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April 20, 2007

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

Subject: March 2007 Performance Monitoring Report
Interim Measures Performance Monitoring Program
PG&E Topock Compressor Station, Needles, California

Dear Mr. Yue:

Enclosed is the *Performance Monitoring Report for March 2007* for the Interim Measure Performance Monitoring Program at the PG&E Topock Compressor Station. This monitoring report documents the performance monitoring results for March 1 through 31, 2007, and has been prepared in conformance with DTSC's letter dated February 14, 2005.

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

Sincerely,

Yvonne Meeks

Enclosure
Cc: Chris Guerre/DTSC

Performance Monitoring Report for March 2007

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

April 20, 2007

CH2MHILL
155 Grand Avenue, Suite 1000
Oakland, California 94612

Performance Monitoring Report for March 2007

Interim Measures Performance Monitoring Program

PG&E Topock Compressor Station Needles, California

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

Paul Bertucci

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

Contents

Acronyms and Abbreviations

µg/L	micrograms per liter (essentially the same as parts per billion [ppb])
cfs	cubic feet per second
Cr(T)	total chromium
Cr(VI)	hexavalent chromium
DTSC	California Department of Toxic Substances Control
gpm	gallons per minute
IM	Interim Measure
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. Collectively, the groundwater extraction, treatment, and injection systems are 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.

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. 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). The DTSC directive also defined the monitoring and reporting requirements for the IM. A draft *Performance Monitoring Plan for Interim Measures in the Floodplain Area* (CH2M HILL 2005) 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 for the floodplain area.

This monthly report has been prepared in compliance with DTSC's requirements and documents the monitoring activities and performance evaluation of the IM hydraulic containment system for the period from March 1 through March 31, 2007. The monthly results and status of IM performance monitoring during April 2007 will be reported in the first quarter 2007 performance monitoring report on May 30, 2007.

Figure 1-2 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 March 2007 are defined as:

- **Floodplain Wells** (monitoring wells on the Colorado River floodplain): MW-22, MW-27 cluster (three), MW-28 cluster (two), MW-29, MW-30 cluster (two), 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, MW-46 cluster (two), MW-49 cluster (three).
- **Intermediate Wells** (monitoring wells located immediately north, west, and southwest of the floodplain): MW-12, MW-19, MW-20 cluster (three), MW-21, 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 (Figure 1-1). In March 2005, extraction well PE-1 was installed on the floodplain approximately 450 feet east of extraction well TW-2D (Figure 1-1). Construction of the conveyance piping and power supply to well PE-1 was completed in January. Testing and commissioning of well PE-1 began on January 25, 2006, with full-time operation of the well beginning on January 26, 2006. Currently, both TW-3D and PE-1 are in full-time operation.

The wells screened in the unconsolidated alluvial fan and fluvial deposits that 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—designated upper, middle, and lower—are based on grouping the monitoring wells screened at common elevations and do not represent distinct hydrostratigraphic units or separate aquifer zones. 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. It should be noted, however, that these divisions do not correspond to any distinct lithostratigraphic layers within the aquifer. The floodplain aquifer is considered to be hydraulically undivided.

2.0 Extraction System Operations

Pumping data for the IM groundwater extraction system for the period March 1 through March 31, 2007 are shown in Table 2-1. During the reporting period, extraction wells TW-3D and PE-1 operated at a combined target pump rate of 135 gallons per minute (gpm), excluding periods of planned and unplanned downtime.

The March 2007 monthly average pumping rate was 131.5 gpm. A total of 5,870,462 gallons of groundwater was extracted and treated by the IM No. 3 treatment plant during March 2007. The IM No. 3 facility also treated approximately 3,200 gallons of water generated from the groundwater monitoring program and 6,990 gallons of water generated from injection well re-development during March 2007. The operational run time for the IM extraction system was 98 percent during this reporting period. An operations log for the extraction system during March 2007, including downtime, is included in Appendix A.

The concentrate (i.e., brine) 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. One container of solids from the IM No. 3 facility were transported offsite during March 2007 to Chemical Waste Management Kettleman Hills.

Daily inspections included general facility inspections, process control monitoring, and site security monitoring. Daily logs with documentation of inspections are maintained onsite.

Table 2-2 summarizes the analytical results of groundwater samples collected from the extraction well system during the March reporting period and prior months.

3.0 Chromium Sampling Results

During March 2007, the groundwater monitoring wells in the floodplain area were sampled for Cr(VI), total chromium [Cr(T)], and field water quality parameters under newly updated monthly and biweekly schedules, in accordance with the approved groundwater monitoring plan and DTSC directives. Refer to PG&E's Topock *Fourth Quarter and 2006 Annual Performance Monitoring Evaluation* (CH2M HILL 2007) and DTSC (2006) for the prior and current sampling plan and frequencies for groundwater wells in the performance monitoring area.

Table B-1 in Appendix B presents the groundwater sampling results for Cr(VI) and Cr(T), as well as groundwater elevation and selected field water quality parameters for monitoring wells in the floodplain area during March 2007 and the previous months. Table B-2 (Appendix B) presents the groundwater sampling data for the other wells monitored in the Performance Monitoring Program area during March 2007 and the previous months.

Figure 3-1 presents the Cr(VI) results distribution for March 2007, in plan view, for the groundwater wells monitoring the upper, middle, and lower depth intervals of the Alluvial Aquifer in the floodplain area. Interpretations of Cr(VI) contours at each depth interval are also provided on this figure. The actual locations of contours beyond well data points are not certain but are inferred using available site investigation and monitoring data (bedrock structure, hydraulic gradients, observed distribution of geochemically-reducing conditions, and Cr(VI) concentration gradients). The aquifer depth intervals, well screens, and March 2007 Cr(VI) sampling results and interpreted contours are also shown on Figure 3-1 in a vertical cross-section extending east-west across the floodplain. The California drinking water standard for Cr(T) is 50 µg/L.

Figure 3-2 presents the March 2007 Cr(VI) results for additional floodplain monitoring wells on a cross-section oriented parallel to the Colorado River (see Figure 1-2 for locations of the cross-sections). For ongoing IM performance evaluation, Cr(VI) concentration trend graphs and hydrographs for key floodplain monitoring wells are presented on Figures B-1 (well MW-33-90), B-2 (well MW-34-100), and B-3 (well MW-36-100) in Appendix B.

4.0 Hydraulic Gradient Results

During the reporting period, water levels were recorded at intervals of 30 minutes with pressure transducers in 61 wells and two river monitoring stations (I-3 and RRB). The data are typically continuous, with only short interruptions for sampling or maintenance. The location of the wells monitored are shown on Figure 1-2 and listed in Section 1.0.

The monthly average and the minimum and maximum daily average groundwater and river elevations have been calculated from the pressure transducer data for the March reporting period (March 1 through March 31, 2007) and are summarized in Appendix C, Table C-1.

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 (Fetter 1994). 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 March 2007) for all wells with transducers are included in Appendix C. The elevation of the Colorado River measured at the river gauge (I-3, Figure 1-2) during March 2007 is also shown on the hydrographs.

The March 2007 hydraulic data and groundwater gradient maps for the upper, middle, and lower depth intervals are shown on Figures 4-1, 4-2, and 4-3, respectively. The groundwater elevations for all depth intervals of the Alluvial Aquifer indicate strong landward hydraulic gradients within the IM No. 3 capture zone throughout the floodplain. 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. Note that several monitoring wells are significantly deeper than other wells in the lower aquifer zone. Due to vertical gradients present at the Topock site, water levels in deeper wells tend to be higher than water levels in shallower wells. Consequently, some of the wells with screen intervals significantly deeper than most of the lower zone wells exhibit water levels that are not contoured in the plan view on Figure 4-3.

The landward gradients measured during March 2007 were greater than those measured in February 2007, due to rising river levels over the reporting period. The March 2007 average monthly groundwater elevations are also presented and contoured in cross-section on Figure 4-4 (cross-section location shown on Figure 1-2). The groundwater elevation contours on this cross-section show the strong downward and landward hydraulic gradients produced by the combined pumping from IM extraction wells TW-3D and PE-1.

Table 4-1 summarizes the estimated and actual dam discharges and river elevations since April 2004. The actual Davis Dam average discharge for March 2007 of 14,554 cubic feet per second (cfs) was more than the United States Bureau of Reclamation (USBR) projected discharge of 14,300 cfs for the current reporting period. As a result, the actual Colorado River elevation at I-3 (monthly average) was greater (0.5 ft) than the level predicted during

the previous month by using the multiple regression method with USBR projections for the March reporting period.

Table 4-2 summarizes gradients measured between the three designated well pairs (MW-31-135 / MW-33-150, MW-20-130 / MW-34-80, and MW-20-130 / MW-42-65) during March 2007. Pumping from extraction well PE-1 began on January 26, 2006. Since that time, the central well pair has been affected by PE-1 pumping. Pumping at well PE-1 would tend to lower the water level in well MW-34-80 and decrease the apparent gradient in the central well pair. Nevertheless, average gradients in the three well pairs were landward at magnitudes that were approximately three to four times the target value of 0.001 feet per foot (0.0028, 0.0040, and 0.0045, respectively). The landward gradients measured in March were greater than the average gradients for these well pairs in February 2007 due to rising river levels and consistent pumping operations over the reporting period.

5.0 Status of Operation and Monitoring

Reporting of the IM extraction and monitoring activities will continue as described in the Performance Monitoring Plan. The next monthly monitoring report for the April 2007 reporting period will be submitted by May 30, 2007 with the first quarter 2007 performance monitoring report.

Per DTSC direction, PG&E will continue to operate both TW-3D and PE-1 at a target combined pumping rate of 135 gpm during April 2007, except for periods when planned and unplanned downtime occurs. Treated groundwater will be discharged into the IM No. 3 injection wells in accordance with Waste Discharge Requirements Order No. R7-2006-0060. Brine generated as a byproduct of the treatment process will continue to be transported offsite.

Annual maintenance of the IM No. 3 treatment plant has been scheduled for April 22 through April 28, 2007. This will result in up to seven days where both extraction wells PE-1 and TW-3D will be off. On March 30, 2007, PG&E notified DTSC of the planned April 2007 equipment maintenance and inspection shutdown. The plant shutdown is intentionally scheduled during the highest river levels of the year, which typically occur March through July (see Table 4-1). During the period of rising river levels landward gradients are present in the floodplain even in the absence of pumping from the IM extraction wells.

PG&E will continue to balance the pumping rates between wells TW-3D and PE-1 to maintain the target pumping rate and maintain appropriate hydraulic gradients across the Alluvial Aquifer. If, at any time, hydraulic data indicate that well PE-1 pumping has the potential to draw higher concentrations of chromium away from the capture zone of well TW-3D, PG&E will request authorization from DTSC to increase the pumping rate at TW-3D and decrease the rate at well PE-1. Extraction well TW-2D will continue serve as a backup extraction well to TW-3D and PE-1.

Current USBR projections show that the average Davis Dam release for April 2007 (17,300 cfs) will increase compared to March 2007 (14,554 cfs) (Table 4-1). Based on April 9, 2007 USBR projections, it is anticipated that the Colorado River level at the I-3 gauge location during April 2007 will be greater (0.8 ft) compared to the average river level in March 2007. PG&E is in communication with the USBR river operations office in Boulder City, Nevada and will notify DTSC if any changes in USBR river operations could result in currently unplanned significant decreases in river levels during the time of this planned shutdown.

With the initiation of pumping from PE-1 (late January 2006) and expansion of the IM monitoring well network, new gradient control well pairs will be defined by DTSC to account for the more complex gradient caused by pumping at both TW-3D and PE-1. Modifications and updates to the IM performance monitoring program will be incorporated pending DTSC approval and direction.

6.0 References

California Department of Toxic Substances Control (DTSC). 2005. Letter. "Criteria for Evaluating Interim Measures Performance Requirements to Hydraulically Contain Chromium Plume in Floodplain Area, Pacific Gas & Electric Company, Topock Compressor Station." February 14.

_____. 2006. Letter to PG&E. "Modification of Groundwater and Shoreline Surface Water Sampling Frequencies at Pacific Gas & Electric Company, Topock Compressor Station, Needles, California" October 26.

CH2M HILL. 2005. *Draft Performance Monitoring Plan for Interim Measures in the Floodplain Are, PG&E Topock Compressor Station*. April 15.

_____. 2007. *Fourth Quarter and 2006 Annual Performance Monitoring Evaluation, PG&E Topock Compressor Station*. April 6.

Fetter, C.W. 1994. *Applied Hydrogeology*. Third Edition. Prentice-Hall.

Tables

TABLE 2-1
Pumping Rate and Extracted Volume for IM System through March 2007
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Extraction Well	March 2007 Period		Project To Date[b]
	Average Pumping Rate[c] (gpm)	Volume Pumped (gal)	Cumulative Volume Pumped (gal)
TW-2S	0	0	994,438
TW-2D	0	0	53,015,001
TW-3D	98.6	4,401,973	65,042,842
PE-1	32.9	1,468,489	21,148,046
Total	131.5	5,870,462	140,200,327
		Volume Pumped from the MW-20 Well Cluster	1,527,724
		Total Volume Pumped[b] (gal)	141,728,051
		Total Volume Pumped (ac-ft)	435.0

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

[a] Pumping results during the monthly period are based on readings collected between March 1, 2007 at 12:00 a.m. and March 31, 2007 at 11:59 p.m. (31 days).
[b] Interim Measure groundwater extraction at the Topock site was initiated in March 2004.
[c] The "Average Pumping Rate" is the overall average during the reporting period, including system downtime based on flow meter readings.

TABLE 2-2
Analytical Results for Extraction Wells, October 2006 through March 2007
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

Well ID	Sample Date	Dissolved Total Chromium mg/L	Hexavalent Chromium mg/L	Total Dissolved Solids mg/L
TW-3D	04-Oct-06	2.46	2.47	5350 J
TW-3D	01-Nov-06	3.18	2.49	4920
TW-3D	06-Dec-06	2.09	2.50	5420
TW-3D	10-Jan-07	2.58	2.44	5520
TW-3D	06-Feb-07	2.31	2.40	5780
TW-3D	07-Mar-07	2.50	2.42	6040
PE-1	04-Oct-06	0.0839	0.0901	5950 J
PE-1	01-Nov-06	0.0833	0.0925	5010
PE-1	06-Dec-06	0.0858	0.0972	5650
PE-1	10-Jan-07	0.103	0.0889	5320
PE-1	06-Feb-07	0.0895	0.0808	5440
PE-1	07-Mar-07	0.091	0.0847	5500

NOTES:

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.

J = concentration or reporting limit estimated by laboratory or data validation

TABLE 4-1

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)
April 2004	17,400	17,354	-46	456.4	456.2	-0.2
May 2004	17,100	16,788	-312	456.3	456.3	-0.1
June 2004	15,800	16,869	1,069	455.8	456.6	0.7
July 2004	14,000	14,951	951	455.2	455.9	0.7
August 2004	12,100	12,000	-100	454.5	454.9	0.4
September 2004	11,200	10,979	-221	454.2	454.6	0.4
October 2004	8,600	7,538	-1,062	453.2	453.5	0.3
November 2004	9,500	8,075	-1,425	453.6	453.4	-0.2
December 2004	6,200	8,090	1,890	452.4	453.3	0.9
January 2005	8,800	4,900	-3,900	453.4	452.4	-1.0
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
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	--	--	456.4	--	--

NOTES:

1) 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

2) Listed projections for April 2004 through July 2004 are from April 2004, and the remainder were from the beginning of each respective month.

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.

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

TABLE 4-2
Calculated Hydraulic Gradients for Well Pairs, March 2007
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

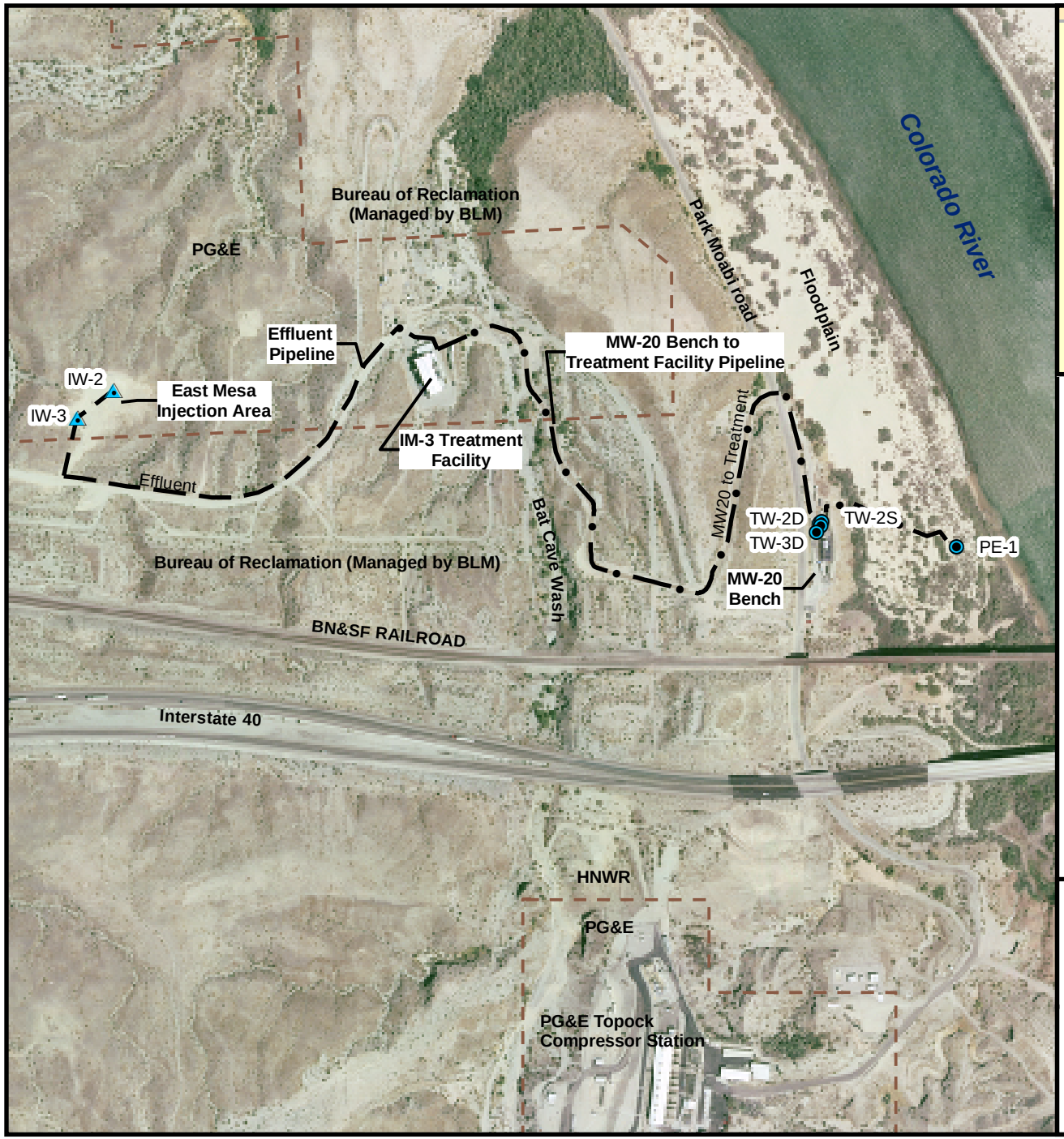
Well Pair[1]	Reporting Period	Mean Landward Hydraulic Gradient[2] (feet/foot)	Measurement Interval 2007
Northern Gradient Pair			
MW-31-135 / MW-33-150		0.0028	March 1 through March 31
Central Gradient Pair			
MW-20-130 / MW-34-80		0.0040	March 1 through March 31
Southern Gradient Pair			
MW-20-130 / MW-42-65		0.0045	March 1 through March 31

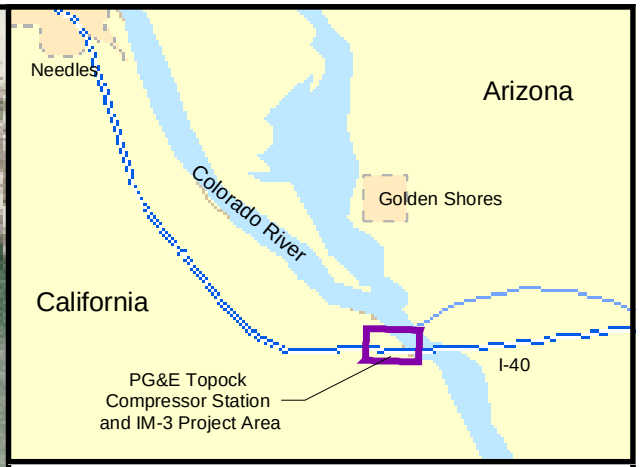
NOTES:

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

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

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
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

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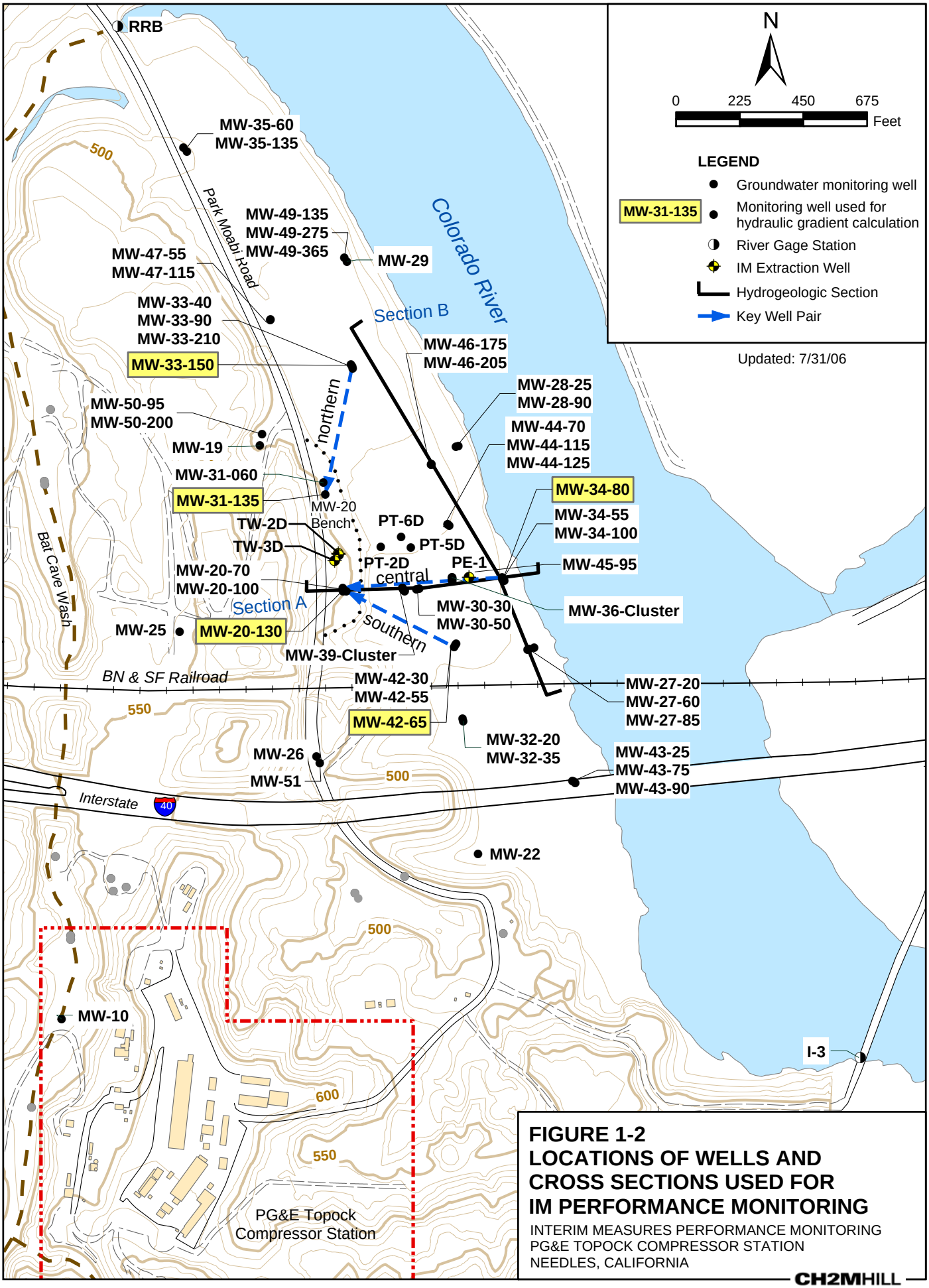

FIGURE 1-2
LOCATIONS OF WELLS AND CROSS SECTIONS USED FOR IM PERFORMANCE MONITORING

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

CH2MHILL

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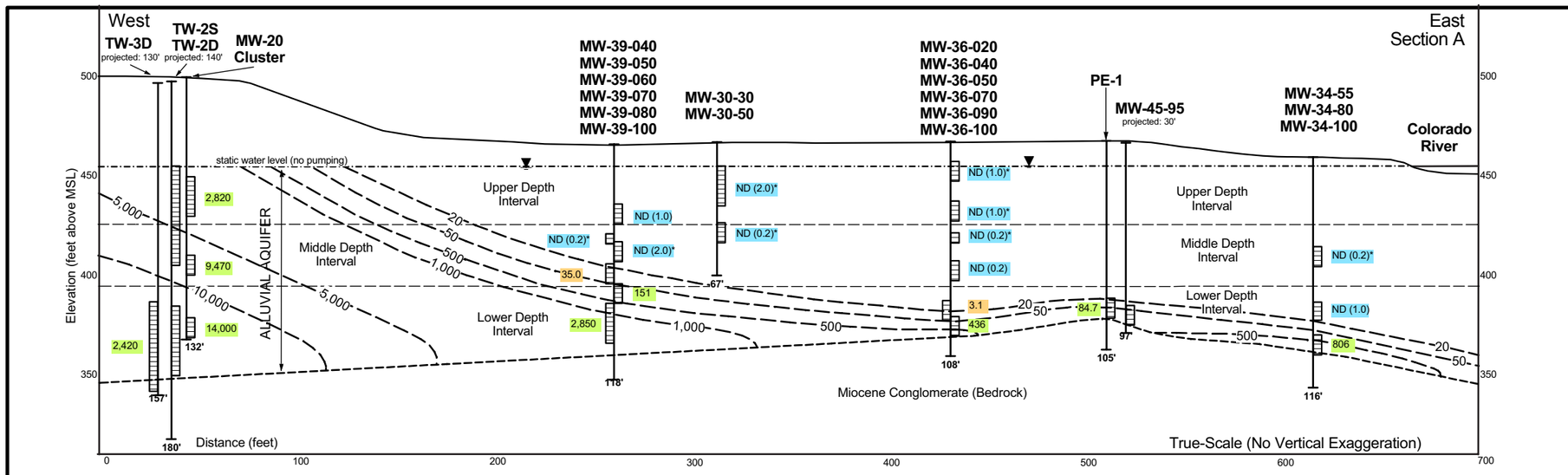

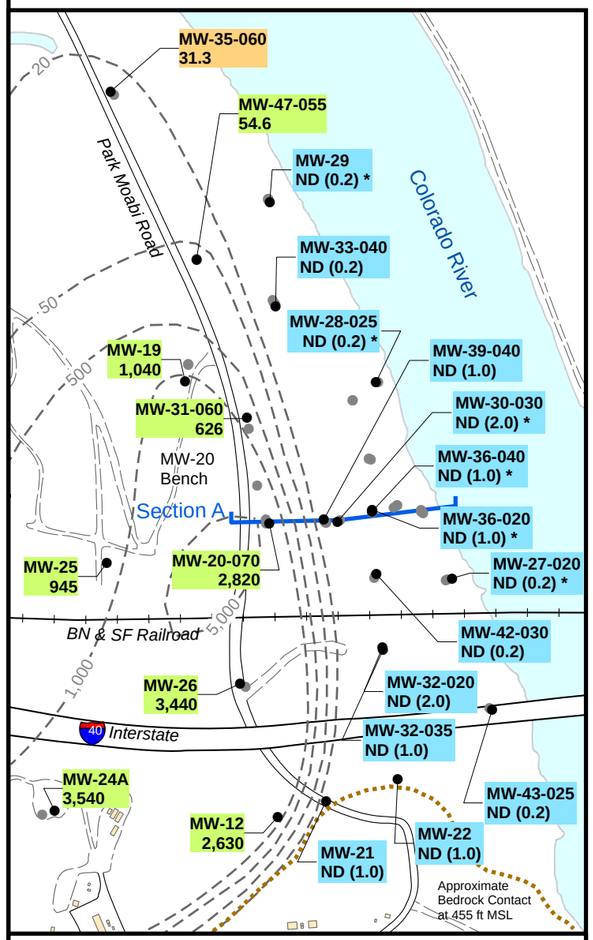

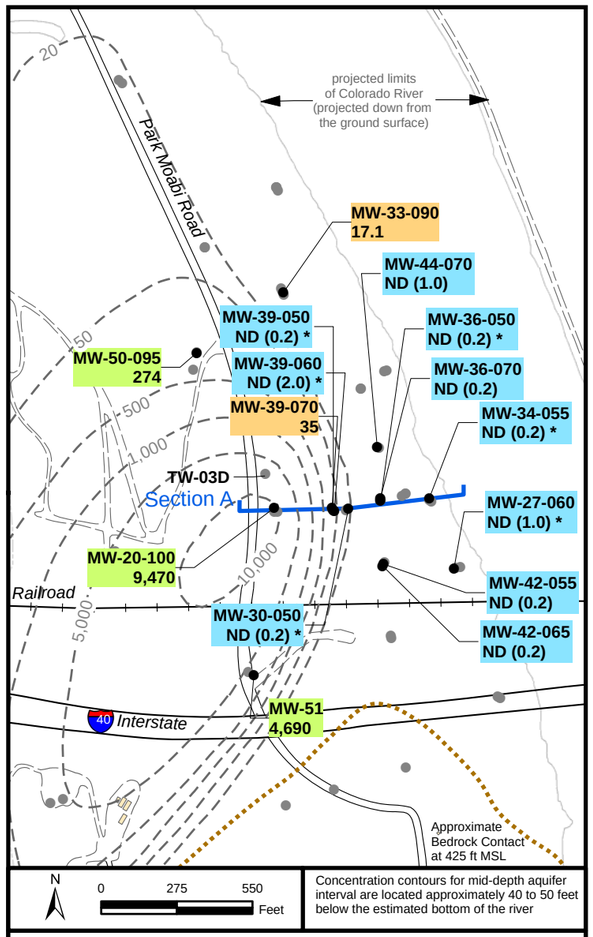

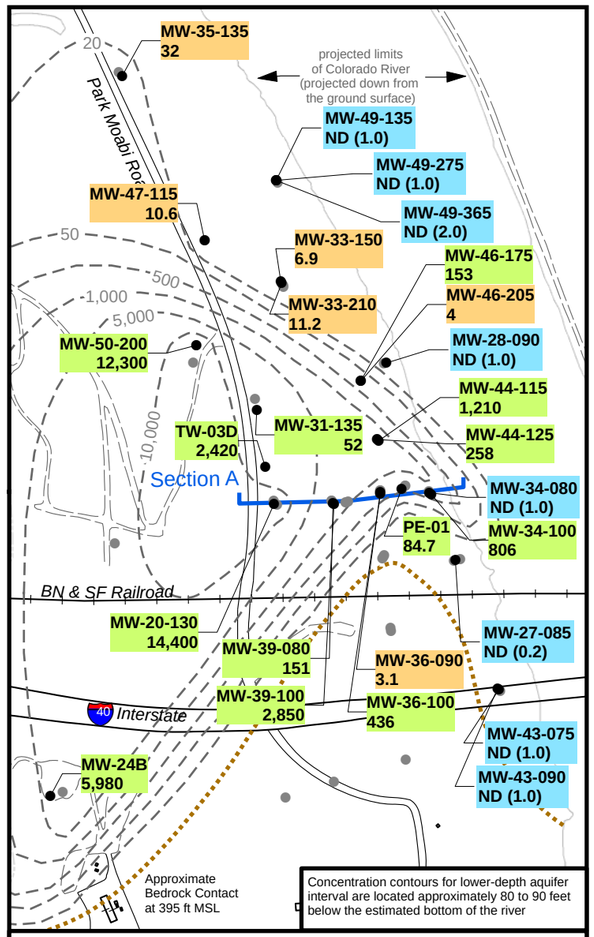

LEGEND

Maximum Hexavalent Chromium [Cr(VI)] Concentrations in Groundwater, March 2007 Monitoring

Concentrations in micrograms per liter (µg/L) equivalent to parts per billon (ppb)

ND = not detected at listed reporting limit
J = Concentration estimated by laboratory or data validation

Samples with * are from October 2006 sampling, all other samples are from March 2007.

Results posted are maximum concentrations from primary and duplicate samples.
See Tables B-1 and B-2 for sampling data and other results.

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
	Contours incorporate the maximum concentration from wells within each depth interval
	Hydrogeologic Section A (true-scale) showing aquifer depth intervals, well screens, and Cr(VI) sampling results.

NOTES ON CONTOUR MAPS

1. The Cr(VI) contour maps for 2006-2007 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 2004-2006. The actual locations of contours beyond well control points in these areas are not certain, but are inferred using available site investigation and monitoring 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.

FIGURE 3-1
MAXIMUM CR(VI) CONCENTRATIONS IN ALLUVIAL AQUIFER, MARCH 2007

ANNUAL IM PERFORMANCE MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

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

Oldest Alluvium

Fluvial Deposits

Upper Depth Interval

Middle Depth Interval

Lower Depth Interval

Approximate geologic contact between alluvial fan and fluvial deposits

ND (0.2)
17.1
6.9
11.2
237'

ND (0.2)*
ND (1.0)
153
4.0
216'

ND (1.0)
1,210
258
134'

ND (0.2)*
ND (1.0)
806
116'

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

20
50
500
1,000

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:

Results are maximum concentrations from primary and duplicate samples from March 2007 sampling.
Other results marked with * are from the October 2006 sampling event.
See Tables B-1 and B-2 for sampling data and other results.

J = Concentration estimated by laboratory or data validation.

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

-— — 50 -— —
Inferred Hexavalent Chromium [Cr(VI)] concentration contour

Hexavalent Chromium 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
MARCH 2007

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

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M:\GINT\INPUT\GINT_WORK_FILE_TYPES\GDW\X-SECTIONS\PMR\PMP21_APRIL_2007\4-10-2007_B_X-SECTION.GDW;

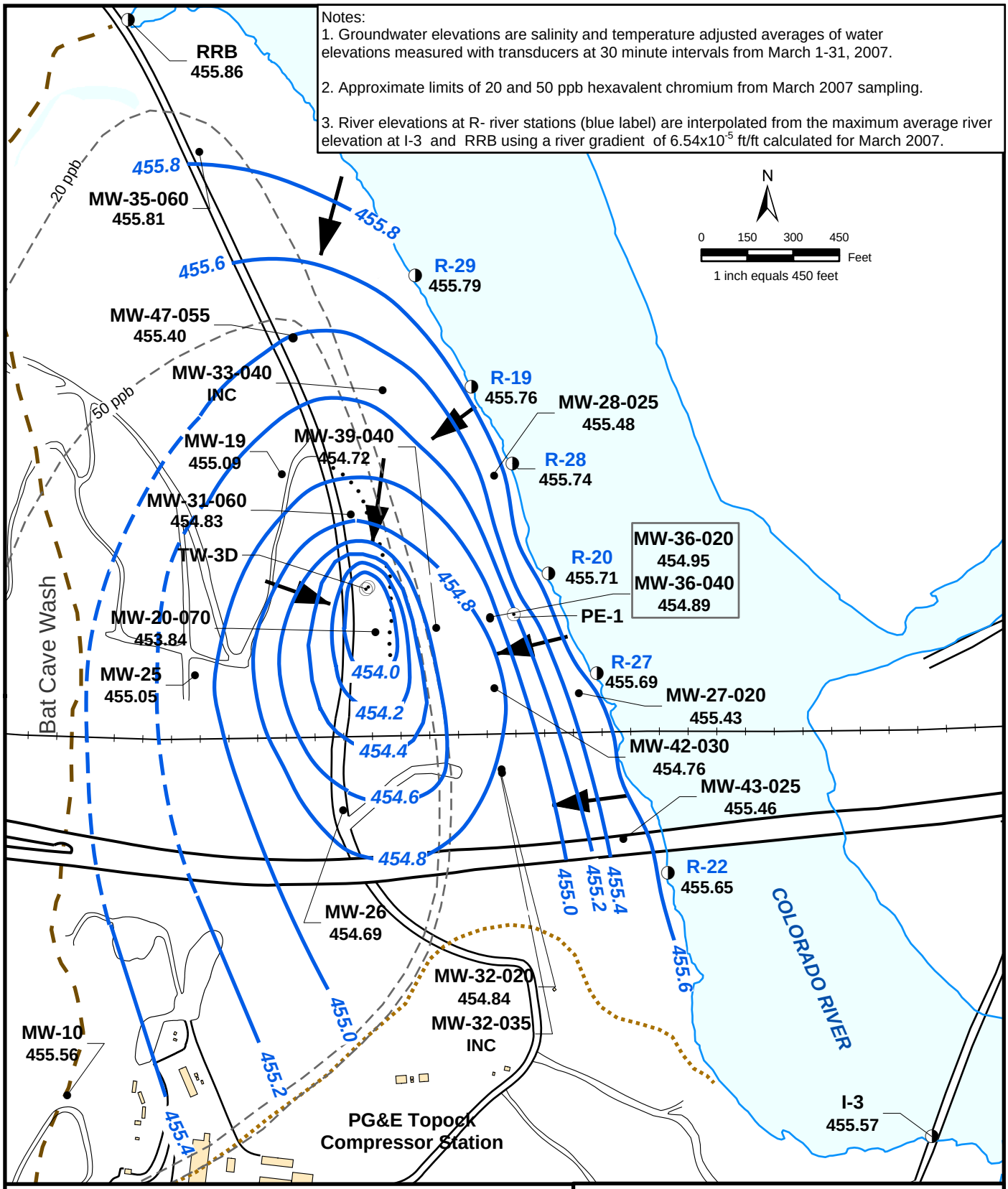

FIGURE 4-1
AVERAGE GROUNDWATER ELEVATIONS SHALLOW WELLS AND RIVER ELEVATIONS, MARCH 2007

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

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\\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MapFiles\2007\GW\IM_Average_groundwater_UA_Mar07.mxd

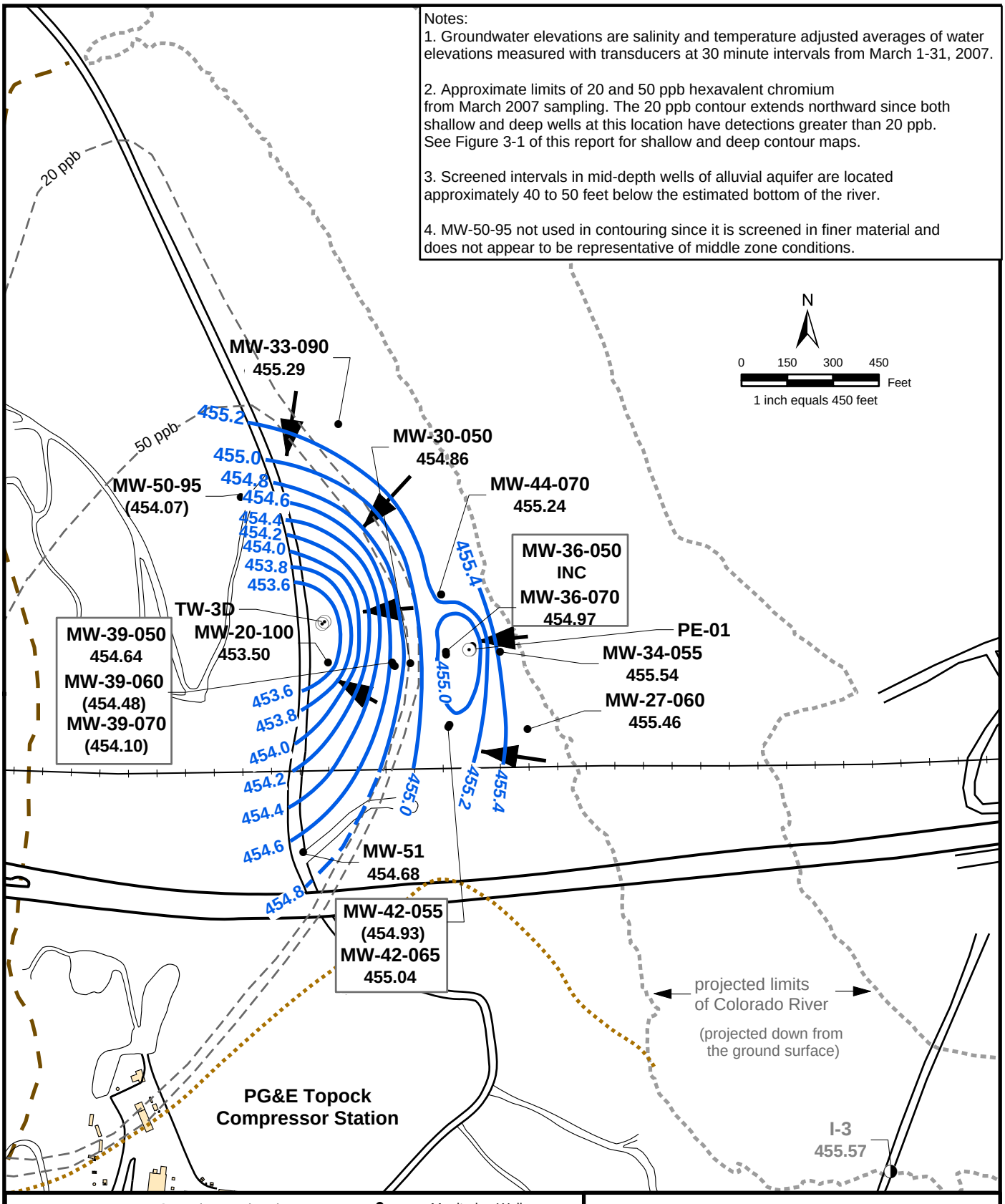

FIGURE 4-2
AVERAGE GROUNDWATER ELEVATIONS MID-DEPTH WELLS MARCH 2007

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

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SFO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MAPFILES\2007\GW\IM_AVERAGE_GROUNDWATER_MA_March07.MXD

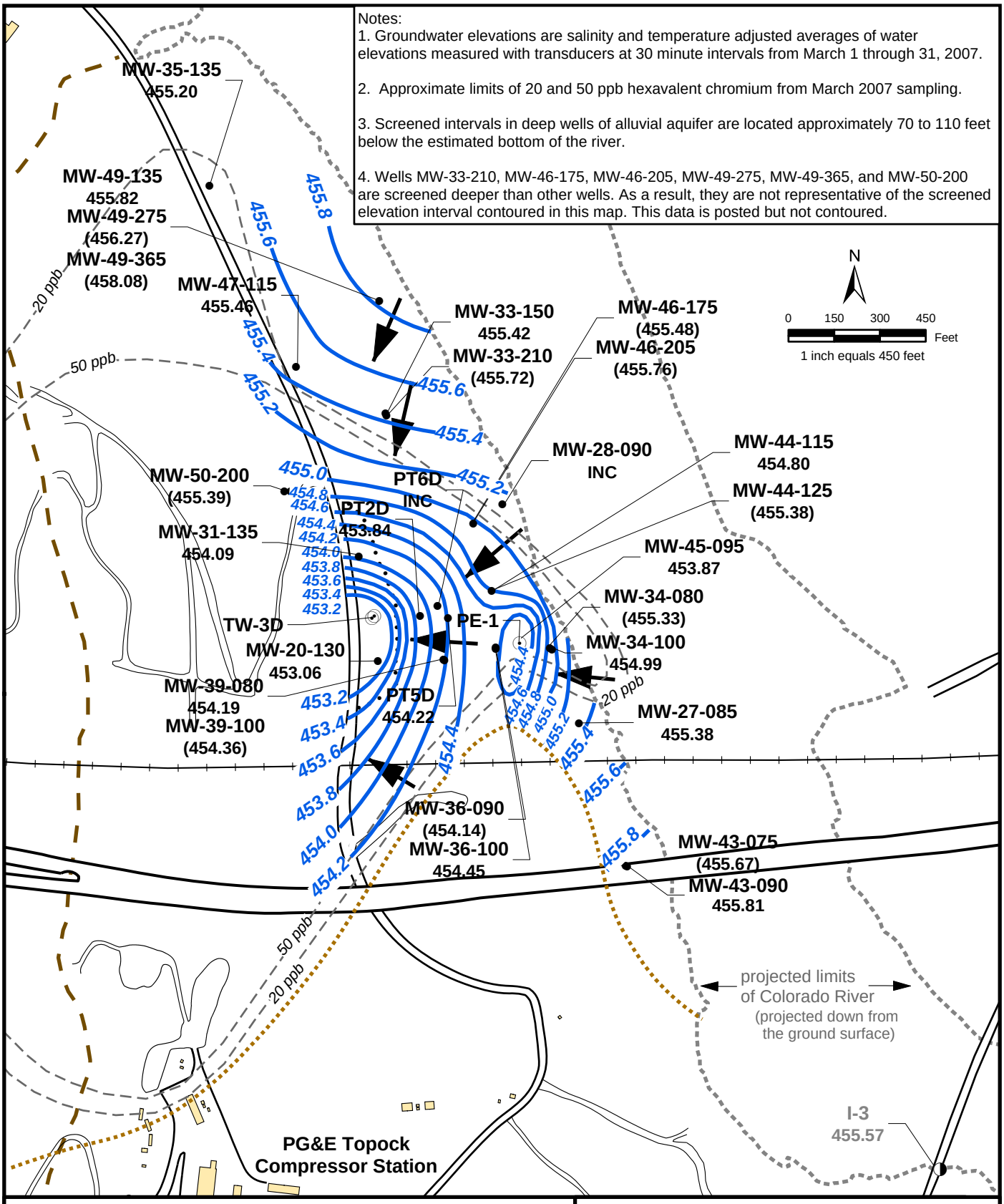
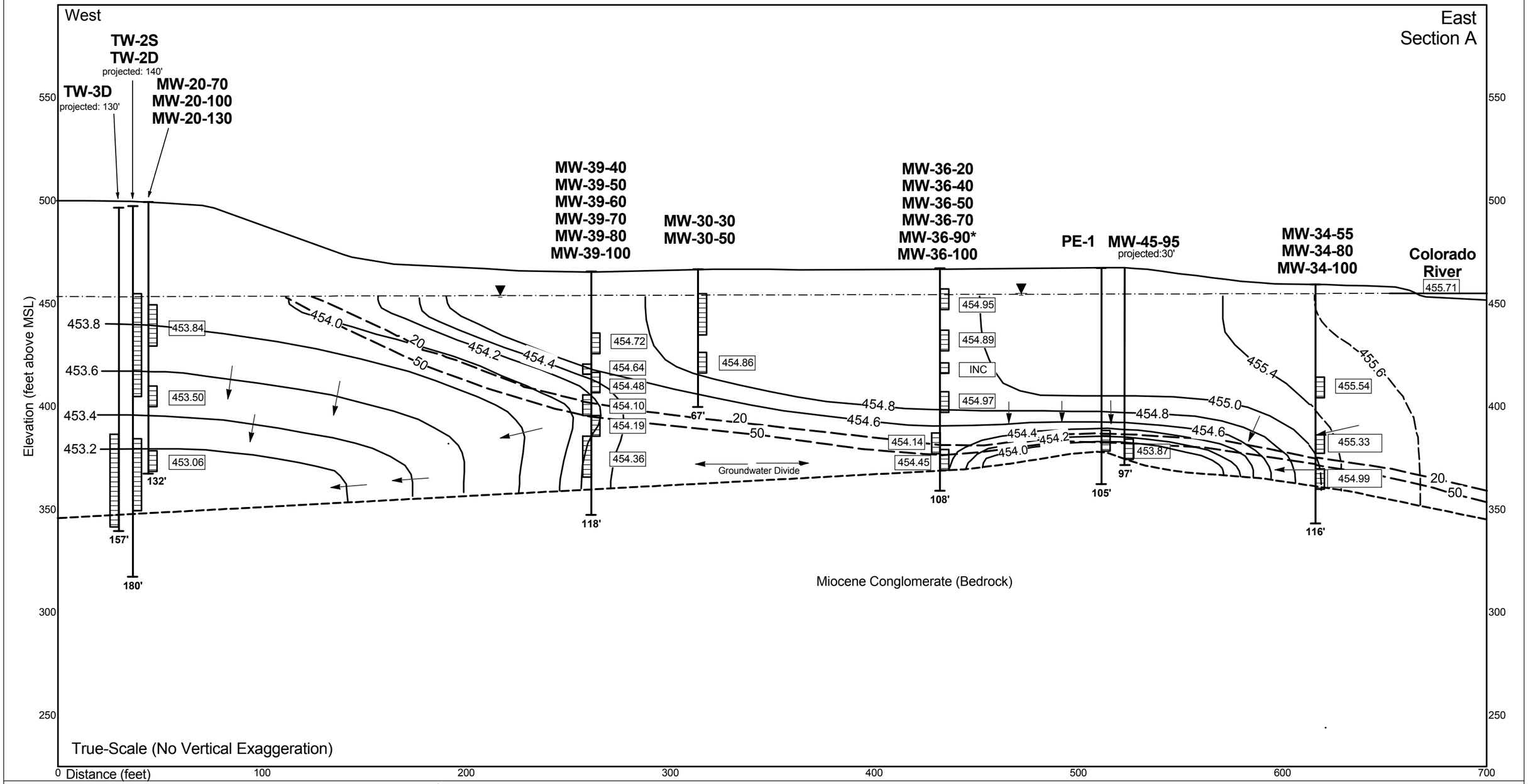


FIGURE 4-3
AVERAGE GROUNDWATER ELEVATIONS DEEP WELLS MARCH 2007

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

CH2MHILL

BAO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MapFiles\2007\GW\GW\IM_Average_groundwater_LA_Mar_07.mxd



Notes: Results show average groundwater elevations for March 1 through 31, 2007 measured with transducers at 30 minute intervals.
Groundwater elevations adjusted for salinity and temperature.

Well MW-36-90* excluded from contouring.

River elevation (R-20) is the calculated average river level based upon the river gradient between RRB and I-3.

Legend:

MW-30-50 — well screen

Inferred water table

453.66 — Monthly average groundwater head (ft AMSL)

103 boring depth (feet)

20 — Inferred hexavalent chromium contour (ppb) March 2007

453.5 — Groundwater head contour

453.5 — Inferred groundwater head contour

Interpreted groundwater flow direction

FIGURE 4-4
AVERAGE GROUNDWATER ELEVATIONS FOR WELLS ON FLOODPLAIN CROSS-SECTION A MARCH 2007

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

CH2MHILL

G:\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GINT\INPUT\GINT_WORK_FILE_TYPES\GDW\X-SECTIONS\GW_X-SECTIONS\PMP21_APRIL20-2007\EAST_WEST_XSECTIONA_MARCH_2007.GDW;

Appendix A
Extraction System Operations Log for Reporting Period

Appendix A
Extraction System Operations Log for March 2007
PG&E Topock Interim Measures Performance Monitoring Program

During March 2007, extraction wells TW-3D and PE-1 operated at a target pump rate of at 135 gallons per minute (gpm) excluding periods of planned and unplanned downtime. The operational run time for the IM groundwater extraction system (combined or individual pumping) was 98 percent during the March 2007 reporting period.

The IM No. 3 facility also treated approximately 3,200 gallons of water generated from the groundwater monitoring program and 6,990 gallons of water generated from injection well re-development during March 2007. One container of solids from the IM No. 3 facility were taken offsite during March 2007.

Periods of planned and unplanned extraction system down time (that together resulted in approximately 2 percent downtime during March 2007) 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.

- **March 12, 2007 (planned)**: The extraction well system was offline from 6:45 am until 6:44 pm to complete a chemical cleaning of the reverse osmosis unit membranes. Extraction system downtime was 11 hours 59 minutes.
- **March 14, 2007 (unplanned)**: The extraction well system was temporarily offline from 12:45 pm until 12:50 pm while switching to generator power. Extraction system downtime was 5 minutes.
- **March 14, 2007 (unplanned)**: The extraction well system was temporarily offline from 2:19 pm until 2:20 pm while switching to Needles Power. Extraction system downtime was 2 minutes.
- **March 22, 2007 (unplanned)**: The extraction well system was temporarily offline from 12:33 pm until 12:36 pm while switching to generator power. Extraction system downtime was 3 minutes.
- **March 22, 2007 (unplanned)**: The extraction well system was temporarily offline from 5:03 pm until 5:06 pm while switching to Needles power. Extraction system downtime was 3 minutes.
- **March 26, 2007 (unplanned)**: The extraction well system was temporarily offline from 4:03 pm until 6:52 pm while replacing a polymer feed pump that failed with an onsite spare pump. Extraction System Downtime was 2 hours 49 minutes.
- **March 27, 2007 (unplanned)**: The extraction well system was temporarily offline from 1:39 pm until 1:40 pm while switching to generator power. Extraction system downtime was 2 minutes.
- **March 28, 2007 (unplanned)**: The extraction well system was temporarily offline from 7:33 am until 7:39 am while switching to Needles power. Extraction system downtime was 6 minutes.

- **March 30, 2007 (unplanned)**: The extraction well system was temporarily offline from 1:20 am until 1:57 am while reprogramming the Micro Filter PLC. Extraction system downtime was 37 minutes.

Appendix B
Chromium Sampling Results for Monitoring Wells in Floodplain Area

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, October 2006 through March 2007
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 Wells								
MW-27-020	03-Oct-06	ND (0.2)	ND (1.0)	-176	0.5	1,240	455.0	M
MW-28-025	11-Oct-06	ND (0.2)	ND (1.0)	-111	1.5	1,860	454.4	453.7
MW-29	13-Oct-06	ND (0.2)	ND (1.0)	-56	5.3	4,770	454.9	455.0
MW-30-030	10-Oct-06	ND (2.0)	ND (1.0)	-129	1.4	56,500	454.3	453.6
MW-32-020	02-Oct-06	ND (5.0)	ND (1.0)	-122	0.9	59,800	454.3	M
	11-Dec-06	ND (2.0)	ND (1.0)	-110	1.8	61,300	453.6	455.4
	06-Mar-07	ND (2.0)	ND (1.0)	-84	0.1	39,700	454.5	454.7
MW-32-035	02-Oct-06	ND (1.0)	ND (1.0)	-162	0.7	20,000	454.4	M
	11-Dec-06	ND (1.0)	ND (1.0)	-149	1.5	23,700	454.2	455.4
	06-Mar-07	ND (1.0)	ND (1.0)	-66	0.0	14,800	454.7	454.7
MW-33-040	06-Oct-06	ND (0.2)	ND (1.0)	167	---	6,710	455.2	455.0
	14-Dec-06	ND (0.2)	1.20	31	2.8	7,080	454.0	453.2
	06-Mar-07	ND (0.2)	ND (1.0)	---	1.7	27,000	454.9	454.7
MW-36-020	02-Oct-06	ND (1.0)	ND (1.0)	-177	1.8	24,000	454.6	M
MW-36-040	05-Oct-06	ND (1.0)	ND (1.0)	-194	1.4	16,000	454.2	455.0
MW-39-040	05-Oct-06	ND (0.2)	ND (1.0)	-198	1.4	12,500	454.0	454.0
	14-Dec-06	ND (1.0)	ND (1.0)	-174	1.7	13,200	453.4	453.1
	05-Mar-07	ND (1.0)	ND (1.0)	-55	---	8,770	454.5	455.1
MW-42-030	03-Oct-06	ND (1.0)	ND (1.0)	-160	0.9	19,700	454.4	M
	07-Mar-07	ND (0.2)	ND (1.0)	-109	0.0	14,400	454.3	454.5
MW-43-025	02-Oct-06	ND (0.2)	ND (1.0)	-172	0.6	1,310	454.8	M
	06-Mar-07	ND (0.2)	ND (1.0)	-168	0.0	6,410	455.0	454.8
Middle-Depth Wells								
MW-27-060	03-Oct-06	ND (1.0)	ND (1.0)	-122	0.8	14,300	455.0	M
MW-30-050	11-Oct-06	ND (0.2)	ND (1.0)	-113	0.8	8,280	454.5	454.6
	11-Oct-06 FD	ND (0.2)	ND (1.0)	FD	FD	FD	FD	FD
MW-33-090	06-Oct-06	17.3	20.9	110	0.9	12,500	455.2	454.5
	15-Dec-06	17.8 J	13.8	110	1.7	14,600	453.8	453.6
	15-Dec-06 FD	2.30 R	13.5	FD	FD	FD	FD	FD
	12-Mar-07	17.1	18.0	97	0.4	11,600	454.9	454.5
MW-34-055	04-Oct-06	ND (0.2)	ND (1.0)	-178	2.2	3,080	455.0	453.9
MW-36-050	05-Oct-06	ND (0.2)	ND (1.0)	-165	1.4	4,200	454.9	455.1
MW-36-070	02-Oct-06	ND (0.2)	ND (1.0)	-122	1.4	5,220	454.5	M
	14-Dec-06	ND (0.2)	ND (1.0) LF	-112	1.8	3,440	453.2	453.3
	07-Mar-07	ND (0.2)	ND (1.0)	-128	0.5	3,000	454.6	454.5
MW-39-050	05-Oct-06	ND (0.2)	ND (1.0)	-77	1.4	11,200	454.2	454.2
MW-39-060	05-Oct-06	ND (1.0)	ND (1.0)	-54	1.2	11,300	454.2	454.5
	05-Oct-06 FD	ND (2.0)	ND (1.0)	FD	FD	FD	FD	FD

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, October 2006 through March 2007
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-Depth Wells								
MW-39-070	05-Oct-06	112	103	-1	1.2	12,200	453.6	453.9
	14-Dec-06	101	94.0	2	1.8	8,190	453.8	453.2
	05-Mar-07	35.0	37.2	219	---	8,310	453.6	455.1
MW-42-055	03-Oct-06	ND (1.0)	ND (1.0)	-126	0.8	19,100	454.4	M
	14-Dec-06	ND (2.0)	ND (1.0)	-132	0.5	16,500	453.6	453.3
	07-Mar-07	ND (0.2)	ND (1.0)	-62	0.0	17,700	454.4	454.5
	07-Mar-07 FD	ND (0.2)	ND (1.0)	FD	FD	FD	FD	FD
MW-42-065	03-Oct-06	ND (1.0)	ND (1.0)	-50	0.7	20,400	454.5	M
	14-Dec-06	ND (2.0)	ND (1.0)	-42	0.6	18,300	453.8	453.4
	07-Mar-07	ND (0.2)	ND (1.0)	---	0.0	18,500	454.4	454.5
MW-44-070	04-Oct-06	ND (1.0)	ND (1.0)	-181	2.3	8,910	454.0	453.8
	14-Dec-06	ND (1.0)	ND (1.0)	-129	1.7	6,730	453.7	453.6
	09-Mar-07	ND (1.0)	ND (1.0)	-144	0.0	8,700	454.8	455.1
Deep Wells								
MW-27-085	13-Oct-06	ND (1.0)	ND (1.0)	-78	1.1	24,100	454.0	454.2
	16-Nov-06	ND (1.0)	ND (1.0)	-87	1.2	23,400	453.1	452.8
	11-Dec-06	ND (1.0)	ND (1.0)	-82	1.3	26,700	454.9	455.8
	10-Jan-07	ND (1.0)	4.40	-61	0.3	18,640	453.6	453.7
	06-Feb-07	ND (1.0)	ND (1.0)	-47	0.1	23,100	453.5	453.5
	07-Mar-07	ND (0.2)	ND (1.0)	-80	0.2	---	454.7	454.5
MW-28-090	13-Oct-06	ND (0.2)	ND (1.0)	-156	1.0	9,700	454.9	454.9
	14-Dec-06	ND (1.0)	ND (1.0)	-160	0.3	7,590	453.7	453.7
	08-Mar-07	ND (1.0)	ND (1.0)	-154	4.1	6,910	454.7	454.7
MW-33-150	06-Oct-06	7.70	5.70	15	0.9	20,500	454.9	454.0
	13-Dec-06	10.8	9.80	-5	0.4	17,500	454.1	453.8
	06-Mar-07	6.90	7.00	37	0.0	---	455.0	454.7
MW-33-210	06-Oct-06	10.2	10.0	28	0.9	24,000	455.3	454.2
	11-Dec-06	11.1	8.00	157	1.2	27,600	454.9	455.9
	05-Mar-07	11.2	11.0	-2	0.3	57,300	455.7	455.0
MW-34-080	04-Oct-06	ND (1.0)	ND (1.0)	-111	2.1	14,400	453.7	453.9
	16-Nov-06	ND (1.0)	ND (1.0)	-86	1.1	13,200	453.0	452.6
	12-Dec-06	ND (1.0)	ND (1.0)	-23	0.3	15,000	454.5	454.6
	09-Jan-07	ND (1.0)	3.20	-36	0.3	14,300	453.5	453.6
	05-Feb-07	ND (1.0)	ND (1.0)	-51	0.2	10,300	453.6	453.5
	05-Mar-07	ND (1.0)	ND (1.0)	-54	0.2	24,800	455.2	455.1
MW-34-100	04-Oct-06	910	889	0	2.0	20,700	454.6	453.9
	18-Oct-06	815	920	52	0.8	21,700	454.0	453.9
	01-Nov-06	832	752	33	1.6	20,200	454.0	453.5
	16-Nov-06	777	801	146	1.4	20,500	453.0	453.0
	30-Nov-06	744	712	115	0.9	21,900	452.5	452.2
	12-Dec-06	851	625 J	-16	0.3	21,000	454.1	454.5

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, October 2006 through March 2007
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-34-100	28-Dec-06	723	603	115	---	16,760	453.3	452.7
	09-Jan-07	797	830	52	0.2	---	453.2	453.6
	24-Jan-07	832	817	129	0.3	17,700	453.4	453.3
	05-Feb-07	780	646	-28	0.2	26,800	453.1	453.5
	05-Feb-07 FD	764	634	FD	FD	FD	FD	FD
	21-Feb-07	804	895	37	0.2	39,100	454.5	454.6
	07-Mar-07	806	788	71	0.2	37,800	454.4	454.6
	21-Mar-07	724	642	67	0.0	20,000	454.9	455.5
MW-36-090	02-Oct-06	9.00	8.50	-20	1.0	8,270	453.6	M
	02-Oct-06 FD	8.90	10.8	FD	FD	FD	FD	FD
	15-Nov-06	ND (1.0)	2.40	-64	1.0	11,700	452.4	453.6
	14-Dec-06	3.80 J	5.80 J	-39	1.7	7,250	453.6	453.4
	14-Dec-06 FD	4.00	3.00 J	FD	FD	FD	FD	FD
	10-Jan-07	6.00	9.70	-83	0.2	7,743	452.4	453.7
	05-Feb-07	5.40	4.90	-28	0.2	10,100	452.4	453.5
	07-Mar-07	3.10	3.70	28	0.4	7,470	453.6	454.5
MW-36-100	11-Oct-06	556	629	17	0.9	16,500	453.7	453.8
	14-Nov-06	657	764	13	1.0	17,900	452.5	453.1
	11-Dec-06	586	513	-64	1.1	21,700	453.8	455.7
	10-Jan-07	571	554	-55	0.3	20,300	452.8	453.7
	05-Feb-07	538	474	-66	0.2	23,800	452.7	453.5
	08-Mar-07	436	454	-62	3.7	15,700	453.8	454.7
MW-39-080	05-Oct-06	580	594	76	1.2	19,500	454.2	454.3
	15-Nov-06	339	422	52	0.9	17,600	452.6	453.5
	14-Dec-06	326	272	44	1.7	17,300	453.8	453.2
	10-Jan-07	302	292	---	0.2	13,900	452.7	453.7
	08-Feb-07	286	247	105	0.3	24,600	452.0	452.3
	05-Mar-07	151	144	269	---	10,800	453.9	455.0
MW-39-100	11-Oct-06	3370	3500	87	1.2	23,100	454.4	454.4
	15-Nov-06	2850	3190	96	2.5	23,000	452.9	453.2
	15-Nov-06 FD	2960	3060	FD	FD	FD	FD	FD
	12-Dec-06	3820	3350	95	0.4	24,200	453.4	454.5
	10-Jan-07	2930	2560	75	0.5	19,570	452.9	453.7
	08-Feb-07	2880	2400	74	0.3	---	452.4	452.3
	12-Mar-07	2850	2770	139	0.7	20,800	455.1	454.5
MW-43-075	02-Oct-06	ND (1.0)	ND (1.0)	-128	1.2	17,900	454.2	M
	12-Dec-06	ND (1.0)	ND (1.0)	-109	1.2	17,400	454.6	454.7
	06-Mar-07	ND (1.0)	ND (1.0)	-151	0.0	---	455.4	454.9
MW-43-090	02-Oct-06	ND (1.0)	ND (1.0)	-108	0.4	23,600	455.2	M
	12-Dec-06	ND (1.0)	ND (1.0)	-85	0.5	25,200	454.8	454.7
	06-Mar-07	ND (1.0)	ND (1.0)	-97	0.0	37,300	455.7	455.0
MW-44-115	05-Oct-06	1300	1310	3	2.9	18,400	454.7	454.4

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, October 2006 through March 2007
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-44-115	18-Oct-06	1250	1380	23	0.8	18,300	454.1	454.5
	15-Nov-06	1210	1480	19	1.5	14,000	453.1	453.5
	12-Dec-06	1310	1090	116	0.6	18,300	453.7	454.4
	09-Jan-07	1140	1260	-34	0.2	20,400	453.1	453.6
	06-Feb-07	1140	1020	-53	0.2	25,200	453.1	453.5
	09-Mar-07	1210	1340 LF	-33	0.1	---	454.4	455.1
	09-Mar-07 FD	1200	1340	FD	FD	FD	FD	FD
MW-44-125	05-Oct-06	284	280	-97	2.6	18,000	455.1	454.5
	18-Oct-06	304	327	-112	0.8	18,900	454.7	454.6
	18-Oct-06 FD	308	272	FD	FD	FD	FD	FD
	15-Nov-06	320	363	-119	1.3	14,200	453.5	453.7
	13-Dec-06	300	321	-67	0.8	14,200	454.0	454.3
	09-Jan-07	285	285	-92	0.2	22,700	453.4	453.6
	09-Jan-07 FD	284	268	FD	FD	FD	FD	FD
	06-Feb-07	213	190	-85	0.2	12,900	453.2	453.5
	09-Mar-07	258	287	-70	0.0	19,100	454.9	455.1
MW-46-175	05-Oct-06	194	192	0	2.8	22,200	454.9	453.9
	05-Oct-06 FD	195	187	FD	FD	FD	FD	FD
	18-Oct-06	204	253	15	0.9	21,900	454.8	454.0
	15-Nov-06	163	147	-118	1.1	17,100	453.9	453.1
	13-Dec-06	187	174	-33	0.3	17,700	454.2	453.9
	10-Jan-07	138	133	-160	0.1	17,450	453.9	453.7
	08-Feb-07	130	108	-91	0.3	19,100	453.3	452.4
	08-Mar-07	153	147	222	0.0	14,100	455.1	455.0
MW-46-205	05-Oct-06	2.10	2.30	-96	2.4	27,500	455.2	453.9
	13-Dec-06	3.20	3.00	10	1.0	21,000	454.5	454.0
	08-Mar-07	4.00	5.40	159	0.0	18,100	455.2	454.8
MW-49-135	12-Oct-06	ND (1.0)	ND (1.0)	-200	1.9	21,200	455.3	453.9
	15-Dec-06	ND (1.0)	ND (1.0)	-157	0.3	27,700	454.5	453.3
	09-Mar-07	ND (1.0)	ND (1.0)	-173	0.3	30,500	455.3	455.5
MW-49-275	12-Oct-06	ND (1.0)	ND (1.0)	-252	1.8	31,100	455.9	453.5
	15-Dec-06	ND (1.0)	ND (1.0)	-213	1.7	30,000	454.9	453.4
	09-Mar-07	ND (1.0)	ND (1.0)	-228	0.2	37,700	455.9	455.2
MW-49-365	12-Oct-06	ND (2.0)	ND (1.0)	-275	1.4	47,700	457.3	453.0
	15-Dec-06	ND (2.0)	1.10	-172	1.7	44,400	456.2	453.2
	09-Mar-07	ND (2.0)	ND (1.0)	-237	0.0	42,800	457.5	455.4

Refer to table footnotes for data qualifier explanation.

TABLE B-1
Groundwater Sampling Results for Floodplain Monitoring Wells, October 2006 through March 2007
Interim Measures Performance Monitoring
PG&E Topock Compressor Station

NOTES:

ND = not detected at listed reporting limit (RL)
FD = field duplicate
LF = lab filtered
J = concentration or RL estimated by laboratory or data validation
T = data from the downhole transducers to fill groundwater elevation data gaps at some locations
MSL = mean sea level
(---) = data not collected, available, rejected, or field instrumentation malfunctioned
µg/L= micrograms per liter
mV = oxidation-reduction potential (ORP)
µS/cm = microSiemens per centimeter
M = I-3 Transducer damaged
R = result exceeded analytical criteria for precision and accuracy; should not be used for project decision-making

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 2006 through March 2007
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 Wells						
MW-12	04-Oct-06	1740	1790	128	5.22	---
	13-Dec-06	2050	1880	155	6.20	4660
	06-Mar-07	2630	2440	117	6.67	4940
MW-19	02-Oct-06	970	1300	44.0	---	2450
	15-Dec-06	1070 J	1090	76.0	6.64	2360
	06-Mar-07	1040	1030	95.0	7.03	2280
MW-20-070	03-Oct-06	3290	3390	117	7.47	3460
	03-Oct-06 FD	3410	3330	FD	FD	FD
	13-Dec-06	3430	3120	203	7.93	2890
	14-Mar-07	2820	2720	152	8.37	2260
MW-21	03-Oct-06	ND (1.0)	ND (1.0)	-67	6.90	15900
	13-Dec-06	ND (1.0)	ND (1.0)	-68	1.22	13000
	09-Mar-07	ND (1.0)	ND (1.0) LF	11.0	2.04	19700
MW-22	13-Oct-06	ND (1.0)	ND (1.0)	-105	0.97	42200
	08-Mar-07	ND (1.0)	ND (1.0)	-99	0.25	51300
MW-24A	03-Oct-06	4300	4260	101	2.87	3910
	14-Dec-06	3310	4250	76.0	0.33	---
	06-Mar-07	3540	3600	142	0.99	3230
MW-25	03-Oct-06	1140	1150	81.0	6.88	1720
	06-Mar-07	945	951	120	6.84	1350
MW-26	03-Oct-06	3590	3850	104	---	4140
	12-Mar-07	3440	3540	90.0	4.84	3590
MW-31-060	05-Oct-06	773	849	82.0	7.77	3440
	12-Mar-07	626	638	93.0	5.29	2650
MW-35-060	12-Oct-06	28.6	29.1	112	1.26	12200
	08-Mar-07	31.3	35.1	176	0.78	5660
	08-Mar-07 FD	30.8	32.7	FD	FD	FD
MW-47-055	10-Oct-06	56.9	56.8	6.00	2.83	5300
	14-Dec-06	61.2	82.0	28.0	2.19	3970
	06-Mar-07	54.6	53.0	55.0	3.09	9400
TW-02S	04-Oct-06	1920	2130	224	6.70	3470
Middle-Depth Wells						
MW-20-100	03-Oct-06	9520	10300	106	3.46	4340
	13-Dec-06	9610	9220 J	188	2.19	5200
	13-Dec-06 FD	9400	11500 J	FD	FD	FD
	14-Mar-07	9470	9270	153	3.01	2820
MW-50-095	10-Oct-06	278	277	24.0	2.85	7120
	12-Dec-06	273	262	112	2.40	4590
	07-Mar-07	274	372	108	2.99	5060
MW-51	06-Oct-06	4560	4590	119	3.79	13800
	12-Dec-06	4620	5360	129	3.07	10800

TABLE B-2
Groundwater Sampling Results for Other Monitoring Wells in PMP Area, July 2006 through March 2007
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-51	06-Mar-07	4690	5090	252	2.48	---
Deep Wells						
MW-20-130	18-Oct-06	11600	16400	78.0	2.68	19500
	13-Dec-06	12000	10500	181	0.80	---
	13-Dec-06 FD	11800	10700	FD	FD	FD
	08-Mar-07	12800	11900	91.0	1.11	---
	08-Mar-07 FD	14400	12100	FD	FD	FD
MW-24B	03-Oct-06	6120	5830	85.0	2.72	18700
	14-Dec-06	5520	5060	4.00	0.51	---
	05-Mar-07	5980	6100	10.0	1.40	16400
MW-31-135	05-Oct-06	85.7	81.7	65.0	2.91	13600
	08-Mar-07	51.0	55.2	142	0.60	8730
	08-Mar-07 FD	52.0	54.2	FD	FD	FD
MW-35-135	12-Oct-06	35.4	34.6	113	1.20	14400
	12-Oct-06 FD	34.0	30.8	FD	FD	FD
	08-Mar-07	32.0	39.2	218	0.22	8580
MW-47-115	10-Oct-06	ND (3.5)	6.90	-80	1.13	16800
	14-Dec-06	7.90	6.10	-25	0.36	14800
	06-Mar-07	10.6	10.8	-34	0.33	---
MW-50-200	10-Oct-06	9660	11800	93.0	2.99	28100
	12-Dec-06	10100	9250	123	3.17	20600
	07-Mar-07	12300	14600	114	3.22	25600
TW-02D	04-Oct-06	872	910	162	4.91	11900
TW-04	09-Oct-06	28.5	26.6	12.0	1.11	24700
	07-Mar-07	35.2	31.1	37.0	0.28	25800
	07-Mar-07 FD	35.5	36.9	FD	FD	FD
TW-05	09-Oct-06	3.60	3.20	60.0	1.12	15800

NOTES:

Analytical results are validated.
ND = not detected at listed reporting limit (RL)
FD = field duplicate
LF = lab filtered
(---) = 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 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.

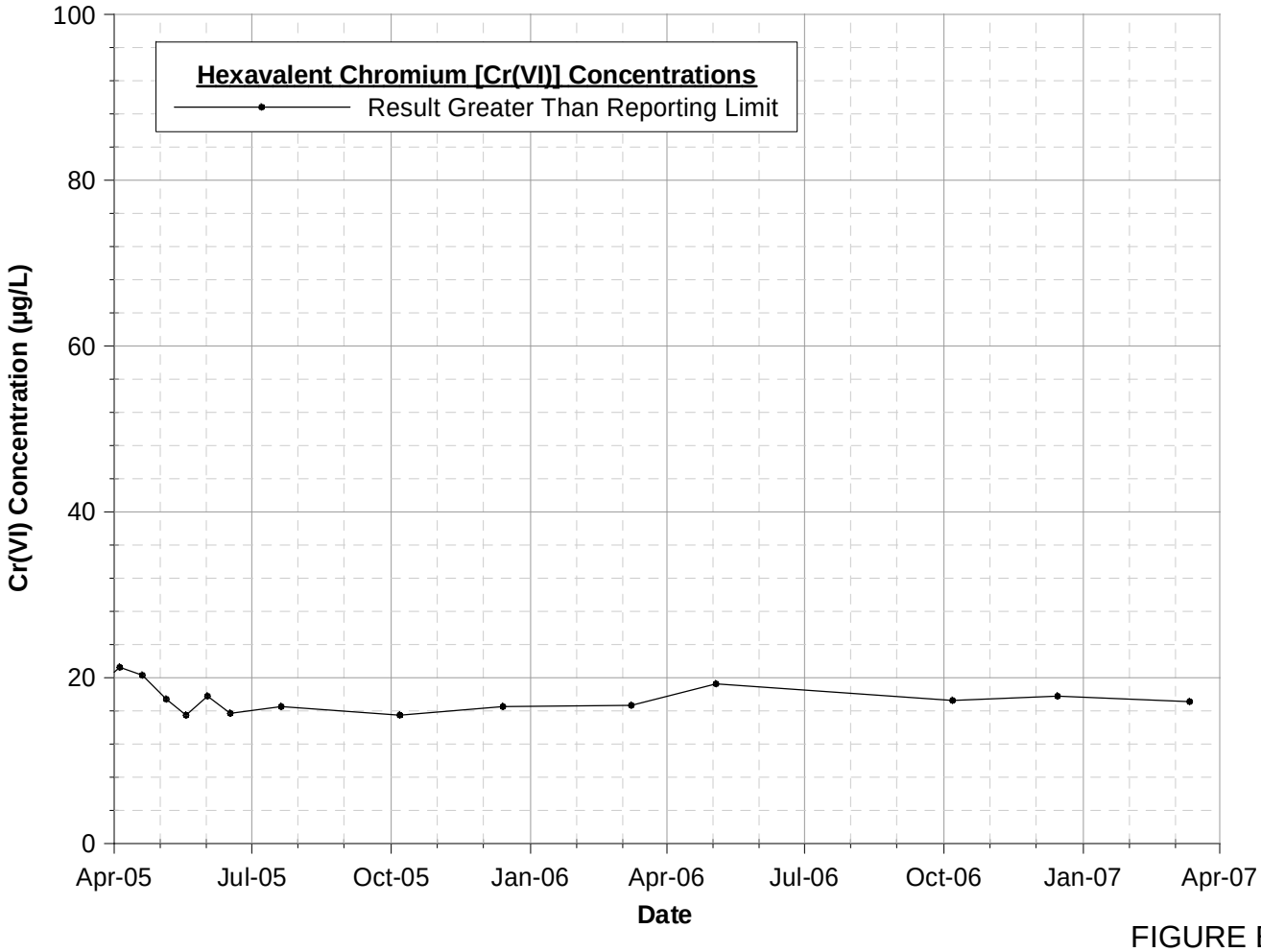


FIGURE B-1
MW-33-90 CR(VI) CONCENTRATION & HYDROGRAPH - 4/1/2005 - 3/12/2007
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
3. I-3 data is unavailable from 9/18/2006 through 10/4/2006.

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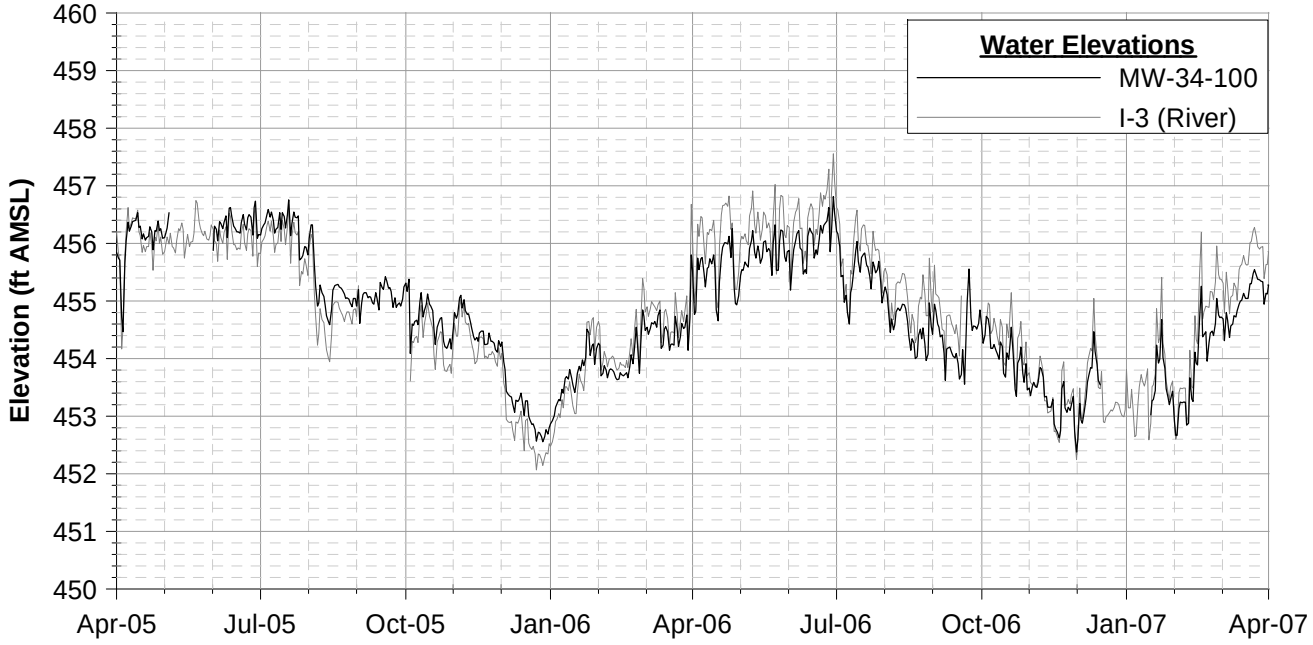

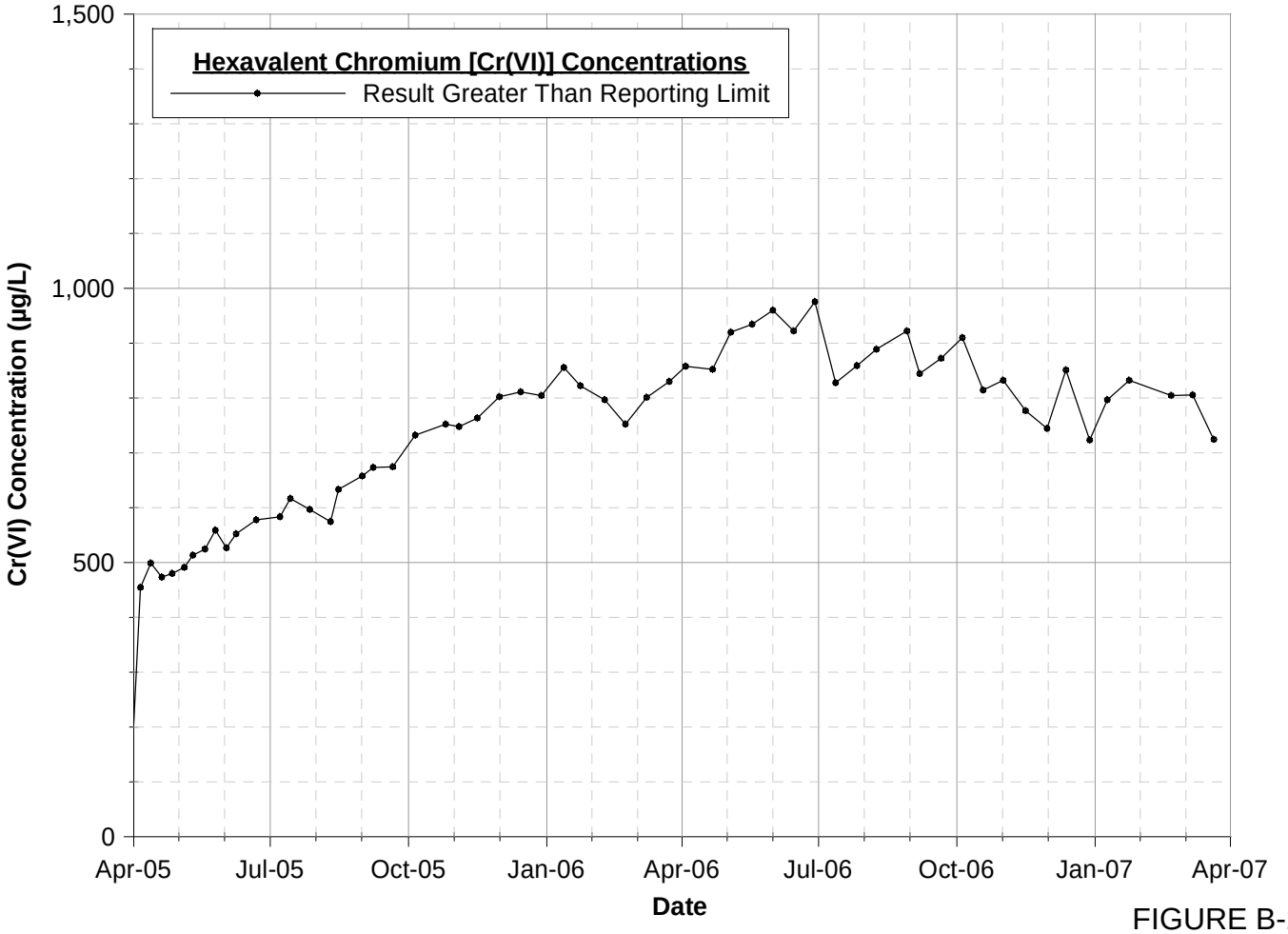

FIGURE B-2
MW-34-100 CR(VI) CONCENTRATION & HYDROGRAPH - 4/1/2005 - 3/21/2007
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. No groundwater elevation data available during May 2005 due to transducer malfunction.
3. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
4. I-3 data is unavailable from 9/18/2006 through 10/4/2006.
5. MW-34-100 data is unavailable from January 1 through January 15, 2007.

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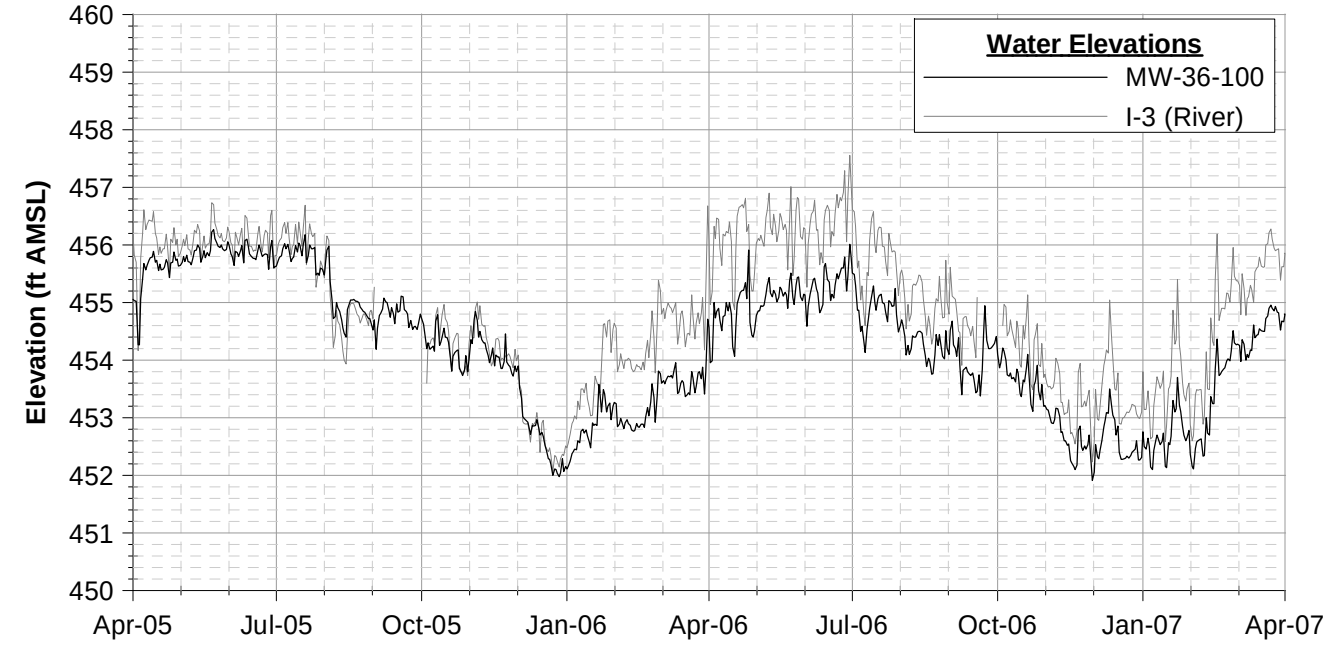

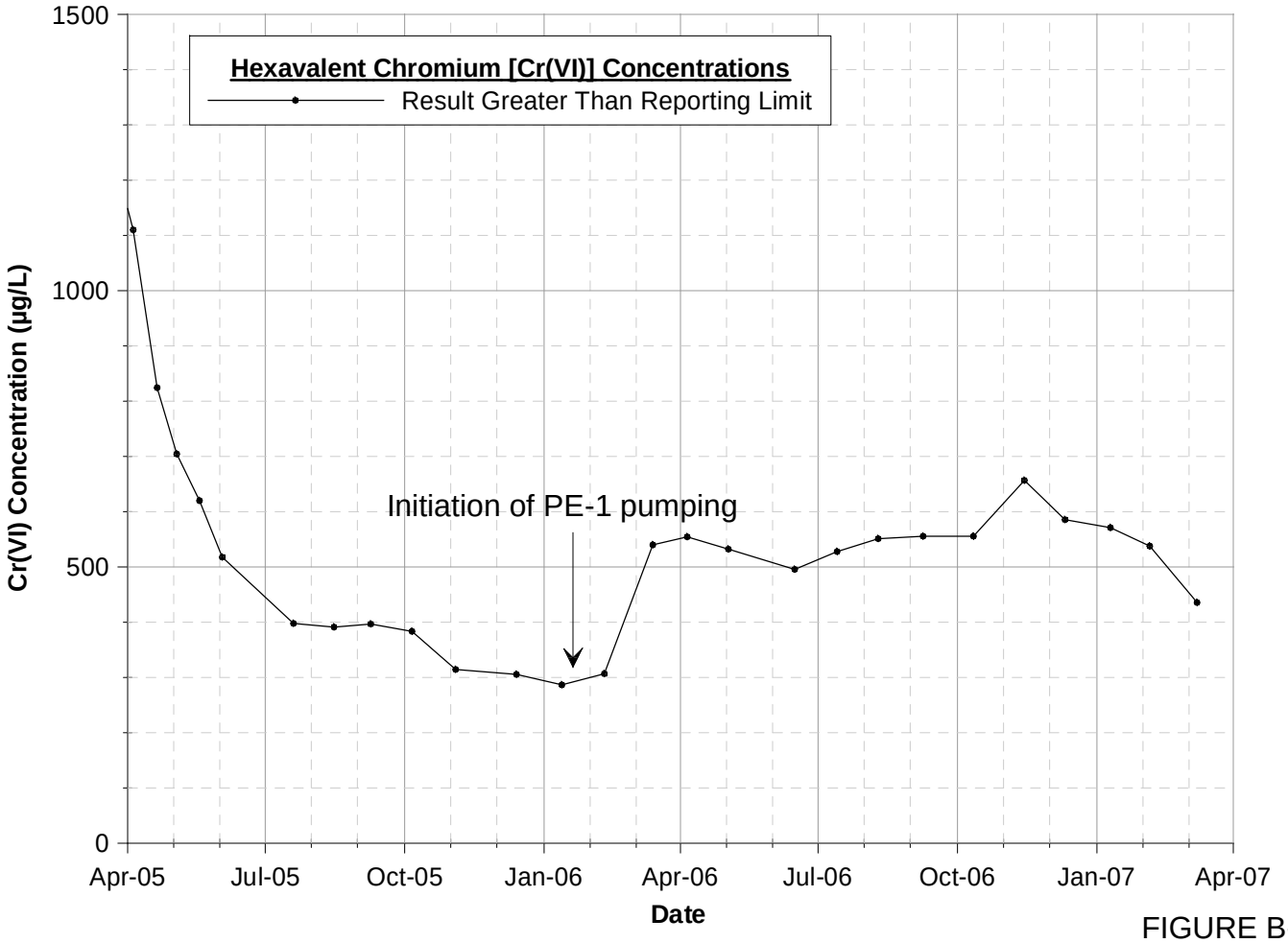

FIGURE B-3
MW-36-100 CR(VI) CONCENTRATION & HYDROGRAPH - 4/1/2005 - 3/8/2007
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes
1. Chromium results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples; see Table B-1 for complete results.
3. I-3 data is unavailable from 9/18/2006 through 10/4/2006.

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Appendix C
Hydraulic Monitoring Data for Reporting Period

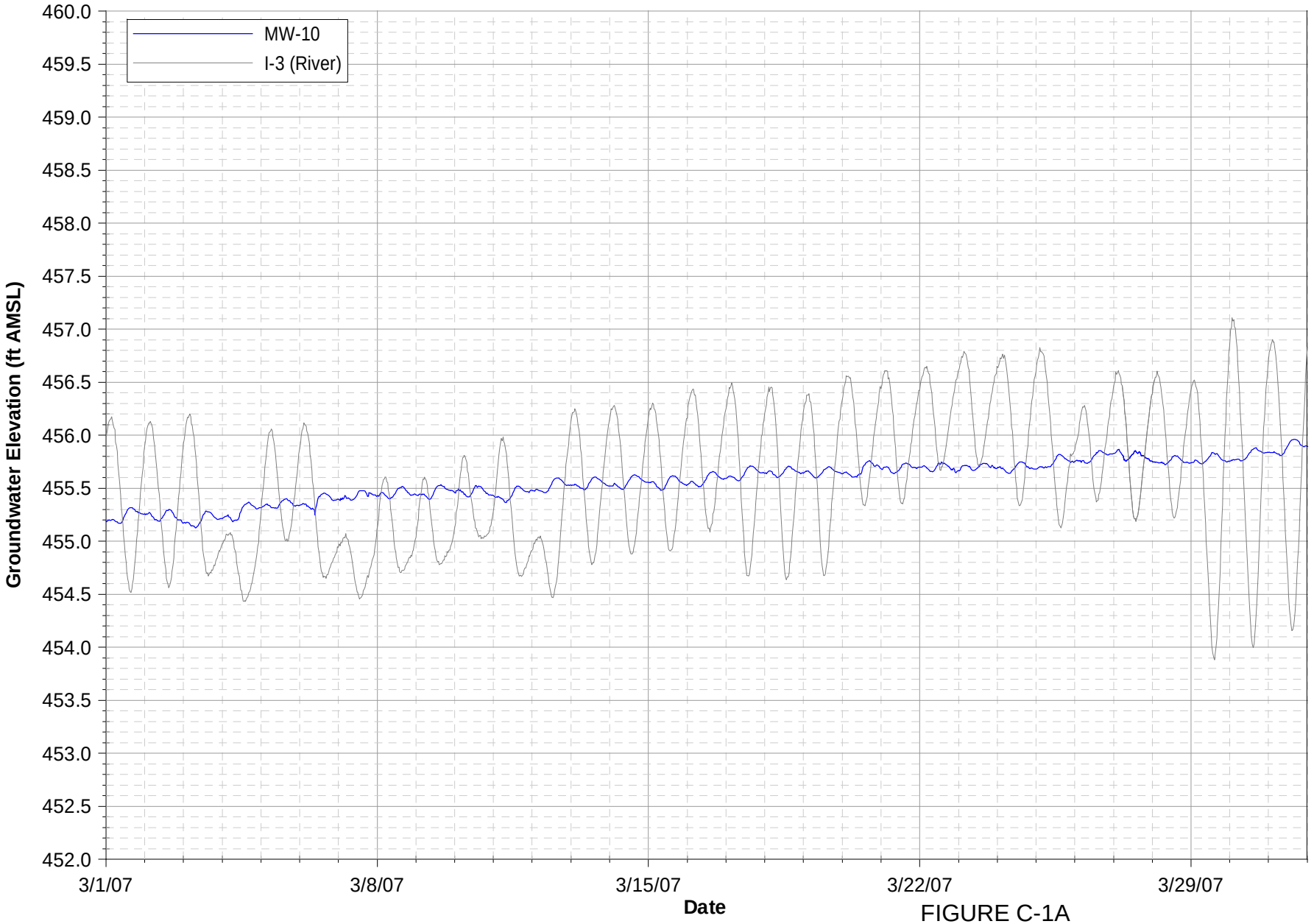
TABLE C-1
Average, Minimum, and Maximum Groundwater Elevations, March 2007
Report
PG&E Topock Compressor Station

Well	Average (ft AMSL)	Minimum (ft AMSL)	Maximum (ft AMSL)	# of Days reporting data	Aquifer Depth
I-3	455.57	456.30	454.84	31	River Station
MW-10	455.56	455.64	455.51	31	Shallow
MW-19	455.09	455.17	455.04	31	Shallow
MW-20-070	453.84	453.95	453.77	31	Shallow
MW-20-100	453.50	453.71	453.38	31	Mid-Depth
MW-20-130	453.06	453.38	452.89	31	Deep
MW-25	455.05	455.11	455.03	30	Shallow
MW-26	454.69	454.76	454.64	30	Shallow
MW-27-020	455.43	455.65	455.20	25	Shallow
MW-27-060	455.46	455.87	455.06	31	Mid-Depth
MW-27-085	455.38	455.78	454.98	31	Deep
MW-28-025	455.48	455.83	455.13	31	Shallow
MW-28-090	455.19	455.55	454.81	3	Deep
MW-30-050	454.86	455.20	454.53	31	Mid-Depth
MW-31-060	454.83	454.93	454.75	31	Shallow
MW-31-135	454.09	454.32	453.94	31	Deep
MW-32-020	454.84	454.93	454.77	31	Shallow
MW-32-035	454.82	454.98	454.65	8	Shallow
MW-33-040	455.80	456.07	455.61	17	Shallow
MW-33-090	455.29	455.55	455.05	31	Mid-Depth
MW-33-150	455.42	455.69	455.19	31	Deep
MW-33-210	455.72	455.96	455.52	31	Deep
MW-34-055	455.54	456.03	455.05	31	Mid-Depth
MW-34-080	455.33	455.80	454.86	31	Deep
MW-34-100	454.99	455.44	454.56	31	Deep
MW-35-060	455.81	456.02	455.62	31	Shallow
MW-35-135	455.20	455.36	454.37	31	Deep
MW-36-020	454.95	455.27	454.64	31	Shallow
MW-36-040	454.89	455.26	454.53	31	Shallow
MW-36-050	455.42	455.81	454.96	18	Mid-Depth
MW-36-070	454.97	455.36	454.58	31	Mid-Depth
MW-36-090	454.14	454.53	453.80	31	Deep
MW-36-100	454.45	454.86	454.11	31	Deep
MW-39-040	454.72	455.05	454.41	31	Shallow
MW-39-050	454.64	454.97	454.34	31	Mid-Depth
MW-39-060	454.48	454.80	454.19	31	Mid-Depth
MW-39-070	454.10	454.40	453.86	31	Mid-Depth

TABLE C-1
Average, Minimum, and Maximum Groundwater Elevations, March 2007
Report
PG&E Topock Compressor Station

Well	Average (ft AMSL)	Minimum (ft AMSL)	Maximum (ft AMSL)	# of Days reporting data	Aquifer Depth
MW-39-080	454.19	454.50	453.95	31	Deep
MW-39-100	454.36	454.67	454.12	31	Deep
MW-42-030	454.76	455.02	454.52	31	Shallow
MW-42-055	454.93	455.21	454.26	31	Mid-Depth
MW-42-065	455.04	455.32	454.13	31	Mid-Depth
MW-43-025	455.46	455.87	455.06	31	Shallow
MW-43-075	455.67	456.11	455.24	31	Deep
MW-43-090	455.81	456.25	455.38	31	Deep
MW-44-070	455.24	455.69	454.80	31	Mid-Depth
MW-44-115	454.80	455.19	454.45	31	Deep
MW-44-125	455.38	455.76	455.04	31	Deep
MW-45-095	453.87	454.62	453.42	31	Deep
MW-46-175	455.48	455.81	455.19	31	Deep
MW-46-205	455.76	456.03	455.52	31	Deep
MW-47-055	455.40	455.52	455.31	31	Shallow
MW-47-115	455.46	455.61	455.35	31	Deep
MW-49-135	455.82	456.13	455.54	31	Deep
MW-49-275	456.27	456.46	456.10	31	Deep
MW-49-365	458.08	458.26	457.93	31	Deep
MW-50-095	455.07	455.16	455.00	31	Mid-Depth
MW-50-200	455.39	455.53	455.29	31	Deep
MW-51	454.68	454.74	454.64	31	Mid-Depth
PT2D	453.84	454.18	453.58	31	Deep
PT5D	454.22	454.57	453.94	31	Deep
PT6D	INC	INC	INC	0	Deep
RRB	455.86	456.61	455.10	31	River Station

INC= Data incomplete over reporting period



Note: Data subject to review.

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

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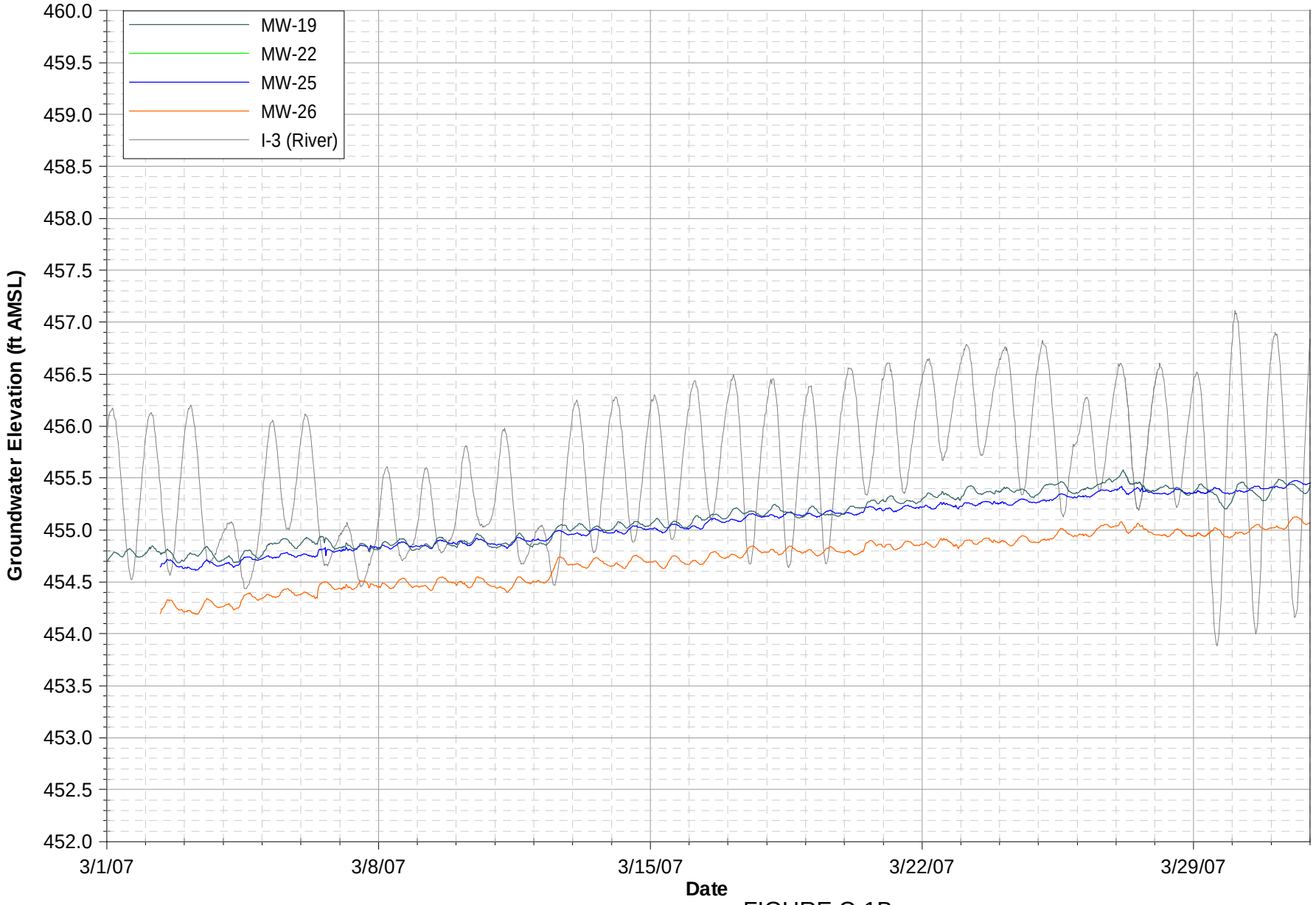

Notes:
Data subject to review.
MW-22 data unavailable after September 19, 2006.
MW-25 data unavailable prior to 3/2/07.
MW-26 data unavailable prior to 3/2/07.

FIGURE C-1B
MW-19, MW-22, MW-25, AND MW-26 HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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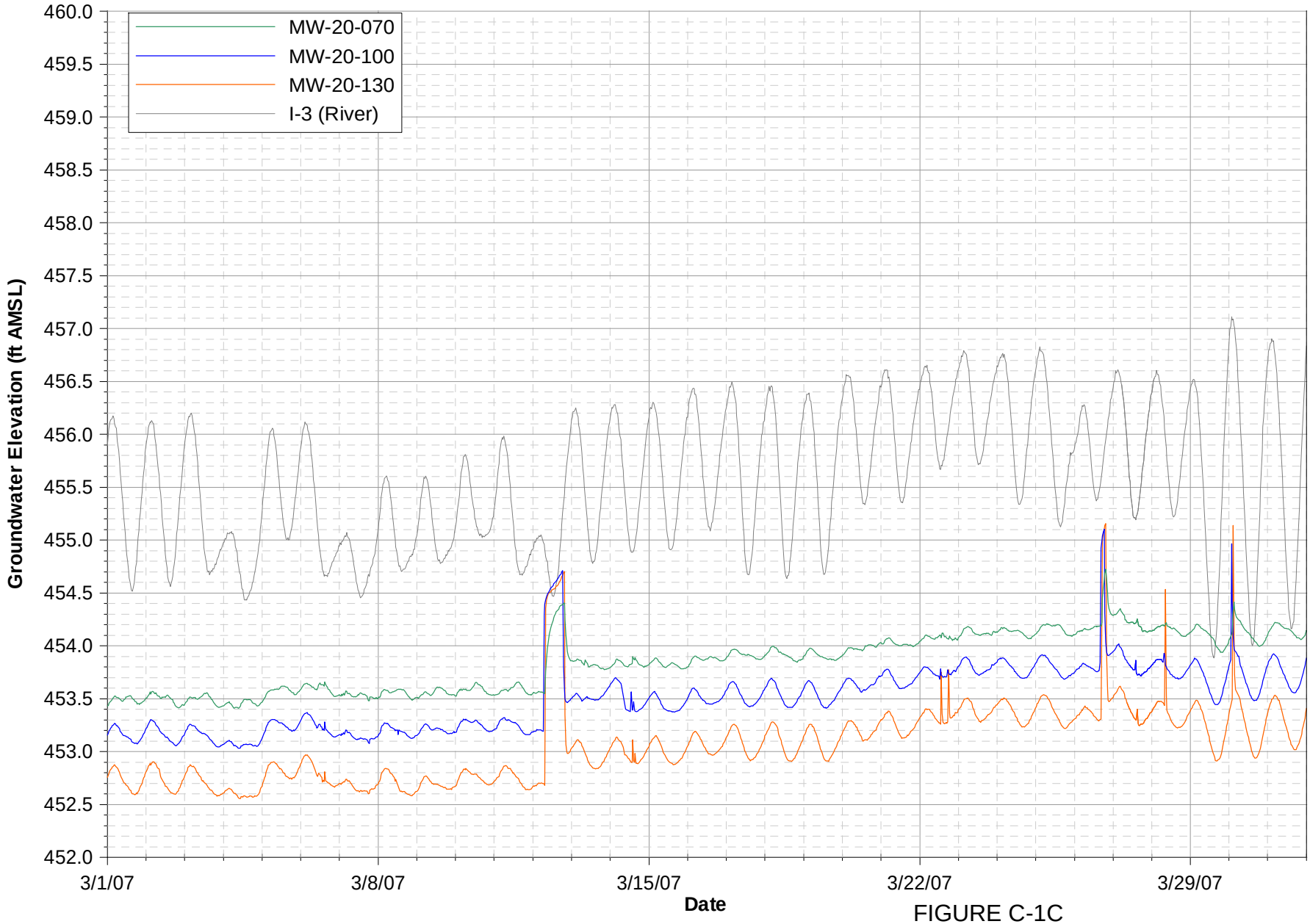

Notes:
Data subject to review.

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

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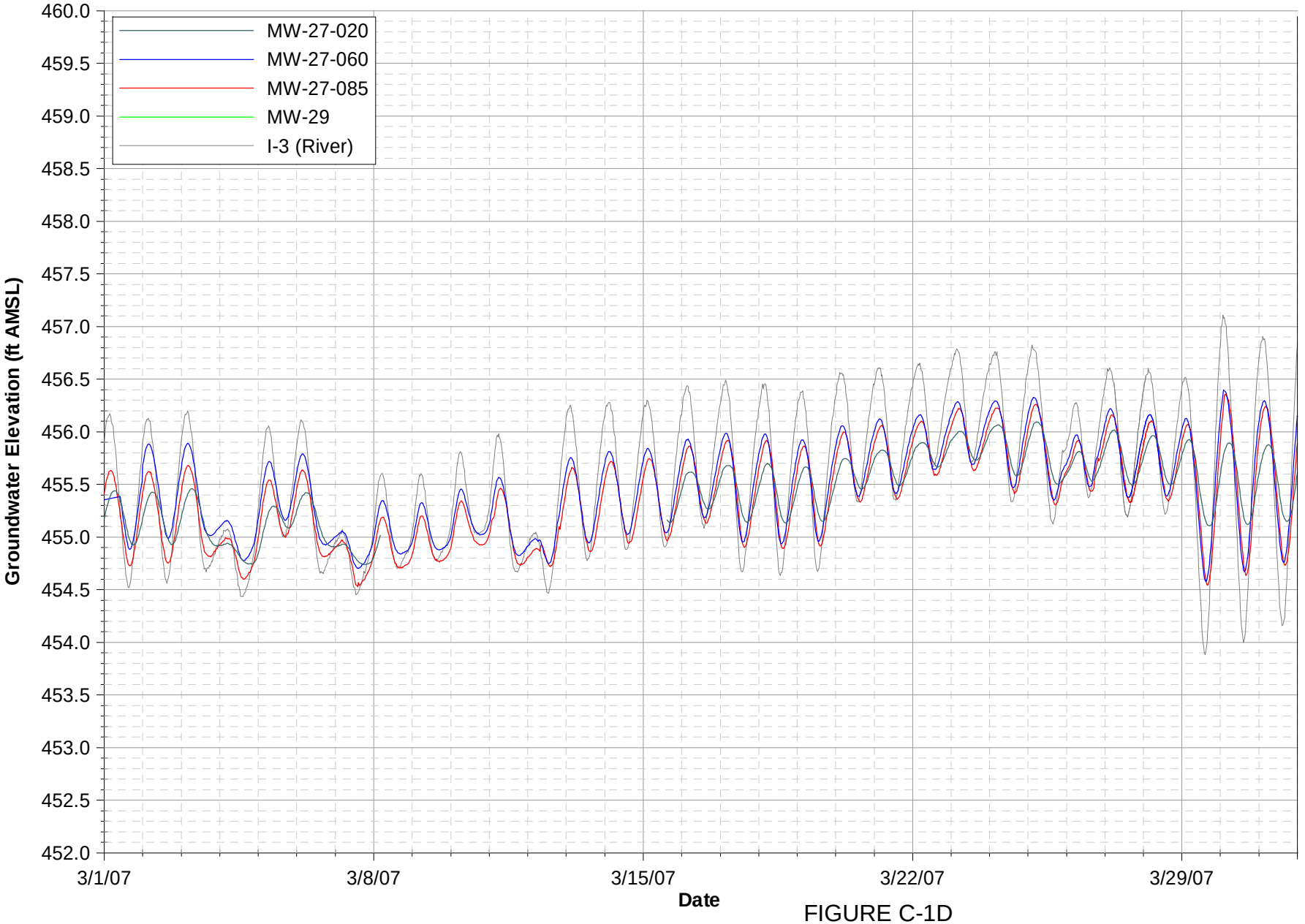

Notes:
Data subject to review.
MW-29 data unavailable after October 1, 2006.
MW-27-60 data unavailable March 9 through March 15, 2007.

FIGURE C-1D
MW-27 CLUSTER AND MW-29 HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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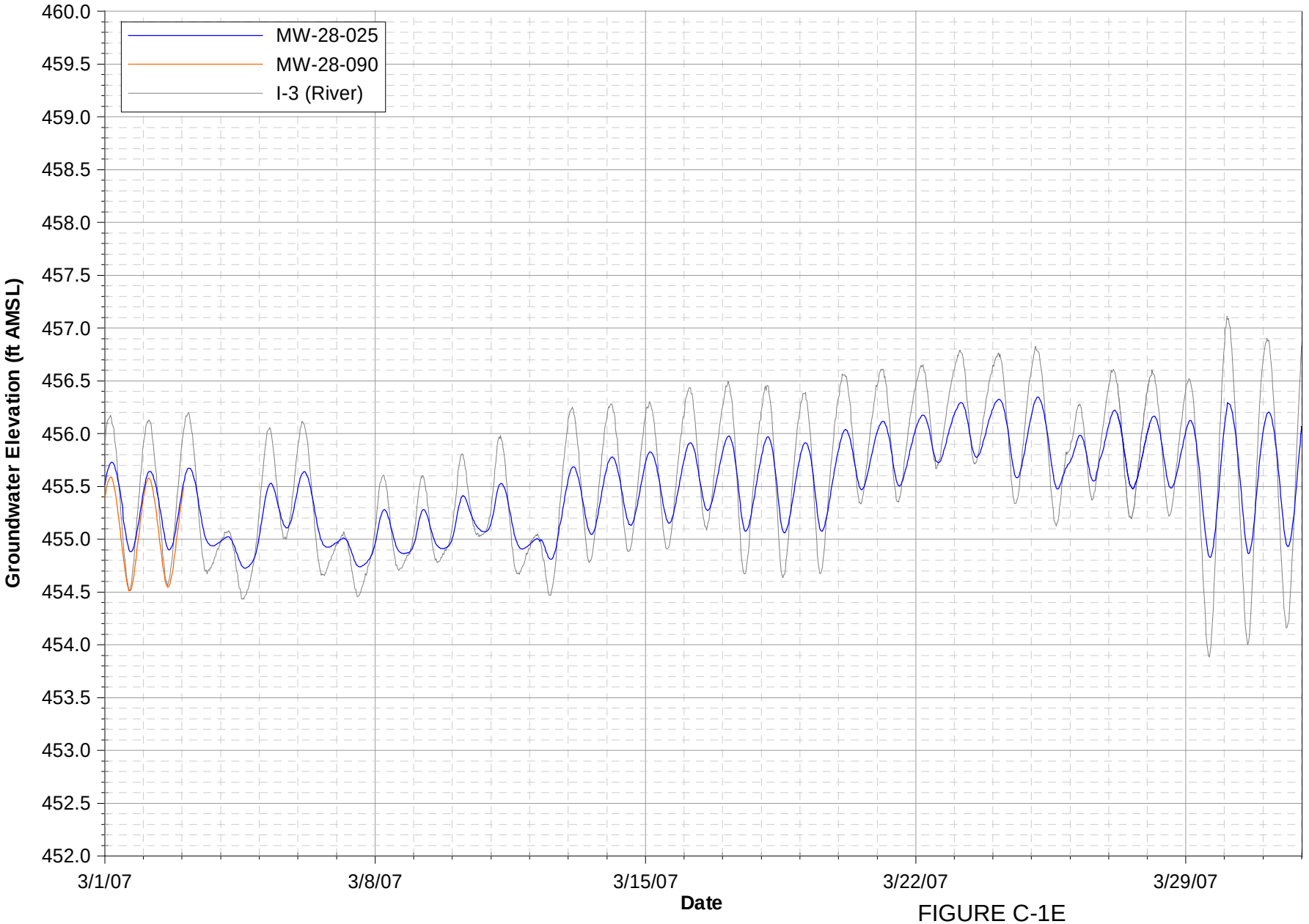

FIGURE C-1E
MW-28 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review
MW-28-090 data unavailable after March 3, 2007..

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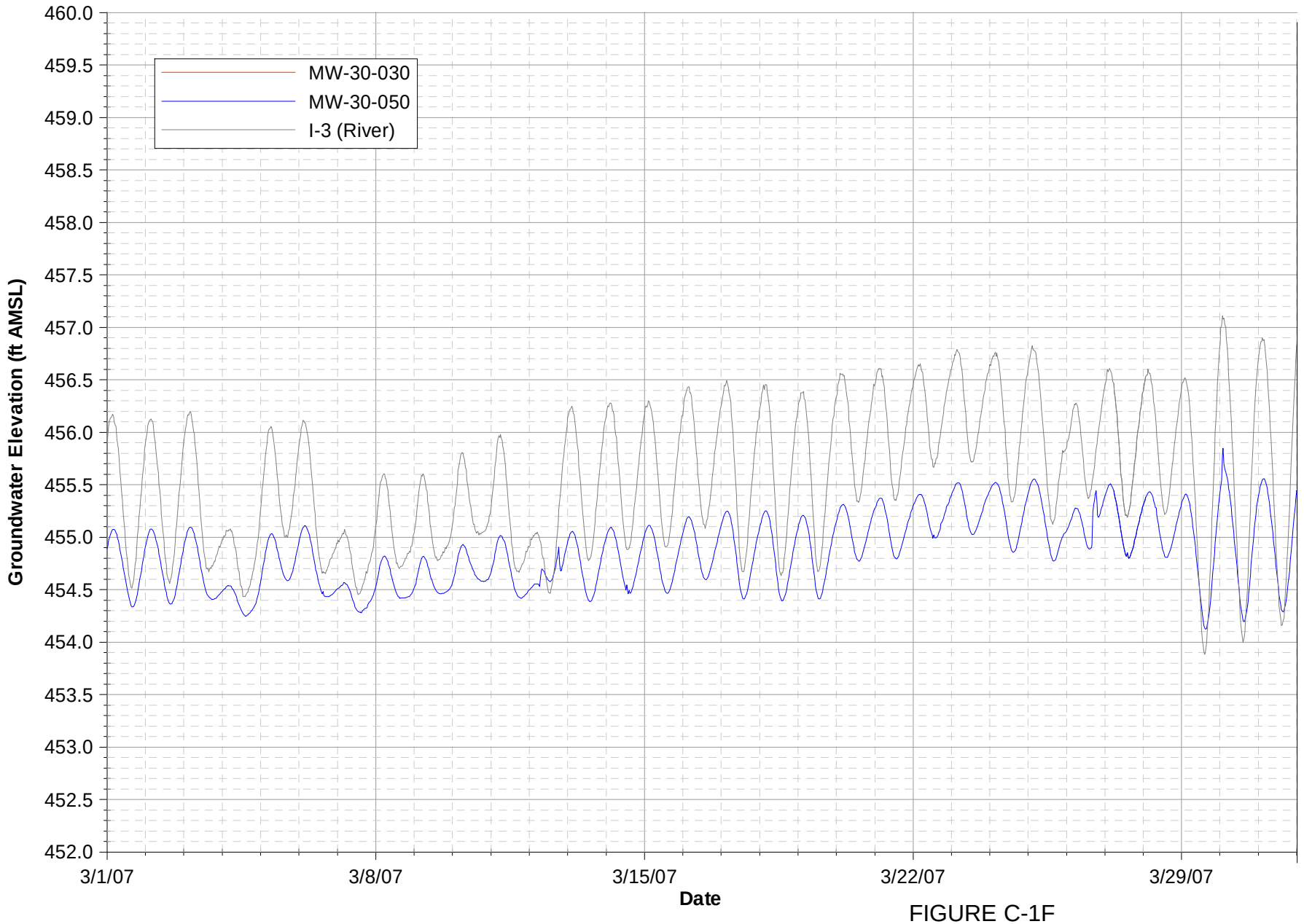

FIGURE C-1F
MW-30 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
MW-30-30 data unavailable after October 31, 2006.

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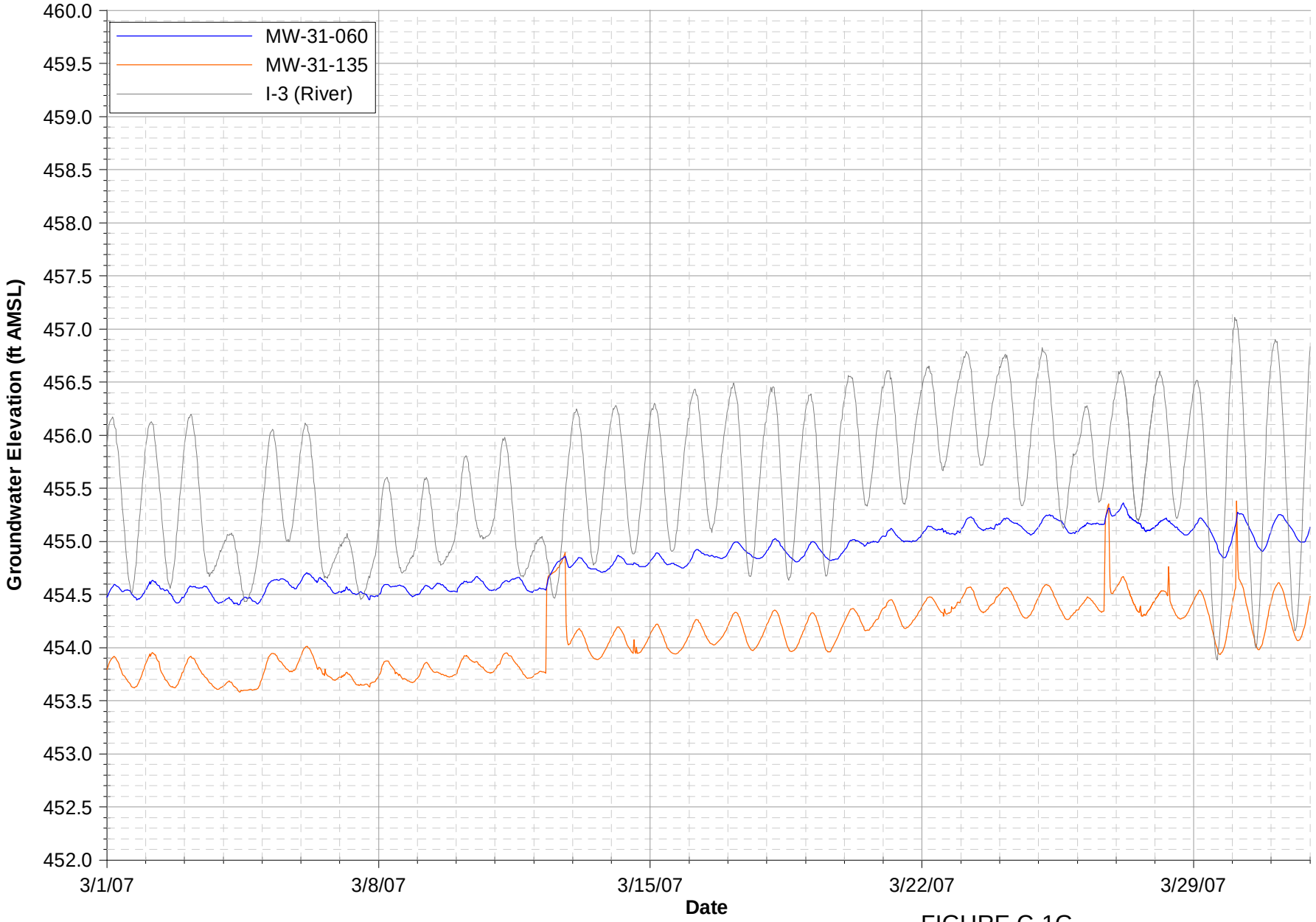


FIGURE C-1G
MW-31 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.

CH2MHILL

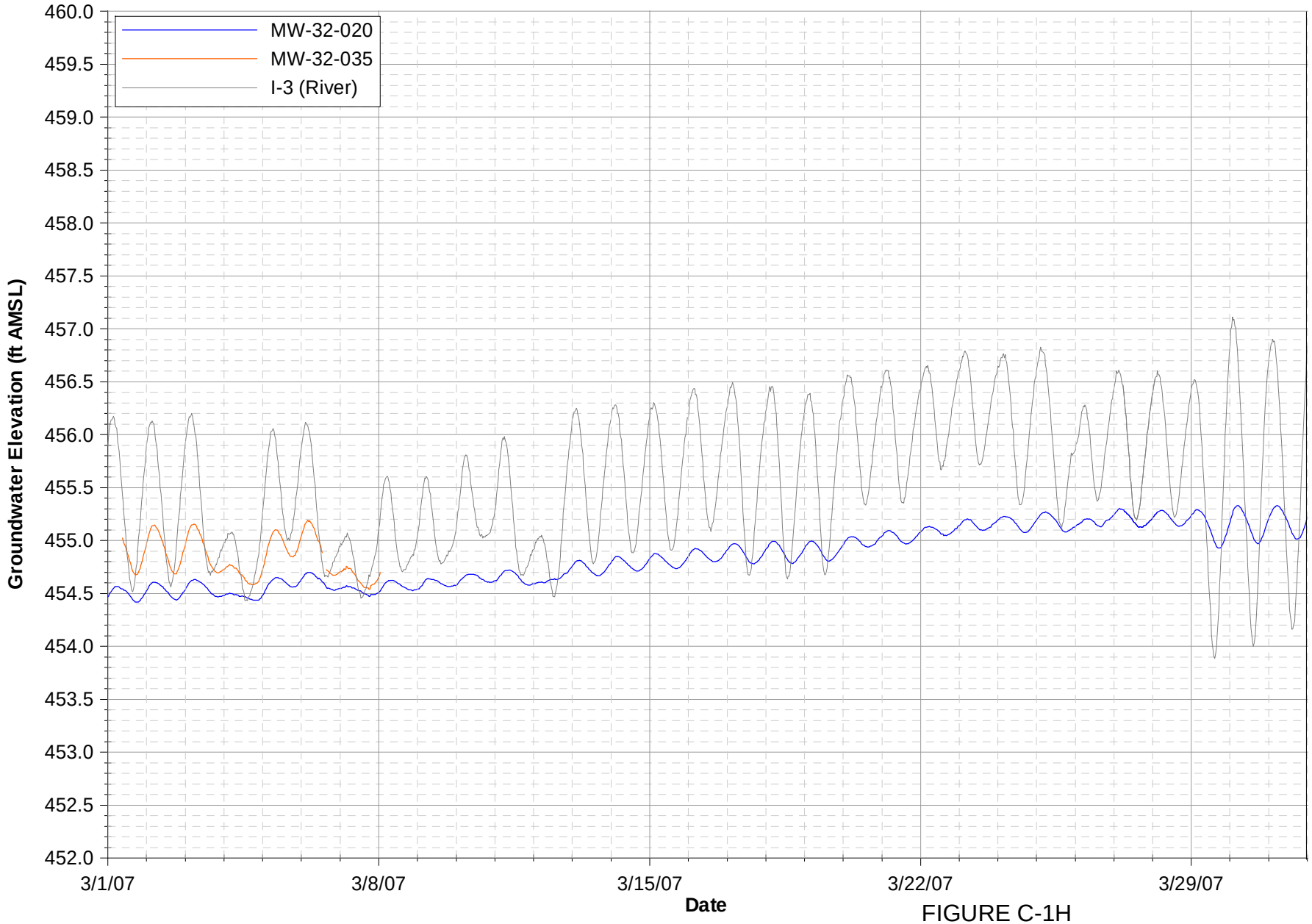


FIGURE C-1H
MW-32 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
MW-32-035 data unavailable after March 8, 2007.

CH2MHILL

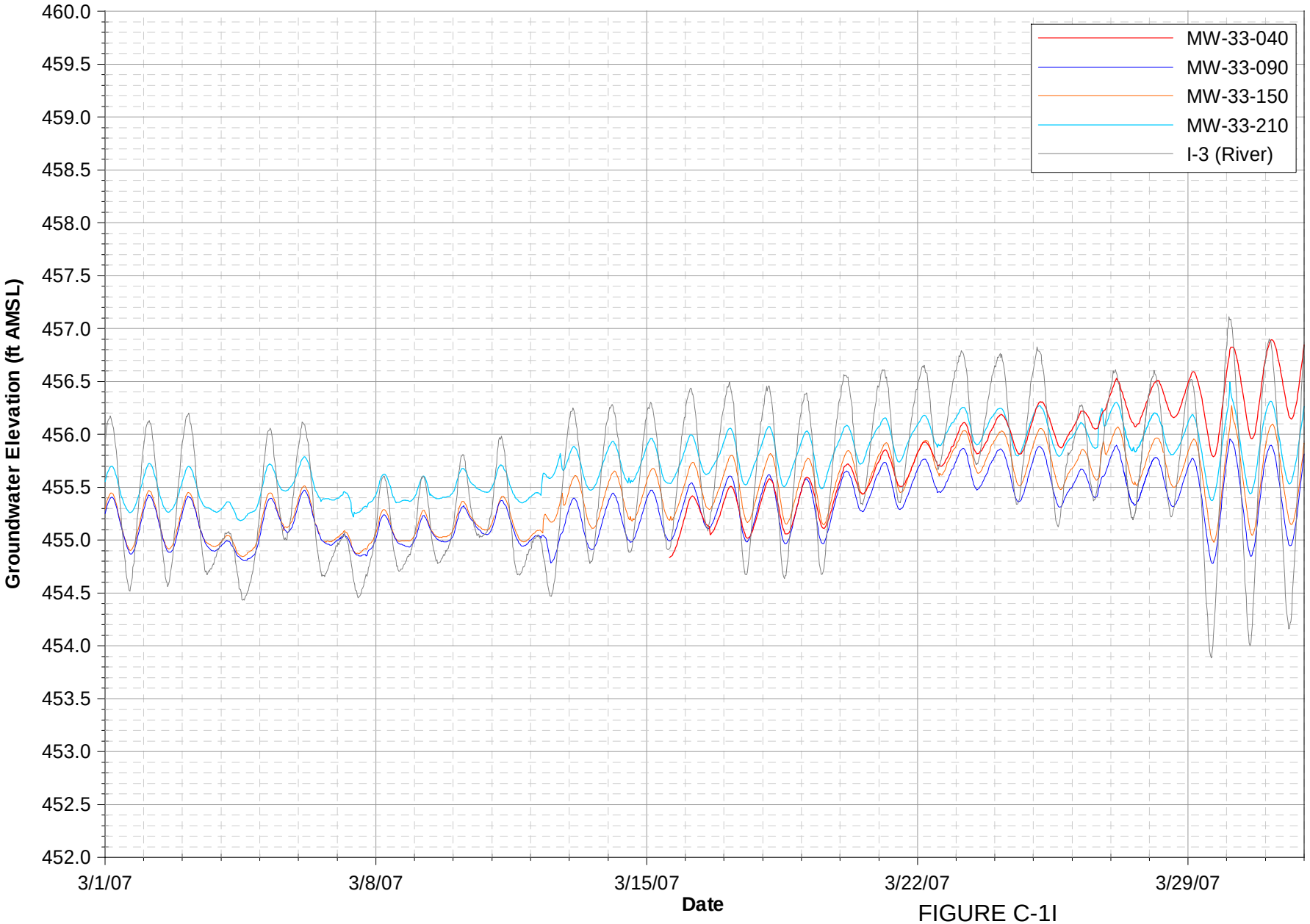
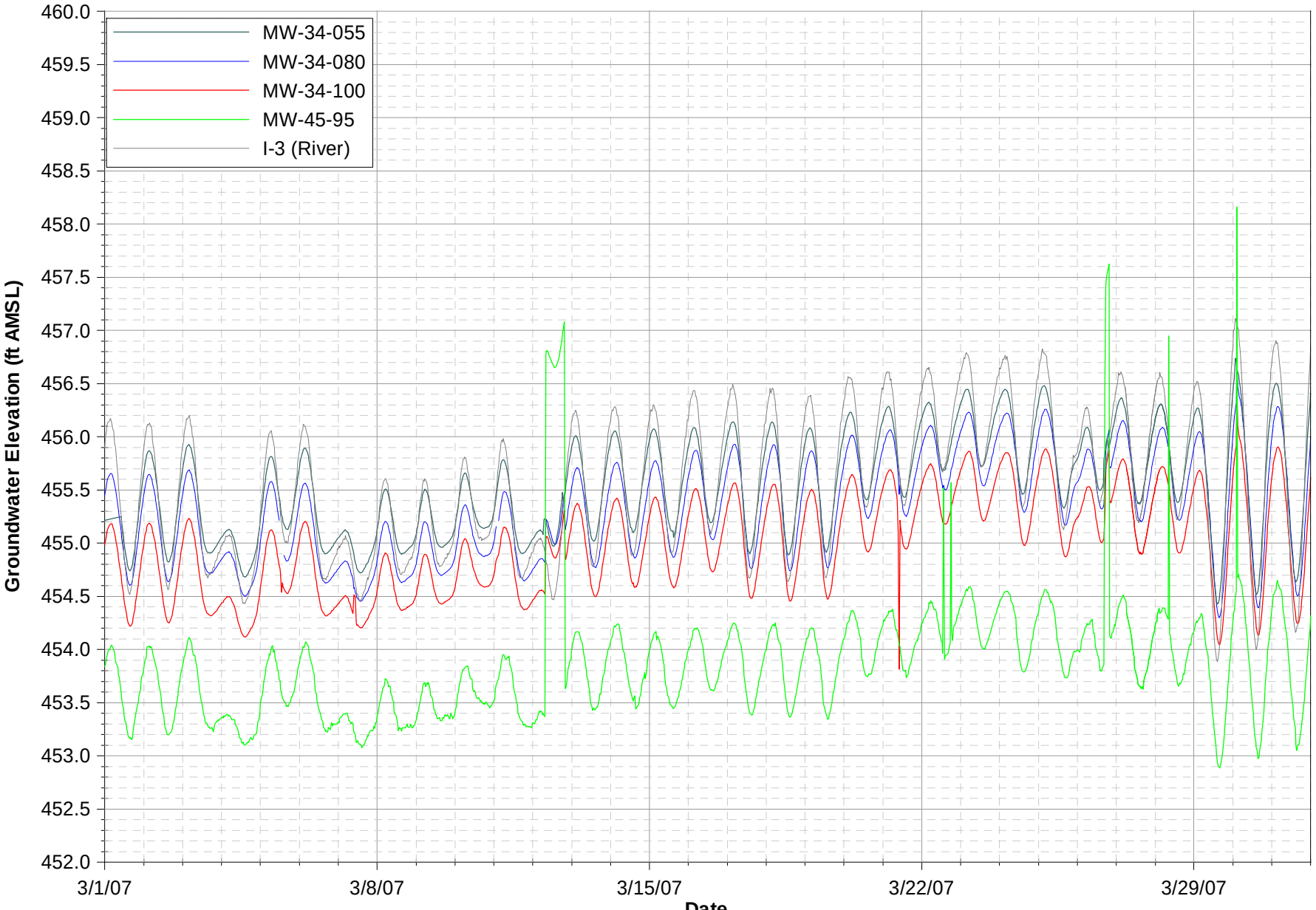


FIGURE C-1I
MW-33 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.
MW-33-40 data unavailable prior to March 15, 2007.

CH2MHILL



Notes:
Data subject to review.

FIGURE C-1J
MW-34 CLUSTER AND MW-45-95 HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

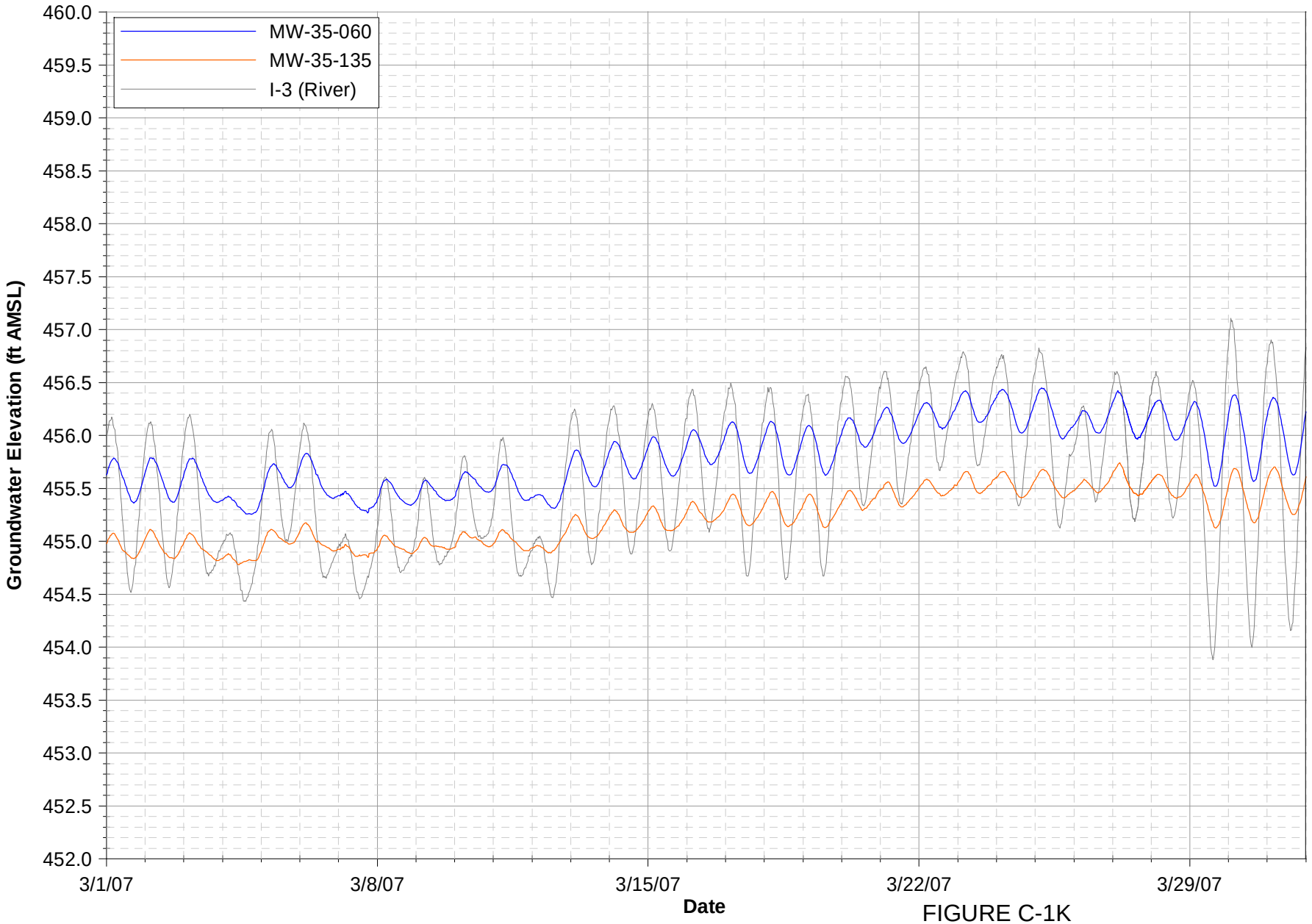


FIGURE C-1K
MW-35 WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.

CH2MHILL

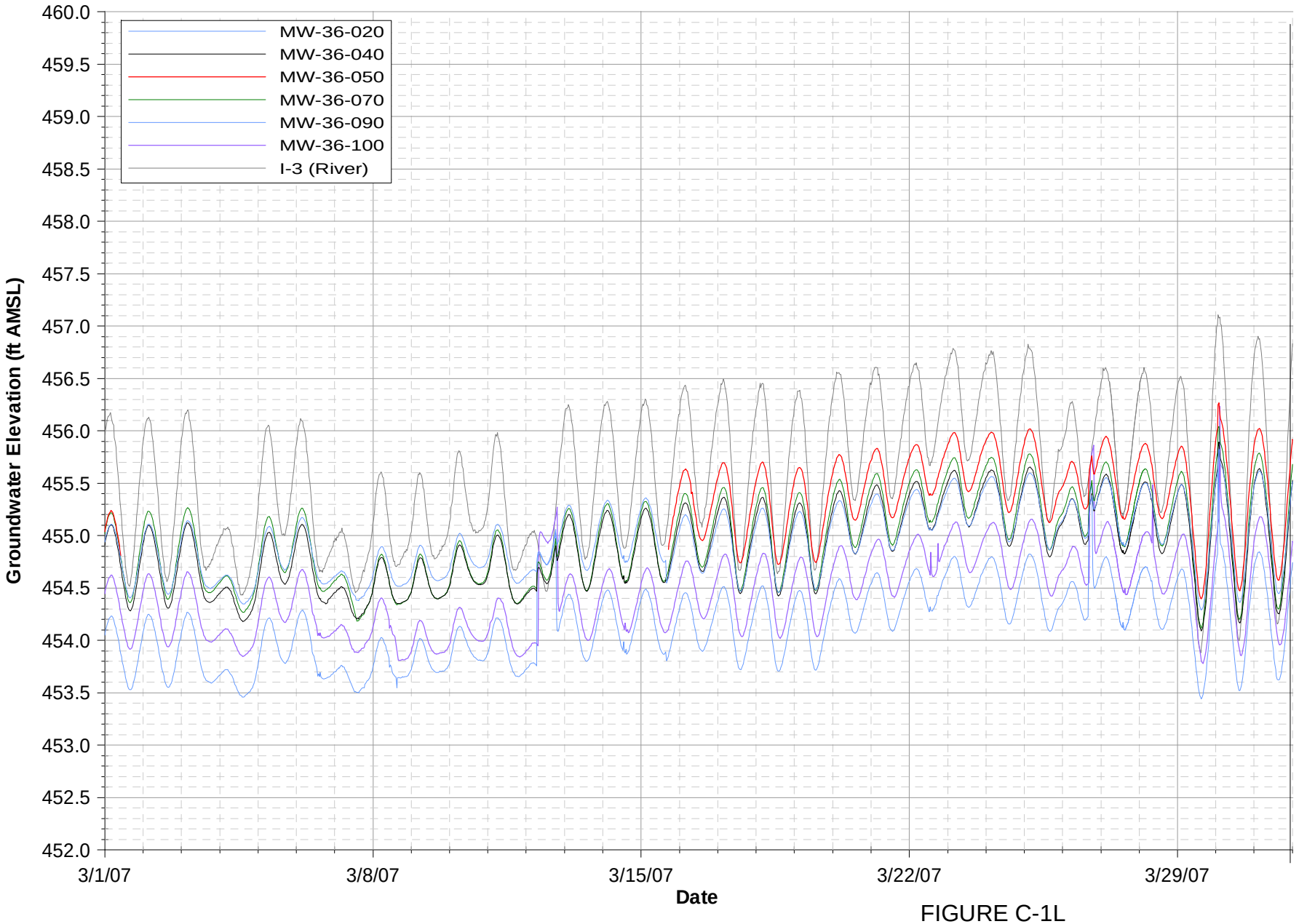


FIGURE C-1L
MW-36 CLUSTER
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review
MW-36-50 data not available from March 1 through 15, 2007.

CH2MHILL

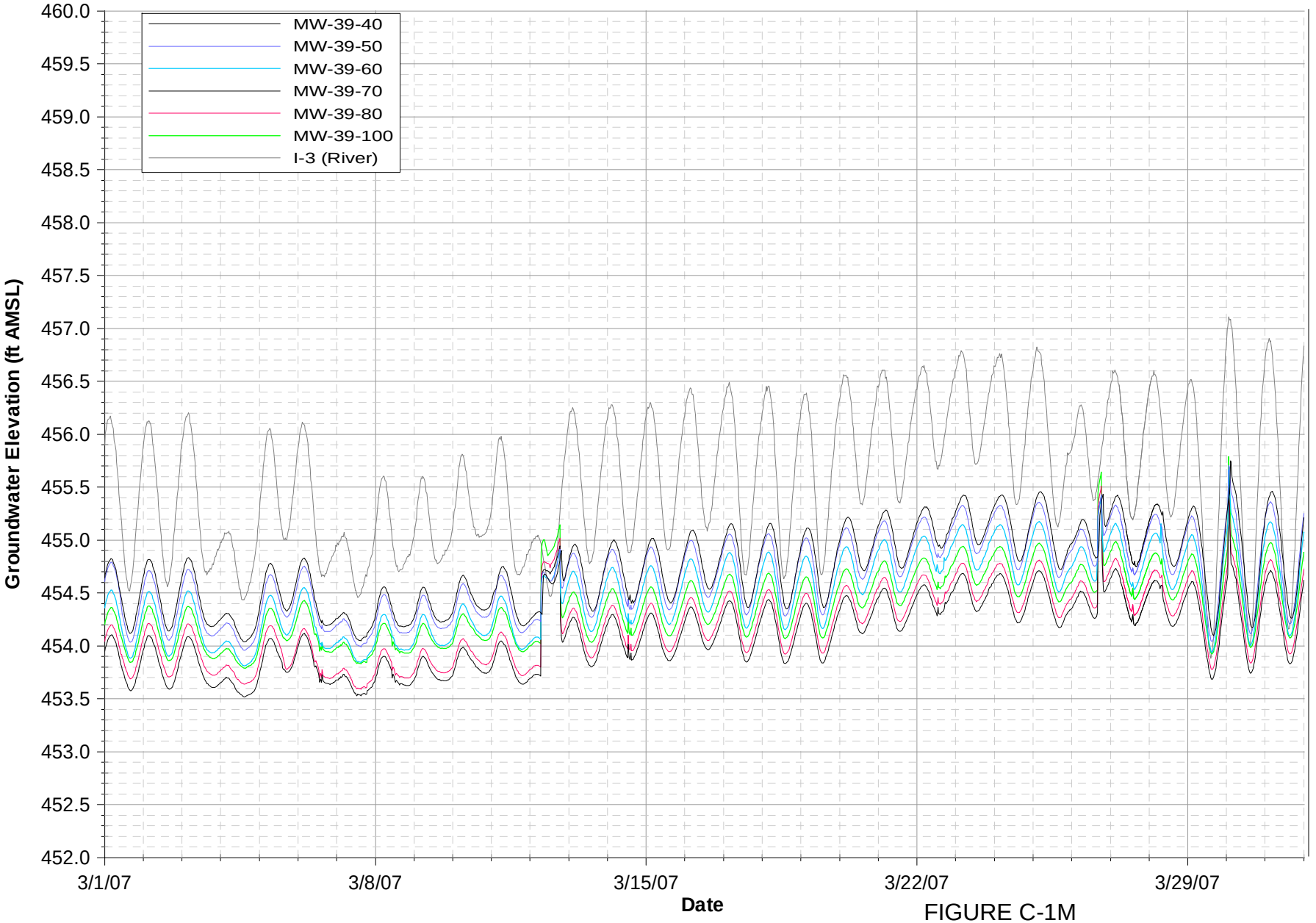


FIGURE C-1M
MW-39 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG & E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.

CH2MHILL

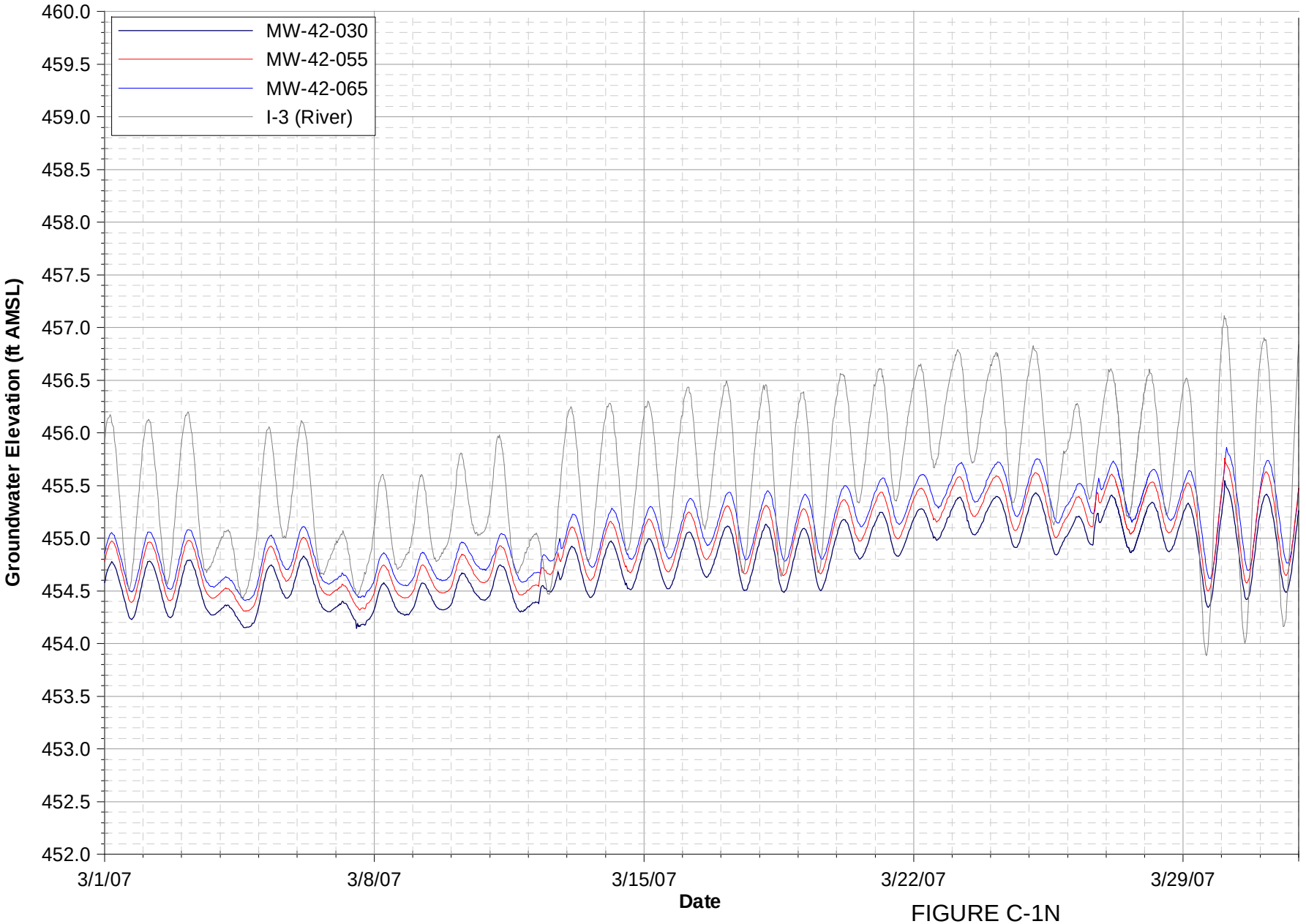
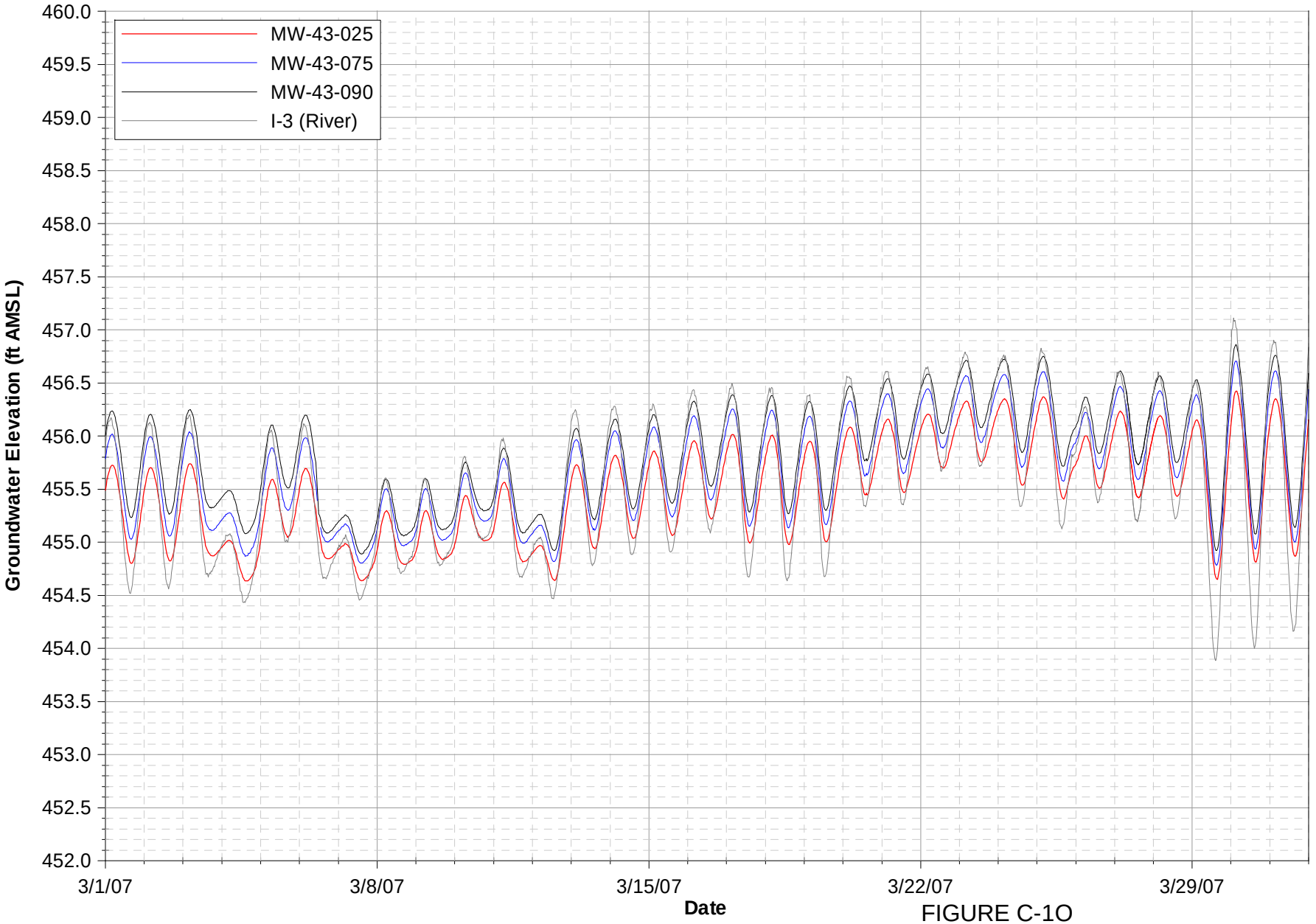


FIGURE C-1N
MW-42 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.

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

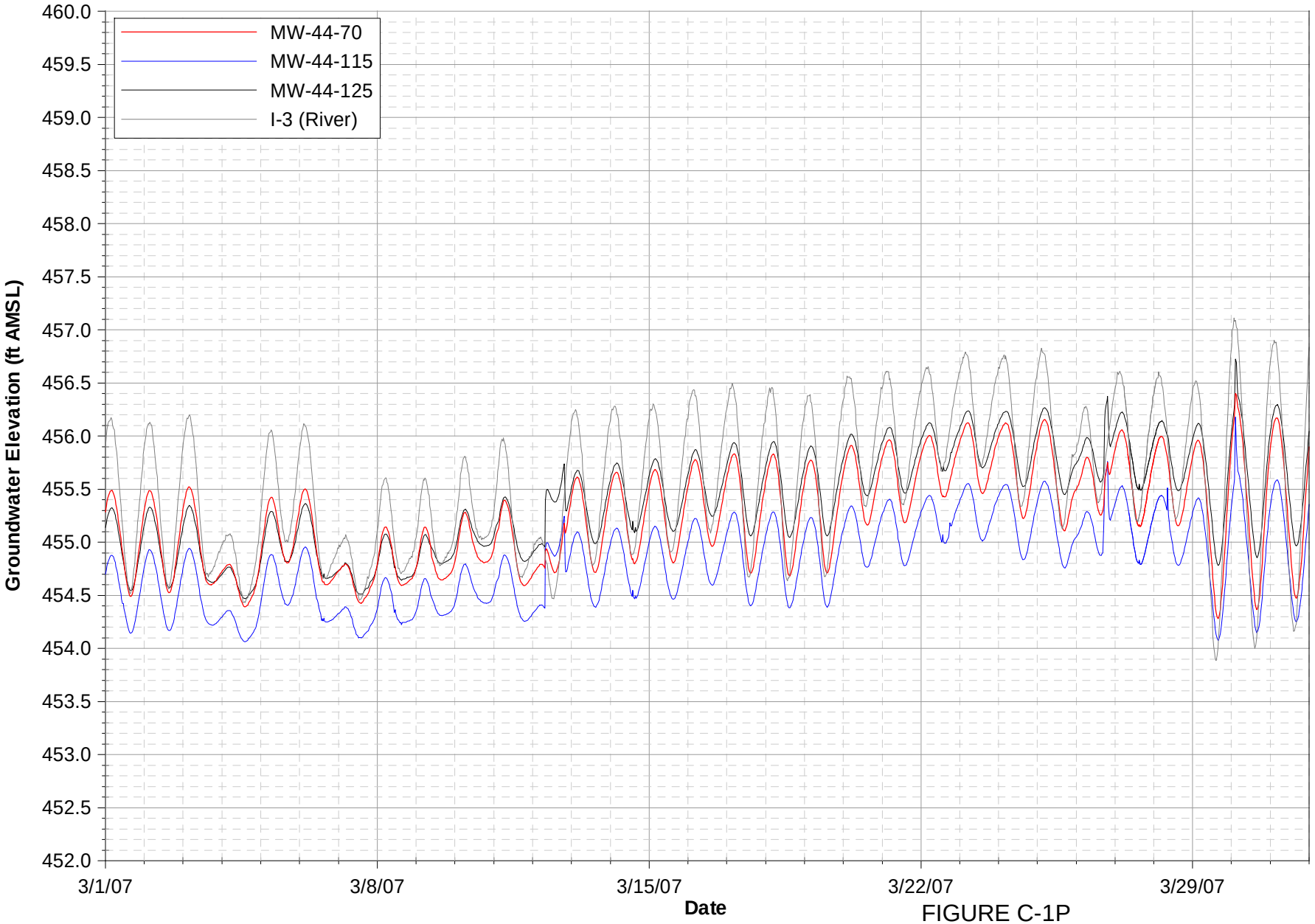


FIGURE C-1P
MW-44 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.

CH2MHILL

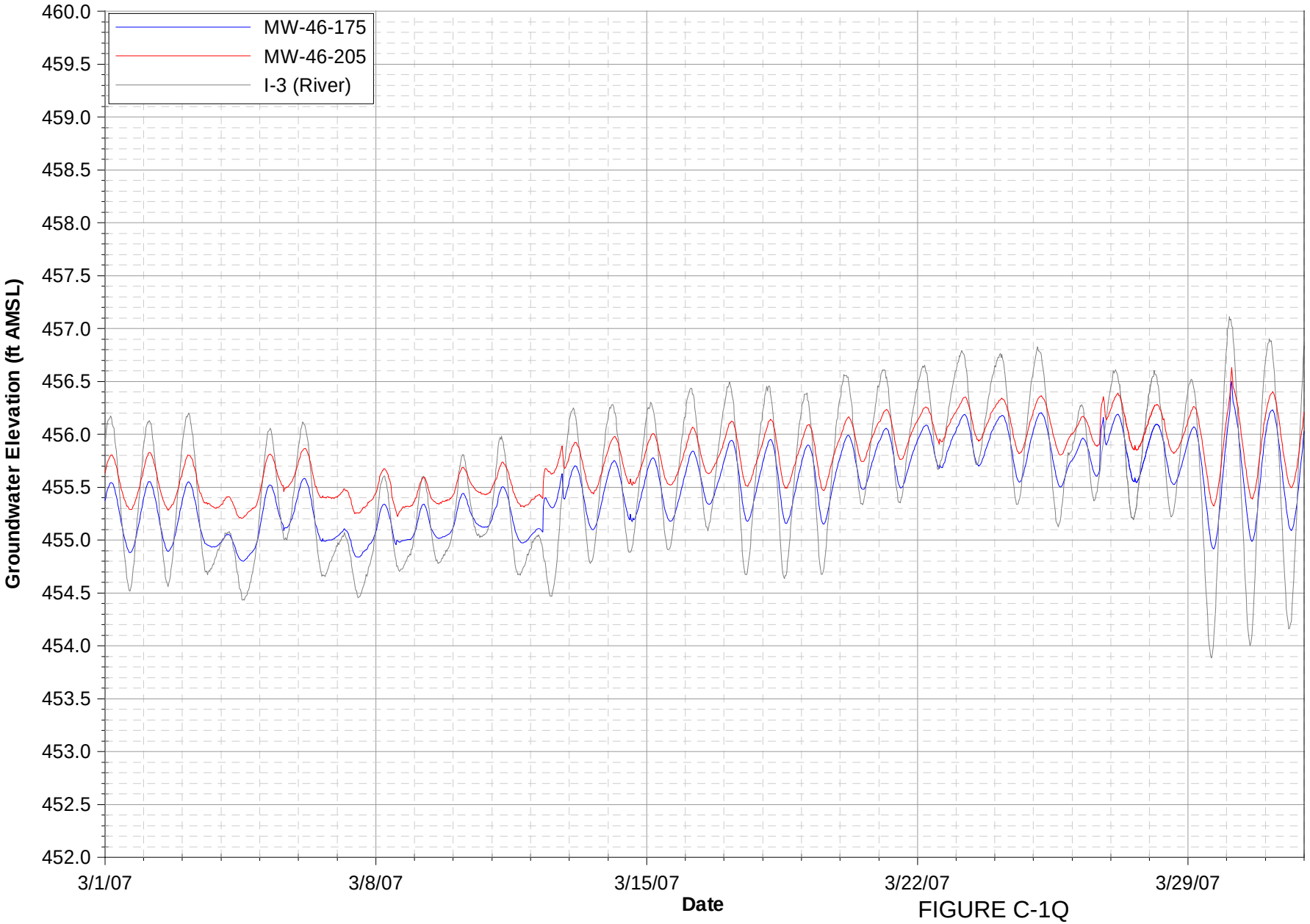


FIGURE C-1Q
MW-46 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.

CH2MHILL

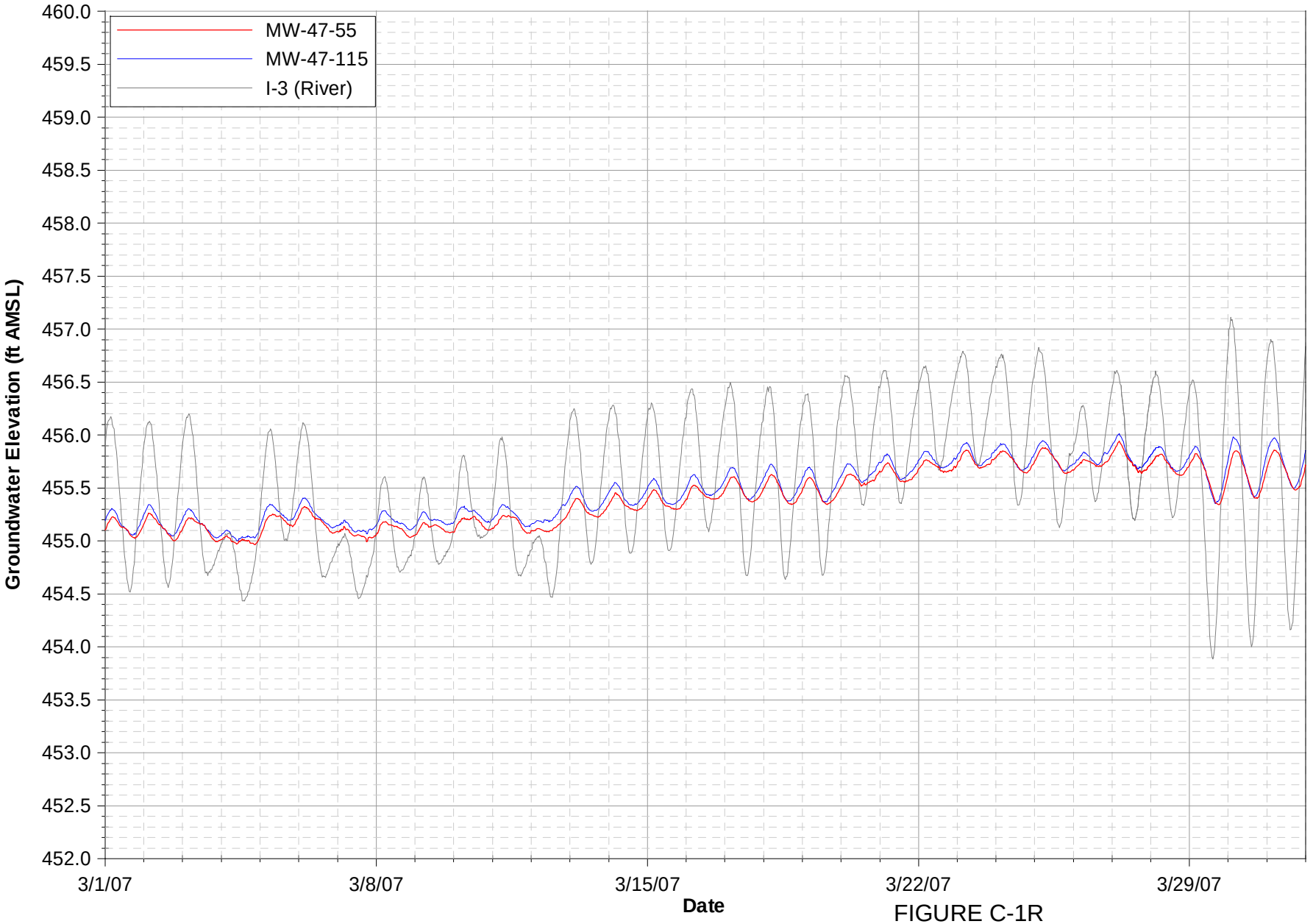
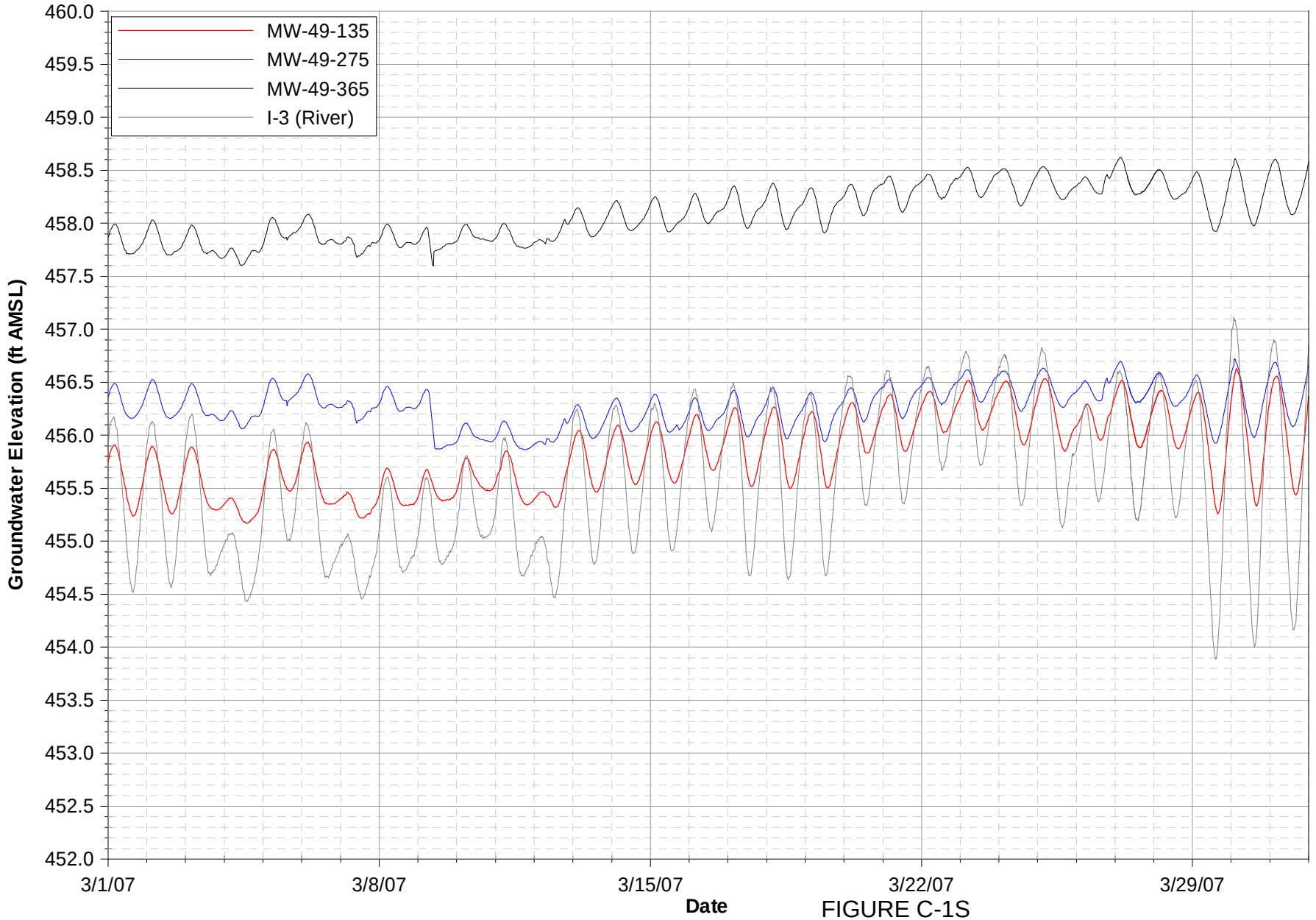


FIGURE C-1R
MW-47 CLUSTER HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Notes:
Data subject to review.

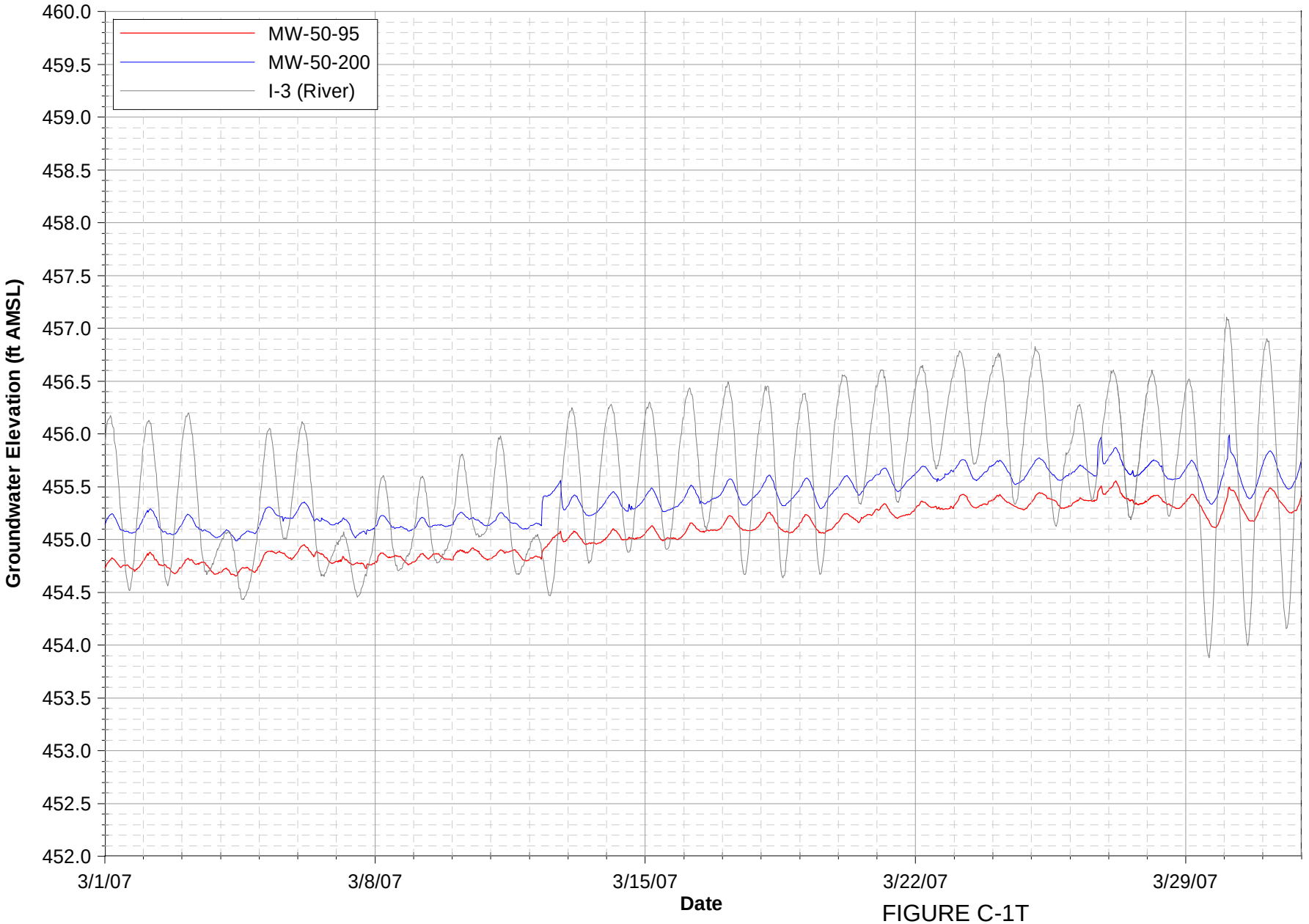
CH2MHILL



Notes:
Data subject to review.

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

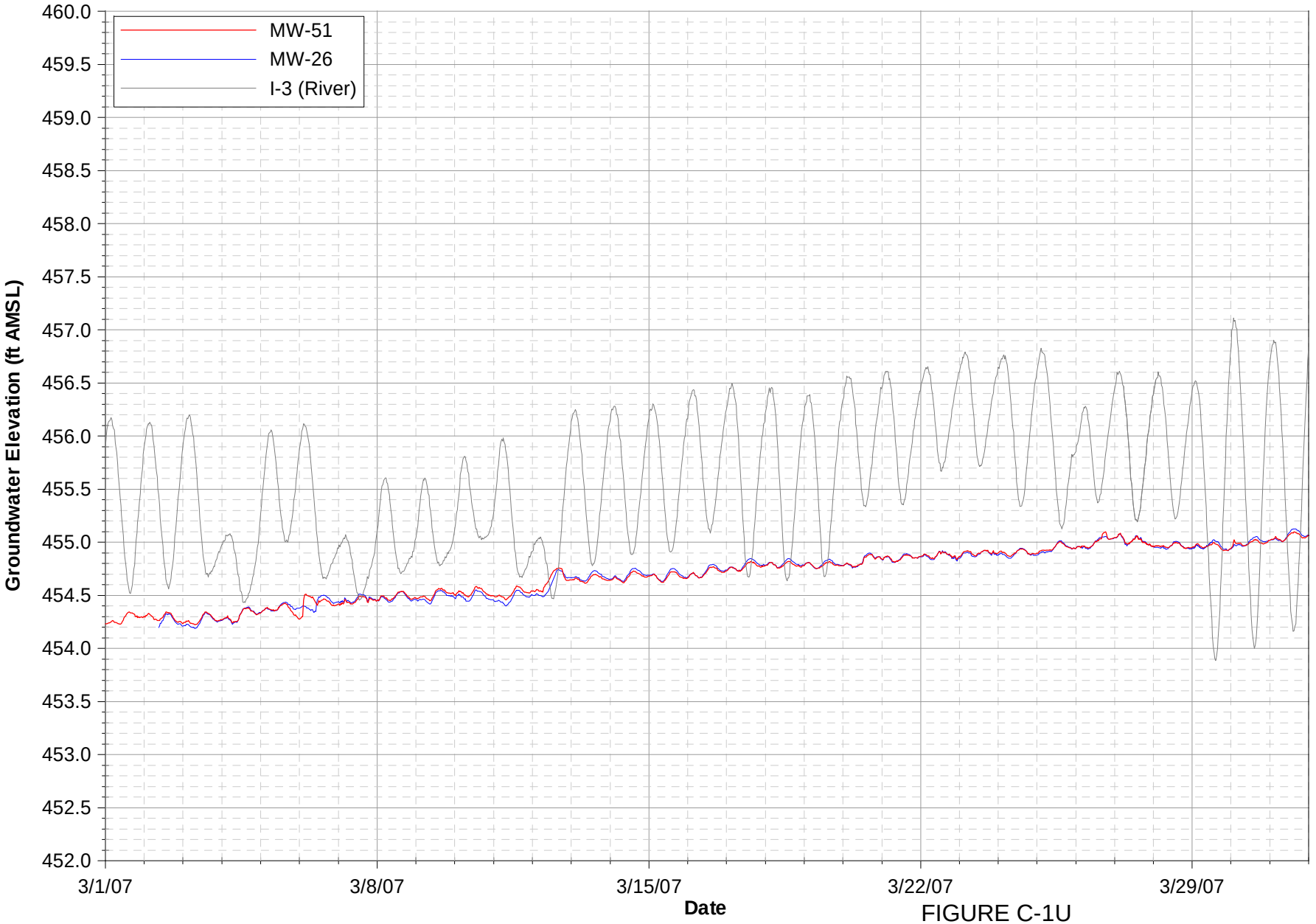
CH2MHILL



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 prior to 3/2/07.

FIGURE C-1U
MW-51& MW-26 HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

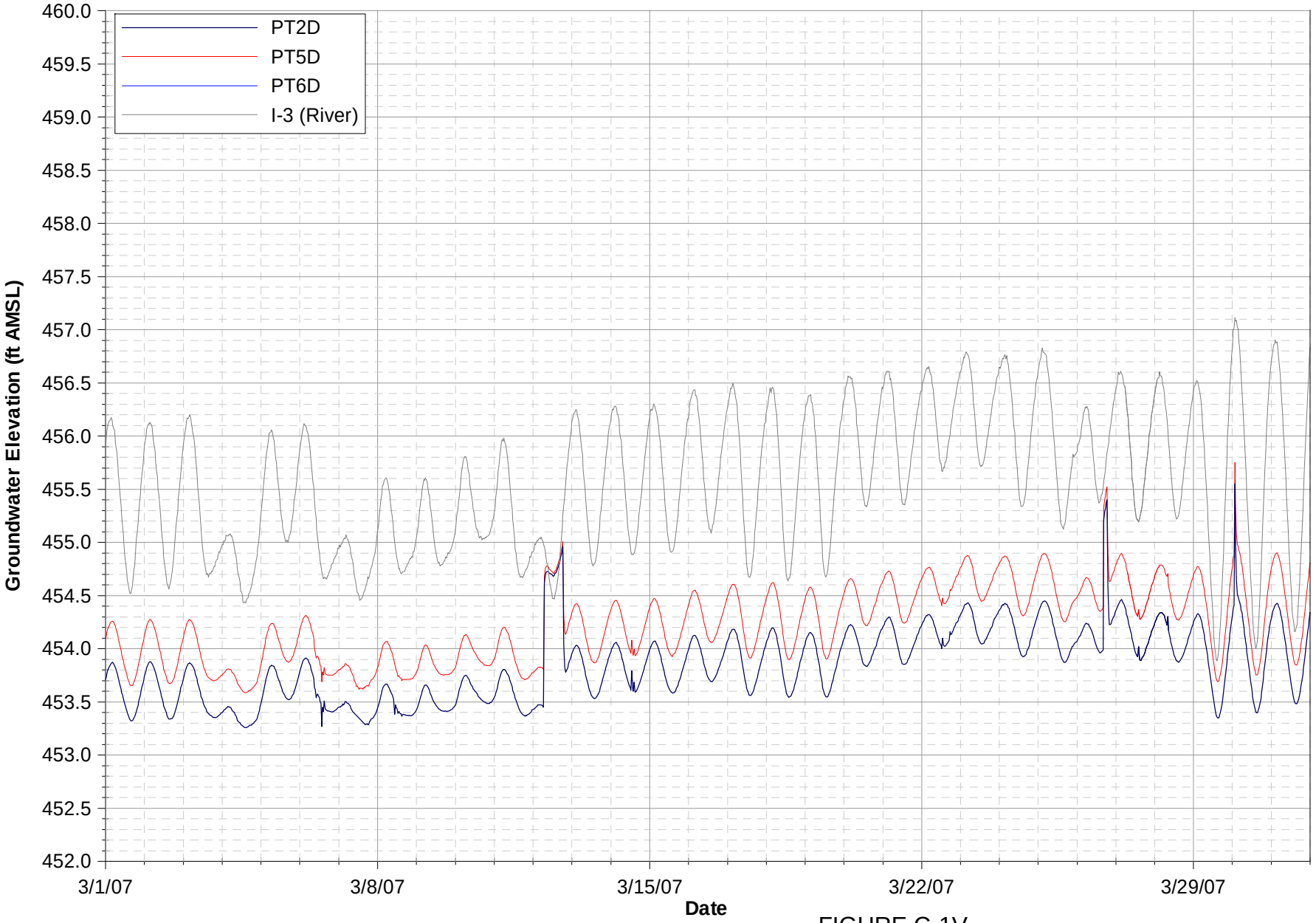


FIGURE C-1V
INSITU PILOT STUDY WELL HYDROGRAPHS
INTERIM MEASURES PERFORMANCE MONITORING
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.
PT6D data unavailable after February 14, 2007.

CH2MHILL