Pacific Gas and Electric Company®

Yvonne J. Meeks
Site Remediation - Portfolio Manager
Environmental Affairs

6588 Ontario Road
San Luis Obispo, CA 93405
Mailing Address
4325 South Higuera Street
San Luis Obispo, CA 93401

805.546.5243
Internal: 664.5243
Fax: 805.546.5232
Internet: YJM1@pge.com

September 15, 2004

Norman Shopay
Project Manager
California Department of Toxic Substances Control
Geology and Corrective Action Branch
700 Heinz Avenue
Berkeley, California 94710

Subject: Performance Monitoring Report No. 9
Interim Measure No. 2
PG&E Topock Compressor Station, Needles, California

Dear Mr. Shopay:

Enclosed is the ninth performance monitoring report for Interim Measure No. 2 for the Topock project. This report was prepared in conformance with Final Interim Measures Work Plan No. 2 and DTSC's Requirement for Future Monitoring Reports (letter dated July 21, 2004). This report describes the activities performed and monitoring data collected during the period August 1 through 31, 2004.

Please contact me at (805) 546-5243 if you have any questions or if you need additional information.

Sincerely,

Teri Hesson
for Yvonne Meeks

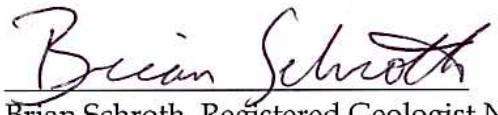
Enclosure

cc: CWG Members

Performance Monitoring Report No. 9
PG&E Topock Compressor Station, Interim Measures No. 2
August 1 through 31, 2004

Prepared for
Pacific Gas and Electric Company

This monitoring report was prepared under supervision of a
California Registered Geologist,



Brian Schroth, Registered Geologist No. 7423
Senior Hydrogeologist

Performance Monitoring Report No. 9, PG&E Topock Compressor Station, Interim Measures No. 2, August 1 through 31, 2004

Prepared for

Pacific Gas and Electric Company

September 15, 2004

CH2MHILL

Performance Monitoring Report No. 9, PG&E Topock Compressor Station, Interim Measures No. 2 August 1 through 31, 2004

Pacific Gas and Electric Company (PG&E) is implementing Interim Measure (IM) No. 2 at the Topock Compressor Station in Needles, California, as described in the *Final Interim Measures Work Plan No. 2* prepared by CH2M HILL on March 2, 2004 and *Addenda to Interim Measures Work Plan No. 2,* prepared by CH2M HILL on March 1, 2004. This performance monitoring report describes operational and monitoring information for IM No. 2 for the period between August 1 and August 31, 2004.

This performance monitoring report has been prepared in compliance with the *Final Interim Measures Work Plan No. 2*, which requires reporting of system operations and performance monitoring data. Future reports will be submitted monthly on the 15th of each month, and each report will cover activities of the entire preceding month. The next report will be submitted on October 15th.

System Operations

Batch Plant Description

On May 21, 2004, the United States Bureau of Land Management approved the PG&E work plan to modify the existing operations to batch treat the water onsite. The modifications were started on June 9, 2004 and substantially completed on July 15, 2004. Start-up and testing of the batch plant began on July 19, 2004.

Treatment is completed in three steps within a tank: (1) chromium reduction by reaction with ferrous chloride to reduce the hexavalent chromium to the less soluble trivalent form, (2) iron oxidation to precipitate out excess iron and reduced chromium, and (3) clarification to remove the precipitated solids from the water. Treated water from the clarifier is transferred to holding tanks for off-site disposal. Precipitated solids are periodically pumped from the clarifier into a container (phase separator) for off-site disposal.

Figure 1 provides an updated batch plant process diagram. The following sections summarize the IM No. 2 operations and activities during this reporting period. Pumping volumes, analytical test results and hydraulic evaluations are also included.

System Operations

Table 1 summarizes the pumping data for the reporting period. The pumping rate from TW-2D was increased from 20 to 30 gpm on August 16, 2004, upon DTSC notification following a request by PG&E to increase the pumping rate in order maintain the objective of IM No. 2.

A total of 1,097,499 gallons of groundwater were extracted and batch treated during this reporting period. The batch treated water was transported to United States Filter Corporation in Los Angeles, California for treatment and disposal. The treated water was manifested as a hazardous waste until August 6, allowing time to test the system performance during start-up and "triple rinse" the treated water storage tanks with the treated water. Since August 6, water has been transported as a RCRA non-hazardous waste.

Water will continue to be transported to United States Filter Corporation for treatment and disposal in the interim until other disposal options are evaluated and implemented by PG&E. Solids accumulated in the clarifier were characterized as a RCRA hazardous waste. No solids were taken off-site during this reporting period.

TABLE 1
Pump Data from TW-2S and TW-2D (August 1 through August 31, 2004)
Performance Monitoring Report No. 9, Topock Compressor Station, Interim Measure No. 2

Extraction Well	Reporting Period		Project To Date
	Average Pumping Rate (gpm)	Volume Pumped (gal)	Cumulative Volume Pumped (gal)
TW-2S[1]	0	0	486,358
TW-2D	25.44	1,097,499	3,193,209
Total	25.44	1,097,499	3,679,567
		Volume Pumped from MW-20 Cluster:	1,224,325
		Total Volume Pumped (gal)	4,903,892
		Total Volume Pumped (ac-ft)	15.05

gpm: gallons per minute.
Gal: gallons.
ac-ft: acre-feet.
[1]Pumping from TW-2S was temporarily terminated on June 11, 2004 per DTSC direction and pumping from TW-2D was increased to a minimum of 20 gpm.

Note: "Average Pumping Rate" is an average of the periodic flow meter readings over the reporting period, whereas "Volume Pumped" is based on flow totalizer readings from the beginning and end of the reporting period.

Daily inspections include tank inspections, flow measurements, site security, and desert tortoise sitings. Daily logs with documentation of inspections are maintained on site. Stormwater generated during storm events in August that accumulated within the secondary containment berm were pumped into the batch treatment system and shipped offsite with the treated water. No other operational changes were noted during the reporting period.

Extracted Water Analytical Results

Weekly grab samples were collected from TW-2D during this reporting period, with the exception of the week of August 9, 2004. Table 2 summarizes analytical results from TW-2S and TW-2D since May 19, 2004.

Batch Plant Modifications

A polymer system was integrated into the batch plant operations during the latter part of August 2004. This process change enhanced solids settling to further reduce chromium levels in batch plant effluent from the clarifier.

Hydraulic Monitoring

Hydraulic Data

Water levels were recorded at intervals of 30 minutes with pressure transducers in multiple wells and two river monitoring stations (I-3 and RRB). The data are typically continuous with only short interruptions for sampling or maintenance. The wells monitored were:

- **Floodplain Wells**: MW-27, MW-28 cluster (2), MW-29, MW-30 cluster (2), MW-32 cluster (2), MW-33 cluster (2), MW-34 cluster (2), MW-36 cluster (6), and MW-39 cluster (6).
- **Intermediate Wells**: MW-19, MW-20 cluster (3), MW-26, MW-31 cluster (2), MW-35 cluster (2), TW-2S, TW-2D.
- **Basin Wells**: MW-10, MW-25.

Hydrographs for all wells with transducers are provided as Attachment 1; the Colorado River elevation at I-3 is shown on all hydrographs. Transducers in two wells (MW-33-40 and MW-35-60) failed and were replaced during this reporting period; data for these wells is incomplete. Reported groundwater elevations (or hydraulic heads) are adjusted for temperature and for salinity differences between wells (i.e., adjusted to a common freshwater equivalent).

The average and the minimum and maximum daily average groundwater/river elevations have been calculated from the transducer data for the August reporting period (August 1 to 31, 2004).

Evaluation of Groundwater Gradients From the Reporting Period

Hydraulic data are summarized and groundwater elevations contoured by aquifer zone on the following figures:

Figure 2 – Upper Unconsolidated Aquifer Zone (Upper UA)

Figure 3 – Middle Unconsolidated Aquifer Zone (Middle UA)

Figure 4 – Lower Unconsolidated Aquifer Zone (Lower UA)

The groundwater elevations for the Upper UA indicate a slight southeastward hydraulic gradient along the floodplain. Further away from the floodplain, the gradient in the Upper UA that does not suggest a landward direction is consistent with regional hydraulic gradients outside of the river area. The groundwater elevations for the Middle UA indicate a landward hydraulic gradient and inferred flow away from the Colorado River. Groundwater elevations for the Lower UA indicate a flat to landward hydraulic gradient near the pumping wells and much of the floodplain.

Figure 5 shows the location of a hydrogeologic section B1 that runs east-west through monitoring points between TW-2 and the river. It is used to present the vertical as well as lateral groundwater gradients in a key area of the site. The average elevations, plotted on Figure 6 and contoured on Figure 7, indicate average upward hydraulic gradients across most of the profile and converging hydraulic gradients near the pumping wells. Converging hydraulic gradients near the pumping wells are apparent on Figure 4 but not as apparent on the vertical cross sections. The water level inside the pumping well has not been posted or contoured on these figures because drawdown in actively pumping wells can be exaggerated due to well inefficiency.

The correlation between Colorado River levels and United States Bureau of Reclamation (USBR) records for Davis Dam discharge has been used to estimate future river levels from of USBR discharge projections. The predicted river levels are input to the groundwater model to help estimate future pumping requirements. Measured Davis Dam discharges do not always agree with USBR projections.

The estimated and actual dam discharges and river elevations since April 2004 are summarized in Table 3. The actual Davis Dam August 2004 discharge (monthly average) was marginally less (100 cubic feet per second [cfs]) than the USBR projected discharge for the August reporting period. The actual Colorado River elevation at I-3 (monthly average) was greater (0.4 feet) than the predicted elevation for the August reporting period. To date, this is the first performance monitoring report to indicate a hydraulic gradient that is not clearly landward. Ongoing evaluation of the batch treatment system during late August suggested that the system was operationally capable of treating additional extracted groundwater to concentrations acceptable to the offsite disposal facility. Therefore, at the end of August, PG&E requested approval from the DTSC and BLM for a second increase to the pumping rate from extraction well TW-2D. PG&E will continue to monitor the operational capacity of the system and will request additional increases to the extraction rate until the maximum capacity of the system is reached.

Future Activities

Reporting of Interim Measures No. 2 activities will continue as described in the *Final Interim Measures Work Plan No. 2*. The next status report will be submitted on October 15, 2004 and will cover activities from September 1 to September 31, 2004.

Full-time pumping from TW-2D will continue in September 2004. The USBR projects that Davis Dam releases in September 2004 will be reduced relative to August rates. Calculations based on this projected dam release reduction indicate a corresponding drop in river level on the order of one foot. In anticipation of the calculated drop in river level and in accordance with DTSC's letter of June 30, 2004, PG&E submitted a request to the DTSC and BLM on August 30, 2004 to increase the groundwater extraction rate from TW-2D to 40 gpm. The requested increase in extraction rate received final approval from DTSC on September 3 and was implemented on September 7, following replacement of the pump in TW-2D to accommodate higher pumping rates. PG&E will continue to monitor the operational capacity of the system and will request additional increases to the extraction rate until the maximum capacity of the system is reached.

Tables

Table 2
Analytical Results - TW-2 Extraction Wells
Topock Interim Measures No. 2

Sample Time Relative to TW-2 Pumping Start	TW-2S				TW-2D				TW-2 Combined			
	Sample Date	**Total Dissolved Chromium** mg/L	**Hexavalent Chromium** mg/L	**Total Dissolved Solids** mg/L	**Sample Date**	**Total Dissolved Chromium** mg/L	**Hexavalent Chromium** mg/L	**Total Dissolved Solids** mg/L	**Sample Date**	**Total Dissolved Chromium** mg/L	**Hexavalent Chromium** mg/L	**Total Dissolved Solids** mg/L
6 days	19-May-04	6.61	7.36	2,620	19-May-04	7.06	7.77	7,740	19-May-04	6.68	7.58	5,230
13 days	26-May-04	6.68	7.00	2,700	26-May-04	7.15	7.47	7,620	26-May-04	7.29	7.19	5,520
20 days	02-Jun-04	7.93	7.19	2,690	02-Jun-04	7.02	7.33	7,540	02-Jun-04	6.93	7.33	5,350
27 days	09-Jun-04	6.82	7.19	2,740	09-Jun-04	6.98	7.41	7,540	09-Jun-04	6.81	7.50	5,300
34 days	NS				16-Jun-04	7.55	7.11	7,400	NS			
41 days	NS				23-Jun-04	7.11	6.75	7,200	NS			
48 days	NS				30-Jun-04	6.37	6.64	7,060	NS			
56 days	NS				08-Jul-04	7.29	6.29	7,150	NS			
62 days	NS				14-Jul-04	5.92	6.15	7,020	NS			
69 days	NS				21-Jul-04	5.74	6.20	6,830	NS			
76 days	NS				28-Jul-04	5.66	6.01	6,760	NS			
83 days	NS				04-Aug-04	5.95	6.06	7,140	NS			
98 days	NS				19-Aug-04	7.61	6.20	6,700	NS			
105 days	NS				26-Aug-04	5.31	6.03	6,620	NS			

Notes:

1. NS = Not Sampled
2. Sampling of TW-2S and TW-2 combined were halted when pumping from TW-2S was temporarily terminated on June 11, 2004 per DTSC direction.

Table 3
Predicted and Actual Monthly Average Davis Dam Discharge and Colorado River Elevation at I-3
PG&E Topock

	Davis Dam Release (cfs)			Colorado River Elevation at I-3 (ft AMSL or ft)		
Month	**Projected**	**Actual**	**Difference**	**Predicted**	**Actual**	**Difference**
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

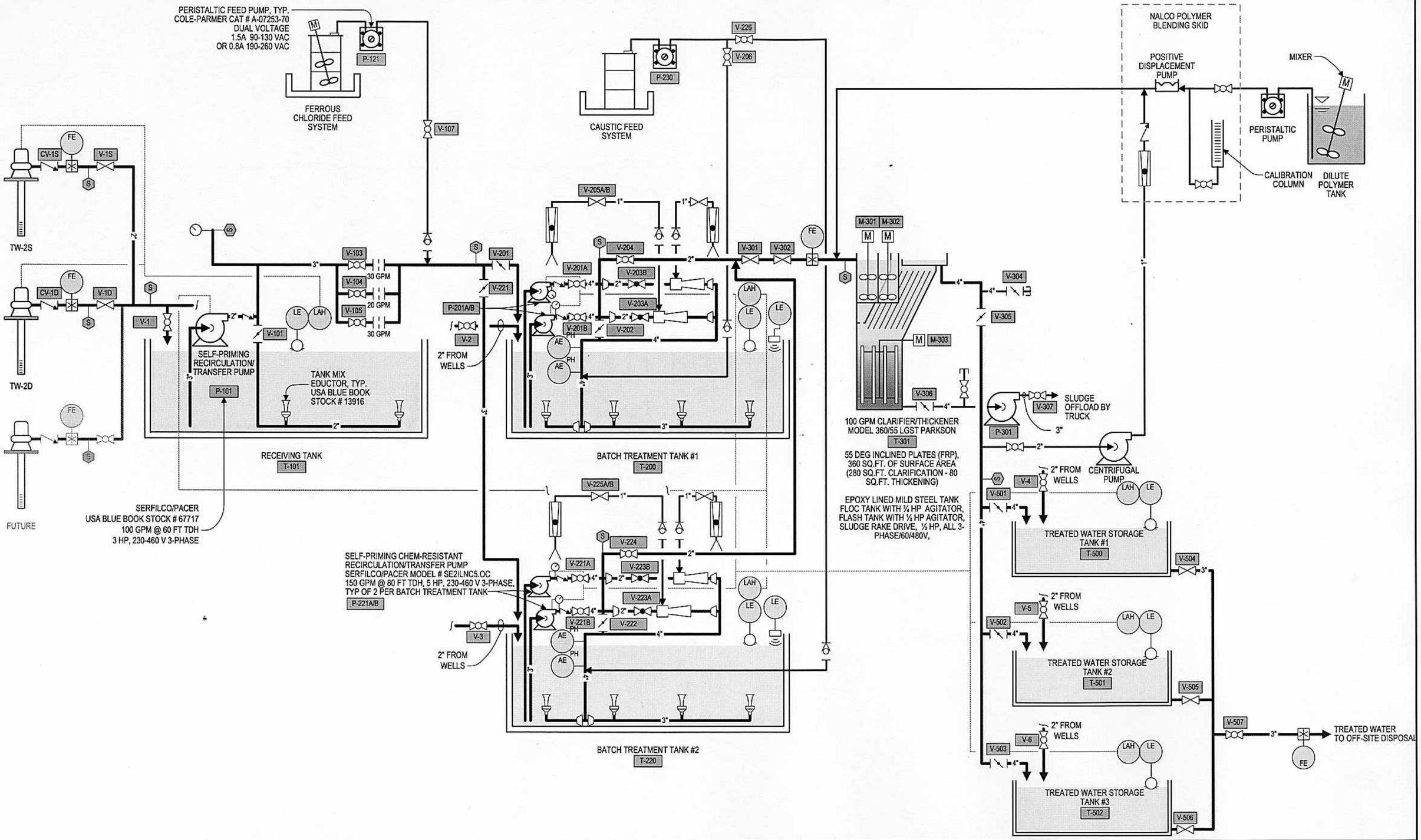
Notes:

Projected Davis Dam Releases, updated monthly, are reported by the US Department of Interior, Bureau of Reclamation at http://www.usbr.gov/lc/region/g4000/24mo.pdf; listed projections are from April 2004, and have since been revised by USBR.

Colorado River levels at I-3 are predicted from a linear regression between historical dam releases and measured river levels at I-3.

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

Figures



CH2MHILL

DSGN	P MUELLER					
DR	P MUELLER					
CHK	J MCWADE					
APVD	P MUELLER					
NO.	DATE	REVISION	BY	APVD		
1	8/04	AS-BUILT	MJ	JM		

BAR IS ONE INCH ON ORIGINAL DRAWING
0 —— 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

REUSE OF DOCUMENTS

THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL

PACIFIC GAS & ELECTRIC CO.
TOPOCK COMPRESSOR STATION
INTERIM MEASURE 2

REVISED AUGUST 25, 2004

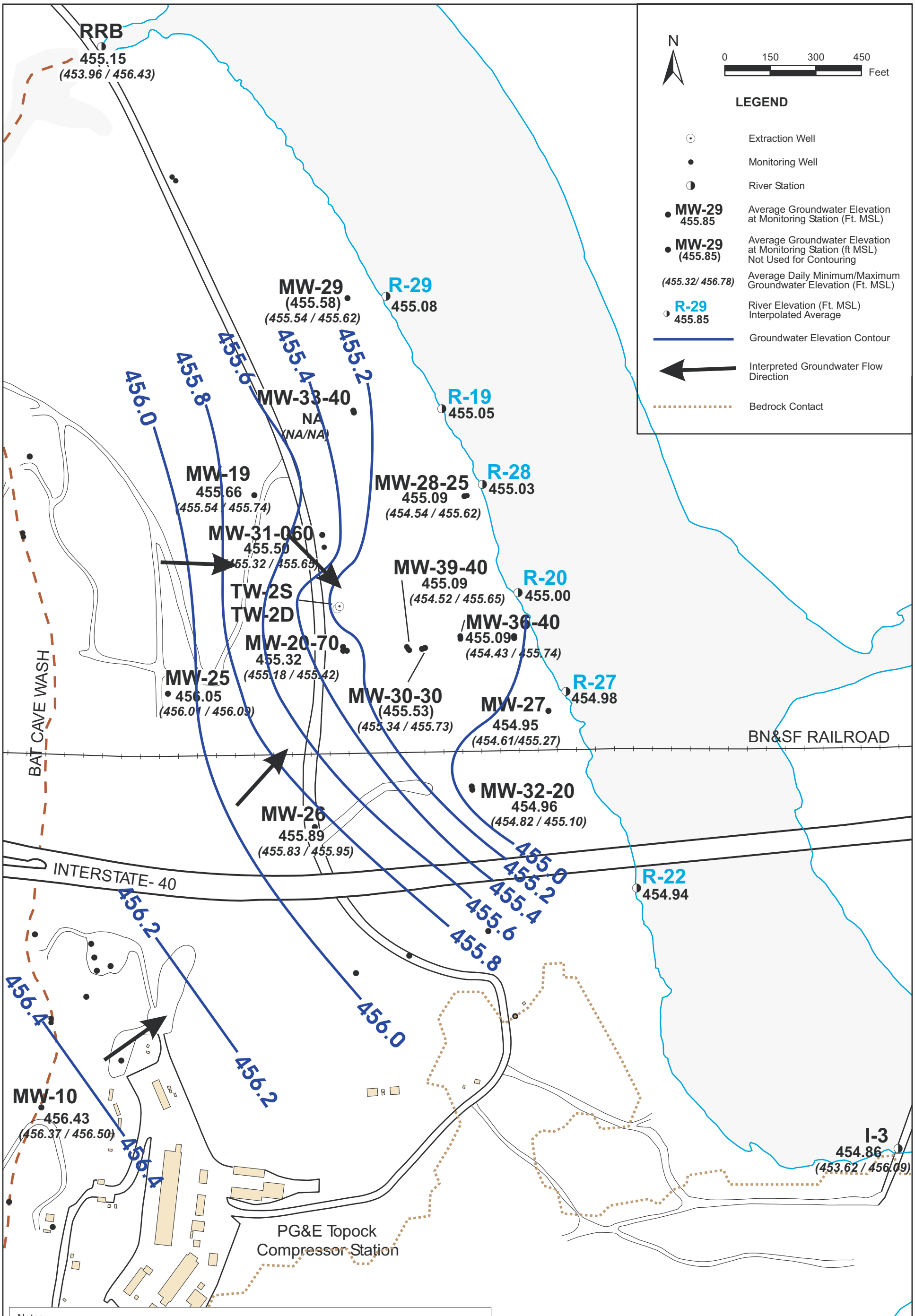
FIGURE 1
PROCESS DIAGRAM FOR BATCH PLANT

PHASE III

SHEET	1
DWG NO.	1
DATE	08/10/04
PROJ NO.	315994

FILENAME: TEMP SYSTEM.VSD

JUL 6, 2004



Notes:

Groundwater elevations shown represent those from the Upper Unconsolidated Aquifer (UA) wells only.

Groundwater elevations are averages of water levels from August 1- 31, 2004 measured with transducers at 30 minute intervals. Groundwater elevations are salinity and temperature adjusted.
River elevations at RRB and R- river stations are interpolated from the average river elevations at I-3 And RRB from May, June and July 2004; the resulting river gradient is 6.6E-5 ft/ft.

Inferred gradients and flow directions are based upon available data; new well, additional data, and further calibration may change interpretations.

Figure 2
Average Groundwater (Upper UA) and River Elevations, August 1-31, 2004

INTERIM MEASURES FIELD PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

SFO \\CABERNET\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MXD\IM_HYDRAULIC_GRADIENT.MXD
SFO \\CABERNET\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\TRANSDUCERS\DATA_EVALUATION\AVG_GRADCALCS\PERIOD_08/01-08-31\AUG_CONTOURS _UPPERUA.CDR

N

0 150 300 450 Feet

LEGEND

- Extraction Well
- Monitoring Well
- River Station
- **MW-29** 455.85 — Average Groundwater Elevation at Monitoring Station (Ft. MSL)
- *(455.32/ 456.78)* — Average Daily Minimum/Maximum Groundwater Elevation (Ft. MSL)
- **R-29** 455.85 — River Elevation (Ft. MSL) Interpolated Average
- Groundwater Elevation Contour
- Interpreted Groundwater Flow Direction
- Bedrock Contact

RRB
455.15
(453.91 / 456.38)

R-29
455.08

MW-33-90
455.45
(455.00 / 455.90)

R-19
455.05

455.4

455.3

455.2

MW-28-90
455.19
(454.35 / 456.02)

R-28
455.03

MW-36-50
455.07
(454.39 / 455.75)

R-20
455.00

TW-2S
TW-2D

MW-20-100
455.14
(454.94 / 455.34)

MW-34-55
455.17
(454.31 / 456.02)

MW-39-60
455.07
(454.57 / 455.57)

MW-30-50
455.07
(454.49 / 455.64)

R-27
454.98

455.1

455.1

MW-32-35
455.04
(454.66 / 455.41)

R-22
454.94

I-3
454.86
(453.62 / 456.09)

BAT CAVE WASH

BN&SF RAILROAD

INTERSTATE- 40

PG&E Topock
Compressor Station

Notes:

Groundwater elevations shown represent those from the Middle Unconsolidated Aquifer (UA) wells only.

Groundwater elevations are averages of water levels from August 1- 31, 2004 measured with transducers at 30 minute intervals. Groundwater elevations are salinity and temperature adjusted.

River elevations at RRB and R- river stations are interpolated from the average river elevations at I-3 And RRB from May, June and July 2004; the resulting river gradient is 6.6E-5 ft/ft.

Inferred gradients and flow directions are based upon available data; new wells, additional data, and further calibration may change interpretations.

River elevations are shown, but not used in contouring groundwater elevations for the Middle UA.

Figure 3
Average Groundwater (Middle UA) and River Elevations, August 1-31, 2004

INTERIM MEASURES FIELD PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

SFO \\CABERNET\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MXD\IM_HYDRAULIC_GRADIENT.MXD
SFO \\CABERNET\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\TRANSDUCERS\DATA_EVALUATION\AVG_GRADCALCS\PERIOD_08/01-08-31\AUG_CONTOURS_MIDDLEUA.CDR

N

0 150 300 450 Feet

LEGEND

- Extraction Well
- Monitoring Well
- River Station
- **MW-29** 455.85 — Average Groundwater Elevation at Monitoring Station (Ft. MSL)
- *(455.32/ 456.78)* — Average Daily Minimum/Maximum Groundwater Elevation (Ft. MSL)
- **R-29** 455.85 — River Elevation (Ft. MSL) Interpolated Average
- Groundwater Elevation Contour
- Inferred or Approximate Groundwater Elevation Contour
- Interpreted Groundwater Flow Direction
- Bedrock Contact

RRB
455.15
(453.91 / 456.38)

MW-35-135
455.45
(455.24 / 455.68)

R-29
455.08

R-19
455.05

R-28
455.03

455.2
456.3
456.4
456.4

TW-2S
TW-2D

MW-20-130
455.22
(454.96 / 455.49)

R-20
455.00

MW-34-80
455.36
(454.55 / 456.16)

R-27
454.98

MW-39-100
455.39
(454.96 / 455.83)

MW-36-100
455.42
(454.84 / 455.99)

MW-36-90
455.23
(454.65 / 455.81)

R-22
454.94

I-3
454.86
(453.62 / 456.09)

BAT CAVE WASH

BN&SF RAILROAD

INTERSTATE- 40

PG&E Topock
Compressor Station

Notes:

Groundwater elevations shown represent those from the Lower Unconsolidated Aquifer (UA) wells only.

Groundwater elevations are averages of water levels from August 1- 31,2004 measured with transducers at 30 minute intervals. Groundwater elevations are salinity and temperature adjusted.

River elevations at RRB and R- river stations are interpolated from the average river elevations at I-3 And RRB from May, June and July 2004; the resulting river gradient is 6.6E-5 ft/ft.

Inferred gradients and flow directions are based upon available data; new wells, additional data, and further calibration may change interpretations.

River elevations are shown, but not used in contouring groundwater elevations for the Lower UA.

Figure 4
Average Groundwater (Lower UA) and River Elevations, August 1-31, 2004

INTERIM MEASURES FIELD PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

SFO \\CABERNET\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MXD\IM_HYDRAULIC_GRADIENT.MXD
SFO \\CABERNET\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\TRANSDUCERS\DATA_EVALUATION\AVG_GRADCALCS\PERIOD_08/01-08-31\AUG_CONTOURS _UPPERUA.CDR

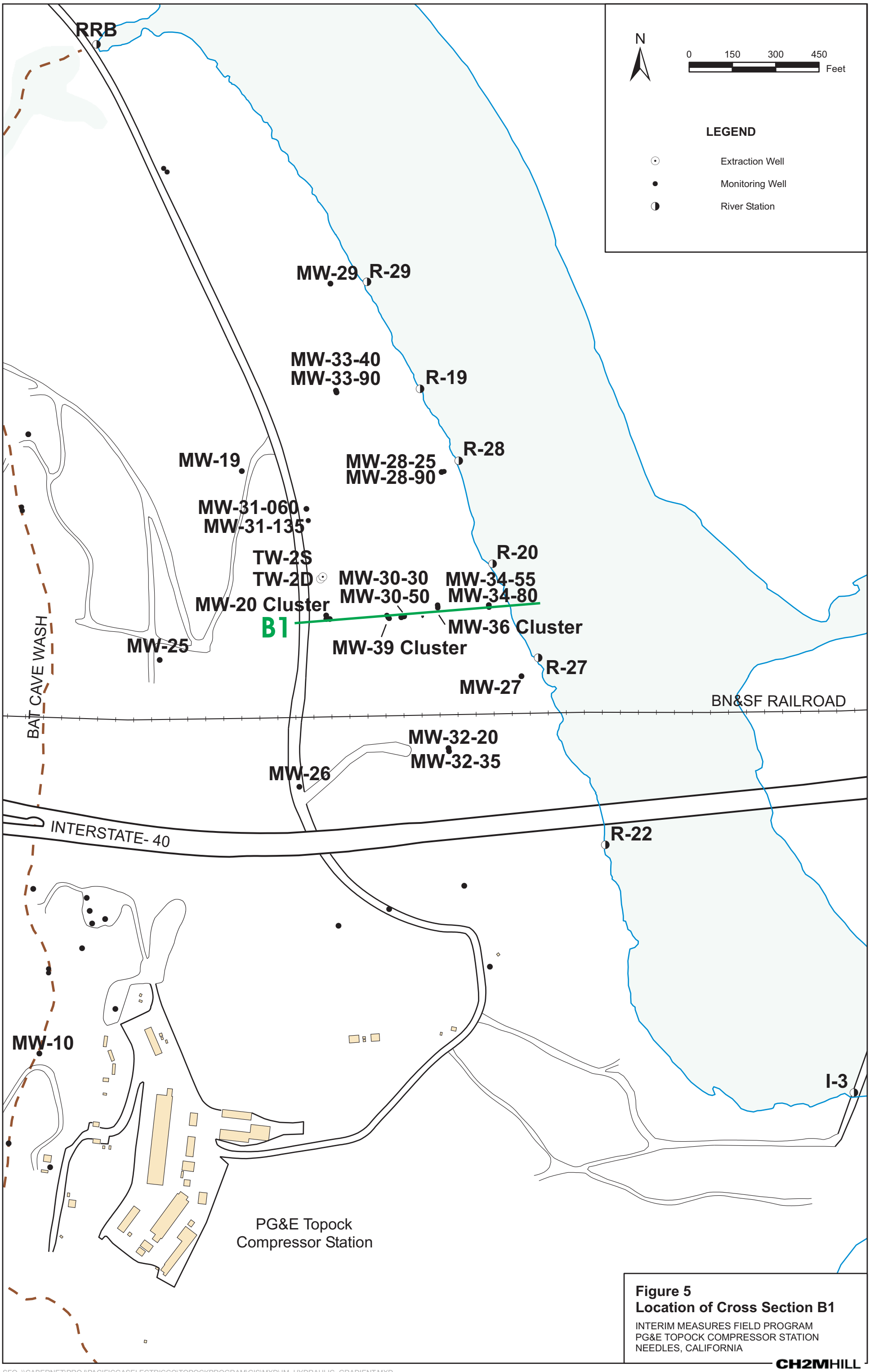


Figure 5
Location of Cross Section B1

INTERIM MEASURES FIELD PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

SFO \\CABERNET\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MXD\IM_HYDRAULIC_GRADIENT.MXD

West

East
Section B1

TW-2S
TW-2D

Projected
120'

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

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

MW-30-30
MW-30-50

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

MW-34-55
MW-34-80

ground surface

water table

Colorado River

454.99

Elevation (Ft. MSL)

500

400

300

455.32
Max. 455.42
Min. 455.18

455.14
Max. 455.34
Min. 454.94

455.22
Max. 455.49
Min. 454.96

131

180

455.07
Max. 455.57
Min. 454.57

455.05
Max. 455.48
Min. 454.63

455.39
Max. 455.83
Min. 454.96

455.09
Max. 455.65
Min. 454.52

455.12
Max. 455.66
Min. 454.58

455.02
Max. 455.46
Min. 454.59

118

455.53
Max. 455.34
Min. 455.73

455.07
Max. 455.64
Min. 454.49

67

455.07
Max. 455.75
Min. 454.39

455.42
Max. 455.99
Min. 454.84

455.07
Max. 455.61
Min. 454.51

455.09
Max. 455.74
Min. 454.43

455.19
Max. 455.88
Min. 454.50

455.23
Max. 455.81
Min. 454.65

108

455.17
Max. 456.02
Min. 454.31

455.36
Max. 456.16
Min. 454.55

93

?

?

Red Fanglomerate
consolidated / cemented conglomerate, sandstone

Note: Data subject to review.

20
Vertical Scale
0
0 Horizontal Scale 100 feet

MW-25
water level
well screen
total depth of boring
458.07
Max. 457.30
Min. 458.52
103

Average groundwater elevation, August 1 - 31, 2004
(salinity and temperature adjusted)
Max. = Average daily maximum groundwater elevation
Min. = Average daily minimum groundwater elevation

456.56 Average river elevation
(Interpolated from I-3
and RRB stations)

FIGURE 6
HYDROGEOLOGIC SECTION B1
AVERAGE GROUNDWATER ELEVATIONS
AUGUST 1 - 31, 2004
INTERIM MEASURES COMPRESSOR STATION
PG&E TOPOCK PROJECT
NEEDLES, CALIFORNIA

CH2MHILL

315024.IM.05.00_Section B1 - August GW elev August 1 - 31 max-min_9/13/04_ccc_sfo

West

East
Section B1

TW-2S
TW-2D

Projected
120'

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

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

MW-30-30
MW-30-50

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

MW-34-55
MW-34-80

ground surface

Colorado River

water table

Elevation (Ft. MSL)

500

400

300

455.3
455.2
455.1

455.32
455.14
455.22
455.2
131
180

455.07
455.09
455.12
455.05
455.02
455.39
455.3
455.4
118

455.53
455.07
67

455.07
455.09
455.07
455.19
455.23
455.42
108

454.99

455.17
455.36
455.1
455.2
455.3
455.4
? ?
93

Red Fanglomerate
consolidated / cemented conglomerate, sandstone

Note: Data subject to review
MW-30-30 not included in contouring.

20
Vertical Scale
0
0 Horizontal Scale 100 feet

MW-25
water level
well screen
total depth of boring
458.07
103

Average groundwater elevation, August 1 - 31, 2004 (salinity & temperature adjusted)

Groundwater elevation contour

Inferred groundwater elevation contour

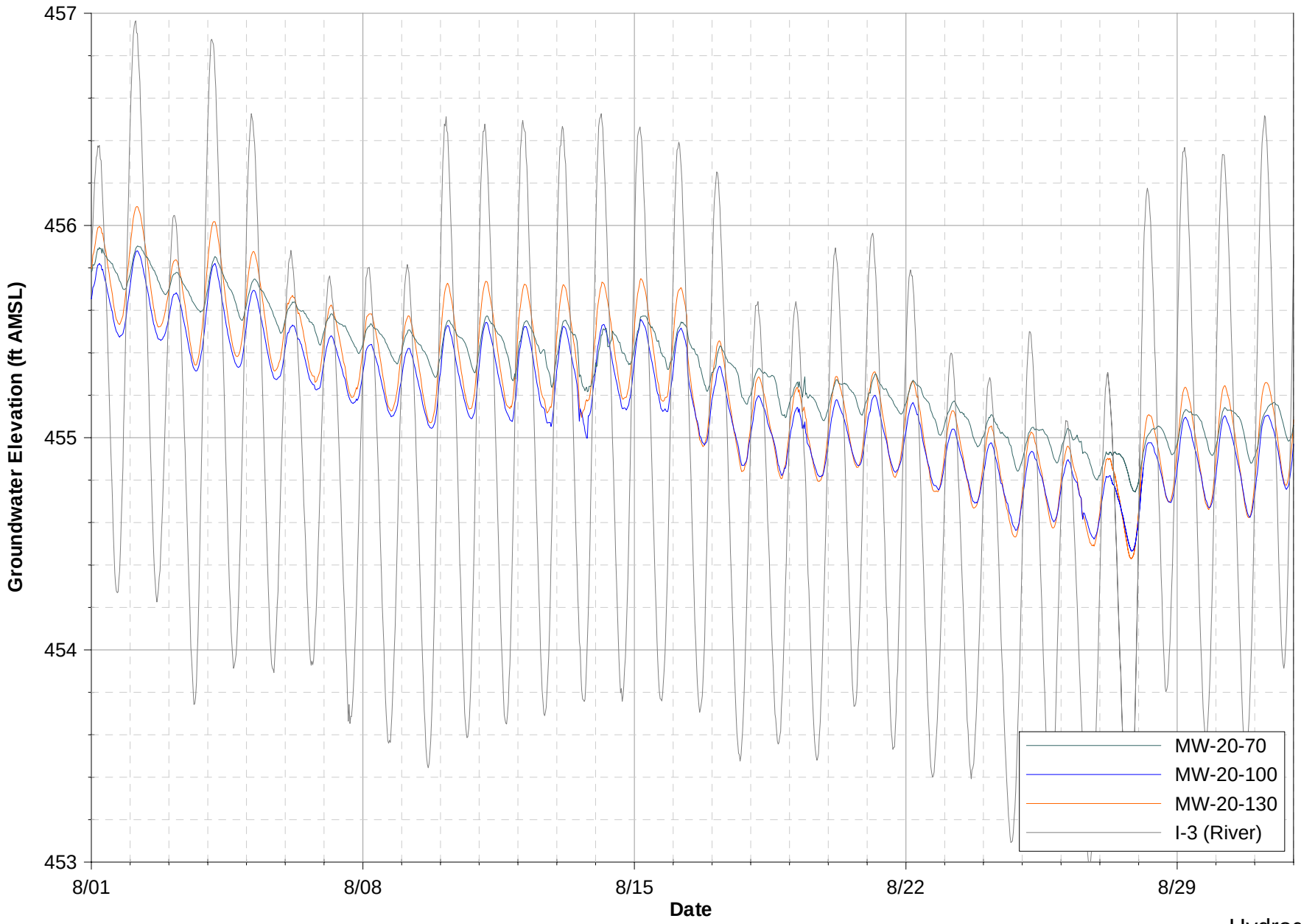
456.56 Average river elevation (Interpolated from I-3 and RRB stations)

FIGURE 7
HYDROGEOLOGIC SECTION B1
AVERAGE GROUNDWATER ELEVATION CONTOURS, AUGUST 1 - 31, 2004
INTERIM MEASURES COMPRESSOR STATION
PG&E TOPOCK PROJECT
NEEDLES, CALIFORNIA

CH2MHILL

315024.IM.05.00_Section B1 - August GW elev August 1 - 31 -CONTOURS_9/13/04_ccc_sfo

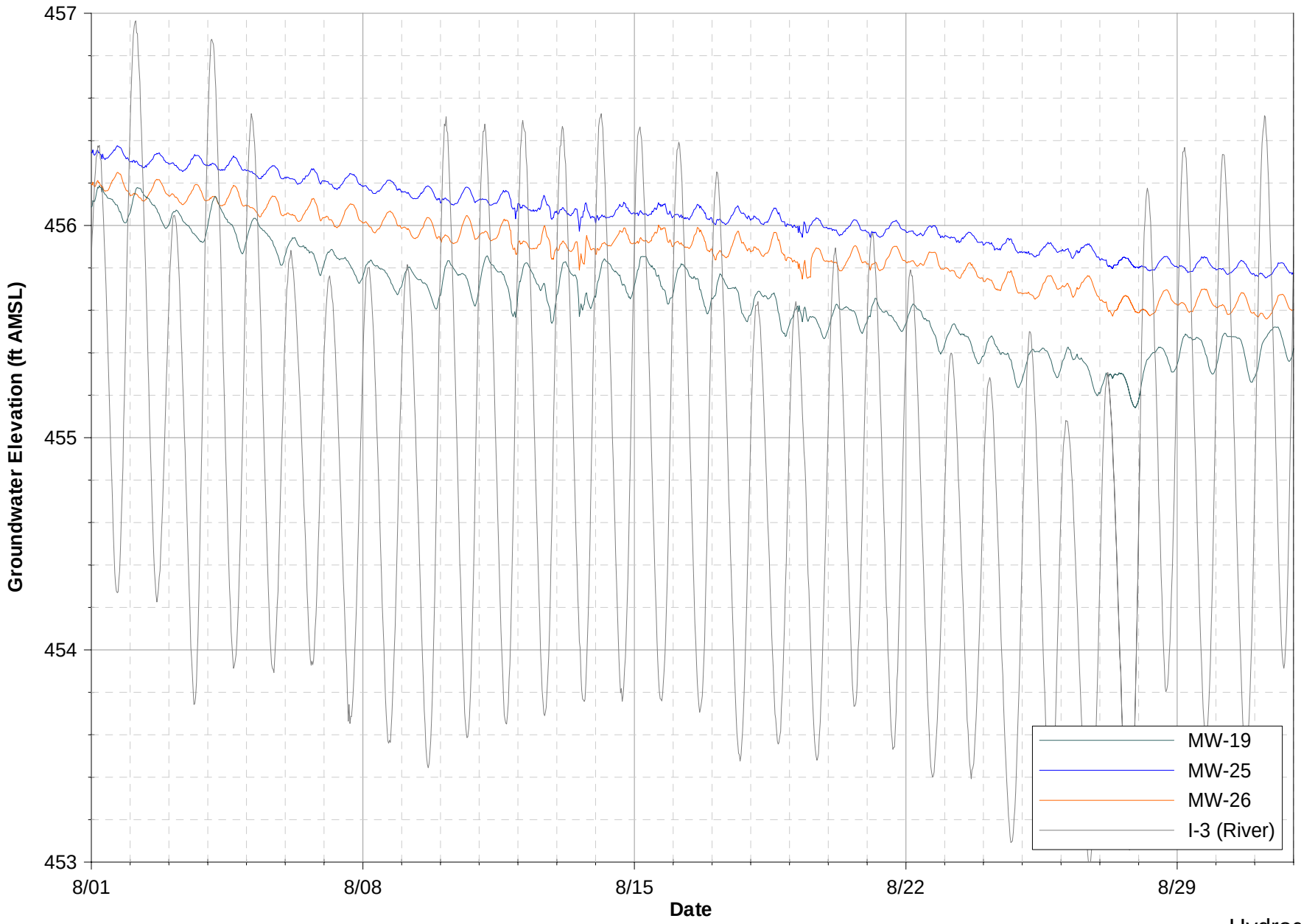
Attachment 1
Hydrographs



Note: Data subject to review.

Hydrograph
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

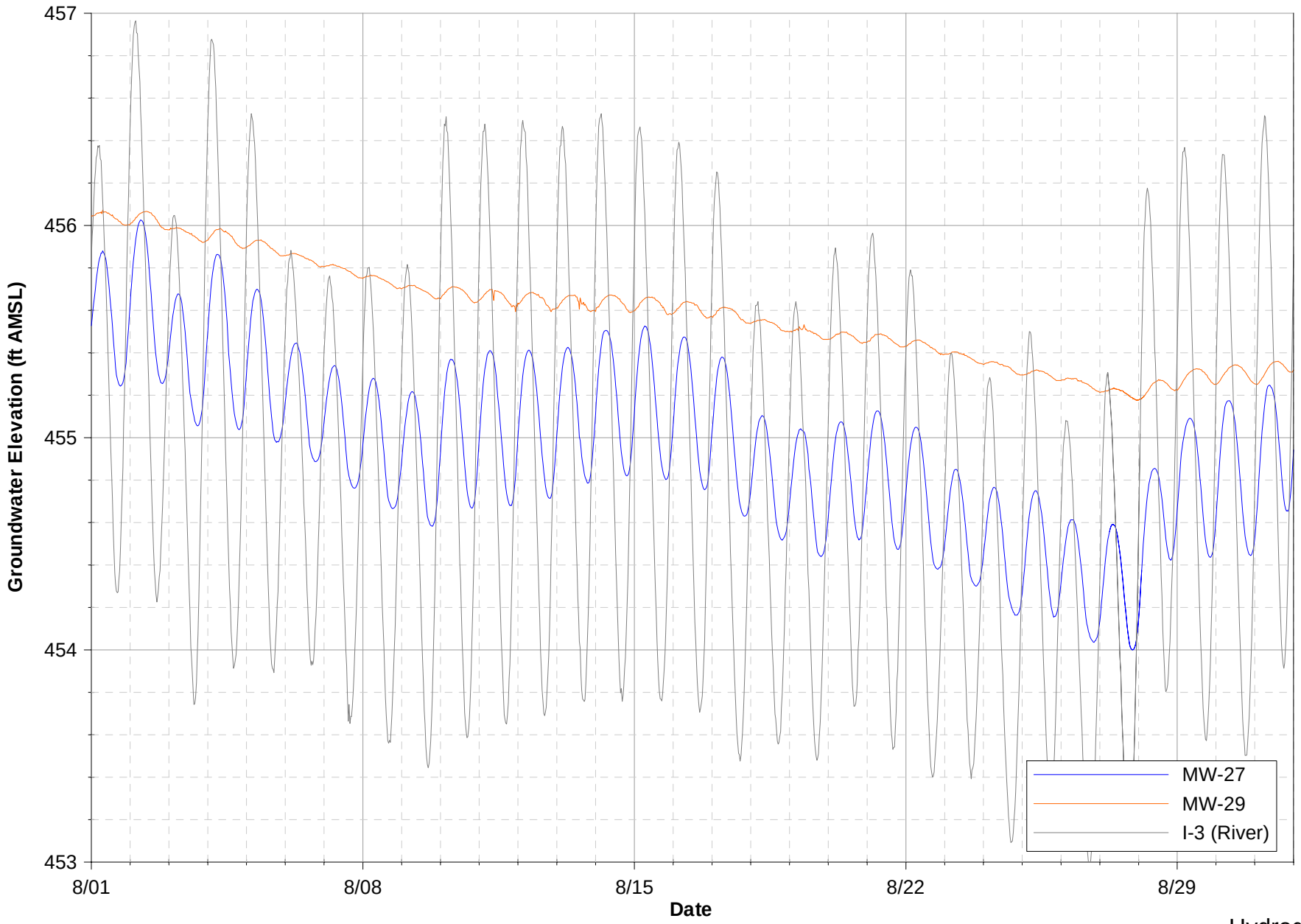
CH2MHILL



Note: Data subject to review.

Hydrograph
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

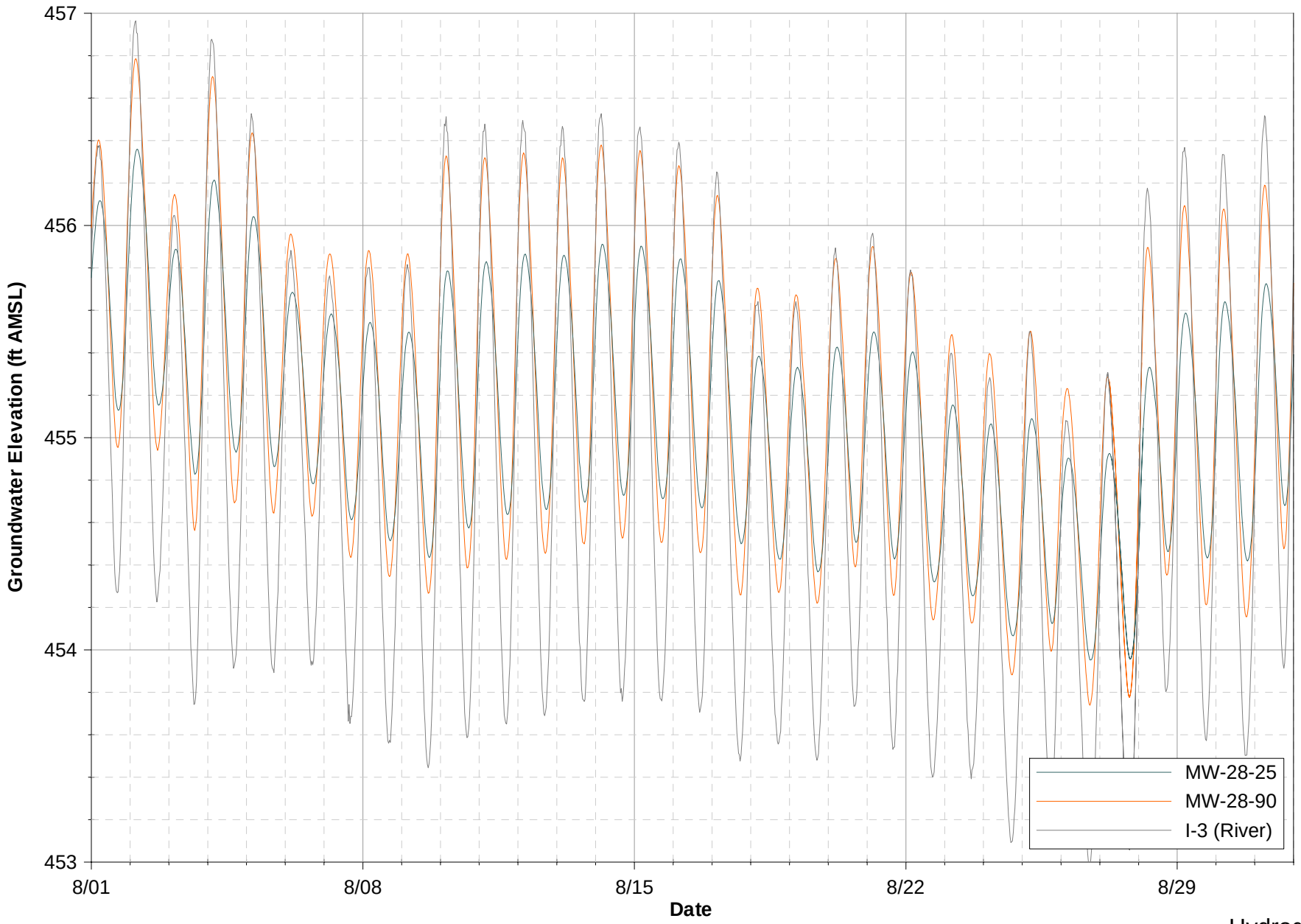


Note: Data subject to review.

Hydrograph

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

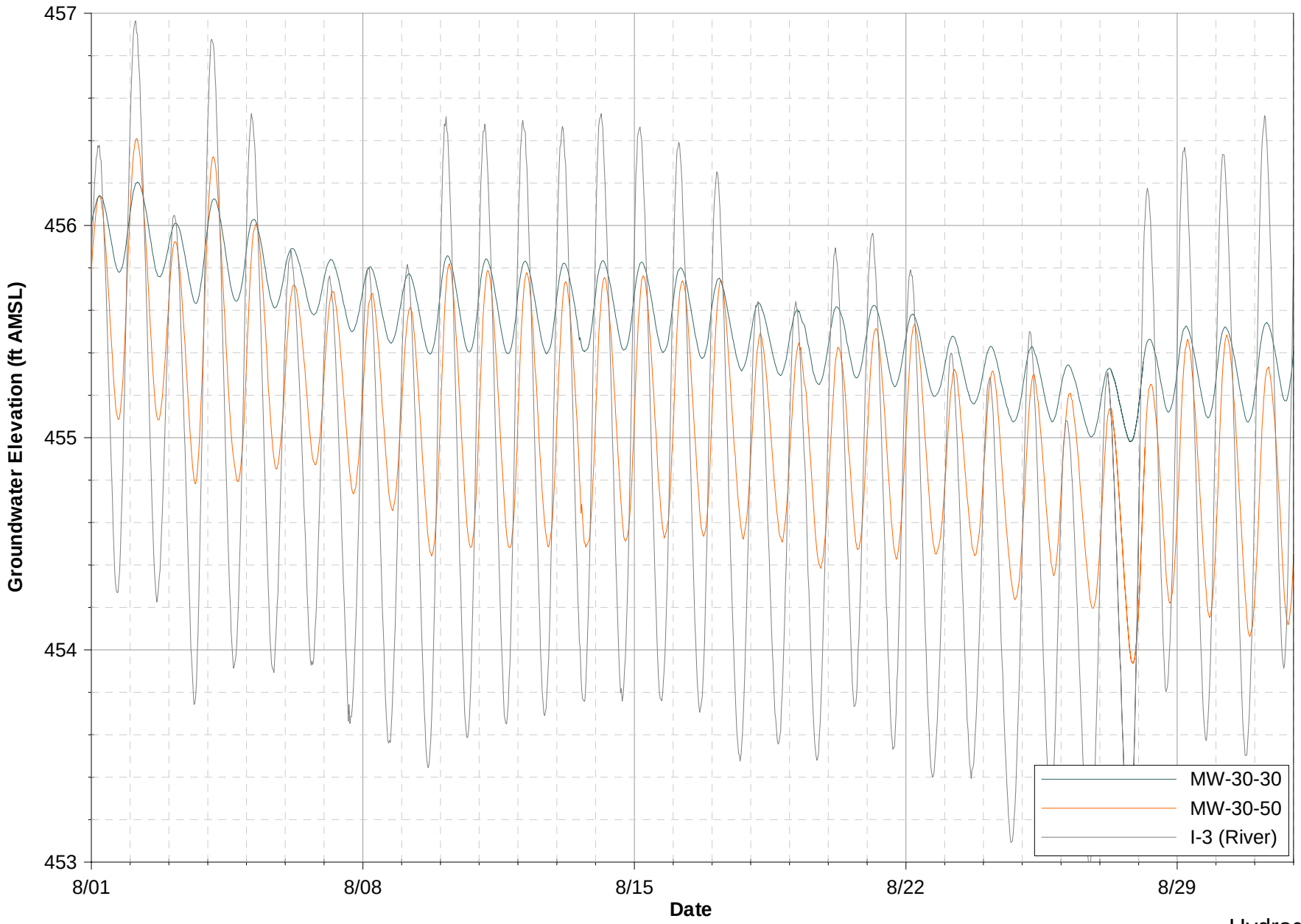


Note: Data subject to review.

Hydrograph

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

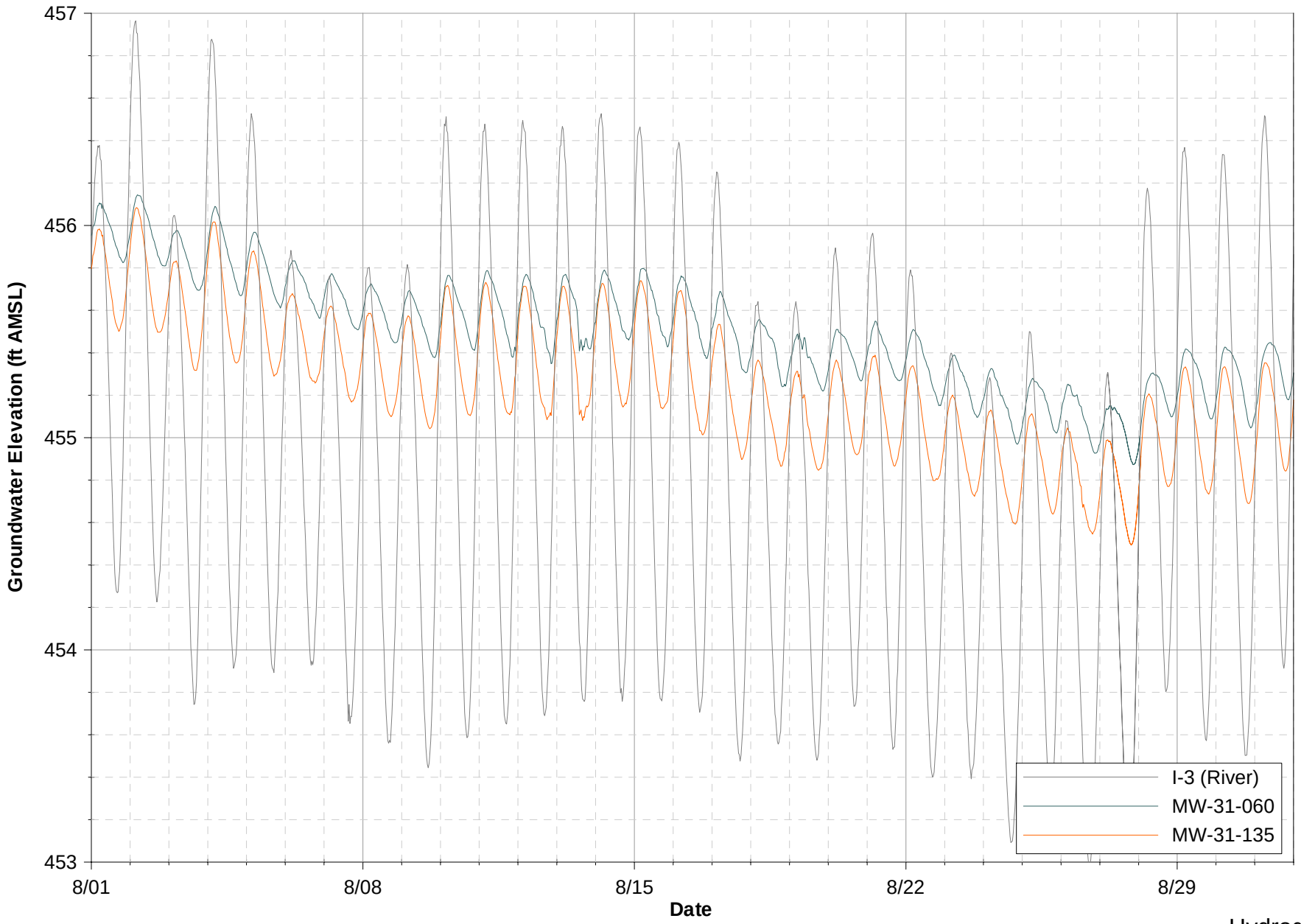


Note: Data subject to review.

Hydrograph

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

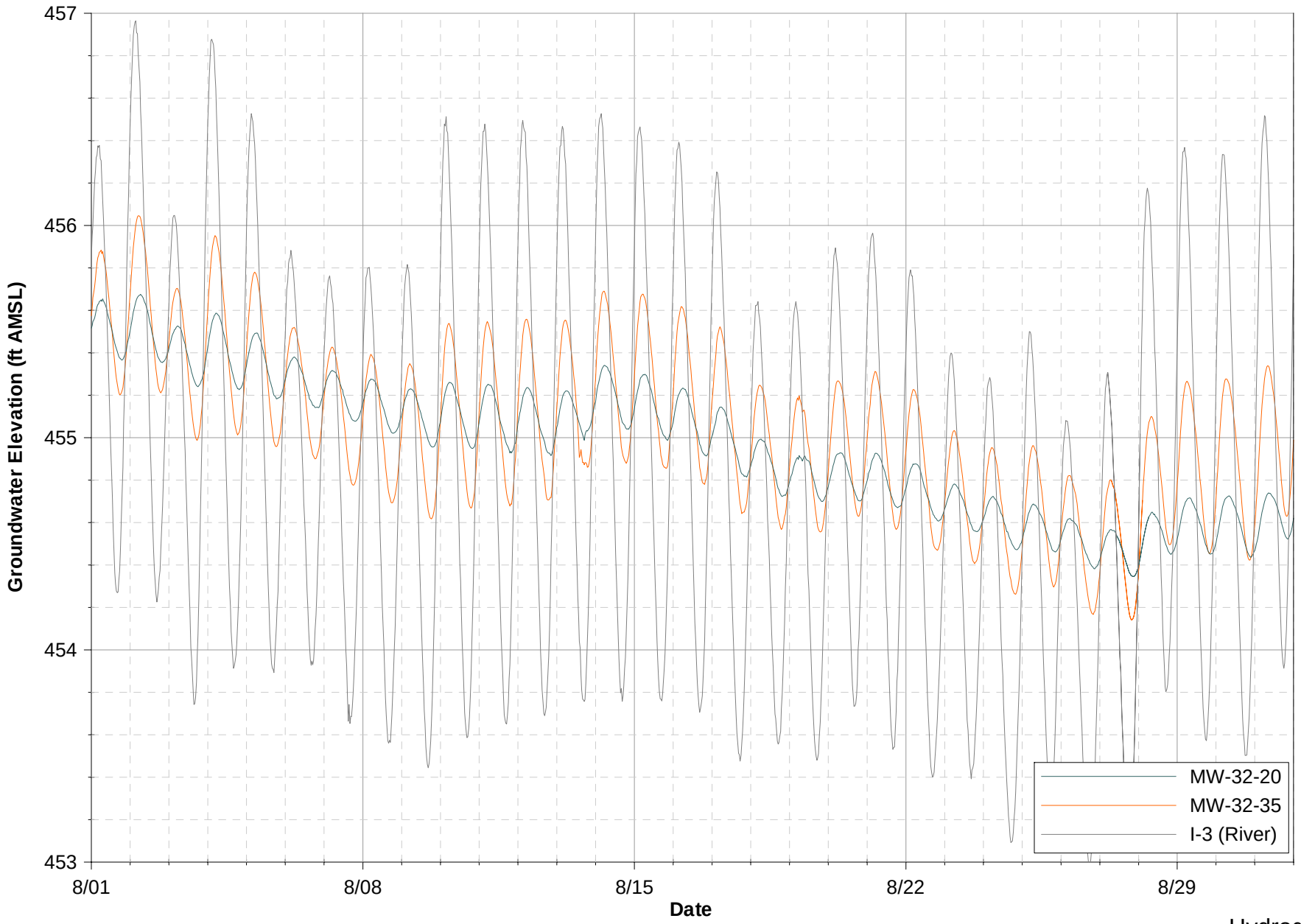


Note: Data subject to review.

Hydrograph

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

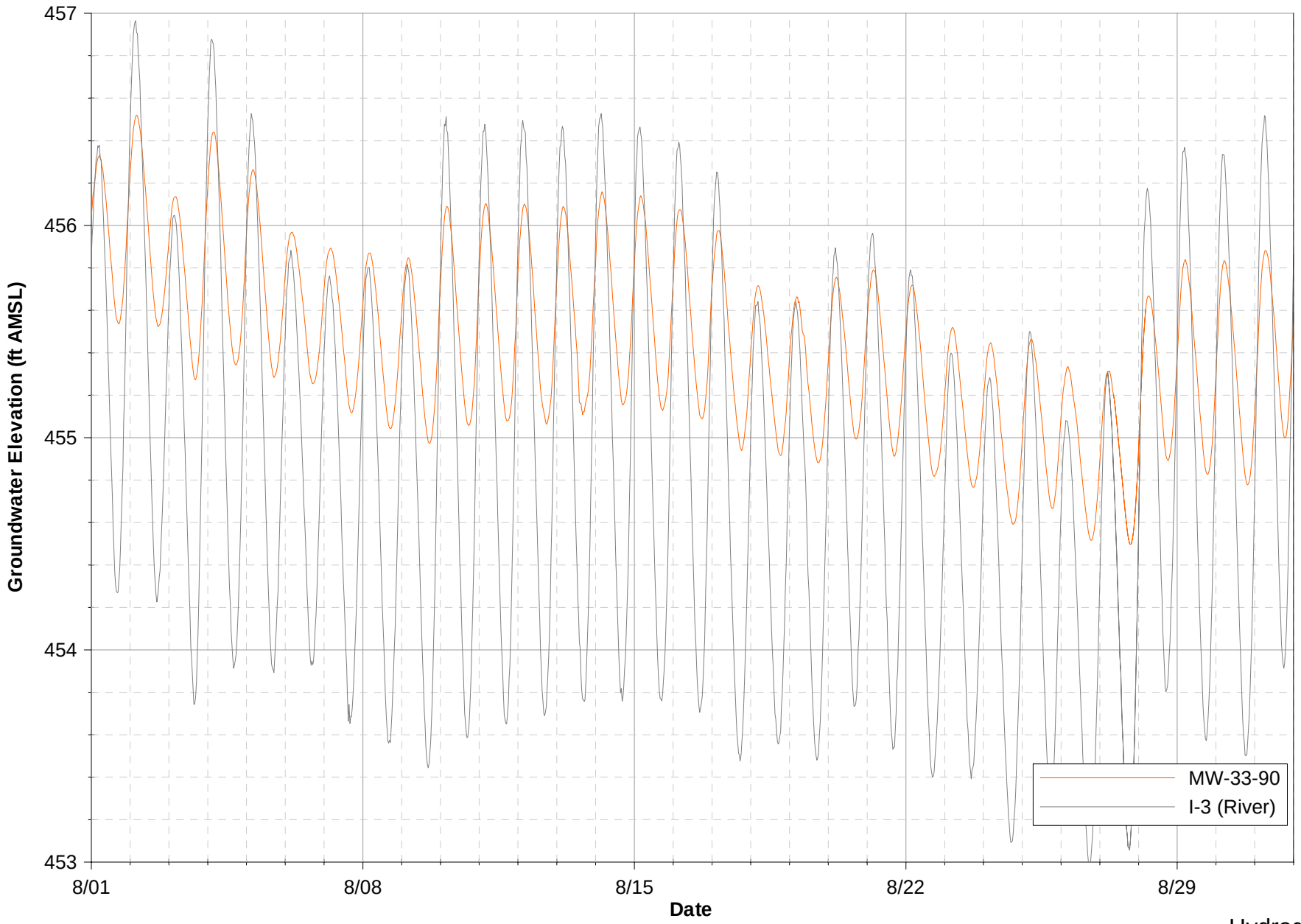


Note: Data subject to review.

Hydrograph

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

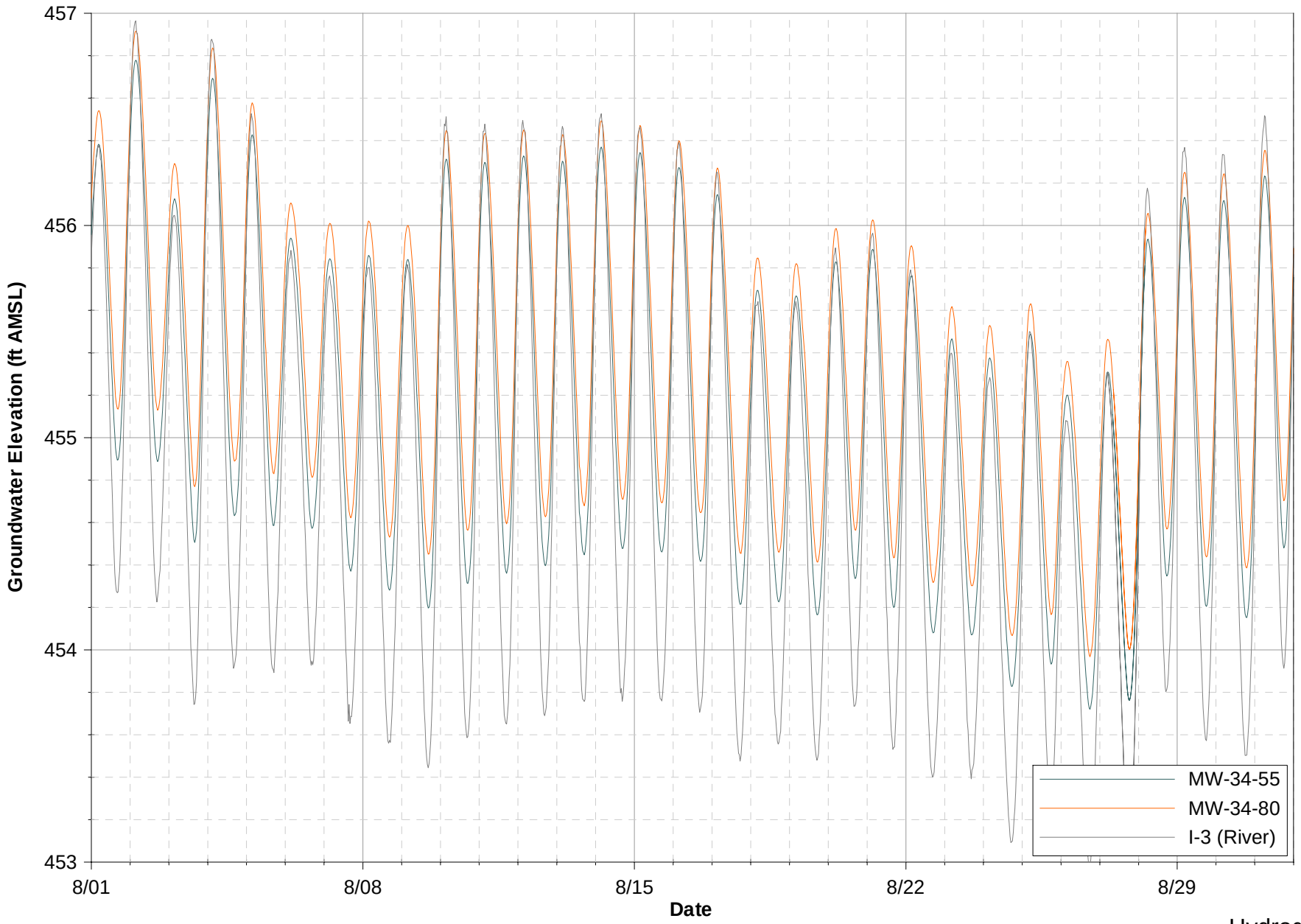


Note: Data subject to review.

Hydrograph

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

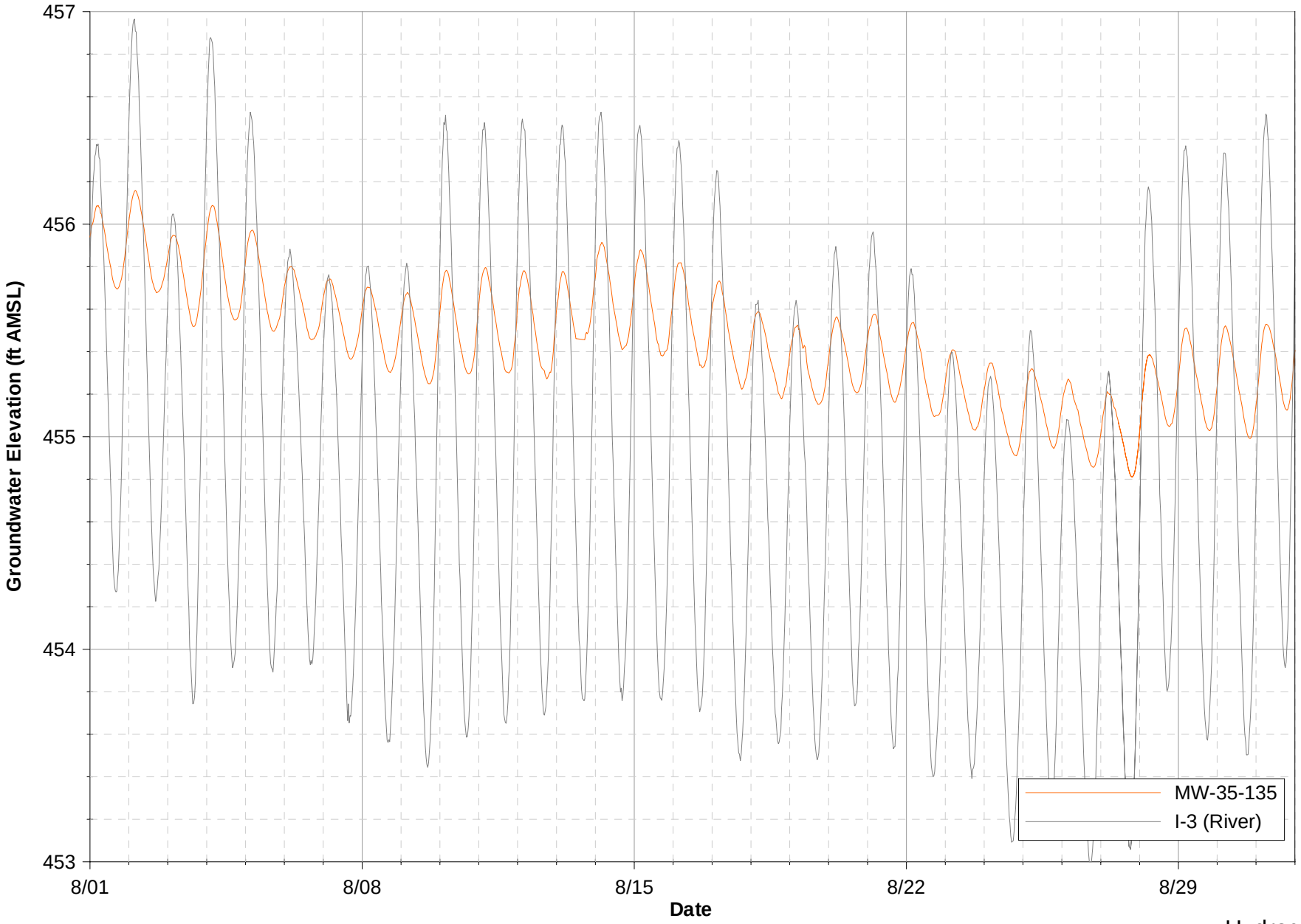


Note: Data subject to review.

Hydrograph

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

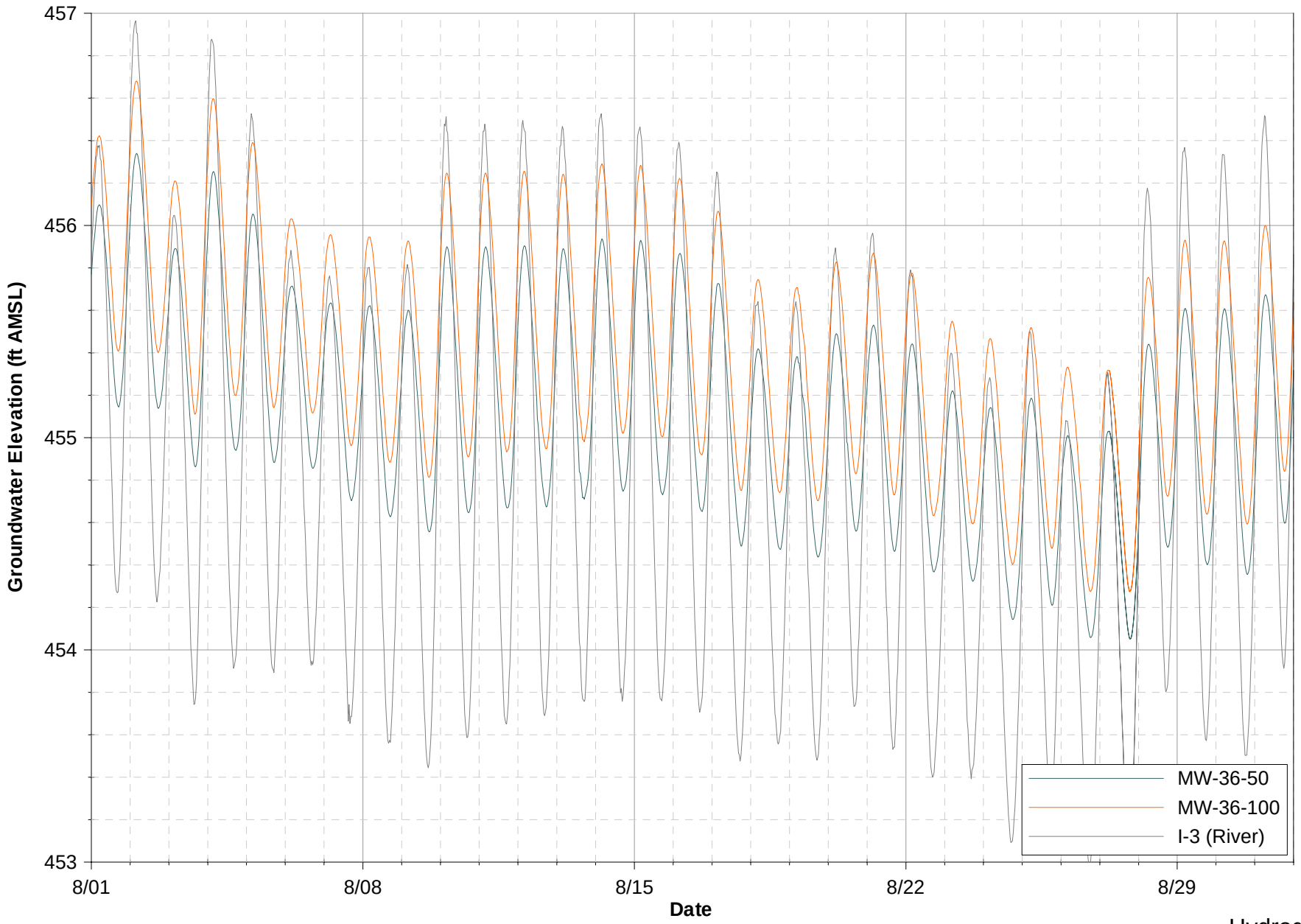


Note: Data subject to review.

Hydrograph

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

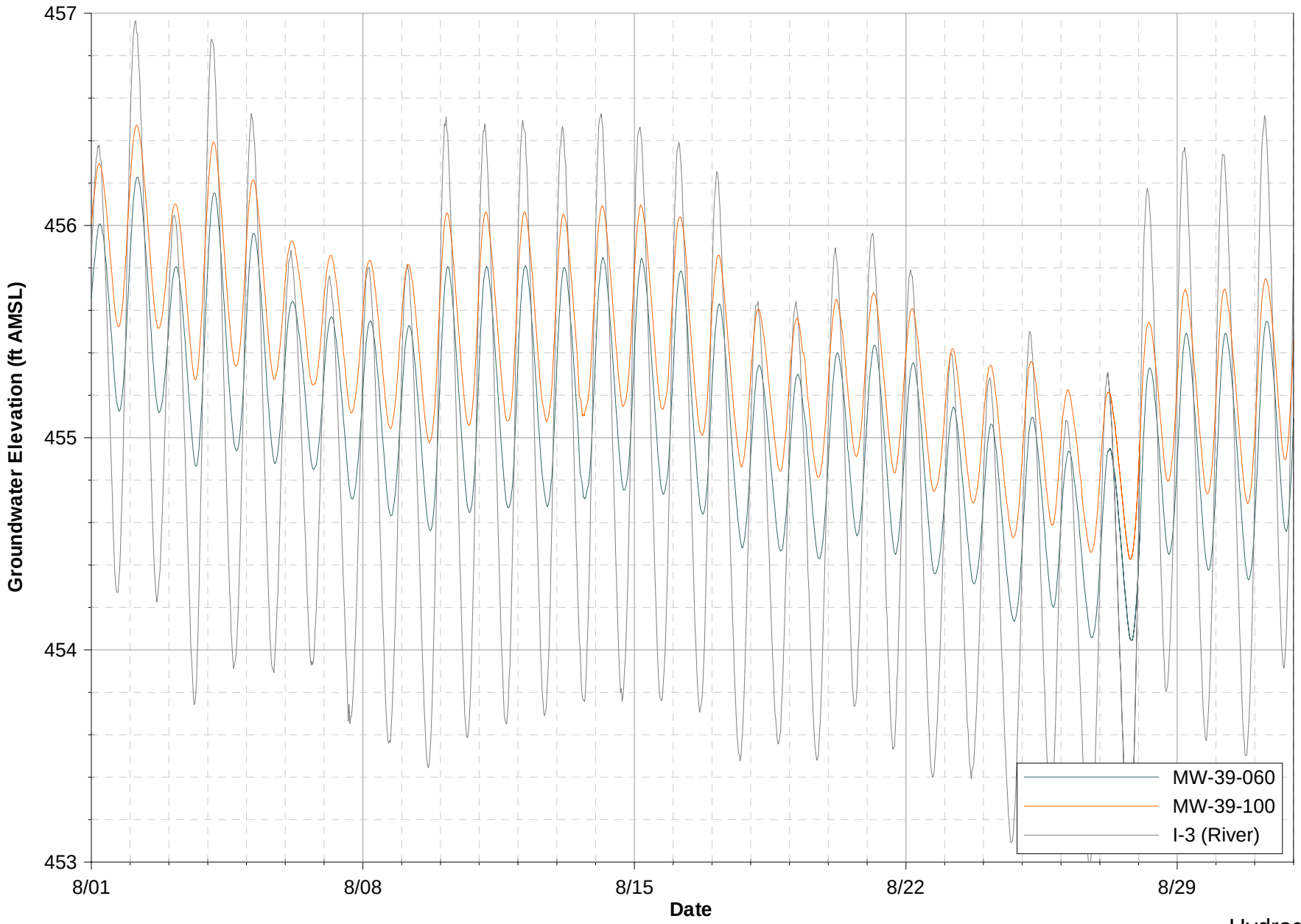


Hydrograph

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Note: Data subject to review.

CH2MHILL



Note: Data subject to review.

Hydrograph

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL