Pacific Gas and Electric Company

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December 15, 2021

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

Subject: *Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California* (PGE20180115A)

Dear Mr. Yue:

Enclosed is the Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, Pacific Gas and Electric Company (PG&E) Topock Compressor Station, Needles, California, for Pacific Gas and Electric Company's Interim Measures (IMs) Performance Monitoring Program, the Groundwater Monitoring Program, and the Surface Water Monitoring Program for the Topock Project. This report presents the Third Quarter (July through October 2021) performance monitoring results for the IM-3 hydraulic containment system. This report also documents groundwater and surface water monitoring activities performed, analyses conducted, and results obtained related to the Groundwater and Surface Water Monitoring Programs during the Third Quarter 2021.

The IM quarterly performance monitoring report is submitted in conformance with the reporting requirements in the California Environmental Protection Agency, Department of Toxic Substances Control's (DTSC) IM directive, dated February 14, 2005, and updates and modifications approved by DTSC in letters or emails dated October 12, 2007; July 14, 2008; July 17, 2008; March 3, 2010; April 28, 2010; July 23, 2010; June 27, 2014; July 20, 2015; and August 18, 2017.

Please contact me at 760.791.5884 if you have any questions on the combined monitoring report.

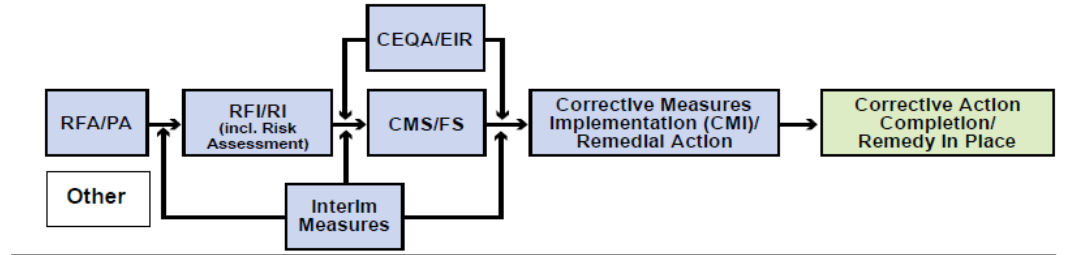
Sincerely,

Curt Russell
Topock Remediation Project Manager

Cc: Chris Guerre/DTSC
Pam Innis/DOI
Ken Foster/CA-SLC
Bruce Campbell/AZ-SLD

Topock Project Executive Abstract

Document Title:	Third Quarter 2021 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles CA
Submitting Agency:	DTSC
Final Document?	☒ Yes ☐ No
Date of Document:	December 15, 2021
Who created this document?: (i.e. PG&E, DTSC, DOI, Other)	PG&E
Priority Status:	☐ HIGH ☐ MED ☒ LOW
Is this time critical?	☐ Yes ☒ No
Type of Document:	☐ Draft ☒ Report ☐ Letter ☐ Memo ☐ Other / Explain:
Action Required:	☒ Information Only ☐ Review & Comment Return to: _____ By Date: _____ ☐ Other / Explain:
What does this information pertain to?	☐ Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA) ☐ RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment) ☐ Corrective Measures Study (CMS)/Feasibility Study (FS) ☐ Corrective Measures Implementation (CMI)/Remedial Action ☐ California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR) ☒ Interim Measures ☐ Other / Explain:
Is this a regulatory requirement?	☒ Yes ☐ No If no, why is the document needed?
What is the consequence of NOT doing this item? What is the consequence of DOING this item?	Submittal of this report is a compliance requirement under DTSC requirements.
Other Justification/s:	☐ Permit ☐ Other / Explain:
Brief Summary of Attached Document:	This quarterly report documents the monitoring activities and performance evaluation of the interim measure (IM) hydraulic containment system under the IM Performance Monitoring Program, the Groundwater Monitoring Program, and Surface Water Monitoring Program for the Topock Project. Hydraulic and chemical monitoring data were collected and used to evaluate the IM hydraulic containment system performance based on a set of standards approved by the California Department of Substances Control (DTSC). Key items included in this report are: (1) measured groundwater elevations and hydraulic gradient data at compliance well pairs, which indicate that the direction of groundwater flow is away from the Colorado River and toward the pumping centers on site; (2) hexavalent chromium data for monitoring wells; (3) pumping rates and volumes from the IM extraction system; and (4) Groundwater Monitoring Program and Surface Water Monitoring Program activities and results. Based on the data and evaluation presented in this report, the IM performance standard has been met for the Third Quarter 2021 Reporting Period. On July 23, 2010, DTSC approved a revised reporting schedule for this report that included a revised IM-3 sample collection period from July 1, 2021 through October 31, 2021. This is the last quarterly report for the IM hydraulic containment system and site-wide Groundwater Monitoring Program and Surface Water Monitoring Program for the site. In Fourth Quarter 2021

	(November and December), the final groundwater remedy for the site is anticipated to start up, and quarterly reporting will transition to a Quarterly Progress Report Written by: PG&E
Recommendations:	None.
How is this information related to the Final Remedy or Regulatory Requirements?:	This report is required by DTSC as part of the Interim Measures Performance Monitoring Program.
Other requirements of this information?:	None.
Related Reports and Documents:	Click any boxes in the Regulatory Road Map (below) to be linked to the Documents Library on the DTSC Topock Web Site (www.dtsc-topock.com).  **Legend** RFA/PA – RCRA Facility Assessment/Preliminary Assessment RFI/RI – RCRA Facility Investigation/CERCLA Remedial Investigation (including Risk Assessment) CMS/FS – RCRA Corrective Measure Study/CERCLA Feasibility Study CEQA/EIR – California Environmental Quality Act/Environmental Impact Report

ARCADIS

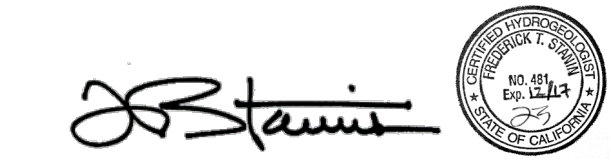
Pacific Gas and Electric Company

THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT

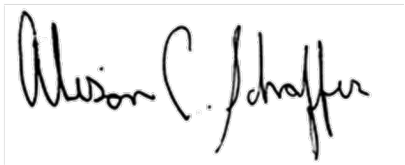
Topock Compressor Station,
Needles, California

December 15, 2021

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



Frederick T. Stanin, P.G., C. Hg
Principal Hydrogeologist



Alison Schaffer
Arcadis Report Lead

Daniel Bush, P.E.
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THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT

Topock Compressor Station,
Needles, California

Prepared for:

California Department of Toxic Substances Control

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Date: December 15, 2021

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ACRONYMS AND ABBREVIATIONS

δ2H	deuterium
δ18O	oxygen-18
µg/L	microgram per liter
chromium-6	hexavalent chromium
COPC	constituent of potential concern
DTSC	California Environmental Protection Agency, Department of Toxic Substances Control
ft/ft	foot per foot
GMP	Groundwater Monitoring Program
gpm	gallon per minute
ID	identification
IM	interim measure
IM-3	Interim Measures number 3
IMCP	Interim Measures Contingency Plan
mg/L	milligram per liter
MS	matrix spike
MSD	matrix spike duplicate
ORP	oxidation-reduction potential
PARCC	precision, accuracy, representativeness, comparability, and completeness
PG&E	Pacific Gas and Electric Company
PMP	Performance Monitoring Program
RCRA	Resource Conservation and Recovery Act
RMP	Surface Water Monitoring Program
RRB	Red Rock Bridge
TDS	total dissolved solids
TSS	total suspended solids
USBR	United States Bureau of Reclamation
UTL	upper tolerance limit

EXECUTIVE SUMMARY

This quarterly report documents the monitoring activities and performance evaluation of the interim measure (IM) hydraulic containment system under the Groundwater Monitoring Program (GMP), Surface Water Monitoring Program (RMP), and IM Performance Monitoring Program (PMP) for Pacific Gas and Electric Company's (PG&E's) Topock Compressor Station (the site), located near Needles, California. The reporting period for this report is July 1 through October 31, 2021 (Third Quarter 2021). Chemical and hydraulic monitoring data collected during this reporting period were used to determine if site conditions have changed and to evaluate the IM hydraulic containment system performance based on a set of standards approved by the California Department of Toxic Substances Control (DTSC).

Key items included in this report are: (1) GMP and RMP activities conducted and analytical results from this reporting period; (2) hexavalent chromium analytical data for monitoring wells in the floodplain area; (3) measured groundwater elevations and hydraulic gradient data at compliance well pairs; and (4) pumping rates and volumes from the IM extraction system.

During Third Quarter 2021, IM extraction wells TW-02D and TW-03D were operated to support hydraulic control. Well TW-01 was also operated as part of an aquifer test at the Topock Compressor Station; extracted water was routed to the IM extraction system for treatment. Hydraulic gradient data indicate that the minimum landward gradient target of 0.001 foot per foot was exceeded each month, except in July and August, when the northern and southern gradient pairs were slightly below the target due to the TW-01 aquifer test. Overall, hexavalent chromium concentrations greater than 20 micrograms per liter in the floodplain area were contained for removal and treatment. Based on the data and evaluation presented in this report, the IM performance standard has been met for the Third Quarter 2021. This is the last quarterly report for the IM hydraulic containment system and site-wide GMP and RMP for the site. In Fourth Quarter 2021 (November and December), the final groundwater remedy for the site is anticipated to start up, and quarterly reporting will transition to a Quarterly Progress Report.

1 INTRODUCTION

Pacific Gas and Electric Company (PG&E) is implementing interim measures (IMs) to address chromium concentrations in groundwater at the Topock Compressor Station (the site). The Topock Compressor Station is in eastern San Bernardino County, 15 miles southeast of the City of Needles, California, as shown on Figure 1-1.

This report presents the monitoring data from three PG&E monitoring programs:

- Site-wide Groundwater Monitoring Program (GMP);
- Site-wide Surface Water Monitoring Program (RMP); and
- Interim Measures (currently Interim Measure Number 3 [IM-3]) Performance Monitoring Program (PMP).

This report presents the monitoring data collected from PG&E's GMP, RMP, and PMP programs between July 1 through October 31, 2021 (hereafter referred to as "Third Quarter 2021"). Table 1-1 shows the current reporting schedule for these programs.

This report is divided into eight sections:

Section 1 introduces the site; the GMP, RMP, and PMP programs; and the regulatory framework.

Section 2 describes the Third Quarter 2021 monitoring and site operations conducted in support of these programs.

Section 3 presents GMP and RMP monitoring results for the Third Quarter 2021.

Section 4 presents PMP monitoring results and the IM evaluation for the Third Quarter 2021.

Section 5 describes upcoming monitoring events for the Fourth Quarter 2021.

Section 8 lists the references cited throughout this report.

This combined GMP, RMP, and PMP reporting format was approved by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) in May 2009 (DTSC 2009). This is the last quarterly IM performance monitoring and site-wide groundwater and surface water monitoring report (PMP-GMP Report) for the site. In Fourth Quarter 2021 (November and December 2021), the final groundwater remedy for the site is anticipated to start up, and quarterly reporting will transition to a Quarterly Progress Report.

1.1 Third Quarter 2021 Regulatory Communication

PG&E communications with the DTSC in Third Quarter 2021 associated with the GMP, RMP, and/or PMP programs are identified below:

- The Second Quarter 2021 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report (PMP-GMP Report) was submitted to the DTSC on August 15, 2021 (Arcadis 2021b).

- Required GMP, RMP, and PMP notifications submitted for Third Quarter 2021 included:
    - On November 1, 2021, Arcadis sent a quarterly email notification to PG&E providing hexavalent chromium (chromium-6) and dissolved chromium results from the August 2021 shoreline and in-channel surface water sampling event. During the sampling, chromium-6 and dissolved chromium concentrations were lower than the respective reporting limits.
    - On November 15, 2021, Arcadis, on behalf of PG&E, sent a quarterly email notification to the DTSC providing chromium-6 and dissolved chromium analytical results from four subject floodplain wells (MW-34-100, MW-44-115, MW-46-175, and MW-44-125).
    - As part of the conditional approval for the shutoff of extraction well PE-01, GMP monitoring results for monitoring wells listed in the July 20, 2015 DTSC approval letter (DTSC 2015) are compared to the maximum chromium-6 and dissolved chromium concentrations measured in 2014 (or for biennial sampling frequency, the 2013 maximum concentrations). Results that exceed the previous maximum are required to be reported to the DTSC within 40 days after the end of the quarterly GMP sampling event. In Third Quarter 2021, chromium-6 and/or dissolved chromium concentrations were below the notification levels; therefore, a notification email was not submitted to the DTSC.

1.2 History of Groundwater Impact at the Site

1.2.1 Chromium-6 Impacts to Groundwater

The Topock Compressor Station began operations in 1951. Remediation efforts are ongoing to address chromium-6 in soil and groundwater resulting from the historical water discharge practices. A comprehensive library documenting the history of remediation at the Topock Compressor Station is available on the DTSC website at http://dtsc-topock.com/ (DTSC 2021).

1.2.2 Background Concentrations of Chromium-6

Based on a regional study of naturally occurring metals in groundwater and a statistical evaluation of these data, naturally occurring chromium-6 in groundwater was calculated to exhibit an upper tolerance limit (UTL) concentration of 32 micrograms per liter (µg/L; CH2M Hill 2009). This concentration is used as the background concentration for remedial activities. At the site, the chromium-6 plume is mostly present within unconsolidated alluvial fan and fluvial deposits within the Alluvial Aquifer and, to a lesser extent, in fractured bedrock. Natural groundwater gradients are generally west-to-east at most of the site. The depth to groundwater and the thicknesses of the saturated sediments vary significantly across the site based on surface topography and the paleo-topography of the top-of-bedrock surface underneath the site.

1.3 Site-wide Groundwater and Surface Water Monitoring Programs

1.3.1 Basis for GMP and RMP Programs

Routine groundwater and surface water monitoring at the site began in 1998 following a Resource Conservation and Recovery Act (RCRA) facility investigation and are ongoing (CH2M Hill 2005). The main objective of the GMP and RMP programs is to monitor concentrations of chromium-6 and other site constituents in groundwater and surface water to determine if site conditions have changed and to make decisions about remedial options and future monitoring (CH2M Hill 2005). In accordance with the 2005 Monitoring Plan for Groundwater and Surface Water Monitoring (CH2M Hill 2005), quarterly monitoring reports document groundwater and surface water monitoring performed at the site during each reporting period. Monitoring reports submitted to date are available on the DTSC website. This report documents the GMP and RMP monitoring conducted in Third Quarter 2021.

1.3.2 GMP and RMP Monitoring Networks

The GMP monitoring well network and RMP surface water monitoring network are shown on Figures 1-2 and 1-3, respectively, and are summarized in the table here. The complete GMP network includes 145 wells that monitor groundwater in the Alluvial Aquifer and bedrock. Well construction details for wells in the GMP monitoring well network are summarized in Table 1-2. The RMP network consists of 16 surface water monitoring locations, nine of which are sampled at multiple depths.

Groundwater and Surface Water Monitoring Wells

Groundwater Monitoring Wells	Surface Water Monitoring Wells
133 monitoring wells in California, including two normally dry wells	10 river channel locations (9 of which are sampled at two different depths)
8 monitoring wells in Arizona	4 shoreline locations
4 IM-3 extraction wells	2 other surface water sampling locations (adjacent to the shoreline)

GMP and RMP monitoring consists of collecting groundwater and surface water samples, inspecting the monitoring wells, and taking corrective actions as needed. GMP and RMP monitoring is performed quarterly, although the monitoring wells included in each GMP event vary by quarter. In addition, GMP monitoring is performed monthly at two extraction wells (TW-03D and PE-01). Table 1-2 provides a list of the monitoring wells and surface water monitoring locations included in the GMP and RMP and the monitoring frequency at each location. Monitoring frequency at GMP wells is also shown on Figure 1-2.

Another component of GMP monitoring is the Bat Cave Wash, an incised ephemeral stream adjacent to the Topock Compressor Station that flows following rainfall events and drains into the Colorado River (Figures 1-1 and 1-2). If a storm causes surface water flow in Bat Cave Wash, additional groundwater samples are collected from monitoring wells MW-09, MW-10, and MW-11.

1.4 Interim Measure Performance Monitoring Program

1.4.1 Basis for PMP Program

Operation of the current IM-3 system began in July 2005. The IM-3 system is intended to maintain hydraulic control of the groundwater chromium-6 plume until the final corrective action is in place at the site (CH2M Hill 2007). The IM-3 system consists of a groundwater extraction system (four extraction wells: TW-02D, TW-03D, TW-02S, and PE-01), conveyance piping, a groundwater treatment plant, and an injection well field (for the discharge of the treated groundwater). Figure 1-1 shows the locations of the IM-3 extraction, conveyance, treatment, and injection facilities.

In a letter dated February 14, 2005, the DTSC issued an IM performance directive that established the operational requirements for the IM and methods for evaluating the performance of the IM (DTSC 2005). As defined by the DTSC, the performance standard for the IM is to, *"establish and maintain a net landward hydraulic gradient, both horizontally and vertically, that ensures that 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 IM is required to maintain a landward hydraulic gradient of at least 0.001 foot per foot (ft/ft) within the lower portion of the Alluvial Aquifer (DTSC 2005).

In accordance with the February 2005 DTSC directive, the following conditions must be met to demonstrate achievement of the IM performance standard (DTSC 2005):

- Demonstrate that a landward hydraulic gradient is maintained within the lower portion of the Alluvial Aquifer in the floodplain by:
    - Providing potentiometric surface contour maps of the Alluvial Aquifer within the floodplain area;
    - Providing calculated hydraulic gradients using established gradient well pairs.
- Demonstrate that chromium-6 concentrations greater than 20 µg/L in the floodplain area are contained for removal and treatment by:
    - Depicting the 20 and 50 µg/L isoconcentration contours for chromium-6 within the floodplain on potentiometric surface maps and hydrogeologic cross-sections;
    - Providing maps and cross-sections of the chromium-6 concentration for the upper, middle, and lower portions of the Alluvial Aquifer in the floodplain area;
    - Providing time-versus-concentration graphs for chromium-6 measured in floodplain wells.

The February 2005 DTSC directive also defined the reporting requirements for the IM (DTSC 2005). In October 2007, the DTSC approved modifications to the reporting requirements, discontinuing monthly performance monitoring reports, and continuing with quarterly and annual reports (DTSC 2007). The DTSC approved additional updates and modifications to the PMP in letters dated October 12, 2007; July 14, 2008; July 16, 2008; March 3, 2010; April 28, 2010; and June 27, 2014 (DTSC 2007, 2008a, 2008b, 2010a, 2010b, 2014).

1.4.2 PMP Monitoring Network

The PMP consists of a network of monitoring wells used to demonstrate achievement of the IM performance standard. Subsets of wells within the PMP network (including chromium monitoring network, IM extraction wells, IM hydraulic monitoring network, IM Contingency Plan [IMCP] monitoring wells, and IM chemical performance monitoring network) focus on different methods for evaluating performance of the IM. The PMP monitoring network is presented in the table in this section and shown on Figure 1-4.

PMP Monitoring Network (145 monitoring wells included in the GMP)

Type of Well	Wells Included in Network
IM Extraction Wells (4 wells)	• TW-02D; • TW-03D; • TW-02S; • PE-01.
IM Hydraulic Monitoring Network (57 monitoring wells and 2 river monitoring locations)	• 16 shallow monitoring wells; • 15 mid-depth monitoring wells; • 26 deep monitoring wells; • 2 river monitoring locations: I-3 and Red Rock Bridge (RRB).
IMCP Monitoring Network (24 wells)	• 6 shallow monitoring wells; • 5 mid-depth monitoring wells; • 13 deep monitoring wells.
IM Chemical Performance Monitoring Network (10 monitoring wells and 1 river monitoring location)	• 5 shallow monitoring wells; • 2 mid-depth monitoring wells; • 3 deep monitoring wells; • 1 river monitoring location: R-28.

The subsets of monitoring well networks within the PMP are described in the following subsections.

1.4.2.1 Chromium Monitoring Network

Chromium-6 data, collected as part of the GMP, are used to generate maps, cross-sections, and time-versus-concentration charts that demonstrate containment of chromium-6 concentrations greater than 20 µg/L in the floodplain area for removal and treatment. As described in Section 1.3.2, groundwater is sampled quarterly; however, the monitoring wells included in each sampling event vary by quarter. In addition, groundwater is sampled monthly at extraction wells TW-03D and PE-01. Table 1-2 provides a list of monitoring wells included in the chromium monitoring network (i.e., the GMP monitoring network) and the monitoring frequency of each location.

1.4.2.2 IM Extraction Wells

The PMP includes four IM extraction wells used to ensure a landward hydraulic gradient via groundwater extraction (Figure 1-4). The operation of the IM extraction system, including pumping rates, planned/unplanned downtime, and volume of groundwater extracted from each extraction well, is documented to demonstrate proper operation of the extraction system. In addition, the wells are sampled

as part of the GMP: extraction wells TW-03D and PE-01 are sampled monthly, TW-02D is sampled quarterly, and TW-02S is sampled annually.

Wells Monitored for Conditional Shutdown of PE-01

On July 20, 2015, the DTSC conditionally approved a proposal to modify the IM-3 pumping regime by allowing PE-01 to be shut off and pumping to be shifted to TW-03D and TW-02D or TW-02S, so long as gradient targets are maintained and contingency is not triggered based on chromium concentrations in select floodplain wells (DTSC 2015). Because PE-01 pumps water with low concentrations of chromium (typically less than 5 µg/L), shifting more pumping to a higher concentration extraction well can increase the rate of chromium removal from the floodplain.

As part of the conditional approval for PE-01 shutoff, GMP monitoring results from 47 monitoring wells listed in the July 20, 2015 DTSC approval letter (i.e., wells within approximately 800 feet of TW-03D; Table 1-2) are compared to the maximum detected chromium-6 and dissolved chromium concentrations from 2014 (or 2013 for wells sampled biennially). If results from any of the wells exceed the 2014 maximum concentration, then the DTSC must be notified within 40 days after completion of the field sampling event to determine if PE-01 pumping should be reinitiated (DTSC 2015).

1.4.2.3 IM Hydraulic Monitoring Network

The IM hydraulic monitoring network consists of 52 monitoring wells located on the California side of the Colorado River and two river monitoring locations (I-3 and RRB) used to evaluate the performance of the IM-3 system by demonstrating compliance of the required hydraulic gradient of 0.001 ft/ft (Figure 1-4, Table 1-2). In addition, five groundwater monitoring wells located on the Arizona side of the Colorado River (MW-54-085, MW-54-140, MW-54-195, MW-55-045, and MW-55-120; not formally part of the PMP) also provide groundwater elevation data that demonstrate hydraulic gradients on the Arizona side of the river (Figure 1-4). Groundwater and surface water elevation data from these locations are collected monthly using pressure transducers installed at each location.

Groundwater elevation data collected from the IM hydraulic monitoring network are used to develop potentiometric maps of shallow, mid-depth, and deep groundwater and measure hydraulic gradients of three well pairs (northern, central, and southern) to demonstrate compliance with the required 0.001 ft/ft landward hydraulic gradient. On August 18, 2017, the DTSC approved use of monitoring well MW-20-130 in place of well MW-45-095 in the central and southern gradient well pairs during months when extraction well PE-01 is not pumped for hydraulic control at the site (DTSC 2017). The current gradient well pairs are:

- Northern Gradient Pair: MW-31-135 and MW-33-150.
- When PE-01 is operated for hydraulic control:
    - Central Gradient Pair: MW-45-095 and MW-34-100;
    - Southern Gradient Pair: MW-45-095 and MW-27-085.
- When PE-01 is not operated for hydraulic control:
    - Central Gradient Pair: MW-20-130 and MW-34-100;

- Southern Gradient Pair: MW-20-130 and MW-27-085.

1.4.2.4 IM Contingency Plan Monitoring Wells

The IMCP was developed to detect and control possible migration of the chromium-6 plume toward the Colorado River (DTSC 2005). Twenty-four IMCP wells were selected as part of an early detection system to detect any increases in chromium concentrations at areas of interest across the site (Figure 1-4, Table 1-2). The IMCP wells are sampled quarterly as part of the GMP monitoring program (note that not all 24 wells are sampled each quarter) to determine if any increasing trends in chromium-6 concentrations are observed. If chromium-6 concentrations exceed the established trigger levels (based on historical chromium-6 concentrations), then a contingency plan must be implemented in accordance with the Revised Contingency Plan Flow Chart (DTSC 2005; PG&E 2008).

1.4.2.5 IM Chemical Performance Monitoring Network

Eleven IM chemical performance monitoring wells are sampled annually or biennially to help evaluate performance of the future remedy (Figure 1-4, Table 1-2). Wells are sampled for an expanded chemistry suite (dissolved boron, bromide, dissolved calcium, chloride, dissolved magnesium, nitrate/nitrite as nitrogen, dissolved potassium, dissolved sodium, sulfate, total alkalinity [as calcium carbonate], total dissolved solids [TDS], and stable isotopes [oxygen-18 {δ18O} and deuterium {δ2H}]), which was last amended in 2008 (DTSC 2008b; PG&E 2008). Currently, nine monitoring wells and one river monitoring location (R-28) are sampled annually, and one well is sampled biennially (MW-26). Results of IM chemical performance monitoring were last reported in the Fourth Quarter 2020 and Annual PMP-GMP Report (Arcadis 2021a).

1.5 Sustainability

The GMP, RMP, and PMP programs strive to use sustainable sampling and data collection practices. This section briefly describes some of the sustainability practices now in use, which aim to reduce emissions from travel, reduce waste, conserve resources, and reduce potential impacts to nesting habitat and culturally sensitive areas.

- Groundwater sampling purge water is disposed on site via the IM-3 treatment plant and injection process.
- The RMP boat contractor is employed locally.
- Laboratory services are provided by a California-certified, Las Vegas-based lab.
- Chromium-6 and nitrate analytical methods were revised to methods with longer holding times.
- Reports are submitted via the DTSC website and electronically, and the number of hard copy quarterly report submittals has been reduced over time.
- Solar-powered data telemetry systems were installed at six key gradient compliance wells located in floodplain areas with nesting habitat for sensitive avian species.

- Low-flow sampling methods are used at most wells screened in the Alluvial Aquifer, reducing the volume of purge water generated.
- For wells still using the three-volume purge sampling methods, the pumps and tubing are sized for the optimum purge technique at each well.
- Utility vehicles (e.g., Polaris Ranger or Kawasaki Mule) and a quiet electric four-wheel-drive utility vehicle are used to access wells on the floodplain and in some culturally sensitive areas rather than the full-size pickup truck.
- The IM-3 pumping regime was modified to allow PE-01 to be periodically shut off with pumping shifted to TW-03D and TW-02D or TW-02S. When applied, this modification allows for an increase in the rate of chromium removal from the floodplain.

2 THIRD QUARTER 2021 MONITORING ACTIVITIES

This section summarizes the monitoring completed during Third Quarter 2021 for the GMP, RMP, and PMP programs.

2.1 Groundwater Monitoring Program

The Third Quarter 2021 GMP consisted of monthly and quarterly groundwater monitoring.

2.1.1 Monthly Groundwater Monitoring

Monthly GMP monitoring (groundwater sampling) was performed at IM extraction wells TW-02D in July, August, and September and TW-03D in October 2021. IM extraction well PE-01 was not sampled in Third Quarter 2021 due to construction associated with the final groundwater remedy at the site. The well locations are shown on Figure 1-2 and listed in Table 1-2. Samples at TW-02D and TW-03D were collected from the taps of the extraction wells (see Table 1-2). During collection of each groundwater sample, field parameters were recorded (i.e., temperature, pH, specific conductivity, oxidation-reduction potential [ORP], turbidity, TDS, and salinity). Samples were sent to Asset Laboratories in Las Vegas, Nevada and analyzed for the following constituents:

- Chromium-6 and dissolved chromium;
- General chemistry parameters: specific conductivity, pH, alkalinity, chloride, sulfate, and TDS;
- Constituent of potential concern (COPC): nitrate/nitrite as nitrogen;
- In-situ byproducts: dissolved iron and dissolved manganese;
- Cations: dissolved calcium, dissolved magnesium, and dissolved sodium.

2.1.2 Quarterly Groundwater Monitoring

The quarterly GMP monitoring event, performed in August and September 2021, consisted of groundwater sampling and inspection of 17 monitoring wells. Monitoring wells MW-57-050 and MW-58-065 were dry during the monitoring event, and well TW-02D was sampled monthly rather than quarterly as it was in use as part of a long-term pumping test associated with TW-01. The monitoring well locations are shown on Figure 1-2 and listed in Table 1-2. Samples were collected using the low-flow sampling method. During collection of each groundwater sample, field parameters were recorded (i.e., temperature, pH, specific conductivity, ORP, turbidity, TDS, and salinity). Samples were sent to Asset Laboratories in Las Vegas, Nevada and were analyzed for the following constituents (note that not all samples were analyzed for the complete analytical suite listed here):

- Chromium-6 and dissolved chromium;
- General chemistry parameters: Specific conductivity;
- COPCs: dissolved molybdenum, dissolved selenium, and nitrate/nitrite as nitrogen;
- In-situ byproducts: dissolved arsenic and dissolved manganese.

2.2 Surface Water Monitoring Program

Third Quarter 2021 RMP monitoring was performed on August 18 and 19, 2021. The RMP monitoring event consisted of collecting 25 surface water samples from 16 locations. At nine of the 16 locations, samples were collected from two depth intervals: shallow (1 foot below water surface) and deep (1 foot above the river bottom). The surface water monitoring locations are shown on Figure 1-3 and listed in Table 1-2. During collection of each surface water sample, field parameters were recorded (i.e., temperature, pH, specific conductivity, ORP, turbidity, TDS, and salinity). Samples were sent to Asset Laboratories in Las Vegas, Nevada for analysis of the following constituents:

- Chromium-6 and dissolved chromium;
- General chemistry parameters: Specific conductivity and pH;
- COPCs: dissolved molybdenum, dissolved selenium, and nitrate/nitrite as nitrogen;
- In-situ byproducts: dissolved arsenic, total and dissolved iron, and dissolved manganese;
- Geochemical parameters: dissolved barium and total suspended solids (TSS).

2.3 IM Performance Monitoring Program

IM performance monitoring in Third Quarter 2021 consisted of groundwater chromium monitoring within the floodplain area, a review of IM extraction system operation, and IM hydraulic monitoring. In addition, chromium-6 and dissolved chromium data collected during chromium monitoring were used to monitor shutdown of extraction well PE-01 and evaluate the need to implement the IMCP.

2.3.1 Chromium Monitoring

Chromium monitoring was performed as part of the monthly and quarterly GMP monitoring. Seventeen monitoring wells were sampled for chromium-6 in August and September 2021. Extraction well TW-02D was sampled monthly in July, August, and September, and extraction well TW-03D was sampled in October 2021. The monitoring well locations are shown on Figure 1-4 and listed in Table 1-2. Chromium-6 analytical results were used to evaluate chromium-6 distribution in the floodplain area.

2.3.2 IM Extraction System Operation

The IM extraction system was operated in July, August, September, and October 2021. Pumping rates, planned or unplanned downtime, and the volume of groundwater extracted from each IM extraction well were documented. Daily IM-3 inspections were performed including general facility inspections, flow measurements, and site security monitoring. Daily logs with documentation of inspections are maintained on site.

2.3.2.1 Wells Monitored for Conditional Shutdown of PE-01

Three GMP monitoring wells were sampled for chromium-6 and dissolved chromium in Third Quarter 2021 as part of the conditional approval for PE-01 shutdown. IM extraction well PE-01 was not sampled due to construction associated with the final groundwater remedy at the site. The monitoring well

locations are shown on Figure 1-2 and listed in Table 1-2. Results were evaluated against the maximum detected chromium-6 and dissolved chromium concentrations from 2014.

2.3.3 IM Hydraulic Monitoring

Groundwater elevation data from monitoring wells and river monitoring locations within the IM hydraulic monitoring network are measured using pressure transducers, which record continuous water levels at 30-minute intervals. Pressure transducer data were downloaded in Third Quarter 2021 during the first two weeks of each month (July, August, September, and October) from the 52 monitoring wells in the IM hydraulic monitoring network, two river monitoring locations (I-3 and RRB), and five wells located on the Arizona side of the Colorado River. The monitoring well and river monitoring locations are shown on Figure 1-4 and listed in Table 1-2. Pressure transducers at the six gradient control monitoring wells (MW-27-085, MW-31-135, MW-33-150, MW-34-100, MW-45-095, and MW-20-130) were downloaded via a cellular telemetry system.

2.3.4 IM Contingency Plan Monitoring

Three IMCP monitoring wells were sampled for chromium-6 as part of the Third Quarter 2021 GMP program. The monitoring well locations are shown on Figure 1-4 and listed in Table 1-2. Results were evaluated against established trigger levels (based on historical chromium-6 concentrations).

3 SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING RESULTS

This section summarizes results from the groundwater and surface water monitoring performed during Third Quarter 2021 for the GMP and RMP programs.

3.1 Groundwater Monitoring Results

3.1.1 Chromium-6 and Dissolved Chromium

Table 3-1 presents the Third Quarter 2021 groundwater sample results for chromium-6 and dissolved chromium, as well as general chemistry parameters (specific conductivity, ORP, pH, and turbidity). The laboratory reports for samples analyzed during Third Quarter 2021 are provided in Appendix A. Historical chromium-6 and dissolved chromium concentration data are presented in Appendix B.

Figures 3-1a and 3-1b show the distribution of chromium-6 concentrations across the site in wells monitoring the upper-depth (shallow) and lower-depth (deep) intervals of the Alluvial Aquifer and bedrock. These figures also show the interpreted extent of groundwater chromium-6 concentrations higher than 32 µg/L for each depth interval. The value of 32 µg/L is based on the calculated natural background UTL for chromium-6 in groundwater from the background study (CH2M Hill 2009).

During Third Quarter 2021, the maximum detected chromium-6 and dissolved chromium concentrations were 49,000 µg/L and 60,000 µg/L (both at MW-68-180), respectively.

3.1.2 Contaminants of Potential Concern and In-Situ Byproducts

Table 3-1 presents the Third Quarter 2021 groundwater sample results for COPCs (dissolved molybdenum, dissolved selenium, and nitrate/nitrite as nitrogen) and in-situ byproducts (dissolved arsenic and dissolved manganese). Maximum concentrations for each constituent are:

- Dissolved molybdenum: 200 µg/L (MW-46-175);
- Dissolved selenium: 25 µg/L (MW-68-180);
- Nitrate/nitrite as nitrogen: 34 milligrams per liter (mg/L; MW-68-180);
- Dissolved arsenic: 6.5 µg/L (MW-38S);
- Dissolved manganese: 970 µg/L (MW-68BR).

3.1.3 Well Maintenance

Monitoring wells were inspected during groundwater sampling in Third Quarter 2021. No corrective or maintenance actions were needed. Appendix C provides a summary of the inspection results.

3.2 Surface Water Monitoring Results

3.2.1 Chromium-6 and Dissolved Chromium

Table 3-2 presents the Third Quarter 2021 surface water sample results for chromium-6 and dissolved chromium, as well as general chemistry parameters (pH and specific conductivity). Chromium-6 and dissolved chromium from the August 2021 sampling event were not detected at concentrations higher than reporting limits at any surface water monitoring location. The laboratory reports for samples analyzed during Third Quarter 2021 are provided in Appendix A.

3.2.2 Contaminants of Potential Concern and In-Situ Byproducts

Table 3-2 presents the Third Quarter 2021 surface water results for COPCs (dissolved molybdenum, dissolved selenium, and nitrate/nitrite as nitrogen), in-situ byproducts (dissolved arsenic, total iron, dissolved iron, and dissolved manganese), and other geochemical indicator parameters (dissolved barium and TSS). Maximum concentrations for each constituent are (with associated locations):

- Dissolved molybdenum: 4.4 µg/L (C-CON-S);
- Dissolved selenium: 1.6 µg/L (C-I-3-D, C-NR4-S, R-28);
- Nitrate/nitrite as nitrogen: 0.39 mg/L (C-NR4-D);
- Dissolved arsenic: 2.6 µg/L (C-MAR-S);
- Total iron: 190 µg/L (C-MAR-D);
- Dissolved iron: 21 µg/L (C-R27-D);
- Dissolved manganese: 6.4 µg/L (RRB);
- Dissolved barium: 110 µg/L (C-NR4-D, RRB);
- TSS: 10 mg/L (C-MAR-D).

3.3 Data Validation and Completeness

Project chemists reviewed laboratory analytical data from the Third Quarter 2021 sampling events to assess data quality and to identify deviations from analytical requirements. Data validation flags were assigned according to the quality assurance project plans (CH2M Hill 2014; Critigen 2020). Data validation qualifiers for groundwater and surface water analytical results are shown in Tables 3-1 and 3-2, respectively.

The Third Quarter 2021 analytical results were evaluated using the criteria of precision, accuracy, representativeness, comparability, and completeness (PARCC) to demonstrate that a sufficient number of representative samples was collected, and the resulting analytical data can be used to support the decision-making process as measured by the PARCC findings. The following summary highlights the PARCC findings:

- Precision of the data was verified through the review of the laboratory data quality indicators that include matrix spike/matrix spike duplicate (MS/MSD) and field duplicate relative percent differences.

Precision was generally acceptable for all analytes with some exceptions; data validation qualifiers were applied for results that did not meet quality control criteria.

- Accuracy of the data was verified through the review of the calibration, laboratory control samples, MS/MSDs, as well as the evaluation of method/field blank data. Accuracy was acceptable for all analyses with some exceptions; data validation qualifiers were applied for results that did not meet quality control criteria. A large quantity of the iron, dissolved iron, and dissolved arsenic data was considered estimated results due to matrix interference.
- Representativeness of the data was verified through the samples' collection, storage, and preservation procedures and the verification of holding-time compliance. The laboratory did not note any problems with the samples' collection, holding time, and storage. Chain-of-custody issues were minor and were resolved and documented in the data packages.
- Comparability of the data was ensured using standard analytical procedures and standard units for reporting. Results obtained are comparable to industry standards, in that the collection and analytical techniques followed approved, documented procedures.
- Completeness is a measure of the number of valid measurements obtained in relation to the total number of measurements planned. Completeness is expressed as the percentage of valid or usable measurements compared to planned measurements. Valid data are defined as all data that are not rejected for project use and flagged "R" for rejected during validation. All data are considered valid. The completeness goal of 90 percent was met for all method/analyte combinations.

4 THIRD QUARTER 2021 IM PERFORMANCE MONITORING PROGRAM EVALUATION

This section summarizes the results of the Third Quarter 2021 PMP evaluation.

4.1 Distribution of Hexavalent Chromium in the Floodplain

Chromium-6 data collected as part of the Third Quarter 2021 GMP monitoring were used to generate maps, cross-sections, and concentration time series charts to demonstrate that chromium-6 concentrations greater than 20 µg/L in the floodplain area are contained for removal and treatment.

Distribution of chromium-6 concentrations in the upper-depth (shallow wells) and lower-depth (deep wells) intervals of the Alluvial Aquifer is shown in plan view and cross-section view (cross-section A) on Figure 4-1. Figure 4-2 presents chromium-6 concentrations for cross-section B, oriented parallel to the Colorado River. The locations of cross-sections A and B are shown on Figure 4-1. The figures demonstrate that chromium-6 concentrations decrease from west to east along the floodplain (cross-section A), and that concentrations greater than 20 µg/L are contained in the floodplain area.

Appendix D provides chromium-6 time-versus-concentration charts for wells sampled in Third Quarter 2021 including for six deep monitoring wells in the floodplain area (MW-34-100, MW-36-090, MW-36-100, MW-44-115, MW-44-125, and MW-46-175) historically monitored for chromium encroachment. These six wells are located between the IM extraction wells and the Colorado River; therefore, they show the distribution of chromium-6 concentrations at the toe of the chromium-6 plume. As shown by the time-versus-concentration charts, chromium-6 concentrations have decreased since initiation of the IM extraction system in 2005 and have remained relatively steady over the past few years. In Third Quarter 2021, chromium-6 concentrations at the six wells were below 20 µg/L (Appendices B and D). In general, wells showing marked decreases in chromium-6 concentrations are located in the floodplain area where IM pumping is removing chromium in groundwater.

4.2 IM Extraction System Operation

During Third Quarter 2021, IM extraction wells TW-03D and TW-02D were operated to support hydraulic control, and well TW-01 was operated for aquifer testing. The TW-01 aquifer test was initiated in June 2021. Consequently, extraction from TW-03D was suspended, and TW-02D was solely operated through July 2021 (pumping rate of 24.2 gallons per minute [gpm]) to allow water extracted from TW-01 to be introduced into the pipeline and routed to the IM-3 system for treatment. In August 2021, extraction from TW-03D resumed; TW-02D and TW-03D were both operated to support hydraulic control at average pumping rates of 15.9 and 16.3 gpm, respectively. In September and October 2021, extraction from TW-02D ceased, and TW-03D was operated at an average pumping rate of 41.7 gpm in September and 43.8 gpm in October 2021. Extraction wells PE-01 and TW-02S were not operated during Third Quarter 2021.

The IM-3 system extracted and treated 21,431,482 gallons of groundwater during Third Quarter 2021, and an estimated 184 pounds (83.4 kilograms) of chromium were removed from the aquifer between June 1 and September 30, 2021 (Table 4-1). Note that groundwater extraction is reported on a different schedule than chromium removal reporting (i.e., July through October and June through September,

respectively; Table 4-1). The operational runtime percentage for the IM-3 system during Third Quarter 2021 was 96 percent. Appendix E provides the operations log for the IM-3 system including planned and unplanned downtime.

4.2.1 Chromium Concentrations in Wells Monitored for Conditional Shutdown of PE-01

During Third Quarter 2021, three of the 47 wells monitored to support the conditional shutdown of PE-01 were sampled for chromium-6 and dissolved chromium. Concentrations in MW-34-100, MW-44-115, and MW-46-175 were lower than the 2014 maximum concentrations (i.e., notification levels). Table 4-2 presents the chromium-6 and dissolved chromium concentrations and their associated notification levels.

4.3 IM Hydraulic Monitoring Results

Table 4-3 presents the Third Quarter 2021 average monthly and quarterly groundwater and river elevations, calculated from the pressure transducer data. Average daily groundwater and river elevations are provided as hydrographs in Appendix F. Groundwater elevations were adjusted for temperature and salinity differences among wells (i.e., adjusted to a common freshwater equivalent).

4.3.1 Hydraulic Gradient Evaluation: California Floodplain

Figures 4-3a, 4-3b, and 4-3c present the average Third Quarter 2021 groundwater elevations and associated groundwater contours for the shallow, mid-depth, and deep wells, respectively. Figure 4-4 presents the average groundwater elevations and associated groundwater contours for wells located in the floodplain along cross-section A. Due to complex vertical gradients present at portions of the Topock site, water levels for some wells are not considered in the contouring on Figures 4-3a, 4-3b, 4-3c, or 4-4.

During Third Quarter 2021, hydraulic gradients were measured for three gradient well pairs selected for performance monitoring of the IM-3 system (shown on Figure 1-4; note that PE-01 was not operated for hydraulic control):

- Northern Gradient Pair: MW-31-135 and MW-33-150;
- Central Gradient Pair: MW-20-130 and MW-34-100;
- Southern Gradient Pair: MW-20-130 and MW-27-085.

As discussed in Section 1.4.2.3, a landward hydraulic gradient of 0.001 ft/ft must be maintained to demonstrate compliance with the performance standard. Table 4-4 presents the monthly average hydraulic gradients measured for each of the gradient well pairs in Third Quarter 2021 as well as the overall average of all well pairs. The overall monthly average gradients for all well pairs were 0.0011, 0.0010, 0.0015, and 0.0013 ft/ft for July, August, September, and October 2021, respectively. Landward gradients measured each month exceeded the 0.001 ft/ft requirement, except at the northern and southern gradient pairs, which were slightly below the target gradient in July and August due to the TW-01 aquifer test. Although these monthly hydraulic gradients were below the target gradient, Cr6 concentrations greater than 20 µg/L in the floodplain area were hydraulically controlled. Figure 4-5

illustrates the measured hydraulic gradients during Third Quarter 2021 with the concurrent Colorado River elevations and IM-3 pumping rates.

4.3.2 Hydraulic Gradient Evaluation: Arizona Side of the Colorado River

During Third Quarter 2021, pressure transducer data were recorded in five wells located on the Arizona side of the Colorado River. The average quarterly groundwater elevations for monitoring wells MW-54-085, MW-54-140, MW-54-195, MW-55-045, and MW-55-120 are presented on Figures 4-3b and 4-3c and are used for contouring where appropriate. Except for well MW-55-045, all wells in the MW-54 and MW-55 clusters are screened in the deep interval of the Alluvial Aquifer. Well MW-55-045 is screened across portions of the shallow and middle intervals (Figure 4-3b). Average quarterly water levels at the MW-54 and MW-55 well clusters indicate that water elevations in monitoring wells in Arizona are higher than those in wells across the river on the California floodplain. This indicates that the apparent hydraulic gradient on the Arizona side of the river is westward and, as a result, groundwater flow would also be toward the west in that area. This is consistent with the site conceptual model and with the current numerical groundwater flow model.

4.4 IM Contingency Plan Monitoring Results

During Third Quarter 2021, chromium-6 concentrations in the three IMCP monitoring wells sampled were lower than the established trigger levels; therefore, implementation of the contingency plan was not needed. Chromium-6 concentrations for the IMCP wells and their associated trigger levels are presented in Table 4-5.

4.5 Projected River Levels During Next Quarter

Colorado River water level projections provide river level information useful for anticipating IM-3 extraction requirements for the upcoming quarter. The Colorado River stage near the site is measured at river monitoring location I-3. Water levels are directly influenced by releases from Davis Dam, and, to a lesser degree, from Lake Havasu elevations, both of which are controlled by the United States Bureau of Reclamation (USBR). Total releases from Davis Dam follow a predictable annual cycle, with the largest monthly releases typically in spring and early summer and the smallest monthly releases in late fall/winter (November and December). Superimposed on this annual cycle is a diurnal cycle determined primarily by daily fluctuations in electric power demand. Releases within a given 24-hour period often fluctuate over a wider range of flows than that of monthly average flows over an entire year. Figure 4-6 shows the river stage measured at location I-3 superimposed on the projected I-3 river levels.

Projected river levels for future months are based on the USBR projections of Davis Dam discharge and Lake Havasu levels from the preceding month. For example, the projected river level for November 2021 is based on the October 2021 USBR projections of Davis Dam release and Lake Havasu level. Future projections of Colorado River stage, shown on Figure 4-6, are based on USBR long-range projections of Davis Dam releases and Lake Havasu levels from October 2021. There is more uncertainty in these projections at longer times in the future because water demand is based on various factors including climate.

Current USBR projections, presented in Table 4-6, show that the projected Davis Dam release for November 2021 is 9,200 cubic feet per second, and the predicted Colorado River elevation at the I-3 gauge is 454.02 feet above mean sea level.

4.6 Third Quarter 2021 Performance Monitoring Program Evaluation Summary

The Third Quarter 2021 PMP evaluation is summarized below.

- Chromium-6 isoconcentration maps indicate that chromium-6 concentrations greater than 20 µg/L in the floodplain area are hydraulically controlled.
- In June 2021, the TW-01 aquifer test was initiated, extraction from TW-03D was suspended, and pumping from TW-02D was initiated to allow water extracted from TW-01 to be routed to the IM-3 system for treatment (combined with water from TW-02D). TW-02D was solely operated in July 2021 to support hydraulic control. In August 2021, extraction from TW-03D resumed, and TW-03D was solely operated to support hydraulic control in September and October 2021. A total of 21,431,482 gallons of groundwater were extracted by the IM-3 system, and an estimated 184 pounds (83.4 kilograms) of chromium were removed from groundwater.
- Chromium-6 and dissolved chromium concentrations in monitoring wells located within 800 feet of extraction well TW-03D were lower than their established notification levels. The shutdown of extraction well PE-01 was continued through the end of the reporting period.
- Groundwater potentiometric surface maps and the gradient analysis from designated well pairs provide evidence of hydraulic containment of the chromium-6 plume. The overall monthly average landward gradients in Third Quarter 2021 were approximately 1 to 1.5 times the required minimum magnitude of 0.001 ft/ft.
- Chromium-6 concentrations in the IMCP monitoring wells were lower than their established trigger levels, indicating that chromium concentrations did not increase at areas of interest across the site.

5 UPCOMING OPERATION AND MONITORING EVENTS

In accordance with the Basis of Design Report (CH2M Hill 2015) and Groundwater Remedy Phase 1 Interim Monitoring Plan (Arcadis 2021c), the final groundwater remedy for the site is anticipated to start up in Fourth Quarter 2021. Therefore, GMP, RMP, and PMP monitoring will transition to monitoring of Phase 1 of the groundwater remedy.

This report is the last quarterly PMP-GMP Report for the site. A Fourth Quarter 2021 Quarterly Progress Report will be developed to document operation and monitoring performed at the site in November and December 2021.

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TABLES

Table 1-1

Topock Monitoring Reporting Schedule

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station, Needles, California

Period	Reporting Period	Report Submittal Date	Anticipated Number of Monitoring Locations: Groundwater Monitoring Program (GMP)	Anticipated Number of Monitoring Locations: Surface Water Monitoring Program (RMP)	Anticipated Number of Monitoring Locations: Chromium Monitoring*	Anticipated Number of Monitoring Locations: Monitoring for Conditional Shutdown of PE-01*	Anticipated Number of Monitoring Locations: IM Hydraulic Monitoring	Anticipated Number of Monitoring Locations: IM Contingency Plan Monitoring*	Anticipated Number of Monitoring Locations: IM Chemical Performance Monitoring
First Quarter	January - March	April 30	22	16	22	4	59	3	0
Second Quarter	April - June	August 15	105	16	105	30	59	19	0
Third Quarter	July - October	December 15	22	16	22	4	59	3	0
Fourth Quarter	November - December	March 15	143 annual + 2 biennial	16	143 annual + 2 biennial	47	59	24	10 annual + 1 biennial

Notes:

1. On July 23, 2010, DTSC approved a revised reporting schedule that included a revised IM-3 monitoring period (i.e., chromium removed), as follows:
   First Quarter: January - February
   Second Quarter: March - May
   Third Quarter: June - September
   Fourth Quarter: October - December

* = Monitoring consists of collecting hexavalent chromium and/or dissolved chromium data from groundwater monitoring wells; these data are collected during the GMP monitoring event.

GMP = Groundwater Monitoring Program.

DTSC = Department of Toxic Substance Control.

IM = interim measure.

RMP = Surface Water Monitoring Program.

Table 1-2
GMP, RMP, and PMP Monitoring Summary
Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Location ID	Site Area	Measuring Point Elevation (ft amsl)	Well Screen Interval (ft bgs)	Well Screen Lithology	Well Casing Diameter (inches)	Well Depth (ft bgs)	Aquifer Zone	Sampling Method	GMP Monitoring Frequency	RMP Monitoring Frequency	PMP Monitoring: Chromium Monitoring Frequency	PMP Monitoring: Monitoring Frequency for Conditional Shutdown of PE-01	PMP Monitoring: IM Hydraulic Monitoring Frequency	PMP Monitoring: IM Contingency Plan Monitoring Frequency	PMP Monitoring: IM Chemical Performance Monitoring Frequency	Notes
MW-09	Bat Cave Wash	536.56	77 - 87	Alluvial	4 in PVC	89.4	Shallow	LF	Semiannual	--	Semiannual	--	--	--	--	Bat Cave Wash flow
MW-10	Bat Cave Wash	530.65	74 - 94	Alluvial	4 in PVC	96.9	Shallow	LF	Semiannual	--	Semiannual	--	--	--	--	Bat Cave Wash flow
MW-11	Bat Cave Wash	522.54	62.5 - 82.5	Alluvial	4 in PVC	86.1	Shallow	LF	Semiannual	--	Semiannual	--	--	--	--	Bat Cave Wash flow
MW-12	East of Station	484.01	27.5 - 47.5	Alluvial	4 in PVC	50.4	Shallow	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-13	Bat Cave Wash	486.67	28.5 - 48.5	Alluvial	4 in PVC	52.0	Shallow	LF	Annual	--	Annual	--	--	--	--	
MW-14	East Mesa	570.99	111 - 131	Alluvial	4 in PVC	133.8	Shallow	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-15	East of New Ponds	641.52	180.5 - 200.5	Alluvial	4 in PVC	203.0	Shallow	LF	Annual	--	Annual	--	--	--	--	
MW-16	Near New Ponds	657.31	198 - 218	Alluvial	4 in PVC	218.1	Shallow	LF	Biennial	--	Biennial	--	--	--	--	
MW-17	West of Mesa Area	589.96	130 - 150	Alluvial	4 in PVC	153.6	Shallow	LF	Biennial	--	Biennial	--	--	--	--	
MW-18	West Mesa	543.19	85 - 105	Alluvial	4 in PVC	106.7	Shallow	LF	Annual	--	Annual	--	--	--	--	
MW-19	Route 66	499.92	46 - 66	Alluvial	4 in PVC	65.8	Shallow	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-20-070	MW-20 bench	500.07	50 - 70	Alluvial	4 in PVC	69.6	Shallow	LF	Semiannual	--	Semiannual	Semiannual	Monthly	--	Annual	
MW-20-100	MW-20 bench	500.58	89.5 - 99.5	Alluvial	4 in PVC	101.4	Middle	LF	Semiannual	--	Semiannual	Semiannual	Monthly	--	Annual	
MW-20-130	MW-20 bench	500.66	121 - 131	Alluvial	4 in PVC	132.3	Deep	LF	Semiannual	--	Semiannual	Semiannual	Monthly	--	Annual	Hydraulic Gradient Well
MW-21	Route 66	505.55	39 - 59	Alluvial	4 in PVC	58.5	Shallow	LF	Semiannual	--	Semiannual	--	--	Semiannual	--	Low recharge well; typically purges dry at 1 casing volume
MW-22	Floodplain	460.72	5.5 - 10.5	Fluvial	2 in PVC	12.4	Shallow	LF	Semiannual	--	Semiannual	--	Monthly	--	--	
MW-23-060	East Ravine	504.08	50 - 60	Bedrock	2 in Sch 40 PVC	60.2	Bedrock	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-23-080	East Ravine	504.13	75 - 80	Bedrock	2 in Sch 40 PVC	80.8	Bedrock	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-24A	MW-24 Bench	567.16	104 - 124	Alluvial	4 in PVC	127.5	Shallow	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-24B	MW-24 Bench	564.76	193 - 213	Alluvial	4 in PVC	214.8	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-24BR	MW-24 Bench	563.95	378 - 437	Bedrock	4 in PVC	441.0	Bedrock	3V	Annual	--	Annual	--	--	--	--	Low recharge well; typically purges dry at 1 casing volume
MW-25	Near Bat Cave Wash	542.90	84.5 - 104.5	Alluvial	4 in PVC	106.5	Shallow	LF	Semiannual	--	Semiannual	--	Monthly	--	Annual	
MW-26	Route 66	502.22	51.5 - 71.5	Alluvial	2 in PVC	70.1	Shallow	LF	Semiannual	--	Semiannual	Semiannual	Monthly	--	Biennial	
MW-27-020	Floodplain	460.56	7 - 17	Fluvial	2 in PVC	14.4	Shallow	LF	Annual	--	Annual	Annual	Monthly	--	--	
MW-27-060	Floodplain	461.49	47.3 - 57.3	Fluvial	2 in PVC	59.0	Middle	LF	Annual	--	Annual	Annual	Monthly	--	--	
MW-27-085	Floodplain	460.99	77.5 - 87.5	Fluvial	2 in PVC	80.0	Deep	LF	Semiannual	--	Semiannual	Semiannual	Monthly	Semiannual	--	Hydraulic Gradient Well
MW-28-025	Floodplain	466.77	13 - 23	Fluvial	2 in PVC	21.1	Shallow	LF	Semiannual	--	Semiannual	Semiannual	Monthly	--	--	
MW-28-090	Floodplain	467.53	70 - 90	Fluvial	2 in PVC	98.4	Deep	LF	Semiannual	--	Semiannual	Semiannual	Monthly	Semiannual	--	
MW-29	Floodplain	485.21	29.5 - 39.5	Fluvial	2 in PVC	41.5	Shallow	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-30-030	Floodplain	468.12	12 - 32	Fluvial	2 in PVC	26.9	Shallow	LF	Annual	--	Annual	Annual	--	--	--	
MW-30-050	Floodplain	468.81	40 - 50	Fluvial	4 in PVC	52.6	Middle	LF	Annual	--	Annual	Annual	Monthly	--	--	
MW-31-060	MW-20 Bench	496.81	41.5 - 61.5	Alluvial	4 in PVC	64.0	Shallow	LF	Semiannual	--	Semiannual	Semiannual	Monthly	--	Annual	
MW-31-135	MW-20 Bench	498.11	113 - 133	Alluvial	2 in PVC	135.4	Deep	LF	Annual	--	Annual	Annual	Monthly	--	--	Hydraulic Gradient Well
MW-32-020	Floodplain	461.51	10 - 20	Fluvial	2 in PVC	19.6	Shallow	LF	Annual	--	Annual	Annual	--	Annual	--	
MW-32-035	Floodplain	461.63	27.5 - 35	Fluvial	4 in PVC	37.2	Shallow	LF	Semiannual	--	Semiannual	Semiannual	Monthly	Semiannual	Annual	
MW-33-040	Floodplain	487.38	29 - 39	Fluvial	2 in PVC	41.8	Shallow	LF	Semiannual	--	Semiannual	Semiannual	Monthly	Semiannual	--	
MW-33-090	Floodplain	487.55	69 - 89	Alluvial	4 in PVC	88.3	Middle	LF	Semiannual	--	Semiannual	Semiannual	Monthly	Semiannual	--	
MW-33-150	Floodplain	487.77	132 - 152	Alluvial	2 in PVC	155.4	Deep	LF	Semiannual	--	Semiannual	Semiannual	Monthly	Semiannual	--	Hydraulic Gradient Well
MW-33-210	Floodplain	487.25	190 - 210	Alluvial	2 in PVC	223.0	Deep	LF	Semiannual	--	Semiannual	Semiannual	--	Semiannual	--	
MW-34-055	Floodplain	460.95	45 - 55	Fluvial	4 in PVC	56.6	Middle	LF	Annual	--	Annual	Annual	Monthly	--	Annual	
MW-34-080	Floodplain	461.20	73 - 83	Fluvial	4 in PVC	84.3	Deep	LF	Semiannual	--	Semiannual	Semiannual	Monthly	Semiannual	Annual	
MW-34-100	Floodplain	460.97	89.5 - 99.5	Fluvial	2 in PVC	117.0	Deep	LF	Quarterly	--	Quarterly	Quarterly	Monthly	Quarterly	Annual	Hydraulic Gradient Well
MW-35-060	Route 66	484.33	41 - 61	Alluvial	2 in PVC	56.8	Shallow	LF	Semiannual	--	Semiannual	--	Monthly	--	--	
MW-35-135	Route 66	484.24	116 - 136	Alluvial	2 in PVC	158.7	Deep	LF	Semiannual	--	Semiannual	--	Monthly	--	--	
MW-36-020	Floodplain	469.33	10 - 20	Fluvial	1 in PVC	20.3	Shallow	LF	Annual	--	Annual	Annual	Monthly	--	--	
MW-36-040	Floodplain	469.59	30 - 40	Fluvial	1 in PVC	40.3	Shallow	LF	Annual	--	Annual	Annual	Monthly	--	--	
MW-36-050	Floodplain	469.62	46 - 51	Fluvial	1 in PVC	108.0	Middle	LF	Annual	--	Annual	Annual	Monthly	--	--	
MW-36-070	Floodplain	469.27	60 - 70	Fluvial	1 in PVC	70.3	Middle	LF	Annual	--	Annual	Annual	Monthly	Annual	--	
MW-36-090	Floodplain	469.64	80 - 90	Fluvial	1 in PVC	90.3	Deep	LF	Semiannual	--	Semiannual	Semiannual	Monthly	--	--	
MW-36-100	Floodplain	469.65	88 - 98	Fluvial	2 in PVC	108.0	Deep	LF	Semiannual	--	Semiannual	Semiannual	Monthly	--	--	

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MW-37D	Bat Cave Wash	486.19	180 - 200	Alluvial	2 in PVC	226.7	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-37S	Bat Cave Wash	485.97	64 - 84	Alluvial	2 in PVC	85.0	Middle	LF	Annual	--	Annual	--	--	--	--	
MW-38D	Bat Cave Wash	525.31	163 - 183	Alluvial	2 in PVC	190.9	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-38S	Bat Cave Wash	526.59	75 - 95	Alluvial	2 in PVC	98.1	Shallow	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-39-040	Floodplain	468.02	30 - 40	Fluvial	1 in PVC	42.1	Shallow	LF	Annual	--	Annual	Annual	Monthly	Annual	--	
MW-39-050	Floodplain	467.93	47 - 52	Fluvial	1 in PVC	54.6	Middle	LF	Annual	--	Annual	Annual	Monthly	--	--	
MW-39-060	Floodplain	468.00	49 - 59	Alluvial	1 in PVC	15.2	Middle	LF	Annual	--	Annual	Annual	Monthly	--	--	
MW-39-070	Floodplain	468.02	60 - 70	Alluvial	1 in PVC	71.7	Middle	LF	Annual	--	Annual	Annual	Monthly	--	--	
MW-39-080	Floodplain	467.92	70 - 80	Alluvial	1 in PVC	82.6	Deep	LF	Annual	--	Annual	Annual	Monthly	--	--	
MW-39-100	Floodplain	468.12	80 - 100	Alluvial	2 in PVC	117.7	Deep	LF	Semiannual	--	Semiannual	Semiannual	Monthly	--	--	
MW-40D	I-40 Median	566.08	240 - 260	Alluvial	2 in PVC	266.0	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-40S	I-40 Median	566.04	115 - 135	Alluvial	2 in PVC	134.0	Shallow	H	Semiannual	--	Semiannual	--	--	--	--	
MW-41D	Bat Cave Wash	479.42	271 - 291	Alluvial	2 in PVC	311.5	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-41M	Bat Cave Wash	479.84	170 - 190	Alluvial	2 in PVC	190.0	Deep	LF	Annual	--	Annual	--	--	--	--	
MW-41S	Bat Cave Wash	480.07	40 - 60	Alluvial	2 in PVC	60.0	Shallow	LF	Annual	--	Annual	--	--	--	--	
MW-42-030	Floodplain	463.74	9.8 - 29.8	Fluvial	2 in Sch 40 PVC	30.1	Shallow	LF	Annual	--	Annual	Annual	Monthly	--	--	
MW-42-055	Floodplain	463.85	42.5 - 52.5	Fluvial	2 in PVC	52.8	Middle	LF	Semiannual	--	Semiannual	Semiannual	--	Semiannual	--	
MW-42-065	Floodplain	463.37	56.2 - 66.2	Fluvial	2 in PVC	80.0	Middle	LF	Semiannual	--	Semiannual	Semiannual	Monthly	Semiannual	--	
MW-43-025	Floodplain	462.54	15 - 25	Fluvial	2 in PVC	25.0	Shallow	LF	Annual	--	Annual	--	Monthly	--	--	
MW-43-075	Floodplain	462.71	65 - 75	Fluvial	2 in PVC	75.0	Deep	LF	Annual	--	Annual	--	--	Annual	--	
MW-43-090	Floodplain	462.76	80 - 90	Fluvial	2 in PVC	97.0	Deep	LF	Annual	--	Annual	--	Monthly	Annual	--	
MW-44-070	Floodplain	471.84	61 - 71	Fluvial	2 in PVC	70.0	Middle	LF	Semiannual	--	Semiannual	Semiannual	Monthly	Semiannual	--	
MW-44-115	Floodplain	471.94	105 - 115	Alluvial	2 in PVC	113.5	Deep	LF	Quarterly	--	Quarterly	Quarterly	Monthly	Quarterly	--	
MW-44-125	Floodplain	472.11	116 - 125	Alluvial	2 in PVC	128.8	Deep	LF	Semiannual	--	Semiannual	Semiannual	Monthly	Semiannual	--	
MW-45-095a	Floodplain	468.27	83 - 93	Fluvial	2 in PVC	97.0	Deep	--	--	--	--	X (see Note 1)	Monthly	--	--	Pressure transducer location; Hydraulic Gradient Well
MW-46-175	Floodplain	482.16	165 - 175	Alluvial	2 in PVC	175.5	Deep	LF	Quarterly	--	Quarterly	Quarterly	Monthly	Quarterly	--	
MW-46-205	Floodplain	482.23	196.5 - 206.5	Alluvial	2 in PVC	206.5	Deep	LF	Semiannual	--	Semiannual	Semiannual	--	Semiannual	--	
MW-47-055	Floodplain	484.04	45 - 55	Alluvial	2 in PVC	55.0	Shallow	LF	Semiannual	--	Semiannual	Semiannual	Monthly	Semiannual	--	
MW-47-115	Floodplain	484.17	105 - 115	Alluvial	2 in PVC	115.0	Deep	LF	Semiannual	--	Semiannual	Semiannual	Monthly	Semiannual	--	
MW-48	East of Station	486.22	124 - 134	Bedrock	2 in PVC	138.0	Bedrock	LF	Semiannual	--	Semiannual	--	--	--	--	Low recharge well; typically purges dry at 1 casing volume
MW-49-135	Floodplain	483.97	125 - 135	Alluvial	1.5 in PVC	135.0	Deep	LF	Annual	--	Annual	--	Monthly	--	--	
MW-49-275	Floodplain	483.95	255 - 275	Alluvial	2 in PVC	274.7	Deep	LF	Annual	--	Annual	--	--	--	--	
MW-49-365	Floodplain	484.01	346 - 366	Alluvial	2 in PVC	367.4	Deep	LF	Annual	--	Annual	--	--	--	--	
MW-50-095	Route 66	496.49	85 - 95	Alluvial	2 in PVC	95.0	Middle	LF	Semiannual	--	Semiannual	--	Monthly	--	--	
MW-50-200	Route 66	496.35	190 - 200	Alluvial	2 in PVC	204.5	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-51	Route 66	501.56	97 - 112	Alluvial	4 in PVC	113.3	Middle	LF	Semiannual	--	Semiannual	Semiannual	Monthly	--	--	
MW-52D	Floodplain	462.16	85 - 87	Fluvial	0.75 in MLABS	89.5	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-52M	Floodplain	462.16	66 - 68	Fluvial	0.75 in MLABS	70.5	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-52S	Floodplain	462.16	47 - 49	Fluvial	0.75 in MLABS	51.5	Middle	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-53D	Floodplain	461.32	123.5 - 125	Fluvial	0.75 in MLABS	---	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-53M	Floodplain	461.32	98.5 - 100	Fluvial	0.75 in MLABS	---	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-54-085	Arizona	466.10	77 - 87	Fluvial	2 in PVC	93.2	Deep	LF	Semiannual	--	Semiannual	--	Monthly	--	--	
MW-54-140	Arizona	465.98	128 - 138	Fluvial	2 in PVC	138.0	Deep	LF	Semiannual	--	Semiannual	--	Monthly	--	--	
MW-54-195	Arizona	466.32	185 - 195	Fluvial	2 in PVC	195.0	Deep	LF	Semiannual	--	Semiannual	--	Monthly	--	--	
MW-55-045	Arizona	465.84	37 - 47	Fluvial	2 in PVC	54.0	Middle	LF	Semiannual	--	Semiannual	--	Monthly	--	--	
MW-55-120	Arizona	465.82	108 - 118	Fluvial	2 in PVC	120.3	Deep	LF	Semiannual	--	Semiannual	--	Monthly	--	--	
MW-56D	Arizona	461.36	103.5 - 105.5	Fluvial	0.75 in MLABS	---	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-56M	Arizona	461.36	73.5 - 75.5	Fluvial	0.75 in MLABS	---	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-56S	Arizona	461.36	33.5 - 35.5	Fluvial	0.75 in MLABS	---	Shallow	LF	Semiannual	--	Semiannual	--	--	--	--	

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MW-57-050	East Ravine	508.76	40 - 50	Bedrock	2 in Sch 40 PVC	50.0	Bedrock	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-57-070	East Ravine	509.37	55 - 70	Bedrock	2 in Sch 40 PVC	70.0	Bedrock	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-57-185	East Ravine	508.97	70 - 184	Bedrock	4 in Sch 40 PVC	184.7	Bedrock	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-58-065	East Ravine	523.26	54 - 64	Bedrock	2 in Sch 40 PVC	66.0	Bedrock	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-58BR	East Ravine	---	--	Bedrock	---	---	Bedrock	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-59-100	East Ravine	541.61	86 - 101	Alluvial	2 in Sch 40 PVC	101.0	Shallow	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-60-125	East Ravine	555.47	103 - 123	Bedrock	2 in Sch 40 PVC	122.5	Bedrock	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-60BR-245	East Ravine	554.95	136 - 245	Bedrock	5 in	244.1	Bedrock	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-61-110	East Ravine	544.03	92 - 112	Bedrock	2 in Sch 40 PVC	112.5	Bedrock	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-62-065	East Ravine	503.56	44.5 - 64.5	Bedrock	2 in Sch 40 PVC	67.4	Bedrock	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-62-110	East Ravine	504.05	85 - 110	Bedrock	---	110.0	Bedrock	G	Quarterly	--	Quarterly	--	--	--	--	
MW-62-190	East Ravine	504.05	155 - 192	Bedrock	---	190.0	Bedrock	3V	Semiannual	--	Semiannual	--	--	--	--	
MW-63-065	East Ravine	504.47	46 - 66	Bedrock	2 in Sch 40 PVC	65.6	Bedrock	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-64BR	East Ravine	575.60	2 - 258	Bedrock	3 in	260.0	Bedrock	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-65-160	Topock Compressor Station	596.59	150 - 160	Alluvial	2 in PVC	160.1	Shallow	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-65-225	Topock Compressor Station	596.58	215 - 225	Alluvial	2 in PVC	225.1	Deep	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-66-165	Topock Compressor Station	586.16	142 - 162	Alluvial	2 in PVC	162.1	Shallow	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-66-230	Topock Compressor Station	586.22	218 - 228	Alluvial	2 in PVC	228.1	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-66BR-270	Topock Compressor Station	586.15	248 - 271	Bedrock	5 in	270.6	Bedrock	3V	Semiannual	--	Semiannual	--	--	--	--	
MW-67-185	Topock Compressor Station	625.91	177 - 187	Alluvial	2 in	186.7	Shallow	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-67-225	Topock Compressor Station	625.83	210 - 225	Alluvial	2 in PVC	225.0	Middle	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-67-260	Topock Compressor Station	625.81	250 - 260	Alluvial	2 in PVC	260.0	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-68-180	Topock Compressor Station	621.17	165 - 180	Alluvial	2 in PVC	180.1	Shallow	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-68-240	Topock Compressor Station	621.17	220 - 240	Alluvial	2 in PVC	240.1	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-68BR-280	Topock Compressor Station	620.64	257 - 279	Bedrock	5 in	278.2	Bedrock	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-69-195	Topock Compressor Station	631.36	176 - 196	Bedrock	2 in	195.5	Bedrock	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-70-105	East Ravine	541.47	85 - 105	Bedrock	2 in PVC	107.8	Bedrock	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-70BR-225	East Ravine	539.84	120 - 227	Bedrock	5 in	229.3	Bedrock	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-71-035	East Ravine	483.69	26 - 36	Alluvial	2 in	36.2	Shallow	LF	Semiannual	--	Semiannual	--	--	--	--	
MW-72-080	East Ravine	513.32	60 - 80	Bedrock	2 in	80.1	Bedrock	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-72BR-200	East Ravine	513.79	107 - 200	Bedrock	---	200.0	Bedrock	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-73-080	East Ravine	505.84	60.2 - 80.2	Bedrock	2 in	79.9	Bedrock	LF	Quarterly	--	Quarterly	--	--	--	--	
MW-74-240	East Ravine	672.34	220 - 240	Bedrock	2 in	239.7	Bedrock	LF	Semiannual	--	Semiannual	--	--	--	--	
OW-03D	West Mesa	558.63	242 - 262	Alluvial	2 in Sch 40 PVC	272.5	Deep	LF	Annual	--	Annual	--	--	--	--	
OW-03M	West Mesa	558.9	180 - 200	Alluvial	2 in Sch 40 PVC	200.3	Middle	LF	Annual	--	Annual	--	--	--	--	
OW-03S	West Mesa	558.58	86 - 116	Alluvial	2 in Sch 40 PVC	116.3	Shallow	LF	Annual	--	Annual	--	--	--	--	
PGE-07BR	MW-24 Bench	--	249 - 300	Bedrock	7 in	300.0	Bedrock	3V	Annual	--	Annual	--	--	--	--	Inactive supply well
PGE-8	Station	596.01	405-554	Bedrock	6.75 in Steel	564.0	Bedrock	3V	Annual	--	Annual	--	--	--	--	Inactive injection well
PT-2D	Floodplain	--	95 - 105	Alluvial	2 in in PVC	105	Deep	--	--	--	--	--	Monthly	--	--	
PT-5D	Floodplain	--	95 - 105	Alluvial	2 in in PVC	105	Deep	--	--	--	--	--	Monthly	--	--	
PT-6D	Floodplain	--	95 - 105	Alluvial	2 in in PVC	105	Deep	--	--	--	--	--	Monthly	--	--	
PE-01	Floodplain	457.52	79 - 89	Fluvial	6 in Sch 40	99.0	Deep	tap	Monthly	--	Monthly	Monthly	--	--	--	IM extraction well
TW-01	Plan B Test	620.55	169 - 269	Alluvial	5 in PVC	271.0	Shallow	LF	Semiannual	--	Semiannual	--	--	--	--	Inactive pilot test well
TW-02D	MW-20 bench	493.29	113 - 148	Alluvial	6 in Sch 80 PVC	150.0	Deep	tap	Quarterly	--	Quarterly	--	--	--	--	IM extraction well
TW-02S	MW-20 bench	499.05	42.5 - 92.5	Alluvial	6 in Sch 80 PVC	97.5	Shallow	tap	Annual	--	Annual	--	--	--	--	IM extraction well
TW-03D	MW-20 bench	498.09	111 - 156	Alluvial	8 in PVC	156.0	Deep	tap	Monthly	--	Monthly	--	--	--	--	IM extraction well
TW-04	Floodplain	484.11	210 - 250	Alluvial	4 in PVC	255.0	Deep	LF	Semiannual	--	Semiannual	Semiannual	--	--	--	
TW-05	Route 66	496.30	110 - 150	Alluvial	4 in PVC	155.0	Deep	LF	Semiannual	--	Semiannual	--	--	--	--	
Park Moabi-3	Park Moabi	518.55	80 - 200	Alluvial	8 in Steel	252.0	Middle	tap	Annual	--	Annual	--	--	--	--	Active supply well
Park Moabi-4	Park Moabi	---	93 - 140	Alluvial	Steel	---	Middle	tap	Annual	--	Annual	--	--	--	--	Active supply well

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C-BNS	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	
C-CON	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth
C-I-3 (I-3)	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	Monthly	--	--	Deep and shallow depth
C-MAR	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth
C-NR1	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth
C-NR3	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth
C-NR4	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth
C-R22A	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth
C-R27	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth
C-TAZ	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth
R-28	Shoreline	--	--	--	--	--	--		--	Quarterly	--	--	--	--	Annual	
R-19	Shoreline	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	
R-63	Shoreline	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	
RRB	Shoreline	--	--	--	--	--	--		--	Quarterly	--	--	Monthly	--	--	
SW-1	Other Surface Water Monitoring Location	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	
SW-2	Other Surface Water Monitoring Location	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	

Notes:
1. On June 27, 2014, DTSC approved discontinuation of groundwater sampling at monitoring well MW-45-095a. This location was originally included in the list of wells monitored for conditional shutdown of PE-01.
2. Monitoring wells MW-09, MW-10, and MW-11 are sampled if rainfall causes surface water flow in Bat Cave Wash.

-- = not applicable.
3V = three volume.
amsl = above mean sea level.
bgs = below ground surface.
Deep = deep interval of Alluvial Aquifer.
DTSC = Department of Toxic Substance Control.
ft = feet.
G = grab sample.
GMP = Groundwater Monitoring Program.
H = HydraSleeve
ID = identification.
IM = interim measure.
LF = low flow (minimal drawdown).
Middle = mid-depth interval of Alluvial Aquifer.
PMP = Performance Monitoring Program.
PVC = polyvinyl chloride (pipe)
RMP = Surface Water Monitoring Program.
Shallow = shallow interval of Alluvial Aquifer.
Tap = sampled from tap of extraction well.

Table 3-1

Groundwater Sampling Results, Third Quarter 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Specific Conductance (µS/cm)	Dissolved Molybdenum (µg/L)	Dissolved Selenium (µg/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Dissolved Arsenic (µg/L)	Dissolved Manganese (µg/L)	Dissolved Iron (µg/L)	ORP (mV)	Field pH (SU)	Turbidity (NTU)
MW-34-100	DA	8/26/2021		LF	ND (1.0)	ND (1.0)	9,000	65	ND (0.5)	ND (0.1)	ND (0.1 J)	160	--	-2.4	7.7	5.0
MW-38S	SA	8/27/2021		LF	15	17	1,600	12	4.4	6.1	6.5 J	22	--	34.9	7.83	5.0
MW-44-115	DA	8/26/2021		LF	ND (1.0)	ND (1.0)	9,200	77	ND (0.5)	ND (0.1)	0.51 J	19	--	-37	7.7	2.0
MW-46-175	DA	8/26/2021		LF	5.3	7.2	15,000	200	0.79	0.94	--	--	--	34	8.4	8.0
MW-58BR	BR	8/26/2021		LF	16	17	6,400	26	2.2	0.71	ND (0.1 J)	380	--	16	7.6	2.0
MW-60BR-245	BR	8/26/2021		LF	5.5	5.5	14,000	64	3.8	0.12	ND (0.1 J)	ND (0.5)	--	52	8.4	4.0
MW-62-065	BR	8/27/2021		LF	590	660	6,400	13	3.9	5.2	ND (0.1 J)	1.7	--	44.9	7.43	6.0
MW-62-065	BR	8/27/2021	FD	--	600	610	6,400	13	3.6	4.9	ND (0.1 J)	2.2	--	--	--	--
MW-62-110	BR	8/27/2021		EP	ND (1.0)	ND (1.0)	12,000	56	ND (0.5)	ND (0.1)	ND (0.1 J)	150	--	-110	7.7	2.0
MW-63-065	BR	8/26/2021		LF	1.3	1.7	6,100	16	1.1	1.5	ND (0.1 J)	3.3	--	-4.0	7.2	9.0
MW-64BR	BR	8/26/2021		LF	ND (1.0)	ND (1.0)	11,000	60	ND (0.5)	ND (0.1)	ND (0.1 J)	970	--	-130	7.5	1.0
MW-65-160	SA	8/25/2021		LF	290	310	4,100	24	9.4	15	ND (0.1 J)	0.75	--	24	7.3	8.0
MW-65-225	DA	8/25/2021		LF	200	210	15,000	39	3.0	3.2	ND (0.1 J)	7.4	--	71	7.3	2.0
MW-68-180	SA	9/9/2021		LF	49,000	60,000	5,600	55	25	34	1.0	1.4	--	160	7.3	5.0
MW-69-195	BR	8/26/2021		LF	480	460	2,800	62	11	17	1.2 J	2.2	--	54	7.4	3.0
MW-72-080	BR	8/27/2021		LF	61	58	15,000	77	1.4	1.2	2.9 J	55	--	-44.2	7.75	5.0
MW-72BR-200	BR	8/27/2021		LF	ND (1.0)	3.0	15,000	80	ND (0.5)	ND (0.1)	5.7 J	100	--	-129.6	8.14	2.0
MW-73-080	BR	8/27/2021		LF	19	22	9,400	35	4.5	3.5	ND (0.1 J)	2.8	--	-44.8	7.4	7.0
TW-02D	DA	7/8/2021		EP	340	370	6,600	--	--	2.4	--	67	ND (20)	236.1	7.52	5.0
TW-02D	DA	8/4/2021		EP	350	360	6,500	--	--	2.4	--	52	ND (20)	229.4	7.38	4.0
TW-02D	DA	9/8/2021		EP	27	33	6,800	18	0.92	1.1	--	130	ND (20)	23	7.4	5.0
TW-02D	DA	9/8/2021	FD	--	27	34	6,800	18	0.73	--	--	140	--	--	--	--
TW-03D	DA	10/7/2021		EP	390	380	7,300	--	--	--	--	7.1	ND (20)	136.9	7.33	7.0

Notes:

1. Beginning February 1, 2008, hexavalent chromium samples are field-filtered per DTSC-approved change from analysis Method SW7199 to E218.6.
2. The following analytical methods were used:
   Hexavalent chromium = USEPA Method 218.6
   Dissolved chromium, dissolved arsenic, dissolved iron, dissolved manganese, dissolved molybdenum, dissolved selenium = Method SW6020
   Specific conductance = USEPA Method 120.1
   Nitrate/Nitrate as Nitrogen = SM 4500-NO3 F

-- = not applicable or not reportable.
µg/L = micrograms per liter.
µS/cm = microSiemens per centimeter.
BR = bedrock.
DA = deep interval of Alluvial Aquifer.
DTSC = Department of Toxic Substance Control.
EP = extraction port.
FD = field duplicate.
G = grab sample.
J = concentration or reporting limit (RL) estimated by laboratory or data validation.
LF = Low Flow (minimal drawdown).
mV = millivolts.
ND = not detected at listed reporting limit.

Table 3-2

Surface Water Sampling Results, Third Quarter 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)	Field pH (SU)	Specific Conductance (µS/cm)	Dissolved Molybdenum (µg/L)	Dissolved Selenium (µg/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Dissolved Arsenic (µg/L)	Dissolved Iron (µg/L)	Iron (µg/L)	Dissolved Manganese (µg/L)	Dissolved Barium (µg/L)	Total Suspended Solids (mg/L)
C-BNS	8/18/2021		ND (0.2)	ND (1.0)	8.0	920	4.1	1.4	0.36	2.3	ND (20)	26 J	ND (0.5)	100	ND (5.0)
C-CON-D	8/19/2021		ND (0.2)	ND (1.0)	8.0	890	4.1	1.4	0.37	2.0	ND (20 J)	25	ND (0.5)	98	5.5
C-CON-S	8/19/2021		ND (0.2)	ND (1.0)	7.8	900	4.4	1.4	0.38	2.2	ND (20 J)	21	ND (0.5)	100	ND (5.0)
C-I-3-D	8/18/2021		ND (0.2)	ND (1.0)	8.0	910	4.3	1.6	0.36	2.1	ND (20)	ND (20)	ND (0.5)	100	ND (5.0)
C-I-3-S	8/18/2021		ND (0.2)	ND (1.0)	8.0	920	4.2	1.4	0.37	2.1	ND (20)	25 J	ND (0.5)	100	ND (5.0)
C-MAR-D	8/19/2021		ND (0.2)	ND (1.0)	8.2	920	4.3	1.5	0.36	2.1	ND (20 J)	190	3.2	100	10
C-MAR-S	8/19/2021		ND (0.2)	ND (1.0)	8.2	930	4.3	1.5	0.35	2.6	ND (20 J)	150	4.8	100	8.0
C-NR1-D	8/19/2021		ND (0.2)	ND (1.0)	8.0	920	4.1	1.5	0.37	1.8	ND (20 J)	ND (20)	ND (0.5)	100	ND (5.0)
C-NR1-S	8/19/2021		ND (0.2)	ND (1.0)	8.0	920	4.2	1.4	0.36	1.7	ND (20 J)	ND (20)	ND (0.5)	99	ND (5.0)
C-NR3-D	8/19/2021		ND (0.2)	ND (1.0)	8.1	920	4.2	1.4	0.38	2.0	ND (20 J)	ND (20)	ND (0.5)	99	ND (5.0)
C-NR3-S	8/19/2021		ND (0.2)	ND (1.0)	8.1	930	4.2	1.5	0.38	2.4	ND (20 J)	ND (20)	ND (0.5)	100	ND (5.0)
C-NR4-D	8/19/2021		ND (0.2)	ND (1.0)	8.1	930	4.2	1.3	0.39	2.4	ND (20 J)	24	ND (0.5)	100	ND (5.0)
C-NR4-D	8/19/2021	FD	ND (0.2)	ND (1.0)	8.0	910	4.2	1.4	0.36	2.0	ND (20 J)	ND (20)	ND (0.5)	110	ND (5.0)
C-NR4-S	8/19/2021		ND (0.2)	ND (1.0)	8.0	900	4.2	1.6	0.36	1.9	ND (20 J)	ND (20)	ND (0.5)	99	ND (5.0)
C-R22A-D	8/18/2021		ND (0.2)	ND (1.0)	8.0	920	4.1	1.2	0.35	2.0	ND (20)	21 J	ND (0.5)	100	ND (5.0)
C-R22A-S	8/18/2021		ND (0.2)	ND (1.0)	8.1	920	4.3	1.3	0.37	2.2	ND (20)	ND (20)	ND (0.5)	100	ND (5.0)
C-R27-D	8/18/2021		ND (0.2)	ND (1.0)	8.0	910	4.3	1.5	0.37	1.9	21	23 J	ND (0.5)	100	ND (5.0)
C-R27-S	8/18/2021		ND (0.2)	ND (1.0)	8.0	920	4.3	1.2	0.36	2.0	ND (20)	43 J	ND (0.5)	100	ND (5.0)
C-TAZ-D	8/18/2021		ND (0.2)	ND (1.0)	8.1	910	4.2	1.4	0.37	2.0	ND (20)	36 J	ND (0.5)	100	ND (5.0)
C-TAZ-D	8/18/2021	FD	ND (0.2)	ND (1.0)	8.0	900	4.2	1.4	0.35	2.2	ND (20)	23 J	ND (0.5)	98	ND (5.0)
C-TAZ-S	8/18/2021		ND (0.2)	ND (1.0)	8.0	920	4.2	1.3	0.37	2.2	ND (20)	ND (20)	ND (0.5)	100	ND (5.0)
R-19	8/19/2021		ND (0.2)	ND (1.0)	8.2	920	4.0	1.5	0.36	2.3	ND (20 J)	21	ND (0.5)	100	ND (5.0)
R-19	8/19/2021	FD	ND (0.2)	ND (1.0)	8.2	920	4.1	1.5	0.35	2.1	ND (20 J)	22	ND (0.5)	100	ND (5.0)
R-28	8/18/2021		ND (0.2)	ND (1.0)	8.0	950	4.3	1.6	0.35	2.1	ND (20)	22 J	ND (0.5)	100	ND (5.0)
R63	8/18/2021		ND (0.2)	ND (1.0)	8.0	920	4.1	1.4	0.35	2.0	ND (20)	29 J	1.7	100	ND (5.0)
RRB	8/19/2021		ND (0.2)	ND (1.0)	7.7	910	4.3	1.3	0.23	2.2	ND (20 J)	57	6.4	110	ND (5.0)
SW1	8/18/2021		ND (0.2)	ND (1.0)	7.6	950	--	--	--	--	--	--	--	--	--
SW2	8/18/2021		ND (0.2)	ND (1.0)	7.5	960	--	--	--	--	--	--	--	--	--

Notes:

1. Beginning February 1, 2008, hexavalent chromium samples are field-filtered per DTSC-approved change from analysis Method SW7199 to E218.6.
2. The following analytical methods were used:
   Hexavalent chromium = USEPA 218.6
   Dissolved chromium, dissolved arsenic, dissolved barium, dissolved selenium = SW6020
   Dissolved iron, total iron, dissolved manganese, dissolved molybdenum = SW6010B
   Specific conductance = USEPA 120.1
   Nitrate/Nitrate as Nitrogen = SM 4500-NO3 F
   Total suspended solids = SM 2540D

-- = not applicable.
µg/L = micrograms per liter.
µS/cm = microSiemens per centimeter.
DTSC = Department of Toxic Substance Control.
FD = field duplicate.
ID = identification.
J = concentration or reporting limit (RL) estimated by laboratory or data validation.
mg/L = milligrams per liter.
ND = not detected at listed reporting limit.
SU = standard units.
USEPA = United States Environmental Protection Agency.

Printed: 11/19/2021

Table 4-1

Pumping Rate and Extracted Volume for IM-3 System, Third Quarter 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station, Needles, California

Extraction Well ID	July 2021 Average Pumping Rate[a] (gpm)	July 2021 Volume Pumped (gal)	August 2021 Average Pumping Rate[a] (gpm)	August 2021 Volume Pumped (gal)	September 2021 Average Pumping Rate[a] (gpm)	September 2021 Volume Pumped (gal)	October 2021 Average Pumping Rate[a] (gpm)	October 2021 Volume Pumped (gal)	Third Quarter 2021 Average Pumping Rate[a] (gpm)	Third Quarter 2021 Volume Pumped (gal)
TW-01	87.06	3,886,336	85.20	3,803,477	83.53	3,608,281	86.20	3,847,921	85.50	15,146,015
TW-02S	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
TW-02D	24.22	1,081,331	15.90	709,761	0.21	8,965	0.00	0	10.08	1,800,057
TW-03D	0.00	0	16.31	727,981	41.67	1,800,355	43.84	1,957,074	25.46	4,485,410
PE-01	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
TOTAL	**111.3**	**4,967,667**	**117.4**	**5,241,219**	**125.4**	**5,417,601**	**130.0**	**5,804,995**	**121.0**	**21,431,482**

Chromium Removed This Quarter (kg)	83.4
Chromium Removed Project to Date (kg)	4,610
Chromium Removed This Quarter (lb)	184.0
Chromium Removed Project to Date (lb)	10,200

Notes:

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

1. Chromium removed includes the period of June 1, 2021 through September 30, 2021.

gal = gallons.

gpm = gallons per minute.

ID = identification.

IM = Interim Measure.

kg = kilograms.

lb = pounds.

Table 4-2

Wells Monitored for Conditional Shutdown of PE-01, Third Quarter 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Q3 2021 Sample Date	Q3 2021 Sample Method	Hexavalent Chromium 2014 Maximum Concentration (µg/L)	Hexavalent Chromium Q3 2021 Result (µg/L)	Dissolved Chromium 2014 Maximum Concentration (µg/L)	Dissolved Chromium Q3 2021 Result (µg/L)	Q3 2021 Result Exceeded 2014 Maximum Concentration?
MW-20-070	Shallow	--	--	2,200	--	2,400	--	--
MW-20-100	Middle	--	--	2,900	--	2,900	--	--
MW-20-130	Deep	--	--	9,100	--	9,000	--	--
MW-26	Shallow	--	--	2,400	--	2,300	--	--
MW-27-020	Shallow	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-27-060	Middle	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-27-085	Deep	--	--	ND (1.0)	--	ND (1.0)	--	--
MW-28-025	Shallow	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-28-090	Deep	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-30-030	Shallow	--	--	0.21	--	ND (1.0)	--	--
MW-30-050	Middle	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-31-060	Shallow	--	--	600	--	660	--	--
MW-31-135	Deep	--	--	12	--	12	--	--
MW-32-020	Shallow	--	--	ND (1.0)	--	ND (5.0)	--	--
MW-32-035	Shallow	--	--	ND (1.0)	--	ND (1.0)	--	--
MW-33-040	Shallow	--	--	0.28	--	ND (1.0)	--	--
MW-33-090	Middle	--	--	13.3	--	15.5	--	--
MW-33-150	Deep	--	--	12	--	10.8	--	--
MW-33-210	Deep	--	--	13	--	13.5	--	--
MW-34-055	Middle	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-34-080	Deep	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-34-100	Deep	08/26/2021	LF	263	ND (1.0)	270	ND (1.0)	No
MW-36-020	Shallow	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-36-040	Shallow	--	--	0.34	--	ND (1.0)	--	--
MW-36-050	Middle	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-36-070	Middle	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-36-090	Deep	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-36-100	Deep	--	--	65	--	62	--	--
MW-39-040	Shallow	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-39-050	Middle	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-39-060	Middle	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-39-070	Middle	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-39-080	Deep	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-39-100	Deep	--	--	57	--	49	--	--
MW-42-030	Shallow	--	--	0.54	--	ND (1.0)	--	--

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Table 4-2

Wells Monitored for Conditional Shutdown of PE-01, Third Quarter 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Q3 2021 Sample Date	Q3 2021 Sample Method	Hexavalent Chromium 2014 Maximum Concentration (µg/L)	Hexavalent Chromium Q3 2021 Result (µg/L)	Dissolved Chromium 2014 Maximum Concentration (µg/L)	Dissolved Chromium Q3 2021 Result (µg/L)	Q3 2021 Result Exceeded 2014 Maximum Concentration?
MW-42-055	Middle	--	--	0.35	--	2.8	--	--
MW-42-065	Middle	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-44-070	Middle	--	--	ND (0.20)	--	ND (1.0)	--	--
MW-44-115	Deep	08/26/2021	LF	41.6	ND (1.0)	42.9	ND (1.0)	No
MW-44-125	Deep	--	--	4.0 J	--	5.9	--	--
MW-45-095a	Deep	--	--	13.7*	--	14.2*	--	--
MW-46-175	Deep	08/26/2021	LF	46.3	5.3	46.1	7.2	No
MW-46-205	Deep	--	--	5.5	--	4.8	--	--
MW-47-055	Shallow	--	--	16	--	16	--	--
MW-47-115	Deep	--	--	24	--	20	--	--
MW-51	Middle	--	--	4,800	--	4,800	--	--
PE-01	Deep	--	--	5.6	--	6	--	--
TW-04	Deep	--	--	7.4*	--	6.5*	--	--

Notes:

1. Monitoring wells presented in the table are located within approximately 800 feet of TW-03D, as stated in DTSC 2015.
2. * = Result is the maximum concentration from 2013.
3. Values shown in parentheses are the reporting limit.
4. If a field duplicate sample was collected, the maximum concentration between the primary and field duplicate sample is presented.
5. On June 27, 2014, DTSC approved discontinuation of groundwater sampling at monitoring well MW-45-095a.
6. **Bold** values exceeded the 2013 and/or 2014 maximum concentration for hexavalent chromium and/or dissolved chromium.

-- = not applicable.
µg/L = micrograms per liter.
DTSC = Department of Toxic Substance Control.
ID = identification.
LF = low flow (minimal drawdown).
ND = not detected at listed reporting limit.
Q3 = first quarter.

Reference:

DTSC. 2015. Letter from Aaron Yue/DTSC to Yvonne Meeks/PG&E. "Conditional Approval of Proposal to Modify Interim Measures 3 (IM3) Extraction Well Pumping at Pacific Gas and Electric Company, Topock Compressor Station (PG&E), Needles, California (USEPA ID No. CAT080011729)." July 20.

Table 4-3

Groundwater Elevation Results, Third Quarter 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	July Average Groundwater Elevation (ft amsl)	August Average Groundwater Elevation (ft amsl)	September Average Groundwater Elevation (ft amsl)	October Average Groundwater Elevation (ft amsl)	Quarterly Average Groundwater Elevation (ft amsl)	Days in Quarterly Average
MW-20-070	Shallow	453.72	454.52	456.03	455.01	454.81	123
MW-22	Shallow	INC	INC	INC	INC	453.93	123
MW-25	Shallow	456.24	455.80	455.47	455.28	455.70	123
MW-26	Shallow	455.82	455.35	455.03	454.77	455.24	123
MW-27-020	Shallow	456.11	455.45	455.54	454.96	455.51	123
MW-28-025	Shallow	456.00	455.37	455.55	455.00	455.48	123
MW-31-060	Shallow	455.93	455.40	455.20	454.84	455.34	123
MW-32-035	Shallow	455.81	455.24	455.29	454.76	455.27	123
MW-33-040	Shallow	456.03	455.38	455.35	454.85	455.40	123
MW-35-060	Shallow	456.04	455.46	455.52	455.09	455.53	123
MW-36-020	Shallow	455.92	455.37	455.39	454.97	455.41	123
MW-36-040	Shallow	455.84	455.26	455.37	454.81	455.32	123
MW-39-040	Shallow	455.91	455.34	455.29	454.81	455.34	123
MW-42-030	Shallow	455.77	455.21	455.25	454.74	455.24	123
MW-43-025	Shallow	455.93	455.30	455.47	454.91	455.40	123
MW-47-055	Shallow	INC	455.75	455.68	455.31	455.69	111
MW-20-100	Middle	455.50	454.89	454.58	454.24	454.81	123
MW-27-060	Middle	455.99	455.39	455.50	454.97	455.46	123
MW-30-050	Middle	455.90	455.37	455.34	454.80	455.35	123
MW-33-090	Middle	INC	INC	INC	454.98	INC	34
MW-34-055	Middle	456.15	455.62	455.54	454.75	455.51	123
MW-36-050	Middle	INC	455.17	455.25	454.76	455.18	111
MW-36-070	Middle	455.92	455.21	455.30	454.79	455.30	123
MW-39-050	Middle	INC	455.29	455.23	454.71	455.20	111
MW-39-060	Middle	455.74	455.13	455.11	454.68	455.17	123
MW-39-070	Middle	455.71	455.19	454.95	454.49	455.09	123
MW-42-065	Middle	455.82	455.24	455.28	454.82	455.29	123
MW-44-070	Middle	455.83	455.28	455.40	454.80	455.33	123
MW-50-095	Middle	INC	455.58	455.42	455.02	455.45	111
MW-51	Middle	455.47	455.03	454.73	454.49	454.93	123
MW-55-045	Middle	456.49	456.26	457.00	INC	INC	91
MW-20-130	Deep	455.42	454.72	454.49	454.07	454.68	123
MW-27-085	Deep	456.04	455.35	455.46	454.89	455.43	123
MW-28-090	Deep	456.01	455.41	455.52	454.98	455.48	123
MW-31-135	Deep	455.96	455.22	454.99	454.63	455.20	123
MW-33-150	Deep	456.32	455.59	455.63	455.25	455.70	123
MW-34-080	Deep	456.22	456.23	456.23	455.17	455.93	111
MW-34-100	Deep	456.43	455.44	455.56	454.92	455.59	123
MW-35-135	Deep	INC	455.80	455.72	455.38	455.73	111
MW-36-090	Deep	INC	455.15	455.06	454.70	455.09	111
MW-36-100	Deep	455.95	455.35	455.33	454.78	455.35	123
MW-39-080	Deep	455.66	455.06	454.92	454.47	455.03	123
MW-39-100	Deep	INC	455.57	455.36	454.94	455.44	111
MW-43-090	Deep	INC	455.31	455.46	454.86	455.33	111
MW-44-115	Deep	455.73	455.15	455.16	454.70	455.19	123
MW-44-125	Deep	456.13	455.56	455.63	455.16	455.62	123
MW-45-095a	Deep	455.32	455.38	455.28	454.71	455.17	123
MW-46-175	Deep	456.07	455.51	455.43	INC	455.63	98

Table 4-3

Groundwater Elevation Results, Third Quarter 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	July Average Groundwater Elevation (ft amsl)	August Average Groundwater Elevation (ft amsl)	September Average Groundwater Elevation (ft amsl)	October Average Groundwater Elevation (ft amsl)	Quarterly Average Groundwater Elevation (ft amsl)	Days in Quarterly Average
MW-47-115	Deep	INC	455.69	455.59	455.26	455.63	111
MW-49-135	Deep	INC	INC	INC	455.08	INC	32
MW-54-085	Deep	456.08	455.50	455.65	455.14	455.56	116
MW-54-140	Deep	455.58	455.02	455.04	454.44	455.02	123
MW-54-195	Deep	456.16	458.45	INC	455.02	INC	90
MW-55-120	Deep	456.63	456.23	456.17	456.06	456.27	123
PT2D	Deep	INC	454.81	454.69	454.20	454.70	111
PT5D	Deep	456.06	455.44	455.49	455.03	455.50	123
PT6D	Deep	456.11	455.48	455.40	454.94	455.48	123
I-3	Surface water	456.28	455.64	455.87	455.12	455.72	123
RRB	Surface water	INC	INC	INC	INC	INC	0

Notes:

ft amsl = feet above mean sea level.

INC = data are incomplete; less than 75 percent of data were available during the reporting period due to rejection, field equipment malfunction, or inaccessibility.

ID = identification.

Table 4-4

Average Hydraulic Gradients Measured at Well Pairs, Third Quarter 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station, Needles, California

Gradient Pair	Well Pair	Reporting Period	Mean Landward Hydraulic Gradient (feet/foot)	Days in Monthly Average	PE-01 Run for Gradient Control?
Overall Average	--	July	0.0011	31	No
Overall Average	--	August	0.0010	31	No
Overall Average	--	September	0.0015	30	No
Overall Average	--	October	0.0013	31	No
Northern Gradient Pair	MW-31-135 / MW-33-150	July	0.0008	31	No
Northern Gradient Pair	MW-31-135 / MW-33-150	August	0.0008	31	No
Northern Gradient Pair	MW-31-135 / MW-33-150	September	0.0013	30	No
Northern Gradient Pair	MW-31-135 / MW-33-150	October	0.0013	31	No
Central Gradient Pair (used when PE-01 is not run for gradient control)	MW-20-130 / MW-34-100	July	0.0018	31	No
Central Gradient Pair (used when PE-01 is not run for gradient control)	MW-20-130 / MW-34-100	August	0.0013	31	No
Central Gradient Pair (used when PE-01 is not run for gradient control)	MW-20-130 / MW-34-100	September	0.0019	30	No
Central Gradient Pair (used when PE-01 is not run for gradient control)	MW-20-130 / MW-34-100	October	0.0015	31	No
Southern Gradient Pair (used when PE-01 is not run for gradient control)	MW-20-130 / MW-27-085	July	0.0009	31	No
Southern Gradient Pair (used when PE-01 is not run for gradient control)	MW-20-130 / MW-27-085	August	0.0009	31	No
Southern Gradient Pair (used when PE-01 is not run for gradient control)	MW-20-130 / MW-27-085	September	0.0014	30	No
Southern Gradient Pair (used when PE-01 is not run for gradient control)	MW-20-130 / MW-27-085	October	0.0012	31	No

Notes:

1. The target mean landward hydraulic gradient for the selected well pairs is 0.001 feet/foot.
2. "Days in Monthly Average" refers to the number of days the pressure transducers in both wells were operating correctly.
3. Beginning in August 2017, MW-20-130 was approved for gradient compliance (instead of MW-45-95) at the central and southern well pairs during months when PE-01 is not run for gradient control.
4. MW-45-095 is also known as MW-45-095a.

-- = not applicable

Table 4-5

Interim Measure Contingency Plan Trigger Levels and Results, Third Quarter 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report

PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Q3 2021 Sample Date	Q3 2021 Sample Method	Hexavalent Chromium Trigger Level (µg/L)	Q3 2021 Hexavalent Chromium Result (µg/L)	Q3 2021 Result Exceeded Trigger Level?
MW-21	Shallow	--	--	20	--	--
MW-27-085	Deep	--	--	20	--	--
MW-28-090	Deep	--	--	20	--	--
MW-32-020	Shallow	--	--	20	--	--
MW-32-035	Shallow	--	--	20	--	--
MW-33-040	Shallow	--	--	20	--	--
MW-33-090	Middle	--	--	25	--	--
MW-33-150	Deep	--	--	20	--	--
MW-33-210	Deep	--	--	20	--	--
MW-34-080	Deep	--	--	20	--	--
MW-34-100	Deep	8/26/2021	LF	750	ND (1.0)	No
MW-36-070	Middle	--	--	20	--	--
MW-39-040	Shallow	--	--	20	--	--
MW-42-055	Middle	--	--	20	--	--
MW-42-065	Middle	--	--	20	--	--
MW-43-075	Deep	--	--	20	--	--
MW-43-090	Deep	--	--	20	--	--
MW-44-070	Middle	--	--	20	--	--
MW-44-115	Deep	8/26/2021	LF	1,200	ND (1.0)	No
MW-44-125	Deep	--	--	475	--	--
MW-46-175	Deep	8/26/2021	LF	225	5.3	No
MW-46-205	Deep	--	--	20	--	--
MW-47-055	Shallow	--	--	150	--	--
MW-47-115	Deep	--	--	31	--	--

Notes:

1. If a field duplicate sample was collected, the maximum concentration between the primary and field duplicate sample is presented.
2. None of the results from the Third Quarter 2021 exceeded their respective trigger level.

-- = not applicable.
µg/L = micrograms per liter.
ID = identification.
LF = Low Flow (minimal drawdown).
ND = not detected at listed reporting limit.
Q3 = first quarter.

Table 4-6

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

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Month, Year	Davis Dam Release Projected (cfs)	Davis Dam Release Actual (cfs)	Davis Dam Release Difference (cfs)	Colorado River Elevation at I-3 Predicted (ft amsl)	Colorado River Elevation at I-3 Actual (ft amsl)	Colorado River Elevation at I-3 Difference (feet)
January 2013	8,300	8,299	1	453.20	453.28	0.04
February 2013	10,600	10,972	-372	454.30	454.63	0.40
March 2013	15,200	15,545	-345	456.00	456.29	0.30
April 2013	17,600	17,090	510	456.90	456.74	0.10
May 2013	15,800	15,592	208	456.40	456.44	0.00
June 2013	15,700	15,588	112	456.50	456.47	0.00
July 2013	14,400	13,165	1,235	456.00	455.79	0.20
August 2013	13,100	12,185	915	455.40	455.43	0.00
September 2013	11,700	11,446	254	454.80	455.02	0.20
October 2013	12,300	12,497	-197	454.90	455.09	0.20
November 2013	9,700	8,918	782	454.00	453.98	0.00
December 2013	6,400	7,636	-1,236	452.40	452.81	0.40
January 2014	8,300	8,970	-670	452.80	453.27	0.50
February 2014	11,600	11,850	-250	454.30	454.67	0.30
March 2014	16,600	17,473	-873	456.40	456.70	0.30
April 2014	18,200	17,718	482	457.10	457.08	0.00
May 2014	16,700	16,622	78	456.80	456.68	0.10
June 2014	15,900	15,917	-17	456.60	456.64	0.10
July 2014	15,100	14,640	460	456.30	456.24	0.00
August 2014	12,300	11,336	964	455.20	455.26	0.10
September 2014	13,100	12,211	889	455.30	455.30	0.00
October 2014	10,700	10,434	266	454.30	454.81	0.50
November 2014	10,700	10,575	125	454.30	454.22	0.10
December 2014	6,400	7,235	-835	452.40	452.93	0.50
January 2015	10,600	10,740	-140	454.30	454.39	0.09
February 2015	10,500	11,252	-752	454.20	454.52	0.32
March 2015	14,900	15,658	-758	455.90	456.29	0.39
April 2015	18,000	17,170	830	457.10	456.82	0.28
May 2015	16,000	13,890	2110	456.50	456.06	0.50
June 2015	14,500	13,616	884	456.10	455.94	0.16
July 2015	13,400	12,411	989	455.60	455.50	0.10
August 2015	12,100	12,627	-527	455.10	455.45	0.40
September 2015	13,300	12,734	566	455.40	INC	NA
October 2015	11,300	10,653	647	454.70	454.80	0.1
November 2015	10,000	10,066	-66	454.16	453.87	0.29
December 2015	6,200	8,556	-2,356	453.30	453.48	-0.18
January 2016	9,400	9,000	400	453.44	454.05	-0.60
February 2016	11,300	11,700	-400	454.37	454.95	-0.57
March 2016	15,800	15,000	800	455.86	456.51	-0.65
April 2016	15,400	16,400	-1,000	456.77	457.17	-0.40
May 2016	15,800	14,700	1,100	455.98	456.76	-0.78
June 2016	14,400	14,100	300	456.01	456.64	-0.62
July 2016	13,300	13,100	200	455.73	456.38	-0.65
August 2016	11,500	11,600	-100	455.02	455.70	-0.69
September 2016	12,200	11,900	300	455.19	455.83	-0.63
October 2016	10,400	10,400	0	454.25	455.23	-0.98
November 2016	9,900	9,600	300	453.70	454.40	-0.70
December 2016	8,300	7,800	500	453.37	453.55	-0.18
January 2017	8,000	6,600	1,400	453.22	453.36	-0.14
February 2017	9,500	8,700	800	453.91	454.15	-0.24
March 2017	13,900	13,700	200	455.53	456.10	-0.57
April 2017	15,900	16,100	-200	456.40	456.97	-0.57
May 2017	14,000	13,800	200	455.74	456.39	-0.66
June 2017	13,600	14,300	-700	455.95	456.46	-0.51
July 2017	13,300	13,300	0	455.62	456.22	-0.59
August 2017	11,500	11,500	0	454.91	455.59	-0.68
September 2017	12,700	11,100	1,600	454.39	455.32	-0.93
October 2017	12,000	10,900	1,100	454.01	455.15	-1.14
November 2017	10,400	10,000	400	454.25	454.70	-0.45

Table 4-6

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

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide
Groundwater and Surface Water Monitoring Report
PG&E Topock Compressor Station, Needles, California

Month, Year	Davis Dam Release Projected (cfs)	Davis Dam Release Actual (cfs)	Davis Dam Release Difference (cfs)	Colorado River Elevation at I-3 Predicted (ft amsl)	Colorado River Elevation at I-3 Actual (ft amsl)	Colorado River Elevation at I-3 Difference (feet)
December 2017	8,800	9,000	-200	453.51	454.09	-0.58
January 2018	8,100	7,100	1,000	452.50	453.05	-0.55
February 2018	11,100	11,000	100	454.40	454.82	-0.42
March 2018	14,400	13,600	800	455.38	455.94	-0.56
April 2018	16,000	16,800	-800	456.25	457.09	-0.84
May 2018	15,900	16,300	-400	456.80	457.06	-0.26
June 2018	15,600	15,300	300	456.40	456.88	-0.48
July 2018	13,700	13,400	300	455.60	456.33	-0.73
August 2018	12,000	11,900	100	454.91	455.58	-0.67
September 2018	13,400	13,700	-300	464.03	456.29	7.74
October 2018	11,200	10,300	900	454.54	455.16	-0.62
November 2018	10,500	10,300	200	454.40	455.02	-0.62
December 2018	7,300	6,300	1000	452.94	453.33	-0.39
January 2019	7,300	6,800	500	452.96	453.32	-0.36
February 2019	11,800	10,200	1600	454.71	454.85	-0.14
March 2019	12,400	12,200	200	455.09	455.47	-0.38
April 2019	15,100	14,900	200	456.20	456.55	-0.35
May 2019	15,200	15,200	0	456.40	456.87	-0.47
June 2019	15,100	14,900	200	456.38	456.80	-0.42
July 2019	14,200	14,500	-300	455.90	456.53	-0.63
August 2019	12,700	13,000	-300	455.31	455.84	-0.53
September 2019	13,600	12,900	700	455.52	456.06	-0.54
October 2019	9,800	9,600	200	454.19	454.88	-0.69
November 2019	8,400	7,700	700	453.71	453.89	-0.18
December 2019	4,300	4,000	300	451.93	452.61	-0.68
January 2020	5,600	6,200	-600	452.39	452.62	-0.23
February 2020	8,300	9,100	-800	453.34	453.80	-0.46
March 2020	13,300	8,900	4400	455.42	454.61	0.81
April 2020	14,600	14,500	100	456.04	456.08	-0.04
May 2020	16,200	16,700	-500	456.60	457.13	-0.53
June 2020	15,900	15,700	200	456.67	457.08	-0.41
July 2020	14,200	14,400	-200	455.92	456.50	-0.58
August 2020	13,000	13,400	-400	455.50	456.15	-0.65
September 2020	13,700	13,300	400	455.59	456.13	-0.54
October 2020	12,200	11,800	400	455.06	455.64	-0.58
November 2020	9,900	9,400	500	454.26	454.64	-0.38
December 2020	7,600	8,300	-700	453.13	453.75	-0.62
January 2021	7,100	7,700	-600	452.97	453.53	-0.56
February 2021	9,700	9,900	-200	454.03	454.38	-0.35
March 2021	15,100	15,000	100	456.09	456.56	-0.47
April 2021	16,600	17,300	-700	456.69	457.38	-0.69
May 2021	16,700	17,200	-500	457.04	457.51	-0.47
June 2021	15,900	15,100	800	456.70	456.98	-0.28
July 2021	13,600	13,500	100	455.73	456.28	-0.55
August 2021	12,200	11,900	300	455.18	455.64	-0.46
September 2021	12,500	12,700	-200	455.19	455.87	-0.68
October 2021	10,600	10,700	-100	454.52	455.12	-0.60
November 2021	9,200	--	--	454.02	--	--

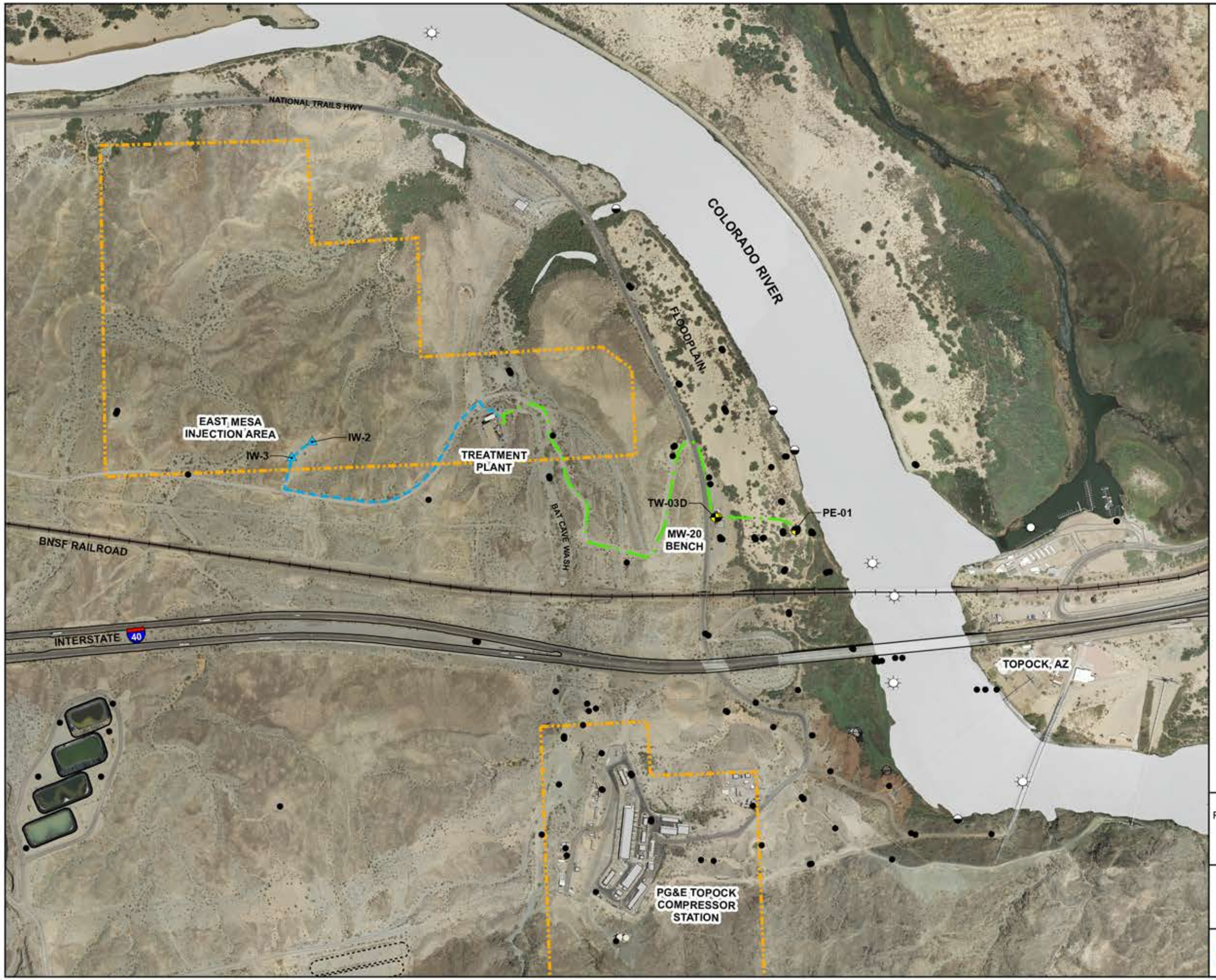
Notes:

1. Projected river level for each month is calculated based on the preceding month's U.S. Bureau of Reclamation (USBR) projections of Davis Dam release and stage in Lake Havasu.

2. Projected and actual Davis Dam releases are reported monthly by the USBR, available online at https://www.usbr.gov/uc/water/crsp/studies/24Month_10.pdf.

-- = not applicable.
cfs = cubic feet per second.
ft amsl = feet above mean sea level.
INC = incomplete data set for Colorado River elevation at I-3.
NA = difference in predicted and actual river elevation not available due to incomplete dataset.

FIGURES



LEGEND

- IM-3 Extraction Well (Active)
- IM-3 Injection Well
- Monitoring Well in Site-Wide Groundwater Monitoring Program (GMP)
- Shoreline Surface Water Monitoring Location
- River Channel Surface Water Monitoring Location
- Other Surface Water Monitoring Location
- Groundwater Extraction/Influent Pipeline
- Treatment Plant Effluent Pipeline
- Property Line

Notes:
1. Location map shows Interim Measure No. 3 (IM-3) active facilities as of current report.
2. See Figures 1-2 and 1-3 for complete monitoring locations and identifications.

0 500 1,000
Feet

THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT

PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

LOCATIONS OF IM-3 FACILITIES AND MONITORING LOCATIONS

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1-1

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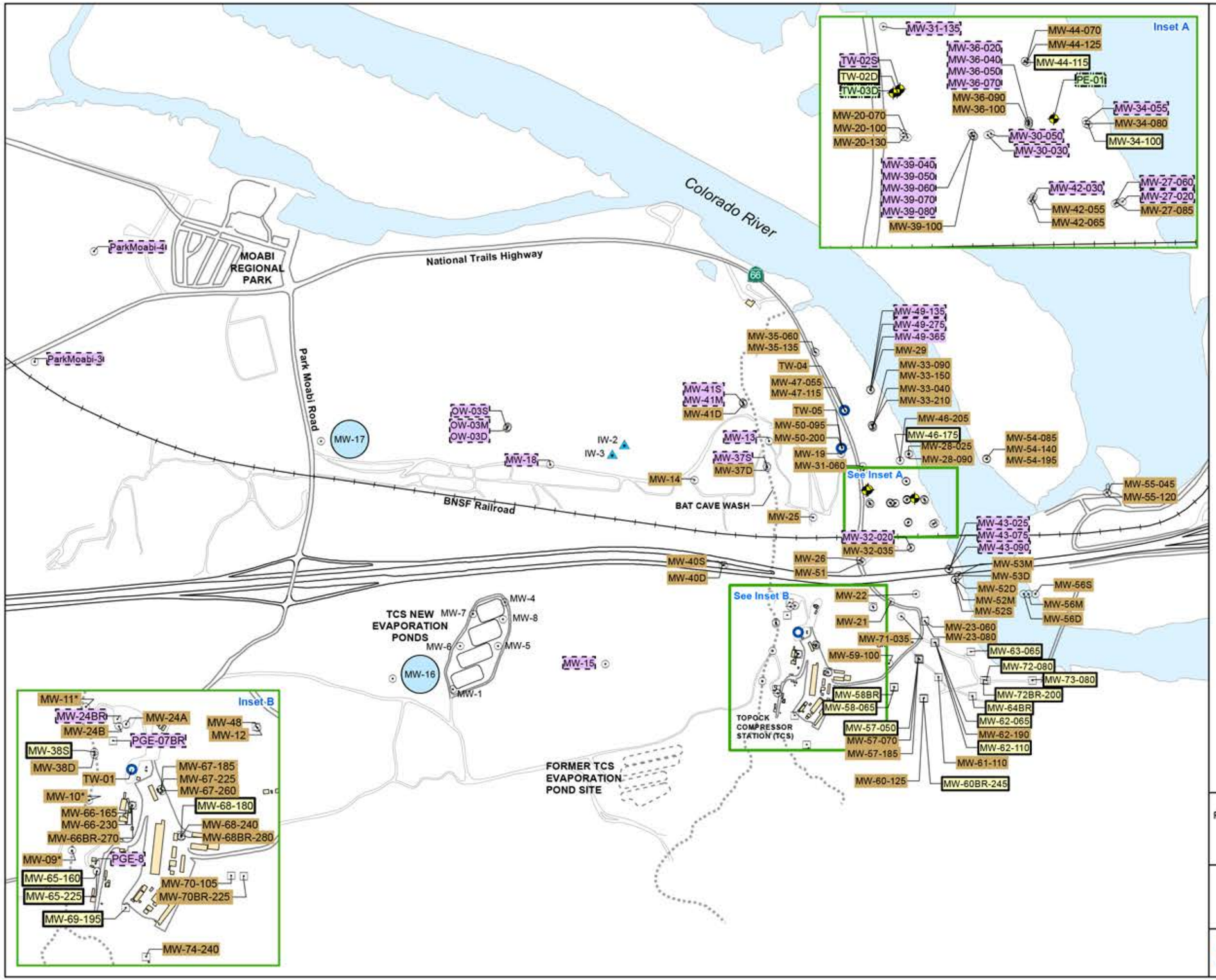


LEGEND

- Groundwater Monitoring Well Completed in Bedrock
- Injection Well
- Groundwater Monitoring Well Completed in Alluvial Aquifer
- Test Well or Supply Well (Inactive)
- Extraction Well (TW-03D and PE-01 are primary extraction wells; TW-02S and TW-02D are backup extraction wells)

Sampling Frequency for Groundwater Monitoring Program (GMP)

MW-17	Biennial sampling
MW-13	Annual sampling
MW-09*	Collect additional sample in quarter following a runoff event with flow through Bat Cave Wash culverts.
MW-21	Semiannual sampling
MW-38S	Quarterly sampling
TW-3D	Monthly sampling

Notes:
1. GMP = Groundwater Monitoring Program
2. TCS = Topock Compressor Station

0 500 1,000
Feet

THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT

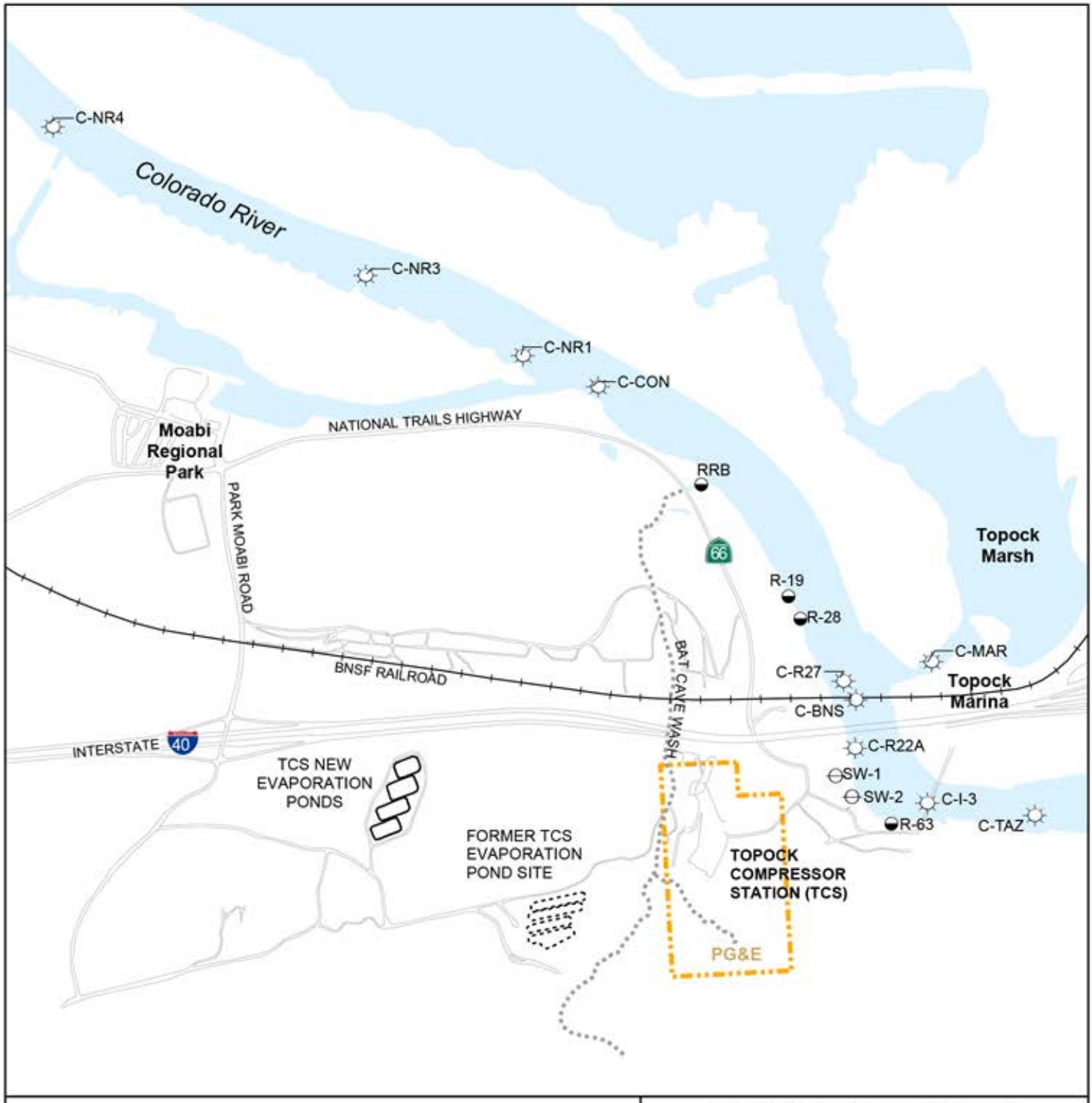
PG&E TOPOCK COMPRESSOR STATION NEEDLES, CALIFORNIA

MONITORING LOCATIONS AND SAMPLING FREQUENCY FOR GMP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1-2

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\3Q21\FINAL\FIGURE1-2_GMP_SAMPLING_FREQUENCY_2021Q.MXD 11/11/2021 9:22:08 AM



LEGEND

- Shoreline Surface Water Monitoring Location
- River Channel Surface Water Monitoring Location
- Other Surface Water Monitoring Location
- PG&E Property Line

0 600 1,200

Feet

Notes:

1. Shoreline, river channel, and other surface water monitoring locations are sampled quarterly and twice per quarter during periods of low river stage (typically November - January).
2. Location for SW-2 is approximate. GPS coverage was not available.
3. RMP = Surface Water Monitoring Program
4. TCS = Topock Compressor Station

THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT

PG&E TOPOCK COMPRESSOR STATION NEEDLES, CALIFORNIA

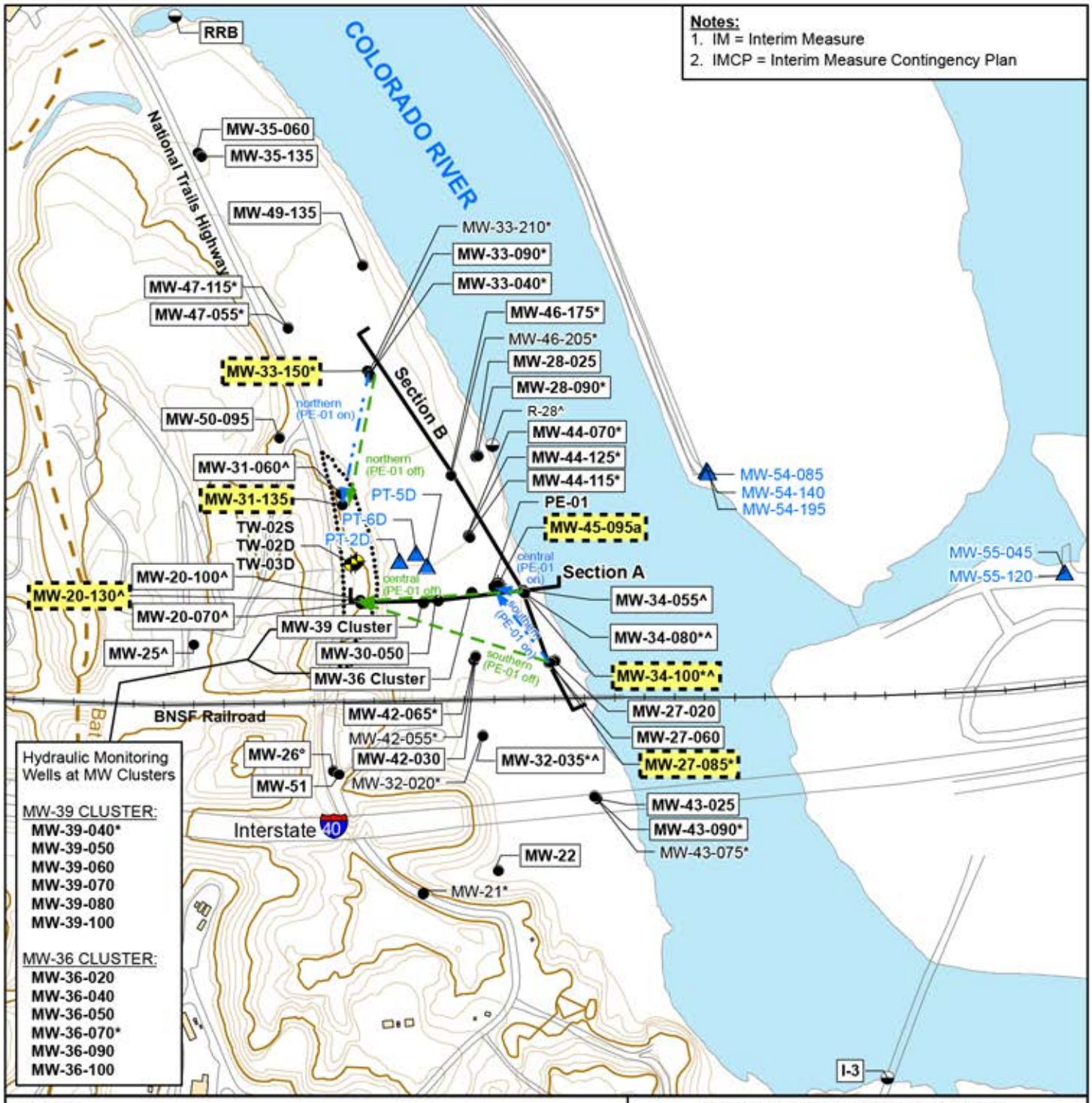
MONITORING LOCATIONS AND SAMPLING FREQUENCY FOR RMP

ARCADIS Design & Consultancy for natural and built assets

FIGURE

1-3

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\3Q21\FINAL\FIGURE1-3_GMP_RIVER_SWLOCS_2021Q3.MXD 11/11/2021 9:23:04 AM



THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT

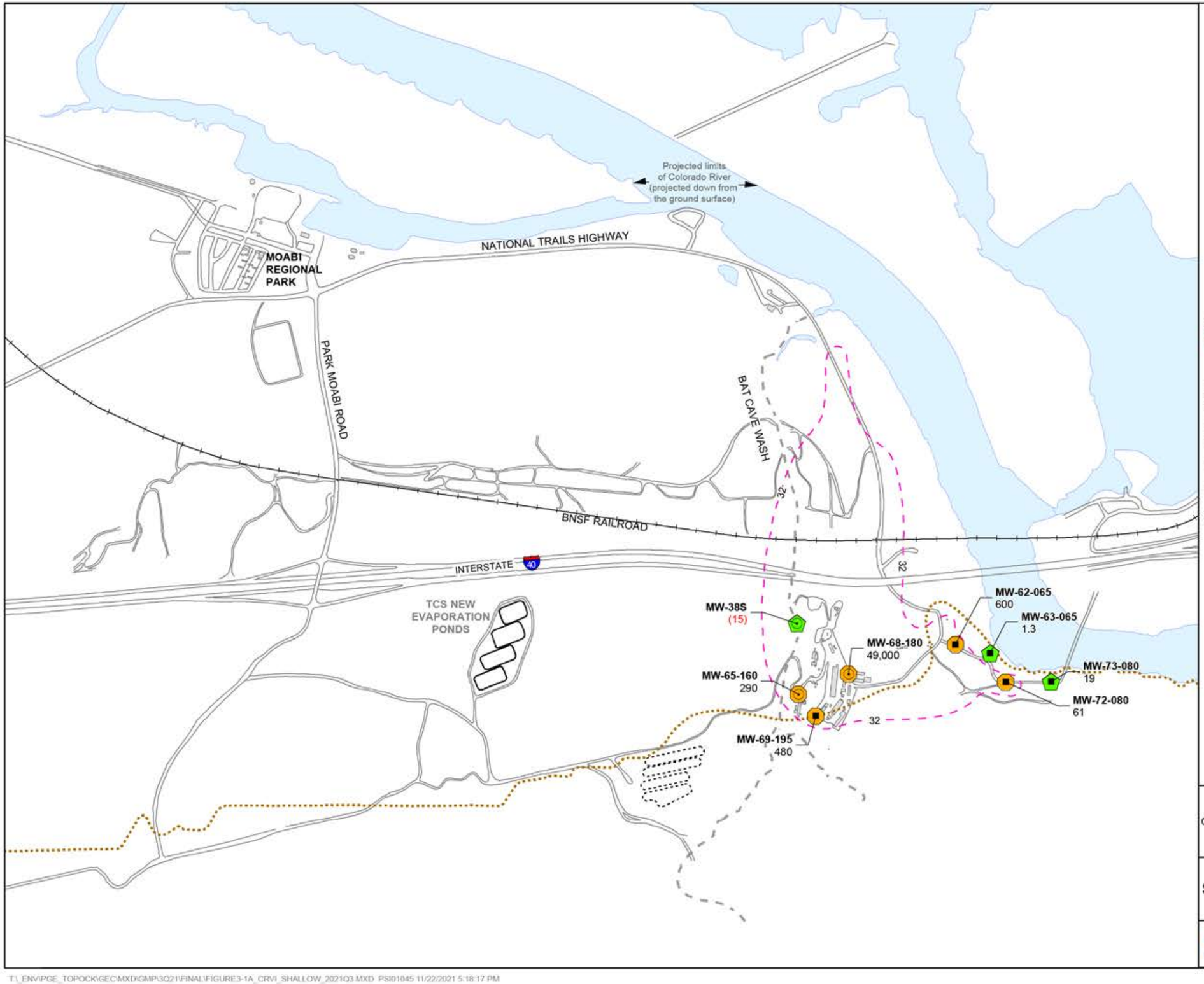
PG&E TOPOCK COMPRESSOR STATION NEEDLES, CALIFORNIA

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

ARCADIS Design & Consultancy for natural and built assets

FIGURE **1-4**

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\3Q21\FINAL\FIGURE1-4_IMP_XSECTION_2021Q3.MXD 11/11/2021 9:23:11 AM



LEGEND

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event

Cr(VI) Concentrations

- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L
- Approximate boundary of "shallow" wells with Cr(VI) concentrations ≥ 32 µg/L
- Approximate bedrock contact at 455 feet above mean sea level.

MW-72-080 ——— Sampling Location
61 ——— Groundwater Cr(VI) Concentration (µg/L)
(15) ——— Groundwater Cr(VI) Concentration (µg/L) not used for contouring

Notes:
1. µg/L = micrograms per liter
2. Cr(VI) = Hexavalent Chromium
3. TCS = Topock Compressor Station
4. ≥ = greater than or equal to
5. 32 µg/L is used as the background Cr(VI) concentration in groundwater for remedial activities.
6. Results plotted are maximum concentration from primary and duplicate samples.
7. The 32 µg/L boundary for Cr(VI) is estimated based on available groundwater analytical results from Fourth Quarter 2020 and the current quarter.
8. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map.

0 500 1,000
Feet

THIRD QUARTER 2021 INTERIM MEASURES
PERFORMANCE MONITORING AND SITE-WIDE
GROUNDWATER AND SURFACE WATER MONITORING REPORT

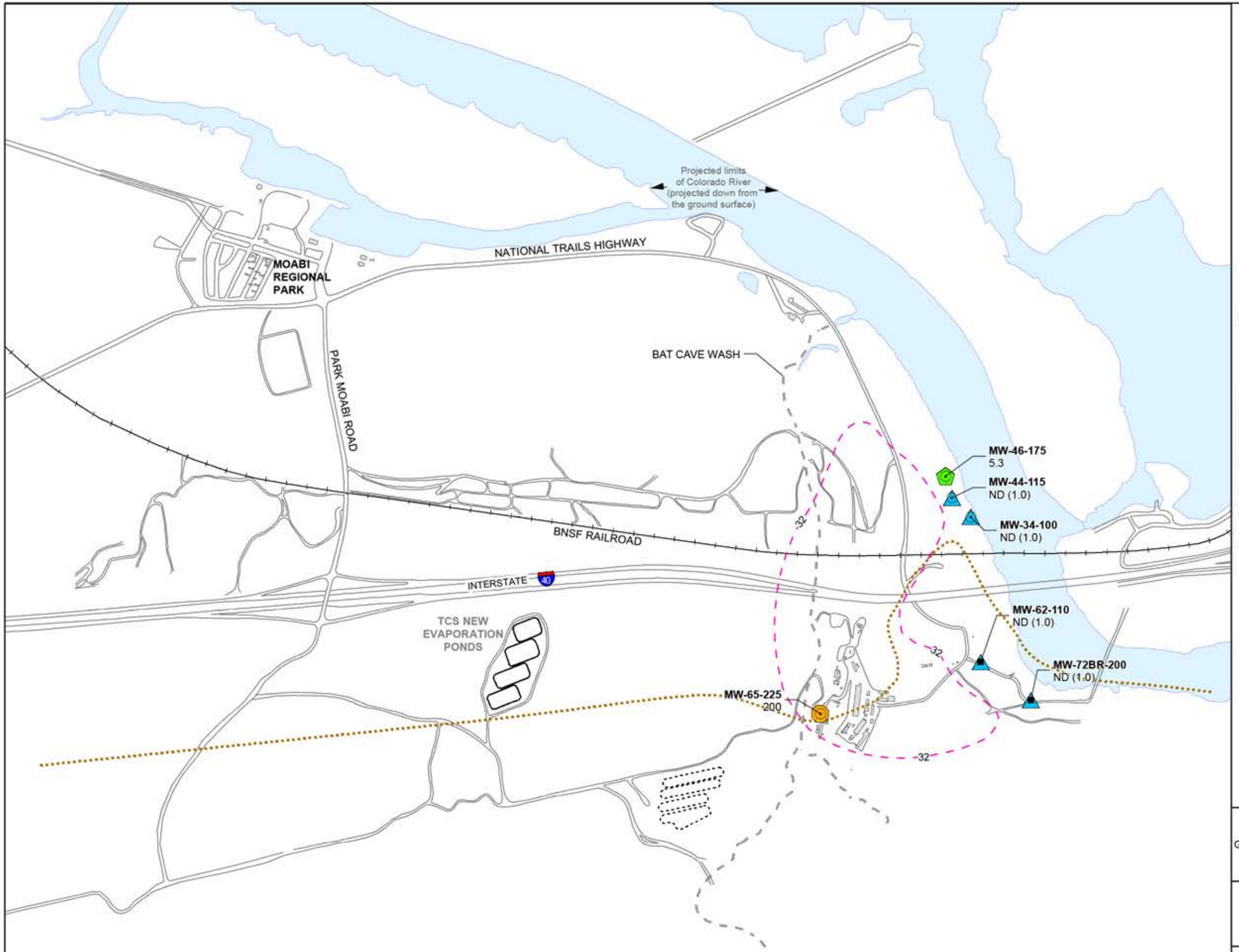
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CHROMIUM-6 SAMPLING RESULTS, SHALLOW WELLS IN ALLUVIAL AQUIFER AND BEDROCK, THIRD QUARTER 2021

ARCADIS Design & Consultancy for natural and built assets

FIGURE
3-1a

T:_ENV\PGE_TOPOCK\GE\C\MXD\GMP\3Q21\FINAL\FIGURE3-1A_CRVI_SHALLOW_2021Q3.MXD PSI01045 11/22/2021 5:18:17 PM



LEGEND

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event
- Extraction well sampled during sampling event

Cr(VI) Concentrations

- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L
- Approximate boundary of "deep" wells with Cr(VI) concentrations ≥ 32 µg/L
- Approximate bedrock contact at 395 feet above mean sea level.

MW-46-175 ——— Sampling Location
5.3 ——— Groundwater Cr(VI) Concentration (µg/L)

Notes:
1. ND = Cr(VI) not detected at analytical reporting limit.
2. µg/L = micrograms per liter
3. Cr(VI) = Hexavalent Chromium
4. TCS = Topock Compressor Station
5. ≥ = greater than or equal to
6. 32 µg/L is used as the background Cr(VI) concentration in groundwater for remedial activities.
7. Results plotted are maximum concentration from primary and duplicate samples.
8. The 32 µg/L boundary for Cr(VI) is estimated based on available groundwater analytical results from Fourth Quarter 2020 and the current quarter.
9. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map.

0 500 1,000
Feet

THIRD QUARTER 2021 INTERIM MEASURES
PERFORMANCE MONITORING AND SITE-WIDE
GROUNDWATER AND SURFACE WATER MONITORING REPORT

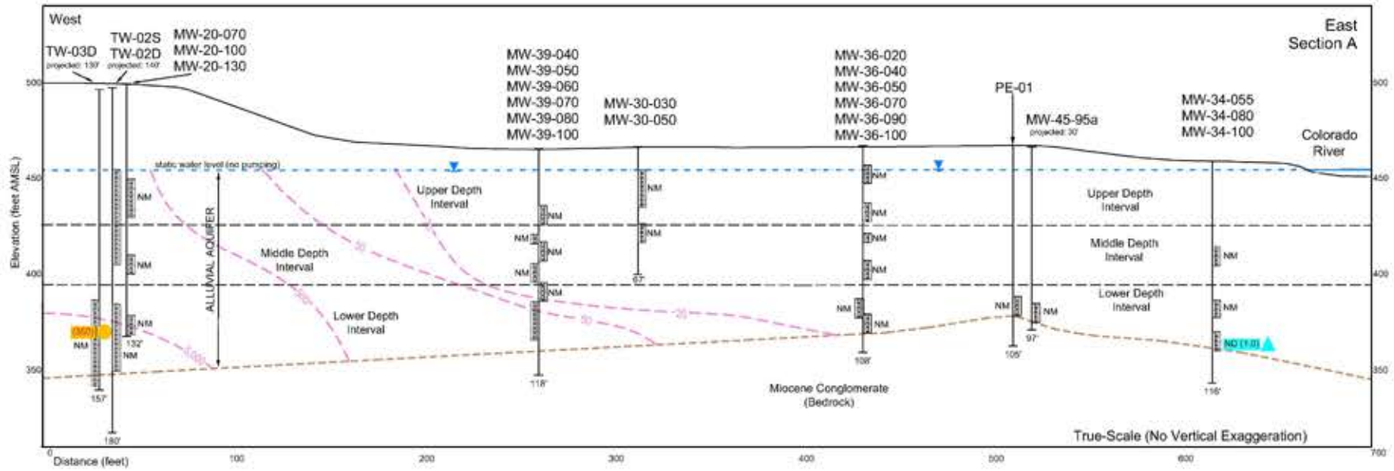
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

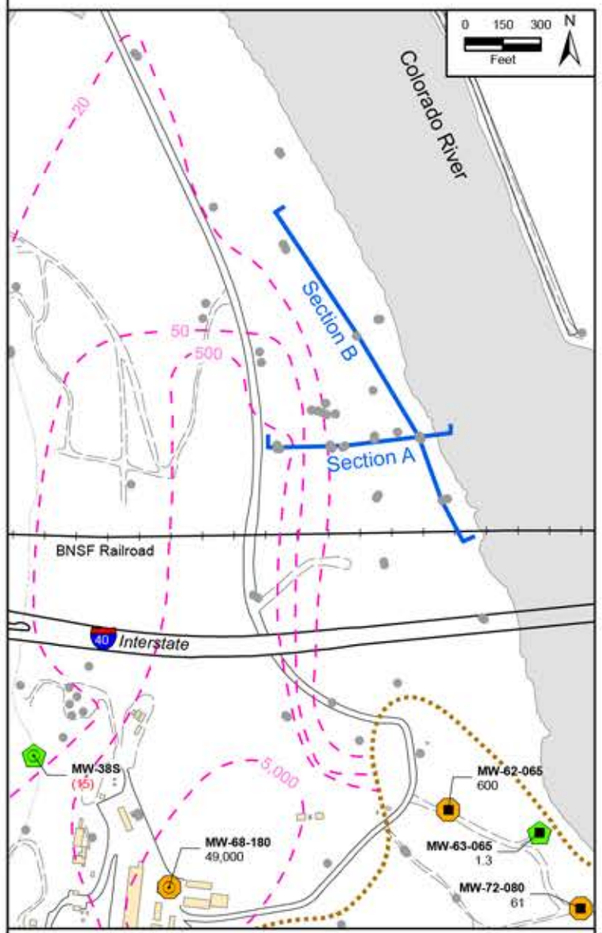
CHROMIUM-6 SAMPLING RESULTS, DEEP WELLS IN ALLUVIAL AQUIFER AND BEDROCK, THIRD QUARTER 2021

ARCADIS Design & Consultancy for natural and built assets

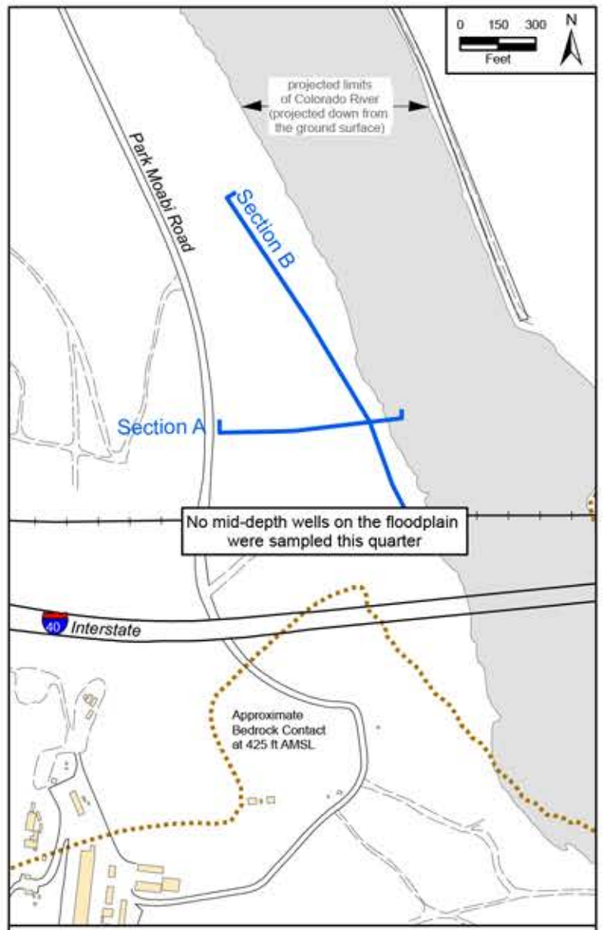
FIGURE
3-1b

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\3Q21\FINAL\FIGURE3-1B_CRVI_DEEP_2021Q3.MXD PSI01045 11/11/2021 9:30:52 AM

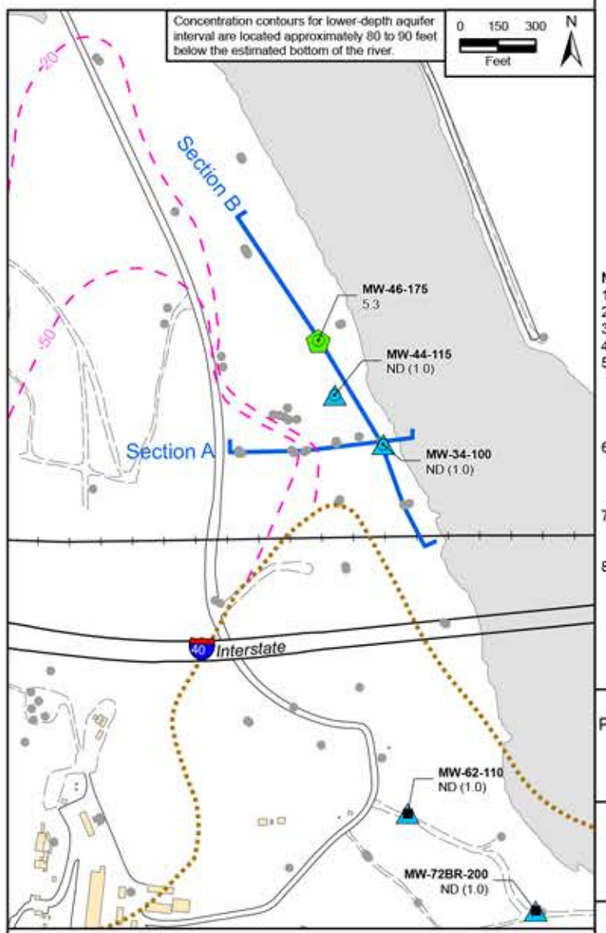




Shallow Wells (Upper Depth Interval)



Mid-Depth Wells (Middle Depth Interval)



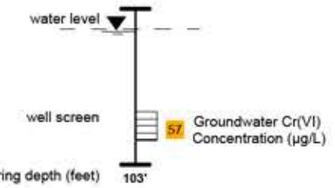
Deep Wells (Lower Depth Interval)

LEGEND

- Alluvial Aquifer well sampled during sampling event
- Bedrock well sampled during sampling event
- Extraction well sampled during sampling event
- Well not sampled during sampling event

Cr(VI) Concentrations

- Not detected at analytical reporting limit
- Concentration between reporting limit and 32 µg/L
- Concentration ≥ 32 µg/L
- Inferred Cr(VI) concentration contour within Alluvial Aquifer depth interval
- Approximate bedrock contact (per depth interval)
- Hydrogeologic Section



MW-63-065 — Sampling Location
1.3 — Groundwater Cr(VI) Concentration (µg/L)
(440) — Groundwater Cr(VI) Concentration (µg/L) not used for contouring

Notes:

1. ND = Cr(VI) not detected at analytical reporting limit.
2. µg/L = micrograms per liter
3. ≥ = greater than or equal to
4. Cr(VI) = Hexavalent Chromium
5. The Cr(VI) concentration contours of 20 and 50 µg/L are shown in accordance with Department of Toxic Substances Control's 2005 Interim Measure performance monitoring directive, which was established for containment of Cr(VI) concentrations greater than 20 µg/L in the floodplain portion of the Alluvial Aquifer.
6. The Cr(VI) contours are estimated based on available groundwater analytical results from Fourth Quarter 2020 and the current quarter. There are no data confirming the existence of Cr(VI) under the Colorado River.
7. Extraction wells PE-01, TW-02S, TW-02D, and TW-03D are not included in contouring. These wells draw water from a larger area and do not represent Cr(VI) concentrations at their specific locations.
8. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map.

THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT

PG&E TOPOCK COMPRESSOR STATION NEEDLES, CALIFORNIA

CHROMIUM-6 CONCENTRATIONS IN ALLUVIAL AQUIFER AND BEDROCK, THIRD QUARTER 2021

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4-1

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\3Q21\FINAL\FIGURE4-1_GMP_CR6_2021Q3_MAX.MXD 11/22/2021 5:42:01 PM

North

South
Section B

Cross-Section Parallel to the Colorado River

BNSF Railroad

MW-33-040
MW-33-090
MW-33-150
MW-33-210

MW-46-175
MW-46-205

MW-28-025
MW-28-090
projected: 110'

MW-44-070
MW-44-115
MW-44-125

MW-34-055
MW-34-080
MW-34-100

MW-27-020
MW-27-060
MW-27-085

Elevation (feet AMSL)

700
600
500
400
300
200
100
0

water table (average 455' AMSL)

Upper Depth Interval
Middle Depth Interval
Lower Depth Interval

ALLUVIAL AQUIFER

Oldest Alluvium

Fluvial Deposits

Approximate geologic contact between alluvial fan and fluvial deposits

NM
ND (1.0)
5.3

237'
216'
134'
116'
107'

Miocene Conglomerate
(Bedrock)

True-Scale (No Vertical Exaggeration)

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

Notes:
AMSL = above mean sea level.
µg/L = micrograms per liter.
ND = not detected at listed reporting limit.
≥ = greater than or equal to.
Cr(VI) = hexavalent chromium.

1. See Figure 4-1 for location of this cross-section.

Legend

water level

well screen

boring depth (feet) 103'

Groundwater Cr(VI) Concentration (µg/L)

— 20 — — Inferred hexavalent chromium contours (µg/L) in Alluvial Aquifer.

Approximate bedrock contact (per depth interval)

Cr(VI) Concentrations

Not detected at analytical reporting limit

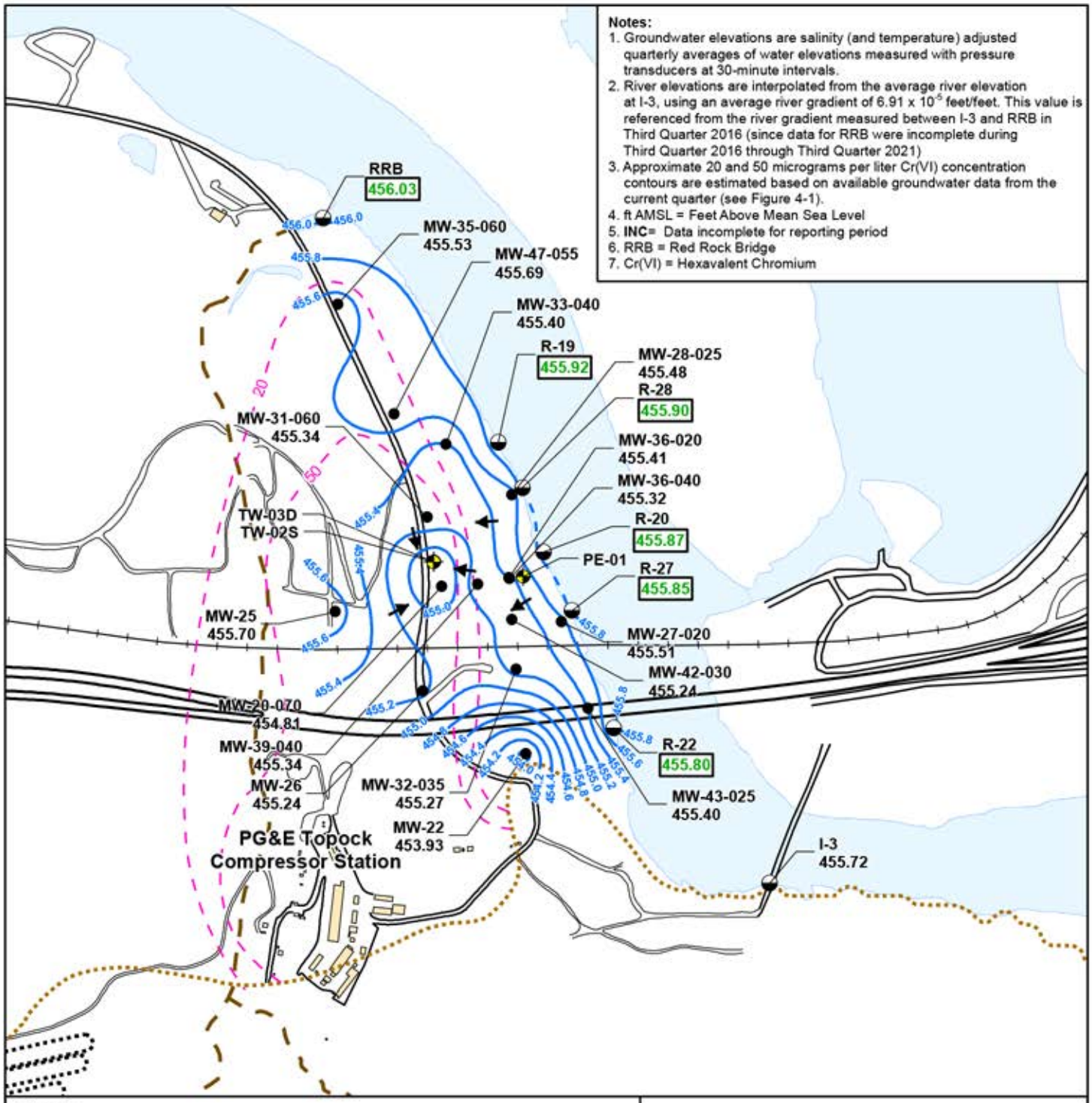
Concentration between reporting limit and 32 µg/L

THIRD QUARTER 2021 INTERIM-MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CHROMIUM-6 CONCENTRATIONS FLOODPLAIN CROSS-SECTION B, THIRD QUARTER 2021

ARCADIS Design & Consultancy for natural and built assets

FIGURE
4-2



THIRD QUARTER 2021 INTERIM MEASURES
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER
AND SURFACE WATER MONITORING REPORT

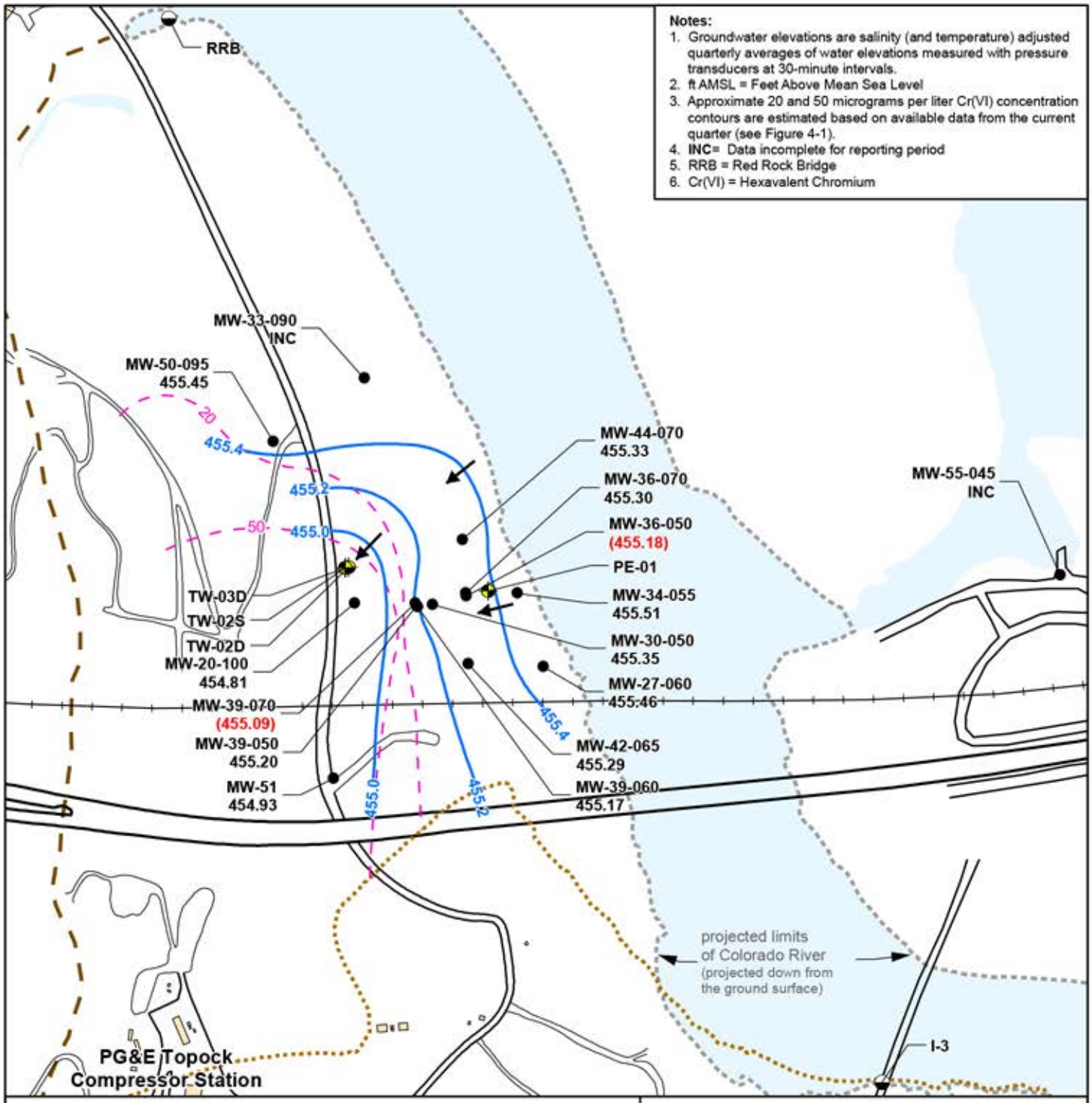
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

AVERAGE GROUNDWATER ELEVATIONS IN SHALLOW WELLS AND RIVER ELEVATIONS, THIRD QUARTER 2021

ARCADIS Design & Consultancy for natural and built assets

FIGURE
4-3a

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\3Q21\FINAL\FIGURE4-3A_GWE_SHALLOW_2021Q3.MXD 11/19/2021 8:50:28 AM



THIRD QUARTER 2021 INTERIM MEASURES
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER
AND SURFACE WATER MONITORING REPORT

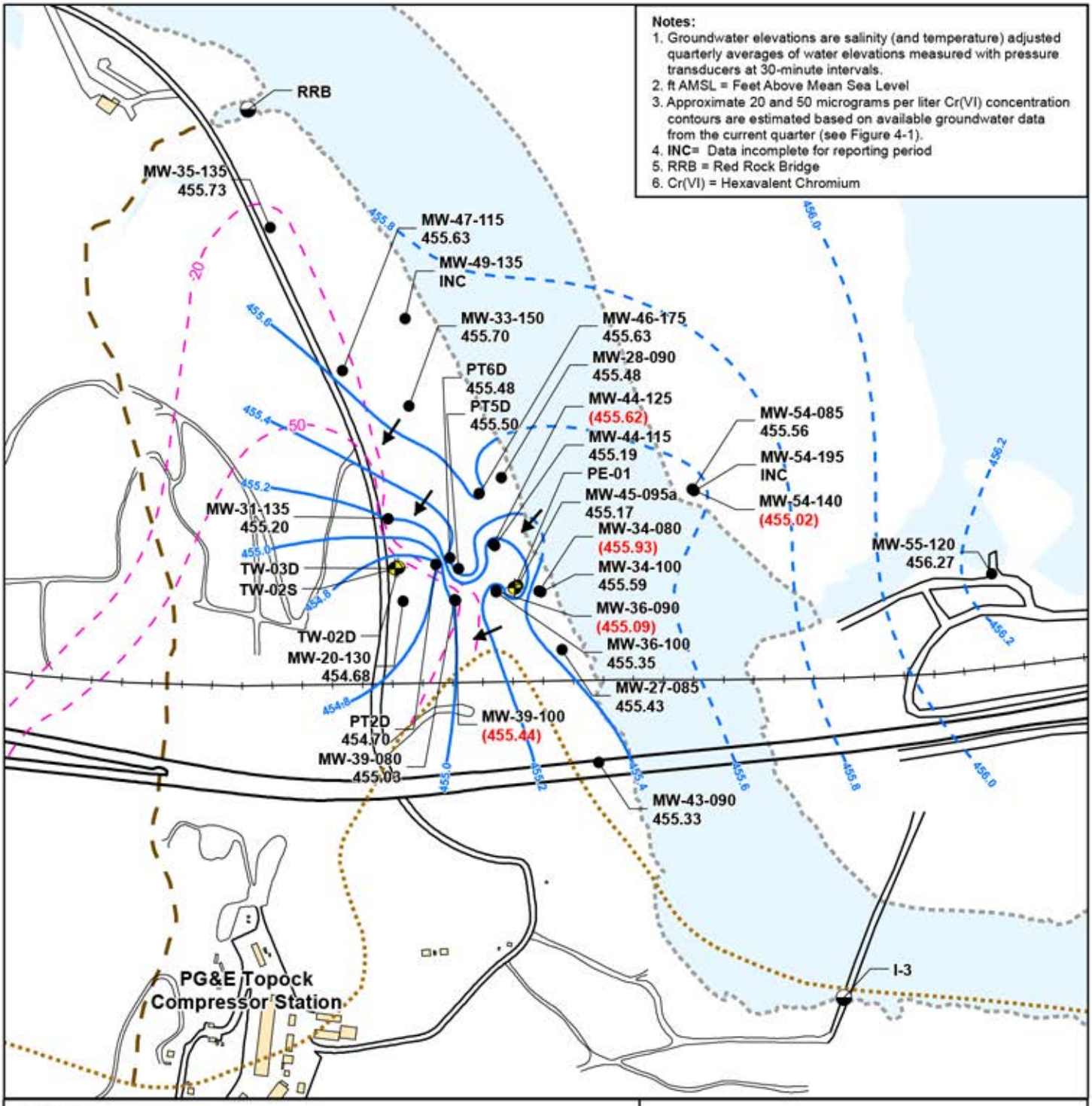
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

AVERAGE GROUNDWATER ELEVATIONS IN MID-DEPTH WELLS, THIRD QUARTER 2021

ARCADIS Design & Consultancy for natural and built assets

FIGURE
4-3b

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\3Q21\FINAL\FIGURE4-3B_GWE_MIDDEPTH_2021Q3.MXD 11/19/2021 10:31:38 AM



THIRD QUARTER 2021 INTERIM MEASURES
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER
AND SURFACE WATER MONITORING REPORT

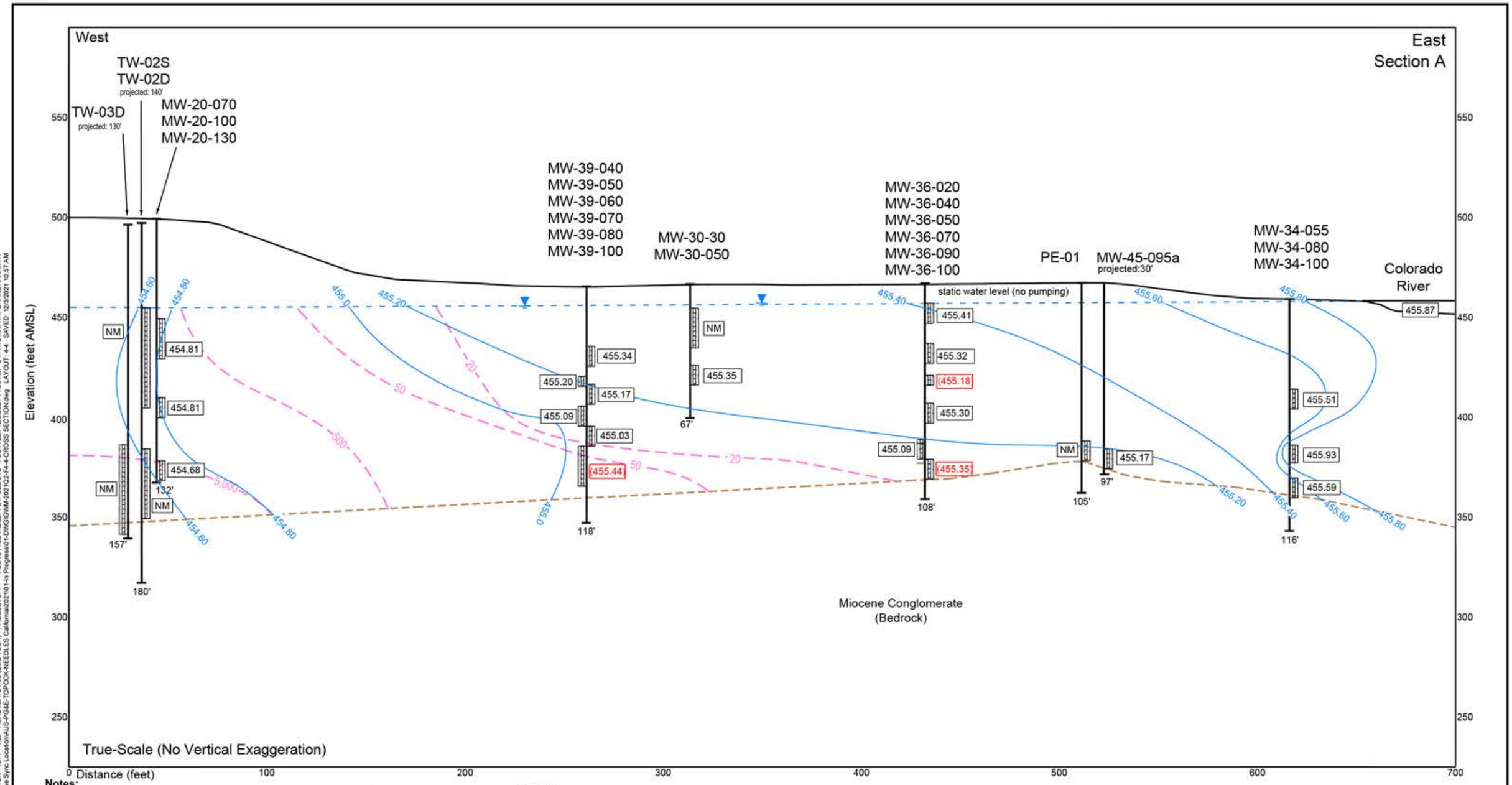
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

AVERAGE GROUNDWATER ELEVATIONS IN DEEP WELLS, THIRD QUARTER 2021

ARCADIS Design & Consultancy for natural and built assets

FIGURE
4-3c

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\3Q21\FINAL\FIGURE4-3C_GWE_DEEP_2021Q3.MXD 11/24/2021 11:13:38 AM



Notes:

1. Results show average groundwater elevations for July, August, September, and October 2021 measured with pressure transducers at 30-minute intervals.
2. Groundwater elevations are adjusted for salinity and temperature.
3. Colorado River elevation shown as interpolated Third Quarter 2021 average from R-20 river monitoring location.
4. The hexavalent chromium contour lines are from Figure 4-1.
5. Groundwater elevations shown in red parenthesis are not used for contouring.

AMSL = above mean sea level.
NM = well not measured or used in contouring.

Legend

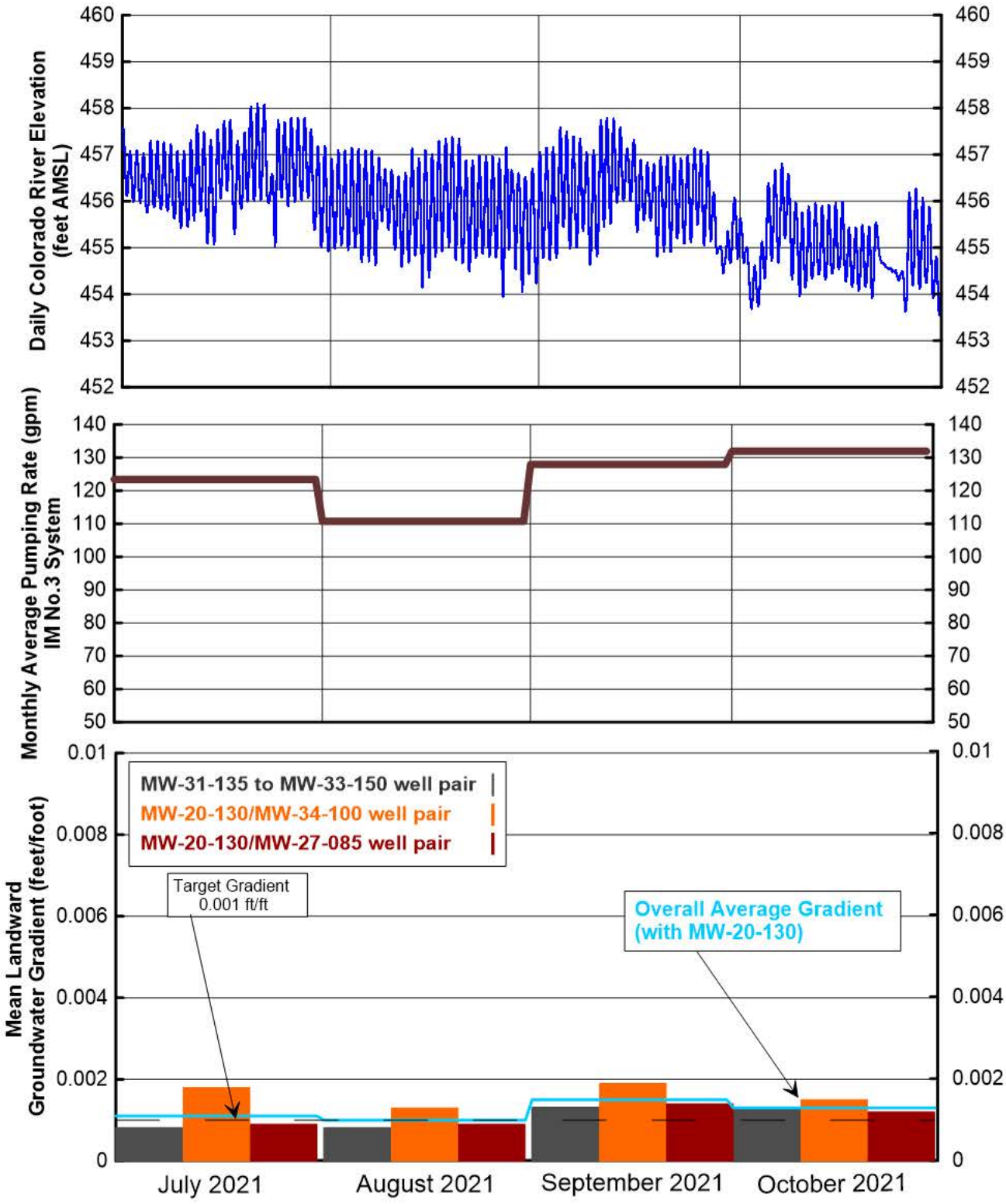
- Inferred water table
- well screen and associated average groundwater elevation (feet AMSL) — MW-030-050 / 455.93
- boring depth (feet) — 67'
- Inferred groundwater head contour
- Interpreted groundwater flow direction
- 20 — Inferred hexavalent chromium contour (ppb) in Alluvial Aquifer

THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

AVERAGE GROUNDWATER ELEVATIONS FOR WELLS IN FLOODPLAIN CROSS-SECTION A, THIRD QUARTER 2021

ARCADIS Design & Consultancy for natural and built assets

FIGURE
4-4



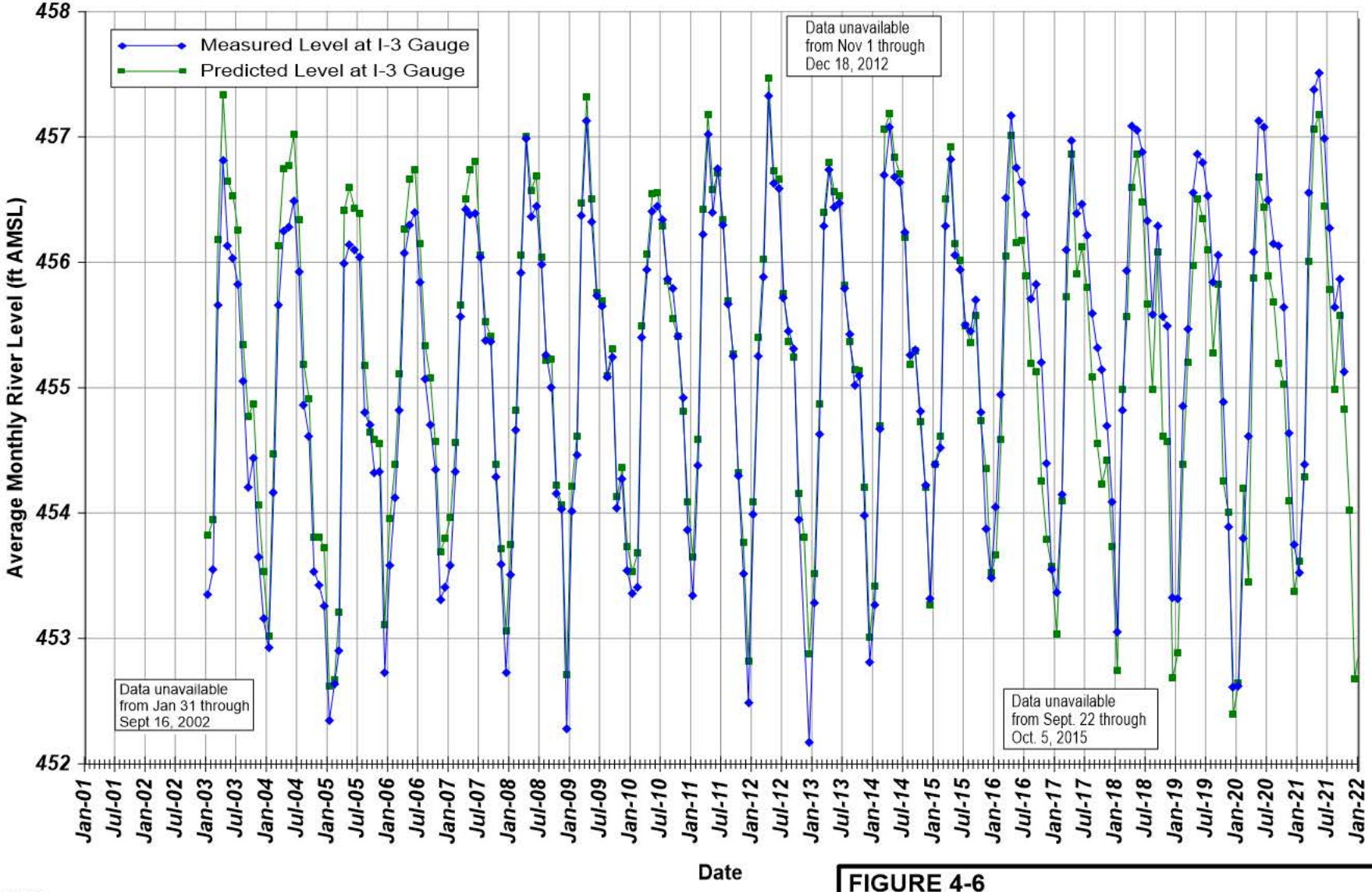
Notes:

1. For Interim Measure (IM) pumping, the target landward gradient for well pairs is 0.001 feet/foot.
2. Pumping rate plotted is the combined rate of extraction wells TW-03D and TW-02D and monitoring well TW-01 in operation each month.
3. Beginning August 2017, MW-20-130 approved for gradient compliance (instead of MW-45-095) at central and southern well pairs during months when PE-01 is not run for gradient control.
4. AMSL = above mean sea level.
5. gpm = gallons per minute

FIGURE 4-5
MEASURED HYDRAULIC GRADIENTS, RIVER ELEVATION, AND PUMPING RATE, THIRD QUARTER 2021

THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



Note:
Projected river level for each month in the past is calculated based on the preceding months United States Bureau of Reclamation (USBR) projections of Davis Dam release and stage in Lake Havasu. Future projections of river level at I-3 are based upon USBR projections presented in the October 24-Month Study (Report dated October 2021). These data are reported monthly by the US Department of Interior, at https://www.usbr.gov/uc/water/crsp/studies/24Month_10.pdf

ft AMSL = feet above mean sea level

FIGURE 4-6
PAST AND PREDICTED FUTURE RIVER LEVELS AT TOPOCK COMPRESSOR STATION
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

APPENDIX A

Lab Reports, Third Quarter 2021 (Provided on CD with Hard Copy Submittal)

For additional help with the information provided in the lab reports, please contact Alison Schaffer, Arcadis Report Lead, at 303.471.3575.

APPENDIX B

Historical Chromium-6 and Dissolved Chromium Concentrations, January 2020 through October 2021

Appendix B

Historical Cr(VI) and Dissolved Chromium Concentrations, January 2020 through October 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-09	SA	04/24/2020	N	LF	130	130
MW-09	SA	12/01/2020	N	LF	120	120
MW-09	SA	02/24/2021	N	LF	120	120
MW-09	SA	05/19/2021	N	LF	120	110
MW-10	SA	04/23/2020	N	LF	150	150
MW-10	SA	11/30/2020	N	LF	120	120
MW-10	SA	11/30/2020	FD	--	120	120
MW-10	SA	02/24/2021	N	LF	110	120
MW-10	SA	05/05/2021	N	LF	130	130 J
MW-10	SA	09/22/2021	N	--	120	140 J
MW-11	SA	04/23/2020	N	LF	43	43
MW-11	SA	12/10/2020	N	LF	33	33
MW-11	SA	05/19/2021	N	LF	38	37
MW-12	SA	04/28/2020	N	LF	2,700	2,800
MW-12	SA	12/14/2020	N	LF	1,600	1,900
MW-12	SA	12/14/2020	FD	--	1,600	1,900
MW-12	SA	02/17/2021	N	LF	1,400	1,600
MW-12	SA	05/26/2021	N	LF	1,300	1,200
MW-13	SA	12/14/2020	N	LF	23	24
MW-14	SA	06/24/2020	N	LF	12	12
MW-14	SA	06/24/2020	FD	--	12	12
MW-14	SA	12/10/2020	N	LF	13	13
MW-14	SA	05/28/2021	N	LF	17	16
MW-15	SA	12/10/2020	N	LF	15	14
MW-16	SA	12/10/2020	N	LF	10	10
MW-17	SA	12/10/2020	N	LF	10	12
MW-18	SA	12/10/2020	N	LF	19	20
MW-19	SA	04/27/2020	N	LF	32	40
MW-19	SA	12/07/2020	N	LF	94	92 J
MW-19	SA	05/28/2021	N	LF	500	500
MW-20-070	SA	04/24/2020	N	LF	2,500	2,500
MW-20-070	SA	12/04/2020	N	LF	1,600 J	1,700
MW-20-070	SA	05/28/2021	N	LF	1,700	1,700
MW-20-100	MA	04/24/2020	N	LF	750	760
MW-20-100	MA	12/04/2020	N	LF	610 J	660
MW-20-100	MA	05/28/2021	N	LF	680	690
MW-20-130	DA	04/24/2020	N	LF	5,900	6,100
MW-20-130	DA	12/04/2020	N	LF	4,000 J	4,400
MW-20-130	DA	12/04/2020	FD	--	4,100 J	4,500
MW-20-130	DA	05/28/2021	N	LF	4,100	4,000
MW-21	SA	04/30/2020	N	LF	5	5
MW-21	SA	12/15/2020	N	LF	ND (1.0)	ND (1.0)
MW-21	SA	06/08/2021	N	3V	ND (1.0)	2
MW-22	SA	06/16/2020	N	LF	ND (0.2)	ND (1.0)
MW-22	SA	12/08/2020	N	LF	ND (1.0)	ND (1.0)
MW-22	SA	12/08/2020	FD	--	ND (1.0)	ND (1.0)
MW-22	SA	04/27/2021	N	LF	ND (1.0)	ND (1.0)

Appendix B

Historical Cr(VI) and Dissolved Chromium Concentrations, January 2020 through October 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-23-060	BR	06/18/2020	N	LF	40	37
MW-23-060	BR	12/08/2020	N	LF	42	40
MW-23-060	BR	04/30/2021	N	LF	41	38
MW-23-080	BR	06/18/2020	N	LF	ND (1.0)	ND (1.0)
MW-23-080	BR	12/08/2020	N	LF	ND (1.0)	ND (1.0)
MW-23-080	BR	04/30/2021	N	LF	ND (1.0)	1
MW-24A	SA	05/01/2020	N	LF	ND (0.2)	3
MW-24A	SA	10/05/2020	N	LF	ND (0.2)	3
MW-24A	SA	12/01/2020	N	LF	ND (0.2)	ND (1.0)
MW-24A	SA	12/01/2020	FD	--	ND (0.2)	ND (1.0)
MW-24A	SA	05/05/2021	N	LF	ND (0.2)	ND (1.0 J)
MW-24B	DA	05/01/2020	N	LF	120	140
MW-24B	DA	10/05/2020	N	LF	ND (1.0)	57
MW-24B	DA	12/01/2020	N	LF	64	65
MW-24B	DA	05/05/2021	N	LF	48	45 J
MW-24BR	BR	12/02/2020	N	3V	ND (1.0)	ND (1.0)
MW-25	SA	06/24/2020	N	LF	56	55
MW-25	SA	06/24/2020	FD	--	57	56
MW-25	SA	12/07/2020	N	LF	68	65 J
MW-25	SA	05/25/2021	N	LF	55	56
MW-25	SA	05/25/2021	FD	--	55	56
MW-26	SA	04/27/2020	N	LF	2,300	2,300
MW-26	SA	12/03/2020	N	LF	2,200	2,200
MW-26	SA	12/03/2020	FD	--	2,200	2,500
MW-26	SA	05/20/2021	N	LF	2,200	2,300
MW-27-020	SA	12/03/2020	N	LF	ND (0.2)	ND (1.0)
MW-27-060	MA	12/03/2020	N	LF	ND (0.2)	ND (1.0)
MW-27-085	DA	06/18/2020	N	LF	ND (0.2)	ND (1.0)
MW-27-085	DA	12/03/2020	N	LF	ND (1.0)	ND (1.0)
MW-27-085	DA	04/27/2021	N	LF	ND (0.2)	ND (1.0)
MW-28-025	SA	06/23/2020	N	LF	ND (0.2)	ND (1.0)
MW-28-025	SA	12/15/2020	N	LF	ND (0.2)	ND (1.0)
MW-28-025	SA	04/29/2021	N	LF	ND (0.2)	ND (1.0)
MW-28-090	DA	06/23/2020	N	LF	ND (0.2)	ND (1.0)
MW-28-090	DA	12/15/2020	N	LF	ND (0.2)	ND (1.0)
MW-28-090	DA	04/29/2021	N	LF	ND (0.2)	ND (1.0)
MW-29	SA	06/23/2020	N	LF	ND (0.2)	ND (1.0)
MW-29	SA	12/04/2020	N	LF	ND (0.2)	ND (1.0)
MW-29	SA	04/29/2021	N	LF	ND (0.2)	ND (1.0)
MW-30-030	SA	12/07/2020	N	LF	ND (1.0)	ND (1.0 J)
MW-30-050	MA	12/07/2020	N	LF	ND (0.2)	ND (1.0 J)
MW-31-060	SA	06/24/2020	N	LF	320	280
MW-31-060	SA	12/07/2020	N	LF	410	400 J
MW-31-060	SA	04/30/2021	N	LF	150	150
MW-31-135	DA	12/07/2020	N	LF	15	13 J
MW-32-020	SA	12/07/2020	N	LF	ND (1.0)	ND (1.0 J)
MW-32-035	SA	06/18/2020	N	LF	ND (0.2)	ND (1.0)

Appendix B

Historical Cr(VI) and Dissolved Chromium Concentrations, January 2020 through October 2021

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Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-32-035	SA	12/07/2020	N	LF	ND (1.0)	ND (1.0 J)
MW-32-035	SA	12/07/2020	FD	--	ND (1.0)	ND (1.0 J)
MW-32-035	SA	04/27/2021	N	LF	ND (0.2)	1
MW-33-040	SA	06/17/2020	N	LF	ND (0.2)	ND (1.0)
MW-33-040	SA	12/02/2020	N	LF	ND (1.0)	2
MW-33-040	SA	04/29/2021	N	LF	ND (0.2)	ND (1.0)
MW-33-090	MA	06/17/2020	N	LF	3	6
MW-33-090	MA	12/02/2020	N	LF	3	11
MW-33-090	MA	04/29/2021	N	LF	3	4
MW-33-150	DA	06/17/2020	N	LF	5	11
MW-33-150	DA	12/02/2020	N	LF	5	9
MW-33-150	DA	04/29/2021	N	LF	7	8
MW-33-210	DA	06/17/2020	N	LF	7	15
MW-33-210	DA	12/02/2020	N	LF	12	15
MW-33-210	DA	04/29/2021	N	LF	8	9
MW-34-055	MA	12/03/2020	N	LF	ND (0.2)	ND (1.0)
MW-34-055	MA	12/03/2020	FD	--	ND (0.2)	ND (1.0)
MW-34-055	MA	06/30/2021	N	LF	ND (0.2)	--
MW-34-055	MA	07/12/2021	N	LF	ND (0.2)	--
MW-34-055	MA	07/26/2021	N	LF	ND (0.2)	--
MW-34-055	MA	08/10/2021	N	LF	ND (0.2)	--
MW-34-055	MA	08/26/2021	N	LF	ND (0.2)	--
MW-34-055	MA	09/08/2021	N	LF	ND (0.2)	--
MW-34-055	MA	09/22/2021	N	LF	ND (0.2)	--
MW-34-055	MA	10/06/2021	N	--	ND (0.2)	--
MW-34-055	MA	10/20/2021	N	LF	ND (0.2)	--
MW-34-080	DA	06/18/2020	N	LF	ND (0.2)	ND (1.0)
MW-34-080	DA	12/03/2020	N	LF	ND (0.2)	ND (1.0)
MW-34-080	DA	04/28/2021	N	LF	ND (0.2)	ND (1.0)
MW-34-080	DA	06/30/2021	N	--	ND (0.2)	--
MW-34-080	DA	06/30/2021	FD	--	ND (0.2)	--
MW-34-080	DA	07/12/2021	N	LF	ND (0.2)	--
MW-34-080	DA	07/26/2021	N	LF	ND (0.2)	--
MW-34-080	DA	08/10/2021	N	LF	ND (0.2)	--
MW-34-080	DA	08/26/2021	N	LF	ND (0.2)	--
MW-34-080	DA	09/08/2021	N	LF	ND (0.2)	--
MW-34-080	DA	09/22/2021	N	LF	ND (0.2)	--
MW-34-080	DA	10/06/2021	N	LF	ND (0.2)	--
MW-34-080	DA	10/20/2021	N	LF	ND (0.2)	--
MW-34-100	DA	02/20/2020	N	LF	ND (0.2)	4
MW-34-100	DA	06/18/2020	N	LF	ND (0.2)	ND (1.0)
MW-34-100	DA	10/01/2020	N	LF	ND (0.2)	ND (1.0)
MW-34-100	DA	12/03/2020	N	LF	ND (1.0)	ND (1.0)
MW-34-100	DA	12/03/2020	FD	--	ND (1.0)	ND (1.0)
MW-34-100	DA	02/25/2021	N	LF	ND (1.0)	2
MW-34-100	DA	04/28/2021	N	LF	ND (0.2)	ND (1.0)
MW-34-100	DA	06/30/2021	N	LF	ND (0.2)	--

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Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-34-100	DA	08/26/2021	N	LF	ND (1.0)	ND (1.0)
MW-35-060	SA	04/27/2020	N	LF	32	32
MW-35-060	SA	12/08/2020	N	LF	21	21
MW-35-060	SA	12/08/2020	FD	--	20	21
MW-35-060	SA	04/30/2021	N	LF	20	22
MW-35-135	DA	04/27/2020	N	LF	25	24
MW-35-135	DA	12/08/2020	N	LF	27	27
MW-35-135	DA	12/08/2020	FD	--	28	27
MW-35-135	DA	04/30/2021	N	LF	24	24
MW-36-020	SA	12/15/2020	N	LF	ND (0.2)	ND (1.0)
MW-36-020	SA	06/29/2021	N	LF	ND (0.2)	--
MW-36-020	SA	07/13/2021	N	LF	ND (0.2)	--
MW-36-020	SA	07/27/2021	N	LF	ND (0.2)	--
MW-36-020	SA	08/09/2021	N	LF	ND (0.2)	--
MW-36-020	SA	08/25/2021	N	LF	ND (0.2)	--
MW-36-020	SA	09/07/2021	N	LF	ND (0.2)	--
MW-36-020	SA	09/21/2021	N	LF	ND (0.2)	--
MW-36-020	SA	10/06/2021	N	LF	ND (0.2)	--
MW-36-020	SA	10/18/2021	N	LF	ND (0.2)	--
MW-36-040	SA	12/15/2020	N	LF	ND (0.2)	ND (1.0)
MW-36-040	SA	06/29/2021	N	LF	ND (0.2)	--
MW-36-040	SA	07/13/2021	N	LF	ND (0.2)	--
MW-36-040	SA	07/27/2021	N	LF	ND (0.2)	--
MW-36-040	SA	08/09/2021	N	LF	ND (0.2)	--
MW-36-040	SA	08/25/2021	N	LF	ND (0.2)	--
MW-36-040	SA	09/07/2021	N	LF	ND (0.2)	--
MW-36-040	SA	09/21/2021	N	LF	ND (0.2)	--
MW-36-040	SA	10/06/2021	N	--	ND (0.2)	--
MW-36-040	SA	10/18/2021	N	LF	ND (0.2)	--
MW-36-050	MA	12/15/2020	N	LF	ND (0.2)	ND (1.0)
MW-36-050	MA	06/29/2021	N	LF	ND (0.2)	--
MW-36-050	MA	07/13/2021	N	LF	ND (0.2)	--
MW-36-050	MA	07/27/2021	N	LF	ND (0.2)	--
MW-36-050	MA	08/09/2021	N	--	ND (0.2)	--
MW-36-050	MA	08/25/2021	N	LF	ND (0.2)	--
MW-36-050	MA	08/25/2021	FD	--	ND (0.2)	--
MW-36-050	MA	09/07/2021	N	LF	ND (0.2)	--
MW-36-050	MA	09/21/2021	N	LF	ND (0.2)	--
MW-36-050	MA	10/06/2021	N	LF	ND (0.2)	--
MW-36-050	MA	10/18/2021	N	LF	ND (0.2)	--
MW-36-070	MA	12/15/2020	N	LF	0	ND (1.0)
MW-36-070	MA	06/29/2021	N	LF	ND (0.2)	--
MW-36-070	MA	07/13/2021	N	LF	ND (0.2)	--
MW-36-070	MA	07/27/2021	N	LF	ND (0.2)	--
MW-36-070	MA	08/09/2021	N	LF	ND (0.2)	--
MW-36-070	MA	08/25/2021	N	--	ND (0.2)	--
MW-36-070	MA	09/07/2021	N	LF	ND (0.2)	--

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Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-36-070	MA	09/21/2021	N	LF	ND (0.2)	--
MW-36-070	MA	10/06/2021	N	--	ND (0.2)	--
MW-36-070	MA	10/18/2021	N	LF	ND (0.2)	--
MW-36-090	DA	06/16/2020	N	LF	ND (0.2)	ND (1.0)
MW-36-090	DA	12/15/2020	N	LF	ND (0.2)	2
MW-36-090	DA	04/28/2021	N	LF	ND (0.2)	ND (1.0)
MW-36-090	DA	06/29/2021	N	LF	ND (0.2)	--
MW-36-090	DA	07/13/2021	N	LF	ND (0.2)	--
MW-36-090	DA	07/27/2021	N	LF	ND (0.2)	--
MW-36-090	DA	08/09/2021	N	LF	ND (0.2)	--
MW-36-090	DA	08/25/2021	N	LF	ND (0.2)	--
MW-36-090	DA	09/07/2021	N	LF	ND (0.2)	--
MW-36-090	DA	09/21/2021	N	LF	ND (0.2)	--
MW-36-090	DA	10/06/2021	N	--	ND (0.2)	--
MW-36-090	DA	10/18/2021	N	LF	ND (0.2)	--
MW-36-100	DA	06/16/2020	N	LF	12	11
MW-36-100	DA	12/15/2020	N	LF	5	6
MW-36-100	DA	04/28/2021	N	LF	6	7
MW-36-100	DA	06/29/2021	N	LF	ND (0.2)	--
MW-36-100	DA	07/13/2021	N	LF	ND (0.2)	--
MW-36-100	DA	07/27/2021	N	LF	ND (0.2)	--
MW-36-100	DA	08/09/2021	N	LF	ND (0.2)	--
MW-36-100	DA	08/25/2021	N	LF	9	--
MW-36-100	DA	09/07/2021	N	LF	ND (0.2)	--
MW-36-100	DA	09/21/2021	N	LF	ND (0.2)	--
MW-36-100	DA	10/06/2021	N	LF	ND (0.2)	--
MW-36-100	DA	10/18/2021	N	LF	ND (0.2)	--
MW-37D	DA	06/24/2020	N	LF	5	7
MW-37D	DA	12/10/2020	N	LF	5	6
MW-37D	DA	06/07/2021	N	LF	5	5
MW-37S	MA	12/10/2020	N	LF	12	13
MW-38D	DA	04/23/2020	N	LF	19	16
MW-38D	DA	10/05/2020	N	LF	20	21
MW-38D	DA	12/14/2020	N	LF	17	19
MW-38D	DA	12/15/2020	N	--	19	18
MW-38D	DA	02/25/2021	N	LF	25	22
MW-38D	DA	05/05/2021	N	LF	23	22 J
MW-38D	DA	09/22/2021	N	LF	30	36 J
MW-38S	SA	02/25/2020	N	LF	4	3
MW-38S	SA	02/25/2020	FD	--	4	3
MW-38S	SA	04/23/2020	N	LF	4	4
MW-38S	SA	04/23/2020	FD	--	4	5
MW-38S	SA	11/30/2020	N	LF	7	8
MW-38S	SA	02/25/2021	N	LF	8	9
MW-38S	SA	05/05/2021	N	LF	11	11 J
MW-38S	SA	08/27/2021	N	LF	15	17
MW-38S-SMT	SA	09/30/2020	N	LF	5	5

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Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-39-040	SA	12/11/2020	N	LF	ND (0.2)	ND (1.0)
MW-39-050	MA	12/11/2020	N	LF	ND (0.2)	ND (1.0)
MW-39-060	MA	12/11/2020	N	LF	ND (0.2)	ND (1.0)
MW-39-070	MA	12/11/2020	N	LF	ND (0.2)	ND (1.0)
MW-39-080	DA	12/11/2020	N	LF	0	1
MW-39-100	DA	06/18/2020	N	LF	93	91
MW-39-100	DA	12/15/2020	N	LF	120	110
MW-39-100	DA	04/28/2021	N	LF	92	91
MW-40D	DA	06/17/2020	N	LF	12	11
MW-40D	DA	12/10/2020	N	LF	31	29
MW-40D	DA	05/19/2021	N	LF	110	98
MW-40S	SA	06/17/2020	N	H	18	28
MW-40S	SA	12/10/2020	N	H	6	29
MW-40S	SA	05/19/2021	N	G	13	13
MW-41D	DA	06/24/2020	N	LF	ND (1.0)	ND (1.0)
MW-41D	DA	06/24/2020	FD	--	ND (1.0)	ND (1.0)
MW-41D	DA	12/17/2020	N	LF	1	1
MW-41D	DA	06/07/2021	N	LF	ND (1.0)	ND (1.0)
MW-41D	DA	06/07/2021	FD	--	ND (1.0)	ND (1.0)
MW-41M	DA	12/17/2020	N	LF	10	8
MW-41S	SA	12/17/2020	N	LF	6	5
MW-42-030	SA	12/16/2020	N	LF	ND (0.2)	ND (1.0)
MW-42-055	MA	06/18/2020	N	LF	ND (0.2)	ND (1.0)
MW-42-055	MA	12/16/2020	N	LF	ND (0.2)	ND (1.0)
MW-42-055	MA	04/27/2021	N	LF	ND (0.2)	ND (1.0)
MW-42-065	MA	06/18/2020	N	LF	ND (0.2)	ND (1.0)
MW-42-065	MA	12/16/2020	N	LF	ND (0.2)	ND (1.0)
MW-42-065	MA	04/27/2021	N	LF	ND (0.2)	ND (1.0)
MW-43-025	SA	12/08/2020	N	LF	ND (0.2)	ND (1.0)
MW-43-075	DA	12/08/2020	N	LF	ND (0.2)	ND (1.0)
MW-43-090	DA	12/08/2020	N	LF	ND (1.0)	ND (1.0)
MW-44-070	MA	06/23/2020	N	LF	ND (0.2)	ND (1.0)
MW-44-070	MA	12/11/2020	N	LF	ND (0.2)	ND (1.0)
MW-44-070	MA	04/28/2021	N	LF	ND (0.2)	ND (1.0)
MW-44-070	MA	06/29/2021	N	LF	ND (0.2)	--
MW-44-070	MA	07/12/2021	N	--	ND (0.2)	--
MW-44-070	MA	07/27/2021	N	LF	ND (0.2)	--
MW-44-070	MA	08/10/2021	N	LF	ND (0.2)	--
MW-44-070	MA	08/10/2021	FD	--	ND (0.2)	--
MW-44-070	MA	08/26/2021	N	LF	ND (0.2)	--
MW-44-070	MA	09/08/2021	N	LF	ND (0.2)	--
MW-44-070	MA	09/23/2021	N	LF	ND (0.2)	--
MW-44-070	MA	10/06/2021	N	LF	ND (0.2)	--
MW-44-070	MA	10/20/2021	N	LF	ND (0.2)	--
MW-44-115	DA	02/21/2020	N	LF	5	6
MW-44-115	DA	06/23/2020	N	LF	4	4
MW-44-115	DA	10/01/2020	N	LF	3	4

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Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-44-115	DA	10/01/2020	FD	--	3	4
MW-44-115	DA	12/11/2020	N	LF	3	4
MW-44-115	DA	02/26/2021	N	LF	3	5
MW-44-115	DA	04/28/2021	N	LF	2	2
MW-44-115	DA	06/29/2021	N	LF	ND (1.0)	--
MW-44-115	DA	08/26/2021	N	LF	ND (1.0)	ND (1.0)
MW-44-125	DA	06/23/2020	N	LF	ND (0.2)	1
MW-44-125	DA	12/11/2020	N	LF	ND (0.2)	ND (1.0)
MW-44-125	DA	04/28/2021	N	LF	ND (0.2)	ND (1.0)
MW-44-125	DA	06/29/2021	N	LF	ND (0.2)	--
MW-44-125	DA	07/12/2021	N	--	ND (0.2)	--
MW-44-125	DA	07/27/2021	N	LF	ND (0.2)	--
MW-44-125	DA	08/10/2021	N	LF	ND (0.2)	--
MW-44-125	DA	08/26/2021	N	LF	ND (0.2)	--
MW-44-125	DA	09/08/2021	N	LF	ND (0.2)	--
MW-44-125	DA	09/23/2021	N	LF	ND (0.2)	--
MW-44-125	DA	10/06/2021	N	LF	ND (0.2)	--
MW-44-125	DA	10/20/2021	N	LF	ND (0.2)	--
MW-46-175	DA	02/21/2020	N	LF	9	17
MW-46-175	DA	06/23/2020	N	LF	5	23
MW-46-175	DA	10/01/2020	N	LF	5	6
MW-46-175	DA	12/15/2020	N	LF	8	9
MW-46-175	DA	02/25/2021	N	LF	5	8
MW-46-175	DA	04/29/2021	N	LF	7	7
MW-46-175	DA	06/30/2021	N	--	7	--
MW-46-175	DA	08/26/2021	N	LF	5.3	7.2
MW-46-205	DA	06/23/2020	N	LF	1	2
MW-46-205	DA	12/15/2020	N	LF	ND (1.0)	4
MW-46-205	DA	04/29/2021	N	LF	2	2
MW-47-055	SA	06/25/2020	N	LF	16	16
MW-47-055	SA	11/30/2020	N	LF	17	17
MW-47-055	SA	04/28/2021	N	LF	14	15
MW-47-115	DA	06/25/2020	N	LF	24	24
MW-47-115	DA	11/30/2020	N	LF	18	18
MW-47-115	DA	04/28/2021	N	LF	24	23
MW-48	BR	05/01/2020	N	3V	ND (1.0)	ND (1.0)
MW-48	BR	12/16/2020	N	G	ND (1.0)	ND (1.0)
MW-48	BR	05/28/2021	N	3V	ND (1.0)	ND (1.0)
MW-49-135	DA	12/04/2020	N	LF	8.6 J	11
MW-49-275	DA	12/04/2020	N	LF	ND (1.0)	ND (1.0)
MW-49-365	DA	12/04/2020	N	LF	ND (1.0)	ND (1.0)
MW-50-095	MA	06/24/2020	N	LF	13	14
MW-50-095	MA	12/07/2020	N	LF	13	14 J
MW-50-095	MA	05/26/2021	N	LF	13	13
MW-50-200	DA	06/24/2020	N	LF	3,600	3,500
MW-50-200	DA	12/07/2020	N	LF	2,300	2,100 J
MW-50-200	DA	12/07/2020	FD	--	2300	2,100 J

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Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-50-200	DA	05/26/2021	N	LF	3,300	3,400
MW-51	MA	04/27/2020	N	LF	3,200	3,200
MW-51	MA	04/27/2020	FD	--	3,300	3,200
MW-51	MA	12/03/2020	N	LF	3,300	3,500
MW-51	MA	12/03/2020	FD	--	3,300	3,700
MW-51	MA	05/20/2021	N	LF	2,600	2,600
MW-52D	DA	06/16/2020	N	LF	ND (1.0)	ND (1.0)
MW-52D	DA	12/08/2020	N	LF	ND (1.0)	ND (1.0)
MW-52D	DA	04/27/2021	N	LF	ND (1.0)	ND (1.0)
MW-52M	DA	06/16/2020	N	LF	ND (1.0)	ND (1.0)
MW-52M	DA	12/08/2020	N	LF	ND (1.0)	ND (1.0)
MW-52M	DA	04/27/2021	N	LF	ND (1.0)	ND (1.0)
MW-52S	MA	06/16/2020	N	LF	ND (0.2)	ND (1.0)
MW-52S	MA	12/08/2020	N	LF	ND (1.0)	ND (1.0)
MW-52S	MA	04/27/2021	N	LF	ND (0.2)	ND (1.0)
MW-53D	DA	06/16/2020	N	LF	ND (1.0)	ND (1.0)
MW-53D	DA	12/08/2020	N	LF	ND (1.0)	ND (1.0)
MW-53D	DA	04/27/2021	N	LF	ND (1.0)	ND (1.0)
MW-53M	DA	06/16/2020	N	LF	ND (1.0)	ND (1.0)
MW-53M	DA	12/08/2020	N	LF	ND (1.0)	ND (1.0)
MW-53M	DA	04/27/2021	N	LF	ND (1.0)	ND (1.0)
MW-54-085	DA	06/19/2020	N	LF	ND (0.1)	ND (0.2)
MW-54-085	DA	12/09/2020	N	LF	ND (0.05)	ND (2.5)
MW-54-085	DA	06/08/2021	N	LF	ND (0.25)	ND (3.0)
MW-54-140	DA	06/19/2020	N	LF	ND (0.5)	ND (0.2)
MW-54-140	DA	12/09/2020	N	LF	ND (0.25)	ND (2.5)
MW-54-140	DA	06/08/2021	N	LF	ND (0.25)	ND (3.0)
MW-54-195	DA	06/19/2020	N	LF	ND (0.5)	ND (0.2)
MW-54-195	DA	12/09/2020	N	LF	ND (0.25)	ND (2.5)
MW-54-195	DA	06/08/2021	N	LF	ND (0.25)	ND (3.0)
MW-55-045	MA	06/19/2020	N	LF	ND (0.1)	ND (0.2)
MW-55-045	MA	12/09/2020	N	LF	ND (0.05)	ND (2.5)
MW-55-045	MA	06/09/2021	N	LF	ND (0.05)	ND (0.3)
MW-55-120	DA	06/19/2020	N	LF	8	9
MW-55-120	DA	06/19/2020	FD	--	8	9
MW-55-120	DA	12/09/2020	N	LF	8	ND (2.5)
MW-55-120	DA	06/09/2021	N	LF	7	ND (3.0)
MW-56D	DA	06/19/2020	N	LF	ND (0.5)	ND (0.2)
MW-56D	DA	12/09/2020	N	LF	ND (0.25)	ND (2.5)
MW-56D	DA	06/09/2021	N	LF	ND (0.25)	ND (3.0)
MW-56M	DA	06/19/2020	N	LF	ND (0.5)	ND (0.2)
MW-56M	DA	12/09/2020	N	LF	ND (0.25)	ND (2.5)
MW-56M	DA	12/09/2020	FD	--	ND (0.25)	ND (2.5)
MW-56M	DA	06/09/2021	N	LF	ND (0.25)	ND (3.0)
MW-56M	DA	06/09/2021	FD	--	ND (0.25)	ND (3.0)
MW-56S	SA	06/19/2020	N	LF	ND (0.1)	ND (0.2)
MW-56S	SA	12/09/2020	N	LF	ND (0.05)	ND (2.5)

Appendix B

Historical Cr(VI) and Dissolved Chromium Concentrations, January 2020 through October 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-56S	SA	06/09/2021	N	LF	ND (0.05)	ND (3.0)
MW-57-070	BR	06/22/2020	N	LF	610	530
MW-57-070	BR	12/04/2020	N	LF	630 J	660
MW-57-070	BR	04/30/2021	N	LF	490	540
MW-57-185	BR	06/22/2020	N	LF	1	2
MW-57-185	BR	06/22/2020	FD	--	1	2
MW-57-185	BR	12/04/2020	N	LF	4.4 J	5
MW-57-185	BR	04/30/2021	N	LF	4	4
MW-58BR	BR	02/17/2020	N	LF	120	120
MW-58BR	BR	05/01/2020	N	LF	43	41
MW-58BR	BR	09/29/2020	N	LF	4	5
MW-58BR	BR	11/30/2020	N	LF	5	6
MW-58BR	BR	02/15/2021	N	LF	4	5
MW-58BR	BR	05/17/2021	N	LF	3	3
MW-58BR	BR	05/17/2021	FD	--	2	2
MW-58BR	BR	08/26/2021	N	LF	16	17
MW-59-100	SA	06/22/2020	N	LF	2,100	2,200
MW-59-100	SA	12/08/2020	N	LF	2,700	2,900
MW-59-100	SA	12/08/2020	FD	--	2,700	2,800
MW-59-100	SA	02/17/2021	N	LF	2,500	2,800
MW-59-100	SA	06/07/2021	N	LF	1,800	1,900
MW-60-125	BR	06/24/2020	N	LF	660	630
MW-60-125	BR	10/01/2020	N	LF	580	570
MW-60-125	BR	05/27/2021	N	LF	390	390
MW-60BR-245	BR	02/20/2020	N	3V	52	44
MW-60BR-245	BR	09/30/2020	N	LF	21	22
MW-60BR-245	BR	12/17/2020	N	LF	16	15
MW-60BR-245	BR	02/18/2021	N	LF	22	23 J
MW-60BR-245	BR	05/27/2021	N	LF	9	9
MW-60BR-245	BR	08/26/2021	N	LF	6	6
MW-60BR-245_D	BR	02/21/2020	N	LF	72	62
MW-60BR-245_S	BR	02/21/2020	N	LF	96	85
MW-60BR-245_S	BR	06/24/2020	N	LF	44	42
MW-61-110	BR	12/04/2020	N	LF	430 J	440
MW-61-110	BR	05/27/2021	N	LF	160	150
MW-62-065	BR	02/19/2020	N	LF	480	460
MW-62-065	BR	04/28/2020	N	LF	580	550
MW-62-065	BR	09/30/2020	N	LF	590	610
MW-62-065	BR	12/04/2020	N	LF	620	570
MW-62-065	BR	02/18/2021	N	LF	530	580 J
MW-62-065	BR	05/27/2021	N	LF	670	640
MW-62-065	BR	08/27/2021	N	LF	590	660
MW-62-065	BR	08/27/2021	FD	--	600	610
MW-62-110	BR	02/18/2020	N	LF	ND (0.2)	ND (1.0)
MW-62-110	BR	04/29/2020	N	Tap	ND (1.0)	ND (1.0)
MW-62-110	BR	09/30/2020	N	LF	ND (1.0)	ND (1.0)
MW-62-110	BR	12/02/2020	N	--	ND (0.2)	ND (1.0)

Appendix B

Historical Cr(VI) and Dissolved Chromium Concentrations, January 2020 through October 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-62-110	BR	02/16/2021	N	3V	ND (0.2)	ND (1.0)
MW-62-110	BR	06/08/2021	N	3V	ND (1.0)	ND (1.0)
MW-62-110	BR	08/27/2021	N	EP	ND (1.0)	ND (1.0)
MW-62-190	BR	04/29/2020	N	Tap	ND (1.0)	ND (1.0)
MW-62-190	BR	04/29/2020	FD	--	ND (1.0)	ND (1.0)
MW-62-190	BR	12/02/2020	N	--	ND (1.0)	ND (1.0)
MW-62-190	BR	06/08/2021	N	3V	ND (1.0)	ND (1.0)
MW-63-065	BR	02/19/2020	N	LF	1	3
MW-63-065	BR	02/19/2020	FD	--	1	3
MW-63-065	BR	06/24/2020	N	LF	1	3
MW-63-065	BR	09/30/2020	N	LF	1	2
MW-63-065	BR	12/07/2020	N	LF	2	2.7 J
MW-63-065	BR	02/18/2021	N	LF	1	3.1 J
MW-63-065	BR	05/27/2021	N	LF	1	3
MW-63-065	BR	08/26/2021	N	LF	1	2
MW-64BR	BR	02/21/2020	N	LF	ND (1.0)	ND (1.0)
MW-64BR	BR	05/01/2020	N	LF	ND (0.2)	2
MW-64BR	BR	09/30/2020	N	LF	ND (1.0)	ND (1.0)
MW-64BR	BR	11/30/2020	N	LF	ND (1.0)	ND (1.0)
MW-64BR	BR	02/18/2021	N	LF	ND (1.0)	ND (1.0 J)
MW-64BR	BR	05/27/2021	N	LF	ND (1.0)	ND (1.0)
MW-64BR	BR	08/26/2021	N	LF	ND (1.0)	ND (1.0)
MW-65-160	SA	02/20/2020	N	LF	250	250
MW-65-160	SA	04/29/2020	N	LF	190	210
MW-65-160	SA	09/29/2020	N	LF	240	240
MW-65-160	SA	12/03/2020	N	LF	210	240
MW-65-160	SA	02/16/2021	N	LF	240	250 J
MW-65-160	SA	05/27/2021	N	LF	270	260
MW-65-160	SA	08/25/2021	N	LF	290	310
MW-65-225	DA	02/20/2020	N	LF	460	470
MW-65-225	DA	04/29/2020	N	LF	280	260
MW-65-225	DA	09/29/2020	N	LF	260	250
MW-65-225	DA	12/03/2020	N	LF	360	350
MW-65-225	DA	02/16/2021	N	LF	330	340 J
MW-65-225	DA	05/27/2021	N	LF	460	430
MW-65-225	DA	08/25/2021	N	LF	200	210
MW-66-165	SA	04/29/2020	N	LF	530	520
MW-66-165	SA	12/03/2020	N	LF	400	390
MW-66-165	SA	12/03/2020	FD	--	410	420
MW-66-165	SA	02/16/2021	N	LF	400	400 J
MW-66-165	SA	05/05/2021	N	LF	520	500 J
MW-66-165	SA	09/24/2021	N	LF	360	410
MW-66-230	DA	04/29/2020	N	LF	6,700	6,300
MW-66-230	DA	04/29/2020	FD	--	6,600	6,600
MW-66-230	DA	12/03/2020	N	LF	6,500	6,400
MW-66-230	DA	12/03/2020	FD	--	6,300	6,500
MW-66-230	DA	02/16/2021	N	LF	6,000	6,500 J

Appendix B

Historical Cr(VI) and Dissolved Chromium Concentrations, January 2020 through October 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-66-230	DA	05/05/2021	N	LF	6,000	6,200 J
MW-66-230	DA	09/24/2021	N	--	4,800	5,400
MW-66BR-270	BR	06/24/2020	N	3V	ND (1.0)	ND (1.0)
MW-66BR-270	BR	12/16/2020	N	3V	ND (1.0)	1
MW-66BR-270	BR	12/16/2020	FD	--	ND (1.0)	ND (1.0)
MW-66BR-270	BR	02/26/2021	N	3V	ND (1.0)	ND (1.0)
MW-66BR-270	BR	05/05/2021	N	--	ND (1.0)	ND (1.0 J)
MW-66BR-270	BR	10/08/2021	N	--	ND (1.0)	ND (1.0)
MW-67-185	SA	04/30/2020	N	LF	2,000	2,000
MW-67-185	SA	10/06/2020	N	LF	2,000	2,000
MW-67-185	SA	12/02/2020	N	LF	2,900	3,000
MW-67-185	SA	02/16/2021	N	LF	640	690 J
MW-67-185	SA	05/04/2021	N	LF	2,000	2,000
MW-67-185	SA	05/04/2021	FD	--	2,000	1,900
MW-67-185	SA	09/23/2021	N	LF	ND (100)	ND (5.0 J)
MW-67-225	MA	04/30/2020	N	LF	3,000	3,200
MW-67-225	MA	12/02/2020	N	LF	3,800	4,000
MW-67-225	MA	02/16/2021	N	LF	4,100	3,500 J
MW-67-225	MA	05/04/2021	N	LF	3,400	3,400
MW-67-225	MA	09/24/2021	N	--	2,100	2,400
MW-67-260	DA	04/30/2020	N	LF	1,100	1,100
MW-67-260	DA	12/02/2020	N	LF	250	250
MW-67-260	DA	02/19/2021	N	--	350	380
MW-67-260	DA	05/04/2021	N	LF	920	940
MW-67-260	DA	09/24/2021	N	--	770	840
MW-68-180	SA	02/20/2020	N	LF	25,000	27,000
MW-68-180	SA	04/30/2020	N	LF	41,000	43,000
MW-68-180	SA	09/29/2020	N	LF	54,000	51,000
MW-68-180	SA	12/16/2020	N	LF	61,000	66,000
MW-68-180	SA	12/16/2020	FD	--	61,000	63,000
MW-68-180	SA	02/19/2021	N	LF	63,000	66,000
MW-68-180	SA	05/04/2021	N	LF	37,000	37,000
MW-68-180	SA	06/28/2021	N	LF	62,000	--
MW-68-180	SA	09/09/2021	N	LF	49,000	60,000
MW-68-240	DA	04/30/2020	N	LF	2,000	2,000
MW-68-240	DA	12/16/2020	N	LF	2,000	2,000
MW-68-240	DA	12/16/2020	FD	--	2,000	1,900
MW-68-240	DA	02/19/2021	N	LF	1,900	2,000
MW-68-240	DA	02/19/2021	FD	--	1,900	2,000
MW-68-240	DA	05/04/2021	N	LF	2,000	2,000
MW-68-240	DA	09/23/2021	N	LF	1,800	2,000 J
MW-68BR-280	BR	04/30/2020	N	3V	ND (1.0)	ND (1.0)
MW-68BR-280	BR	12/16/2020	N	LF	ND (1.0)	ND (1.0)
MW-68BR-280	BR	12/16/2020	FD	--	ND (1.0)	1
MW-68BR-280	BR	02/19/2021	N	LF	ND (1.0)	ND (1.0)
MW-68BR-280	BR	05/04/2021	N	3V	ND (1.0)	1
MW-68BR-280	BR	09/23/2021	N	LF	ND (1.0)	ND (1.0 J)

Appendix B

Historical Cr(VI) and Dissolved Chromium Concentrations, January 2020 through October 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-69-195	BR	02/25/2020	N	LF	150	140
MW-69-195	BR	05/01/2020	N	LF	170	170
MW-69-195	BR	05/01/2020	FD	--	180	170
MW-69-195	BR	09/29/2020	N	LF	350	380
MW-69-195	BR	12/03/2020	N	LF	6	9
MW-69-195	BR	02/15/2021	N	LF	29	59
MW-69-195	BR	02/15/2021	FD	--	27	59
MW-69-195	BR	05/27/2021	N	LF	610	650
MW-69-195	BR	05/27/2021	FD	--	610	630
MW-69-195	BR	08/26/2021	N	LF	480	460
MW-70-105	BR	11/30/2020	N	LF	150	150
MW-70-105	BR	02/15/2021	N	LF	140	150
MW-70-105	BR	05/17/2021	N	LF	150	140
MW-70BR-225	BR	11/30/2020	N	LF	1,300	1,300
MW-70BR-225	BR	05/17/2021	N	LF	1,200	1,200
MW-71-035	SA	05/01/2020	N	LF	ND (1.0)	ND (1.0)
MW-71-035	SA	12/15/2020	N	G	ND (1.0)	ND (1.0)
MW-71-035	SA	05/26/2021	N	LF	ND (1.0)	ND (1.0)
MW-72-080	BR	02/20/2020	N	LF	96	85
MW-72-080	BR	04/28/2020	N	LF	100	95
MW-72-080	BR	09/29/2020	N	LF	79	75
MW-72-080	BR	12/03/2020	N	LF	86	78
MW-72-080	BR	02/18/2021	N	LF	70	72 J
MW-72-080	BR	05/27/2021	N	LF	66	62
MW-72-080	BR	08/27/2021	N	LF	61	58
MW-72BR-200	BR	02/20/2020	N	LF	1	3
MW-72BR-200	BR	04/28/2020	N	LF	ND (1.0)	2
MW-72BR-200	BR	09/29/2020	N	LF	ND (1.0)	2
MW-72BR-200	BR	12/03/2020	N	LF	ND (1.0)	ND (1.0)
MW-72BR-200	BR	02/18/2021	N	LF	ND (1.0)	ND (1.0 J)
MW-72BR-200	BR	05/27/2021	N	LF	ND (1.0)	ND (1.0)
MW-72BR-200	BR	05/27/2021	FD	--	ND (1.0)	ND (1.0)
MW-72BR-200	BR	08/27/2021	N	LF	ND (1.0)	3
MW-73-080	BR	02/20/2020	N	LF	21	19
MW-73-080	BR	04/28/2020	N	LF	26	24
MW-73-080	BR	09/30/2020	N	LF	18	21
MW-73-080	BR	12/03/2020	N	LF	11	11
MW-73-080	BR	02/18/2021	N	LF	11	12 J
MW-73-080	BR	05/27/2021	N	LF	24	23
MW-73-080	BR	05/27/2021	FD	--	25	23
MW-73-080	BR	08/27/2021	N	LF	19	22
MW-74-240	BR	04/30/2020	N	3V	ND (0.2)	2
MW-74-240	BR	12/03/2020	N	3V	ND (0.2)	ND (1.0)
MW-74-240	BR	06/07/2021	N	LF	ND (0.2)	ND (1.0)
MW-74-240	BR	06/07/2021	FD	--	ND (0.2)	ND (1.0)
OW-03D	DA	12/11/2020	N	LF	12	13
OW-03M	MA	12/11/2020	N	LF	17	17

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Historical Cr(VI) and Dissolved Chromium Concentrations, January 2020 through October 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
OW-03S	SA	12/11/2020	N	LF	19	20
PGE-07BR	BR	12/03/2020	N	3V	ND (1.0)	ND (1.0)
PGE-08	BR	12/09/2020	N	3V	ND (1.0)	ND (1.0)
PM-03	MA	12/14/2020	N	G	10	10
PM-04	MA	12/14/2020	N	G	16	16
TW-01	SA	11/04/2020	N	PD	1,400	1,400
TW-01	SA	06/10/2021	N	EP	1,400	1,500
TW-01	SA	06/10/2021	FD	--	1,400	1,500
TW-01	SA	06/15/2021	N	EP	1,400	1,500
TW-01	SA	06/16/2021	N	EP	1,400	1,500
TW-01	SA	06/17/2021	N	EP	1,400	1,500
TW-01	SA	06/18/2021	N	EP	1,400	1,500
TW-01	SA	06/19/2021	N	EP	1,500	1,500
TW-01	SA	06/20/2021	N	EP	1,500	1,500
TW-01	SA	06/21/2021	N	EP	1,400	1,500
TW-01	SA	06/28/2021	N	EP	1,500	1,600
TW-01	SA	07/12/2021	N	--	1,500	1,700
TW-01	SA	07/12/2021	FD	--	1,500	1,700
TW-01	SA	07/26/2021	N	EP	1,400	1,500
TW-01	SA	08/16/2021	N	EP	1,400	1,400
TW-01	SA	08/16/2021	FD	--	1,400	1,500
TW-01	SA	09/01/2021	N	--	--	1,500
TW-01	SA	09/02/2021	N	--	1,200	--
TW-01	SA	09/09/2021	N	EP	1,200	1,300
TW-01	SA	09/09/2021	FD	--	1,300	1,500
TW-01	SA	09/23/2021	N	EP	1,200	1,400 J
TW-01	SA	09/23/2021	FD	--	1,200	1,400 J
TW-01	SA	10/07/2021	N	EP	1,300	1,300
TW-01	SA	10/07/2021	FD	--	1,300	1,300
TW-01	SA	10/20/2021	N	EP	1,300	1,400
TW-01	SA	10/20/2021	FD	--	1,300	1,400
TW-02D	DA	02/19/2020	N	Tap	740	670
TW-02D	DA	07/08/2021	N	EP	340	370
TW-02D	DA	08/04/2021	N	EP	350	360
TW-02D	DA	09/08/2021	N	EP	27	33
TW-02D	DA	09/08/2021	FD	--	27	34
TW-03D	DA	01/08/2020	N	G	470	460
TW-03D	DA	02/05/2020	N	G	460	480
TW-03D	DA	03/04/2020	N	G	450	390
TW-03D	DA	04/07/2020	N	Tap	440	420
TW-03D	DA	05/05/2020	N	Tap	450	410
TW-03D	DA	07/23/2020	N	Tap	390	410
TW-03D	DA	08/04/2020	N	Tap	440	430
TW-03D	DA	09/01/2020	N	Tap	430	420
TW-03D	DA	10/07/2020	N	Tap	420	400
TW-03D	DA	11/03/2020	N	LF	440	420
TW-03D	DA	12/03/2020	N	G	440	430

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Historical Cr(VI) and Dissolved Chromium Concentrations, January 2020 through October 2021

Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
TW-03D	DA	01/06/2021	N	G	440	410
TW-03D	DA	02/03/2021	N	--	420	430
TW-03D	DA	03/03/2021	N	EP	400	420
TW-03D	DA	04/07/2021	N	EP	410	400
TW-03D	DA	05/05/2021	N	EP	390	360
TW-03D	DA	06/02/2021	N	EP	390	370
TW-03D	DA	10/07/2021	N	EP	390	380
TW-04	DA	06/25/2020	N	LF	4	4
TW-04	DA	11/30/2020	N	LF	6	7
TW-04	DA	06/07/2021	N	LF	8	7
TW-05	DA	06/25/2020	N	LF	12	12
TW-05	DA	12/07/2020	N	LF	18	16 J
TW-05	DA	05/28/2021	N	LF	12	12

Notes:

1. Beginning February 1, 2008, hexavalent chromium samples are field-filtered per DTSC-approved change from analysis Method SW7199 to E218.6.

-- = not applicable.
µg/L = micrograms per liter.
3V = three volume.
BR = bedrock.
DA = deep interval of Alluvial Aquifer.
DTSC = Department of Toxic Substance Control.
FD = field duplicate.
G = Grab sample.
H = HydraSleeve.
ID = identification.
J = concentration or reporting limit (RL) estimated by laboratory or data validation.
LF = Low Flow (minimal drawdown).
MA = mid-depth interval of Alluvial Aquifer.
ND = not detected at listed reporting limit.
PD = purges dry, low recharge
SA = shallow interval of Alluvial Aquifer.
Tap = sampled from tap of extraction well.

APPENDIX C

Well Inspection and Maintenance Log, Third Quarter 2021

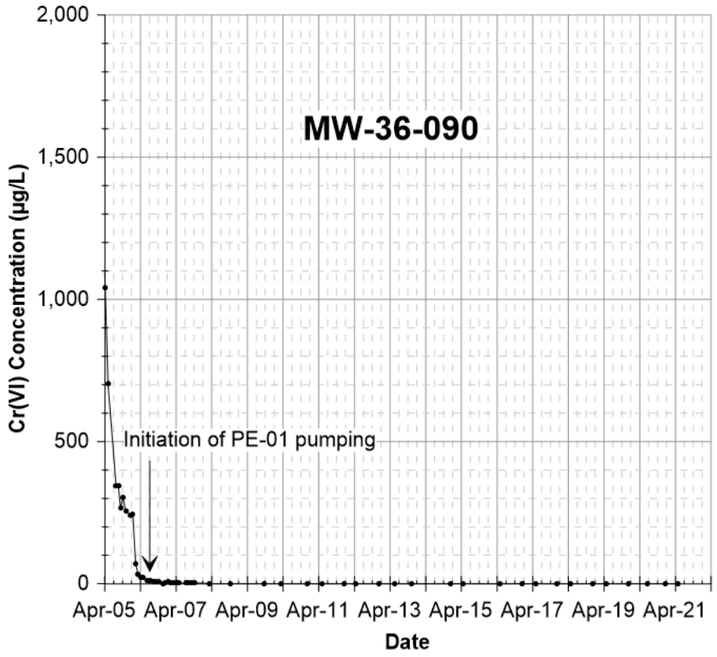
Appendix C
Well Inspection and Maintenance Log, Third Quarter 2021
Third Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

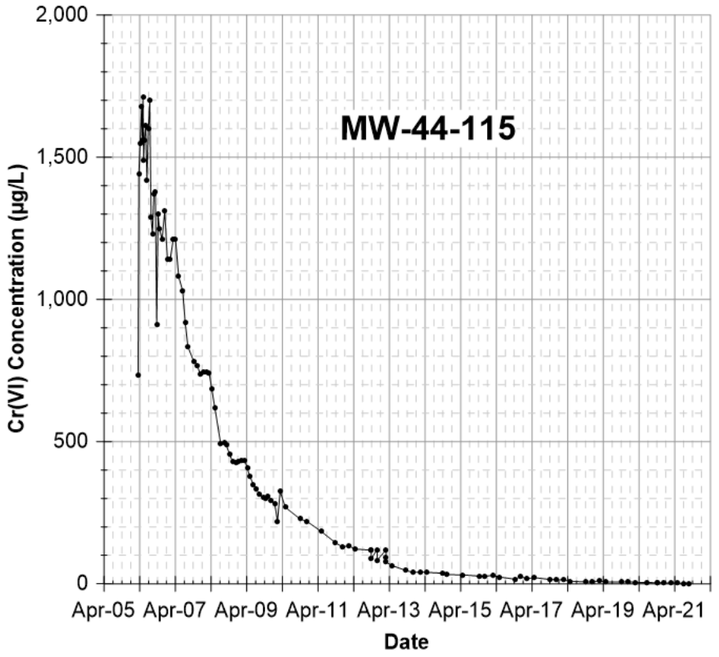
Well ID	Date	Well Labeled On Casing Or Pad? (Yes/No)	Traffic Poles Intact? (Yes/No)	Concrete Pad Intact? (Yes/No)	Erosion Around Wellhead? (Yes/No)	Steel Casing or Well Box Intact? (Yes/No)	Any Tabs Stripped or Missing? (Yes/No)	Water In Well Box? (Yes/No)	J Plug Replaced Properly? (Yes/No)	Well Locked At Arrival? (Yes/No)	All Bolts Present? (Yes/No)	Photo Taken? (Yes/No)	Comments
MW-34-100	9/22/2021	Yes	--	Yes	No	Yes	--	No	Yes	Yes	--	No	None
MW-38S	9/22/2021	Yes	--	Yes	No	Yes	--	No	Yes	Yes	--	No	None
MW-44-115	9/23/2021	Yes	--	Yes	No	Yes	--	No	Yes	Yes	--	No	None
MW-46-175	9/9/2021	Yes	--	Yes	No	Yes	--	--	Yes	Yes	--	No	None
MW-57-050	9/10/2021	Yes	--	Yes	No	Yes	No	No	Yes	No	Yes	No	None
MW-58-065	9/10/2021	Yes	--	No	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-58BR	9/10/2021	Yes	--	No	No	Yes	--	No	Yes	Yes	--	No	None
MW-60BR-245	9/10/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	No	No	None
MW-62-065	9/9/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-62-110	8/26/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-63-065	8/26/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-64BR	8/26/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-65-160	8/25/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-65-225	8/25/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-68-180	9/23/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-69-195	8/26/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-72-080	8/27/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-72BR-200	8/27/2021	Yes	--	Yes	No	Yes	Yes	No	Yes	Yes	No	No	None
MW-73-080	8/27/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None

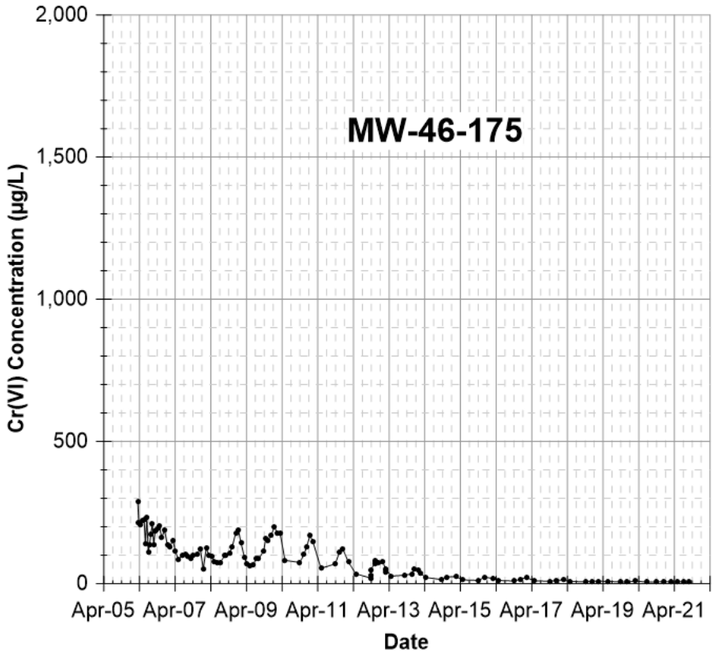
Notes:
-- = not applicable

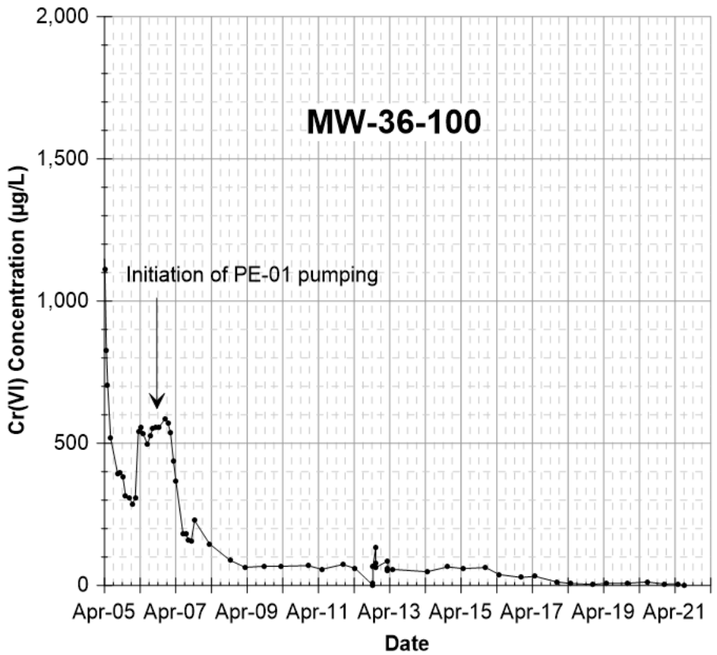
APPENDIX D

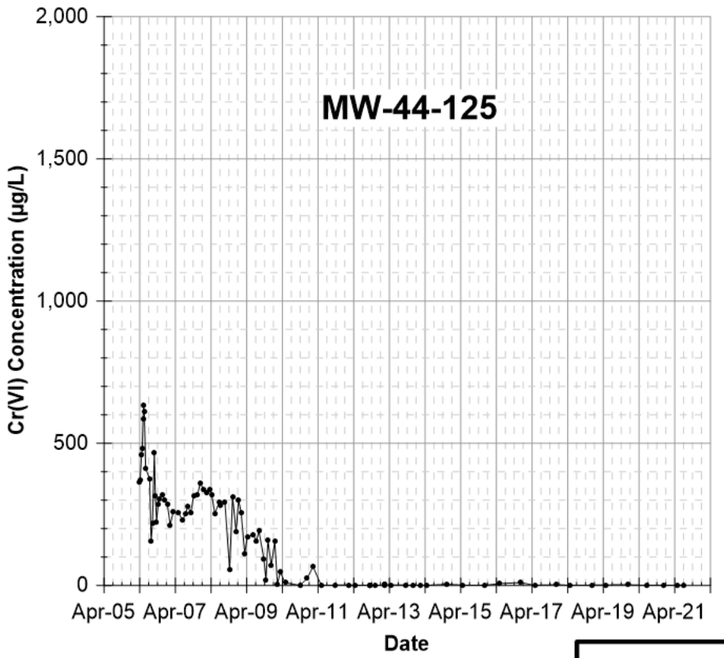
Concentration Time Series Charts, Third Quarter 2021

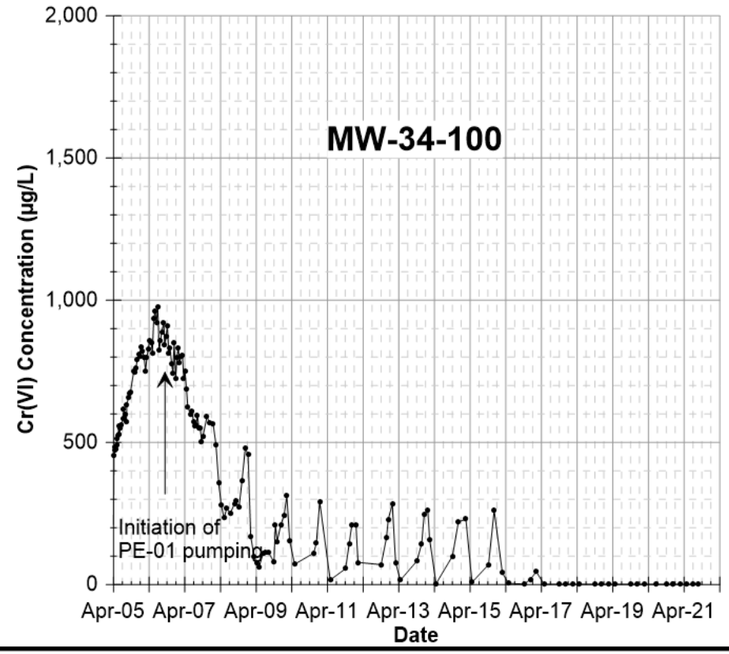












Notes:
1. Hexavalent chromium [Cr(VI)] results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples; see Table 3-1 for complete results.
3. MW-36 wells selected to monitor effects of PE-01 pumping on plume west of PE-01. MW-44 wells, MW-46-175, and MW-34-100 selected to monitor concentrations within the plume.

APPENDIX D
Cr(VI) CONCENTRATION TRENDS IN SELECTED PERFORMANCE MONITORING WELLS, APRIL 2005 THROUGH OCTOBER 2021
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING
AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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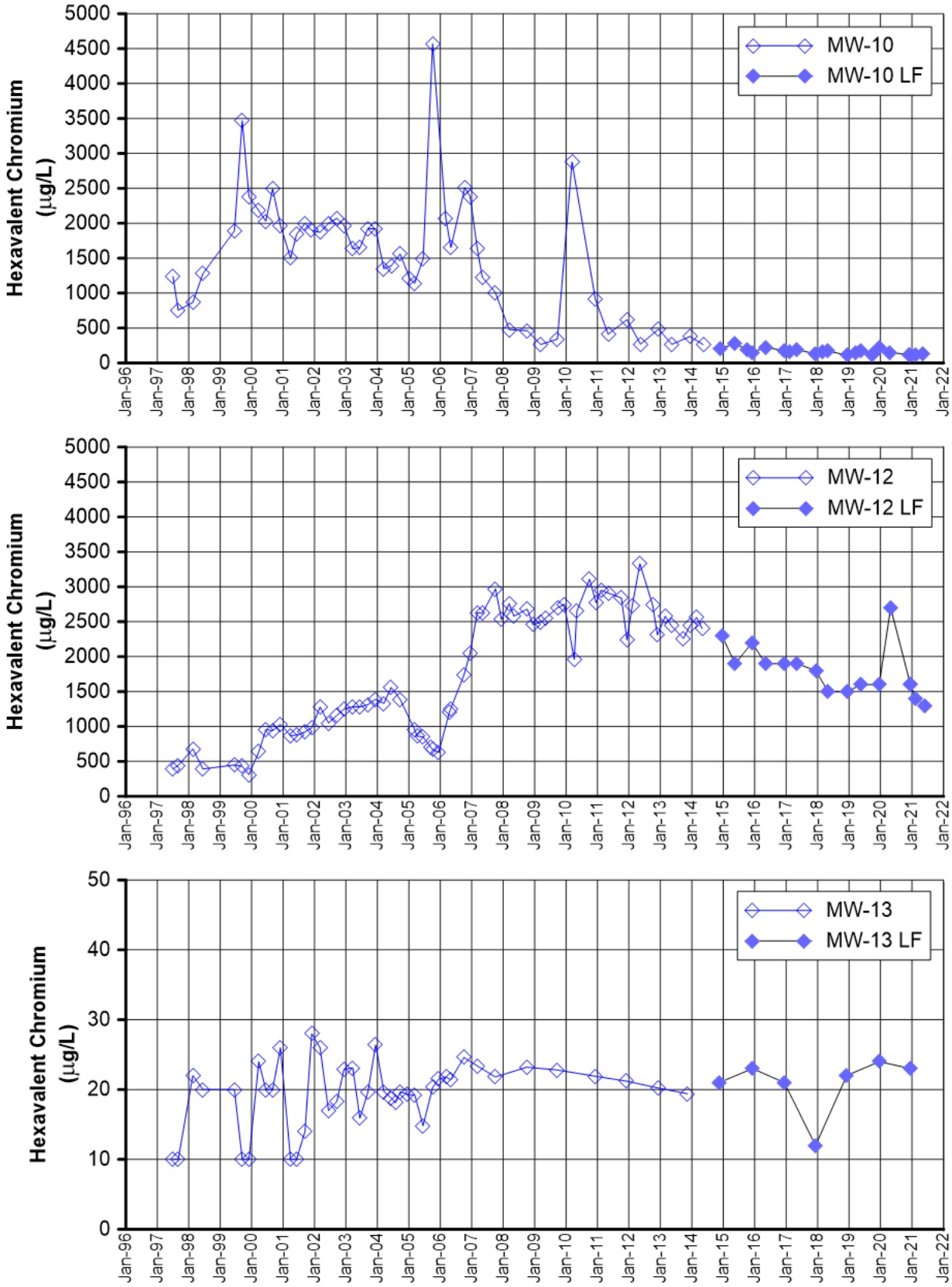

Notes:

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-1
HEXAVALENT CHROMIUM
IN MW-10, MW-12, AND MW-13
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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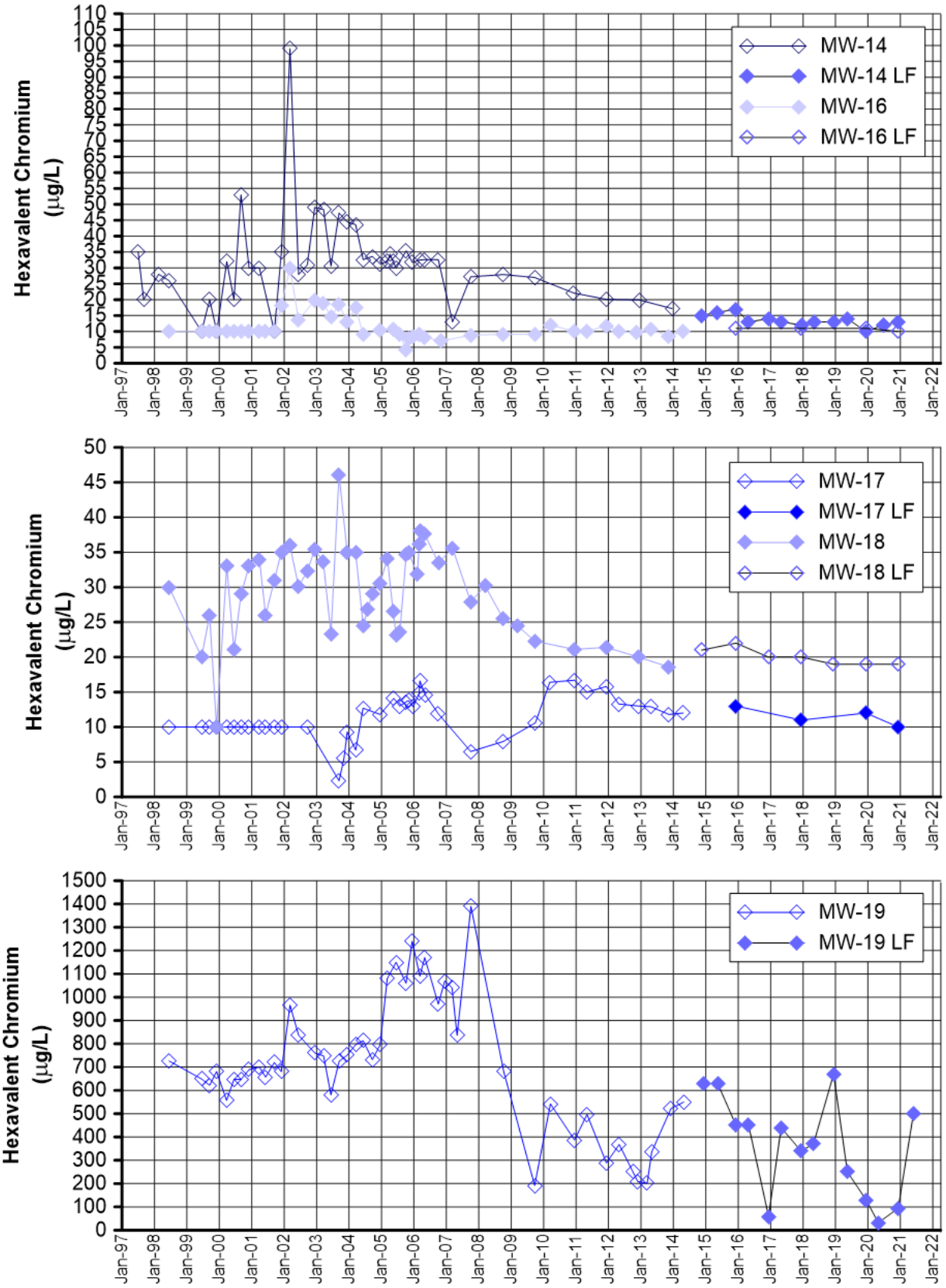

Notes:

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-2
HEXAVALENT CHROMIUM
IN MW-14, MW-16, MW-17, MW-18, AND MW-19
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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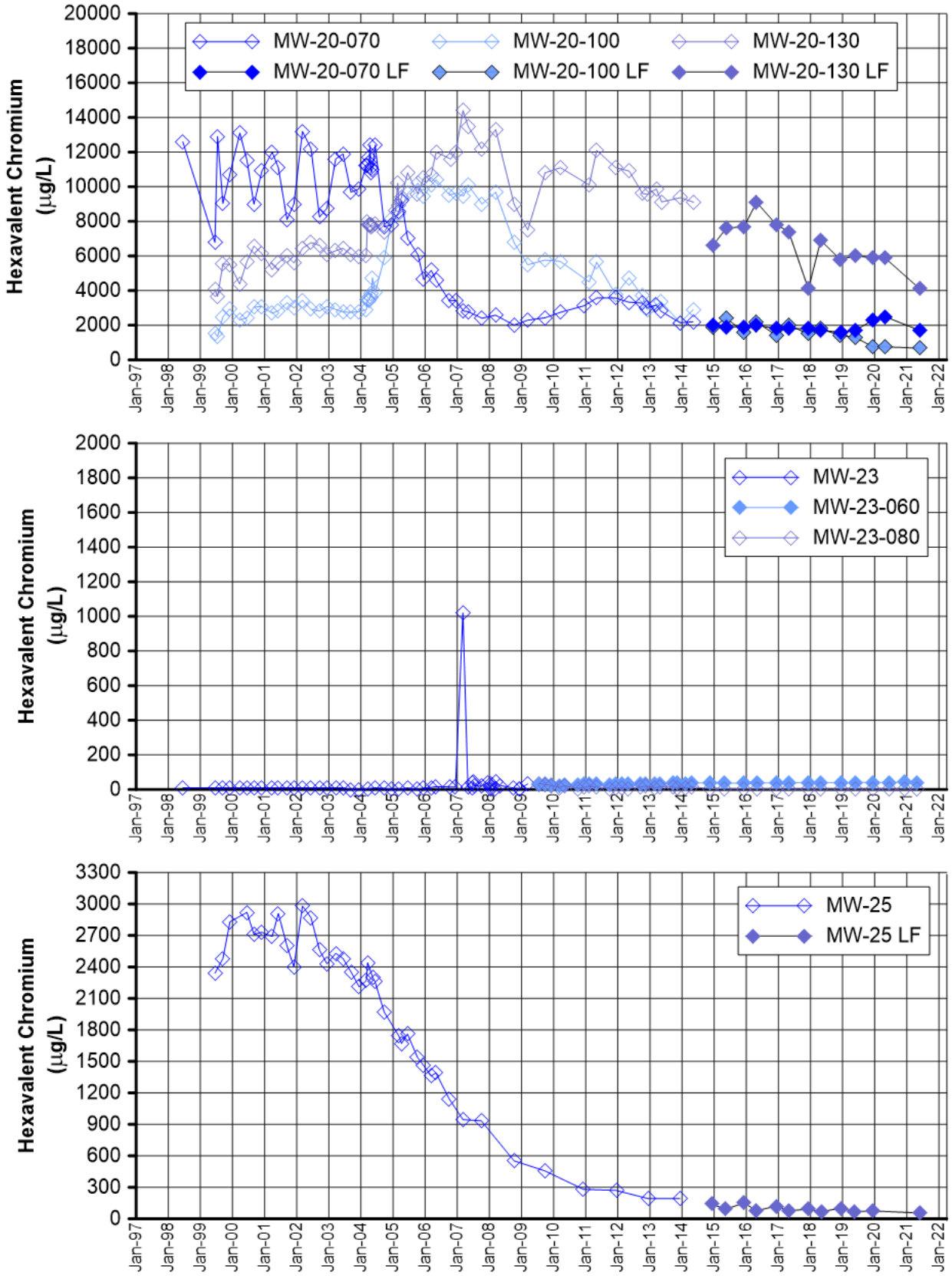

Notes:

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-3
HEXAVALENT CHROMIUM
IN MW-20 AND MW-23 CLUSTERS AND MW-25
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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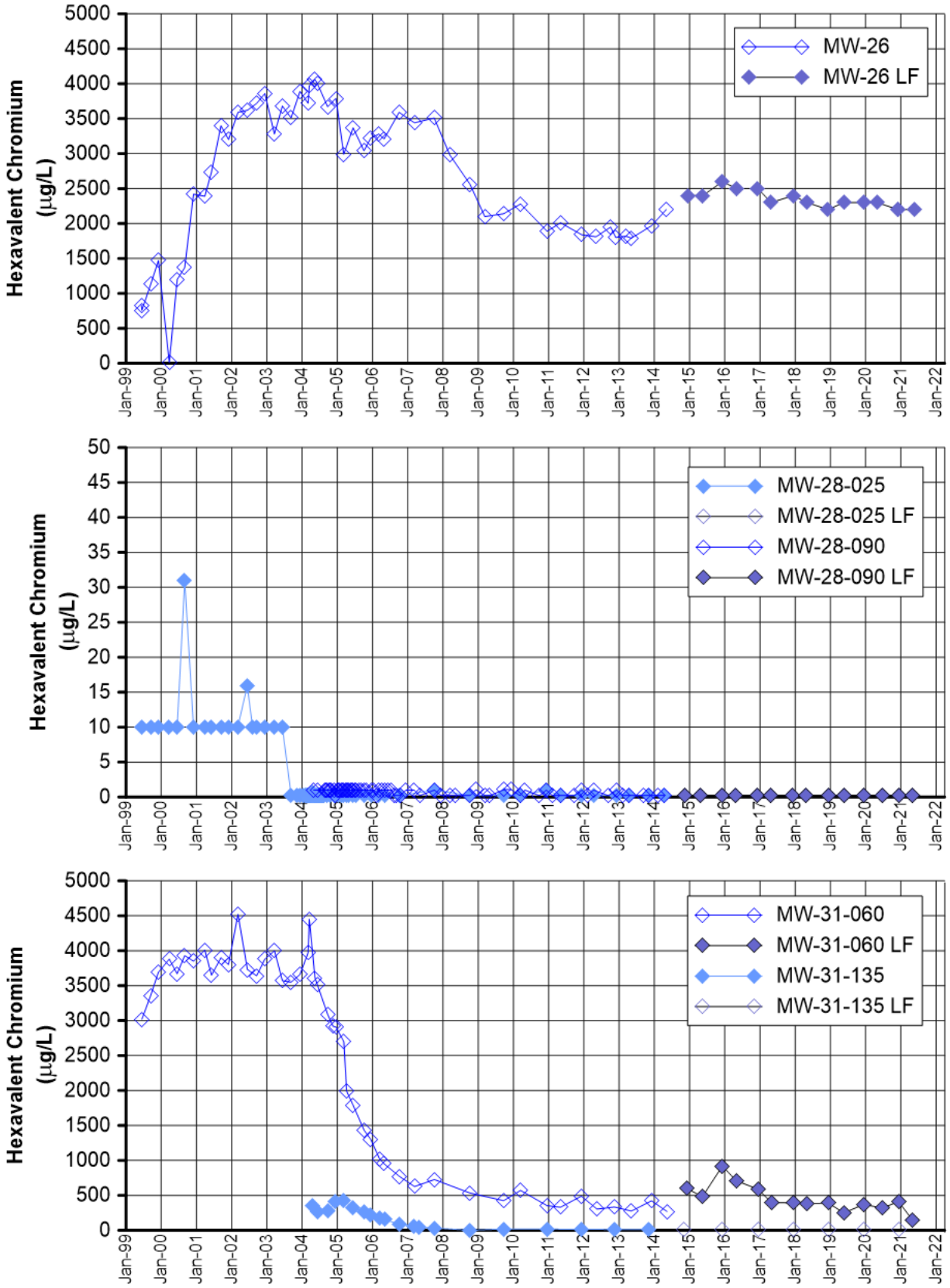

Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-28-090 is 20 µg/L.

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-4
HEXAVALENT CHROMIUM
IN MW-26, MW-28, AND MW-31 CLUSTERS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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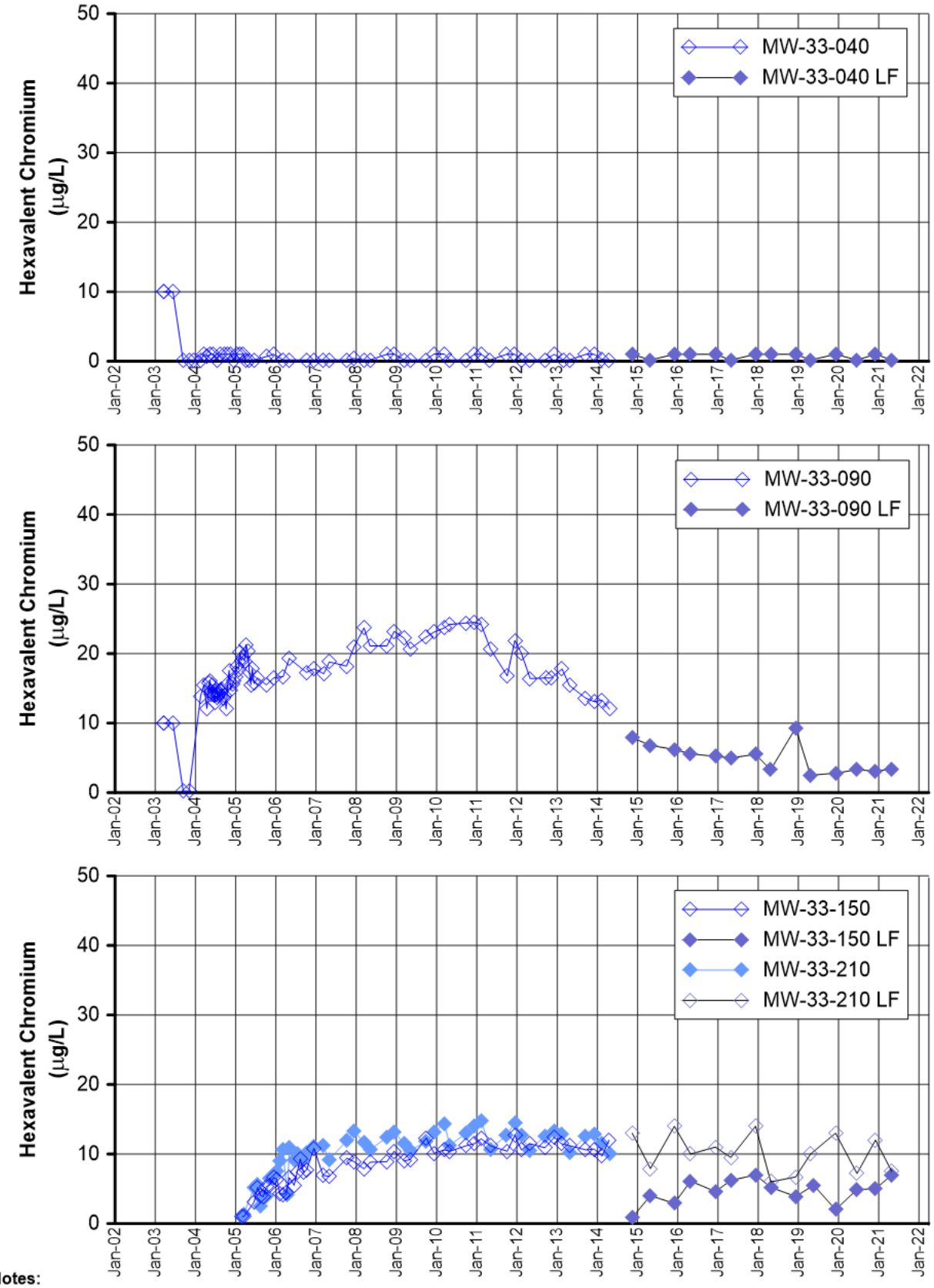

Notes:

1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-33-040 is 20 µg/L.
3) The trigger level for MW-33-090 is 25 µg/L.
4) The trigger level for MW-33-150 is 20 µg/L.
5) The trigger level for MW-33-210 is 20 µg/L.

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-5
HEXAVALENT CHROMIUM IN MW-33 CLUSTER

THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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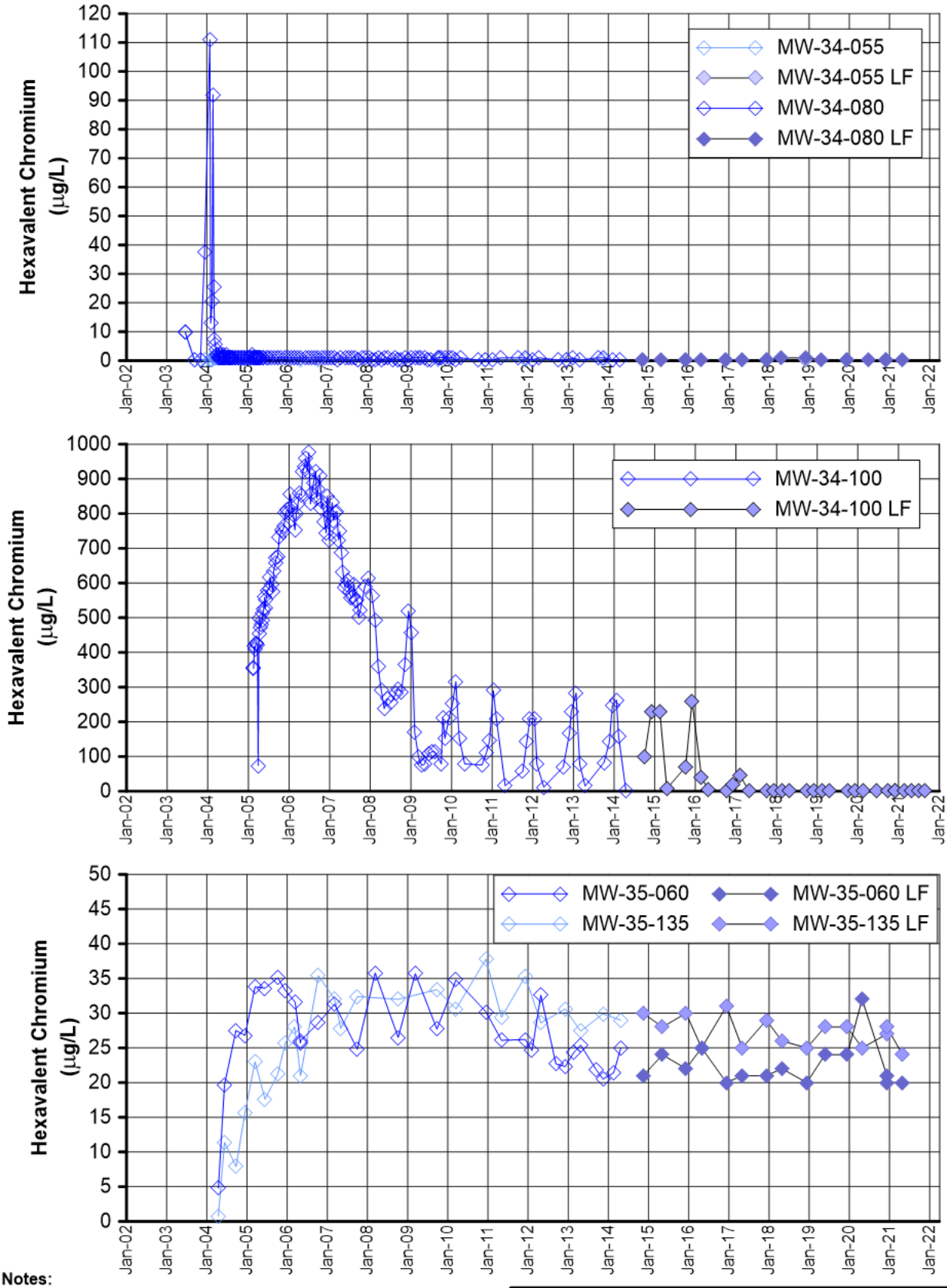

Notes:

1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-34-080 is 20 µg/L.
3) The trigger level for MW-34-100 is 750 µg/L.

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-6
HEXAVALENT CHROMIUM
IN MW-34 AND MW-35 CLUSTERS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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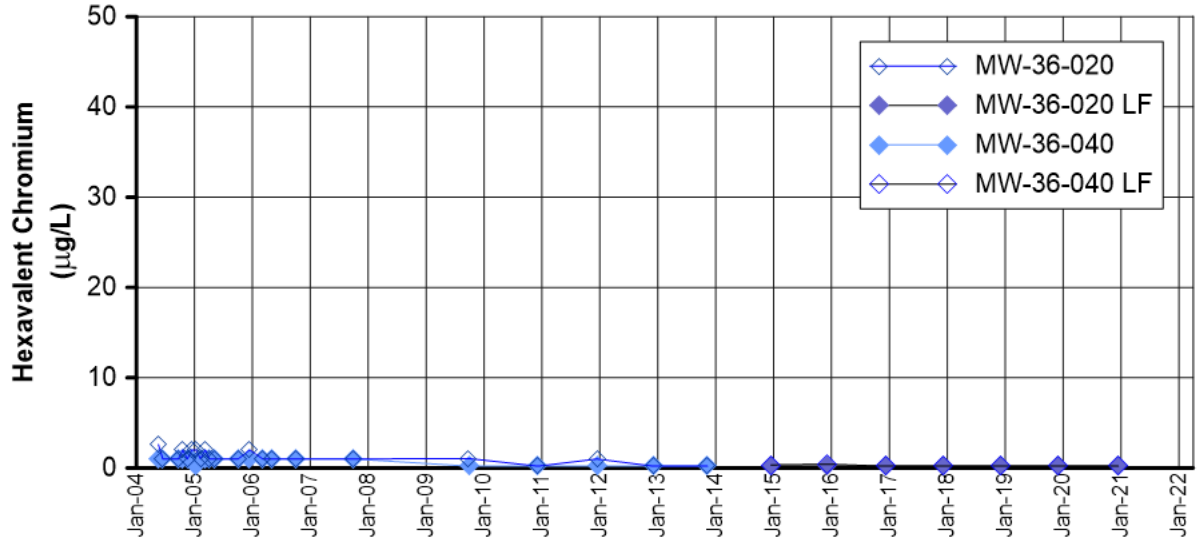

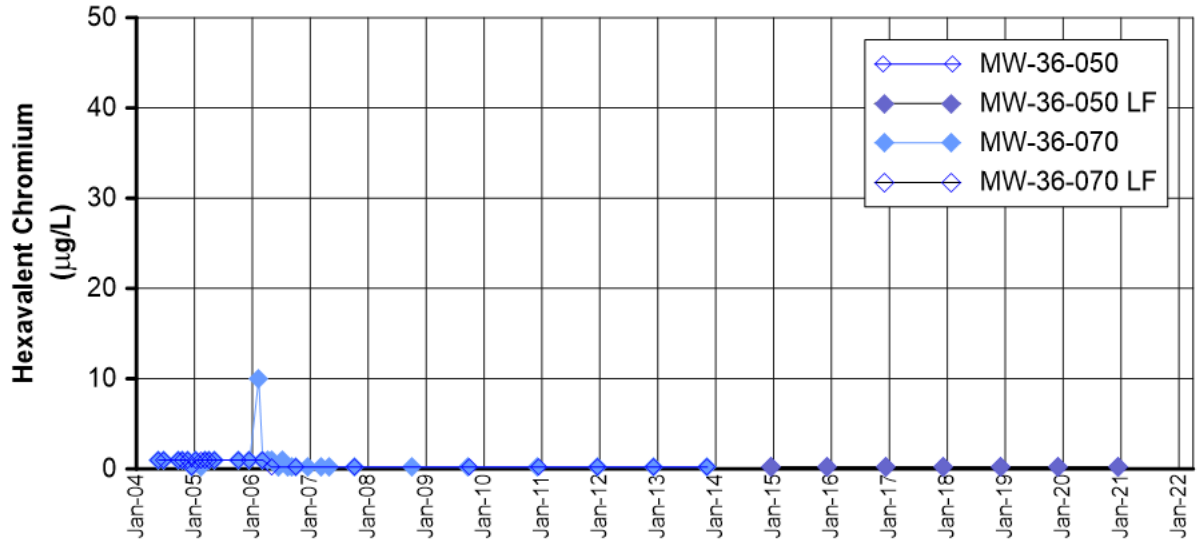

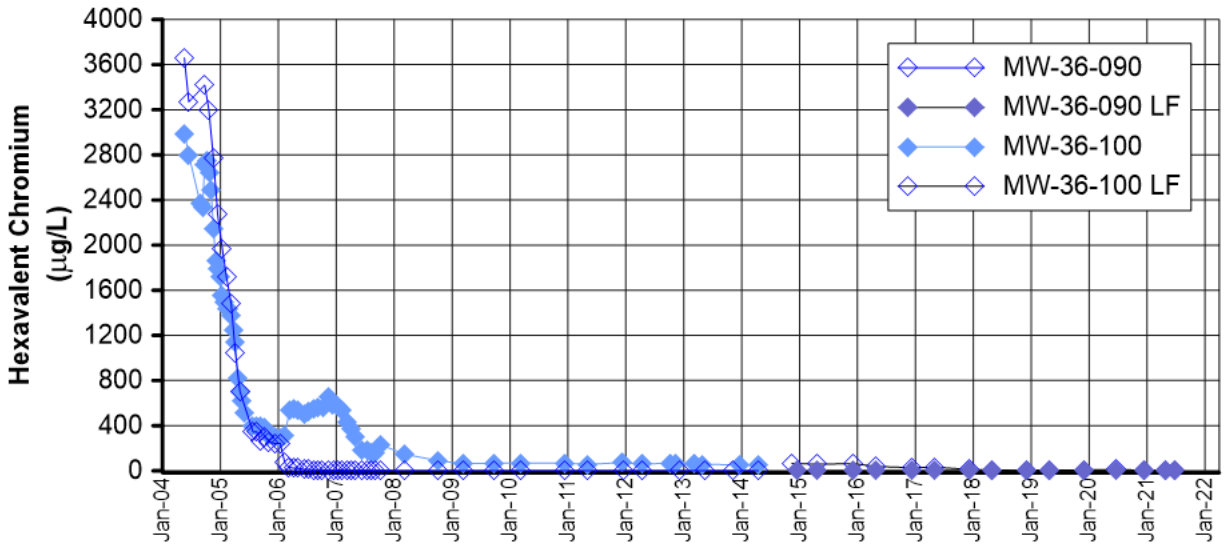

Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-36-070 is 20 µg/L.

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-7
HEXAVALENT CHROMIUM IN MW-36 CLUSTER
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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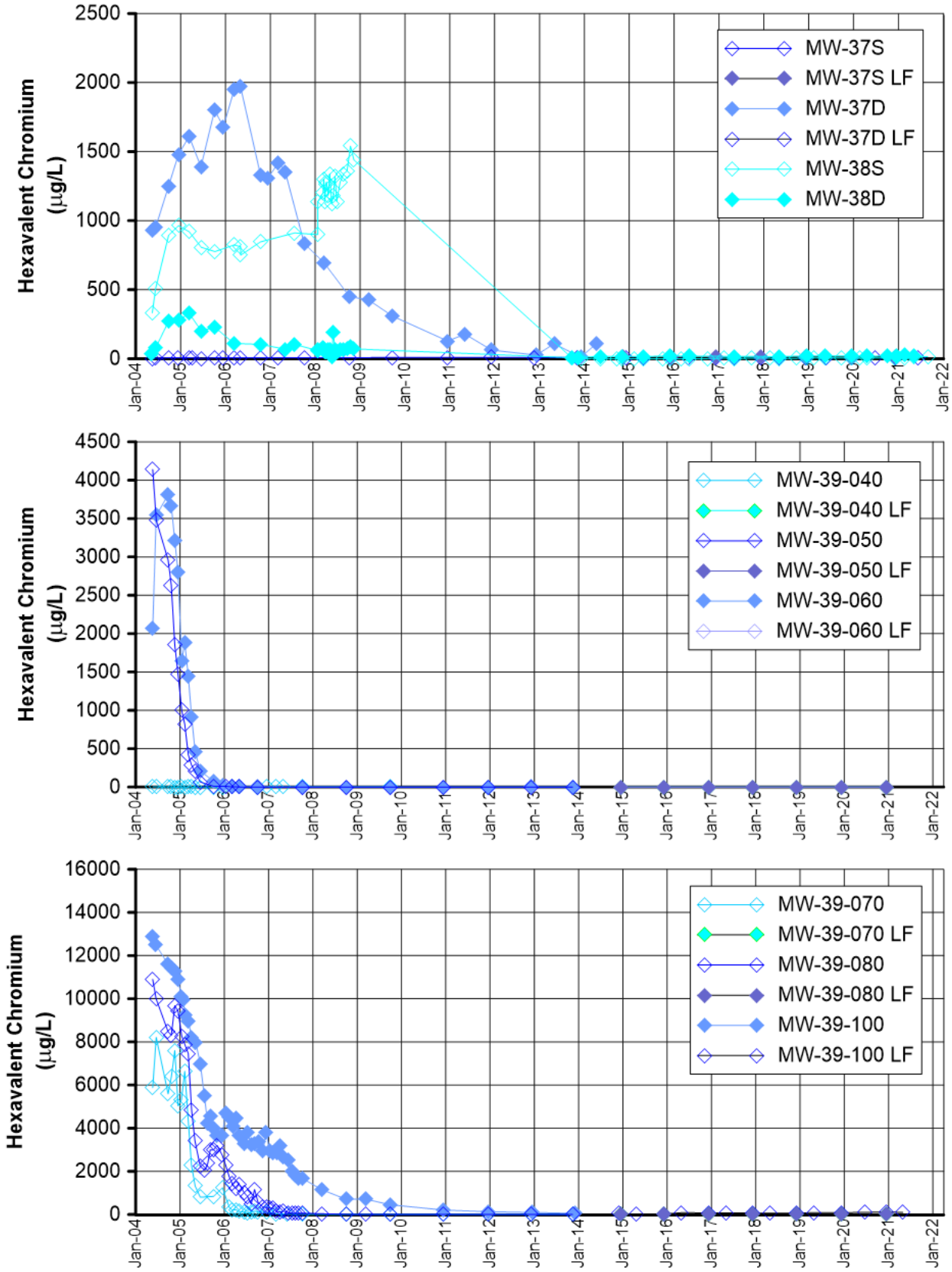

Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-39-040 is 20 µg/L.

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-8
HEXAVALENT CHROMIUM IN MW-37, MW-38 AND MW-39 CLUSTERS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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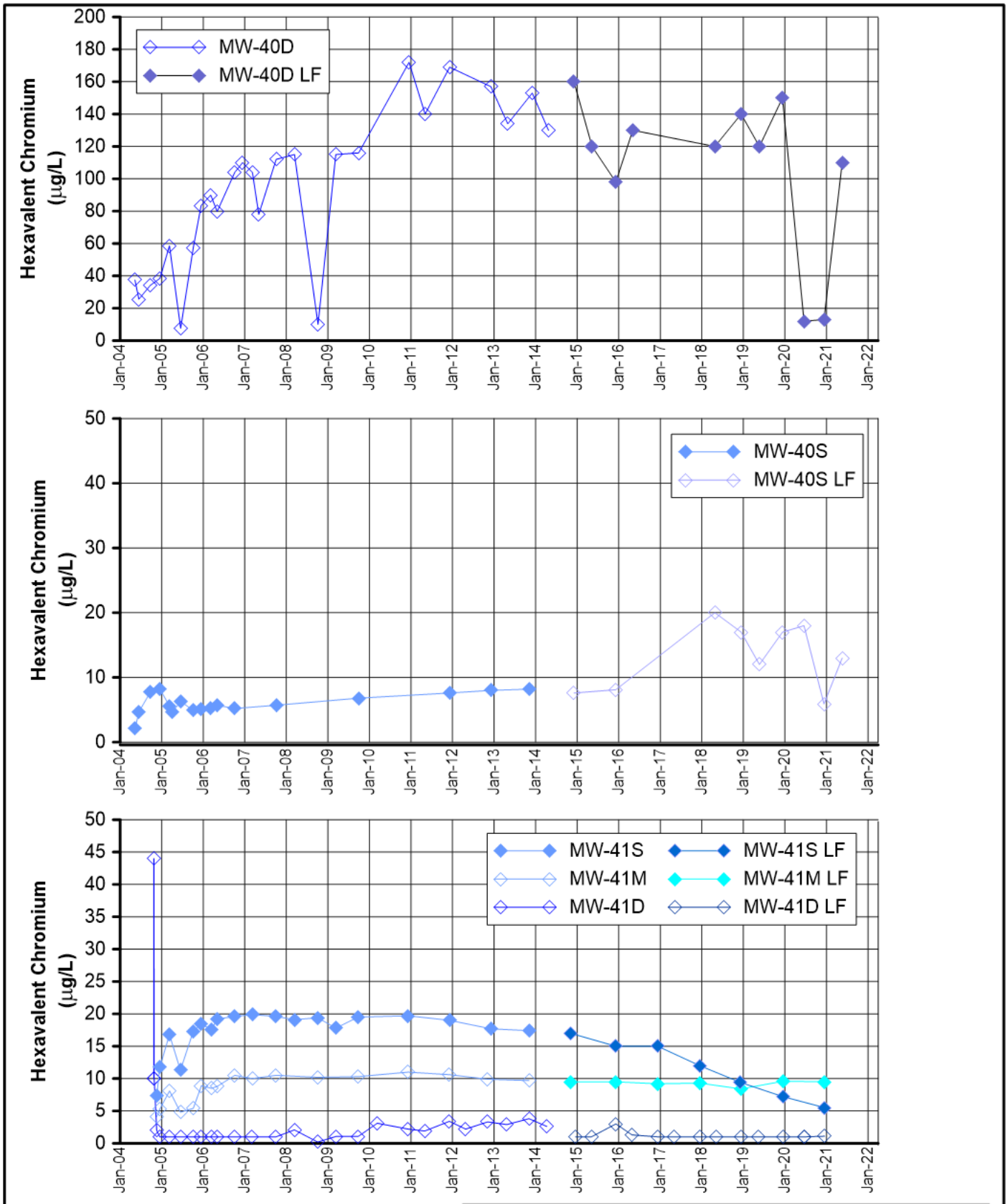

Notes:

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-9
HEXAVALENT CHROMIUM
IN MW-40 AND MW-41 CLUSTERS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
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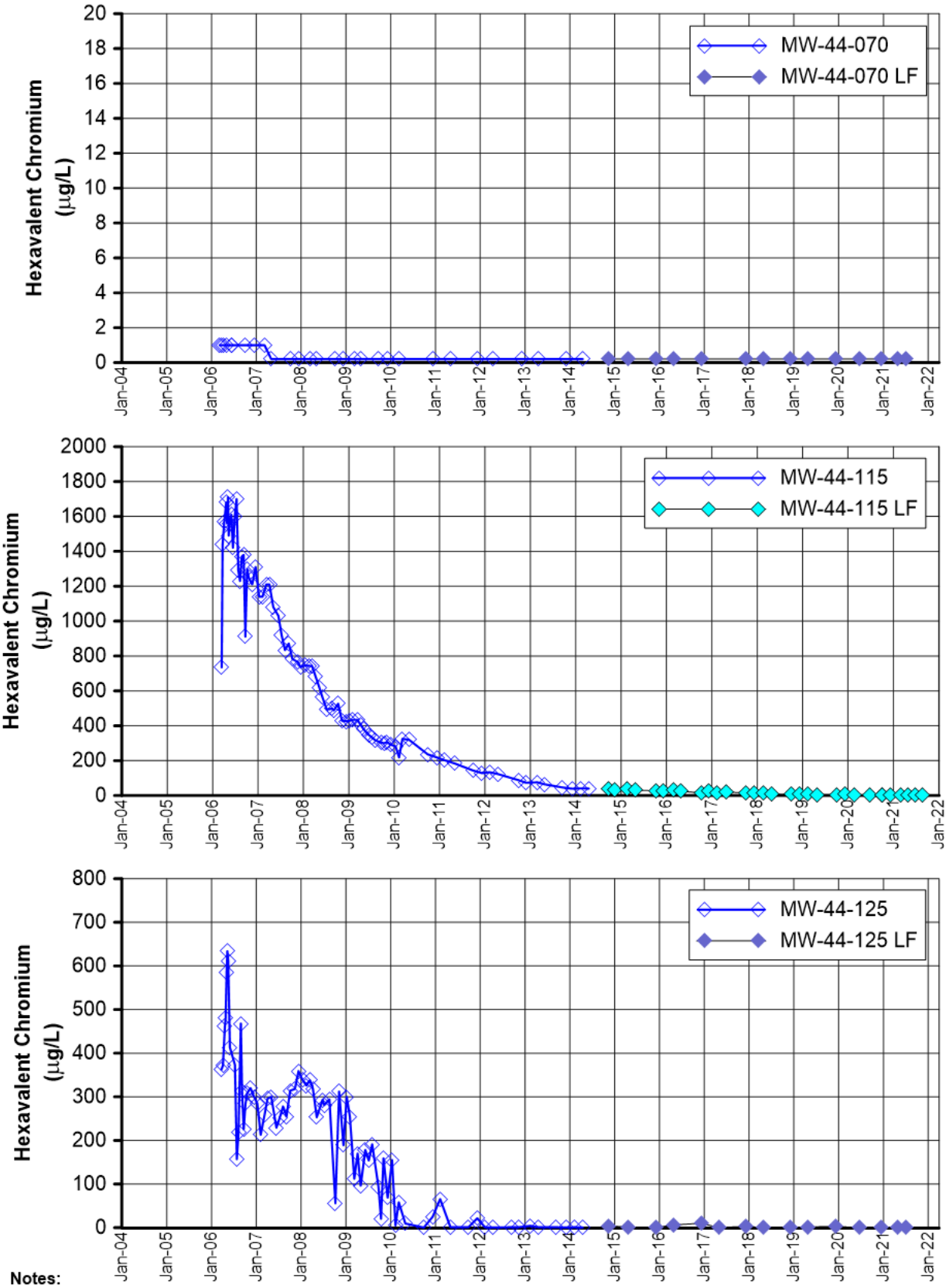

Notes:

1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-44-070 is 20 µg/L.
3) The trigger level for MW-44-115 is 1,200 µg/L.
4) The trigger level for MW-44-125 is 475 µg/L.

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-10
HEXAVALENT CHROMIUM IN MW-44 CLUSTER

THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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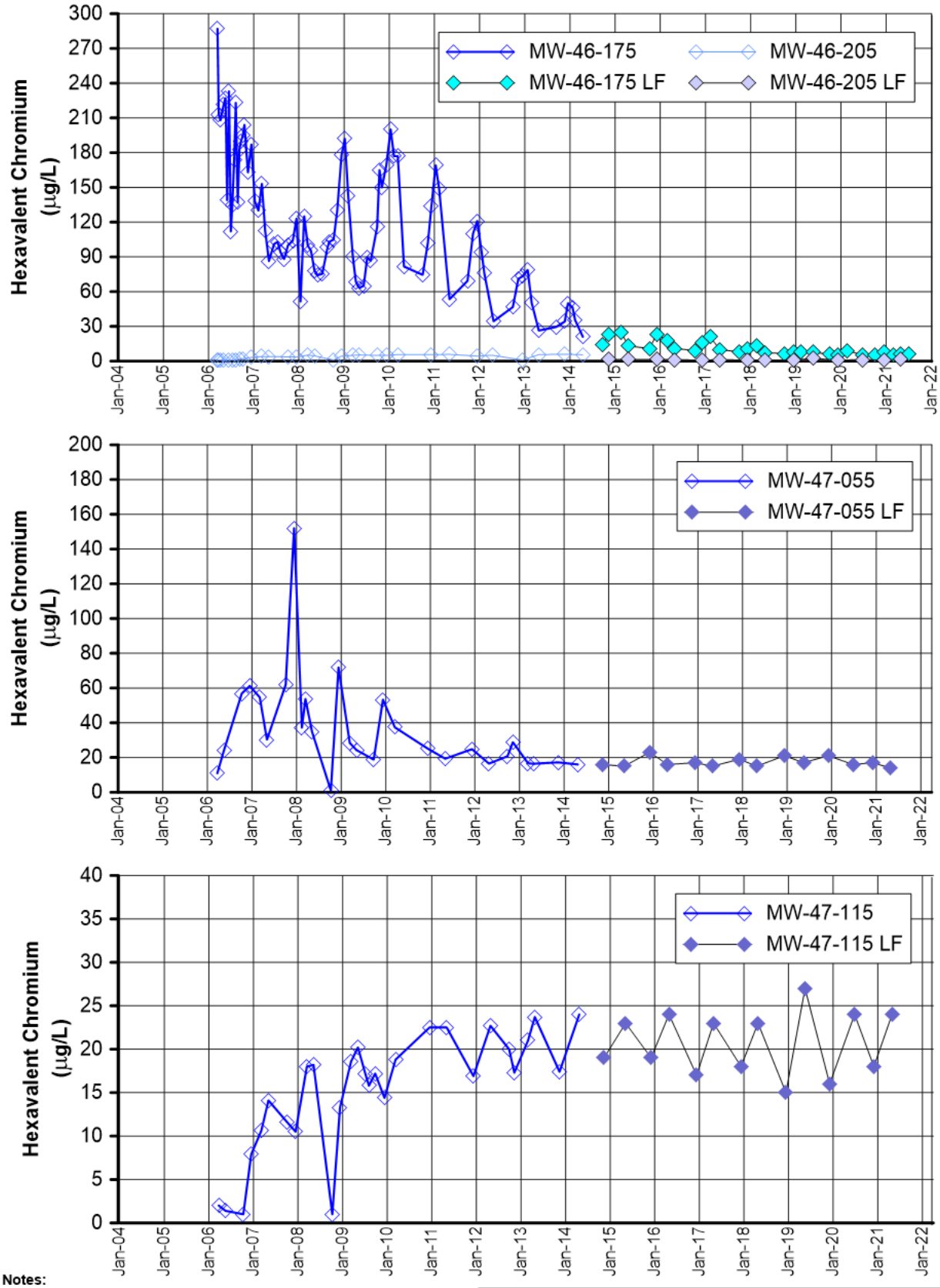

Notes:

1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-46-175 is 225 µg/L.
3) The trigger level for MW-46-205 is 20 µg/L.
4) The trigger level for MW-47-055 is 475 µg/L.
5) The trigger level for MW-47-115 is 31 µg/L.

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-11
HEXAVALENT CHROMIUM
IN MW-46 AND MW-47 CLUSTERS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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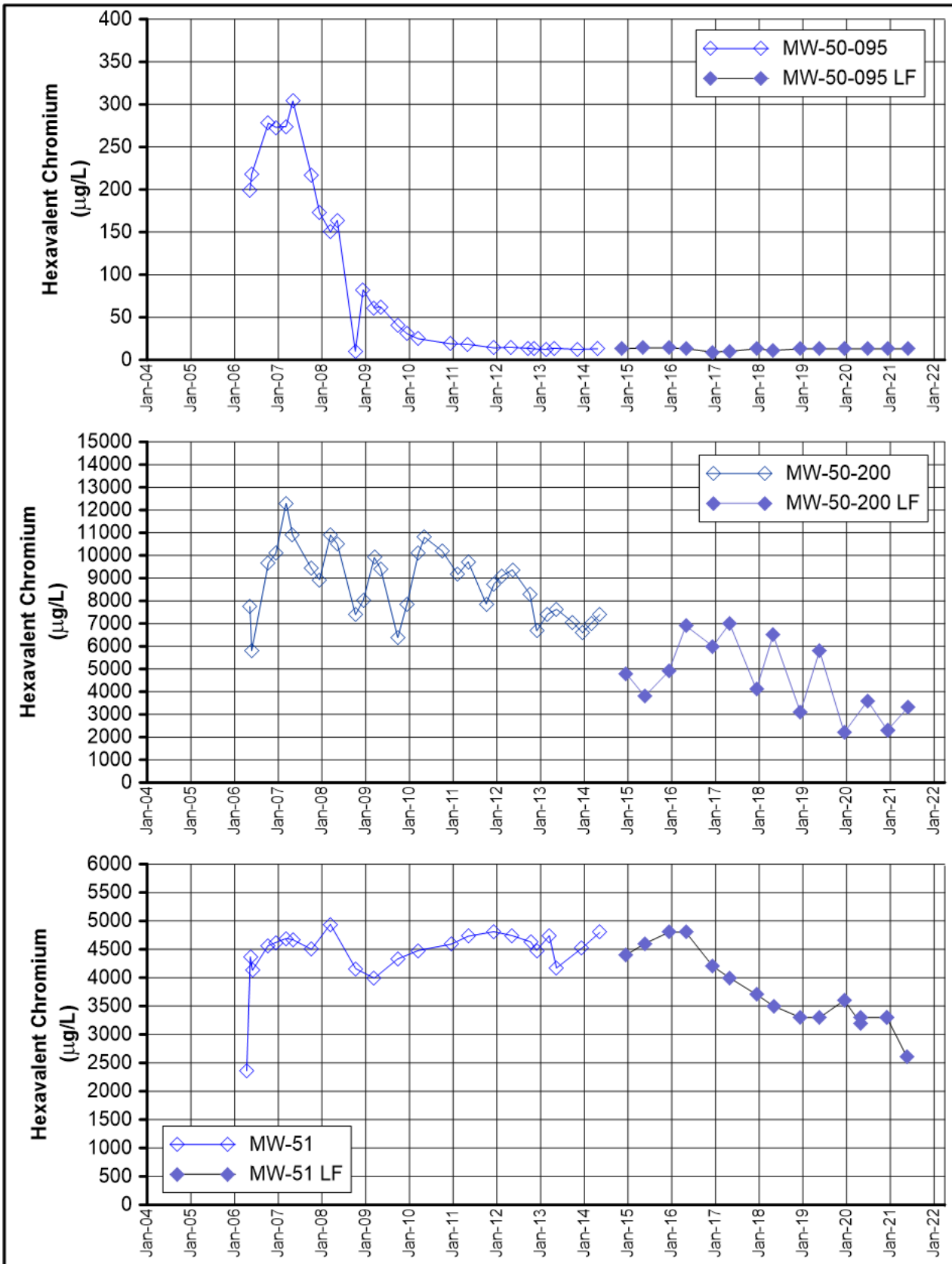

Notes:

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-12
HEXAVALENT CHROMIUM
IN MW-50 AND MW-51 CLUSTERS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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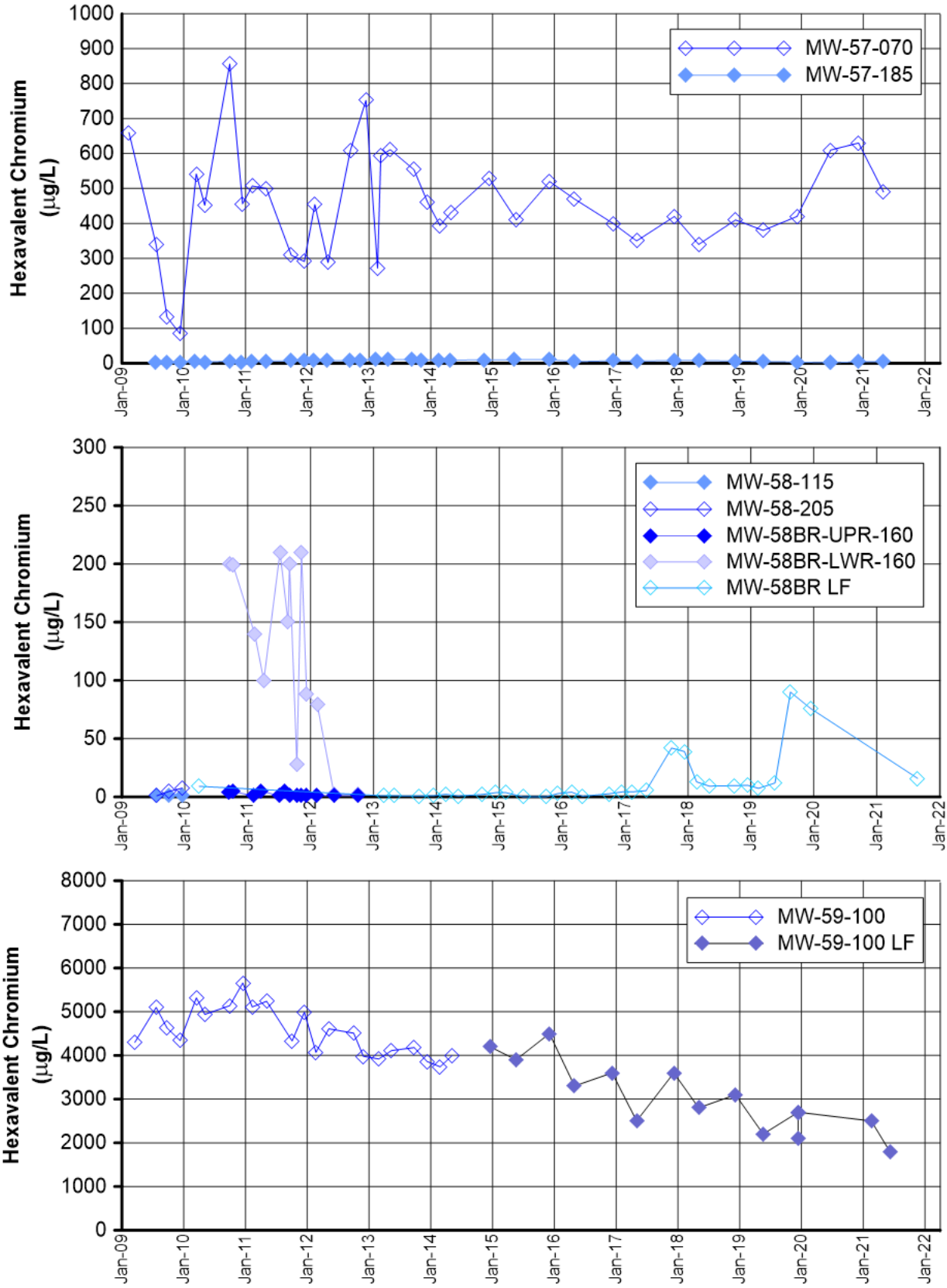

Note:

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-13
HEXAVALENT CHROMIUM
IN MW-57 CLUSTER, MW-58 CLUSTER AND MW-59-100
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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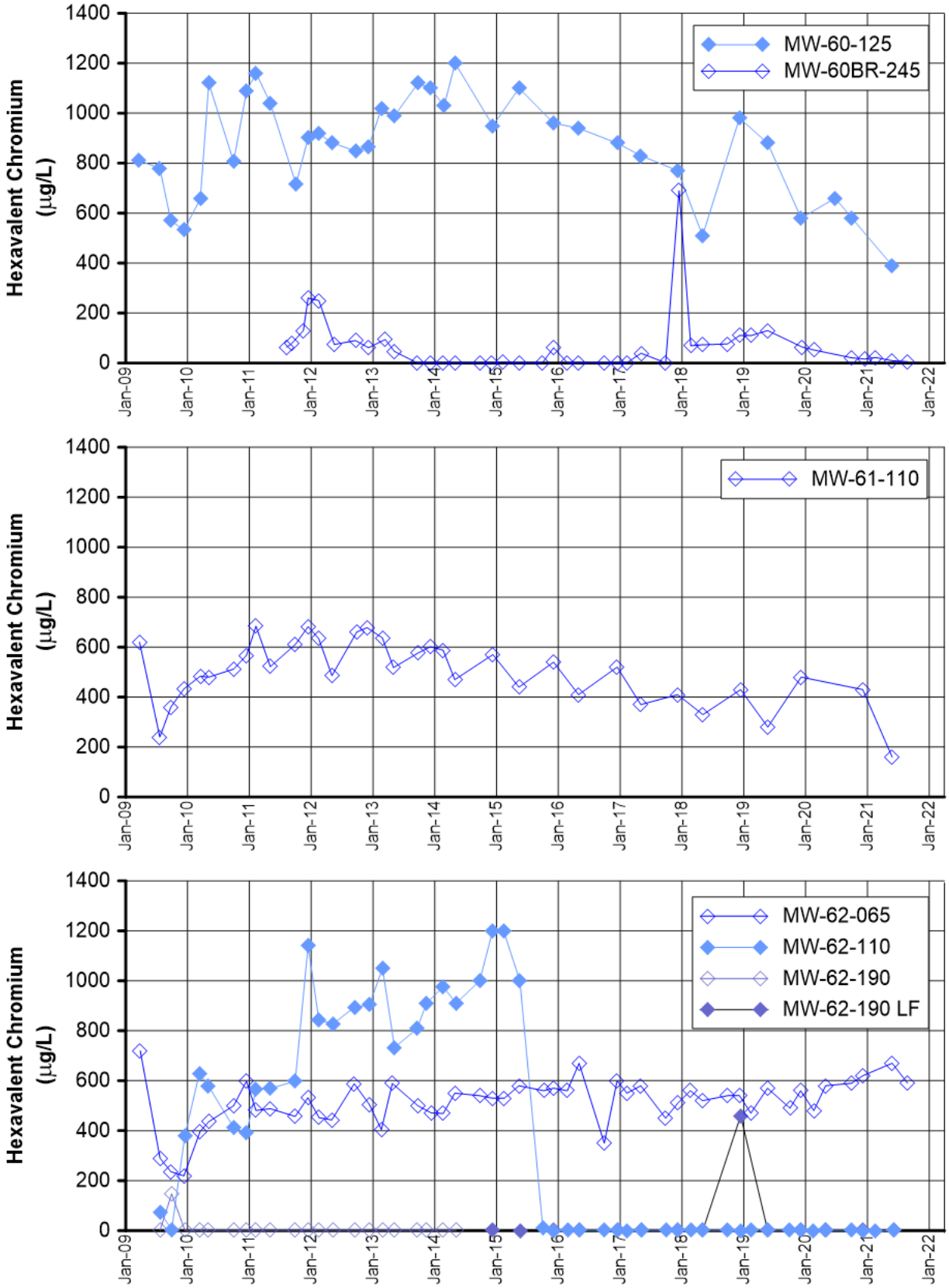

Notes:

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-14
HEXAVALENT CHROMIUM
IN MW-60 CLUSTER, MW-61-110 AND MW-62 CLUSTER
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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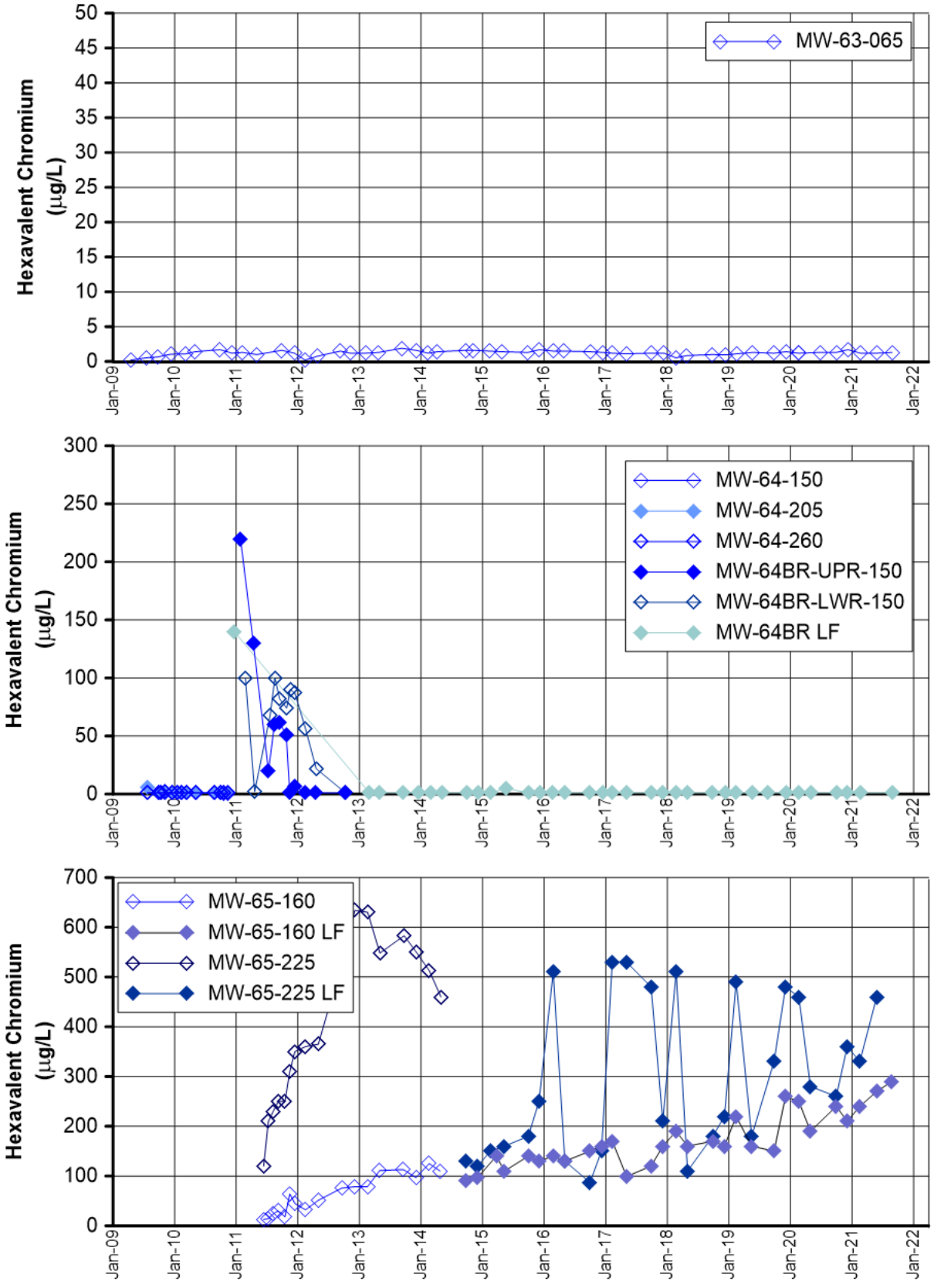

Notes:

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-15
HEXAVALENT CHROMIUM
IN MW-63-065, MW-64 CLUSTER AND MW-65 CLUSTER
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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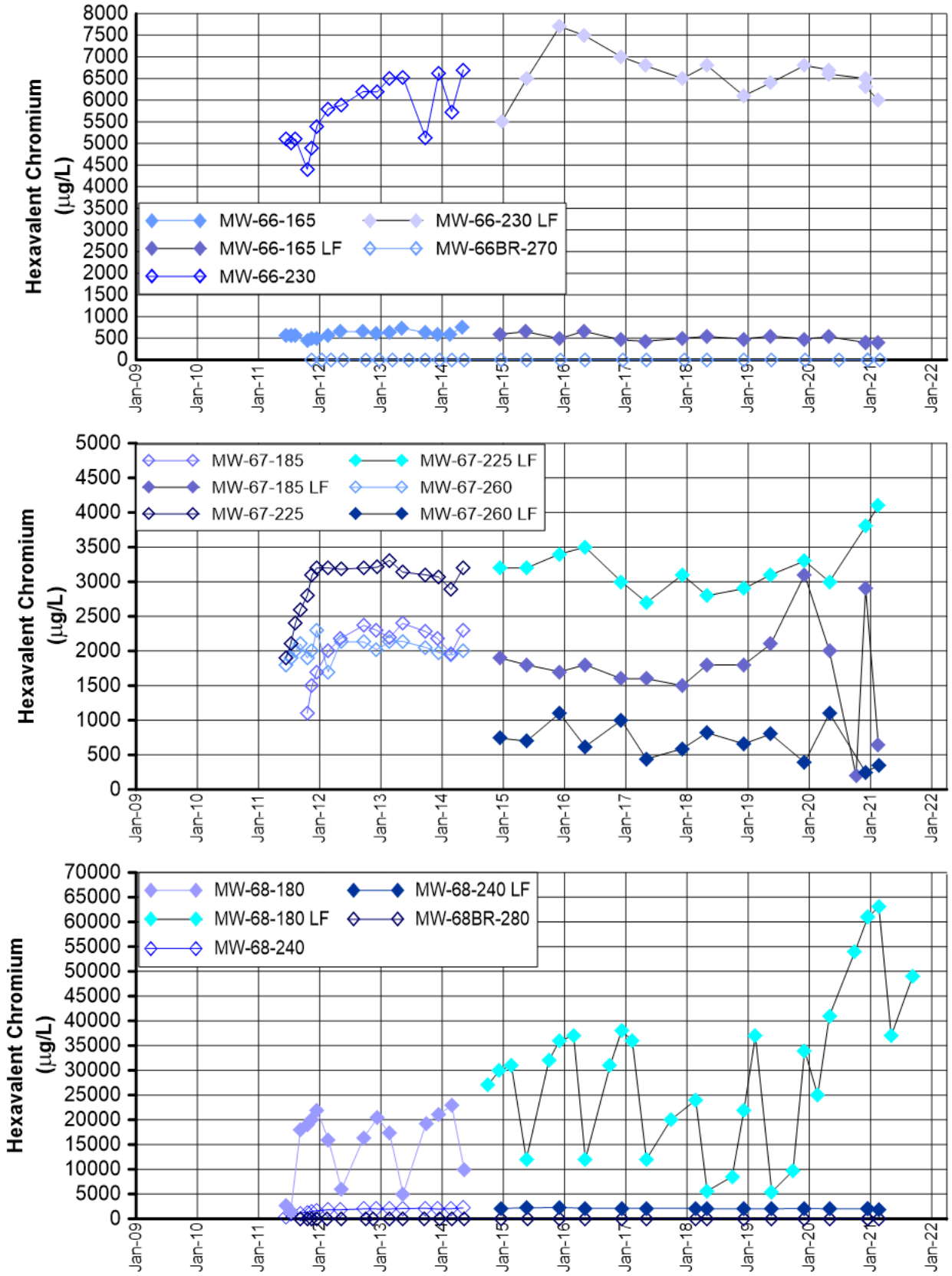

Notes:

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-16
HEXAVALENT CHROMIUM
IN MW-66, MW-67, AND MW-68 CLUSTERS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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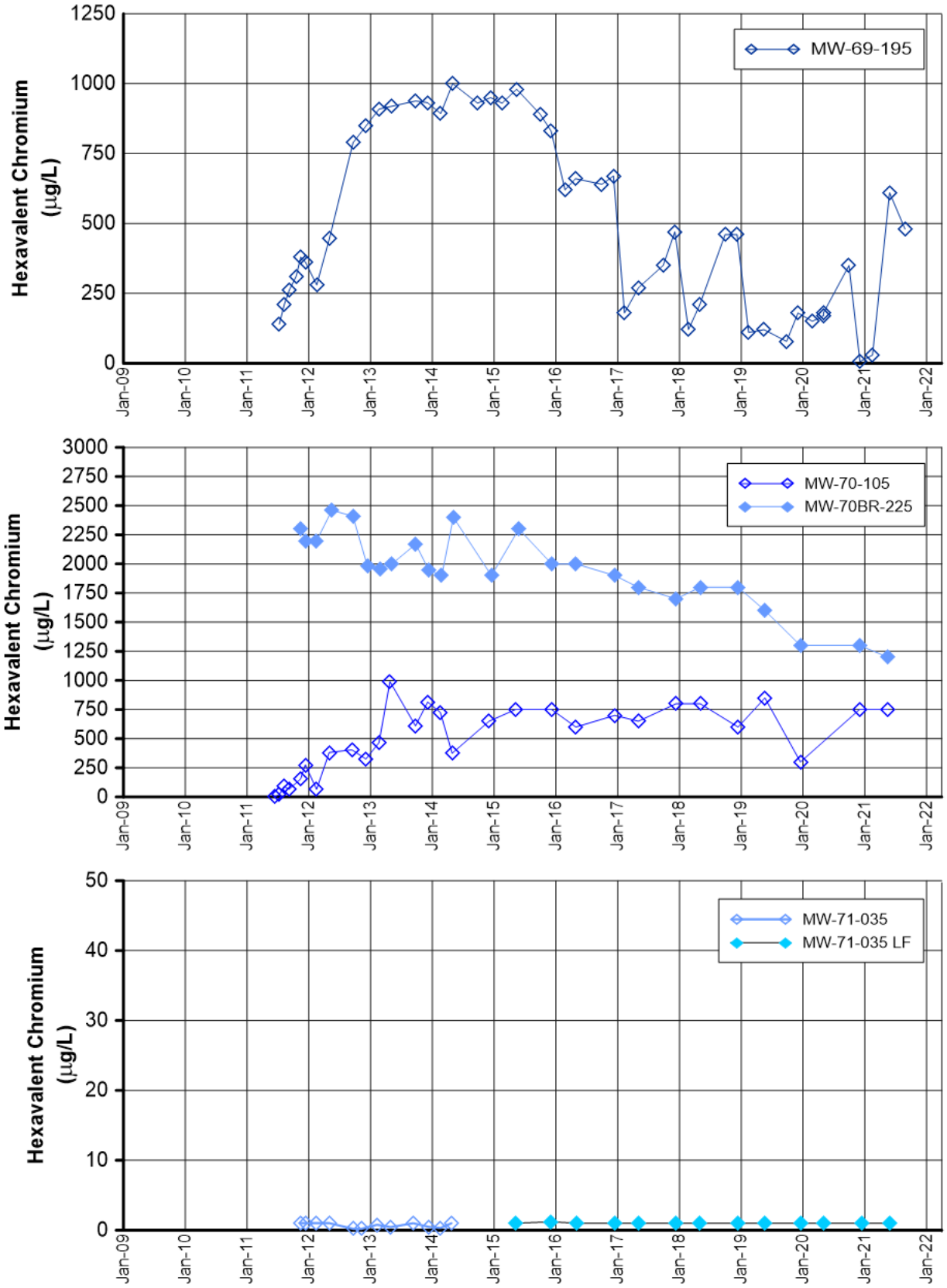

Notes:

LF = low flow, hexavalent chromium sample collected using low flow sampling method. Data not indicated with (LF) was collected using the three-volume purge sampling method.

FIGURE D-17
HEXAVALENT CHROMIUM
IN MW-69-195, MW-70 CLUSTER, AND MW-71-035
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

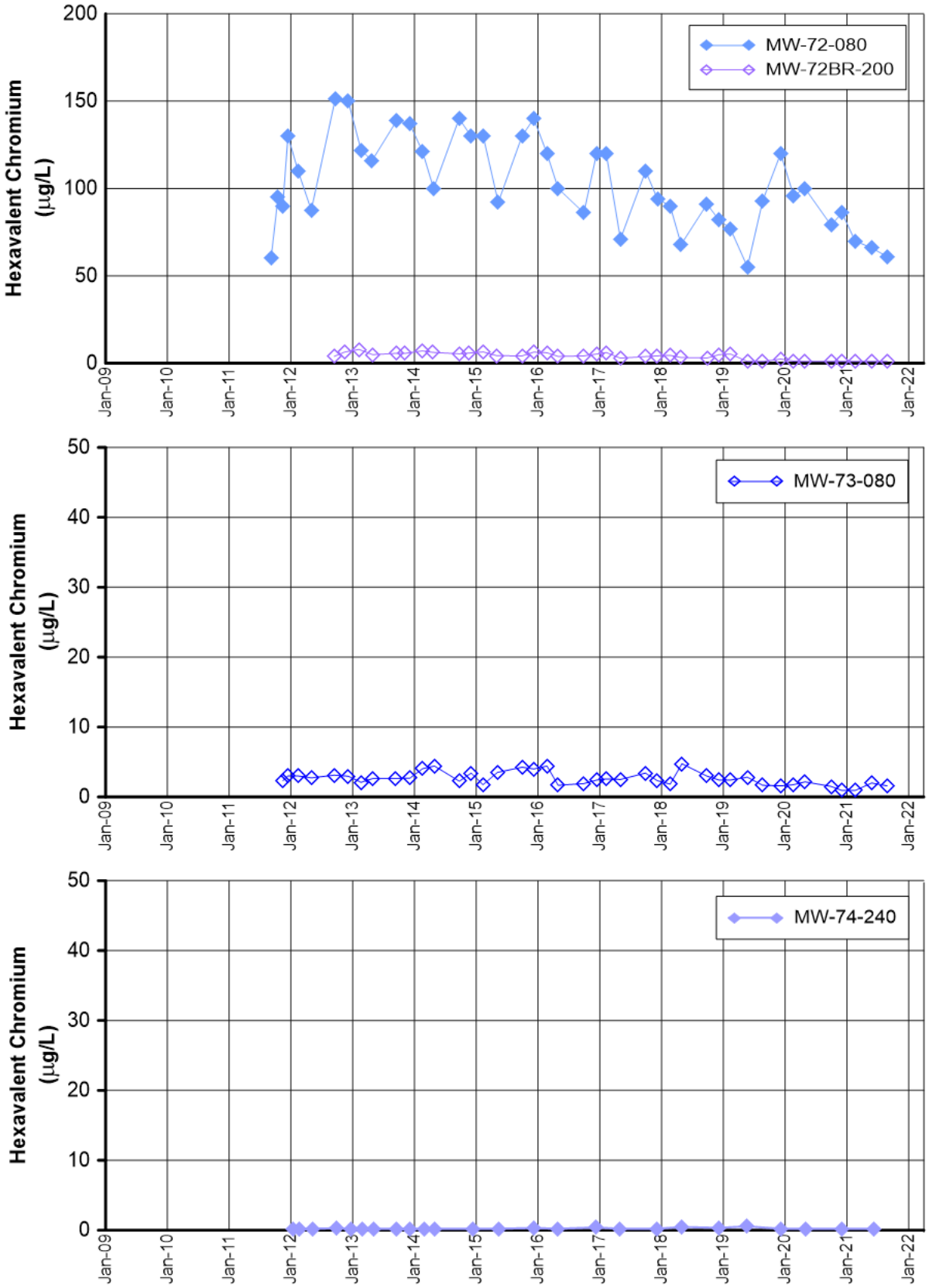

FIGURE D-18
HEXAVALENT CHROMIUM
IN MW-72 CLUSTER, MW-73-080, AND MW-74-240
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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\\arcadis-us.com\officedata\Denver-CO-Technical\Aproject\PG&E - Groundwater Monitoring\Reporting\00_Arcadis_rpts\02_GMP_rpts\18_Q321

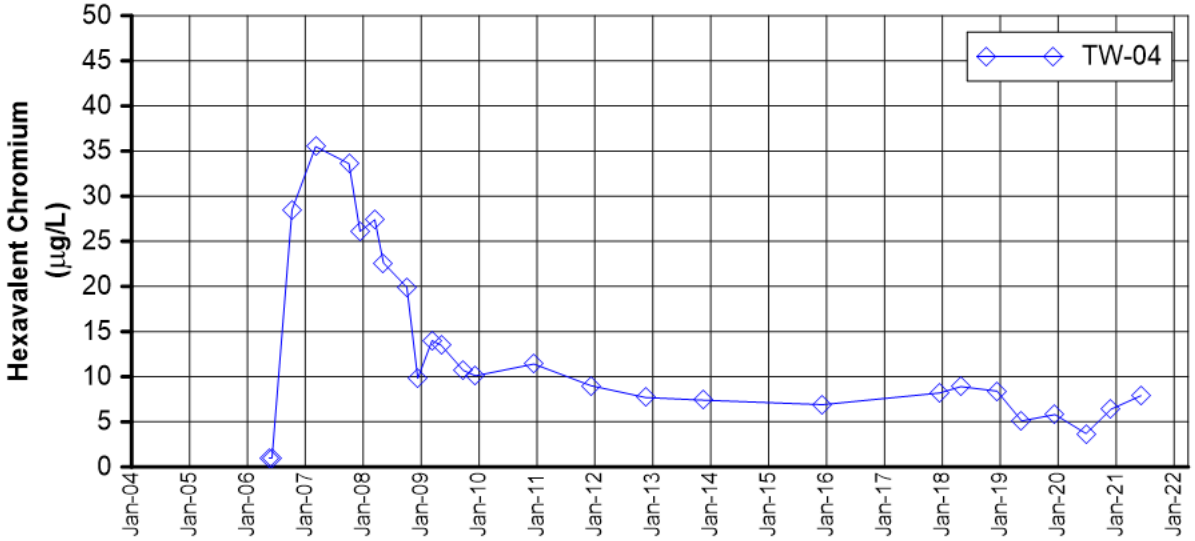

FIGURE D-19
HEXAVALENT CHROMIUM
IN TW-04
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE
MONITORING AND SITE-WIDE GROUNDWATER
AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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APPENDIX E

Interim Measures Extraction System Operations Log, Third Quarter 2021

On June 15, 2021, the TW-01 aquifer test was started. Prior to the start of the TW-01 aquifer test, extraction wells TW-2D and TW-3D operated at a target pump rate of 135 gallons per minute (gpm), excluding periods of planned and unplanned downtime. Once the test was started, extraction well TW-3D was turned off and extraction well TW-2D, combined with TW-01, operated at a slightly lower total rate. TW-2D cannot pump more than 28 gpm, for a combined maximum possible rate of 118 gpm in July. The flow control valve for TW-3D was replaced to allow lower pumping rates, and pumping from TW-3D resumed on August 21, 2021 and continued through October. Groundwater extraction pumping from TW-2D stopped when TW-3D resumed pumping during the TW-1 test. Extraction wells TW-2S and PE-01 were not operated during Third Quarter 2021.

A portion of the piping/conduit for PE-01 at the MW-20 Bench was disconnected from the IM-3 system on January 18, 2019 to allow for remedy construction activities without crossing under the PE-01 piping/conduit, and that portion of pipeline was still disconnected in Third Quarter 2021. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 96 percent during the Third Quarter 2021 reporting period.

The Interim Measure Number 3 (IM-3) facility treated approximately 21,431,482 gallons of extracted groundwater during Third Quarter 2021, including 15,146,015 gallons pumped from TW-01 for the aquifer test.

In addition to extracted groundwater, the IM-3 facility also treated zero gallons of Final Groundwater Remedy wastewater, 2,125 gallons of sampling purge water, and 32,000 gallons of groundwater from injection well backwashing/re-development during Third Quarter 2021. Six containers of solids from the IM-3 facility were transported offsite during Third Quarter 2021.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 4 percent of downtime during Third Quarter 2021) are summarized below. The times shown are in Pacific Standard Time to be consistent with other data collected (for example, water level data) at the site.

E.1 July 2021

- **July 2, 2021 (unplanned**): The extraction well system was offline from 3:10 p.m. to 3:14 p.m. due to a programmable logic controller (PLC) and human machine interface (HMI) connectivity issue. Extraction system downtime was 4 minutes.
- **July 6, 2021 (unplanned**): The extraction well system was offline from 4:02 p.m. to 4:06 p.m. due to a PLC and HMI connectivity issue. Extraction system downtime was 4 minutes.
- **July 7, 2021 (unplanned):** The extraction well system was offline from 8:24 a.m. to 2:24 p.m. to replace the Clarifier Feed Pump (P-400). Extraction system downtime was 6 hours 0 minutes.
- **July 9, 2021 (unplanned):** The extraction well system was offline from 5:30 p.m. to 5:40 p.m. and from 5:52 p.m. to 6:00 p.m. due to a City of Needles power outage. The outage required switching to the backup generator and resuming normal power supply when the power outage ended. Extraction system downtime was 18 minutes.
- **July 13, 2021 (unplanned**): The extraction well system was offline from 1:56 p.m. to 2:02 p.m. due to a PLC and HMI connectivity issue. Extraction system downtime was 6 minutes.
- **July 21, 2021 (unplanned):** The extraction well system was offline from 8:06 a.m. to 7:40 p.m. due to replacing microfilter modules. Extraction system downtime was 11 hours 34 minutes.
- **July 22, 2021 (unplanned):** The extraction well system was offline from 12:08 p.m. to 12:10 p.m.; due to a City of Needles power outage. Extraction system downtime was 2 minutes.
- **July 22, 2021 (unplanned):** The extraction well system was offline from 12:16 p.m. to 12:18 p.m. due to a PLC and HMI connectivity issue. Extraction system downtime was 2 minutes.
- **July 29, 2021 (unplanned):** The extraction well system was offline from 8:06 a.m. to 8:26 a.m. due to high-water levels in the clarifier. The operator shut down extraction so the clarifier could drain to a suitable level. Extraction system downtime was 20 minutes.

E.2 August 2021

- **August 2, 2021 (unplanned**): The extraction well system was offline from 1:12 p.m. to 2:14 p.m. due to high-water levels in the Raw Water Storage Tank (T-100). The operator shut down extraction so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 1 hour 2 minutes.
- **August 2-3, 2021 (unplanned**): The extraction well system was offline from 7:08 p.m. to 12:26 a.m. due to cleaning the clarifier Sludge Withdrawal Pump (P-401) and replacing the associated piping. Extraction system downtime was 5 hours 18 minutes.
- **August 3, 2021 (unplanned**): The extraction well system was offline from 6:52 p.m. to 9:34 p.m. due to high-water levels in T-100. The operator shut down extraction so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 2 hours 42 minutes.
- **August 4, 2021 (unplanned**): The extraction well system was offline from 3:24 a.m. to 4:20 a.m. due to high-water levels in T-100. The operator shut down extraction so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 56 minutes.
- **August 4, 2021 (unplanned**): The extraction well system was offline from 9:00 a.m. to 6:14 p.m. due to cleaning the clarifier and repairing a leak in the ferrous chloride feed system. Extraction system downtime was 9 hours 14 minutes.
- **August 11, 2021 (unplanned):** The extraction well system was offline from 3:44 p.m. to 3:50 p.m. due to a programmable logic controller (PLC) and human machine interface (HMI) connectivity issue. Extraction system downtime was 6 minutes.
- **August 11, 2021 (unplanned):** The extraction well system was offline from 7:06 p.m. to 7:08 p.m. due to a PLC and HMI connectivity issue. Extraction system downtime was 2 minutes.
- **August 20, 2021 (unplanned):** The extraction well system was offline from 11:30 a.m. to 3:38 p.m. due to changing out the Clarifier Feed Pump (P-400) which was scaled heavily reducing flow through the plant. Extraction system downtime was 4 hours 8 minutes.
- **August 31, 2021 (unplanned**): The extraction well system was offline from 5:08 p.m. to 8:56 p.m. due to high-water levels in T-100 caused by too much flow from extraction well TW-3D. Extraction system downtime was 3 hours 48 minutes

E.3 September 2021

- **September 1, 2021 (unplanned**): The extraction well system was offline from 12:08 p.m. to 2:36 p.m. due to high-water levels in the Raw Water Storage Tank (T-100). The operator shut down extraction so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 2 hours 28 minutes.
- **September 3, 2021 (unplanned**): The extraction well system was offline from 9:20 a.m. to 11:04 a.m. due to troubleshooting microfilter operating issues and adjusting water levels in the process tanks. Extraction system downtime was 1 hour 44 minutes.
- **September 3, 2021 (unplanned**): The extraction well system was offline from 5:50 p.m. to 5:54 p.m. due to due to a programmable logic controller (PLC) and human machine interface (HMI) connectivity issue. Extraction system downtime was 4 minutes.
- **September 4, 2021 (unplanned**): The extraction well system was offline from 2:06 a.m. to 12:42 a.m. due to an alarm in the extraction system leak detection system. Extraction system downtime was 10 hours 36 minutes.
- **September 4, 2021 (unplanned**): The extraction well system was offline from 3:08 p.m. to 3:10 p.m. due to sampling extraction well TW-2D. Extraction system downtime was 2 minutes.

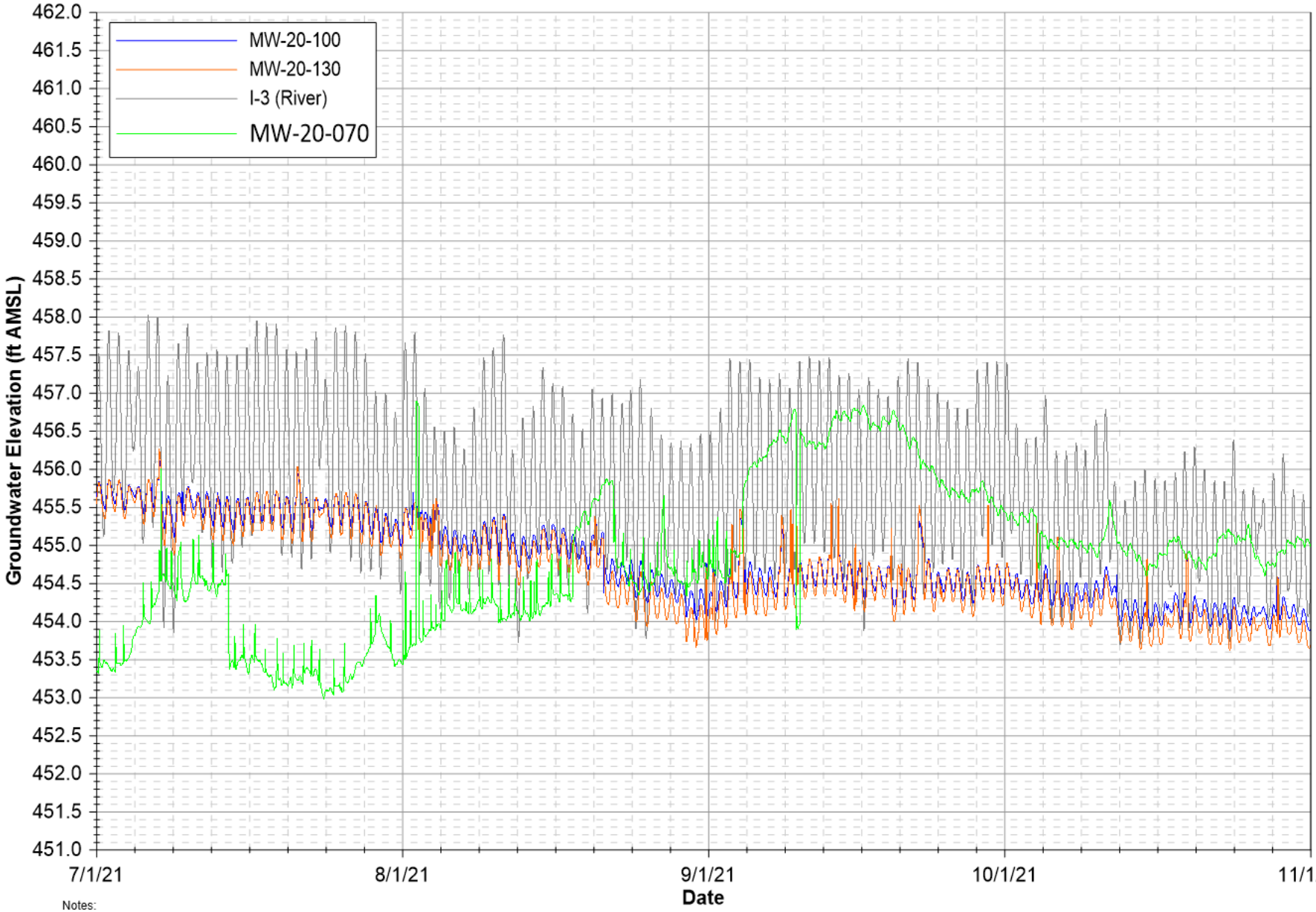
- **September 8, 2021 (unplanned):** The extraction well system was offline from 8:04 a.m. to 3:44 p.m. due to changing microfilter modules and to replace a tank level sensor. Extraction system downtime was 7 hours 40 minutes.
- **September 9, 2021 (unplanned):** The extraction well system was offline from 6:36 a.m. to 8:34 a.m. due to repairing a leak in the microfilter piping. Extraction system downtime was 1 hour 58 minutes.
- **September 9, 2021 (unplanned):** The extraction well system was offline from 11:34 a.m. to 12:58 p.m. due to lowering water levels in T-100 to allow delivery of injection well IW-2 backwash water. Extraction system downtime was 1 hour 24minutes.
- **September 13, 2021 (unplanned**): The extraction well system was offline from 8:32 a.m. to 11:36 a.m. due to high-water levels in T-100. Extraction system downtime was 3 hours 4 minutes.
- **September 14, 2021 (unplanned**): The extraction well system was offline from 2:28 a.m. to 5:14 a.m. due to high-water levels in T-100. Extraction system downtime was 2 hours 46 minutes.
- **September 15, 2021 (unplanned**): The extraction well system was offline from 7:34 p.m. to 9:16 p.m. due to high-water levels in T-100. Extraction system downtime was 1 hours 42 minutes.
- **September 19, 2021 (unplanned**): The extraction well system was offline from 11:14 a.m. to 12:06 p.m. due to replacing the flow control valve in extraction well TW-3D. Extraction system downtime was 52 minutes.
- **September 22, 2021 (unplanned**): The extraction well system was offline from 6:26 a.m. to 7:14 p.m. due to replacing the Clarifier Feed Pump (P-400) and associated piping. Extraction system downtime was 12 hours 48 minutes.
- **September 29, 2021 (unplanned):** The extraction well system was offline from 6:42 a.m. to 9:10 a.m. due to lowering water levels in T-100 to allow delivery of injection well IW-3 backwash water and maintain plant pH control system. Extraction system downtime was 2 hours 28 minutes.

E.4 October 2021

- **October 4, 2021 (unplanned**): The extraction well system was offline from 3:44 a.m. to 7:10 a.m. due to high-water levels in the Raw Water Storage Tank (T-100). The operator shut down extraction so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 3 hours 16 minutes.
- **October 6, 2021 (unplanned**): The extraction well system was offline from 7:48 a.m. to 12:50 a.m. due to completing maintenance of the human machine interface (HMI) computer workstations. Extraction system downtime was 5 hour 2 minutes.
- **October 12, 2021 (unplanned**): The extraction well system was offline from 8:02 p.m. to 8:06 p.m. due to a power outage caused by high winds. Extraction system downtime was 4 minutes.
- **October 15, 2021 (unplanned**): The extraction well system was offline from 8:52 a.m. to 11:16 a.m. due to replacing the Clarifier Feed Pump (P-400) and a sludge control valve (FV-400) Extraction system downtime was 2 hours 24 minutes.
- **October 19, 2021 (unplanned**): The extraction well system was offline from 9:08 p.m. to 1:02 p.m. due to due to changing microfilter modules. Extraction system downtime was 3 hours 54 minutes.
- **October 28, 2021 (unplanned):** The extraction well system was offline from 12:08 p.m. to 12:14 p.m. and from 12:32 p.m. to 12:50 p.m. due to a power failure at the City of Needles power tap. Extraction system downtime was 24 minutes.
- **October 28, 2021 (unplanned):** The extraction well system was offline from 2:04 p.m. to 6:24 p.m. due to a low pH level in the Effluent Tank (T-700). The system was put in recirculation mode until the pH was raised to the target level. Extraction system downtime was 4 hour 20 minutes.

APPENDIX F

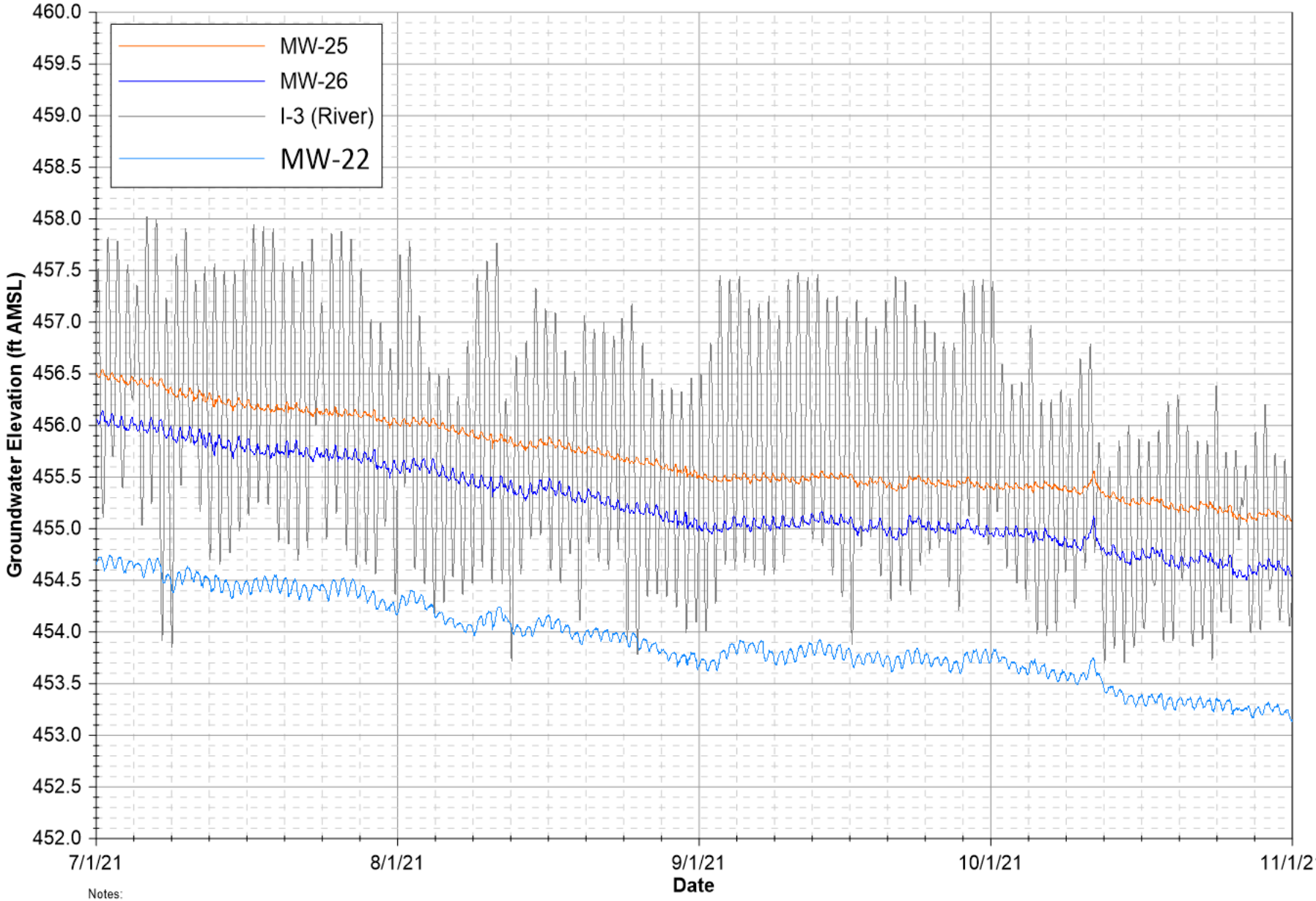
Hydrographs, Third Quarter 2021



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.

FIGURE F-1A
MW-20 CLUSTER HYDROGRAPHS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



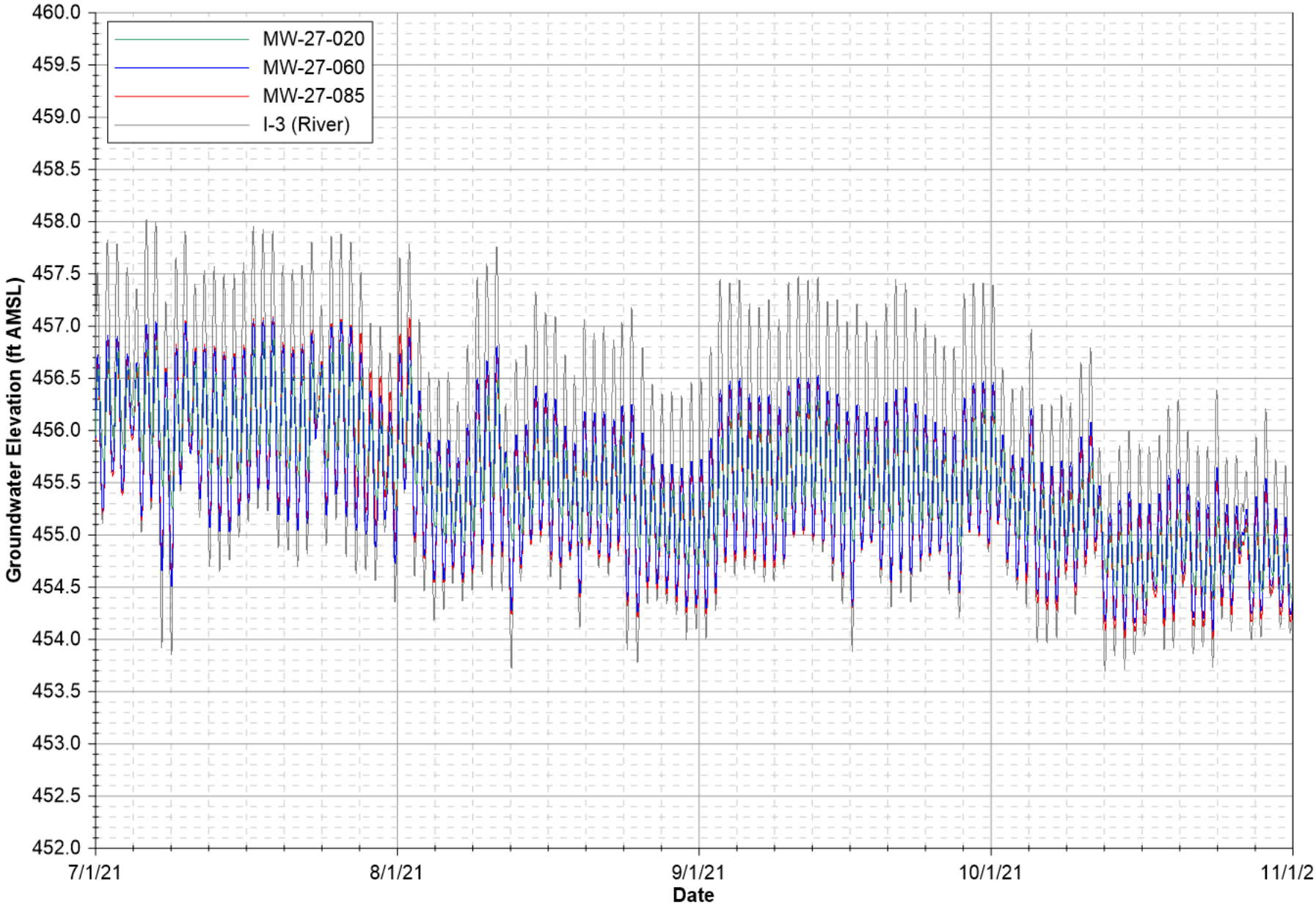
Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.

FIGURE F-1B

MW-22, MW-25, AND MW-26 HYDROGRAPHS

THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



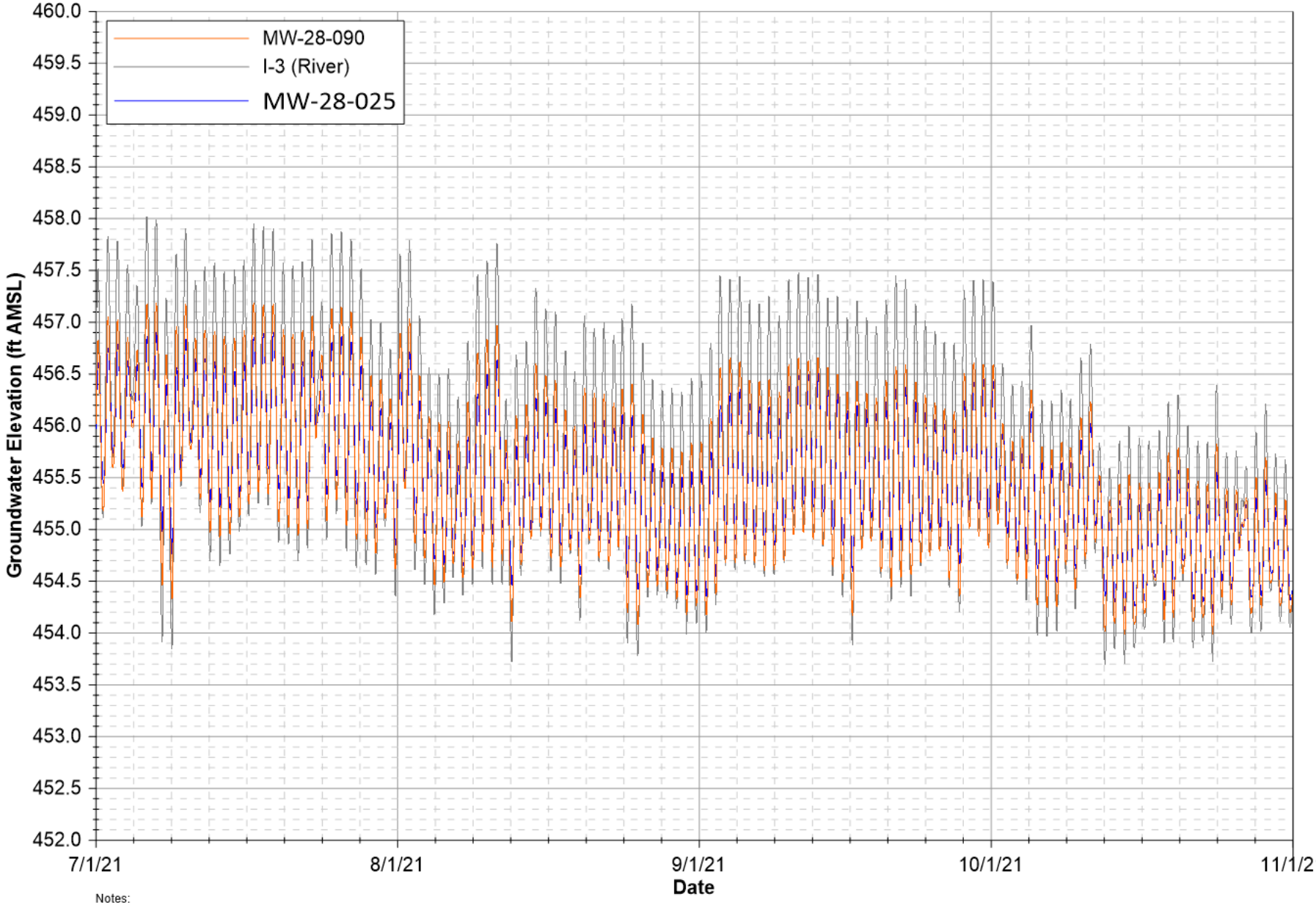
Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level

FIGURE F-1C

MW-27 CLUSTER HYDROGRAPHS

THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

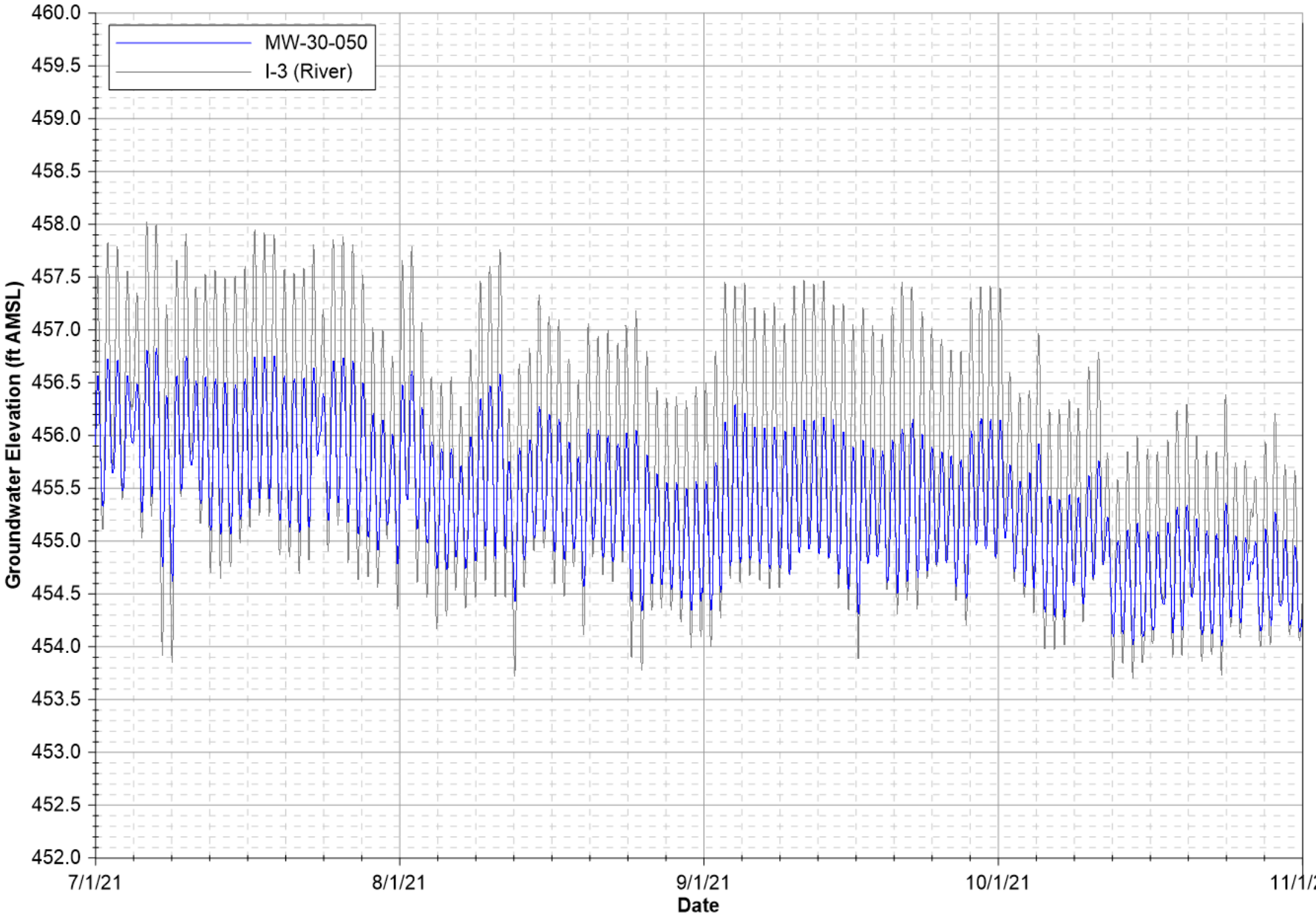
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.

FIGURE F-1D
MW-28 CLUSTER HYDROGRAPHS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

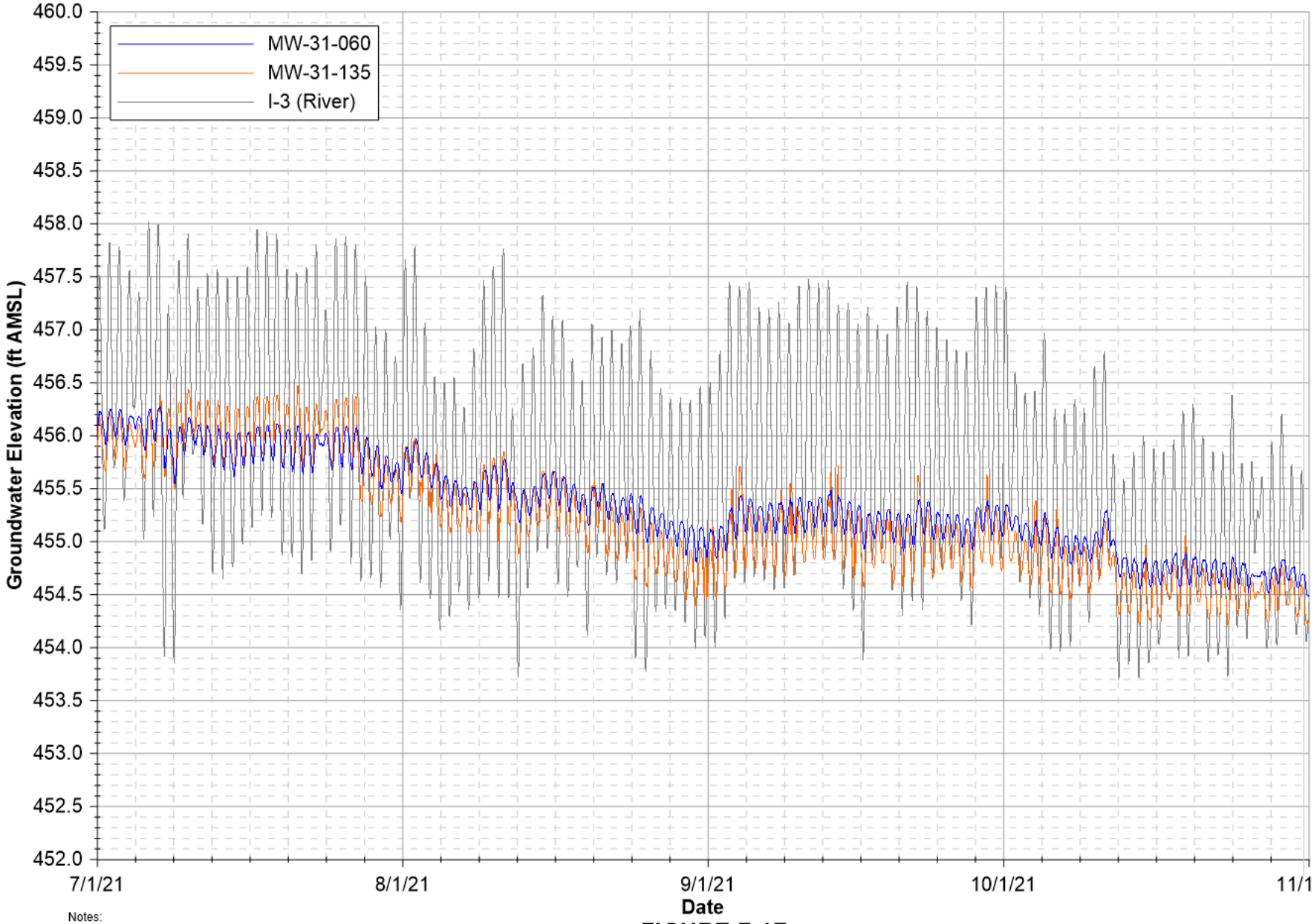
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.

FIGURE F-1E
MW-30-050 HYDROGRAPH
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

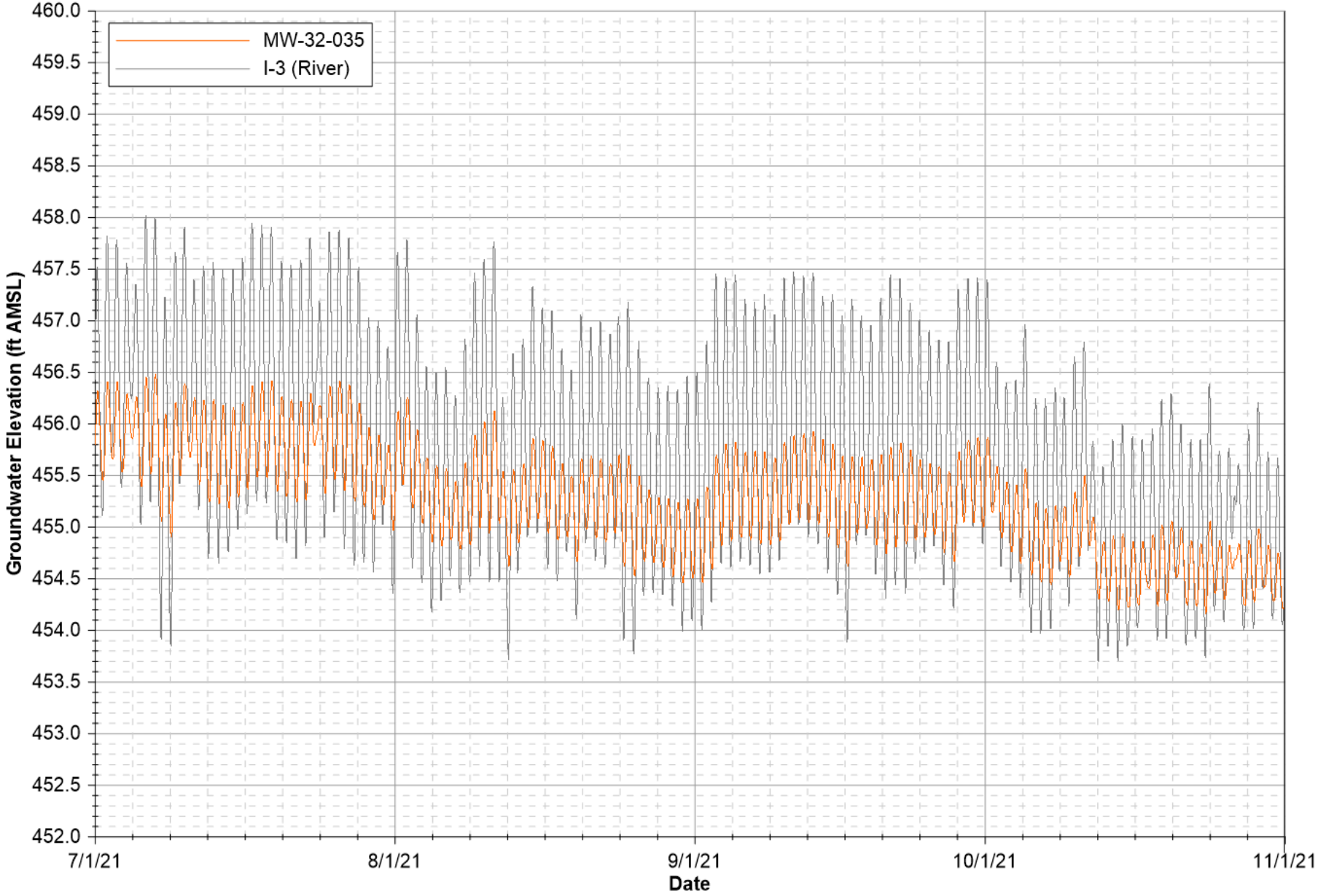
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.

FIGURE F-1F
MW-31 CLUSTER HYDROGRAPHS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

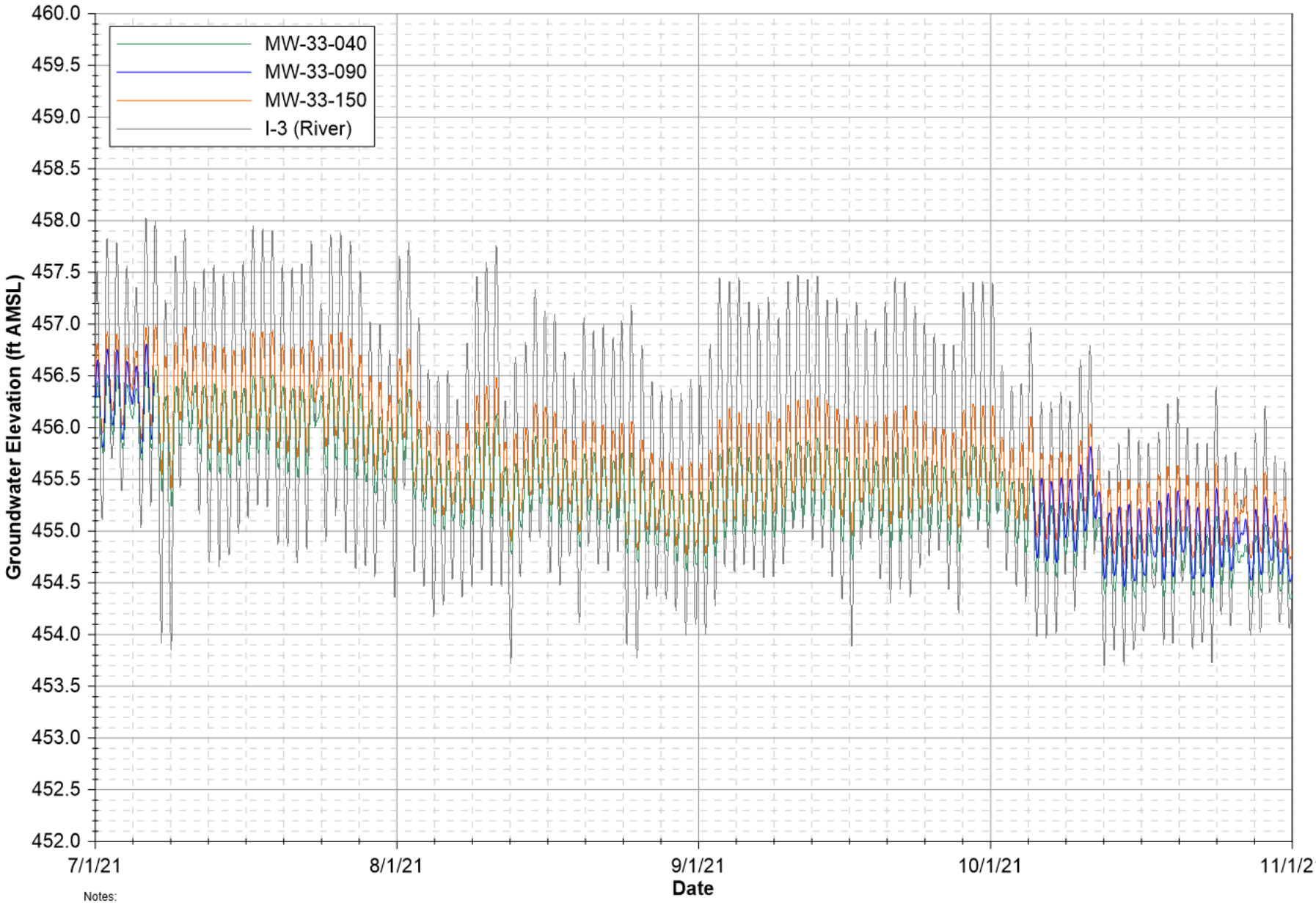
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.

FIGURE F-1G
MW-32 HYDROGRAPH
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



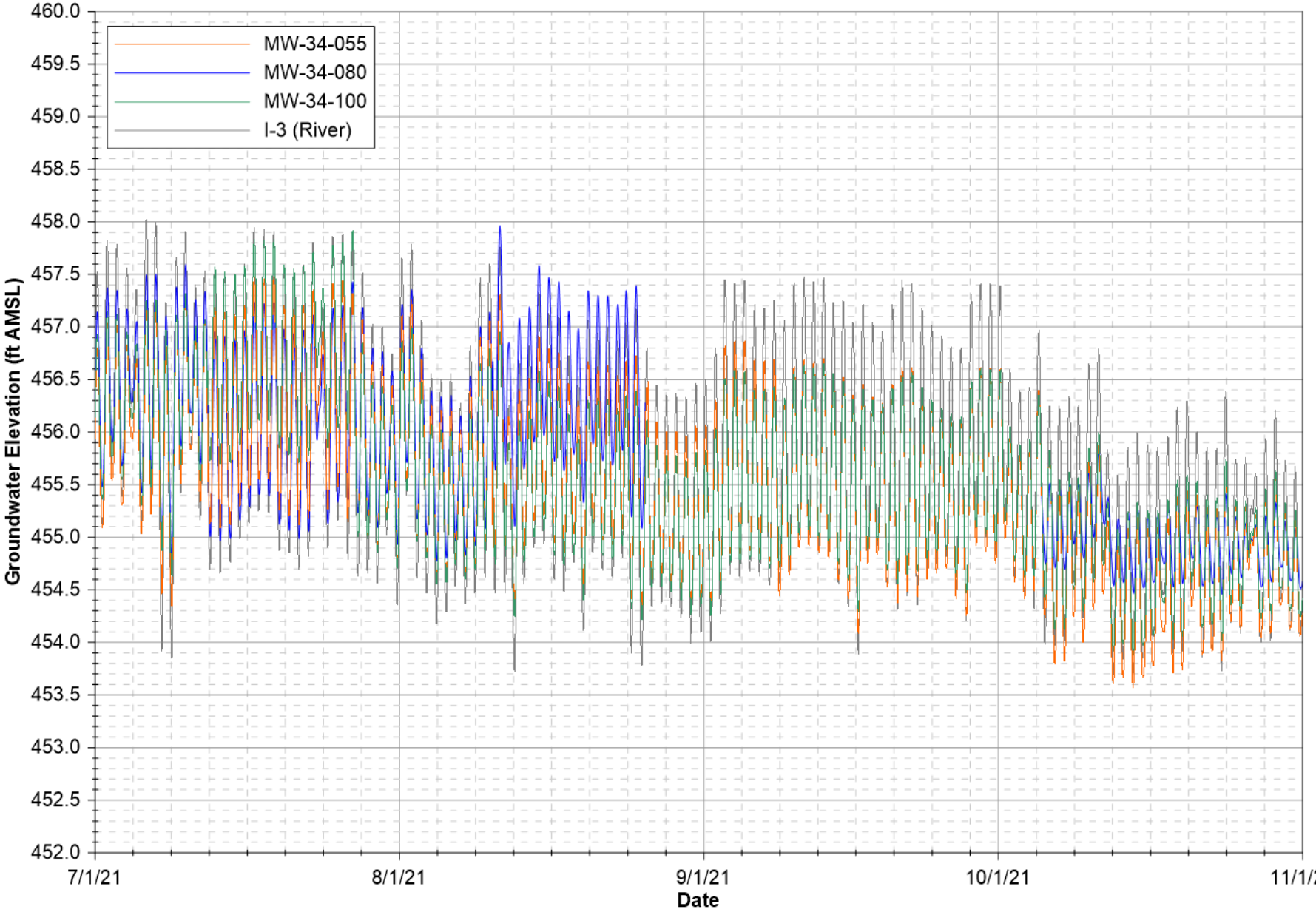
Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. MW-33-90 data unavailable from 7 July, 2021 through 5 October 2021 due to transducer malfunction.

FIGURE F-1H

MW-33 CLUSTER HYDROGRAPHS

THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

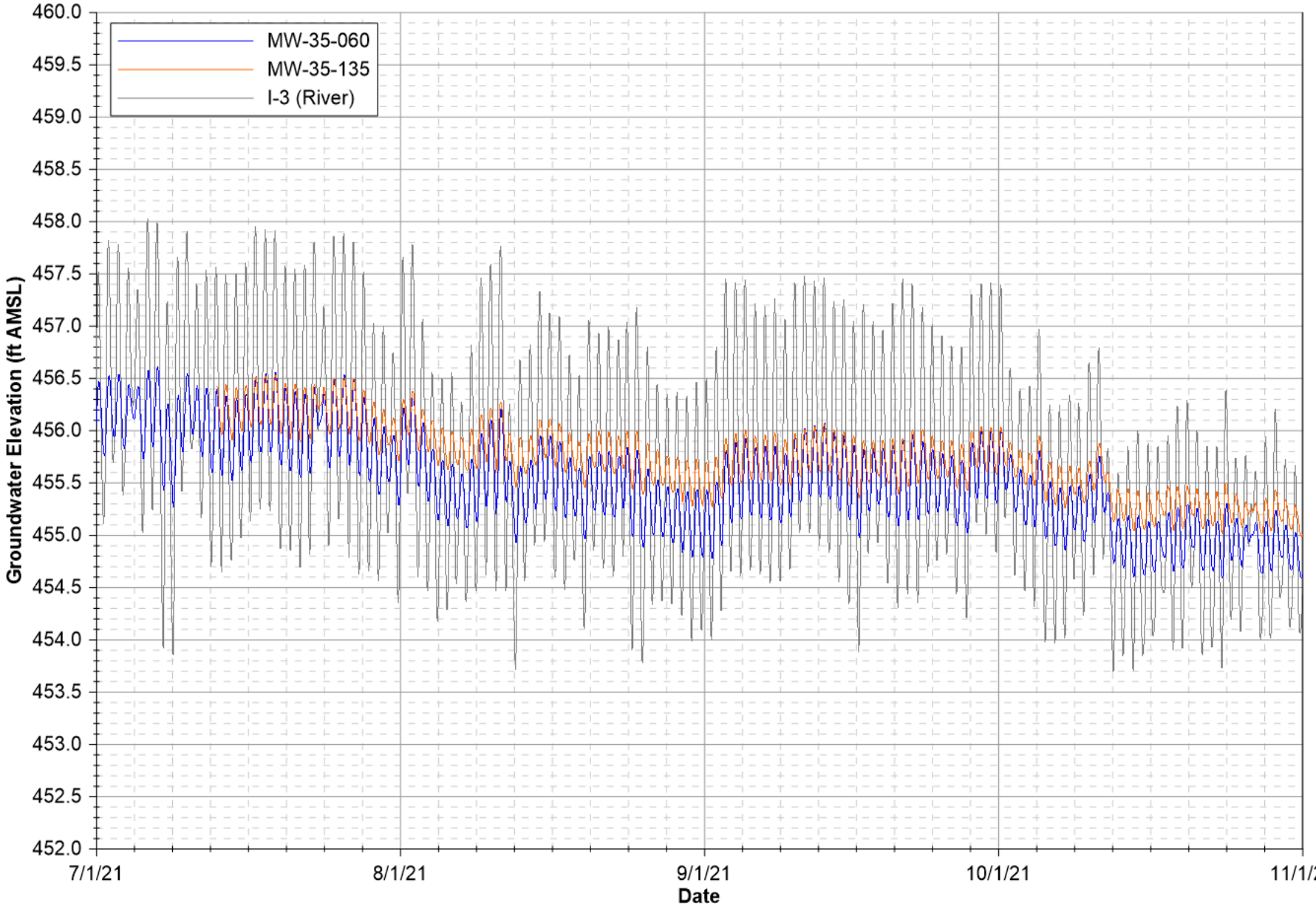
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. MW-34-80 data unavailable from 26 August 2021 through 8 September 2021 due to transducer malfunction.

FIGURE F-1I
MW-34 CLUSTER HYDROGRAPHS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

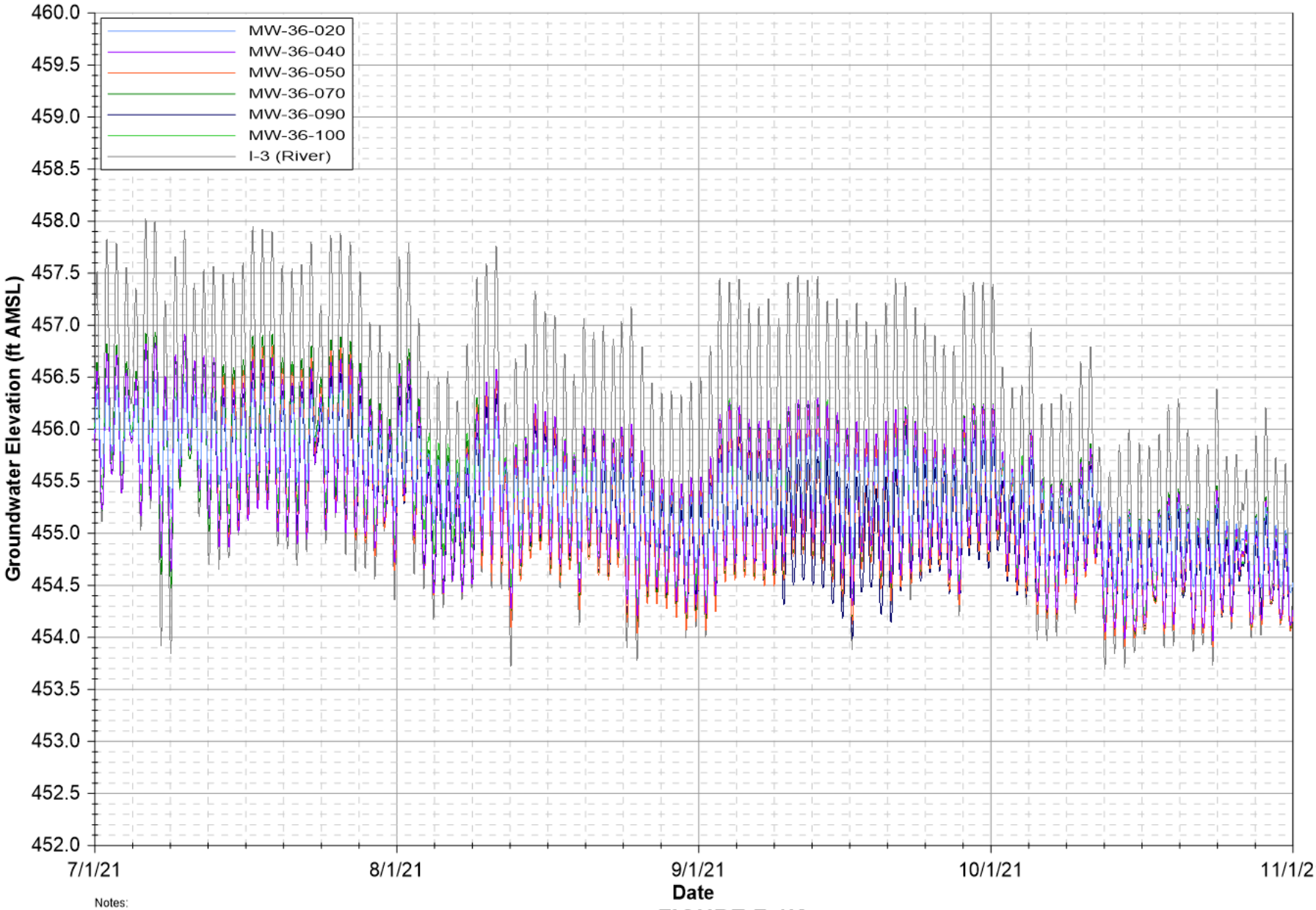
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. MW-35-135 data until July 13, 2021 due to transducer malfunction.

FIGURE H-1J
MW-35 CLUSTER HYDROGRAPHS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

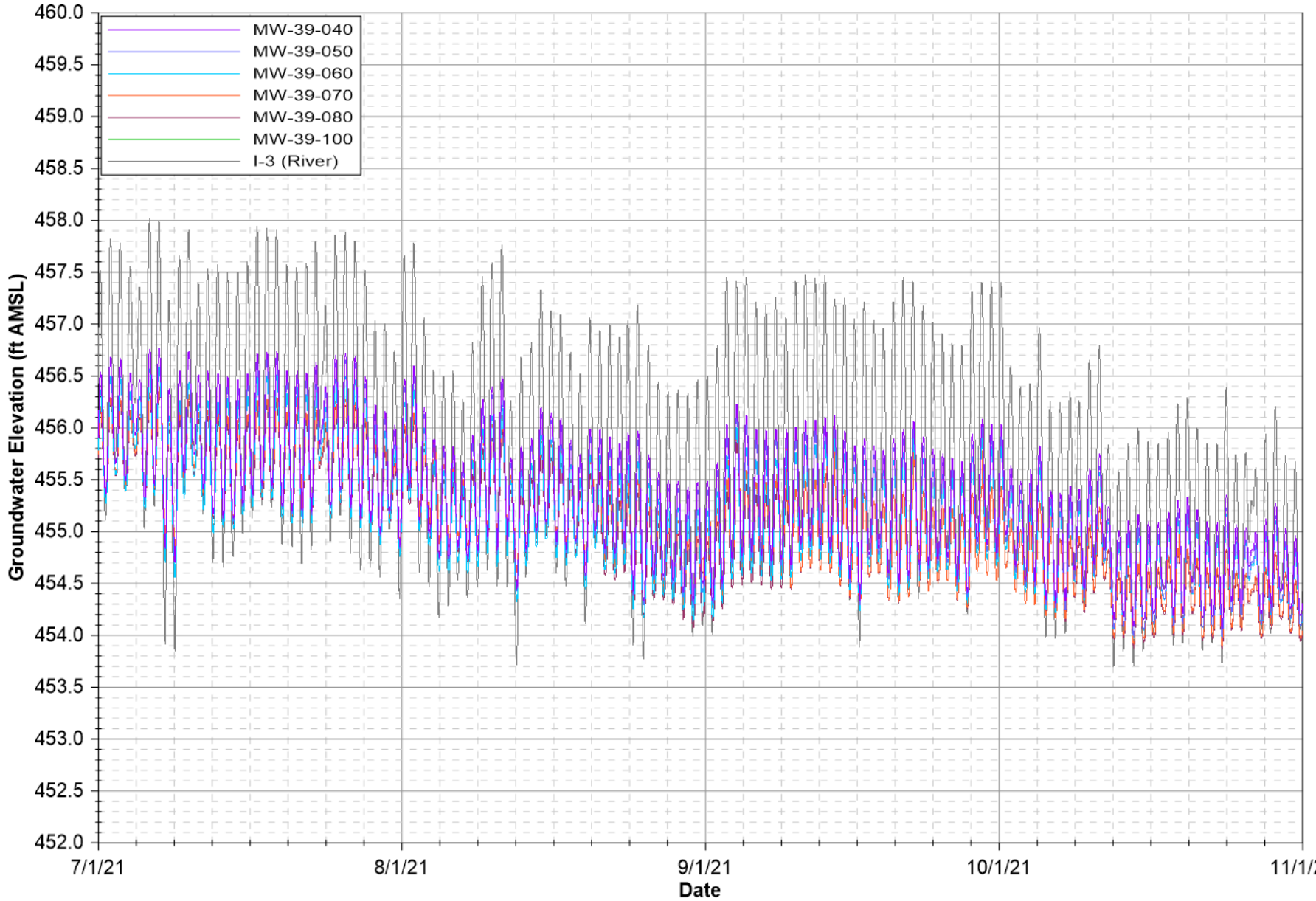
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. MW-36-50 data unavailable until July 13, 2021 due to transducer malfunction.
4. MW-36-90 data unavailable until July 13, 2021 due to transducer malfunction.

FIGURE F-1K
MW-36 CLUSTER HYDROGRAPHS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

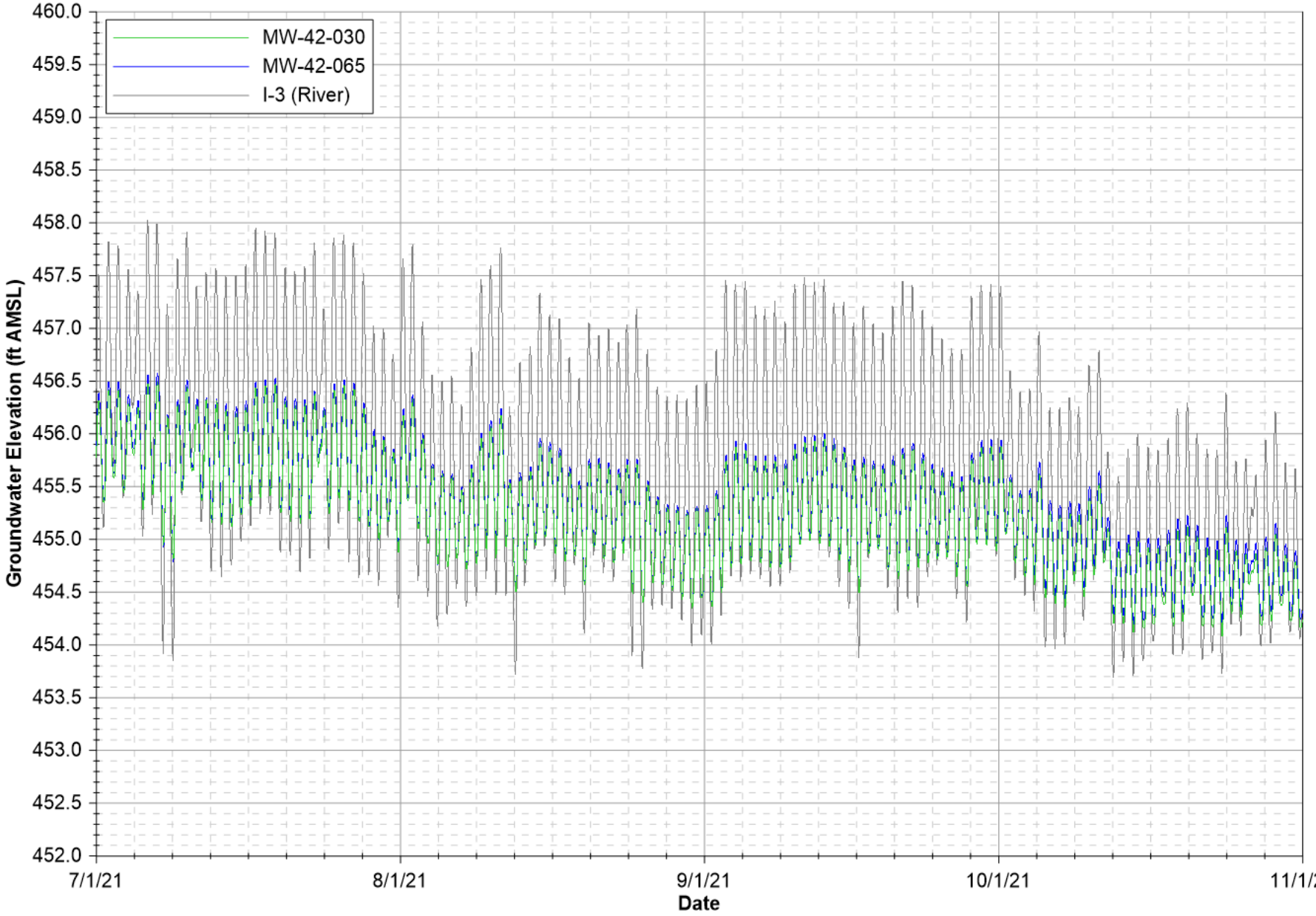
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level

FIGURE F-1L
MW-39 CLUSTER HYDROGRAPHS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

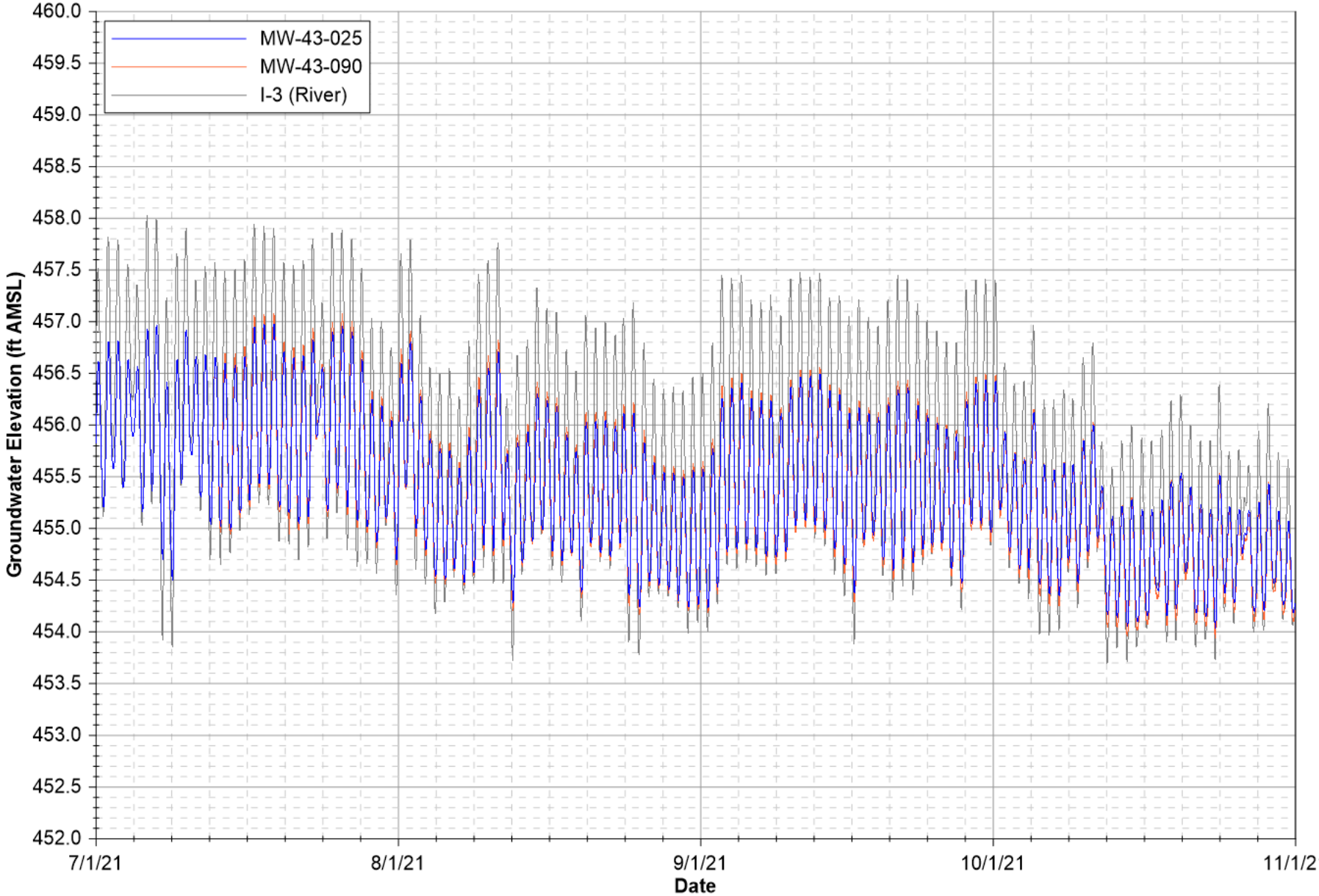
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.

FIGURE F-1M
MW-42 CLUSTER HYDROGRAPHS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

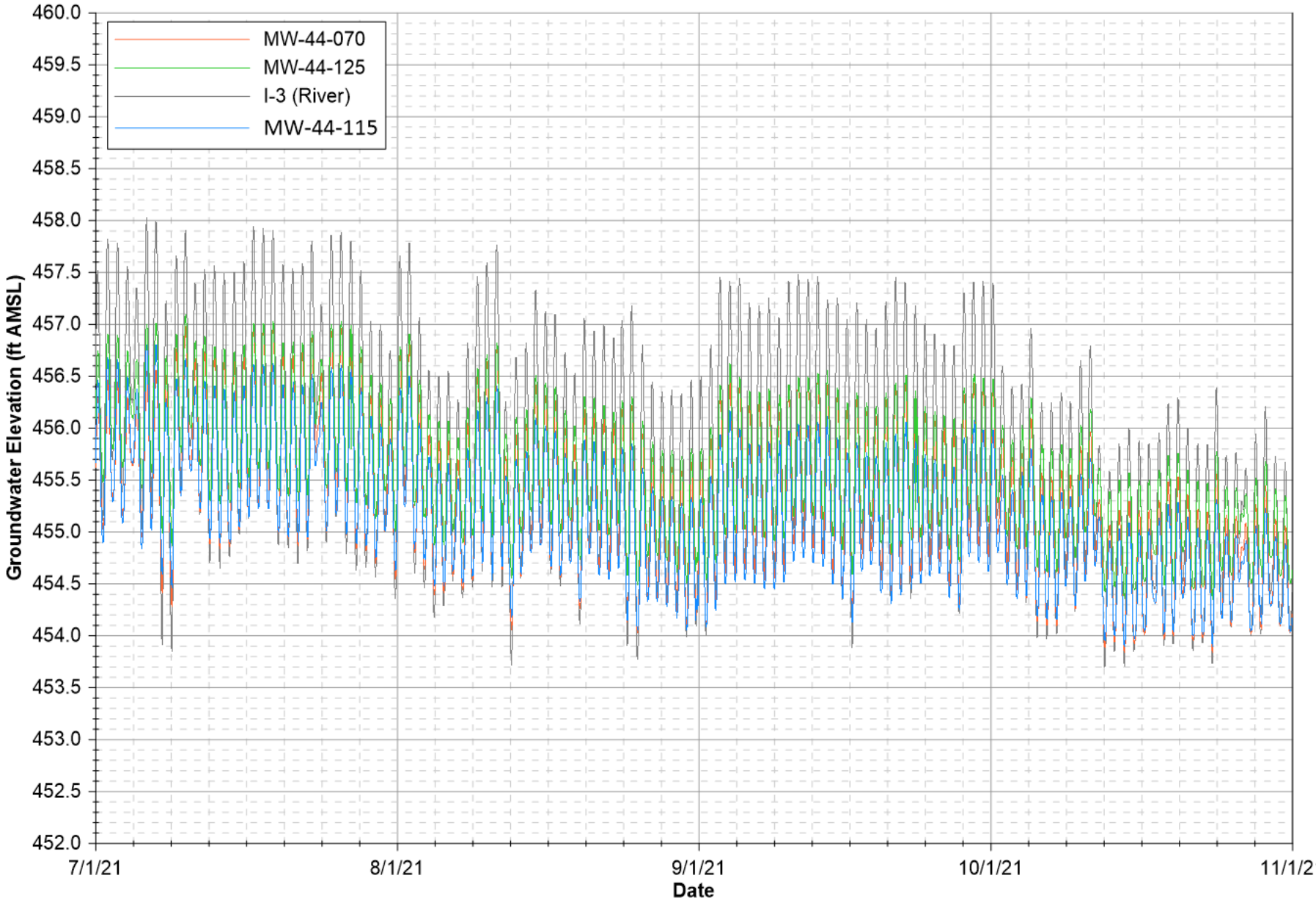
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. MW-43-090 data unavailable until July 13, 2021 due to transducer malfunction.

FIGURE F-1N
MW-43 CLUSTER HYDROGRAPHS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

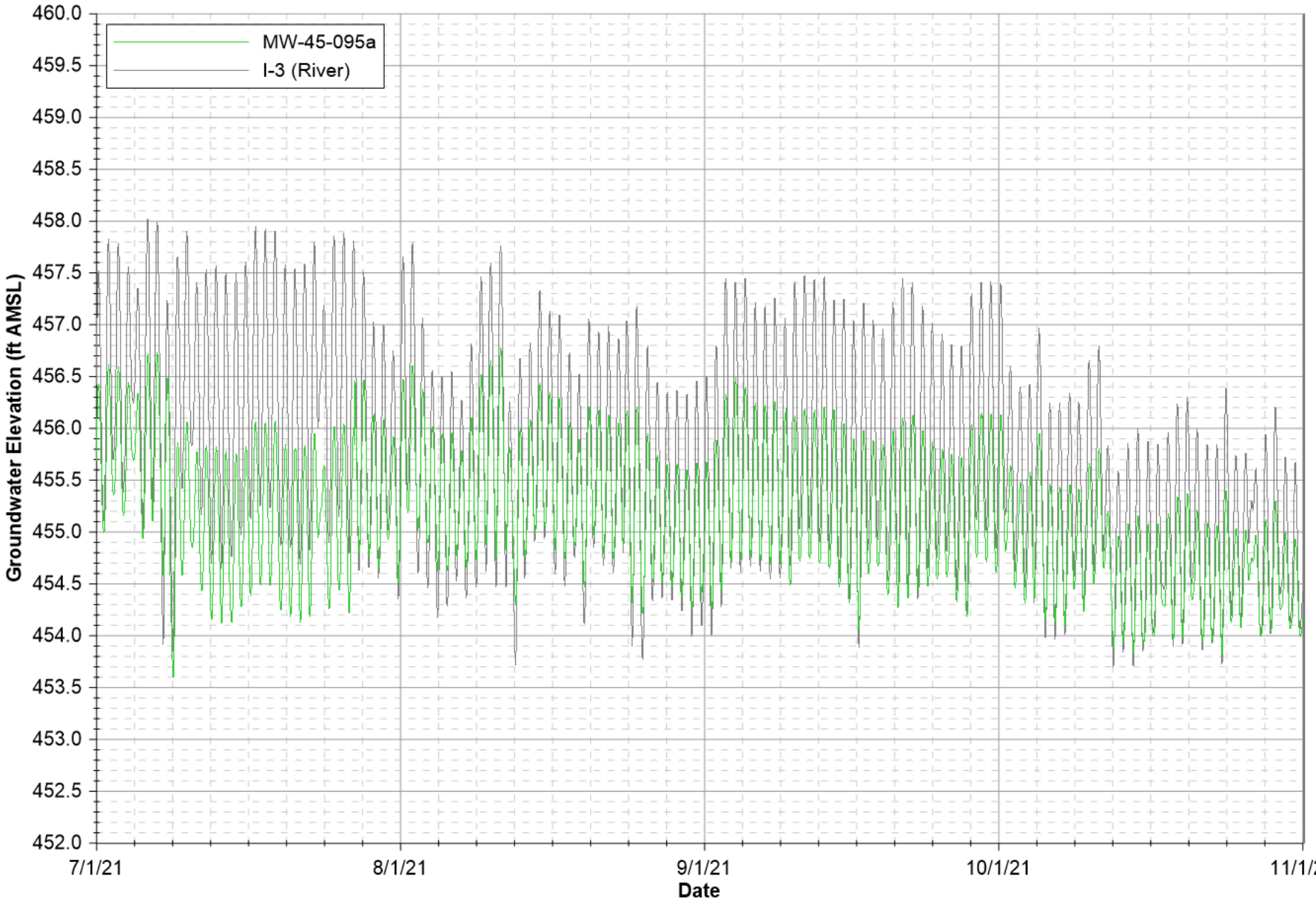
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.

FIGURE F-1O
MW-44 CLUSTER HYDROGRAPHS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

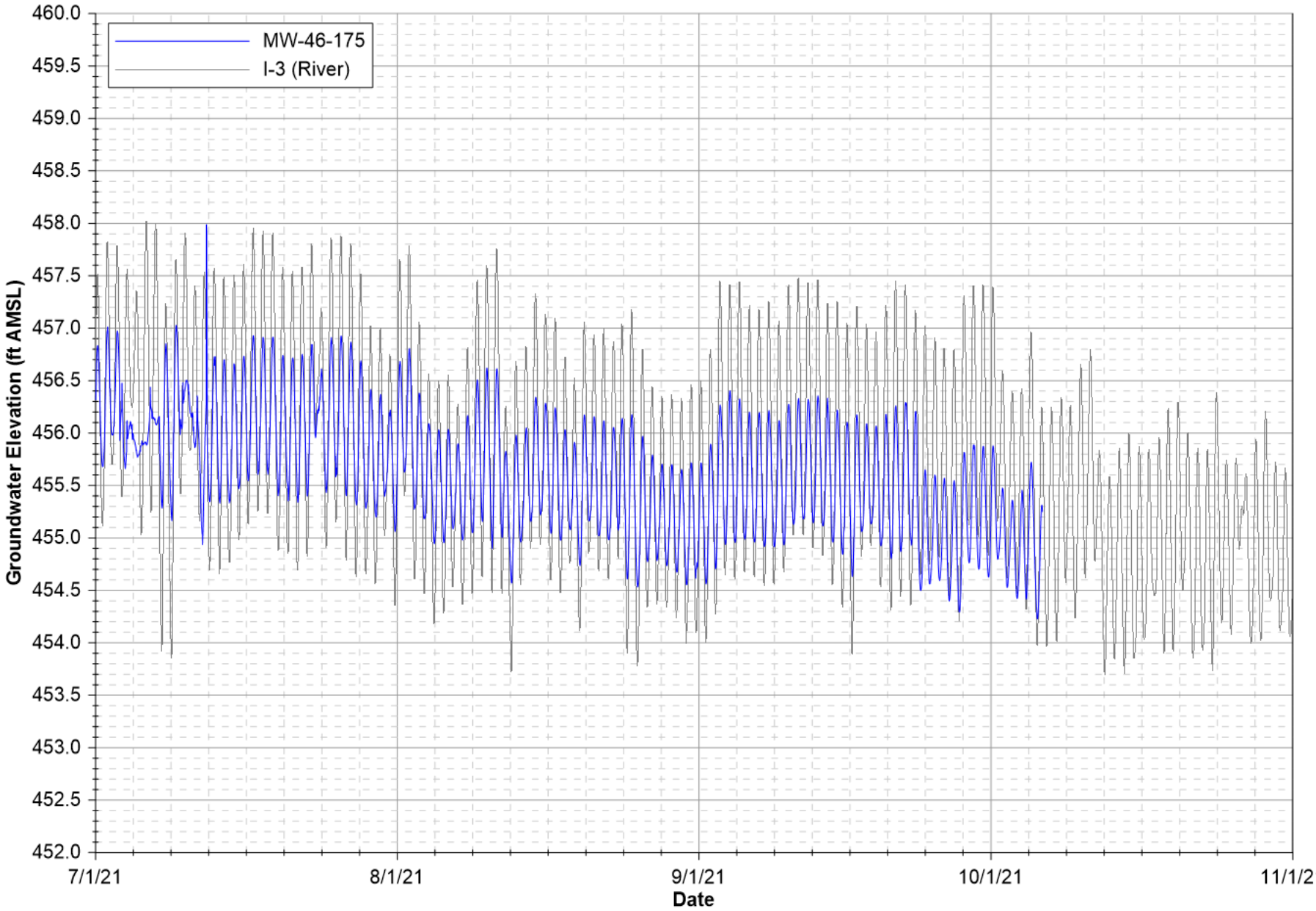
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.

FIGURE F-1P
MW-45-095a HYDROGRAPH
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

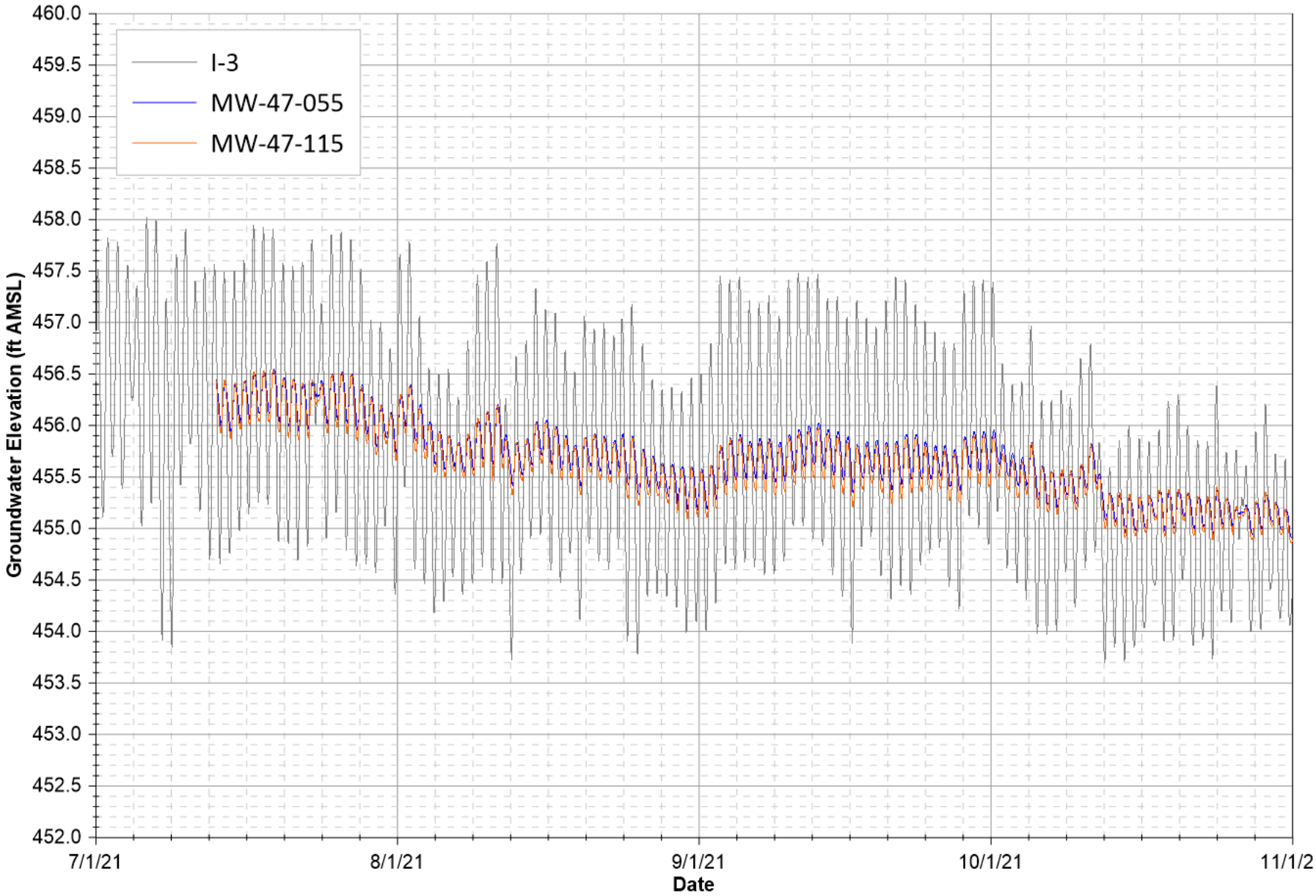
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. MW-46-175 data unavailable from October 6, 2021 due to transducer malfunction.

FIGURE F-1Q
MW-46 HYDROGRAPH
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

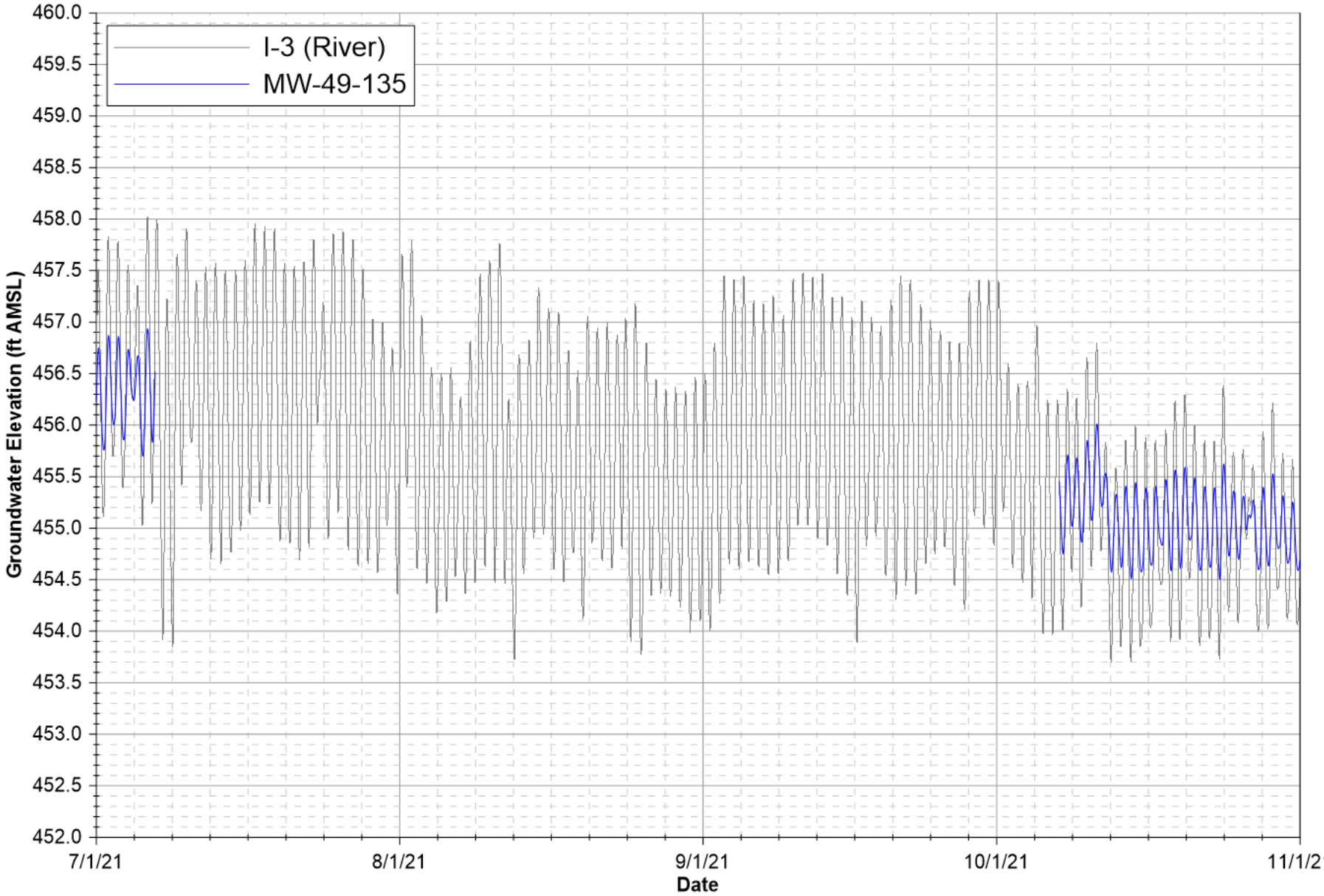
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. MW-47-055 data unavailable until July 13, 2021 due to transducer malfunction.
3. MW-47-115 data unavailable until July 13, 2021 due to transducer malfunction.

FIGURE F-1R
MW-47 CLUSTER HYDROGRAPHS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

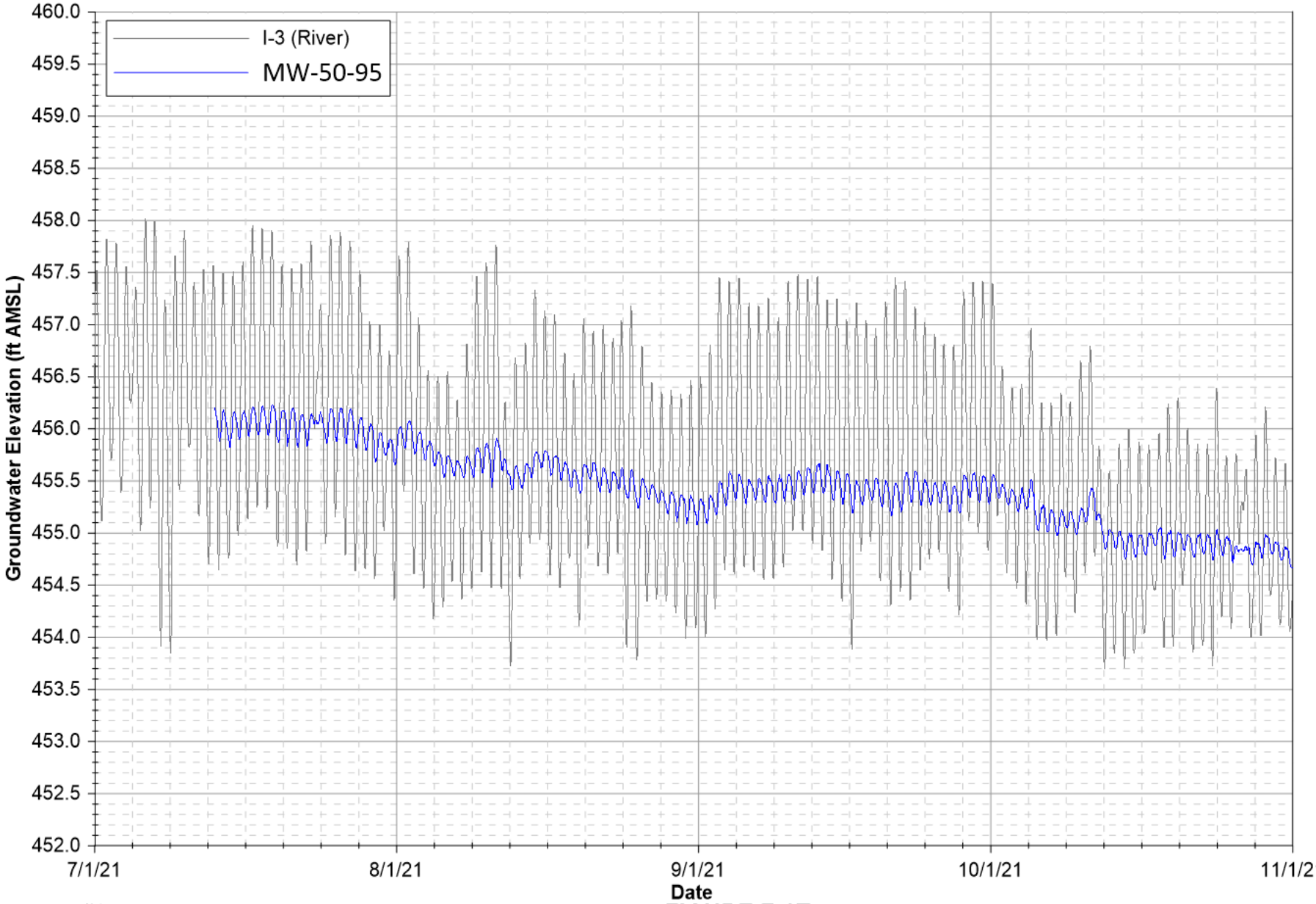
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. MW-49-135 data unavailable from July 7, 2021 through October 7, 2021 due to transducer malfunction.

FIGURE F-1S
MW-49 HYDROGRAPH
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



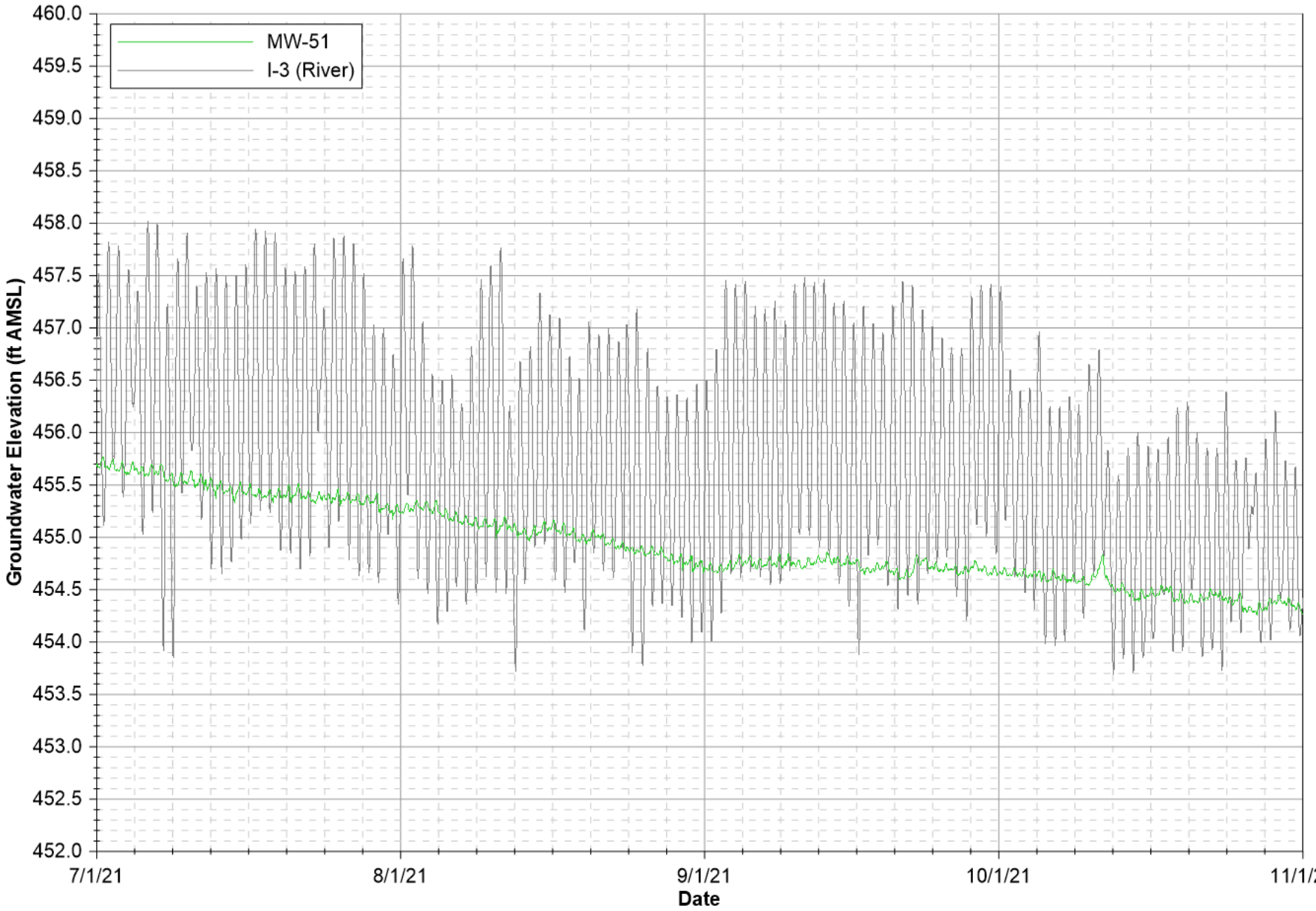
Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. MW-50-095 data unavailable until July 13, 2021 due to transducer malfunction.

FIGURE F-1T

MW-50 HYDROGRAPH

THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



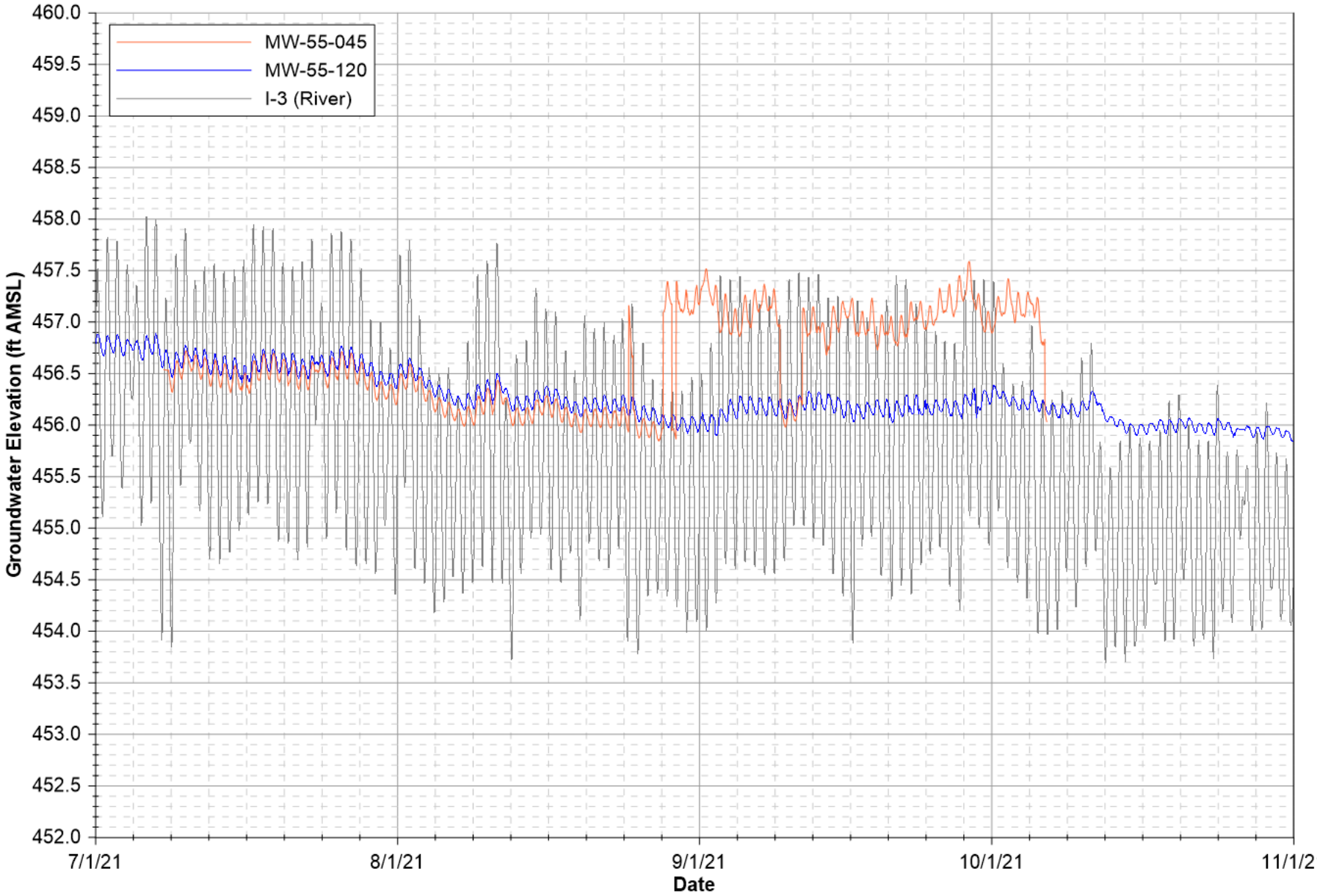
Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.

FIGURE F-1U

MW-51 HYDROGRAPHS

THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. MW-55-045 data unavailable until July 8, 2021 and from October 6, 2021 due to transducer malfunction.

FIGURE F-1v
MW-55 CLUSTER HYDROGRAPHS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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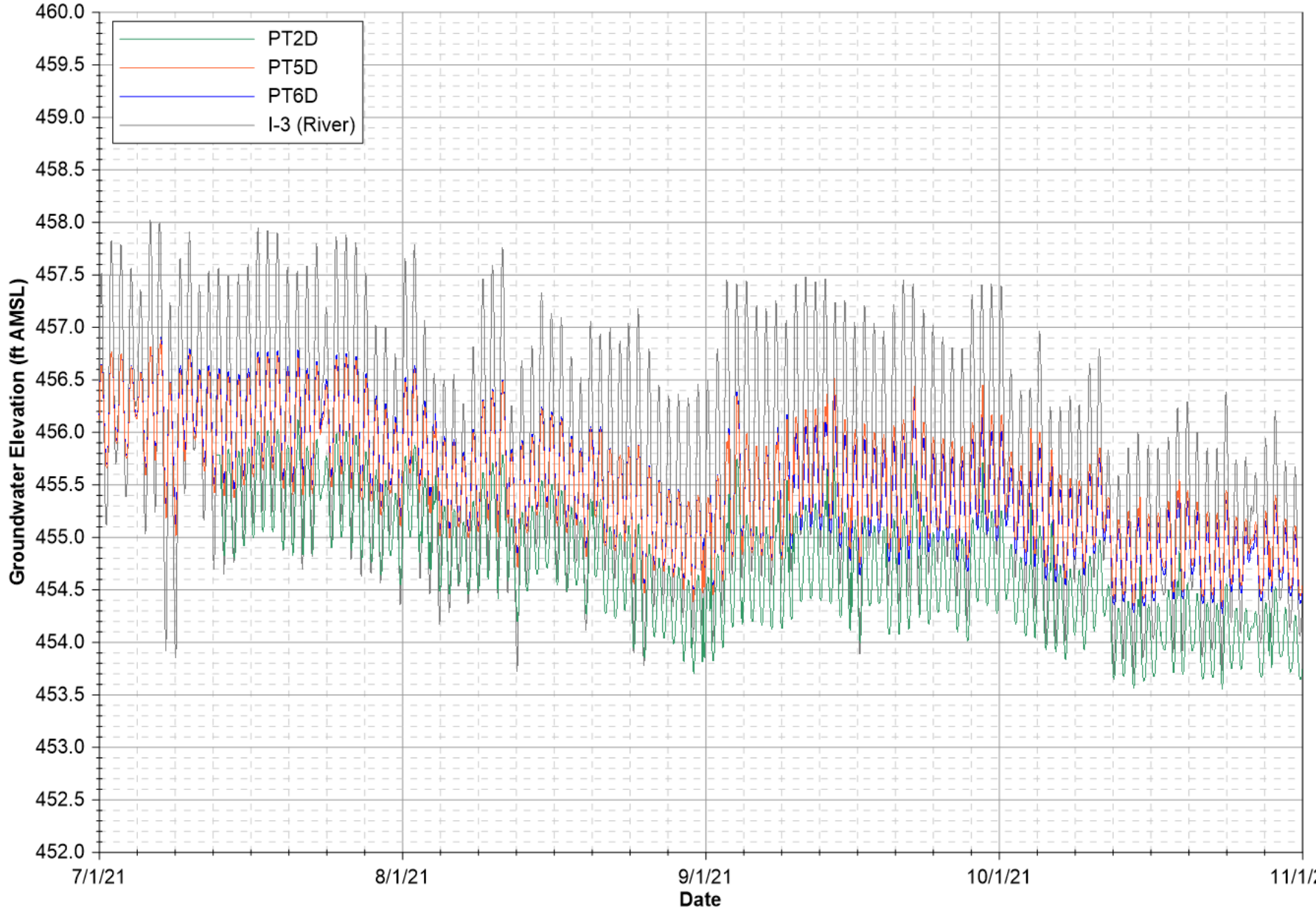

Note:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. PT2D data unavailable unitl July 13, 2021 due to transducer malfunction.

FIGURE F-1 W
INSITU PILOT STUDY WELL HYDROGRAPHS
THIRD QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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