND (1.0)	198	55.4	9.89	431	0.412	81.7
	15-Jun-05	1980	-7.0	-60.0	749	388	9.79	ND (1.0)	189	55.4	10.5	433	0.414	73.8
	15-Jun-05 FD	2050	-8.3	-57.0	760	392	9.81	ND (1.0)	204	60.7	11.4	468	0.445	71.3
	11-Oct-05	1950	-7.2	-57.0	737	359	9.48	0.641	198	49.9	14.6	323	0.402	69.9
	15-Dec-05	1830	-7.1	-49.0	645	326	9.90	ND (1.0)	138	42.3	14.5	267	0.441	77.8
	10-Mar-06	1940	-7.2	-54.0	679	358	10.5	ND (0.5)	161	48.6	9.22	424	0.427	82.2
	05-May-06	1750	-8.2	-55.9	696	376	9.86	0.574	162	49.2	9.55	461	0.476	74.5
	03-Oct-06	1890	-8.1	-60.4	677	357	13.0	ND (5.0)	158	47.6	9.82	472	0.535	85.0
	03-Oct-06 FD	1840	-8.1	-60.5	669	352	12.9	ND (5.0)	154	45.9	9.51	466	0.515	80.0
	13-Dec-06	1910	-7.6	-61.2	678	352	12.7	0.699	149	44.3	9.09	458	0.459	77.5
	14-Mar-07	1740	-8.5	-64.3	689	358	13.7	0.641	139	42.2	8.83	451	0.503	80.0
	03-May-07	1750	-8.4	-66.7	697	344	25.1	ND (1.0)	139	41.2	8.65	390	0.477	77.5
	11-Oct-07	1820	-8.2	-63.9	699	367	15.6	ND (1.0)	130	39.1	11.0	600	0.54	80.0
	12-Mar-08	1790	-7.6	-65.2	695	360	22.1	ND (1.0)	139	41.2	10.7	403	0.51	77.0
MW-20-100	10-Mar-05	2490	-5.2	-49.0	466	511	9.98	ND (1.0)	133	19.8	8.98	712	0.859	84.2
	15-Jun-05	2500	-4.7	-46.0	921	506	9.02	ND (1.0)	137	21.3	9.06	592	0.713	84.0
	11-Oct-05	2400	-5.3	-48.0	887	484	8.87	0.731	170	23.7	15.2	500	0.718	82.3
	15-Dec-05	2340	-5.4	-40.0	813	404	9.65	ND (1.0)	136	21.4	14.8	406	0.709	82.7
	10-Mar-06	2500	-5.6	-50.3	861	475	9.94	ND (0.5)	171	27.0	7.75	597	0.803	92.5
	05-May-06	2260	-5.1	-46.4	927	522	9.99	ND (1.0)	193	32.0	10.8	577	0.716	82.5
	03-Oct-06	2320	-5.8	-51.5	863	456	13.4	ND (5.0)	202	34.4	10.9 J	568	0.874	90.0
	13-Dec-06	1960	-6.2	-54.4	861	459	12.3	0.83	205	32.2	11.4	579	0.889	97.5
	13-Dec-06 FD	2200	-6.2	-54.5	874	457	12.2	0.851	205	32.2	9.55	575	0.881	92.5
	14-Mar-07	2180	-6.8	-57.8	847	477	14.2	0.785	194	31.7	9.90	521	0.715	87.5
	03-May-07	2300	-7.3	-59.2	879	493	23.2	ND (1.0)	209	36.0	12.0 J	559	0.699	87.5
	03-May-07 FD	2330	-6.7	-59.3	888	484	19.7	ND (1.0)	208	34.6	9.63 J	532	0.686	87.5
	10-Oct-07	2160	-7.2	-57.2	858	468	3.25	ND (1.0)	190	32.0	15.0	560	0.81	92.0
	12-Mar-08	2470	-6.9	-58.3	827	442	19.2	ND (1.0)	218	35.4	11.9	469	0.702	870
MW-20-130	09-Mar-05	5520	-5.8	-56.0	3120	1080	10.9	ND (1.0)	219	12.1	24.7	2250	1.90	68.9
	09-Mar-05 FD	6200	-5.4	-51.0	3080	1080	10.9	ND (1.0)	231	12.8	25.4	2390	1.99	68.9

TABLE D-1
Chemical Performance Monitoring Results, March 2005 through June 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Location	Sample Date	Total Dissolved Solids	Oxygen 18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Calcium	Magnesium	Potassium	Sodium	Boron	Alkalinity
Monitoring Wells														
MW-20-130	15-Jun-05	7790	-5.0	-48.0	3410	1230	11.1	ND (1.0)	352	23.2	31.3	2980	2.75	68.7
	07-Oct-05	7330	-5.0	-47.0	3010	1210	10.9	1.04 J	349	13.9	38.4	2070	2.41	72.4
	16-Dec-05	7860	-5.8	-43.0	3260	1000	10.7	ND (2.5)	324	16.3	44.4	1780	1.98	63.2
	10-Mar-06	8610	-5.5	-48.8	3370	1250	10.6	ND (0.5)	312	18.9	27.7	2730	2.03	74.5
	05-May-06	7700	-5.3	-47.2	3900	1280	8.95	ND (1.0)	349	20.3	27.7	2810	2.40	69.2
	18-Oct-06	8450	-6.3	-51.4	3680	1100	11.5	ND (5.0)	358	20.9	28.0	2870	2.28	70.0
	13-Dec-06	7890	-6.0	-54.9	3970	1250	10.6	0.896	335	19.7	27.6	2900	2.31	72.5
	13-Dec-06 FD	8250	-5.9	-54.4	3950	1260	10.5	1.09	328	19.1	27.3	2830	2.24	72.5
	08-Mar-07	8450	-6.5	-57.7	3930	1240	11.3	1.08	353	21.3	27.0	2760	2.24	70.0
	08-Mar-07 FD	8510	-6.6	-57.4	3900	1210	11.3	1.06	351	21.3	26.8	2750	2.19	72.5
	03-May-07	8150	-7.7	-60.0	4020	1310	9.80 J	ND (1.0)	338	22.5	27.8	2550	2.49	75.0
	03-May-07 FD	8100	-6.9	-60.1	3950	1290	20.4 J	ND (1.0)	338	21.9	27.3	2550	2.47	72.5
	05-Oct-07	7980	-7.0	-57.5	3670	1070	11.6	ND (1.0)	310	19.0	31.0	2900	2.40	77.0
	12-Mar-08	8460	-6.2	-58.7	3690	1220	14.3	ND (1.0)	342	23.4	47.0	2260	2.07	75.0
MW-25	09-Mar-05	877	-8.4	-62.0	247	169	3.64	ND (0.5)	77.6	16.1	6.24	211	0.441	158
	14-Jun-05	942	-8.6	-61.0	289	183	3.89	ND (0.5)	93.5	20.0	8.91	253	0.464	137
	14-Jun-05 FD	980	-7.2	-59.0	294	185	3.94	ND (0.5)	100	20.9	9.06	268	0.475	137
	04-Oct-05	950	-8.2	-68.0	252	171	3.77	ND (0.5)	83.3	14.9	9.93	164	0.362	141
	04-Oct-05 FD	910	-8.3	-60.0	251	171	3.75	ND (0.5)	94.6	15.3	10.2	185	0.371	146
	14-Dec-05	838	-8.4	-55.0	224	158	3.74	ND (0.5)	75.5	14.5	9.80	143	0.396	153
	14-Dec-05 FD	896	-8.4	-50.0	219	155	3.75	ND (0.5)	73.0	14.1	9.71	151	0.382	156
	09-Mar-06	910	-8.4	-64.1	245	164	3.83	ND (0.5)	76.4	15.6	6.97	210	0.39	170
	03-May-06	907	-9.0	-59.4	272	172	3.95	ND (0.5)	78.0	17.3	7.38	222	0.418	150
	03-May-06 FD	924	-9.0	-61.0	274	173	3.94	ND (0.5)	79.7	17.8	7.53	245	0.431	155
	03-Oct-06	892	-8.9	-62.7	222	158	4.09	ND (0.5)	73.3	15.0	7.25	206	0.466	163
	06-Mar-07	843	-9.0	-66.9	221	164	3.95	ND (0.5)	72.9	14.4	6.85	203	0.459	160
	02-Oct-07	796	-9.0	-65.8	189	155	4.58	ND (1.0)	66.0	14.0	7.90	200	0.49	180
	02-Oct-07 FD	758	-9.0	-65.7	195	157	4.40	ND (1.0)	63.0	13.0	7.70	220	0.46	190
MW-26	08-Mar-05	1840	-8.8	-70.0	756	370	4.48	ND (0.5)	166	41.6	10.7	439	0.557	98.7
	08-Mar-05 FD	1800	-8.7	-70.0	708	338	4.45	ND (0.5)	166	40.9	11.4	438	0.559	96.1

TABLE D-1
Chemical Performance Monitoring Results, March 2005 through June 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Location	Sample Date	Total Dissolved Solids	Oxygen 18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Calcium	Magnesium	Potassium	Sodium	Boron	Alkalinity
Monitoring Wells														
MW-26	13-Jun-05	2130	-8.2	-65.0	847	371	4.90	ND (0.5)	178	44.6	14.0	511	0.663	103
	04-Oct-05	2120	-7.8	-68.0	779	372	4.88	0.601	166	40.4	19.8	352	0.526	109
	12-Dec-05	2610	-8.5	-55.0	788	372	4.88	0.546	162	39.9	20.3	349	0.613	99.7
	08-Mar-06	2070	-8.6	-60.4	772	324	4.90	ND (0.5)	155	38.1	11.7	434 J	0.621	121
	01-May-06	2130	-8.9	-62.7	927	382	4.87	ND (0.5)	165	42.0	12.8	555	0.723	121
	03-Oct-06	2220	-8.8	-63.0	894	370	6.22	ND (2.5)	170	43.9	12.8	510	0.692	105
	12-Mar-07	2280	-9.0	-67.0	917	387	6.02	0.646	163	41.6	12.9	621	0.622	90.0
	02-Oct-07	2180	-8.6	-66.3	945	391	7.84	ND (1.0)	170	42.0	15.0	620	0.66	100
	12-Mar-08	2500	-8.1	-67.2	908	398	10.7 J	ND (1.0)	176	44.1 J	16.2 J	498	0.589	103
	12-Mar-08 FD	2420	-8.9	-68.2	905	398	7.61 J	ND (1.0)	160	32.8 J	12.7 J	462	0.601	102
MW-27-20	08-Mar-05	1250	-12	-102.0	190	432	ND (0.5)	ND (0.5)	137	56.6	4.89	195	ND (0.2)	215
	18-Jul-05	---	-11.9	-98.0	81.9	228	ND (0.5)	ND (0.5)	96.1	30.1	4.27	94.8	ND (0.2)	160
	05-Oct-05	742	-11.8	-102.0	91.1	252	ND (0.5)	ND (0.5)	88.6	31.4	5.48	81.0	ND (0.2)	175
	14-Dec-05	1020	-11.7	-91.0	118	347	ND (0.5)	ND (0.5)	116	41.8	6.96	116	ND (0.2)	216
	06-Mar-06	664	-12.1	-90.9	89.7	231	ND (0.2)	ND (0.2)	89.1	28.8	4.90	103	ND (0.2)	385
	14-Jun-06	730	-12	-89.8	98.3	272	ND (0.5)	ND (0.5)	91.1	28.5	2.79 J	96.9	ND (0.2)	195
	03-Oct-06	600	-13.1	-96.6	90.8	261	ND (0.5)	ND (0.5)	102	34.5	6.45	113	ND (0.2)	160
	02-Oct-07	802	-12.5	-96.3	102	320	ND (1.0)	ND (1.0)	97.0	34.0	5.30	150	0.22	170
MW-28-25	10-Mar-05	880	-12.2	-95.0	112	302	ND (0.5)	ND (0.5)	129	36.3	3.50	122	ND (0.2)	204
	15-Jun-05	974	-11.6	-91.0	108	359	ND (0.5)	ND (0.5)	133	38.9	6.54	117	ND (0.2)	221
	06-Oct-05	884	-11.7	-95.0	99.8	300	ND (0.5)	ND (0.5)	123	37.0	6.61	88.7	ND (0.2)	197
	16-Dec-05	1010	-11.4	-90.0	128	348	ND (0.5)	ND (0.5)	134	41.5	6.46	107	ND (0.2)	212
	09-Mar-06	746	-11.5	-93.9	84.4	225	ND (0.5)	ND (0.5)	98.5	27.5	4.15 J	88.5	ND (0.2)	244
	05-May-06	741	-11.4	-90.3	110	302	ND (0.5)	ND (0.5)	117	35.7	5.77	118	ND (0.2)	216
	11-Oct-06	1050	-12.2	-95.0	86.3	247	ND (0.5)	ND (0.5)	133	40.8	5.47	132	ND (0.2)	225
	04-Oct-07	812	-12.1	-98.7	110	307	ND (1.0)	ND (1.0)	120	37.0 J	4.80	150	0.26 J	230
MW-30-30	10-Mar-05	38800	-9.8	-79.0	16000	4270	ND (5.0)	7.91	1590	1600	95.4	13600	4.97	421
	07-Oct-05	36400	-8.5	-75.0	17600	4000	ND (0.5)	ND (10)	1020	842	93.6	7650	5.20	521
	15-Dec-05	35700	-8.7	-59.0	19700	4070	ND (1.0)	3.13	1060	894	110	8540	6.14	504
	13-Mar-06	39700 J	-8.8	-70.5	18600	4530	ND (0.5)	ND (50)	1050	892	77.2	11300	4.62	650

TABLE D-1
Chemical Performance Monitoring Results, March 2005 through June 2008
Interim Measures Performance Monitoring
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Location	Sample Date	Total Dissolved Solids	Oxygen 18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Calcium	Magnesium	Potassium	Sodium	Boron	Alkalinity
Monitoring Wells														
MW-30-30	02-May-06	32400	-10.3	-70.7	15400	3300	ND (0.5)	ND (5.0)	882	828	59.4	10300	3.95	756
	10-Oct-06	29400	-9.4	-68.7	17800	4400	ND (2.5)	ND (2.5)	729	653	55.0	10200	4.32	550
	08-Oct-07	27400	-9.0	-73.9	13700	3370	ND (1.0)	3.88	650	540	56.0	9600	4.50	800
MW-30-50	10-Mar-05	6470 J	-8.3	-68.0	4660	672	ND (0.5)	1.03	335	107	16.5	2040	1.15	324
	07-Oct-05	6860	-9.4	-79.0	3060	857	ND (0.5)	0.899 J	438	101	37.0	1780	1.27	252
	16-Dec-05	5850	-10.5	-65.0	2360	578	ND (0.5)	0.645	265	77.9	32.9	1260	1.19	212
	09-Mar-06	5380	-9.8	-83.5	2420	651	ND (0.5)	ND (0.5)	226	66.2	14.6	1640	1.18	275
	02-May-06	5420	-10.4	-73.6	2380	612	ND (0.5)	3.41	243	70.3	16.4	1750	1.22	261
	11-Oct-06	4170	-10.7	-82.2	1980	468	ND (0.5)	ND (0.5)	171	48.5	14.0	1370	1.11	290
	11-Oct-06 FD	3930	-11	-82.6	1810	462	ND (0.5)	ND (0.5)	163	46.1	14.1	1340	1.08	298
MW-31-60	09-Mar-05	1540	-8.6	-63.0	649	210	4.94	ND (0.5)	108	17.3	5.97	424	0.401	76.6
	13-Jun-05	1660	-8.2	-65.0	745	207	4.12	ND (0.5)	121	18.9	6.57	403	0.388	70.0
	06-Oct-05	1660	-8.6	-65.0	691	206	4.01	ND (0.5)	109	16.5	9.75	308	0.462	77.3
	13-Dec-05	1620	-8.7	-54.0	669	199	4.14	ND (0.5)	87.0	15.4	9.32	275	0.359	73.0
	15-Mar-06	1560 J	-8.6	-65.6	661	191	4.37	ND (0.5)	106	17.5	7.30	403	0.393	89.3
	15-Mar-06 FD	1640 J	-8.6	-64.9	662	192	4.34	ND (0.5)	101	16.8	6.94	391	0.383	81.9
	01-May-06	1630	-9.6	-63.2	691	209	4.58	ND (0.5)	118	20.1	7.78	467	0.449	79.6
	05-Oct-06	1620	-9.4	-66.3	687	205	5.00	ND (0.5)	113	20.6	9.60 J	325	0.464	80.0
	12-Mar-07	1750	-9.3	-69.0	757	222	4.93	ND (0.5)	116	20.3	6.05	454	0.402 J	72.5
	04-Oct-07	1720	-9.4	-69.6	799	208	5.15	ND (1.0)	150	26.0	7.30	580	0.64	80.0
MW-32-20	09-Mar-05	12500	-7.2	-65.0	6930	1660	ND (0.5)	3.51	838	302	36.9	4000	2.76	123
	17-Jun-05	10200	-9.0	-67.0	4810	690	ND (0.5)	ND (2.5)	566	231	23.3	2620	1.75	676
	04-Oct-05	28800	-7.8	-65.0	14200	2420	ND (5.0)	6.19	1380 J	613 J	91.1 J	5400 J	4.75 J	733
	16-Dec-05	24600	-7.8	-61.0	12200	2140	ND (1.0)	3.48	1470	552	90.4	4950	4.16	861
	10-Mar-06	20900	-8.3	-65.5	10600	1970	ND (0.5)	ND (0.5)	1350	530	56.1	6440	3.54	432
	04-May-06	16900	-8.1	-64.9	9430	1380	ND (0.5)	2.35	937	445	46.0	4780	2.87	218
	02-Oct-06	46200 J	-8.6	-67.1	20200	3190	ND (2.5)	7.30	1870	1070	87.0	11300	6.34	660
	11-Dec-06	37900	-8.0	-67.0	17900	3020	ND (5.0)	7.67	1530	785	81.7	8420	4.98	825
	06-Mar-07	27600	-8.7	-72.7	16200	2210	0.925	5.93	1460	635	64.4	7110	3.92	765
	30-Apr-07	17700	-9.6	-78.1	9820	1310	ND (0.2)	3.78	965	484	51.4	5520	3.02	770

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Location	Sample Date	Total Dissolved Solids	Oxygen 18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Calcium	Magnesium	Potassium	Sodium	Boron	Alkalinity
Monitoring Wells														
MW-32-20	01-Oct-07	37200	-8.3	-70.1	20600	3160	ND (1.0)	6.44	1800	1100	93.0	9900	5.70	700
	10-Mar-08	26000	-9.4	-72.6	15800	2280	ND (1.0)	5.66	1190	710	67.4	11600	2.31	800
MW-32-35	09-Mar-05	3560	-8.2	-68.0	1770	465	ND (0.5)	0.845	312	85.5	13.0	944	1.07	260
	17-Jun-05	7550	-9.5	-72.0	3520	787	ND (0.5)	ND (2.5)	506	120	14.8	2110	1.18	223
	04-Oct-05	8340	-8.3	-70.0	3840	765	ND (0.5)	ND (5.0)	567	134	29.3	1530	1.26	208
	16-Dec-05	7660	-8.8	-63.0	3510	710	ND (1.0)	1.02	606	128	30.0	1580	1.25	219
	10-Mar-06	9230	-8.6	-74.0	4210	1010	ND (0.5)	ND (0.5)	654	129	19.2	2360	1.13	234
	04-May-06	9840	-9.1	-67.8	4960	1130	ND (0.5)	ND (0.5)	693	148	19.5	2800	1.38	218
	02-Oct-06	11200	-9.4	-71.4	5430	1050	ND (2.5)	ND (2.5)	839	165	23.9	3260	1.48	290
	11-Dec-06	10400	-9.0	-70.4	5090	1000	ND (0.5)	1.90	845	173	22.5	2620	1.43	338
	06-Mar-07	12600	-10.2	-75.4	6070	1200	ND (0.5)	2.65	1080	209	23.5	2910	1.35	360
	30-Apr-07	12100	-9.9	-78.7	6610	1280	ND (0.2)	2.60	1250	273	26.2	3280	1.35	475
	01-Oct-07	13700	-8.9	-72.7	6830	1120	ND (1.0)	2.62	1000	390	29.0	4000	1.70	490
MW-34-55	10-Mar-05	6230	-10.8	-82.0	2620	739	ND (0.5)	0.654	366	71.3	29.1	1900	1.19	240
	15-Jul-05	---	-10.3	-84.0	2250	607	ND (0.5)	ND (0.5)	247	52.0	16.5	1420	1.02	242
	05-Oct-05	5150	-10.6	-88.0	2170	619	ND (0.5)	ND (0.5)	272	59.1	25.8	1230	1.20	232
	14-Dec-05	5100	-10.8	-74.0	2150	552	ND (0.5)	0.588	217	45.0	27.2	965	0.937	236
	08-Mar-06	4850	-10.8	-86.8	2080	593	ND (0.5)	ND (0.5)	256	54.2	13.5	1640	0.956	272
	03-May-06	4320	-11.5	-84.3	2070	500	ND (0.5)	ND (0.5)	198	44.8	11.1	1360	0.846	302
	04-Oct-06	1680 J	-12.2	-94.8	443	230	ND (0.5)	ND (0.5)	37.6	8.08	4.59	536	0.54	368
	03-Oct-07	730	-11.3	-96.6	109	266	ND (1.0)	ND (1.0)	15.0	3.30	3.30	290	0.26	190
MW-34-80	08-Mar-05	6940	-10.4	-83.0	4180	1040	ND (0.5)	1.01	439	68.1	28.0	2750	1.65	304
	15-Mar-05	8980	---	---	3920	ND (5.0)	ND (1.0)	---	445	65.7	29.7	2990	---	288
	30-Jun-05	7840	-8.4	-82.0	3910	979	ND (0.5)	ND (0.5)	497	76.5	27.7	2670	1.66	302
	05-Oct-05	10200	-10.1	-85.0	3880	1060	ND (0.5)	ND (0.5)	429	72.5	47.4	1660	1.57	302
	14-Dec-05	8800	-10.2	-71.0	3700	880	ND (0.5)	0.854	432	68.3	54.9	1710	1.54	297
	09-Mar-06	7830	-9.9	-86.8	3520	986	ND (0.5)	ND (0.5)	383	65.8	24.0	2420	1.49	313
	03-May-06	7950	-11.7	-77.6	3700	921	ND (0.5)	ND (0.5)	425	70.3	23.9	2480	1.38	297
	04-Oct-06	7080	-11.3	-81.8	3210	786	ND (0.5)	0.737	341	65.4	21.1	2170	1.31	268
	12-Dec-06	6510	-10.5	-80.9	3190	789	ND (0.5)	0.742	298	62.9	18.9	2040	1.26	288

TABLE D-1
Chemical Performance Monitoring Results, March 2005 through June 2008
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Location	Sample Date	Total Dissolved Solids	Oxygen 18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Calcium	Magnesium	Potassium	Sodium	Boron	Alkalinity
Monitoring Wells														
MW-34-80	05-Mar-07	6360 J	-11.5	-85.8	3300	783	ND (0.5)	0.72	315	68.3	19.4	2020	1.29	205
	30-Apr-07	6390	-11.5	-88.9	3320 J	889 J	ND (0.2)	ND (1.0)	282	57.0	18.6	2080	1.33	245
	03-Oct-07	5490	-11.3	-87.8	2630	696	ND (1.0)	ND (1.0)	220	53.0	21.0	2000	1.20	240
	13-Dec-07	5420	-10.9	-88.6	2380	698	ND (1.0)	ND (1.0)	193	49.1	25.4	1450	1.09	264
	12-Mar-08	5500	-11.4	-87.3	2510	739	ND (1.0)	ND (1.0)	237	52.6	19.2	2030	1.14	238
	06-May-08	5820	-11.4	-87.3	2460	753	ND (0.2)	0.525	230	49.0	30.0	1600	1.20	216
Surface Water Stations														
R-27	07-Mar-05	669	-12.3	-102.0	92.7	244	ND (0.5)	ND (0.5)	82.8	31.3	4.72	108	ND (0.2)	136
	14-Jun-05	686	-11.4	-92.0	90.9	266	ND (0.5)	ND (0.5)	81.9	29.8	6.04	98.9	ND (0.2)	127
	05-Oct-05	678	-11.6	-94.0	85.1	255	ND (0.5)	ND (0.5)	101	36.2	6.56	91.2	ND (0.2)	130
	16-Dec-05	718	-11.7	-87.0	87.9	253	ND (0.5)	ND (0.5)	85.5	29.5	5.99	75.6	ND (0.2)	126
	06-Mar-06	656	-11.8	-92.1	90.6	268	ND (0.5)	ND (0.5)	83.5	29.4	5.44 J	101	ND (0.2)	144
	03-May-06	567	-12.8	-93.9	93.1	267	ND (0.5)	ND (0.5)	87.0	31.1	3.12 J	106	ND (0.2)	139
	04-Oct-06	752 J	-12.2	-94.9	91.5	261	ND (0.5)	ND (0.5)	82.9	31.5	6.24 J	98.1	ND (0.2)	128
	20-Dec-06	680	-12.7	-98.1	94.5	266	ND (0.5)	ND (0.5)	83.2	30.9	3.64	106	ND (0.2)	138
	13-Mar-07	750 J	-13	-99.5	96.5	267	0.537	ND (0.5)	86.9	31.3	4.73	106	ND (0.2)	130
	08-May-07	715 J	-12.9	-104.0	92.6	269	ND (0.5)	ND (0.5)	84.3	29.8	5.55	100	ND (0.2)	143
	11-Sep-07	650	-12.5	-101.0	89.4	253	0.336	ND (0.2)	74.2	28.9	5.47	86.5	ND (0.2)	132
	05-Dec-07	---	-11.7	-99.0	94.7	256	ND (1.0)	ND (0.2)	89.8	31.7	6.60	93.4	0.157	137
	02-Apr-08	---	---	---	93.0	267	ND (1.0)	ND (1.0)	80.2	30.7	5.50	106	0.432	136
	17-Jun-08	682	---	---	91.6	254	ND (1.0)	ND (1.0)	76.2	31.8	6.69	89.7	ND (0.2)	134
R-28	08-Mar-05	651	-12.5	-102.0	90.4	231	ND (13)	ND (0.5)	83.7	31.4	5.02	107	ND (0.2)	132
	14-Jun-05	680	-11.6	-95.0	91.2	268	ND (0.5)	ND (0.5)	78.5	28.5	5.08	94.5	ND (0.2)	127
	05-Oct-05	672	-11.6	-94.0	85.5	255	ND (0.5)	ND (0.5)	85.7	30.4	6.30	77.0	ND (0.2)	122
	16-Dec-05	710	-11.5	-83.0	88.1	254	ND (0.5)	ND (0.5)	87.2	29.8	6.11	76.8	ND (0.2)	126
	06-Mar-06	675	-12.3	-93.4	91.0	270	ND (0.5)	ND (0.5)	76.6	26.6	5.22 J	91.5	ND (0.2)	146
	03-May-06	586	-13	-92.1	93.4	270	ND (0.5)	ND (0.5)	88.1	31.4	4.04 J	107	ND (0.2)	136
	04-Oct-06	644 J	-12.6	-95.3	90.9	259	ND (0.5)	ND (0.5)	84.2	32.1	6.17 J	96.5	ND (0.2)	133
	20-Dec-06	615	-12.4	-99.6	93.3	262	ND (0.5)	ND (0.5)	85.7	32.0	4.66	108	ND (0.2)	143
	14-Mar-07	710	-12.8	-100.0	96.7	268	0.534	ND (0.5)	87.9	31.0	5.71	105	ND (0.2)	133

TABLE D-1
Chemical Performance Monitoring Results, March 2005 through June 2008
Interim Measures Performance Monitoring
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Location	Sample Date	Total Dissolved Solids	Oxygen 18	Deuterium	Chloride	Sulfate	Nitrate	Bromide	Calcium	Magnesium	Potassium	Sodium	Boron	Alkalinity
Surface Water Stations														
R-28	09-May-07	690	-13	-102.0	95.8	271	ND (0.5)	ND (0.5)	86.1	30.5	5.92	103	ND (0.2)	143
	12-Sep-07	682	-12.4	-99.4	106	296	0.372	ND (0.2)	73.8	29.9	6.36	89.2	ND (0.2)	122
	06-Dec-07	---	-11.7	-98.6	96.5	258	0.345	ND (0.2)	75.7	30.4	6.62	79.4	ND (0.2)	139
	02-Apr-08	---	---	---	92.5	309	ND (1.0)	ND (1.0)	84.7	31.4	5.58	108	0.467	137
	18-Jun-08	672	---	---	89.4	248	ND (1.0)	ND (1.0)	43.3	31.1	6.95	93.9	ND (0.2)	132

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 decision-making
(---) = data not collected or available

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

Alkalinity reported as carbonate (CaCO3). Nitrate reported as Nitrogen (N).