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April 30, 2021

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

Subject: *First 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 First Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, 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 First Quarter (January through March 2021) performance monitoring results for the IM-3 hydraulic containment system. This report also presents groundwater and surface water monitoring activities performed, analyses conducted, and results obtained related to the Groundwater and Surface Water Monitoring Programs during the First 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.

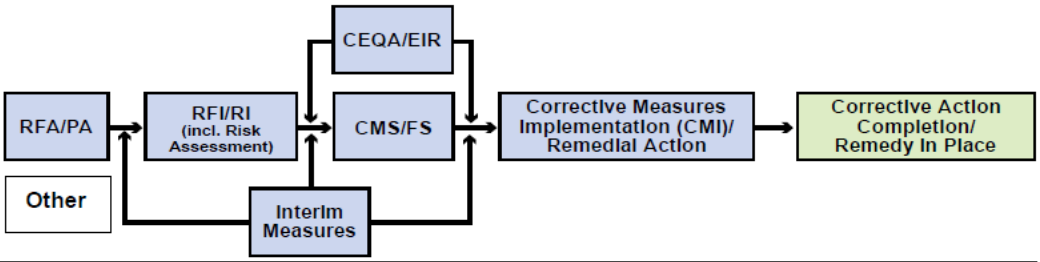
Sincerely,

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:	First 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:	April 30, 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 First 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 January 1, 2021 through March 31, 2021. 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 Design & Consultancy for natural and built assets

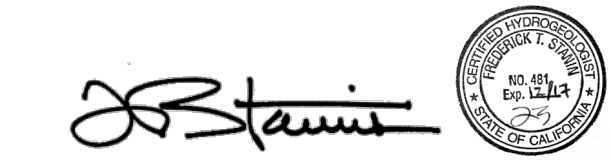
Pacific Gas and Electric Company

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

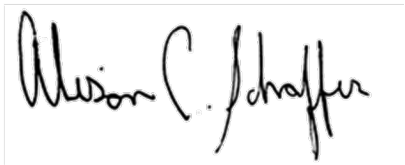
Topock Compressor Station,
Needles, California

April 30, 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.
Arcadis Project Manager

FIRST 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: April 30, 2021

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ACRONYMS AND ABBREVIATIONS

δ2H	deuterium
δ18O	oxygen-18
µg/L	microgram per liter
COPC	constituent of potential concern
chromium-6	hexavalent chromium
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
NTU	nephelometric turbidity unit
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 January 1 through March 31, 2021 (First Quarter 2021). Chemical and hydraulic monitoring data collected during this reporting period were used to determine if site conditions have changed and 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 and results from this reporting period; (2) hexavalent chromium 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 First Quarter 2021, IM extraction well TW-03D was operated to support hydraulic control. Hydraulic gradient data indicate that the minimum landward gradient target of 0.001 foot per foot was exceeded each month, providing evidence of hydraulic containment of the hexavalent chromium plume. 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 First Quarter 2021.

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 January 1 through March 31, 2021 (hereafter referred to as "First 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 First Quarter 2021 monitoring and site operations conducted in support of these programs.

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

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

Section 5 describes upcoming monitoring events for the Second Quarter 2021 including the planned aquifer test at TW-01.

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).

1.1 First Quarter 2021 Regulatory Communication

PG&E communications with the DTSC in First Quarter 2021 associated with the GMP, RMP, and/or PMP programs are outlined in this section.

- The Fourth Quarter 2020 and Annual Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report (PMP-GMP Report) was submitted to the DTSC on March 15, 2021 (Arcadis 2021a).
- Required GMP, RMP, and PMP notifications submitted for First Quarter 2021 included:
    - On April 6, 2021, Arcadis sent a quarterly email notification to PG&E providing hexavalent chromium (chromium-6) and dissolved chromium results from the January and February 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 April 21, 2021, Arcadis, on behalf of PG&E, sent a quarterly email notification to the DTSC providing chromium-6 and dissolved chromium 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 First 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 thickness 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 First 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; and
    - 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; and
    - 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 concentration time series 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, which are 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; and
    - 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; and
    - 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 FIRST QUARTER 2021 MONITORING ACTIVITIES

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

2.1 Groundwater Monitoring Program

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

2.1.1 Monthly Groundwater Monitoring

Monthly GMP monitoring events were performed at IM extraction well TW-03D in January, February, and March 2021 and consisted of groundwater sampling. IM extraction well PE-01 was not sampled in First 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-03D were collected from the tap of the extraction well (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 February 15 through 26, 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 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. Samples were collected using one of the following methods: low-flow, three-volume purge, or grab (see Table 1-2). 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; and
- In-situ byproducts: dissolved arsenic and dissolved manganese.

2.2 Surface Water Monitoring Program

First Quarter 2021 RMP monitoring was performed on January 27 and 28, 2021 during “low-river” conditions and on February 17 and 18, 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; and
- Geochemical Parameters: dissolved barium and total suspended solids (TSS).

2.3 IM Performance Monitoring Program

IM performance monitoring in First 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 February 2021. Extraction well TW-03D was sampled monthly in January, February, and March 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 January, February, and March 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 First 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 (or 2013 for wells sampled biennially).

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 First Quarter 2021 during the first two weeks of each month (January, February, and March) 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 First 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 First 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 First 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 First 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 First Quarter 2021, the maximum detected chromium-6 and dissolved chromium concentrations were 63,000 µg/L and 66,000 µg/L (both at MW-68-180), respectively.

3.1.2 Contaminants of Potential Concern and In-Situ Byproducts

Table 3-1 presents the First 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: 180 µg/L (MW-46-175);
- Dissolved selenium: 23 µg/L (MW-68-180);
- Nitrate/nitrite as nitrogen: 23 milligrams per liter (mg/L; MW-68-180);
- Dissolved arsenic: 14 µg/L (MW-72BR-200); and
- Dissolved manganese: 1,000 µg/L (MW-64BR).

3.1.3 Well Maintenance

Monitoring wells were inspected during groundwater sampling in First 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 First 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 January and February 2021 sampling events were not detected at concentrations higher than reporting limits at any surface water monitoring location. The laboratory reports for samples analyzed during First Quarter 2021 are provided in Appendix A.

3.2.2 Contaminants of Potential Concern and In-Situ Byproducts

Table 3-2 presents the First 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: 5.1 µg/L (C-MAR-S);
- Dissolved selenium: 1.9 µg/L (C-I-3-D, C-MAR-S, C-R22A-D, and R63);
- Nitrate/nitrite as nitrogen: 0.51 mg/L (C-R22A-S);
- Dissolved arsenic: 2.5 µg/L (C-BNS, C-CON-S, C-I-3-D, C-NR3-S, and R-19);
- Total iron: 35,000 µg/L (RRB);
- Dissolved iron: 41 µg/L (R63);
- Dissolved manganese: 24 µg/L (C-MAR-S);
- Dissolved barium: 130 µg/L (C-MAR-D, C-MAR-S); and
- TSS: 2,400 mg/L (RRB).

Note that the elevated total iron and TSS concentrations detected at monitoring location RRB are likely related high sample turbidity at the time of sample collection (15 nephelometric turbidity units [NTU]) and likely do not represent ongoing conditions at this location.

3.3 Data Validation and Completeness

Project chemists reviewed laboratory analytical data from the First 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 First 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 were 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 a few 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 a few exceptions; data validation qualifiers were applied for results that did not meet quality control criteria. A large quantity of the iron and dissolved iron data were 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 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. Therefore, the completeness goal of 90 percent was met for all method/analyte combinations.

4 FIRST QUARTER 2021 IM PERFORMANCE MONITORING PROGRAM EVALUATION

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

4.1 Distribution of Hexavalent Chromium in the Floodplain

Chromium-6 data collected as part of the First 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 concentration time series charts for wells sampled in First 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 concentration time series 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 First 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 First Quarter 2021, IM extraction well TW-03D was operated at an average pumping rate of 121.9 gallons per minute (gpm) to support hydraulic control. The target pumping rate was 135 gpm. Extraction wells PE-01, TW-02D, and TW-02S were not operated.

The IM-3 system extracted and treated 15,808,064 gallons of groundwater during First Quarter 2021, and an estimated 35.2 pounds (16.0 kilograms) of chromium were removed from the aquifer between January 1 and February 28, 2021 (Table 4-1). Note that groundwater extraction is reported on a different schedule than chromium removal reporting (i.e., January through March and January through February, respectively; Table 4-1). The operational runtime percentage for the IM-3 system during First Quarter 2021 was 92.1 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 First 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 First 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 First 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 First 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; and
- 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 First Quarter 2021 as well as the overall average of all well pairs. The overall monthly average gradients for all well pairs were 0.0030, 0.0036, and 0.0047 ft/ft for January, February, and March 2021, respectively. Landward gradients measured each month exceeded the 0.001 ft/ft requirement, as shown in Table 4-4. Figure 4-5 illustrates the measured hydraulic gradients during First 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 First 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 First 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 April 2021 is based on the March 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 March 2021. There is more uncertainty in these projections at longer times in the future because water demand is based on various factors including climatic factors.

Current USBR projections, presented in Table 4-6, show that the projected Davis Dam release for April 2021 is 16,600 cubic feet per second, and the predicted Colorado River elevation at the I-3 gauge is 456.68 feet above mean sea level.

4.6 First Quarter 2021 Performance Monitoring Program Evaluation Summary

The First Quarter 2021 PMP evaluation is summarized here.

- Chromium-6 isoconcentration maps indicate that chromium-6 concentrations greater than 20 µg/L in the floodplain area are hydraulically controlled.
- IM extraction well TW-03D was operated to support hydraulic control. A total of 15,808,064 gallons of groundwater were extracted by the IM-3 system, and an estimated 35.2 pounds (16.0 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 First Quarter 2021.
- 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 January, February, and March 2021 were approximately 3.0, 3.6, and 4.7 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

GMP, RMP, and PMP monitoring will continue under direction from the DTSC in Second Quarter 2021. Monitoring and results will be reported in the Second Quarter 2021 PMP-GMP Report (planned for submittal by August 15, 2021).

5.1 Groundwater Monitoring Program

5.1.1 Monthly Groundwater Monitoring

Monthly GMP monitoring events are planned for April, May, and June 2021 at extraction wells TW-03D and PE-01; however, PE-01 may be inaccessible in Second Quarter 2021 due to construction associated with the final groundwater remedy at the site.

5.1.2 Quarterly Groundwater Sampling

The quarterly GMP monitoring event was conducted in April and June 2021. This event consisted of groundwater sampling and inspection of 103 monitoring wells. Any necessary corrective actions to monitoring wells were performed in a timely manner.

If rainfall in Second Quarter 2021 causes surface water flow in Bat Cave Wash, monitoring wells MW-09, MW-10, and MW-11 will be sampled.

5.1.3 TW-01 Aquifer Test Monitoring

An aquifer test is planned to be conducted starting in early June 2021 as approved in the TW-01 Aquifer Test Plan (Arcadis 2021b). The test is anticipated to last for 3-6 months based on the effectiveness at meeting the work plan objectives and the availability of the IM-3 system to treat the extracted water. There is also a portion of the approved work plan that will require dye injection into MW-68-180, but at a later date (i.e. 2022). Overall, approximately 37 monitoring wells will be sampled as part of the aquifer test as well and approximately 50 additional wells will be monitored for water levels manually and/or via dataloggers installed in the wells. The results of the TW-01 aquifer test will be provided under separate cover including via monthly data transfers during the pumping portion of the test and via a summary technical memorandum after the completion of the test as approved in the work plan.

5.2 Surface Water Monitoring Program

The surface water monitoring event is planned for May 2021. The monitoring event will consist of surface water sampling at 16 locations.

5.3 IM Performance Monitoring Program

5.3.1 Chromium Monitoring

Chromium will be monitored as part of the Second Quarter 2021 GMP monthly and quarterly monitoring events. Chromium-6 data will be collected from a total of 105 monitoring wells.

5.3.2 IM Extraction System Operation

During Second Quarter 2021, the IM-3 system will continue operating, and operations will be documented. IM extraction well TW-03D will be pumped a target rate of 135 gpm, except during periods of planned and unplanned downtime or during the execution of the planned aquifer test at TW-01. During the aquifer test, extraction from TW-03D may be reduced to allow water extracted from TW-01 to be introduced into the pipeline and routed to the IM-3 system for treatment. The combined flow from TW-03D and TW-01 is anticipated to achieve the target pumping rate of 135 gpm. The TW-01 aquifer test is currently projected to begin in early June 2021 and last for several month (i.e., into Third Quarter 2021).

Second Quarter 2021 GMP monitoring results from wells listed in the July 20, 2015 DTSC approval letter for conditional PE-01 shutdown (DTSC 2015) will be compared to the 2014 (or 2013 for wells sampled biennially) maximum chromium-6 and dissolved chromium concentrations. Results that exceed the notification levels will be reported to the DTSC within 40 days after the end of the quarterly GMP sampling event.

5.3.3 IM Hydraulic Monitoring

The IM hydraulic monitoring network will continue to be used to demonstrate compliance of the required 0.001 ft/ft landward hydraulic gradient. During the first 2 weeks of each month, pressure transducer data will be downloaded from the 52 monitoring wells in the IM hydraulic monitoring network, five wells located on the Arizona side of the Colorado River, and two river monitoring locations. Pressure transducer data at the six gradient control wells (MW-27-085, MW-31-135, MW-33-150, MW-34-100, MW-45-095, and MW-20-130) will continue to be downloaded via cellular telemetry at monthly or more frequent intervals, as needed, to verify that 0.001 ft/ft landward gradients are maintained.

5.3.4 IM Contingency Plan Monitoring

Second Quarter 2021 GMP monitoring results from IMCP wells will be compared to their respective trigger levels. If any exceedances are observed, the DTSC will be notified in accordance with the Revised Contingency Plan Flow Chart (PG&E 2008).

5.4 Quarterly Notifications

Email notifications will be sent in Second Quarter 2021 providing chromium-6 and dissolved chromium results for shoreline and in-channel surface water monitoring locations and monitoring wells MW-34-100, MW-44-115, MW-46-175, and MW-44-125.

5.5 Monitoring Well Installation

In accordance with the Basis of Design Report (CH2M Hill 2015), new monitoring wells, extraction wells, and injection wells have been installed as part of the final groundwater remedy at the site. A summary of field activities and monitoring results associated with the new wells is reported under separate cover as part of the monthly reporting process associated with construction of the final groundwater remedy and in the final project record documentation.

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TABLES

Table 1-1

Topock Monitoring Reporting Schedule

First 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
First 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	--	--	
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	--	--	

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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-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	--	--	--	--	
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	--	--	--	--	

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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
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 PVC	105	Deep	--	--	--	--	--	Monthly	--	--	
PT-5D	Floodplain	--	95 - 105	Alluvial	2 in PVC	105	Deep	--	--	--	--	--	Monthly	--	--	
PT-6D	Floodplain	--	95 - 105	Alluvial	2 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
C-BNS	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	
C-CON	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth intervals
C-I-3 (I-3)	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	Monthly	--	--	Deep and shallow depth intervals
C-MAR	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth intervals
C-NR1	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth intervals
C-NR3	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth intervals
C-NR4	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth intervals
C-R22A	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth intervals
C-R27	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth intervals
C-TAZ	In-Channel	--	--	--	--	--	--		--	Quarterly	--	--	--	--	--	Deep and shallow depth intervals
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, First Quarter 2021

First 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	2/25/2021		LF	ND (1.0)	2	11,000	55	ND (0.5)	ND (0.05)	ND (0.1)	160	--	-64	8	5
MW-38S	SA	2/25/2021		LF	8.4	9.1	1,700	17	3.3	5.3	5.1	74	--	76	7.6	8
MW-44-115	DA	2/26/2021		LF	2.5	4.9	11,000	71	ND (0.5)	0.055	1.2	13	--	-44	8	15
MW-46-175	DA	2/25/2021		LF	5	8	19,000	180	0.62	1.1	--	--	--	-59	8.6	2
MW-58BR	BR	2/15/2021		LF	4	5	7,600	26	2.1	0.46	2.1	320	--	-31	8.1	8
MW-60BR-245	BR	2/18/2021		LF	22	23 J	17,000	70	3.1	0.25	5.6	1.5	--	-150	7.9	5
MW-62-065	BR	2/18/2021		LF	530	580 J	6,200	14	3.8	4.8	1.5	3	--	5.7	7.7	11
MW-62-110	BR	2/16/2021		3V	ND (0.2)	ND (1.0)	9,500	50	ND (0.5)	--	4.5 J	130	--	-130	8.1	4
MW-63-065	BR	2/18/2021		LF	1	3.1 J	7,200	17	0.93	1.4	1.6	6	--	11	7.4	5
MW-64BR	BR	2/18/2021		LF	ND (1.0)	ND (1.0 J)	13,000	65	ND (0.5)	0.075	1.9	1,000	--	-150	7.8	1
MW-65-160	SA	2/16/2021		LF	240	250 J	4,500	25	11	15 J	0.84 J	5	--	110	7.7	8
MW-65-225	DA	2/16/2021		LF	330	340 J	11,000	33	4.9	6.9 J	2.3 J	8	--	130	7.7	8
MW-68-180	SA	2/19/2021		LF	63000	66000	5,100	53	23	23	3.2	ND (0.5)	--	100	7.9	8
MW-69-195	BR	2/15/2021		LF	29	59	2,800	67	8.3	4.7	2.8	6.8	--	75	7.9	27
MW-69-195	BR	2/15/2021	FD	--	27	59	2,700	68	7.8	4.9	2.8	7	--	--	--	--
MW-72-080	BR	2/18/2021		LF	70	72 J	15,000	82	1.8	1	11	120	--	-33	8	25
MW-72BR-200	BR	2/18/2021		LF	ND (1.0)	ND (1.0 J)	15,000	79	ND (0.5)	ND (0.05)	14	120	--	-71	8.3	2
MW-73-080	BR	2/18/2021		LF	11	12 J	8,800	37	4.3	3.4	2	6.8	--	-15	7.7	9
TW-03D	DA	1/6/2021		tap	440	410	7,200	--	--	2.8	--	18	ND (20)	96	7.5	2
TW-03D	DA	2/3/2021		tap	420	430	7,200	--	--	3	--	19	93 J	--	--	--
TW-03D	DA	3/3/2021		tap	400	420	7,700	--	--	2.6	--	19	120 J	--	--	--

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
3. Monitoring wells MW-57-050 and MW-58-065 were dry during the First Quarter 2021 sampling event. Extraction wells PE-01 and TW-02D were not sampled in First Quarter 2021 due to construction associated with the final groundwater remedy at the site.

-- = not applicable or not reportable.
µg/L = micrograms per liter.
µS/cm = microSiemens per centimeter.
3V = three volume purge.
BR = bedrock.
DA = deep interval of Alluvial Aquifer.
DTSC = Department of Toxic Substance Control.
FD = field duplicate.
G = Grab sample.
J = concentration or reporting limit (RL) estimated by laboratory or data validation.
LF = Low Flow (minimal drawdown)
mg/L = milligrams per liter.
mV = millivolts.
ND = not detected at listed reporting limit.
NTU = nephelometric turbidity units.
ORP = oxidation-reduction potential.
SA = shallow interval of Alluvial Aquifer.
SU = standard units.
Tap = sampled from tap of extraction well.
USEPA = United States Environmental Protection Agency.

Printed: 4/6/2021

Table 3-2

Surface Water Sampling Results, First Quarter 2021

First 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	1/27/2021		ND (0.2)	ND (1.0)	8.6	820	4.7	1.7	0.27	2.3	ND (20)	33	1.2	120	ND (5.0)
C-BNS	2/17/2021		ND (0.2)	ND (1.0)	8.3	880	4.7	1.6	0.42	2.5	ND (20 J)	46 J	1.4	110	ND (5.0)
C-CON-D	1/28/2021		ND (0.2)	ND (1.0)	8.6	830	4.6	1.6	0.44	2.3	24	35	0.69	120	ND (5.0)
C-CON-D	2/18/2021		ND (0.2)	ND (1.0)	8.3	890	4.6	1.4	0.43	2.2	ND (20 J)	150 J	1.2	110	6.0
C-CON-S	1/28/2021		ND (0.2)	ND (1.0)	8.6	830	4.6	1.5	0.38	2.2	ND (20)	29	0.74	120	ND (5.0)
C-CON-S	2/18/2021		ND (0.2)	ND (1.0)	8.3	860	4.8	1.6	0.4	2.3	ND (20 J)	100 J	1.1	120	7.0
C-CON-S	2/18/2021	FD	ND (0.2)	ND (1.0)	--	890	4.8	1.7	0.39	2.5	ND (20 J)	35 J	1.1	120	ND (5.0)
C-I-3-D	1/27/2021		ND (0.2)	ND (1.0)	8.5	830	4.6	1.6	0.28	2.3	ND (20)	23	ND (0.5)	120	ND (5.0)
C-I-3-D	2/17/2021		ND (0.2)	ND (1.0)	8.3	860	4.8	1.9	0.45	2.5	ND (20 J)	70 J	1.4	120	8.5
C-I-3-S	1/27/2021		ND (0.2)	ND (1.0)	8.6	850	4.9	1.7	0.29	2.3	26 J	29	0.51	120	ND (5.0)
C-I-3-S	2/17/2021		ND (0.2)	ND (1.0)	8.3	870	4.6	1.7	0.45	2.3	ND (20 J)	69 J	1.7	110	6.5
C-MAR-D	1/28/2021		ND (0.2)	ND (1.0)	8.6	960	4.8	1.4	0.42	2.4	28	380	21	130	10
C-MAR-D	2/18/2021		ND (0.2)	ND (1.0)	8.4	870	4.8	1.6	0.4	2.4	ND (20 J)	240 J	3.6	110	10
C-MAR-S	1/28/2021		ND (0.2)	ND (1.0)	8.4	1,000	5.1	1.5	0.41	2.4	28	560	24	130	18
C-MAR-S	2/18/2021		ND (0.2)	ND (1.0)	8.4	860	4.8	1.9	0.37	2.3	ND (20 J)	140 J	3.0	120	6.5
C-MAR-S	2/18/2021	FD	ND (0.2)	ND (1.0)	--	860	4.8	1.5	0.35	2.3	ND (20 J)	160 J	3.0	120	8.5
C-NR1-D	1/28/2021		ND (0.2)	ND (1.0)	8.6	830	4.7	1.6	0.4	2.2	ND (20)	20	0.64	120	ND (5.0)
C-NR1-D	2/18/2021		ND (0.2)	ND (1.0)	8.3	850	4.8	1.3	0.42	2.4	ND (20 J)	71 J	1.2	120	5.5
C-NR1-S	1/28/2021		ND (0.2)	ND (1.0)	8.6	840	4.6	1.7	0.35	2.2	ND (20)	23	0.62	120	ND (5.0)
C-NR1-S	2/18/2021		ND (0.2)	ND (1.0)	8.4	830	4.8	1.7	0.43	2.4	ND (20 J)	24 J	1.3	120	ND (5.0)
C-NR3-D	1/28/2021		ND (0.2)	ND (1.0)	8.6	860	4.5	1.6	0.4	2.2	ND (20)	40	0.7	120	ND (5.0)
C-NR3-D	2/18/2021		ND (0.2)	ND (1.0)	8.3	850	4.8	1.3	0.41	2.4	ND (20 J)	70 J	1.1	120	ND (5.0)
C-NR3-S	1/28/2021		ND (0.2)	ND (1.0)	8.6	860	4.6	1.5	0.4	2.4	25	84	0.84	120	ND (5.0)
C-NR3-S	2/18/2021		ND (0.2)	ND (1.0)	8.3	850	4.8	1.5	0.41	2.5	ND (20 J)	32 J	1.3	120	6.5
C-NR3-S	1/28/2021	FD	ND (0.2)	ND (1.0)	--	870	4.4	1.6	0.4	2.3	ND (20)	26	0.61	120	ND (5.0)
C-NR4-D	1/28/2021		ND (0.2)	ND (1.0)	8.6	880	4.7	1.6	0.39	2.3	ND (20)	58	0.73	120	ND (5.0)
C-NR4-D	2/18/2021		ND (0.2)	ND (1.0)	8.3	870	4.7	1.6	0.38	2.4	ND (20 J)	31 J	0.99	110	ND (5.0)
C-NR4-D	1/28/2021	FD	ND (0.2)	ND (1.0)	--	870	4.6	1.5	0.39	2.3	ND (20)	ND (20)	0.85	120	ND (5.0)
C-NR4-S	1/28/2021		ND (0.2)	ND (1.0)	8.6	840	4.7	1.6	0.37	2.3	32	32	0.73	120	ND (5.0)
C-NR4-S	2/18/2021		ND (0.2)	ND (1.0)	8.3	850	4.9	1.6	0.44	2.2	ND (20 J)	71 J	1.1	120	ND (5.0)
C-R22A-D	1/27/2021		ND (0.2)	ND (1.0)	8.5	860	4.7	1.6	0.3	2.2	24 J	29	2.3	110	ND (5.0)
C-R22A-D	2/17/2021		ND (0.2)	ND (1.0)	8.4	890	4.8	1.9	0.46	2.3	34 J	48 J	2.4	110	ND (5.0)
C-R22A-S	1/27/2021		ND (0.2)	ND (1.0)	8.5	840	4.9	1.5	0.39	2.3	ND (20)	32	2.2	120	ND (5.0)
C-R22A-S	2/17/2021		ND (0.2)	ND (1.0)	8.3	880	4.6	1.8	0.46	2.3	ND (20 J)	100 J	2.6	110	ND (5.0)
C-R22A-S	2/17/2021	FD	ND (0.2)	ND (1.0)	--	910	4.5	1.7	0.51	2.2	ND (20 J)	43 J	2.5	110	ND (5.0)
C-R27-D	1/27/2021		ND (0.2)	ND (1.0)	8.6	810	4.8	1.6	0.4	2.3	ND (20)	28	1.4	120	ND (5.0)
C-R27-D	2/17/2021		ND (0.2)	ND (1.0)	8.3	880	4.7	1.7	0.46	2.2	ND (20 J)	110 J	1.6	110	ND (5.0)
C-R27-S	1/27/2021		ND (0.2)	ND (1.0)	8.6	820	4.6	1.6	0.28	2.1	ND (20)	31	1.5	120	ND (5.0)
C-R27-S	2/17/2021		ND (0.2)	ND (1.0)	8.3	900	4.7	1.6	0.43	2.4	ND (20 J)	98 J	2.2	120	ND (5.0)
C-TAZ-D	1/27/2021		ND (0.2)	ND (1.0)	8.6	810	4.6	1.5	0.29	2.2	25 J	34	0.69	120	ND (5.0)
C-TAZ-D	2/17/2021		ND (0.2)	ND (1.0)	8.3	880	4.6	1.6	0.45	2.3	ND (20 J)	150 J	1.4	110	6.0
C-TAZ-S	1/27/2021		ND (0.2)	ND (1.0)	8.5	820	4.8	1.5	0.26	2.2	22 J	61	0.79	120	ND (5.0)
C-TAZ-S	2/17/2021		ND (0.2)	ND (1.0)	8.4	880	4.7	1.8	0.42	2.3	ND (20 J)	340 J	1.8	110	ND (5.0)
R-19	1/28/2021		ND (0.2)	ND (1.0)	8.5	880	4.7	1.7	0.4	2.2	23	76	1.8	120	ND (5.0)
R-19	2/18/2021		ND (0.2)	ND (1.0)	8.4	850	4.7	1.6	0.39	2.5	ND (20 J)	35 J	1.4	120	ND (5.0)
R-19	1/28/2021	FD	ND (0.2)	ND (1.0)	--	880	4.5	1.6	0.39	2.3	29	43	1.6	120	ND (5.0)
R-28	1/27/2021		ND (0.2)	ND (1.0)	8.6	830	4.7	1.5	0.27	2.2	20 J	25	2.3	120	ND (5.0)
R-28	2/17/2021		ND (0.2)	ND (1.0)	8.3	880	4.8	1.7	0.47	2.4	ND (20 J)	85 J	1.6	120	ND (5.0)
R63	1/27/2021		ND (0.2)	ND (1.0)	8.5	810	4.7	1.6	0.28	2.2	27 J	43	1.9	120	ND (5.0)
R63	2/17/2021		ND (0.2)	ND (1.0)	8.3	880	4.6	1.9	0.39	2.4	41 J	53 J	3.3	120	ND (5.0)

Table 3-2

Surface Water Sampling Results, First Quarter 2021

First 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)
RRB	1/28/2021		ND (0.2)	ND (1.0)	8.5	1,200	4.4	0.61	0.076	0.63	41	35,000	10	98	2,400
RRB	2/18/2021		ND (0.2)	ND (1.0)	8.3	870	4.7	1.3	0.38	2.3	ND (20 J)	87 J	4.1	120	6.5
SW1	1/27/2021		ND (0.2)	ND (1.0)	8.3	1,100	--	--	--	--	--	--	--	--	--
SW1	2/17/2021		ND (0.2)	ND (1.0)	8.0	1,200	--	--	--	--	--	--	--	--	--
SW2	1/27/2021		ND (0.2)	ND (1.0)	7.9	1,200	--	--	--	--	--	--	--	--	--
SW2	2/17/2021		ND (0.2)	ND (1.0)	8.0	940	--	--	--	--	--	--	--	--	--

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
3. The elevated total iron and total suspended solid concentrations detected at monitoring location RRB in January 2021 are likely related high sample turbidity at the time of sample collection (15 NTU).

-- = 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.
NTU = Nephelometric turbidity unit.
SU = standard units.
USEPA = United States Environmental Protection Agency.

Table 4-1

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

First 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	January 2021 Average Pumping Rate[a] (gpm)	January 2021 Volume Pumped (gal)	February 2021 Average Pumping Rate[a] (gpm)	February 2021 Volume Pumped (gal)	March 2021 Average Pumping Rate[a] (gpm)	March 2021 Volume Pumped (gal)	First Quarter 2021 Average Pumping Rate[a] (gpm)	First Quarter 2021 Volume Pumped (gal)
TW-02S	0.00	0	0.00	0	0.00	0	0.00	0
TW-02D	0.00	0	0.00	0	0.00	0	0.00	0
TW-03D	116.98	5,222,128	120.48	4,857,853	128.32	5,728,083	121.93	15,808,064
PE-01	0.00	0	0.00	0	0.00	0	0.00	0
TOTAL	**117.0**	**5,222,128**	**120.5**	**4,857,853**	**128.3**	**5,728,083**	**121.9**	**15,808,064**

Chromium Removed This Quarter (kg)	16.0
Chromium Removed Project to Date (kg)	4,500
Chromium Removed This Quarter (lb)	35
Chromium Removed Project to Date (lb)	9,920

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 January 1, 2021 through February 28, 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, First Quarter 2021

First 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	Q1 2021 Sample Date	Q1 2021 Sample Method	Hexavalent Chromium 2014 Maximum Concentration (µg/L)	Hexavalent Chromium Q1 2021 Result (µg/L)	Dissolved Chromium 2014 Maximum Concentration (µg/L)	Dissolved Chromium Q1 2021 Result (µg/L)	Q1 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	2/25/2021	LF	263	ND (1.0)	270	1.7	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)	--	--

Table 4-2

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

First 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	Q1 2021 Sample Date	Q1 2021 Sample Method	Hexavalent Chromium 2014 Maximum Concentration (µg/L)	Hexavalent Chromium Q1 2021 Result (µg/L)	Dissolved Chromium 2014 Maximum Concentration (µg/L)	Dissolved Chromium Q1 2021 Result (µg/L)	Q1 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	2/26/2021	LF	41.6	2.5	42.9	4.9	No
MW-44-125	Deep	--	--	4.0 J	--	5.9	--	--
MW-45-095a	Deep	--	--	13.7*	--	14.2*	--	--
MW-46-175	Deep	2/25/2021	LF	46.3	5.1	46.1	7.6	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*	--	20	--	--

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.
Q1 = 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, First Quarter 2021

First 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	January Average Groundwater Elevation (ft amsl)	February Average Groundwater Elevation (ft amsl)	March Average Groundwater Elevation (ft amsl)	Quarterly Average Groundwater Elevation (ft amsl)	Days in Quarterly Average
MW-20-070	Shallow	452.34	452.25	453.63	452.79	84
MW-22	Shallow	453.77	453.52	454.59	453.98	85
MW-25	Shallow	454.20	453.93	454.76	454.31	90
MW-26	Shallow	INC	INC	INC	INC	5
MW-27-020	Shallow	453.23	453.87	455.96	454.37	90
MW-28-025	Shallow	453.15	453.81	455.87	454.29	90
MW-31-060	Shallow	453.21	453.26	454.64	453.72	90
MW-32-035	Shallow	453.11	453.60	455.39	454.05	90
MW-33-040	Shallow	453.20	453.58	455.22	454.01	90
MW-35-060	Shallow	453.55	453.99	455.82	454.47	90
MW-36-020	Shallow	453.20	453.64	455.46	454.12	90
MW-36-040	Shallow	453.08	453.64	455.57	454.11	90
MW-39-040	Shallow	452.90	453.37	455.12	453.81	90
MW-42-030	Shallow	452.97	453.47	455.22	453.90	90
MW-43-025	Shallow	453.11	453.83	455.94	454.31	90
MW-47-055	Shallow	453.76	454.05	455.64	454.50	90
MW-20-100	Middle	451.66	451.76	452.98	452.14	90
MW-27-060	Middle	453.27	453.95	455.97	454.41	90
MW-30-050	Middle	452.92	453.49	455.35	453.93	90
MW-33-090	Middle	453.32	453.81	455.53	454.23	90
MW-34-055	Middle	453.20	453.91	455.94	454.37	90
MW-36-050	Middle	452.91	453.51	455.42	453.96	90
MW-36-070	Middle	453.01	453.63	455.54	454.08	90
MW-39-050	Middle	452.78	453.28	455.04	453.72	90
MW-39-060	Middle	452.70	453.13	454.86	453.58	90
MW-39-070	Middle	452.16	452.51	454.06	452.92	90
MW-42-065	Middle	453.00	453.46	455.28	453.93	90
MW-44-070	Middle	453.21	453.51	455.58	454.12	90
MW-50-095	Middle	453.61	453.61	454.92	454.06	90
MW-51	Middle	453.60	INC	INC	INC	34
MW-55-045	Middle	455.19	455.42	456.53	455.72	90
MW-20-130	Deep	451.11	451.33	452.53	451.67	90
MW-27-085	Deep	453.13	453.82	455.84	454.28	90
MW-28-090	Deep	453.14	453.50	455.66	454.12	90
MW-31-135	Deep	452.48	452.70	453.97	453.01	85
MW-33-150	Deep	453.61	453.94	455.53	454.37	90
MW-34-080	Deep	453.46	454.16	456.14	454.60	90
MW-34-100	Deep	453.30	454.00	455.93	454.43	90
MW-35-135	Deep	INC	INC	INC	INC	4

Table 4-3

Groundwater Elevation Results, First Quarter 2021

First 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	January Average Groundwater Elevation (ft amsl)	February Average Groundwater Elevation (ft amsl)	March Average Groundwater Elevation (ft amsl)	Quarterly Average Groundwater Elevation (ft amsl)	Days in Quarterly Average
MW-36-090	Deep	452.55	453.04	454.74	453.46	90
MW-36-100	Deep	452.75	453.23	454.95	453.66	90
MW-39-080	Deep	452.12	452.46	454.02	452.88	90
MW-39-100	Deep	452.71	453.06	454.61	453.47	90
MW-43-090	Deep	453.20	INC	INC	INC	34
MW-44-115	Deep	452.73	452.99	454.95	453.58	90
MW-44-125	Deep	453.04	453.59	455.35	454.01	90
MW-45-095a	Deep	452.84	453.40	455.33	453.87	90
MW-46-175	Deep	453.54	453.99	455.65	454.41	90
MW-47-115	Deep	453.38	INC	INC	INC	33
MW-49-135	Deep	453.65	454.09	455.74	454.51	90
MW-54-085	Deep	453.50	454.18	456.20	454.64	90
MW-54-140	Deep	453.38	453.91	455.64	454.32	90
MW-54-195	Deep	453.94	454.39	455.94	454.77	90
MW-55-120	Deep	455.39	455.54	456.44	455.80	90
PT-2D	Deep	451.79	451.62	453.59	452.36	90
PT-5D	Deep	452.67	453.07	454.64	453.47	90
PT-6D	Deep	452.57	452.97	454.55	453.38	90
I-3	Surface water	453.53	454.38	456.56	454.84	90
RRB	Surface water	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, First Quarter 2021

First 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	--	January	0.0030	31	No
Overall Average	--	February	0.0036	28	No
Overall Average	--	March	0.0047	31	No
Northern Gradient Pair	MW-31-135 / MW-33-150	January	0.0024	31	No
Northern Gradient Pair	MW-31-135 / MW-33-150	February	0.0026	28	No
Northern Gradient Pair	MW-31-135 / MW-33-150	March	0.0033	26	No
Central Gradient Pair (used when PE-01 is not run for gradient control)	MW-20-130 / MW-34-100	January	0.0038	31	No
Central Gradient Pair (used when PE-01 is not run for gradient control)	MW-20-130 / MW-34-100	February	0.0047	28	No
Central Gradient Pair (used when PE-01 is not run for gradient control)	MW-20-130 / MW-34-100	March	0.0059	31	No
Southern Gradient Pair (used when PE-01 is not run for gradient control)	MW-20-130 / MW-27-085	January	0.0029	31	No
Southern Gradient Pair (used when PE-01 is not run for gradient control)	MW-20-130 / MW-27-085	February	0.0036	28	No
Southern Gradient Pair (used when PE-01 is not run for gradient control)	MW-20-130 / MW-27-085	March	0.0048	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, First Quarter 2021

First 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	Q1 2021 Sample Date	Q1 2021 Sample Method	Hexavalent Chromium Trigger Level (µg/L)	Q1 2021 Hexavalent Chromium Result (µg/L)	Q1 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	2/25/2021	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	02/26/2021	LF	1,200	2.5	No
MW-44-125	Deep	--	--	475	--	--
MW-46-175	Deep	02/25/2021	LF	225	5.1	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 First 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.
Q1 = first quarter.

Table 4-6

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

First 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

First 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	--	--	456.68	--	--

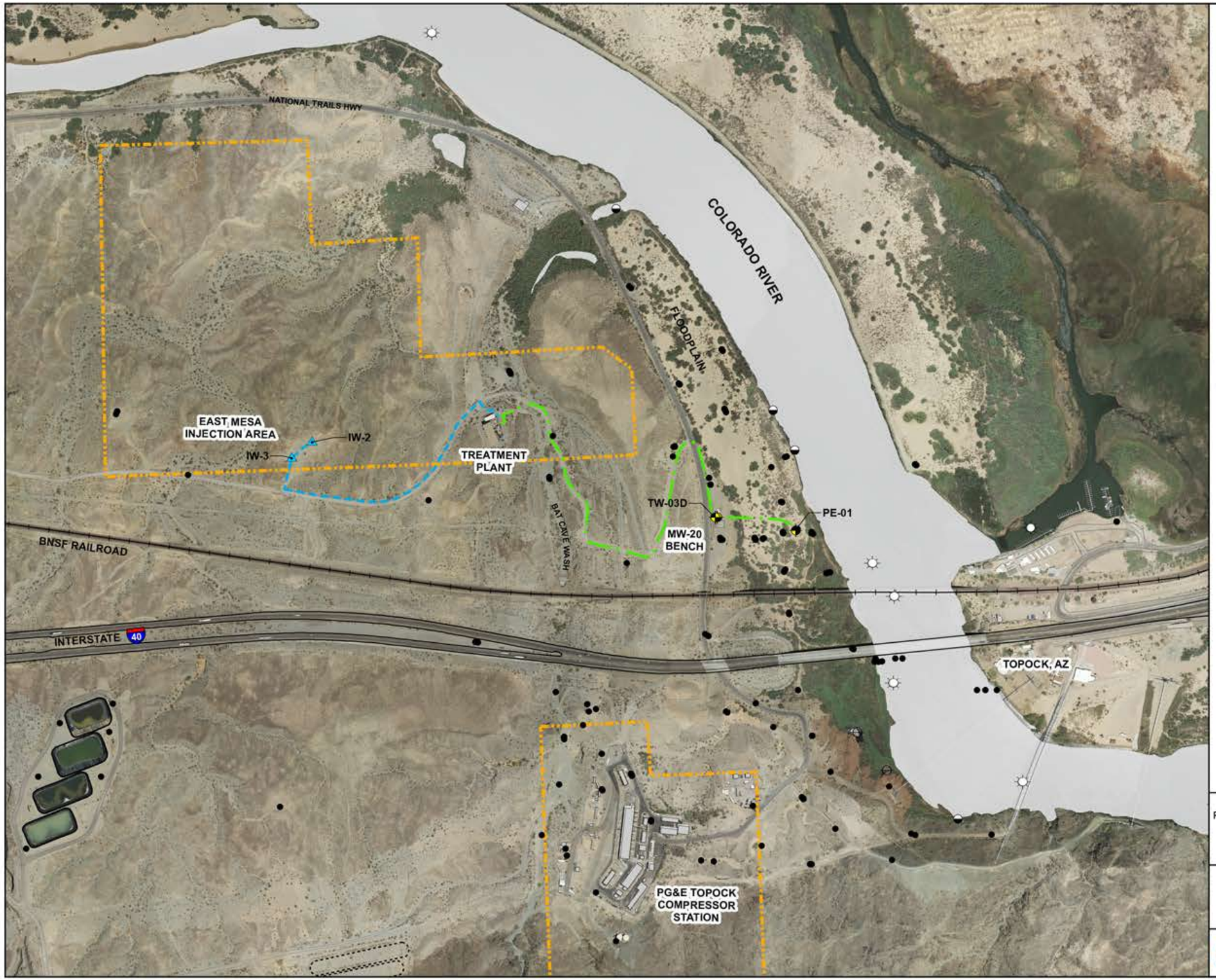
Notes:

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_04.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

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

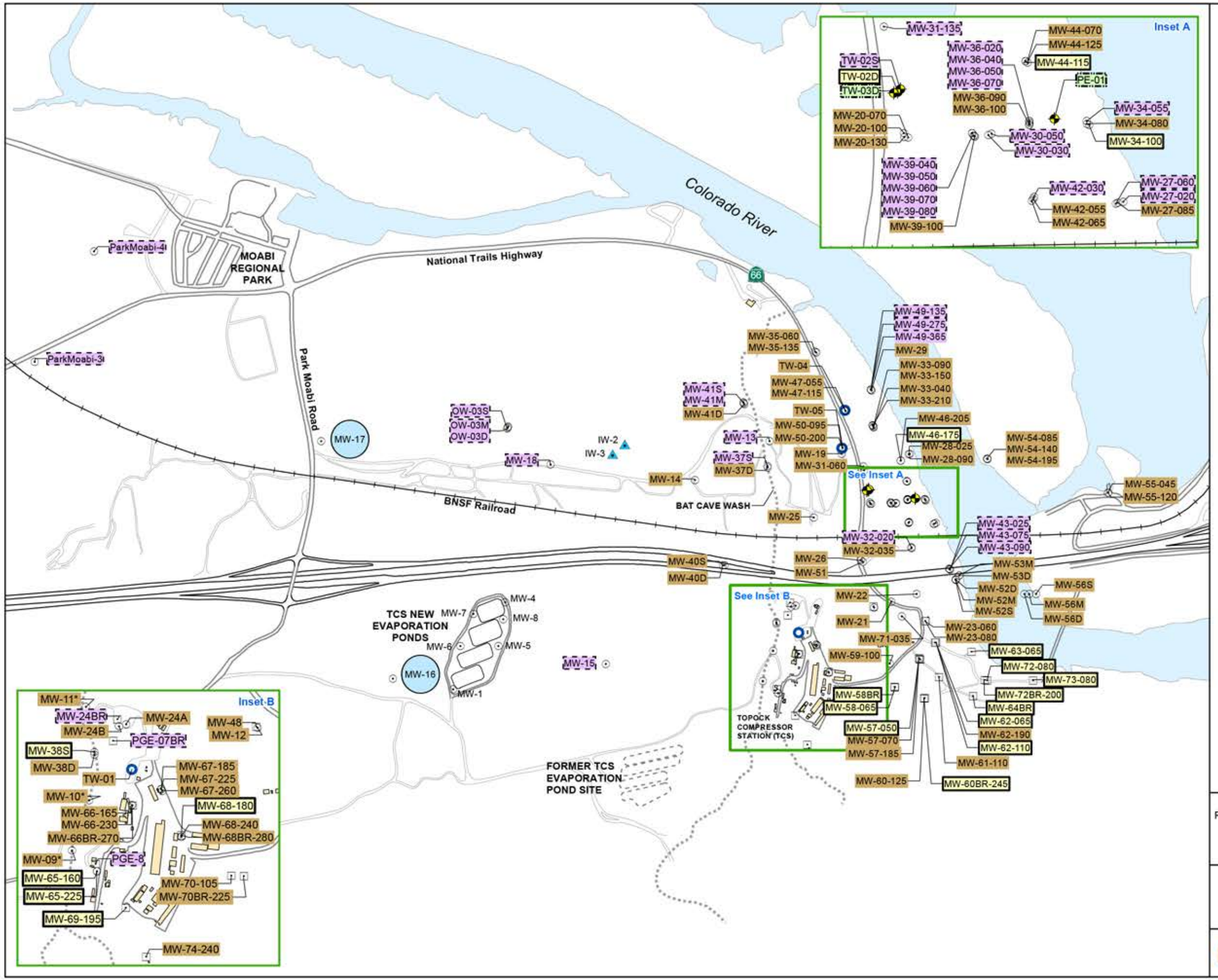
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

LOCATIONS OF IM-3 FACILITIES AND MONITORING LOCATIONS

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1-1

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\1Q21\FINAL\FIGURE1-1_IM3_GMP_LOCS_2021Q1.MXD 07/04/2021 21:05:44



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

FIRST 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

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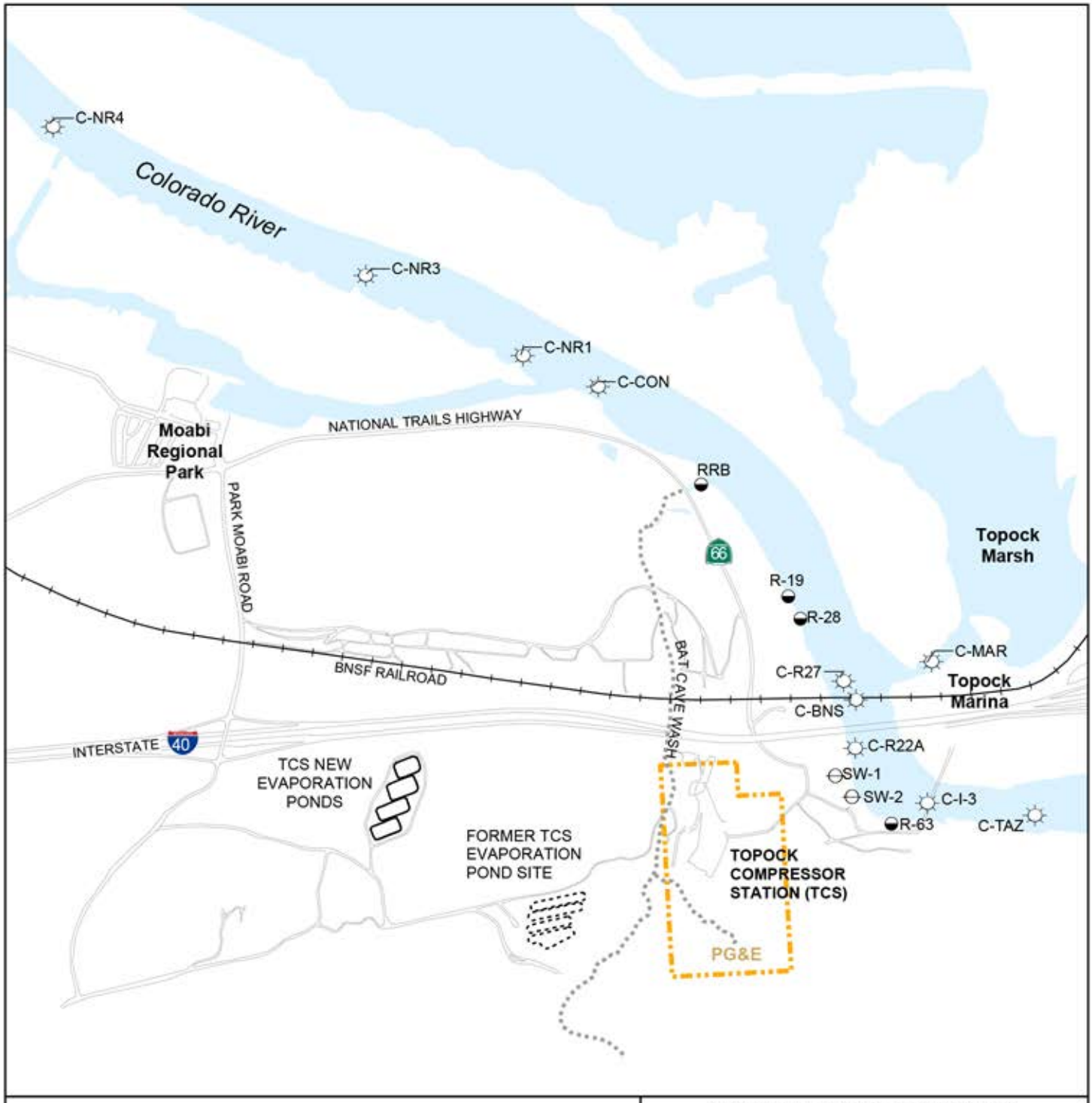
FIGURE 1-2

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\1Q21\FINAL\FIGURE1-2_GMP_SAMPLING_FREQUENCY_2021Q1.MXD 07/04/2021 21:07:48



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

FIRST 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

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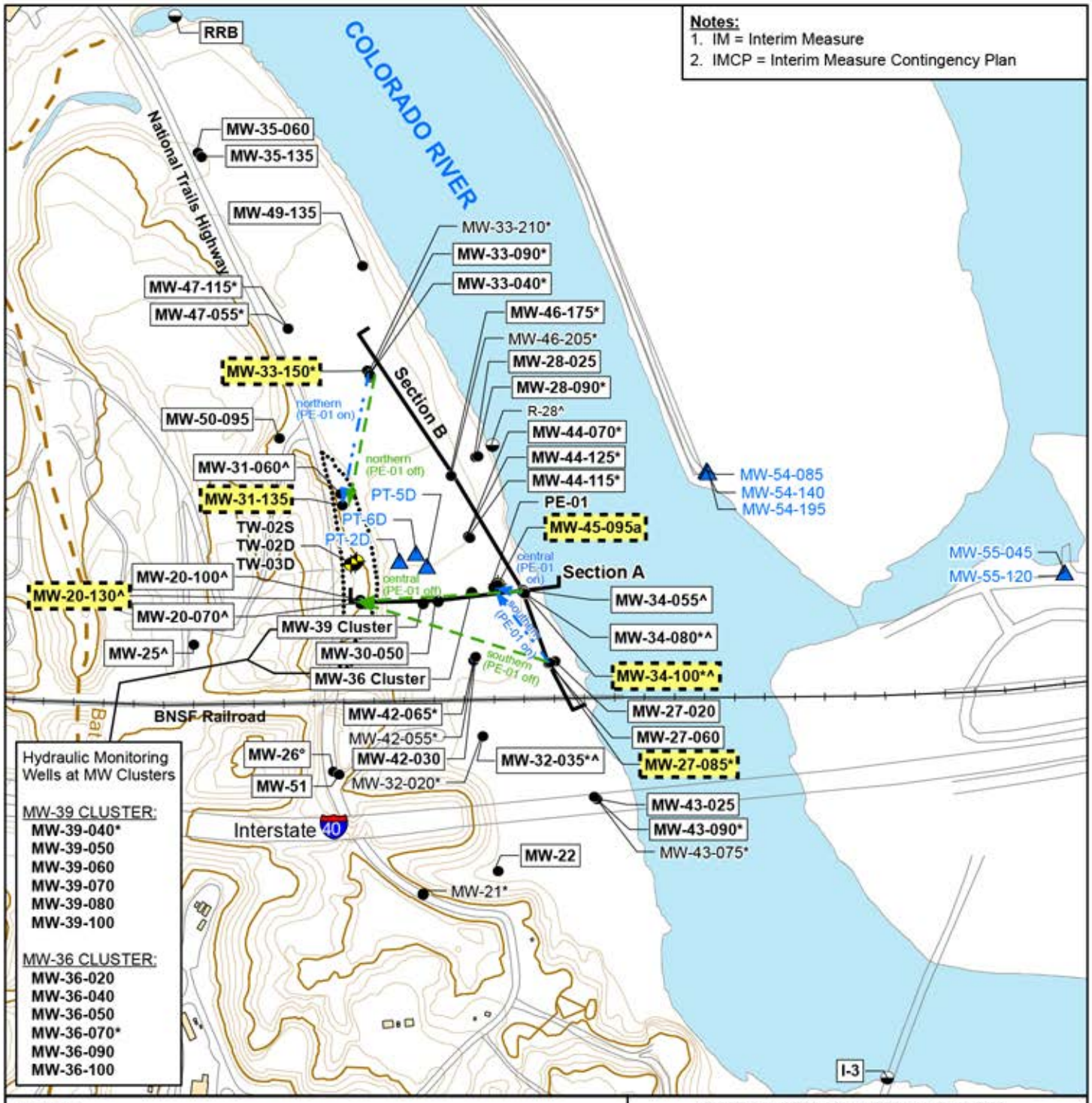
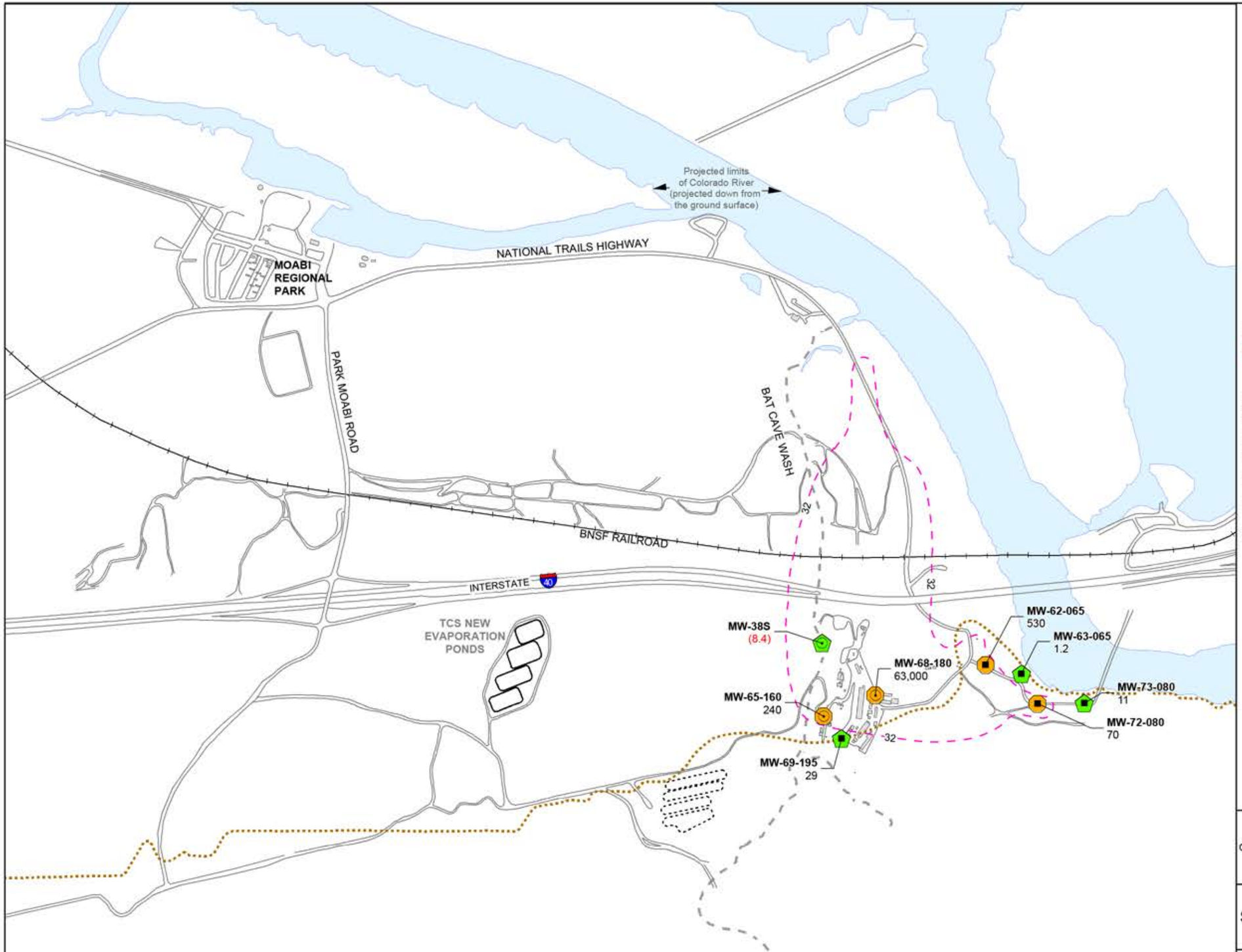
FIGURE

1-3

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\1Q21\FINAL\FIGURE1-3_GMP_RIVER_SWLOCS_2021Q1.MXD 07/04/2021 21:10:17



T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\1Q21\FINAL\FIGURE1-4_IMP_XSECTION_2021Q1.MXD 07/04/2021 21:10:47



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/
- 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
70 ——— Groundwater Cr(VI) Concentration (µg/L)
(8.4) ——— 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

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

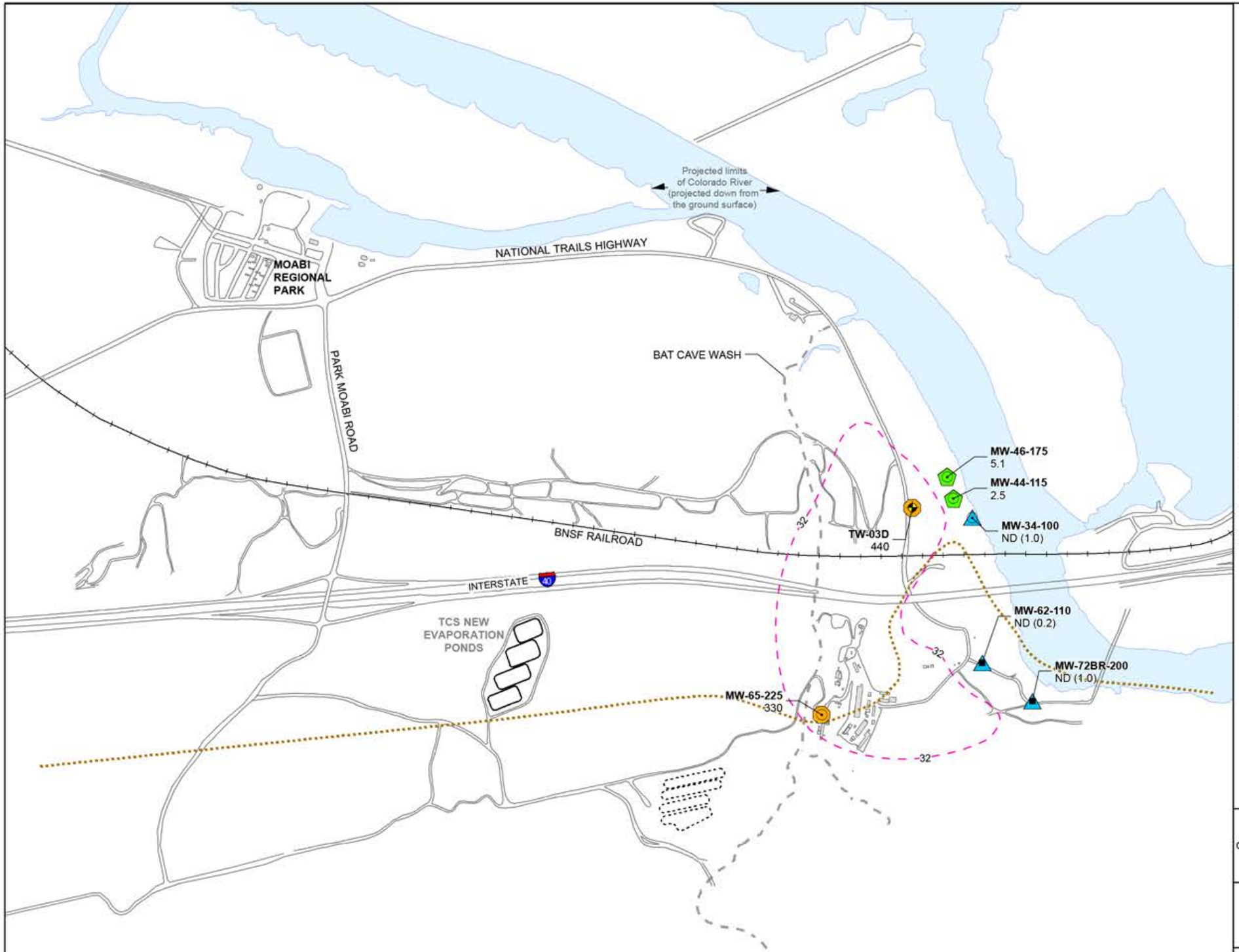
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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

ARCADIS Design & Consultancy for natural and built assets

FIGURE
3-1a

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\1Q21\FINAL\FIGURE3-1A_CRVI_SHALLOW_2021Q1.MXD SHARMAYH4948 04/21/2021 9:51:01 AM



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
5.1 ——— 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

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

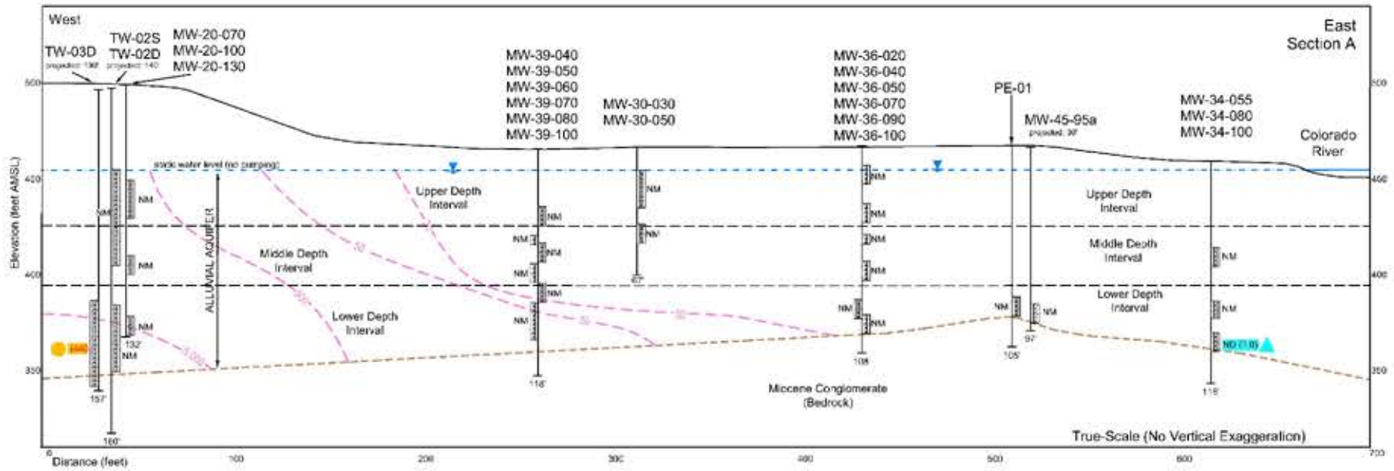
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

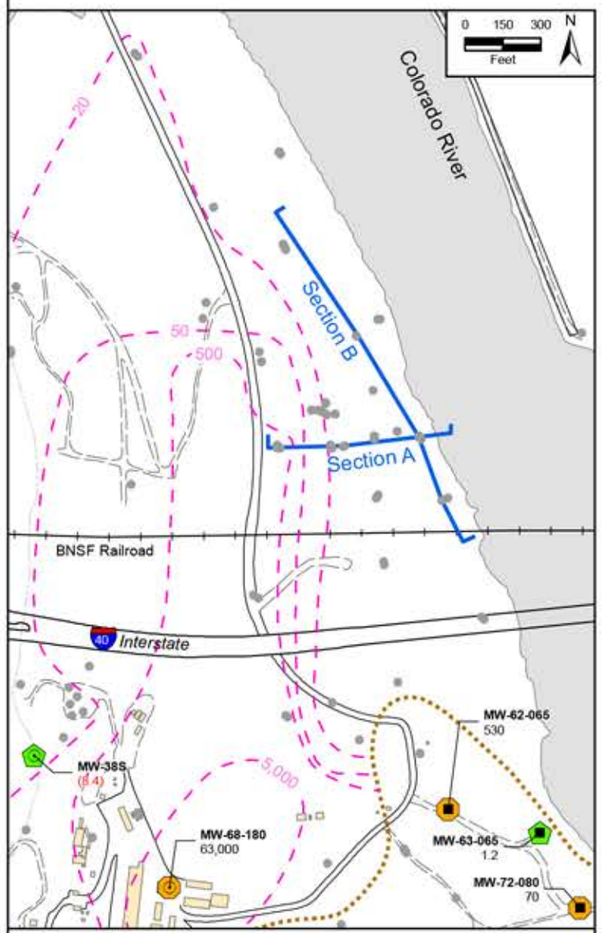
CHROMIUM-6 SAMPLING RESULTS, DEEP WELLS IN ALLUVIAL AQUIFER AND BEDROCK, FIRST QUARTER 2021

ARCADIS Design & Consultancy for natural and built assets

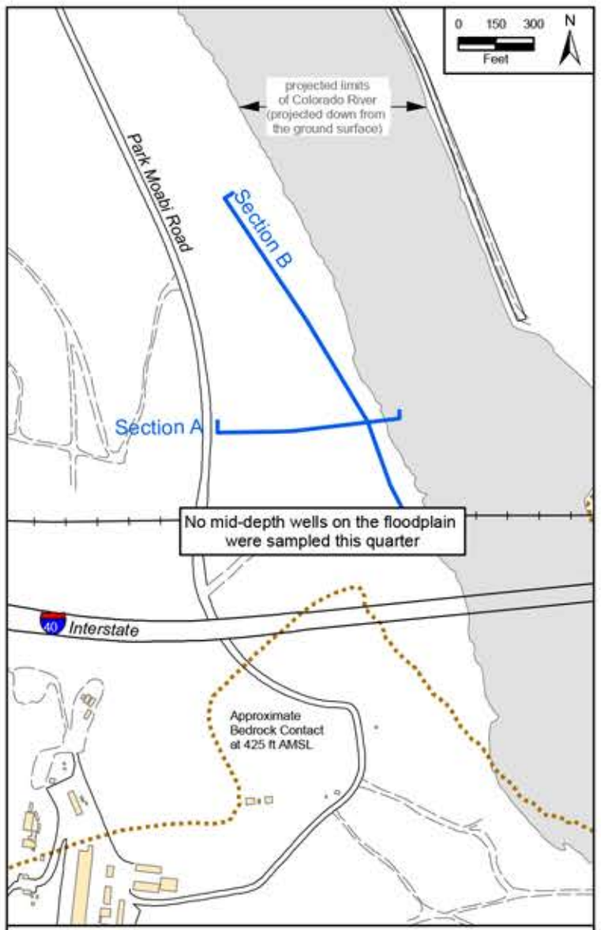
FIGURE
3-1b

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\1Q21\FINAL\FIGURE3-1B_CRVI_DEEP_2021Q1.MXD SHARMAYH4948 04/21/2021 9:52:24 AM

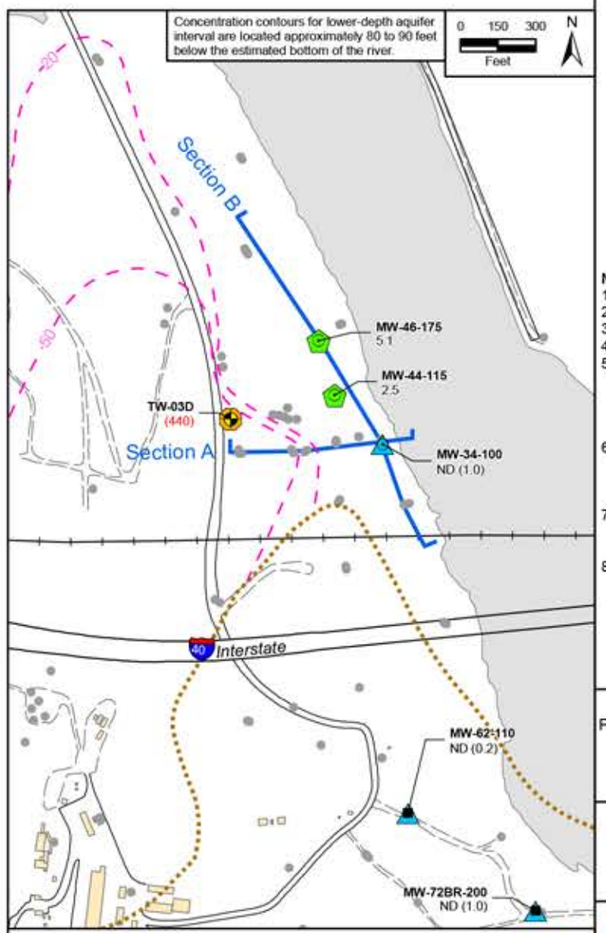




Shallow Wells (Upper Depth Interval)



Mid-Depth Wells (Middle Depth Interval)



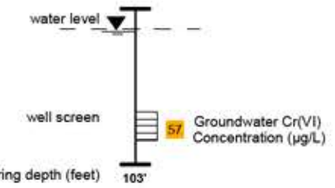
Deep Wells (Lower Depth Interval)

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-38S — Sampling Location
8.4 — 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.

FIRST 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, FIRST QUARTER 2021

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4-1

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\1Q21\FINAL\FIGURE4-1_GMP_CR6_2021Q1_MAX.MXD 04/21/2021 9:54:18 AM

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
5.1
2.5
ND (1.0)

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'

5.1 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

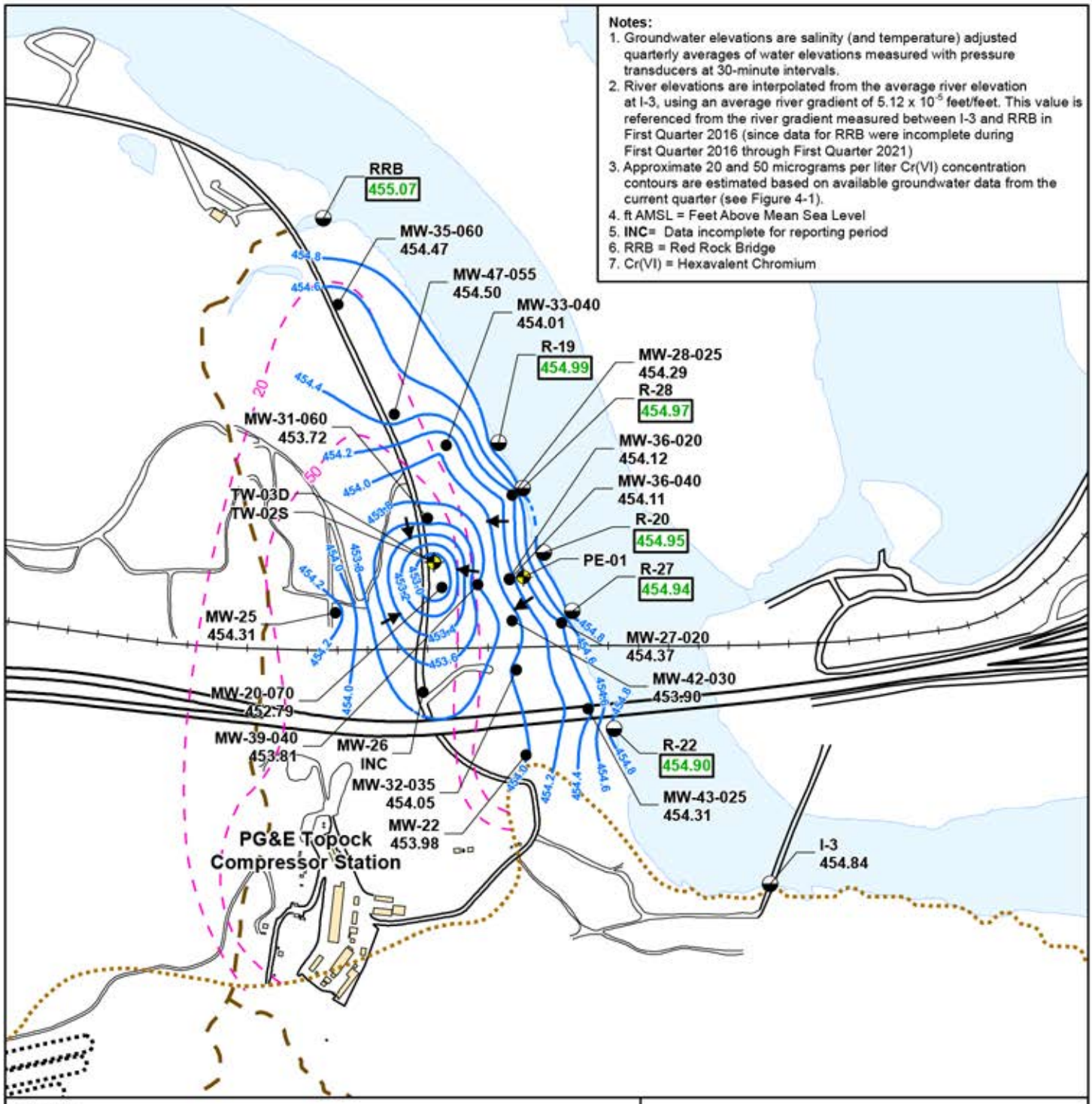
Concentration between reporting limit and 32 µg/L

FIRST 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, FIRST QUARTER 2021

ARCADIS Design & Consultancy for natural and built assets

FIGURE
4-2



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

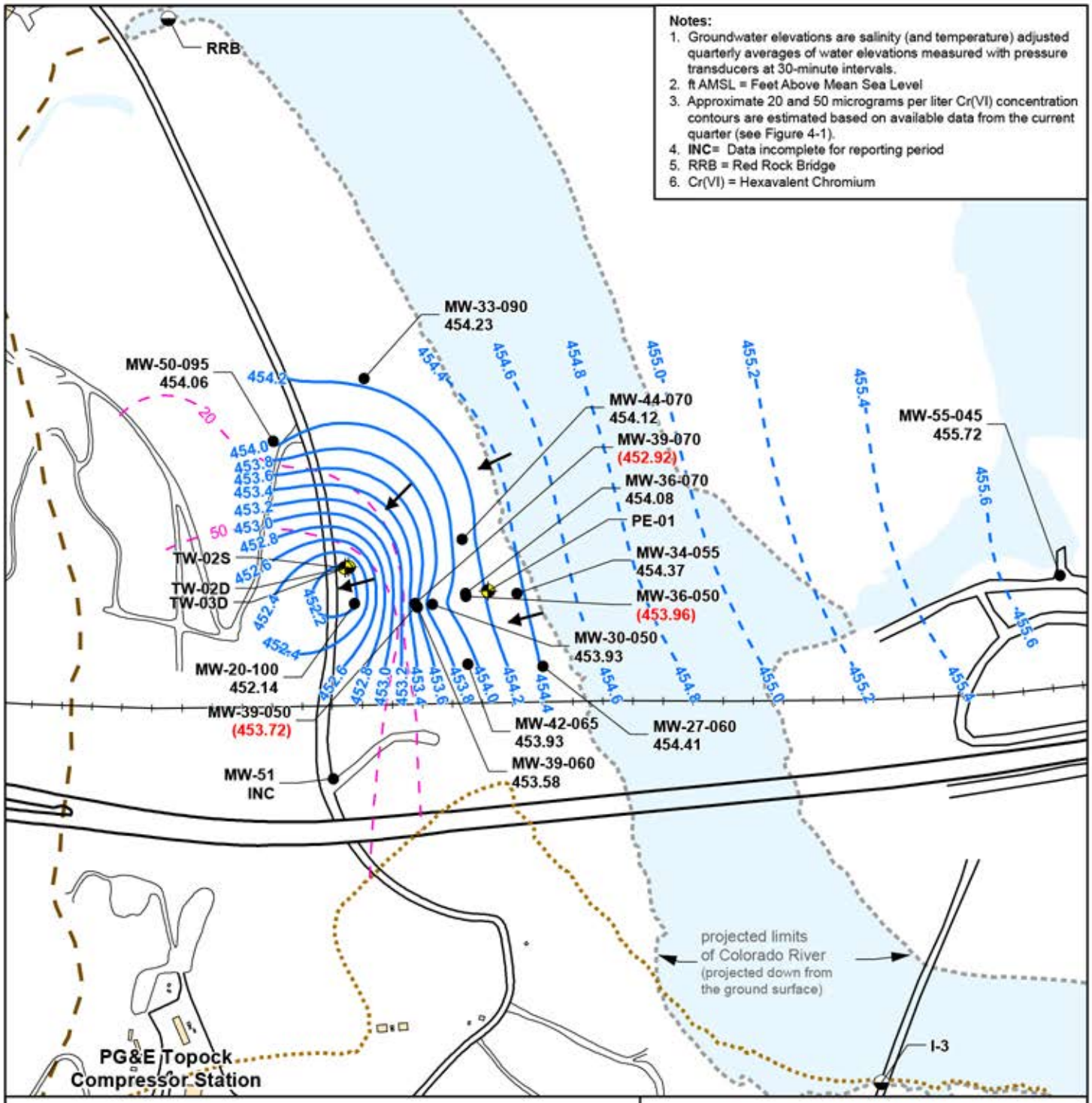
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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

ARCADIS Design & Consultancy for natural and built assets

FIGURE
4-3a

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\1Q21\FINAL\FIGURE4-3A_GWE_SHALLOW_2021Q1.MXD 04/15/2021 6:01:57 PM



Notes:
1. Groundwater elevations are salinity (and temperature) adjusted quarterly averages of water elevations measured with pressure transducers at 30-minute intervals.
2. ft AMSL = Feet Above Mean Sea Level
3. Approximate 20 and 50 micrograms per liter Cr(VI) concentration contours are estimated based on available data from the current quarter (see Figure 4-1).
4. **INC**= Data incomplete for reporting period
5. RRB = Red Rock Bridge
6. Cr(VI) = Hexavalent Chromium

LEGEND

- Monitoring Well
- River Station
- Extraction Well
- Bedrock Contact at 425 ft AMSL Elevation
- Interpreted Groundwater Flow Direction
- Groundwater Elevation Contour 0.2 ft (dashed where inferred)
- Inferred Cr(VI) concentration (micrograms per liter) contour

0 500 1,000
Feet

MW-39-060 — Gauging Location
453.58 — Average Groundwater Elevation (ft AMSL)
(453.72) — Elevation in red parentheses not used for contouring

FIRST 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, FIRST QUARTER 2021

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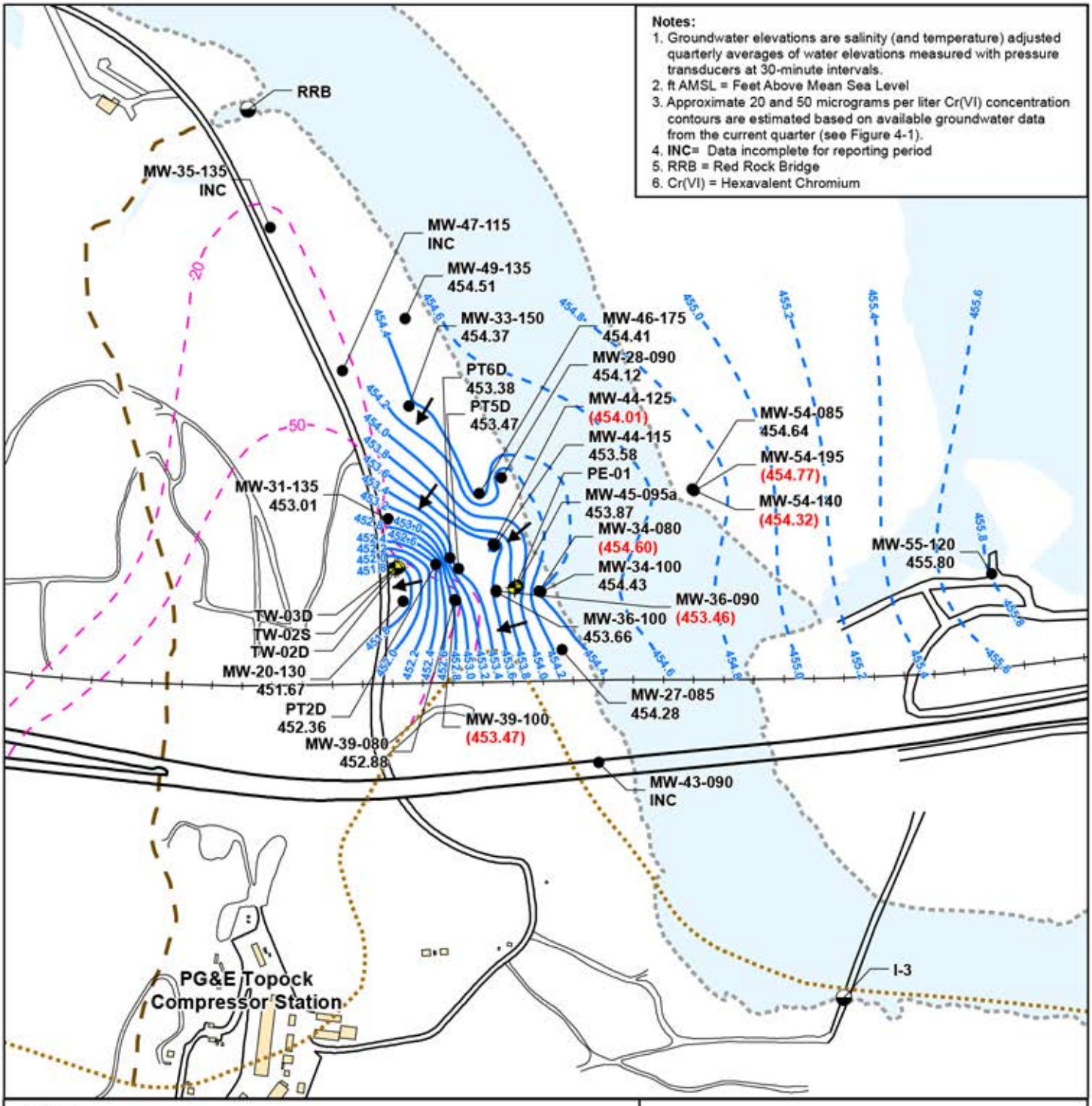
FIGURE
4-3b

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\1Q21\FINAL\FIGURE4-3B_GWE_MIDDEPTH_2021Q1.MXD 04/15/2021 3:44:48 PM



FIRST 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, FIRST QUARTER 2021

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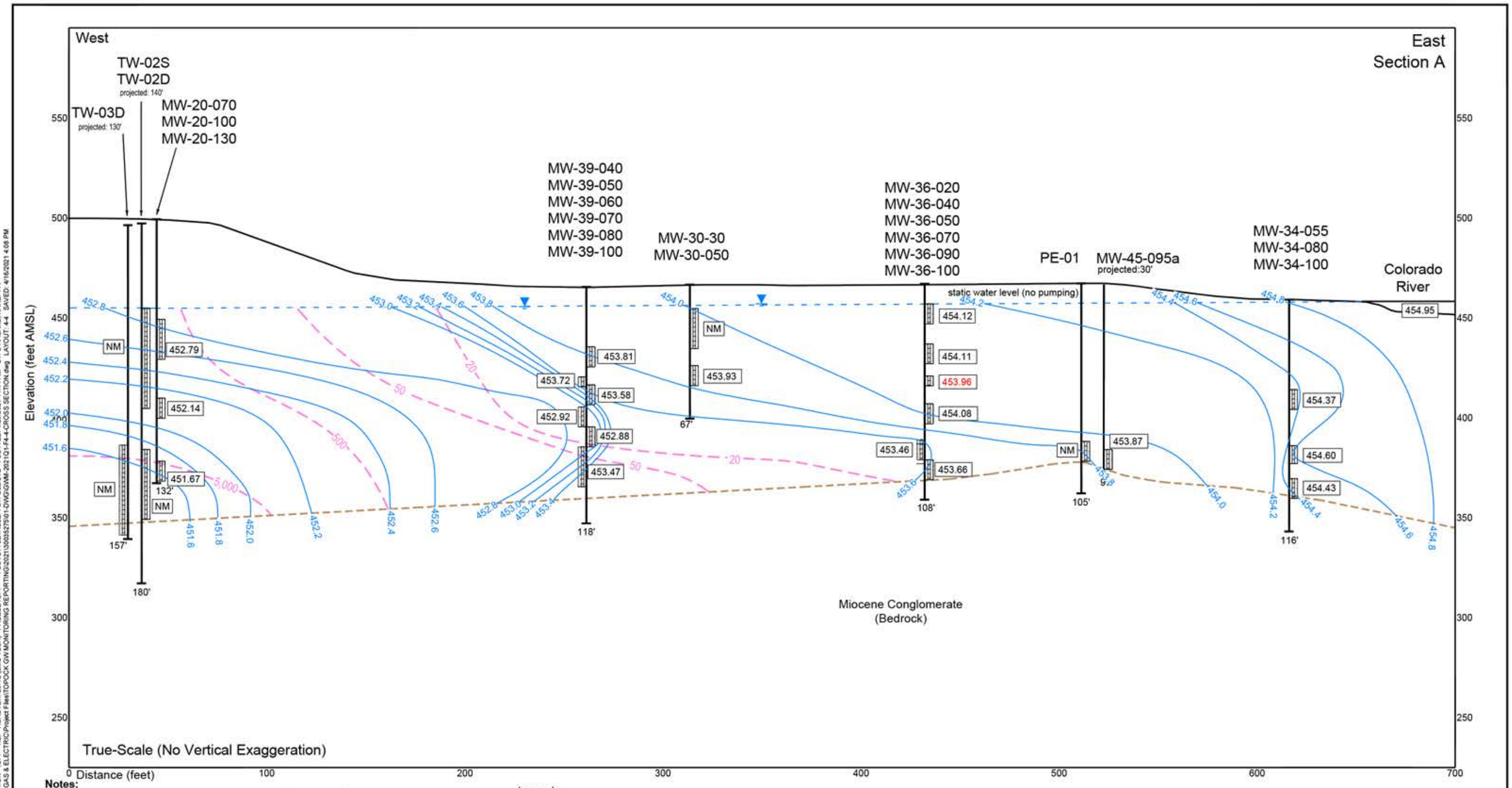
FIGURE

4-3c

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\1Q21\FINAL\FIGURE4-3C_GWE_DEEP_2021Q1.MXD 04/15/2021 7:21:15 PM



Notes:

1. Results show average groundwater elevations for January,February, and March 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 First 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

MW-030-050

Inferred water table

well screen and associated average groundwater elevation (feet AMSL) — 453.54

boring depth (feet) — 67'

Inferred groundwater head contour

Interpreted groundwater flow direction

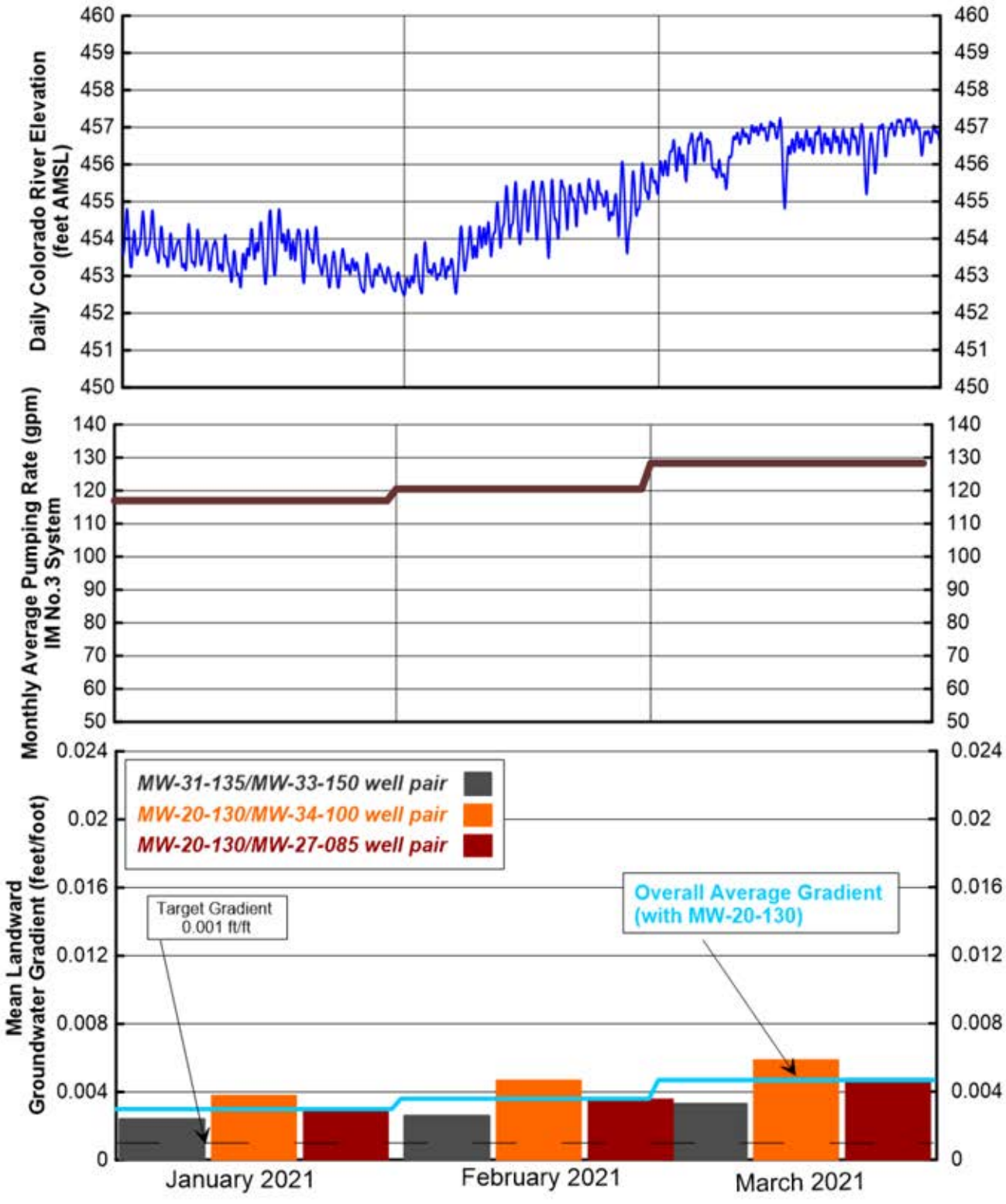
20 Inferred hexavalent chromium contour (ppb) in Alluvial Aquifer

FIRST 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, FIRST QUARTER 2021

ARCADIS Design & Consultancy for natural and built assets

FIGURE
4-4



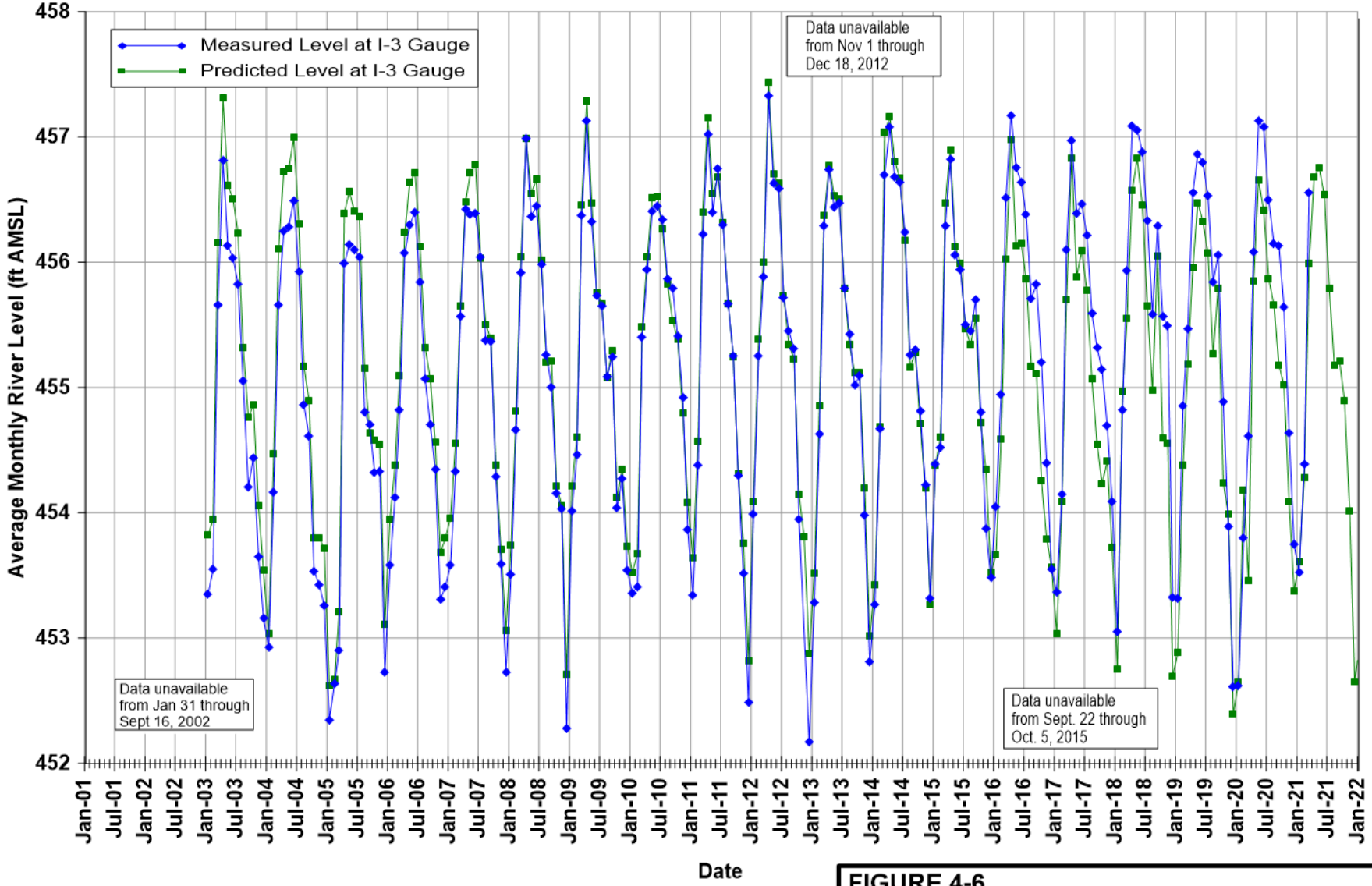
Notes:

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-3D and PE-1 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, FIRST QUARTER 2021

FIRST 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 April 24-Month Study (Report dated April 15, 2021). These data are reported monthly by the US Department of Interior, at https://www.usbr.gov/uc/water/crsp/studies/24Month_04.pdf

ft AMSL = feet above mean sea level

FIGURE 4-6
PAST AND PREDICTED FUTURE RIVER LEVELS AT TOPOCK COMPRESSOR STATION
FIRST 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, First 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 March 2021

Appendix B

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

First 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-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-11	SA	04/23/2020	N	LF	43	43
MW-11	SA	12/10/2020	N	LF	33	33
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-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-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-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-20-100	MA	04/24/2020	N	LF	750	760
MW-20-100	MA	12/04/2020	N	LF	610 J	660
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-21	SA	04/30/2020	N	LF	5	5
MW-21	SA	12/15/2020	N	LF	ND (1.0)	ND (1.0)
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-23-060	BR	06/18/2020	N	LF	40	37
MW-23-060	BR	12/08/2020	N	LF	42	40
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-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-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

Appendix B

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First 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-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-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-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-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-28-090	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-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-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-31-135	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)
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-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)	1.8
MW-33-090	MA	06/17/2020	N	LF	3	6
MW-33-090	MA	12/02/2020	N	LF	3.1	11
MW-33-150	DA	06/17/2020	N	LF	5	11
MW-33-150	DA	12/02/2020	N	LF	5.0	8.8
MW-33-210	DA	06/17/2020	N	LF	7	15
MW-33-210	DA	12/02/2020	N	LF	12	15
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-34-080	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-34-100	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)

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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	02/25/2021	N	LF	ND (1.0)	1.7
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-35-135	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-36-020	SA	12/15/2020	N	LF	ND (0.2)	ND (1.0)
MW-36-040	SA	12/15/2020	N	LF	ND (0.2)	ND (1.0)
MW-36-050	MA	12/15/2020	N	LF	ND (0.2)	ND (1.0)
MW-36-070	MA	12/15/2020	N	LF	0.2	ND (1.0)
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)	1.7
MW-36-100	DA	06/16/2020	N	LF	12	11
MW-36-100	DA	12/15/2020	N	LF	4.5	6.0
MW-37D	DA	06/24/2020	N	LF	5	7
MW-37D	DA	12/10/2020	N	LF	4.5	5.7
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-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	7.2	7.8
MW-38S	SA	02/25/2021	N	LF	8.4	9.1
MW-38S-SMT	SA	09/30/2020	N	LF	5	5
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	0.47	1.2
MW-39-100	DA	06/18/2020	N	LF	93	91
MW-39-100	DA	12/15/2020	N	LF	120	110
MW-40D	DA	06/17/2020	N	LF	12	11
MW-40D	DA	12/10/2020	N	LF	31	29
MW-40S	SA	06/17/2020	N	H	18	28
MW-40S	SA	12/10/2020	N	H	5.9	29
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	1.4

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Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-41M	DA	12/17/2020	N	LF	9.5	8.3
MW-41S	SA	12/17/2020	N	LF	5.5	5.2
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-42-065	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-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-44-115	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
MW-44-115	DA	10/01/2020	FD	--	3	4
MW-44-115	DA	12/11/2020	N	LF	2.7	4.4
MW-44-115	DA	02/26/2021	N	LF	2.5	4.9
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-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	7.9	9.0
MW-46-175	DA	02/25/2021	N	LF	5.1	7.6
MW-46-205	DA	06/23/2020	N	LF	1	2
MW-46-205	DA	12/15/2020	N	LF	ND (1.0)	3.6
MW-47-055	SA	06/25/2020	N	LF	16	16
MW-47-055	SA	11/30/2020	N	LF	17	17
MW-47-115	DA	06/25/2020	N	LF	24	24
MW-47-115	DA	11/30/2020	N	LF	18	18
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-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-50-200	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	--	2,300	2,100 J
MW-51	MA	04/27/2020	N	LF	3,200	3,200
MW-51	MA	04/27/2020	FD	--	3,300	3,200

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Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-51	MA	12/03/2020	N	LF	3,300	3,500
MW-51	MA	12/03/2020	FD	--	3,300	3,700
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-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-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-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-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-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-54-140	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-54-195	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-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-55-120	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	7.51	ND (2.5)
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-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-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)
MW-57-070	BR	06/22/2020	N	LF	610	530
MW-57-070	BR	12/04/2020	N	LF	630 J	660
MW-57-185	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	5.0
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	5.2	5.7
MW-58BR	BR	02/15/2021	N	LF	4.2	5.2
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

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Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-60-125	BR	06/24/2020	N	LF	660	630
MW-60-125	BR	10/01/2020	N	LF	580	570
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_D	BR	02/21/2020	N	LF	72	62
MW-60BR-245_S	BR	02/21/2020	N	LF	96	85
MW-61-110	BR	12/04/2020	N	LF	430 J	440
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-62-110	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)
MW-62-110	BR	02/16/2021	N	3V	ND (0.2)	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-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	1.7	2.7 J
MW-63-065	BR	02/18/2021	N	LF	1.2	3.1 J
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-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

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Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-65-160	SA	02/16/2021	N	LF	240	250 J
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-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-66-230	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-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)	1.2
MW-66BR-270	BR	12/16/2020	FD	--	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-67-225	MA	04/30/2020	N	LF	3,000	3,200
MW-67-225	MA	12/02/2020	N	LF	3,800	4,000
MW-67-260	DA	04/30/2020	N	LF	1,100	1,100
MW-67-260	DA	12/02/2020	N	LF	250	250
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-68-240	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-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)	1.4
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	6.0	9.4
MW-69-195	BR	02/15/2021	N	LF	29	59
MW-69-195	BR	02/15/2021	FD	--	27	59
MW-70-105	BR	11/30/2020	N	LF	150	150

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Location ID	Aquifer Zone	Sample Date	Sample Type	Sample Method	Hexavalent Chromium (µg/L)	Dissolved Chromium (µg/L)
MW-70BR-225	BR	11/30/2020	N	LF	1,300	1,300
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-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-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-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-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)
OW-03D	DA	12/11/2020	N	LF	12	13
OW-03M	MA	12/11/2020	N	LF	17	17
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	9.6	9.5
PM-04	MA	12/14/2020	N	G	16	16
TW-01	SA	11/04/2020	N	PD	1,400	1,400
TW-02D	DA	02/19/2020	N	Tap	740	670
TW-03D	DA	01/08/2020	N	Tap	470	460
TW-03D	DA	02/05/2020	N	Tap	460	480
TW-03D	DA	03/04/2020	N	Tap	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	Tap	440	430
TW-03D	DA	01/06/2021	N	Tap	440	410
TW-03D	DA	02/03/2021	N	--	420	430
TW-03D	DA	03/03/2021	N	--	400	420

Appendix B

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

First 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-04	DA	06/25/2020	N	LF	4	4
TW-04	DA	11/30/2020	N	LF	6.4	6.6
TW-05	DA	06/25/2020	N	LF	12	12
TW-05	DA	12/07/2020	N	LF	18	16 J

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, First Quarter 2021

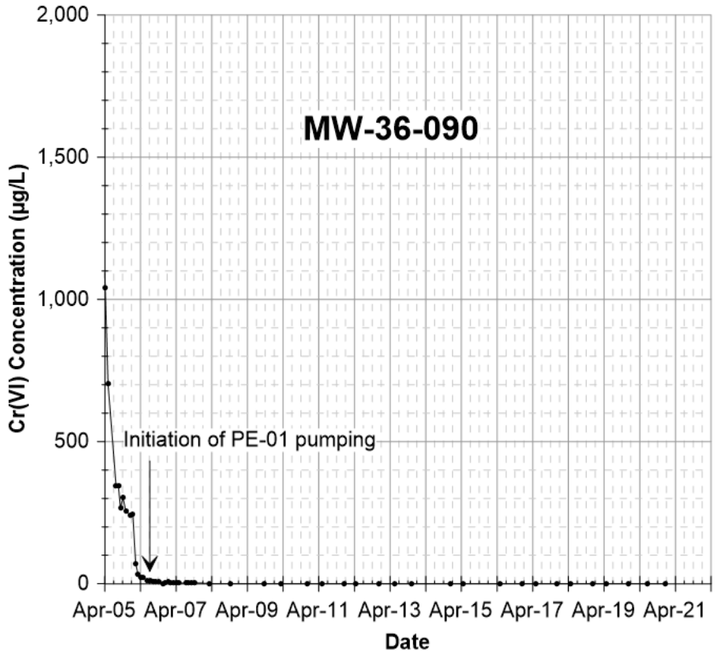
Appendix C
Well Inspection and Maintenance Log, First Quarter 2021
First Quarter 2021 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

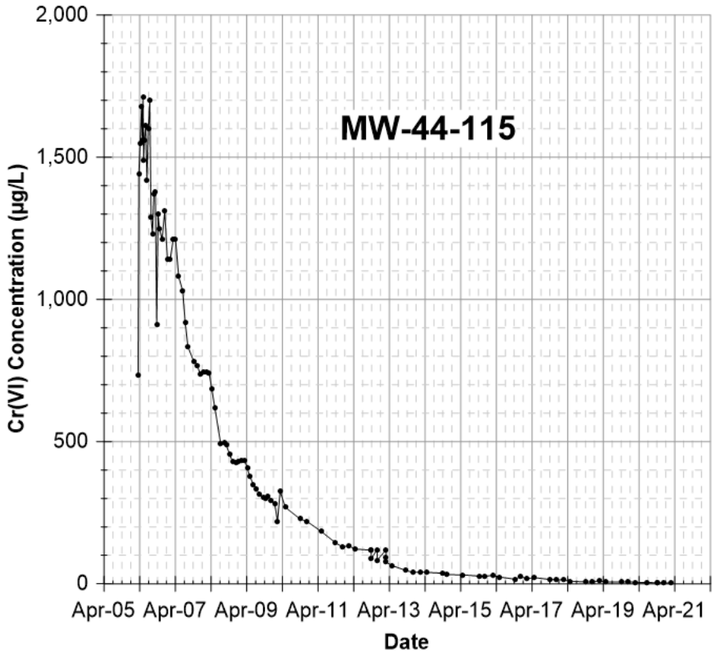
Well/Piezometer	Inspection Date	Well Labeled On Casing or Pad? (Yes/No)	Traffic Poles Intact? (Yes/No)	Concrete Pad Intact? (Yes/No)	Erosion Around Wellhead? (Yes/No)	Steel Casing or Well Box Intact? (Yes/No)	Any Tabs Stripped or Missing? (Yes/No)	Water In Well Box? (Yes/No)	J Plug Replaced Properly? (Yes/No)	Well Locked At Arrival? (Yes/No)	All Bolts Present? (Yes/No)	Photo Taken? (Yes/No)	Comments
MW-34-100	2/25/2021	Yes	--	Yes	No	Yes	--	No	Yes	Yes	--	No	None
MW-38S	2/25/2021	Yes	--	Yes	No	Yes	--	No	Yes	Yes	--	No	None
MW-44-115	2/26/2021	Yes	--	Yes	No	Yes	--	No	Yes	Yes	--	No	None
MW-46-175	2/25/2021	Yes	--	Yes	No	Yes	--	No	Yes	Yes	--	No	None
MW-57-050	2/15/2021	No	--	Yes	No	Yes	No	Yes	Yes	--	Yes	No	None
MW-58-065	2/15/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-58BR	2/15/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-60BR-245	2/18/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	No	Yes	None
MW-62-065	2/18/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-62-110	2/15/2021	Yes	--	Yes	No	Yes	No	Yes	Yes	--	Yes	No	None
MW-63-065	2/18/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-64BR	2/18/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-65-160	2/16/2021	Yes	--	Yes	No	Yes	No	No	Yes	--	Yes	No	None
MW-65-225	2/16/2021	Yes	--	Yes	No	Yes	No	No	Yes	--	Yes	No	None
MW-68-180	2/19/2021	Yes	--	Yes	No	Yes	No	No	Yes	--	Yes	No	None
MW-69-195	2/15/2021	No	--	Yes	No	Yes	No	No	Yes	--	Yes	No	None
MW-72-080	2/18/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
MW-72BR-200	2/18/2021	Yes	--	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	None
MW-73-080	2/18/2021	Yes	--	Yes	No	Yes	No	No	Yes	Yes	Yes	No	None
TW-03D	3/3/2021	No	--	Yes	No	No	--	--	Yes	Yes	--	No	None

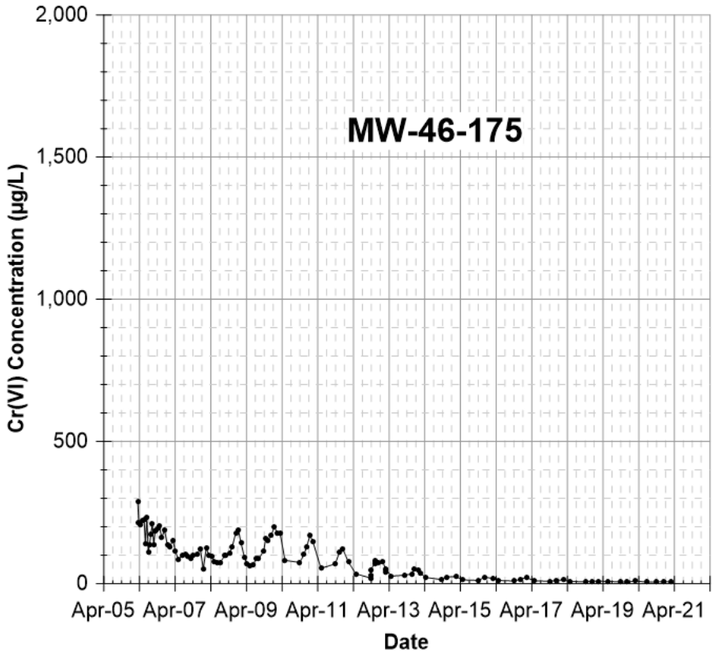
Notes:
-- = not applicable

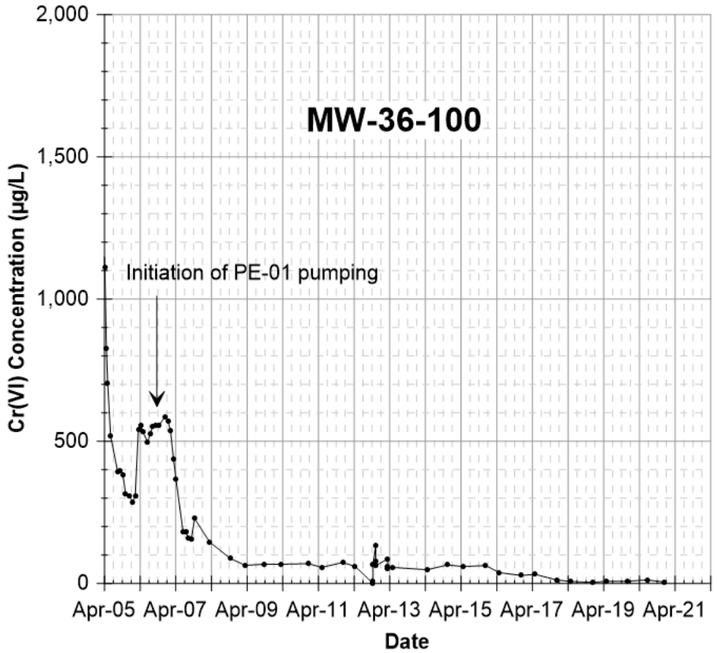
APPENDIX D

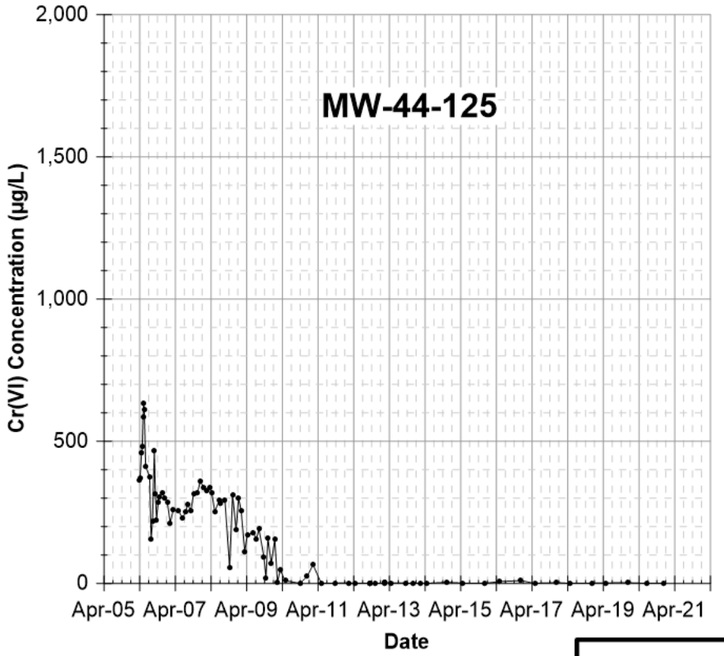
Concentration Time Series Charts, First Quarter 2021

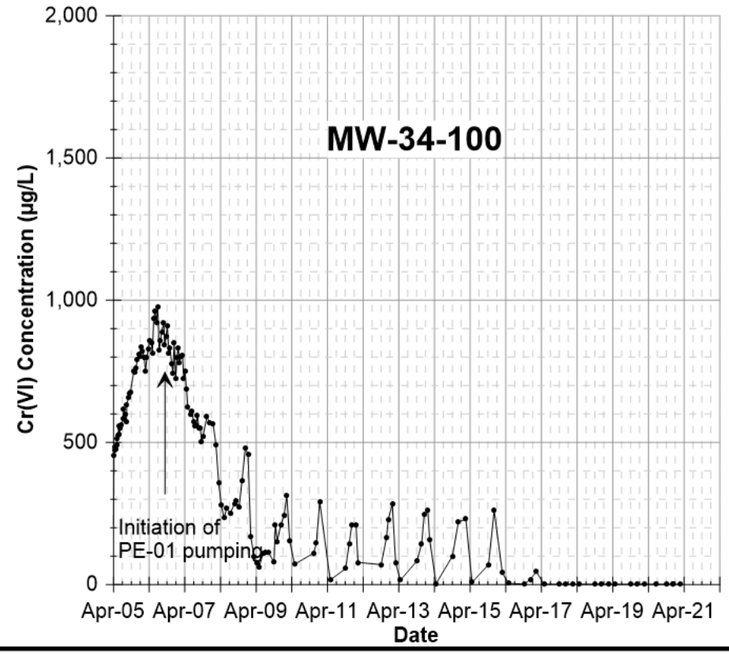












Notes:
1. Hexavalent chromium [Cr(VI)] results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples; see Table 3-1 for complete results.
3. MW-36 wells selected to monitor effects of PE-01 pumping on plume 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 MARCH 2021
FIRST 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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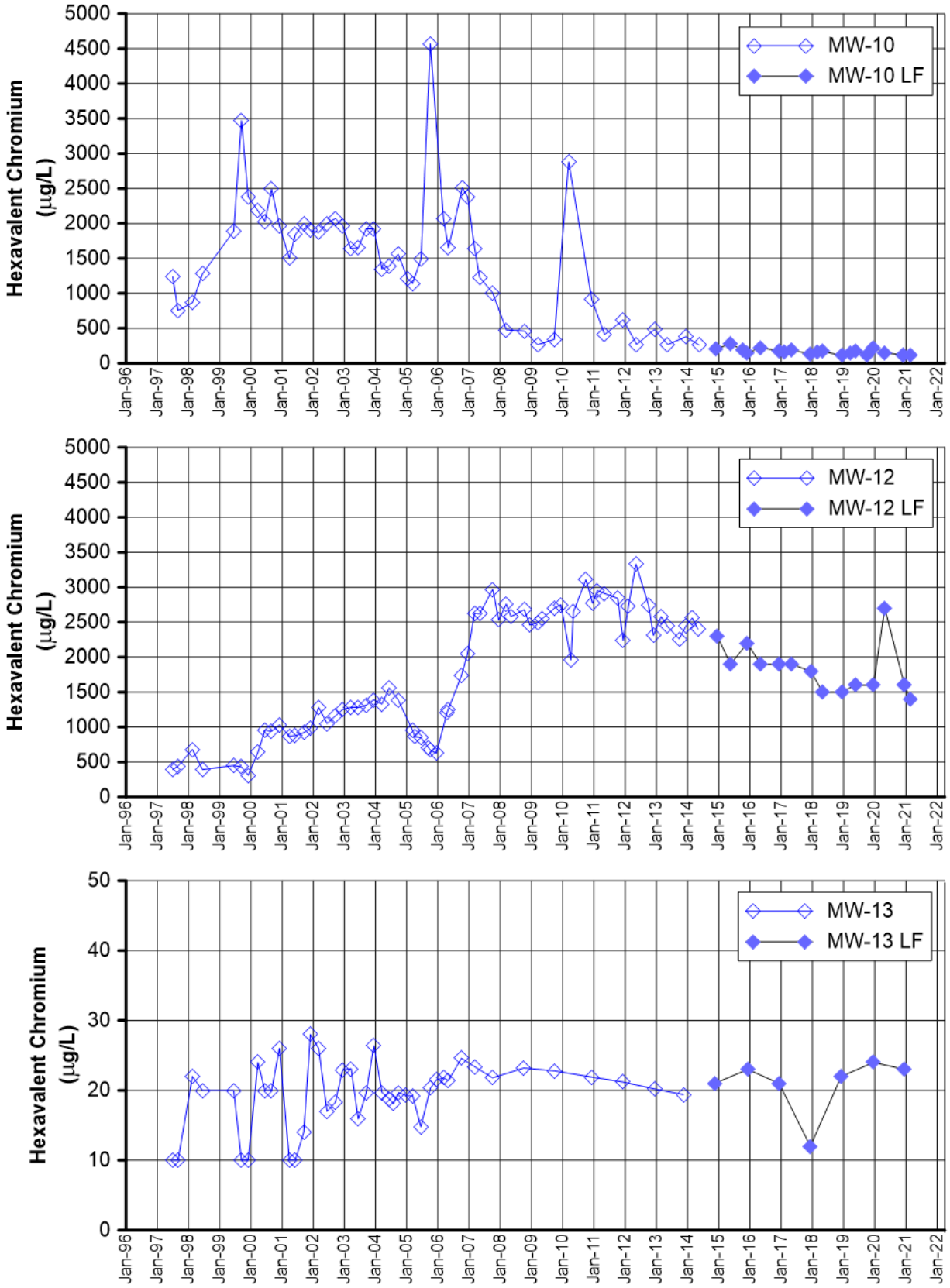

Notes:

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
FIRST 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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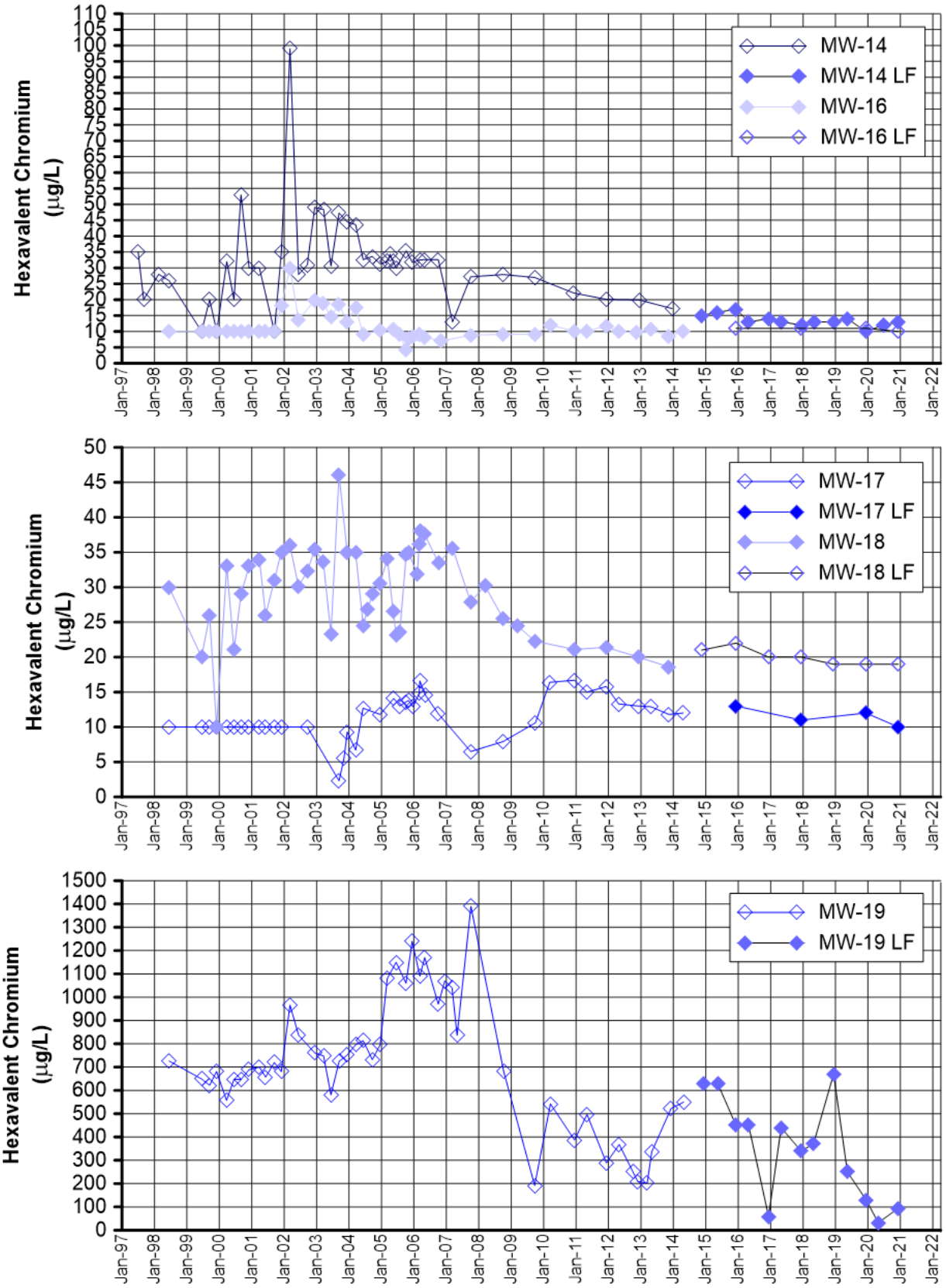

Notes:

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
FIRST 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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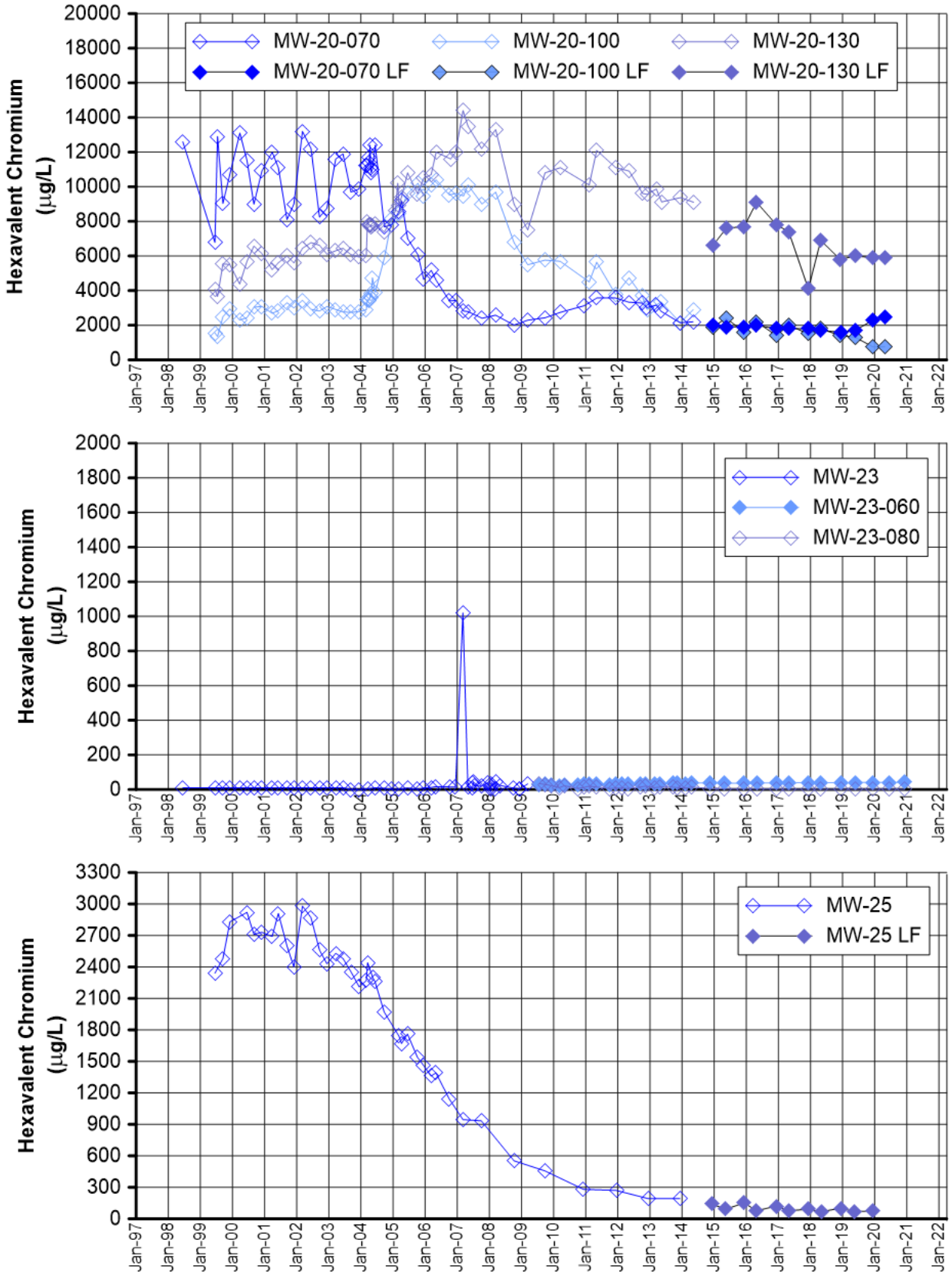

Notes:

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
FIRST 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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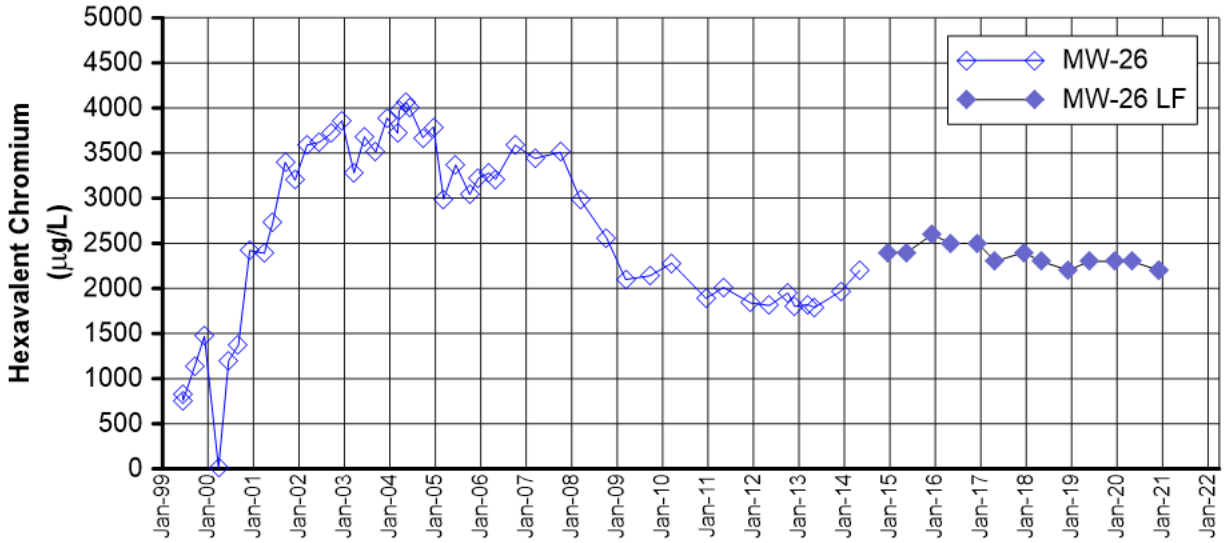

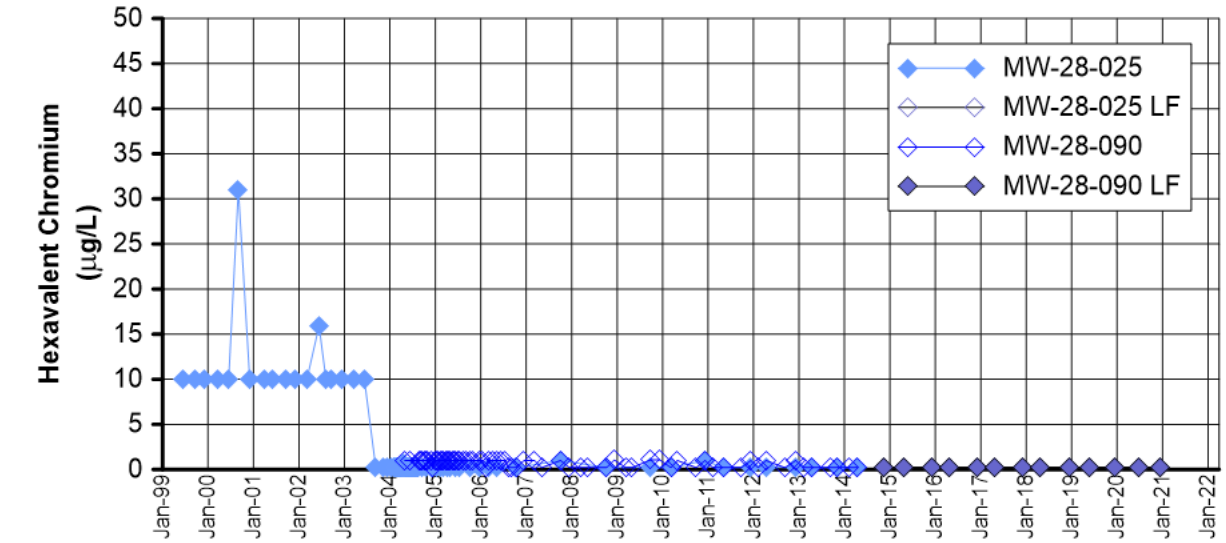

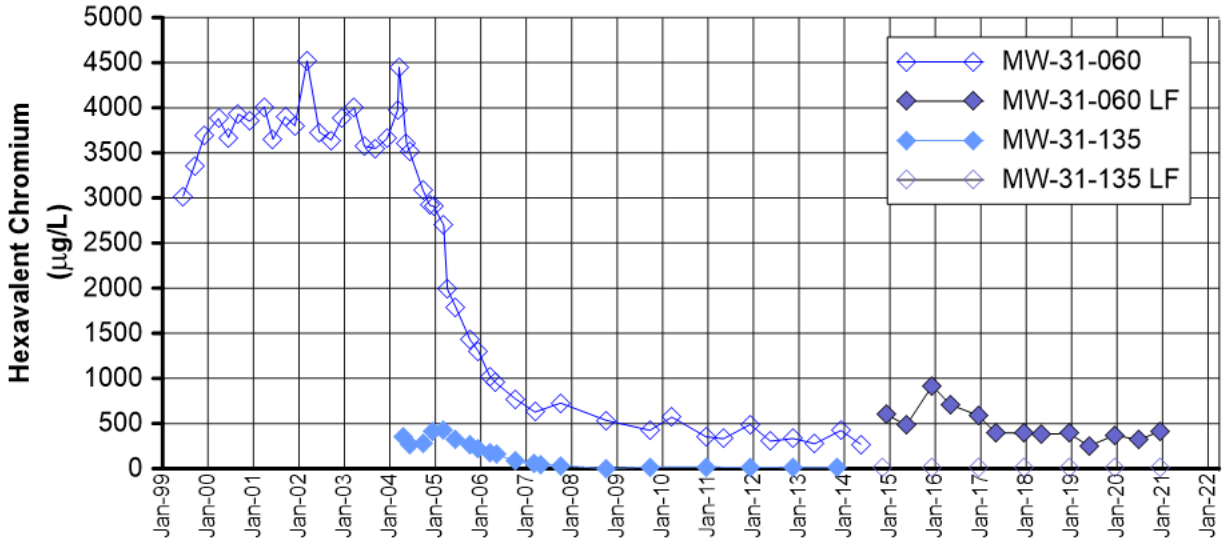

Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-28-090 is 20 µg/L.

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
FIRST 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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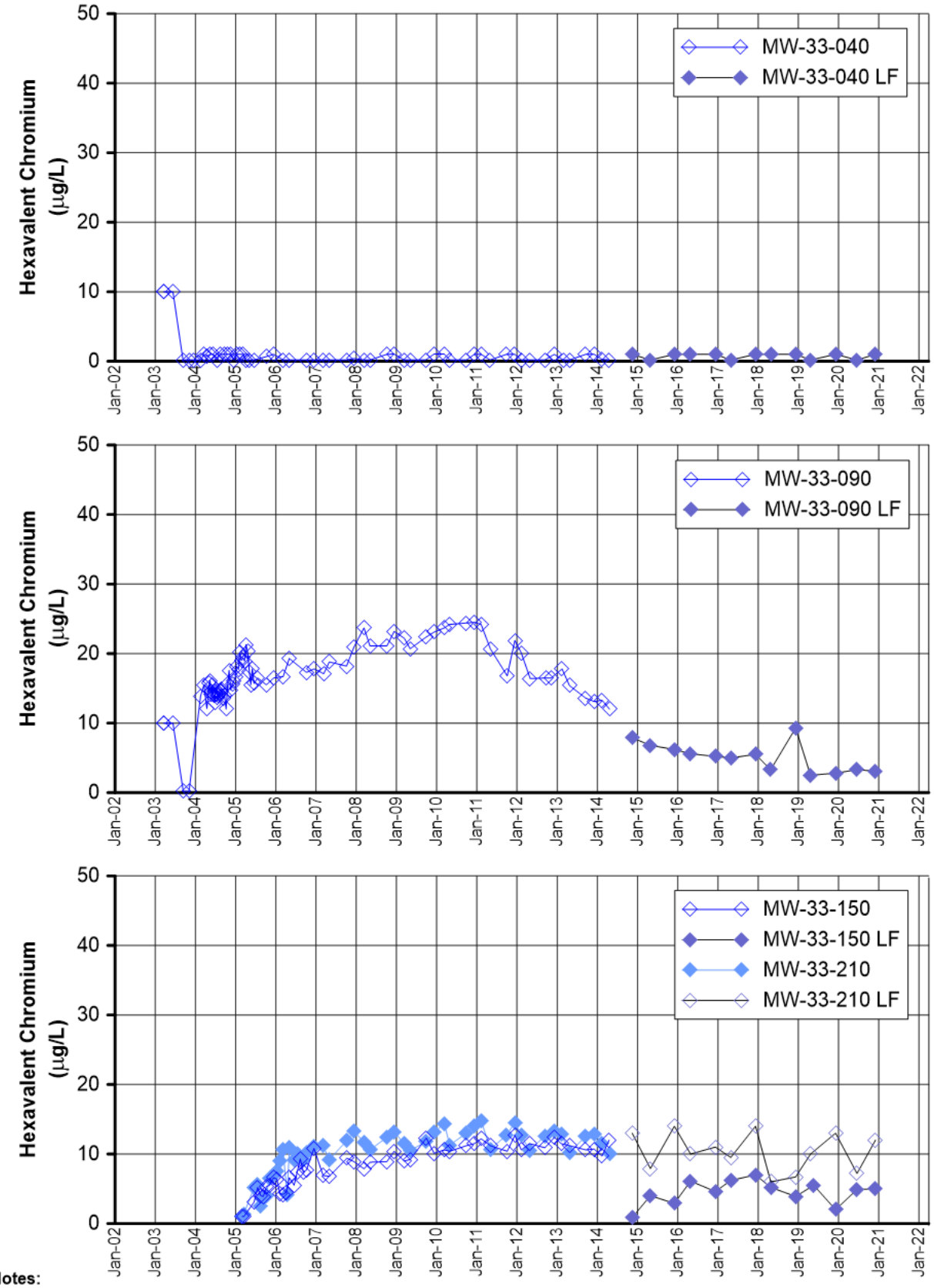

Notes:

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
FIRST 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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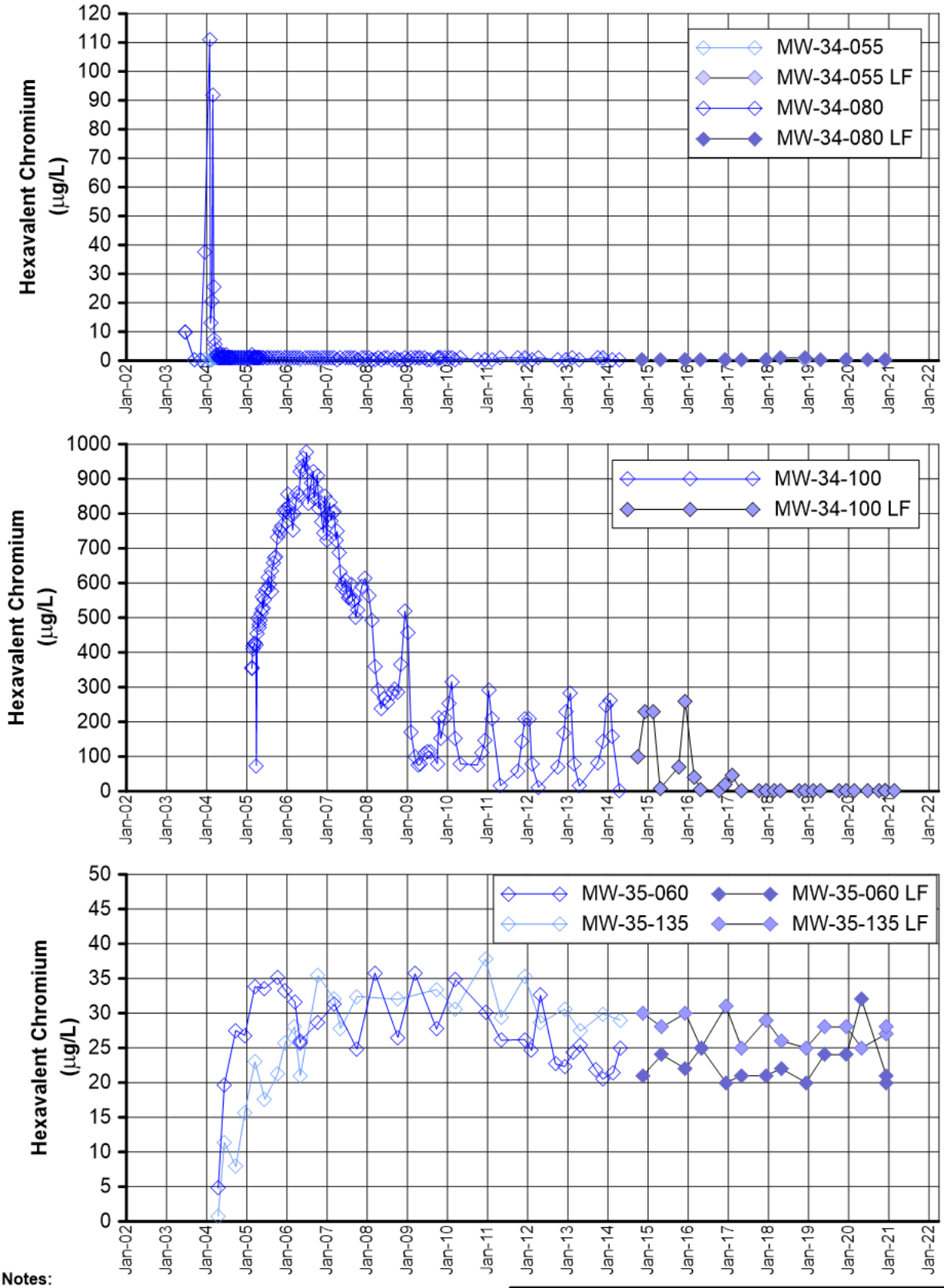

Notes:

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
FIRST 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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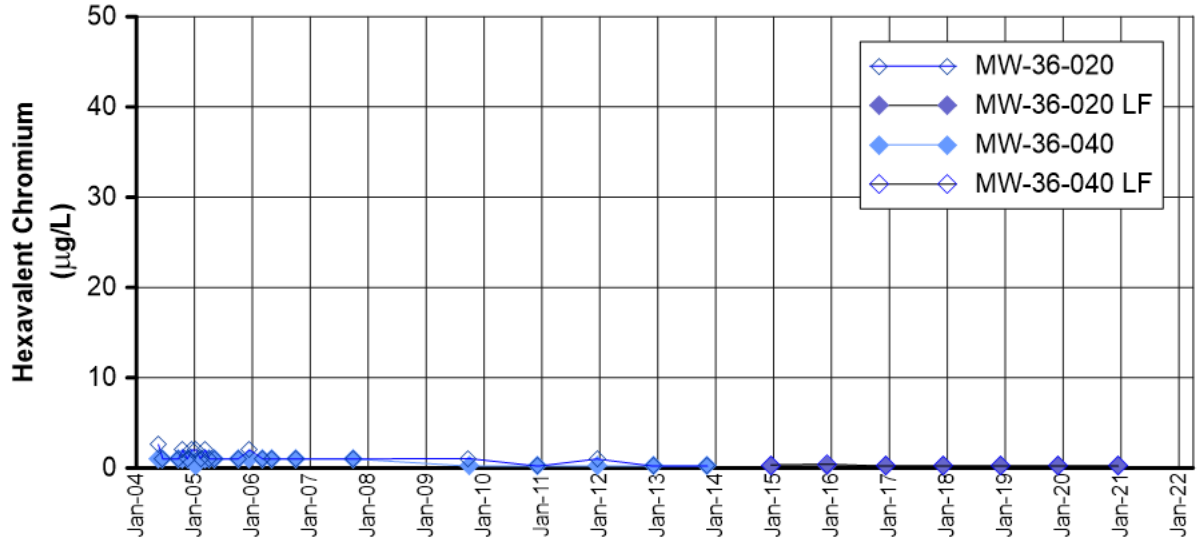

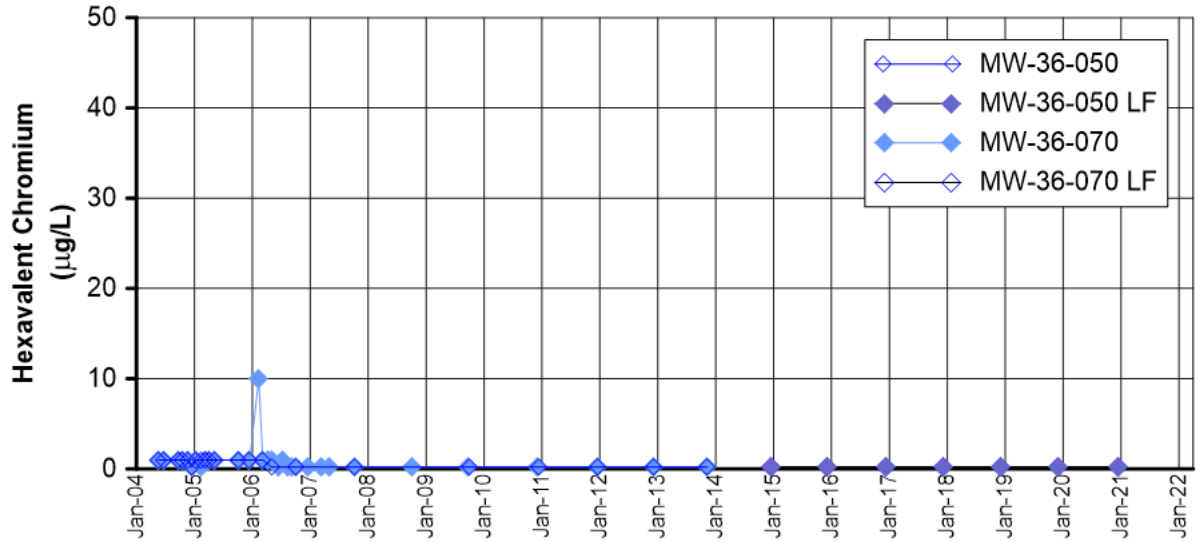

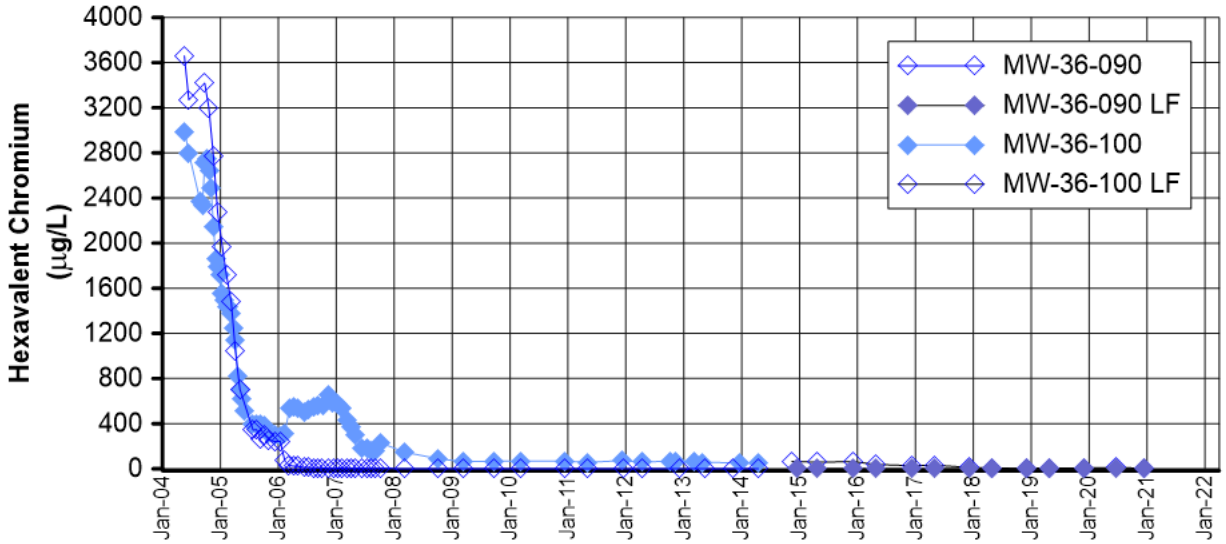

Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-36-070 is 20 µg/L.

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
FIRST 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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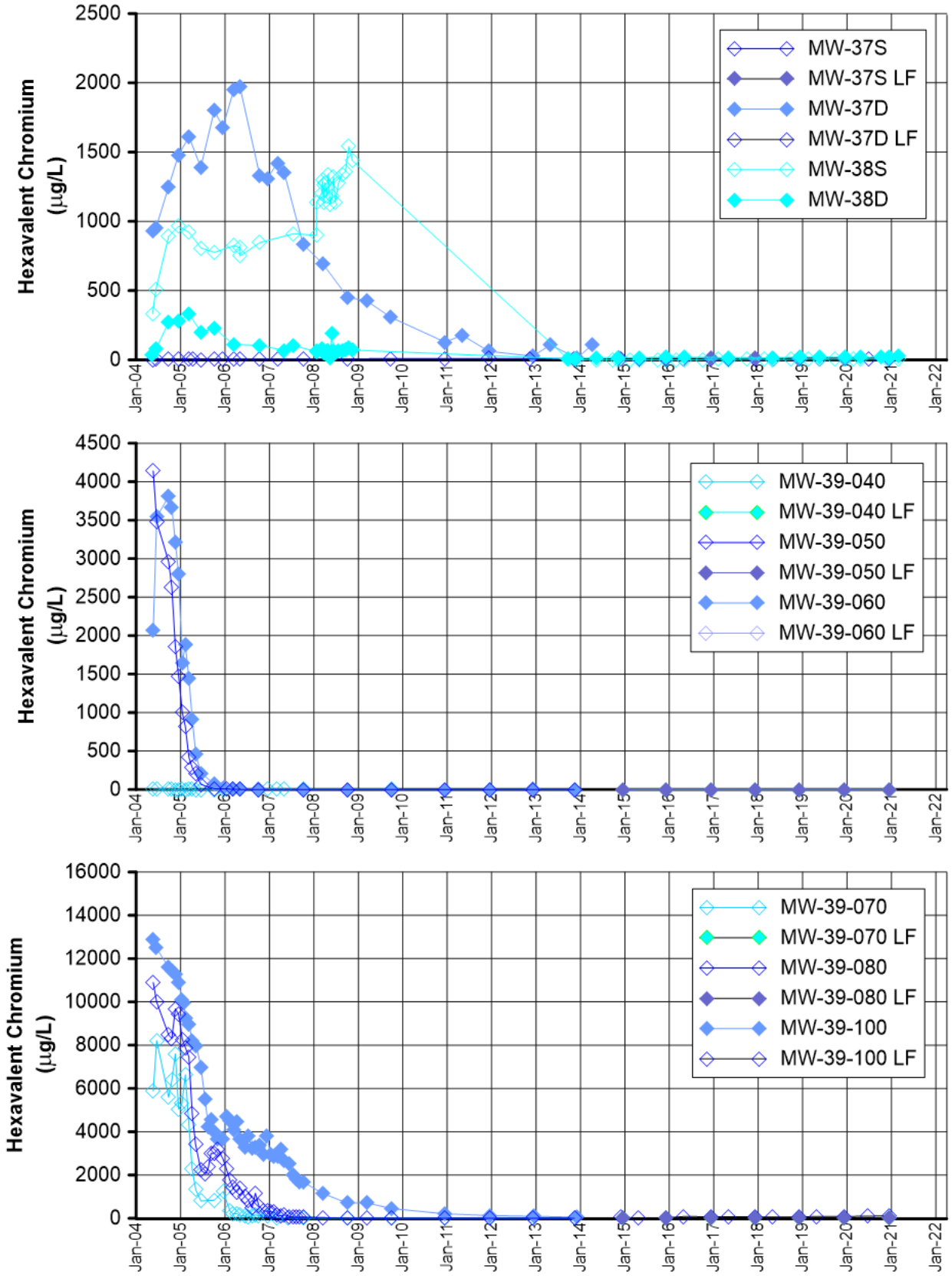

Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-39-040 is 20 µg/L.

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
FIRST 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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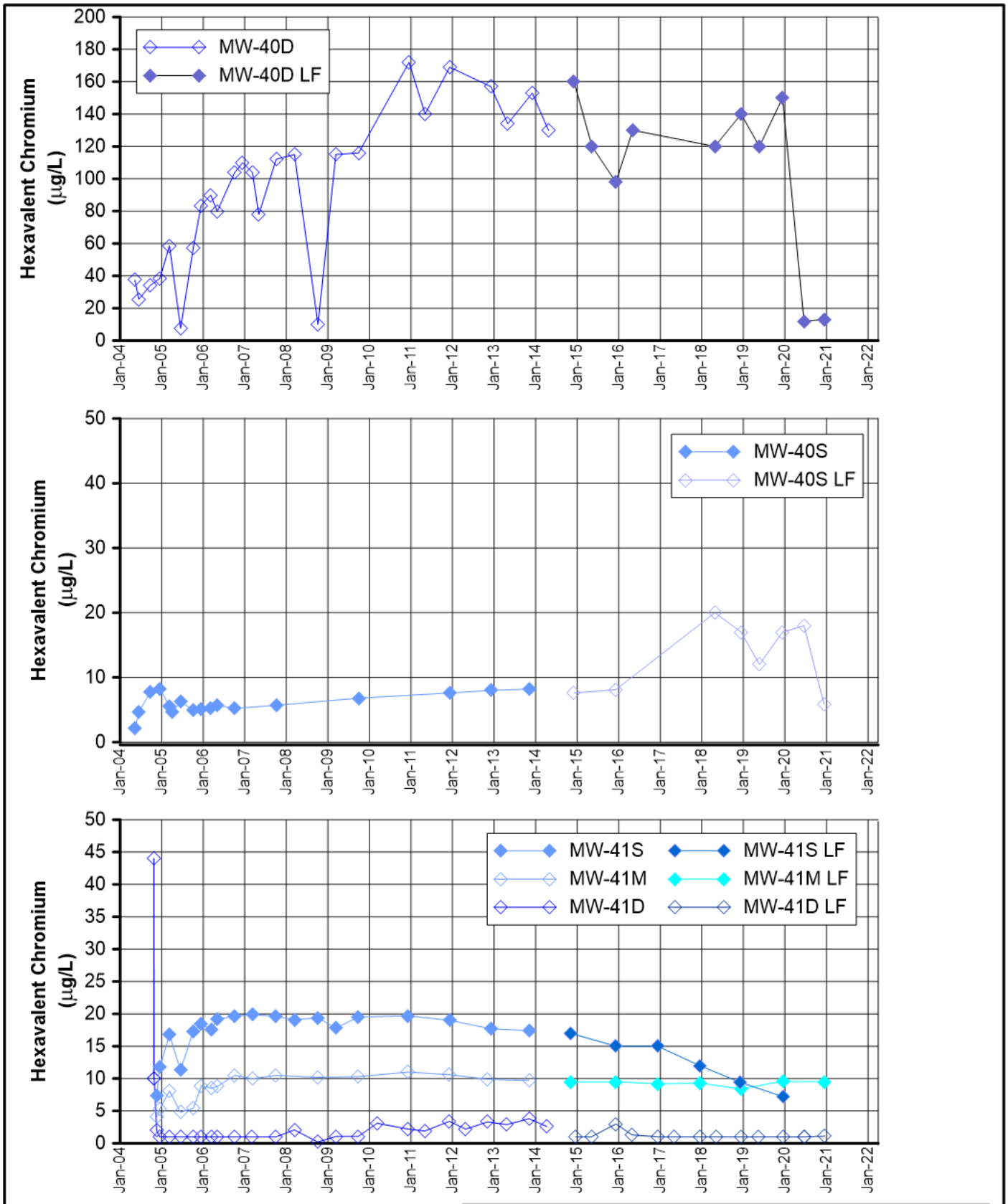

Notes:

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
FIRST 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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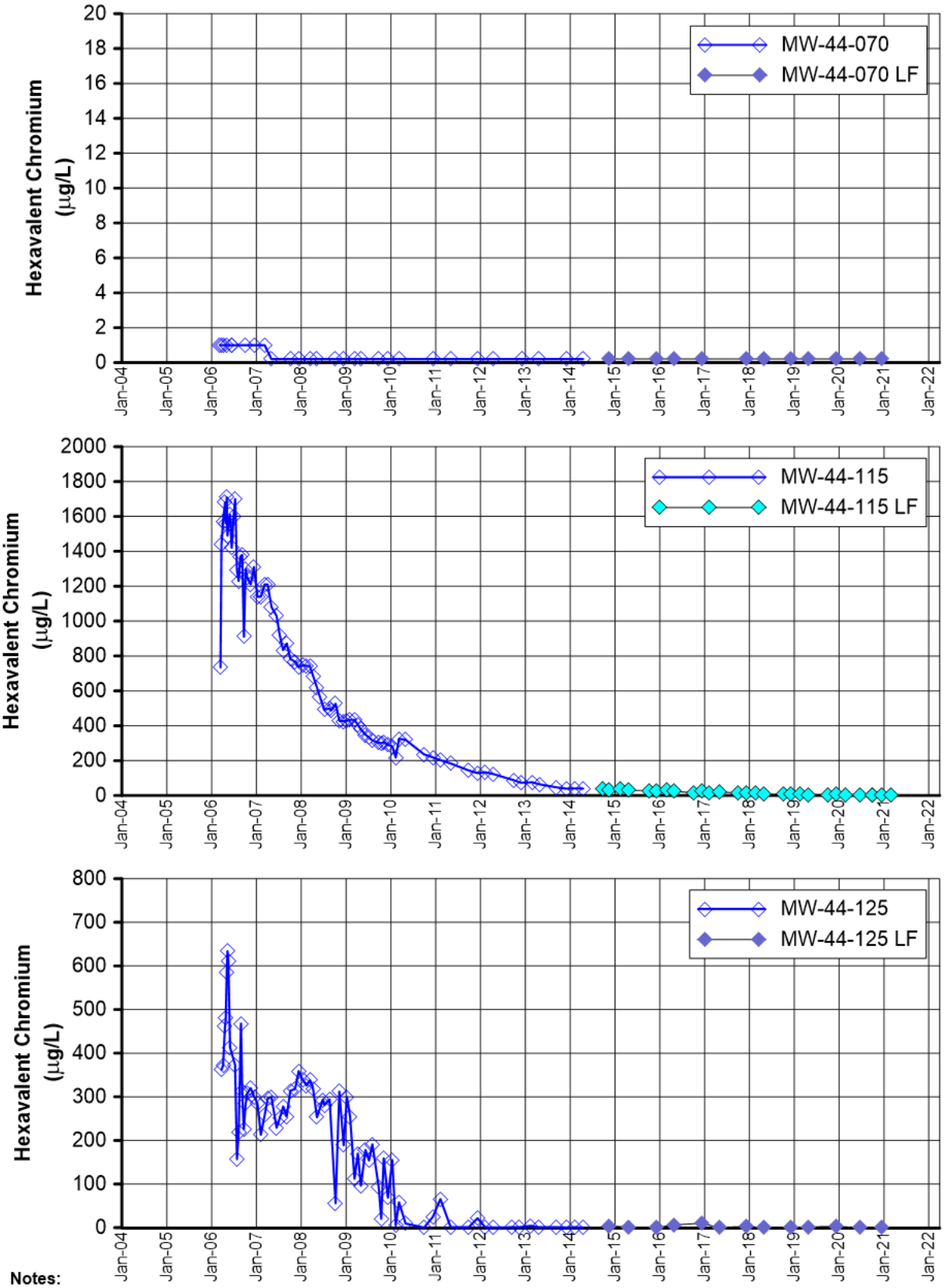

Notes:

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-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

FIRST 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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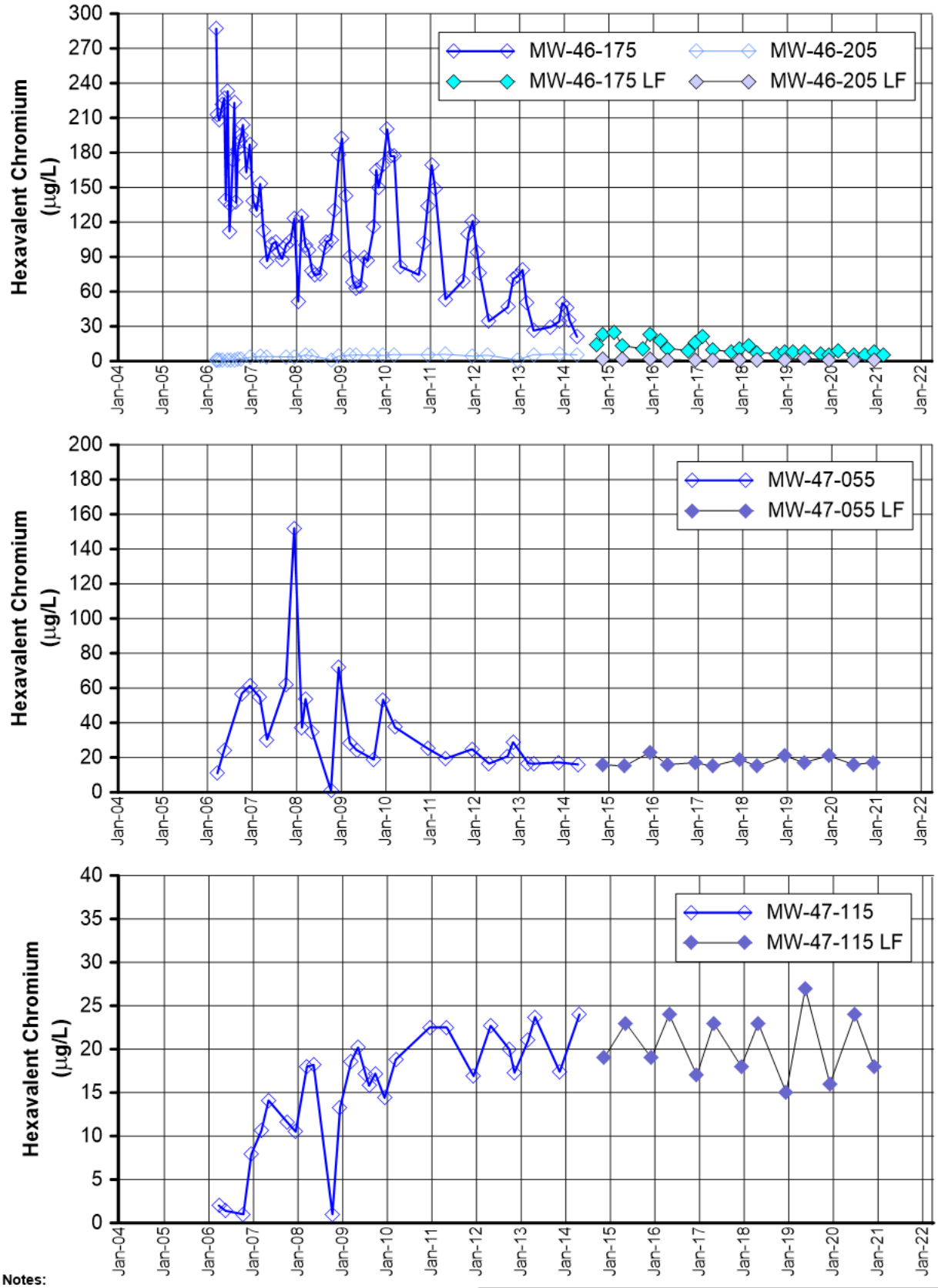

Notes:

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

FIRST 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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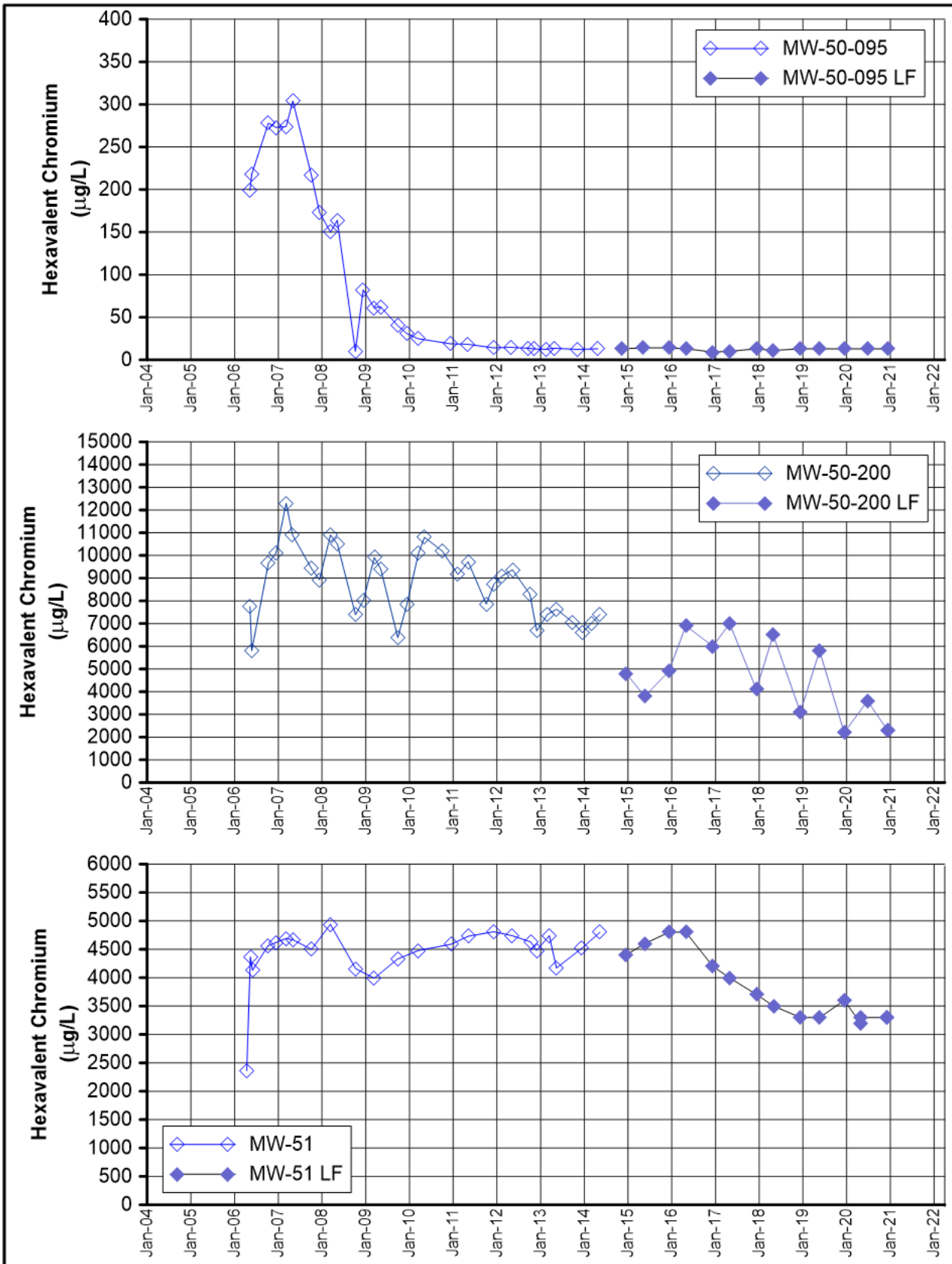

Notes:

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
FIRST 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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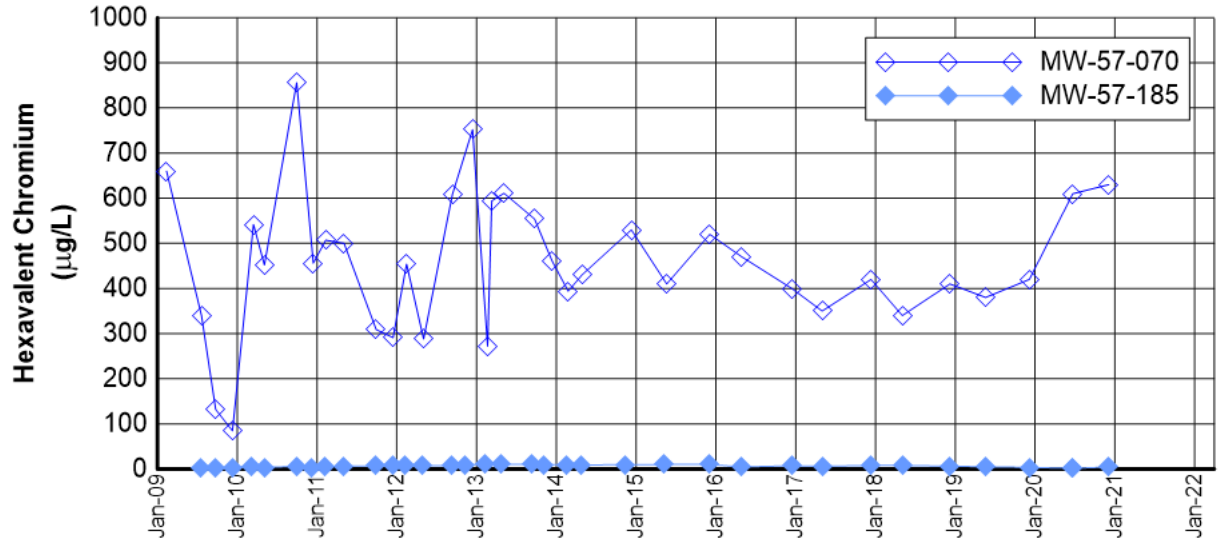

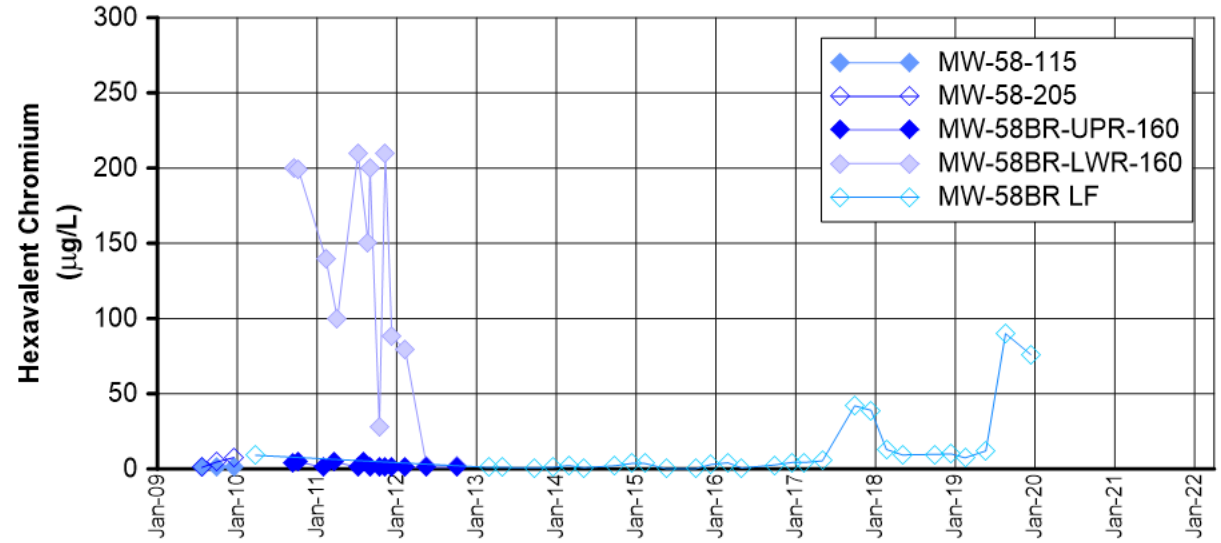

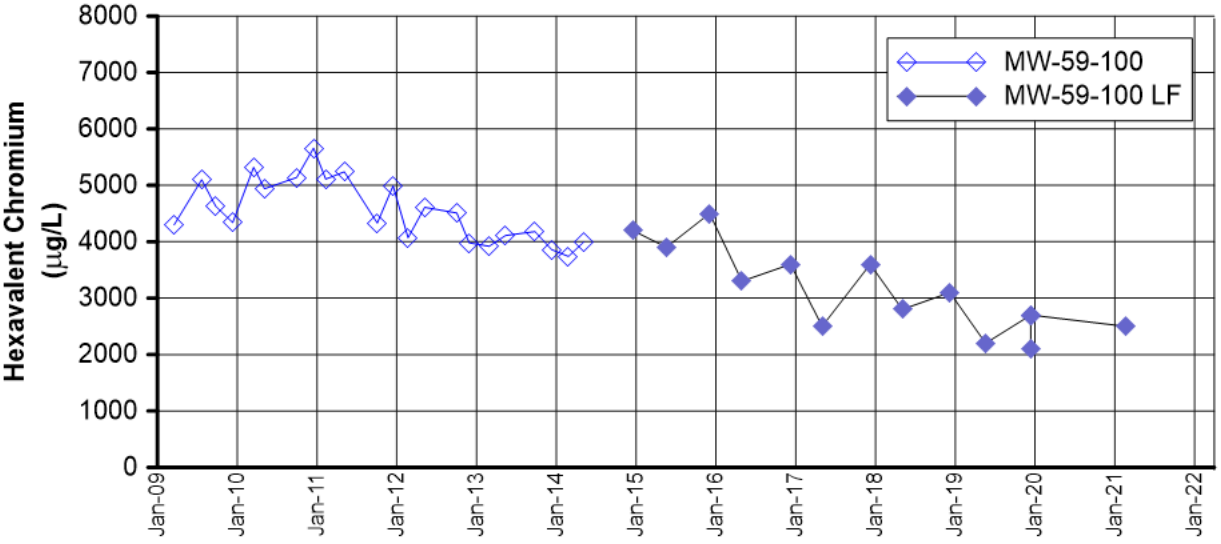

Note:

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
FIRST 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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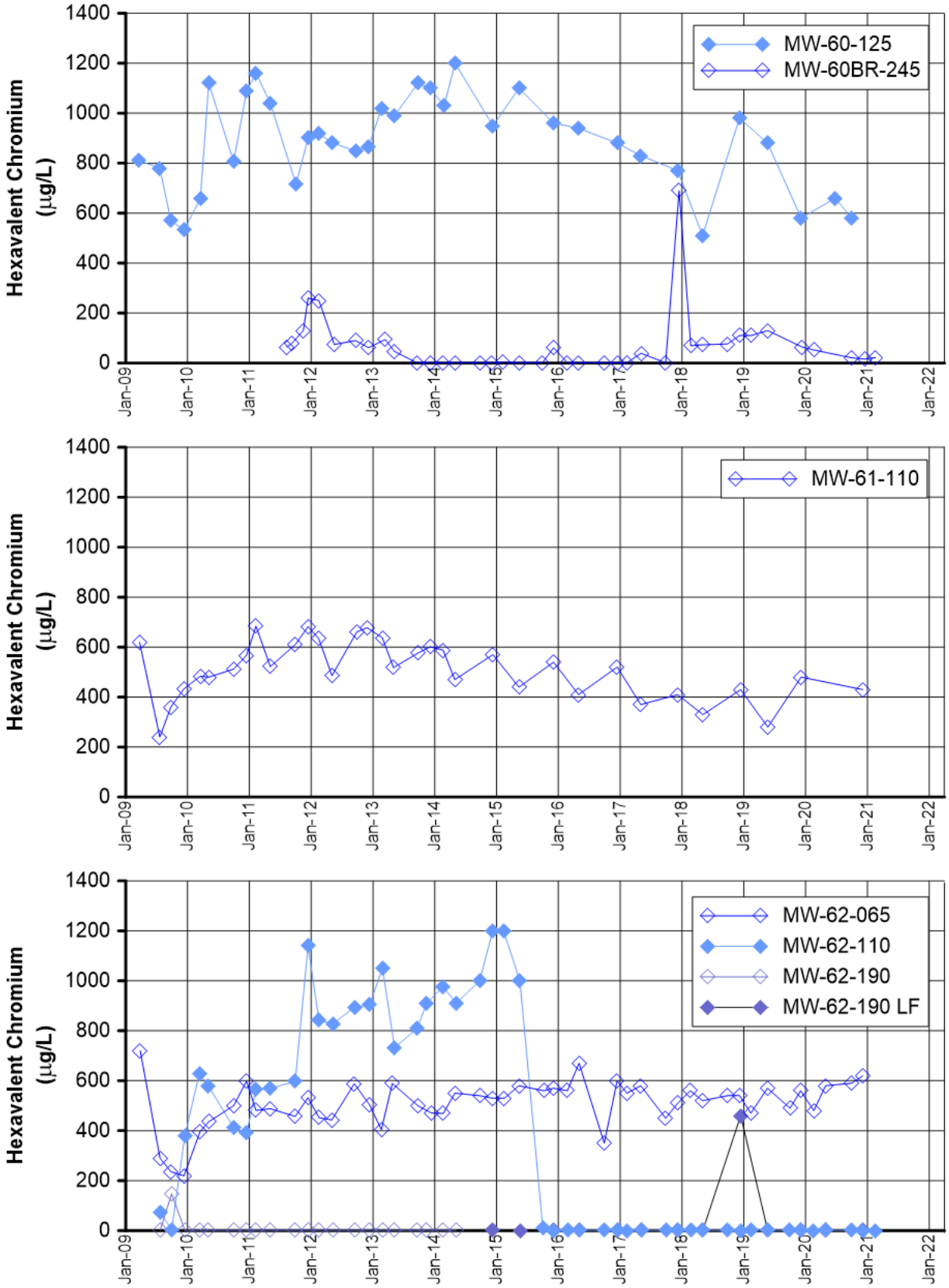

Notes:

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
FIRST 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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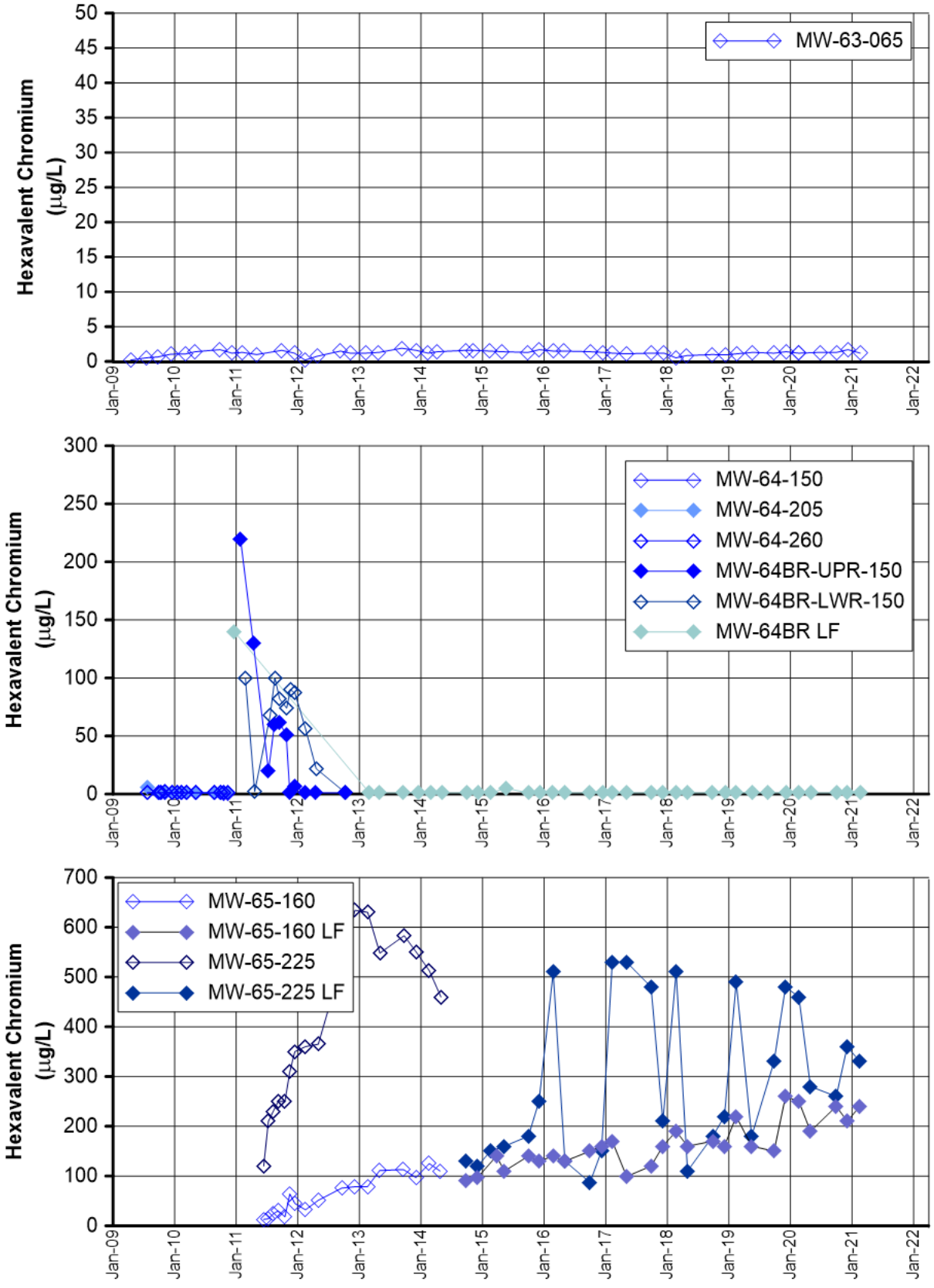

Notes:

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
FIRST 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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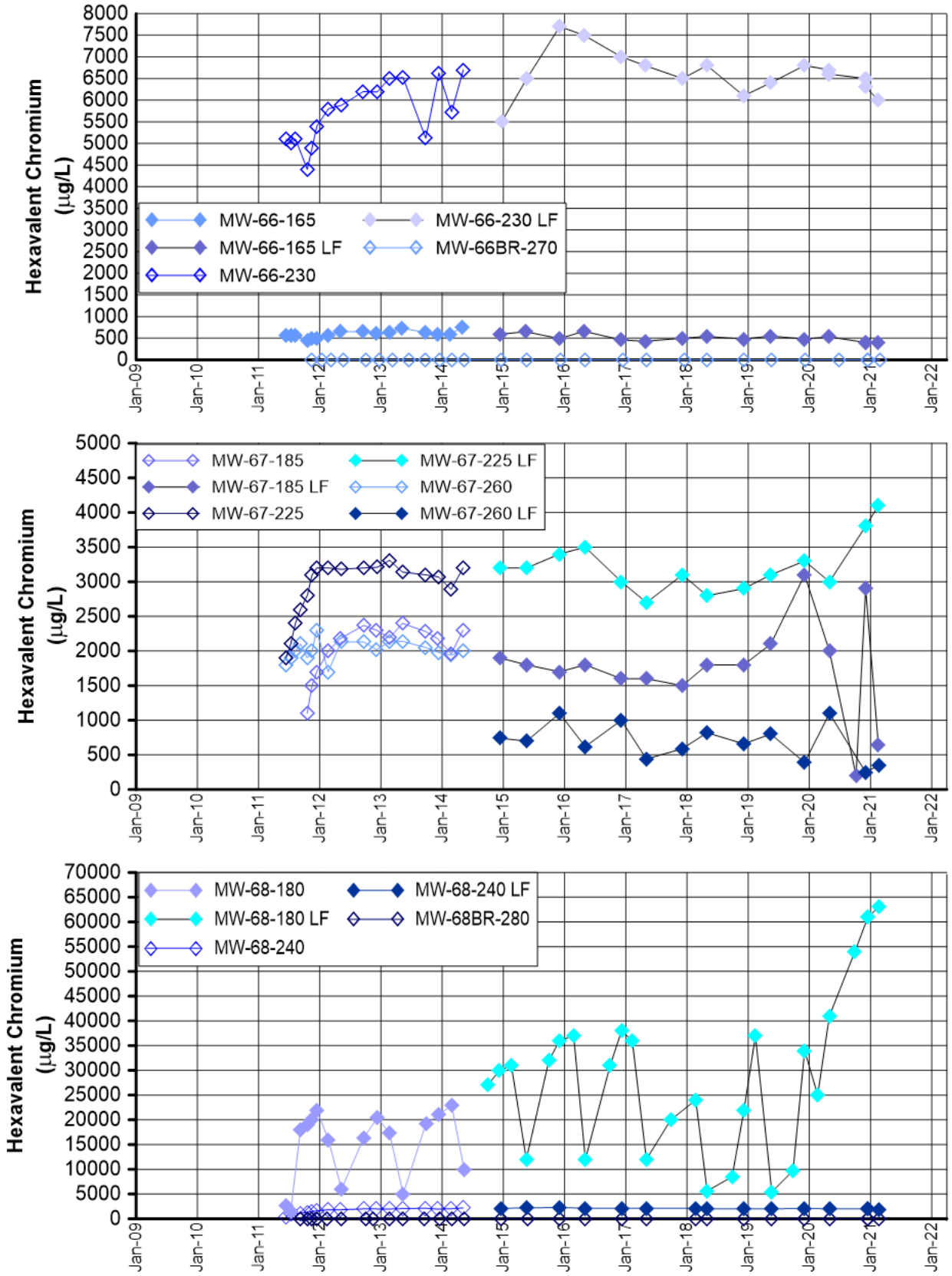

Notes:

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
FIRST 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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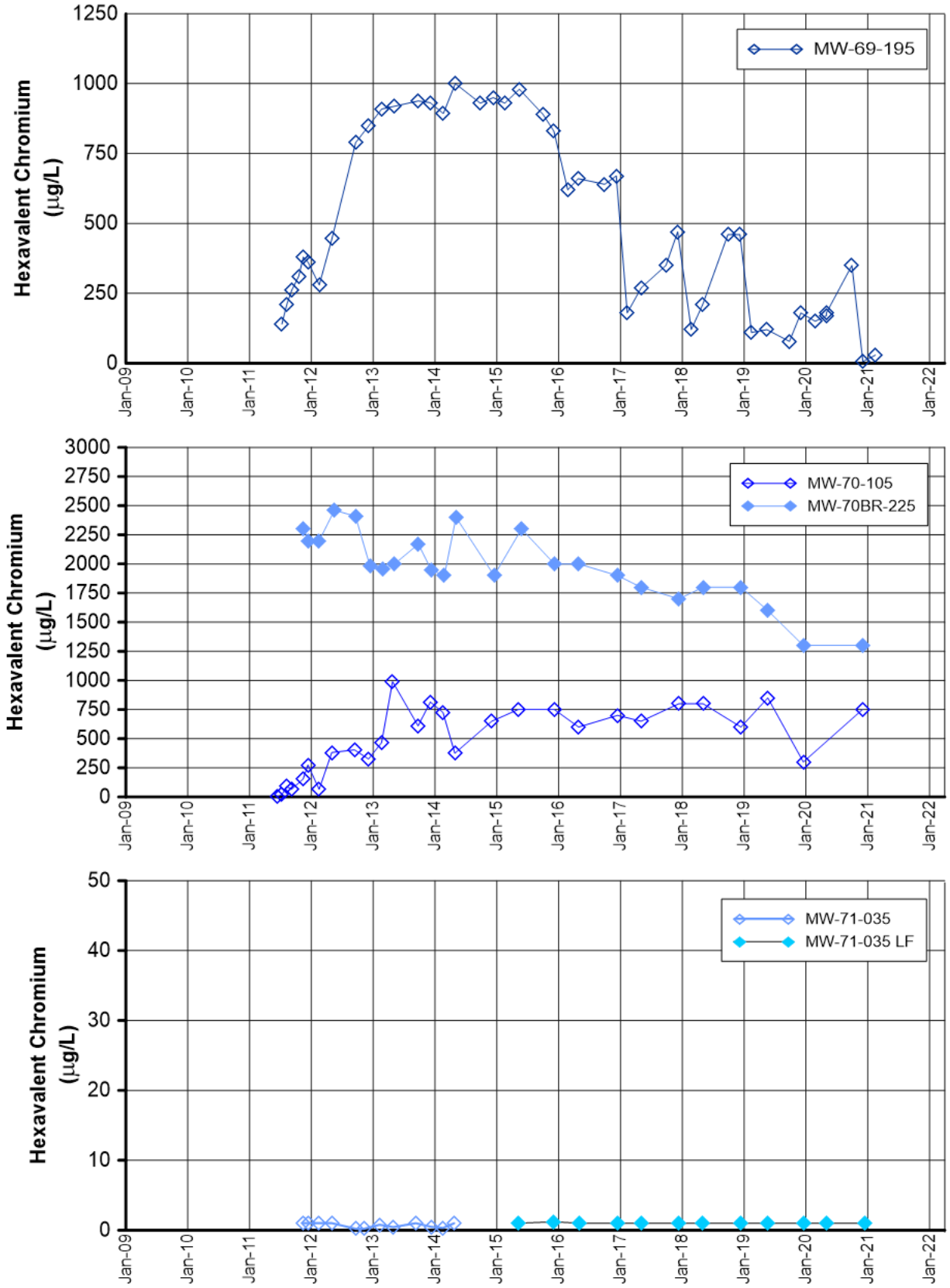

Notes:

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

ARCADIS

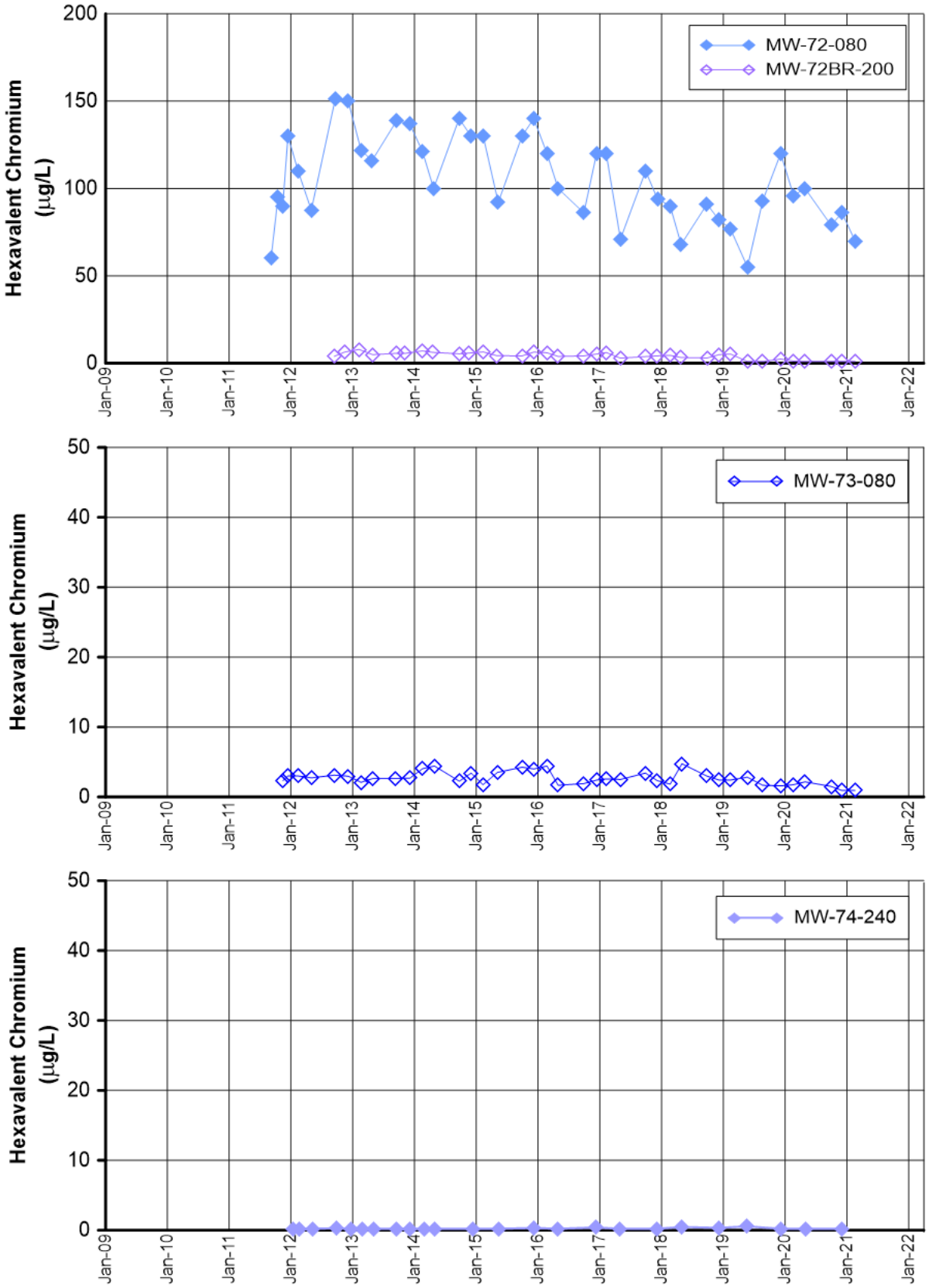

FIGURE D-18
HEXAVALENT CHROMIUM
IN MW-72 CLUSTER, MW-73-080, AND MW-74-240
FIRST QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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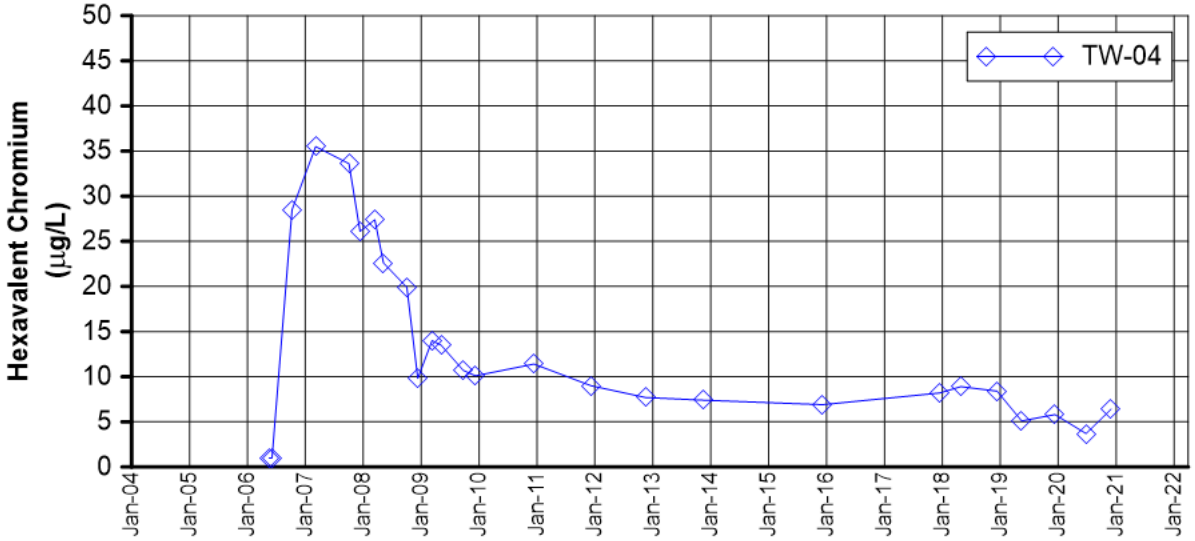

FIGURE D-19
HEXAVALENT CHROMIUM
IN TW-04
FIRST QUARTER 2021 INTERIM MEASURES PERFORMANCE
MONITORING AND SITE-WIDE GROUNDWATER
AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

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APPENDIX E

Interim Measures Extraction System Operations Log, First Quarter 2021

APPENDIX E

Interim Measures Extraction System Operations Log, First Quarter 2021, PG&E Topock Performance Monitoring Program

During First Quarter 2021 (January through March), extraction well TW-3D operated at a target pump rate of at 135 gallons per minute, excluding periods of planned and unplanned downtime. Extraction wells TW-2D, TW2S, and PE-01 was not operated during First Quarter 2021. A portion of the piping/conduit for PE-01 at the MW-20 Bench was disconnected from the IM-3 system on December 18, 2019 to allow for remedy construction activities without crossing under the PE-01 piping/conduit. The operational run time for the Interim Measure groundwater extraction system (combined or individual pumping) was approximately 92.1 percent during First Quarter 2021.

The Interim Measure Number 3 (IM-3) facility treated approximately 15,808,064 gallons of extracted groundwater during First Quarter 2021. The IM-3 facility also treated approximately 0 gallons of injection well backwashing/re-development water, approximately 650 gallons of purge water from site sampling activities, and approximately 0 gallons of Final Groundwater Remedy waste water. Four containers of solids (sludge) were transported offsite from the IM-3 facility during the reporting period.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 7.9 percent of downtime during First 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 January 2021

- **January 1, 2021 (unplanned):** The extraction well system was offline from 9:08 a.m. to 11:16 a.m. due to replacing microfilter modules. Extraction system downtime was 2 hours 8 minutes.
- **January 2-7, 2021 (unplanned):** The extraction well system was offline from 9:10 a.m. to 9:58 a.m. on January 2; from 7:52 a.m. to 9:04 a.m. on January 3; from 3:24 p.m. to 4:20 p.m. on January 4; from 8:00 p.m. to 8:52 p.m. on January 5; and from 1:32 a.m. to 2:26 a.m. on January 7, 2021 due to high-water levels in 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 4 hours 42 minutes.
- **January 7, 2021 (unplanned):** The extraction well system was offline from 4:46 p.m. to 6:40 p.m. due to replacing microfilter modules with clean modules and cleaning-in-place dirty modules. Extraction system downtime was 1 hour 54 minutes.
- **January 7, 2021 (unplanned):** The extraction well system was offline from 10:18 p.m. to 11:50 p.m. due to TW-3D failing due to an electrical power imbalance; the issue is occurring randomly and the root cause has yet to be identified. Extraction system downtime was 1 hour 32 minutes.
- **January 8-11, 2021 (unplanned):** The extraction well system was offline from 2:50 p.m. to 5:16 p.m. on January 8; from 10:48 a.m. to 11:46 a.m. on January 9; from 10:42 p.m. on January 9 to 12:10 a.m. on January 10; from 10:42 a.m. to 11:42 a.m. on January 10; from 7:48 p.m. to 9:38 p.m. on January 10; and from 8:38 a.m. to 12:08 p.m. on January 11 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 11 hours 12 minutes.
- **January 11, 2021 (unplanned):** The extraction well system was offline from 12:20 p.m. to 1:16 p.m. to allow for cleaning of the piping between the Chemical Loop Reactor to Chrome Reduction Reactor. Extraction system downtime was 56 minutes.

- **January 11-13, 2021 (unplanned):** The extraction well system was offline from 8:56 p.m. to 10:04 p.m. on January 11; from 9:06 a.m. to 10:34 a.m. on January 12; from 10:28 p.m. to 11:44 p.m. on January 12; and from 9:12 a.m. to 9:58 a.m. on January 13, 2021 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 4 hours 38 minutes.

- **January 13, 2021 (unplanned):** The extraction well system was offline from 6:18 p.m. to 8:12 p.m. due to TW-3D failing due to an electrical power imbalance; the issue is occurring randomly and the root cause has yet to be identified. Extraction system downtime was 2 hour 10 minutes.

- **January 14, 2021 (unplanned):** The extraction well system was offline from 12:04 a.m. to 1:54 a.m. due to a high-water level in T-100. The operator shut down extraction so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 1 hour 50 minutes.

- **January 14, 2021 (unplanned):** The extraction well system was offline from 5:02 a.m. to 7:14 p.m. due to a high-water level in T-100 and due to cleaning the piping of the 301 tanks. Operators had to dismantle all the piping between Chromium Reduction Reactor Tank 300 (T-300), Iron Oxidation Reactor Tank #1 (T-301A), and Iron Oxidation Reactor Tank #2 (T-301C) to remove the buildup of mineral scale inside the piping. Extraction system downtime was 14 hours 12 minutes.

- **January 15-17, 2021 (unplanned):** The extraction well system was offline from 2:58 a.m. to 3:52 a.m. on January 15; from 10:54 p.m. to 11:56 p.m. on January 15; and from 7:02 a.m. to 8:24 a.m. on January 17, 2021 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 3 hours 18 minutes.

- **January 18, 2021 (unplanned):** The extraction well system was offline from 1:42 p.m. to 2:32 p.m. due to TW-3D failing due to an electrical power imbalance; the issue is occurring randomly and the root cause has yet to be identified. Extraction system downtime was 50 minutes.

- **January 18, 2021 (unplanned):** The extraction well system was offline from 2:42 p.m. to 4:58 p.m. to troubleshoot Flow Valve (FV-100). FV-100 was not responding to the control system “open” command. Operators were eventually able to open the valve manually. Extraction system downtime was 2 hours 16 minutes.

- **January 20, 2021 (unplanned):** The extraction well system was offline from 1:34 a.m. to 2:46 a.m. due to a high-water level in T-100. The operator shut down extraction so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 1 hour 12 minutes.

- **January 20, 2021 (unplanned):** The extraction well system was offline from 10:22 a.m. to 2:34 p.m. due to having a contractor onsite to clean off the mineral scale buildup inside of T-301C. Extraction system downtime was 4 hours 12 minutes.

- **January 21, 2021 (unplanned):** The extraction well system was offline from 8:54 a.m. to 10:38 a.m. due to replacing microfilter modules. Extraction system downtime was 1 hour 44 minutes.

- **January 21, 2021 (unplanned):** The extraction well system was offline from 6:38 p.m. to 8:52 p.m. due to a high-water level in T-100 and T-301C. The operator shut down extraction so the tanks could drain below the high-level alarm setpoint. Extraction system downtime was 2 hours 14 minutes.

- **January 22, 2021 (unplanned):** The extraction well system was offline from 7:56 a.m. to 9:42 a.m. due to replacing Clarifier Feed Pump (P-400) and cleaning off mineral scale buildup on the static mixer in the piping between P-400 and the clarifier. Extraction system downtime was 1 hour 46 minutes.

- **January 23-27, 2021 (unplanned):** The extraction well system was offline from 12:26 a.m. to 1:34 a.m. on January 23; from 5:08 p.m. to 6:30 p.m. on January 23; from 8:16 a.m. to 9:30 a.m. on January 24; from 1:08 a.m. to 2:52 a.m. on January 25; from 5:10 p.m. to 6:30 p.m. on January 25; from 2:12 p.m. to 3:22 p.m. on January 26; and from 11:00 a.m. to 12:46 p.m. on January 27, 2021 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 9 hours 44 minutes.
- **January 28, 2021 (unplanned):** The extraction well system was offline from 9:38 a.m. to 4:22 p.m. to inspect the P-400 discharge piping and change the microfilter modules. The piping between P-400 and the clarifier had become plugged with mineral scale causing restricted flow. Once the extent of the blockage was determined, the decision was made to install temporary piping (permanent piping was installed in February 2021). Extraction system downtime was 6 hours 44 minutes.
- **January 28, 2021 (unplanned):** The extraction well system was offline from 4:40 p.m. to 5:32 p.m. due to a high water level in Pretreated Water Tank (T-500) from an airlock in the microfilter modules. Extraction system downtime was 52 minutes.
- **January 30, 2021 (unplanned):** The extraction well system was offline from 3:30 a.m. to 4:38 a.m. due to mineral scaling in the piping between the clarifier and T-500 which caused a high-water level in T-100. The operator shut down extraction so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 1 hour 8 minutes.
- **January 31, 2021 (unplanned):** The extraction well system was offline from 2:24 p.m. to 2:36 p.m. due to a plugged microfilter strainer. The strainer was replaced with a clean unit and the plant put back into operation. Extraction system downtime was 12 minutes.

E.2 February 2021

- **February 1, 2021 (planned):** The extraction well system was offline from 11:44 a.m. to 12:26 p.m. due to testing of the pipeline critical alarms and leak detection system. Extraction system downtime was 42 minutes.
- **February 2, 2021 (unplanned):** The extraction well system was offline from 2:42 a.m. to 4:16 a.m. due to high-water levels in 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 34 minutes.
- **February 2, 2021 (unplanned):** The extraction well system was offline from 5:48 a.m. to 10:26 a.m. due to replacing microfilter modules. Extraction system downtime was 4 hours 38 minutes.
- **February 2, 2021 (unplanned):** The extraction well system was offline from 11:34 a.m. to 1:22 p.m. due to higher turbidity. After just changing the microfilter modules (previous downtime), clarifier effluent turbidity was too high to feed through the microfilter. The contents of the Pre-Treated Water Tank (T-500) were sent back to T-100 until the turbidity was low enough to pass through the microfilter. Extraction system downtime was 1 hour 48 minutes.
- **February 3, 2021 (unplanned):** The extraction well system was offline from 2:54 a.m. to 3:58 a.m.; and from 4:00 a.m. to 4:28 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 1 hour 32 minutes.
- **February 3, 2021 (planned):** The extraction well system was offline from 7:24 a.m. to 4:46 p.m. due to plant maintenance. The operator shut down extraction to drain the T-100 tank and then the temporary piping from Clarifier Feed Pump (P-400) to the clarifier was replaced with permanent piping. Extraction system downtime was 9 hours 22 minutes.

- **February 4, 2021 (unplanned):** The extraction well system was offline from 2:38 a.m. to 3:44 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 1 hour 6 minutes.
- **February 5, 2021 (unplanned):** The extraction well system was offline from 10:20 a.m. to 11:52 a.m. due to replacing microfilter modules. Extraction system downtime was 1 hour 32 minutes.
- **February 6, 2021 (unplanned):** The extraction well system was offline from 9:46 a.m. to 9:56 a.m. to allow the motor control center (MCC) control wire connection points to be tightened in an attempt to find the root cause for the TW-3D electrical trips. Extraction system downtime was 10 minutes.
- **February 8, 2021 (unplanned):** The extraction well system was offline from 11:50 a.m. to 12:38 p.m. due to cleaning out the microfilter basket strainer. Extraction system downtime was 48 minutes.
- **February 8, 2021 (unplanned):** The extraction well system was offline from 1:42 p.m. to 3:04 p.m.; and from 10:08 p.m. to 10:50 p.m. due to TW-3D tripping its circuit breaker without an alarm sounding. Operators are working on but not yet able to identify the root cause. The circuit breaker was reset as soon as the fault was discovered. Extraction system downtime was 2 hours 4 minutes.
- **February 9, 2021 (unplanned):** The extraction well system was offline from 4:34 a.m. to 6:36 a.m. due to replacing microfilter modules. Extraction system downtime was 2 hours 2 minutes.
- **February 10, 2021 (unplanned):** The extraction well system was offline from 1:12 p.m. to 1:38 p.m. due to TW-3D tripping its circuit breaker without an alarm sounding. The circuit breaker was reset as soon as the fault was discovered. Extraction system downtime was 26 minutes.
- **February 10, 2021 (unplanned):** The extraction well system was offline from 3:42 p.m. to 7:04 p.m. due to cleaning the clogged air lines for the microfilter scrub air hoses. Extraction system downtime was 3 hours 22 minutes.
- **February 11, 2021 (unplanned):** The extraction well system was offline from 12:28 p.m. to 1:42 p.m. due to replacing the air valve on the microfilter air flow filtration module. Extraction system downtime was 1 hour 14 minutes.
- **February 11, 2021 (unplanned):** The extraction well system was offline from 7:38 p.m. to 9:08 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 1 hour 30 minutes.
- **February 12-13, 2021 (unplanned):** The extraction well system was offline from 4:22 a.m. to 5:30 a.m. on February 12, 2021; and from 2:02 a.m. to 3:24 a.m. on February 13, 2021 due to a high-water level in the process drain tank (T-900). T-900 had a buildup of solid material that was inhibiting the performance of the pump (P-900). Extraction was halted to unplug P-900. Extraction system downtime was 2 hours 30 minutes.
- **February 13, 2021 (unplanned):** The extraction well system was offline from 2:06 p.m. to 7:20 p.m. to change pressure transmitters in the microfilter. Extraction system downtime was 5 hours 14 minutes.
- **February 17, 2021 (unplanned):** The extraction well system was offline from 5:04 a.m. to 6:26 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 1 hour 22 minutes.
- **February 17, 2021 (planned):** The extraction well system was offline from 9:20 a.m. to 6:54 p.m. to allow a tank cleaning services vendor to cleanout tank T-900. Extraction system downtime was 9 hours 34 minutes.
- **February 23-25, 2021 (unplanned):** The extraction well system was offline from 3:18 a.m. to 3:40 a.m. on February 23, 2021; from 4:46 a.m. to 5:06 a.m. on February 23, 2021; and from 11:24 p.m. to 11:34 p.m. on

February 25, 2021 due to TW-3D tripping its circuit breaker without an alarm sounding. The circuit breaker was reset as soon as the fault was discovered. Extraction system downtime was 52 minutes.

- **February 26, 2021 (unplanned):** The extraction well system was offline from 8:30 a.m. to 8:32 a.m. and from 8:36 a.m. to 8:38 a.m. due to the operator switching TW-3D motor control from "auto" to "manual" while troubleshooting the random shutdown. Extraction system downtime was 4 minutes.
- **February 26, 2021 (unplanned):** The extraction well system was offline from 10:30 a.m. to 11:44 a.m. to change the Reverse Filtration Pump (P-502). The pump seal failed so the pump was replaced. Extraction system downtime was 1 hour 14 minutes.
- **February 27, 2021 (unplanned):** The extraction well system was offline from 5:30 a.m. to 7:46 a.m. due to replacing the Pretreated Water Transfer Pump (P-500) which failed. Extraction system downtime was 2 hours 16 minutes.
- **February 27, 2021 (unplanned):** The extraction well system was offline from 11:58 a.m. to 12:44 p.m. due to replacing microfilter modules. Extraction system downtime was 46 minutes.

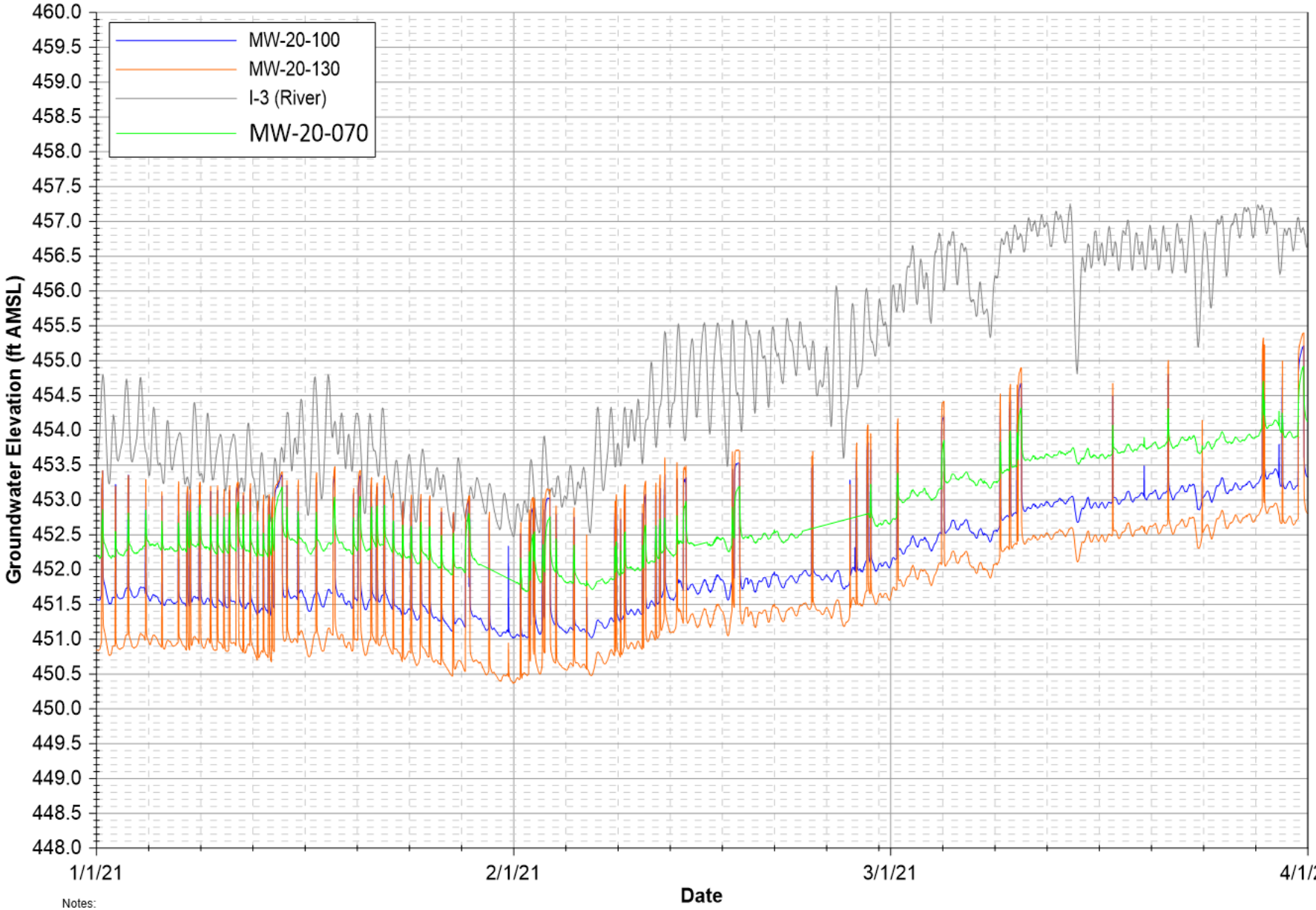
E.3 March 2021

- **March 1, 2021 (unplanned):** The extraction well system was offline from 11:06 a.m. to 1:00 p.m. due to replacing microfilter modules. Extraction system downtime was 1 hour 54 minutes.
- **March 4, 2021 (unplanned):** The extraction well system was offline from 6:48 p.m. to 11:18 p.m.to figure out microfilter system. The piping between P-501 (the microfilter feed pump) and the filtration modules had become so fouled by mineral scale that P-501 could no longer force enough water through the pipes to keep up with plant flow. The piping was removed and temporary piping installed. Extraction system downtime was 4 hours 30 minutes.
- **March 9, 2021 (unplanned):** The extraction well system was offline from 2:48 a.m. to 3:56 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 1 hour 8 minutes.
- **March 9, 2021 (unplanned):** The extraction well system was offline from 7:48 p.m. to 9:42 p.m. due to replacing microfilter modules. Extraction system downtime was 1 hour 54 minutes.
- **March 10, 2021 (unplanned):** The extraction well system was offline from 9:00 a.m. to 9:52 a.m. due to the microfilter shutting down. Particles of mineral scale were plugging the microfilter basket strainer. The source of the particles were from the Pre-treated Water Tank (T-500). Extraction system downtime was 52 minutes.
- **March 10, 2021 (unplanned):** The extraction well system was offline from 11:26 a.m. to 5:06 p.m. due to the microfilter shutting down (previous downtime). Tank (T-500) was cleaned out to remove scale that was clogging the microfilter. Extraction system downtime was 5 hours 40 minutes.
- **March 17, 2021 (planned):** The extraction well system was offline from 11:46 a.m. to 12:16 p.m. due to testing of the pipeline critical alarms and leak detection system. Extraction system downtime was 30 minutes.
- **March 19, 2021 (unplanned):** The extraction well system was offline from 8:02 p.m. to 8:10 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 8 minutes.
- **March 21, 2021 (unplanned):** The extraction well system was offline from 2:02 p.m. to 3:12 p.m. because the microfilter basket strainer failed. A completely new strainer assembly was installed. Extraction system downtime was 1 hour 10 minutes.

- **March 24, 2021 (unplanned):** The extraction well system was offline from 3:24 a.m. to 3:32 a.m. due to cleaning out the microfilter basket strainer. Extraction system downtime was 8 minutes.
- **March 28, 2021 (unplanned):** The extraction well system was offline from 2:36 p.m. to 4:46 p.m. due to replacing microfilter modules. Extraction system downtime was 2 hours 10 minutes.
- **March 28, 2021 (unplanned):** The extraction well system was offline from 6:00 p.m. to 6:32 p.m. due to the microfilter leaking. After changing the filter modules, leaks were discovered at the module end caps. New O-rings were installed to stop the leaks. Extraction system downtime was 32 minutes.
- **March 29, 2020 (unplanned):** The extraction well system was offline from 8:32 p.m. to 8:42 p.m. due to a City of Needles power outage. Extraction system downtime was 10 minutes.
- **March 30, 2021 (unplanned):** The extraction well system was offline from 2:00 a.m. to 2:34 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 34 minutes.
- **March 31, 2021 (planned):** The extraction well system was offline from 6:34 a.m. to 4:40 p.m. for scheduled plant maintenance (part of the semiannual maintenance). Extraction system downtime was 10 hours 6 minutes.

APPENDIX F

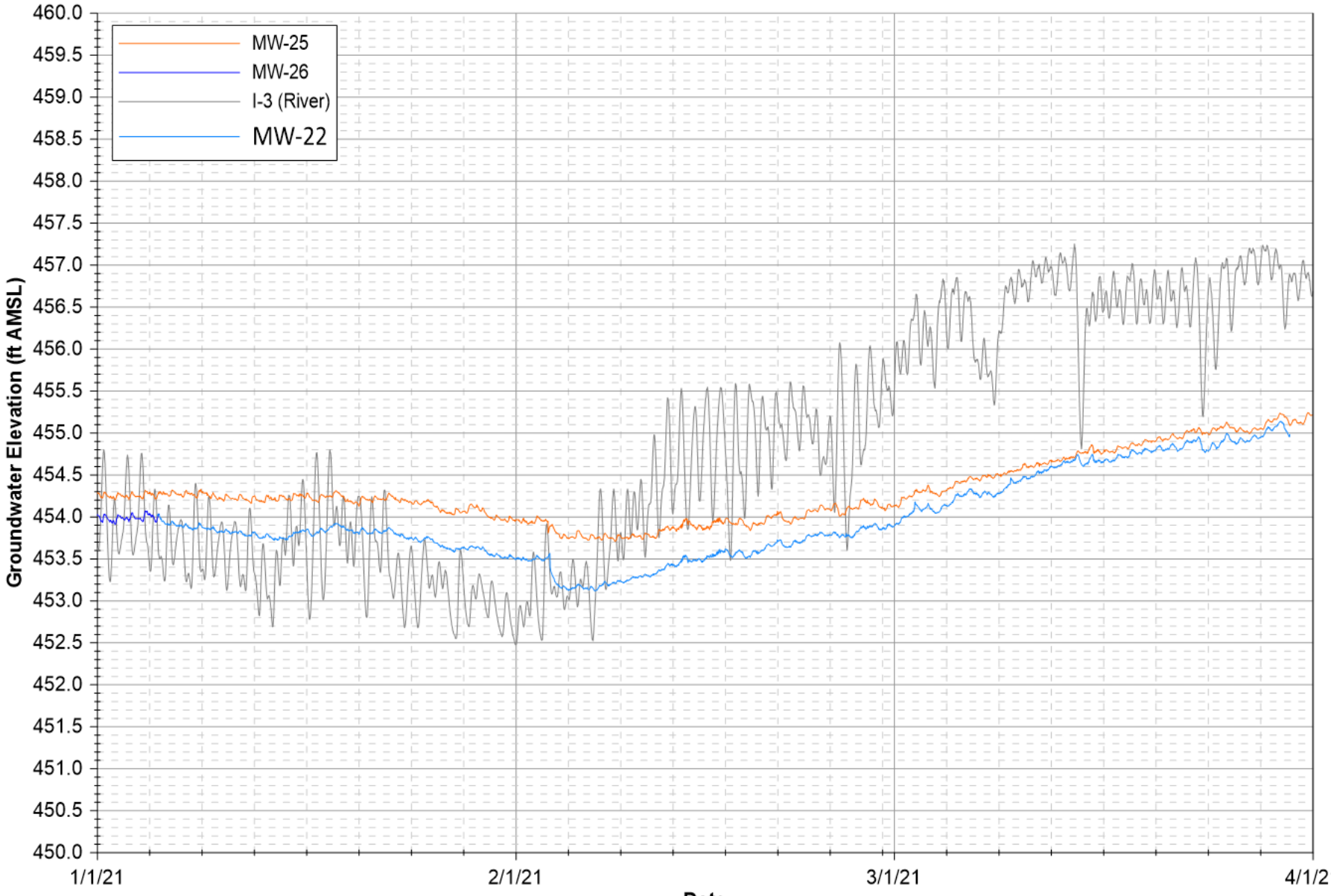
Hydrographs, First Quarter 2021



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

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

ARCADIS



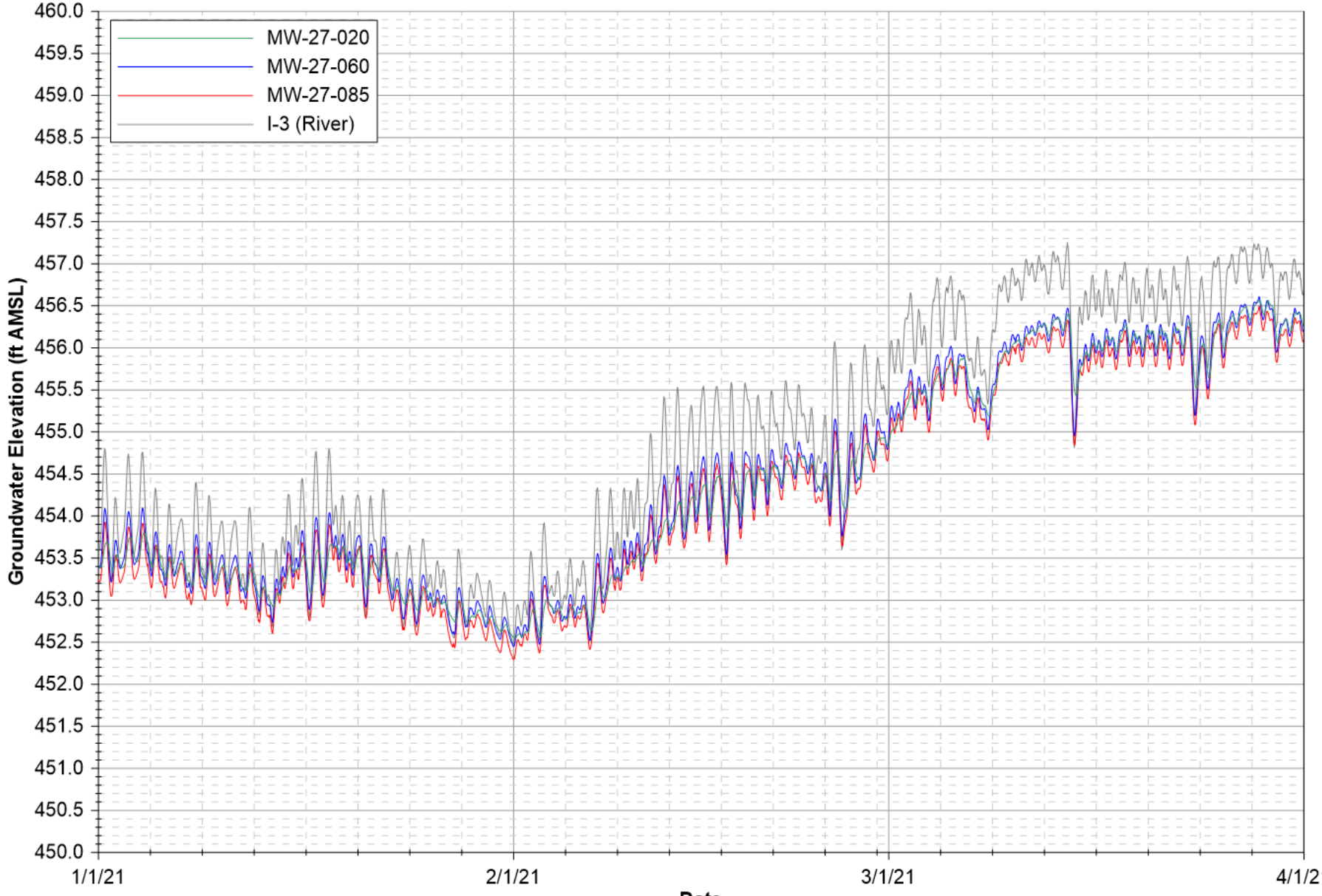
Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. MW-22 data unavailable until January 5, 2021 due to transducer malfunction
4. MW-26 data unavailable from January 6, 2021 due to transducer malfunction.

FIGURE F-1B

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

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

ARCADIS



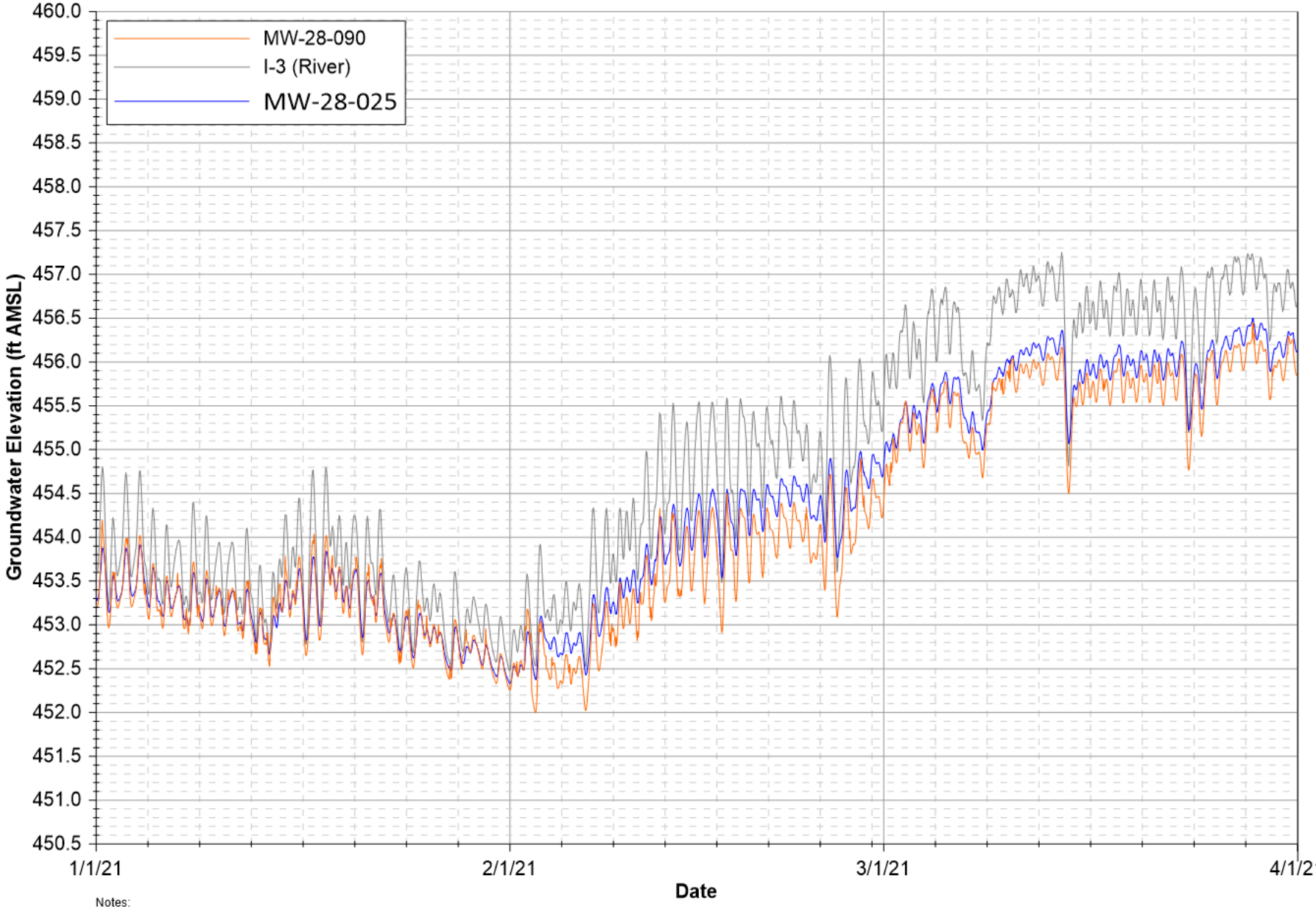
Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level

FIGURE F-1C

MW-27 CLUSTER HYDROGRAPHS

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

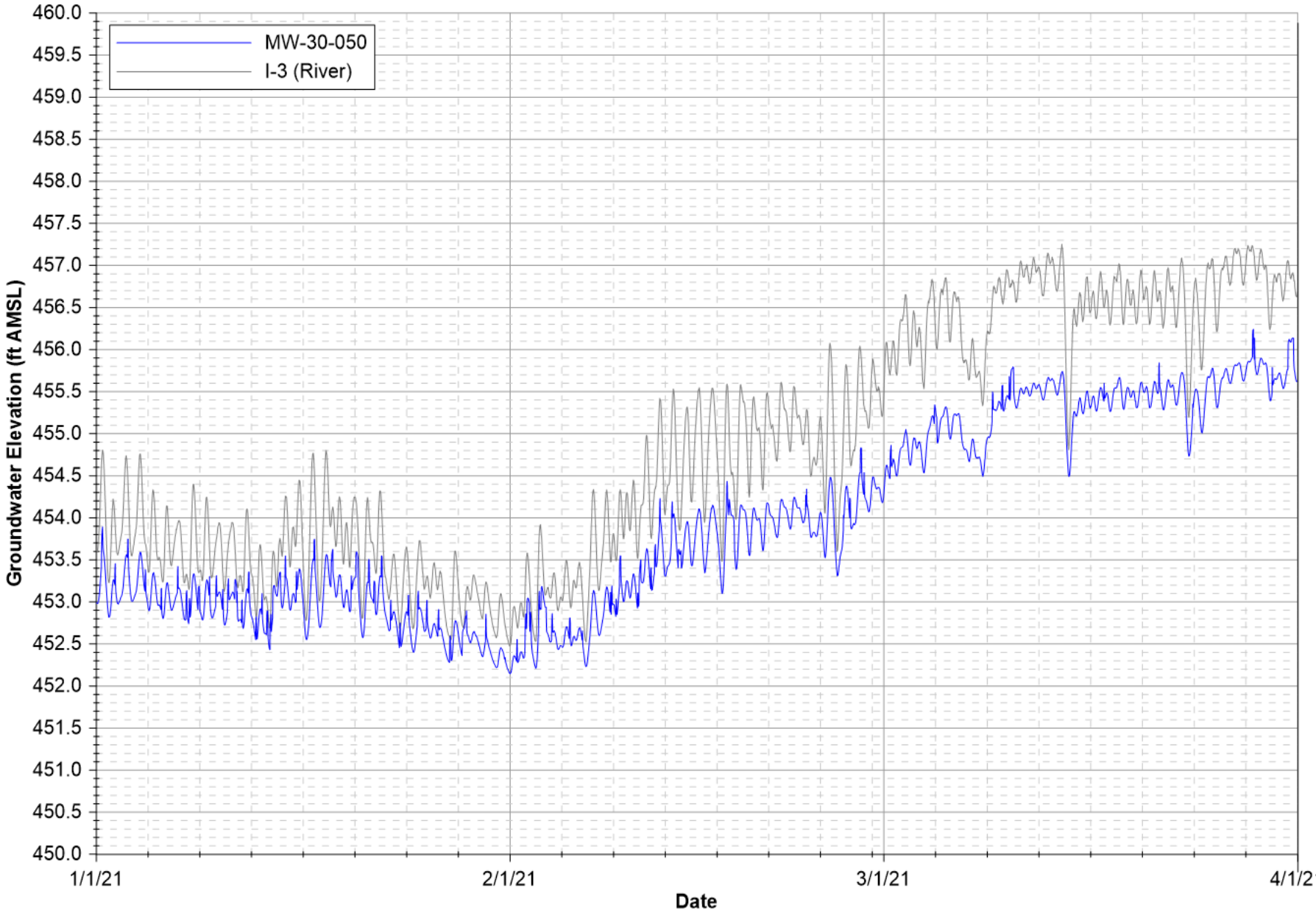
ARCADIS



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

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

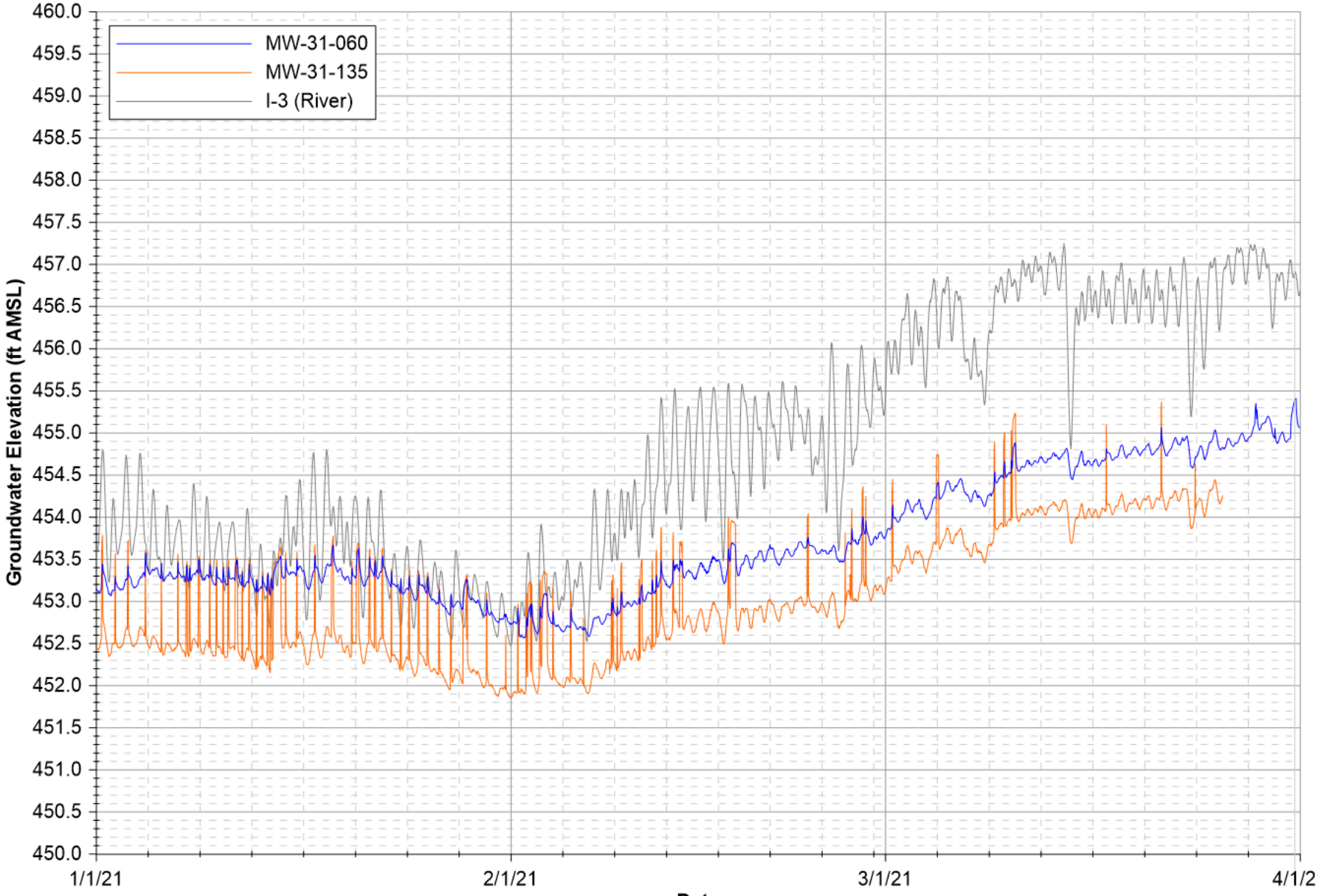
ARCADIS



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

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

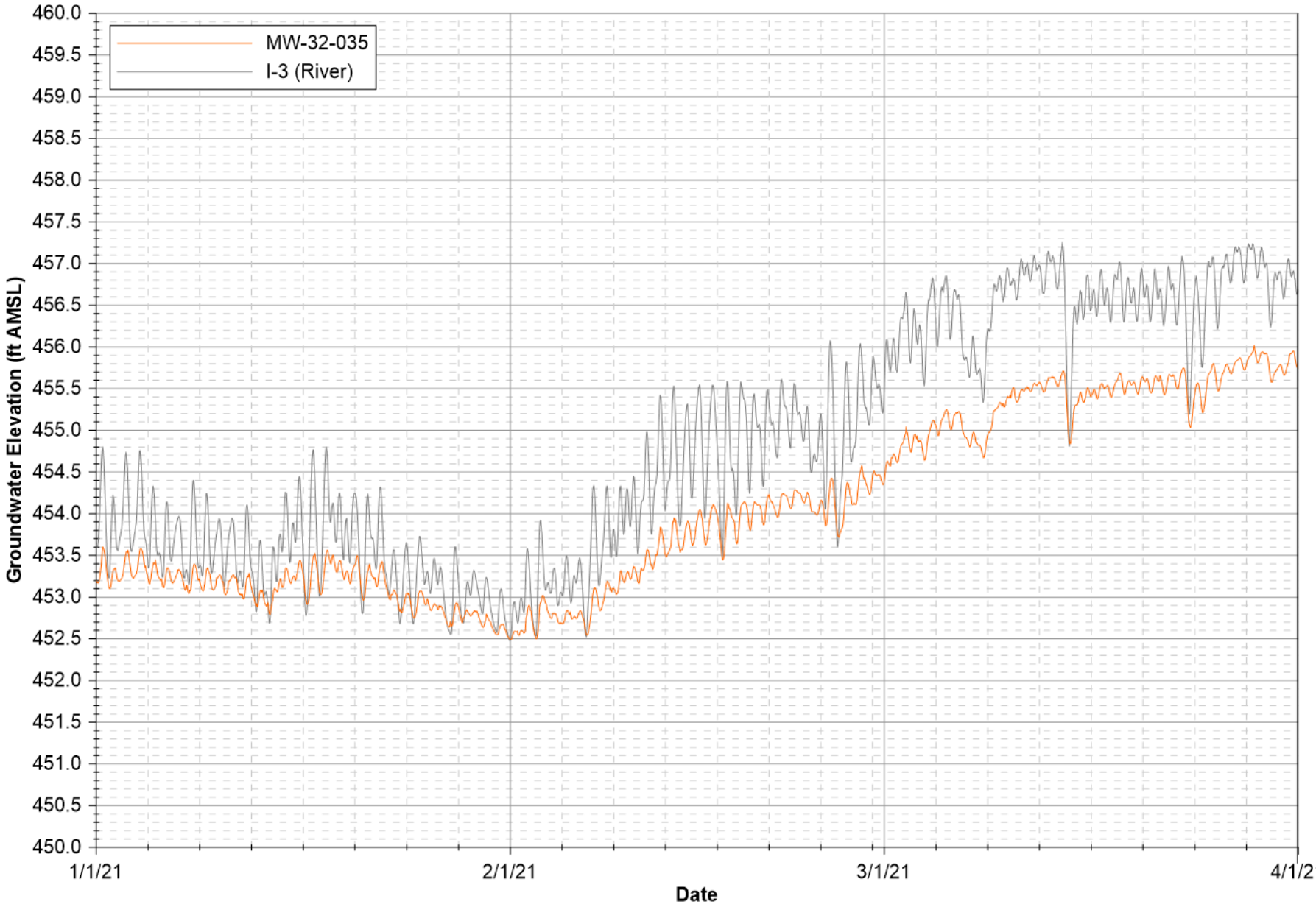
ARCADIS



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

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

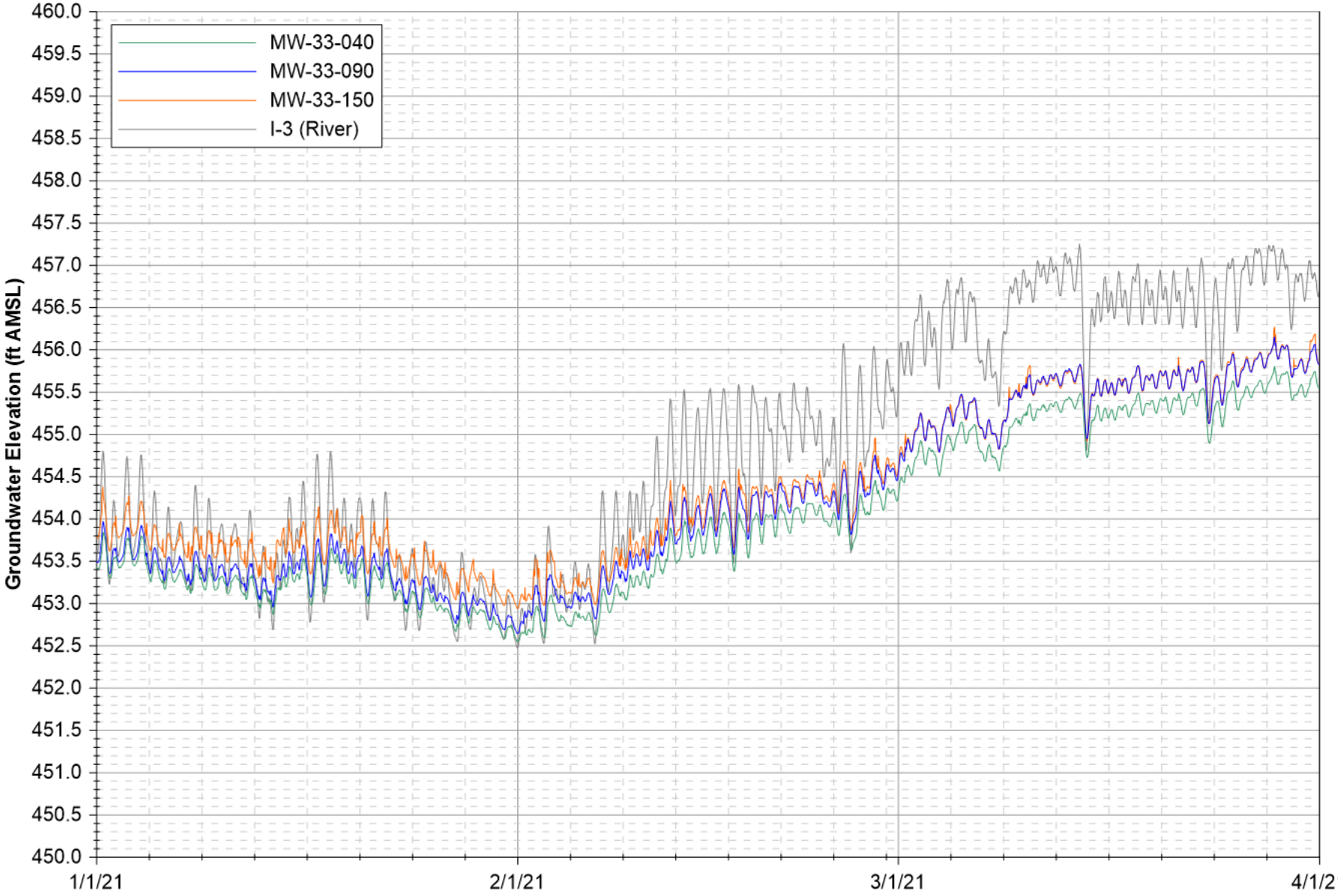
ARCADIS



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

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

ARCADIS



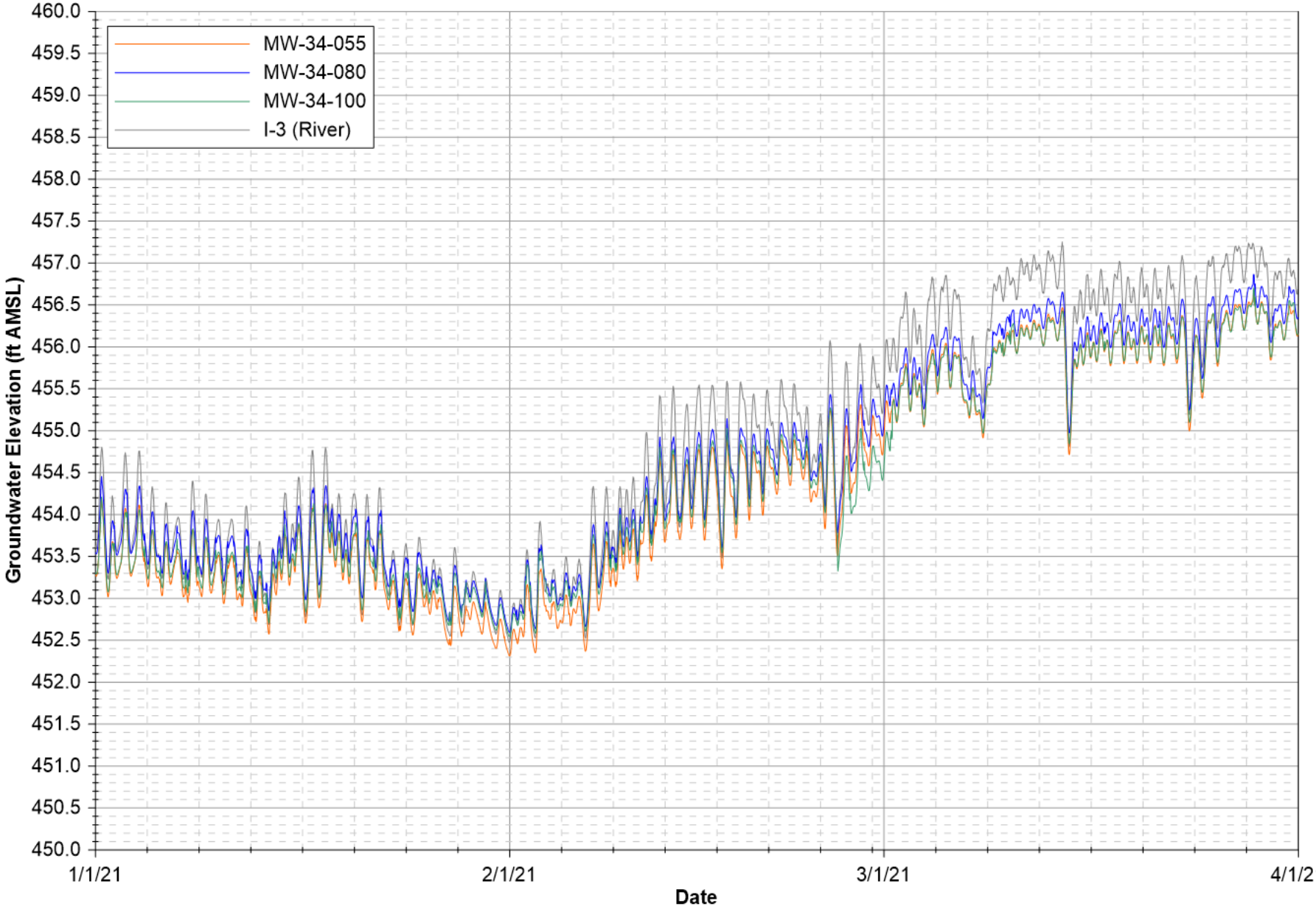
Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.

FIGURE F-1H

MW-33 CLUSTER HYDROGRAPHS

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

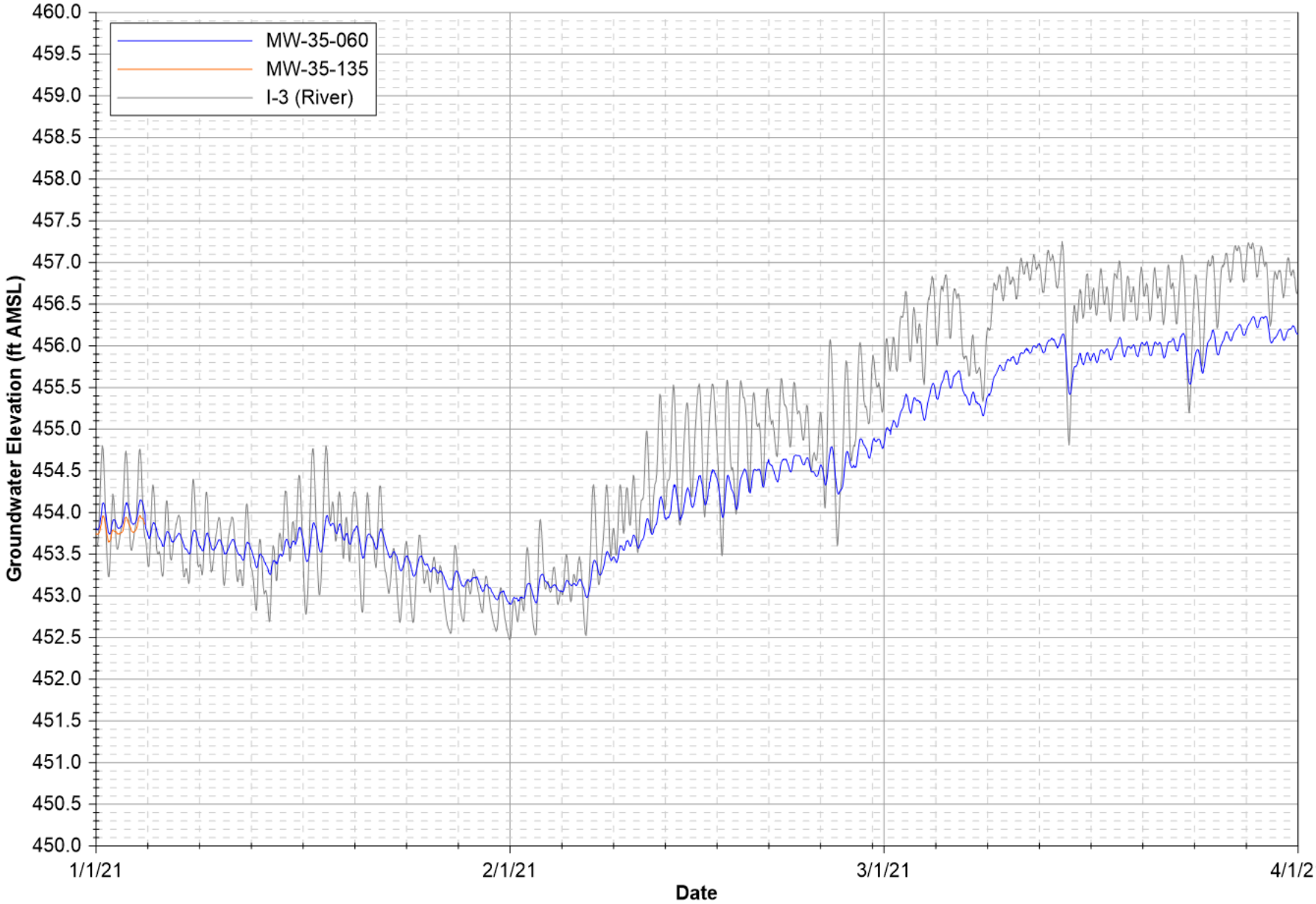
ARCADIS



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

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

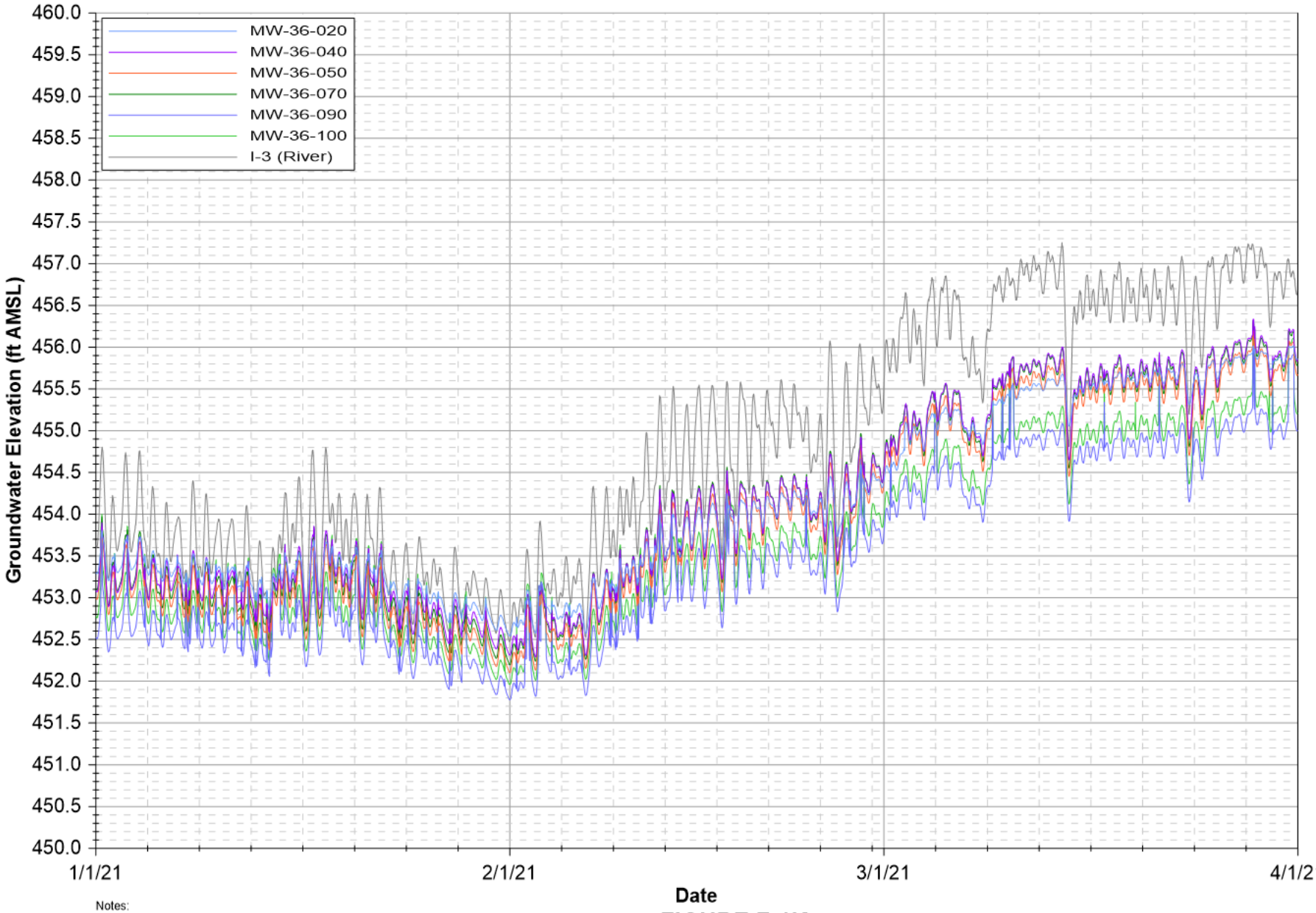
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. MW-35-135 data unavailable from January 4, 2021 due to transducer malfunction.

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

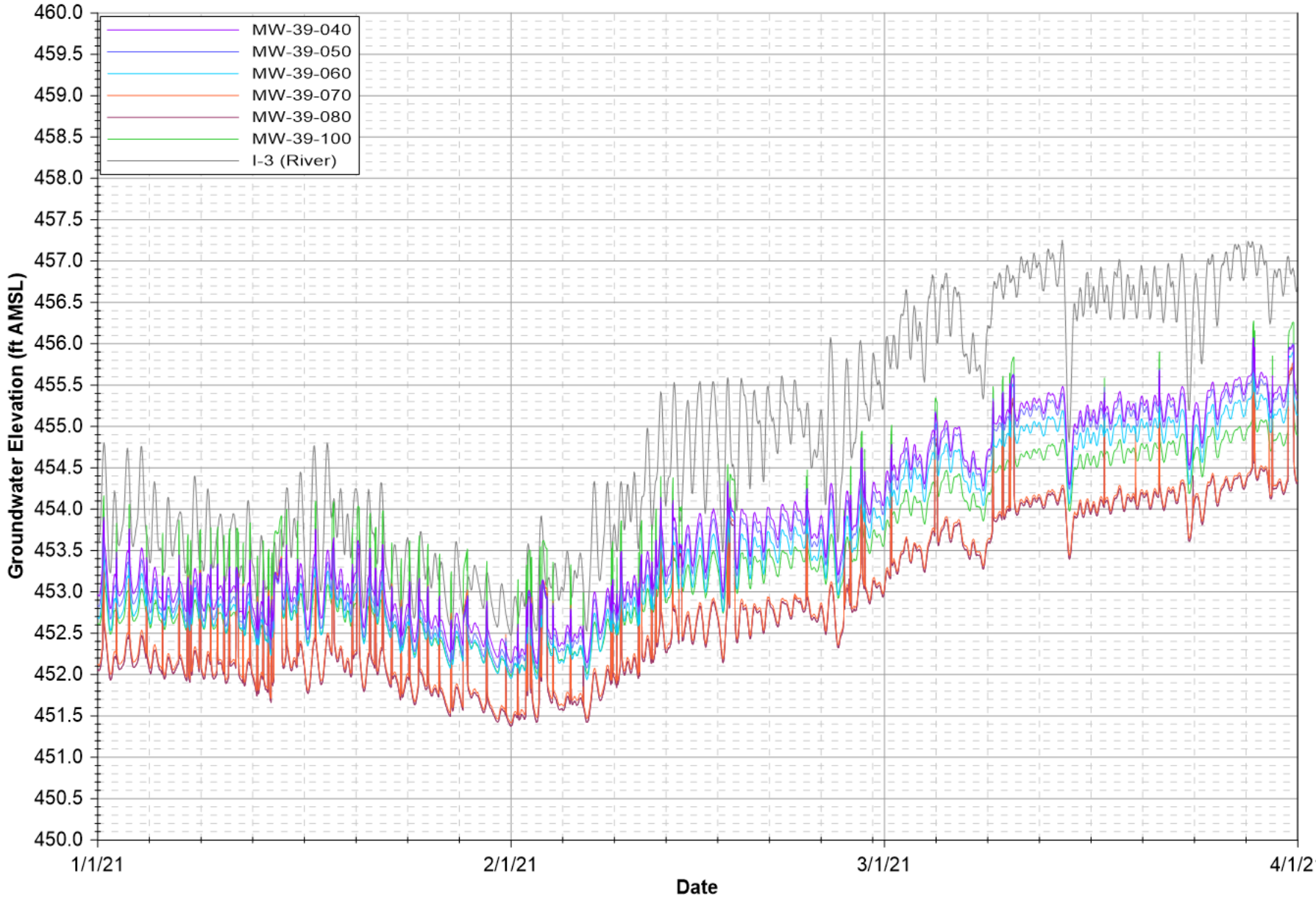
ARCADIS



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

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

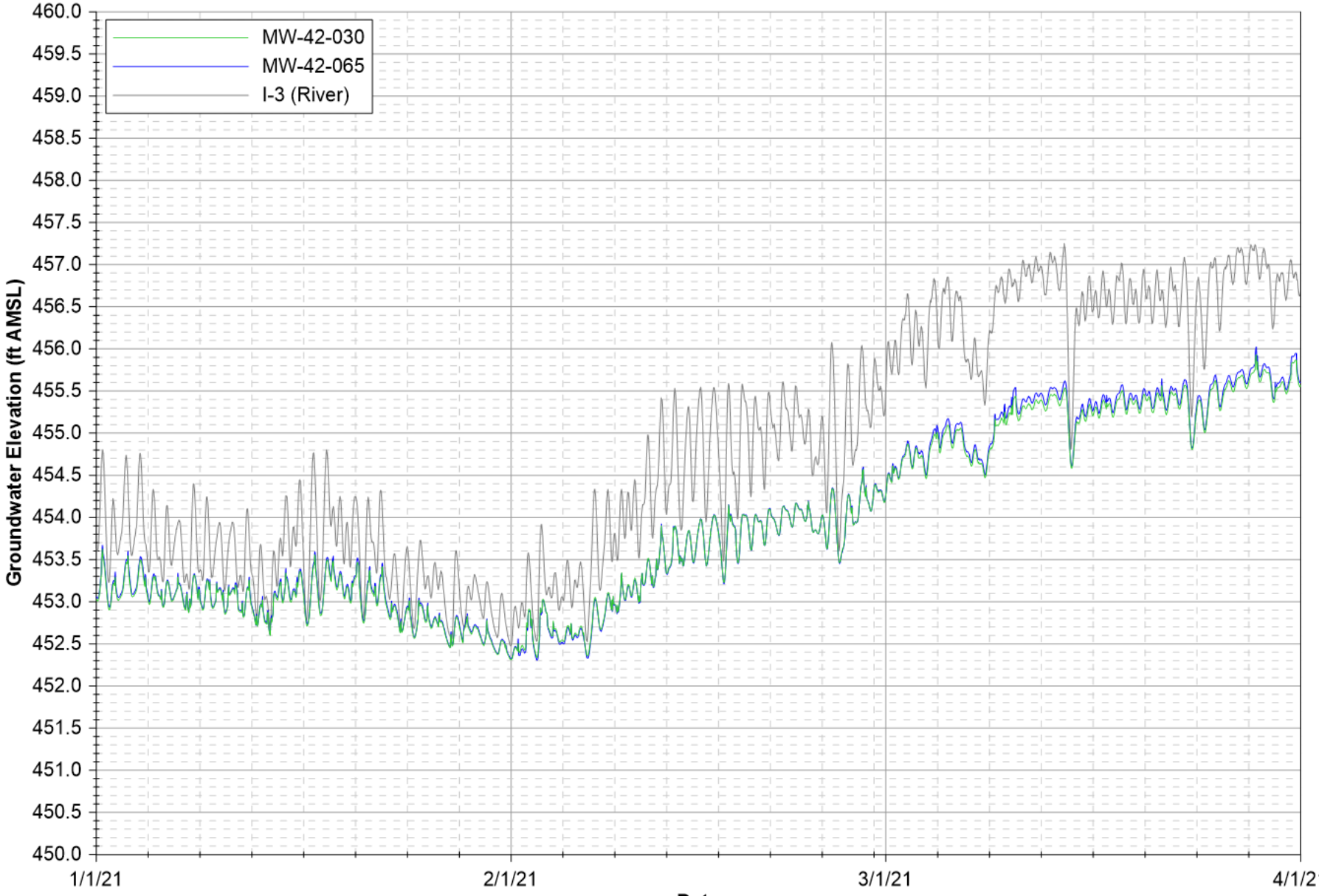
ARCADIS



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

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

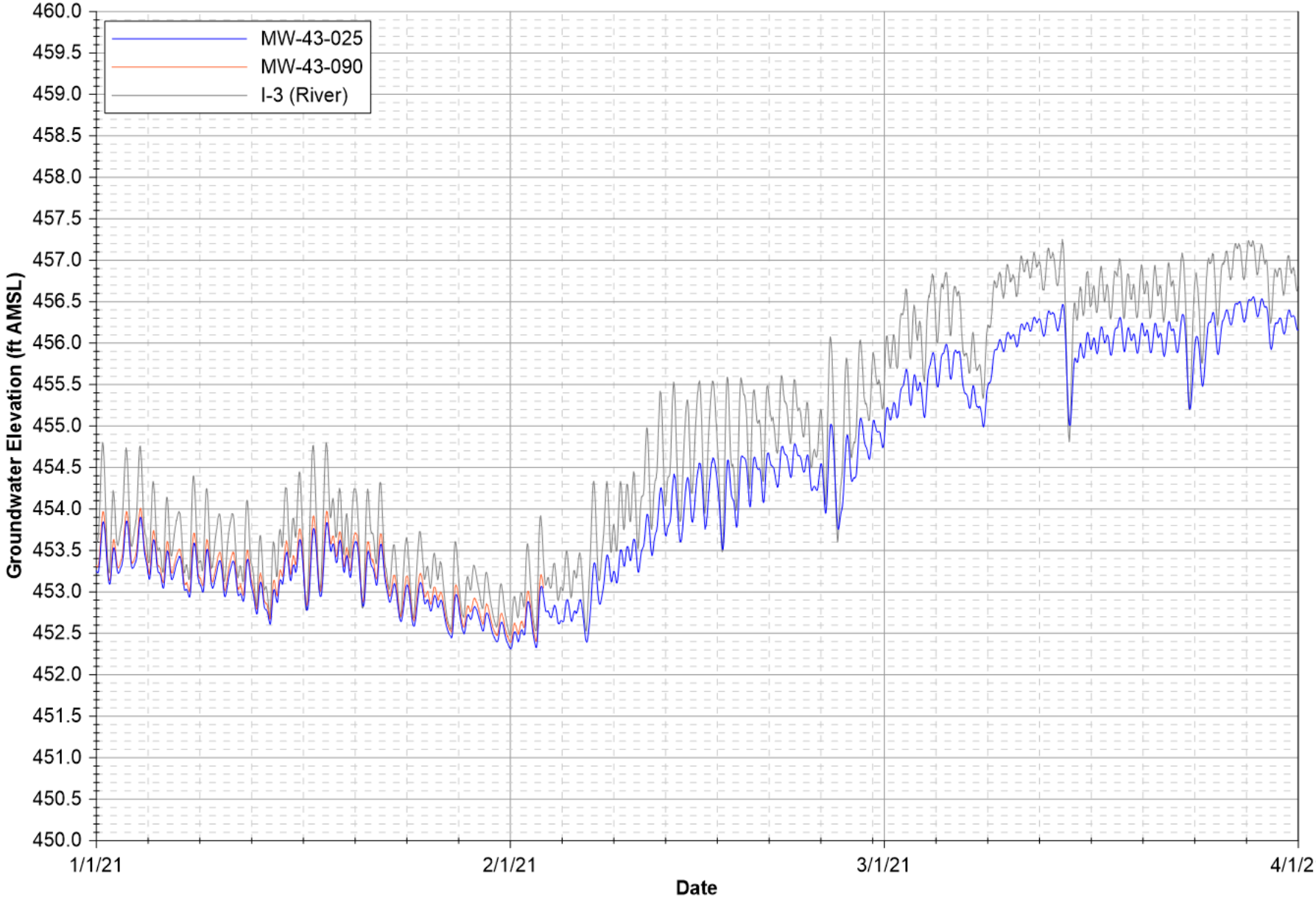
ARCADIS



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

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

ARCADIS



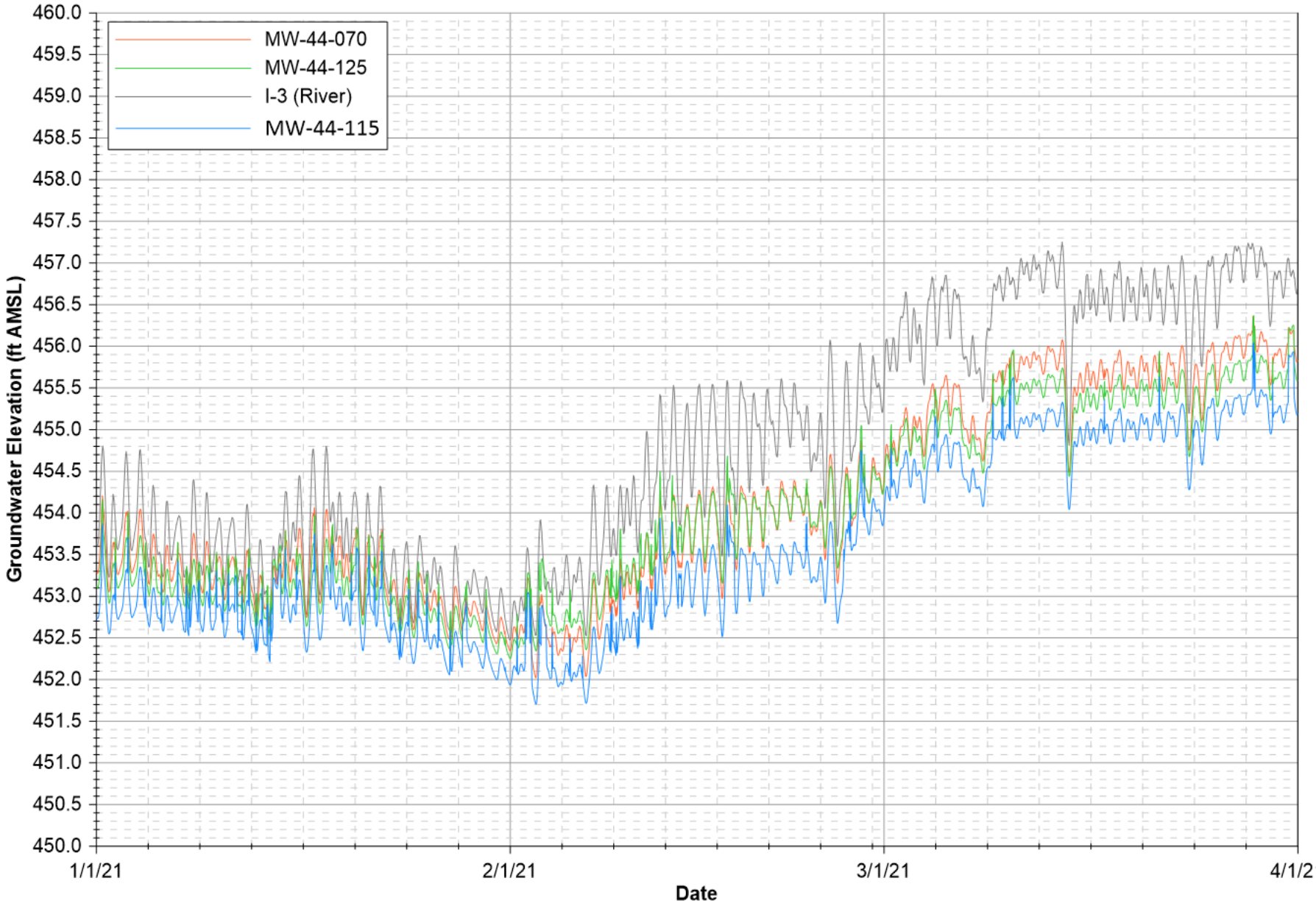
Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. MW-43-090 data unavailable from February 3, 2021 due to transducer malfunction.

FIGURE F-1N

MW-43 CLUSTER HYDROGRAPHS

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

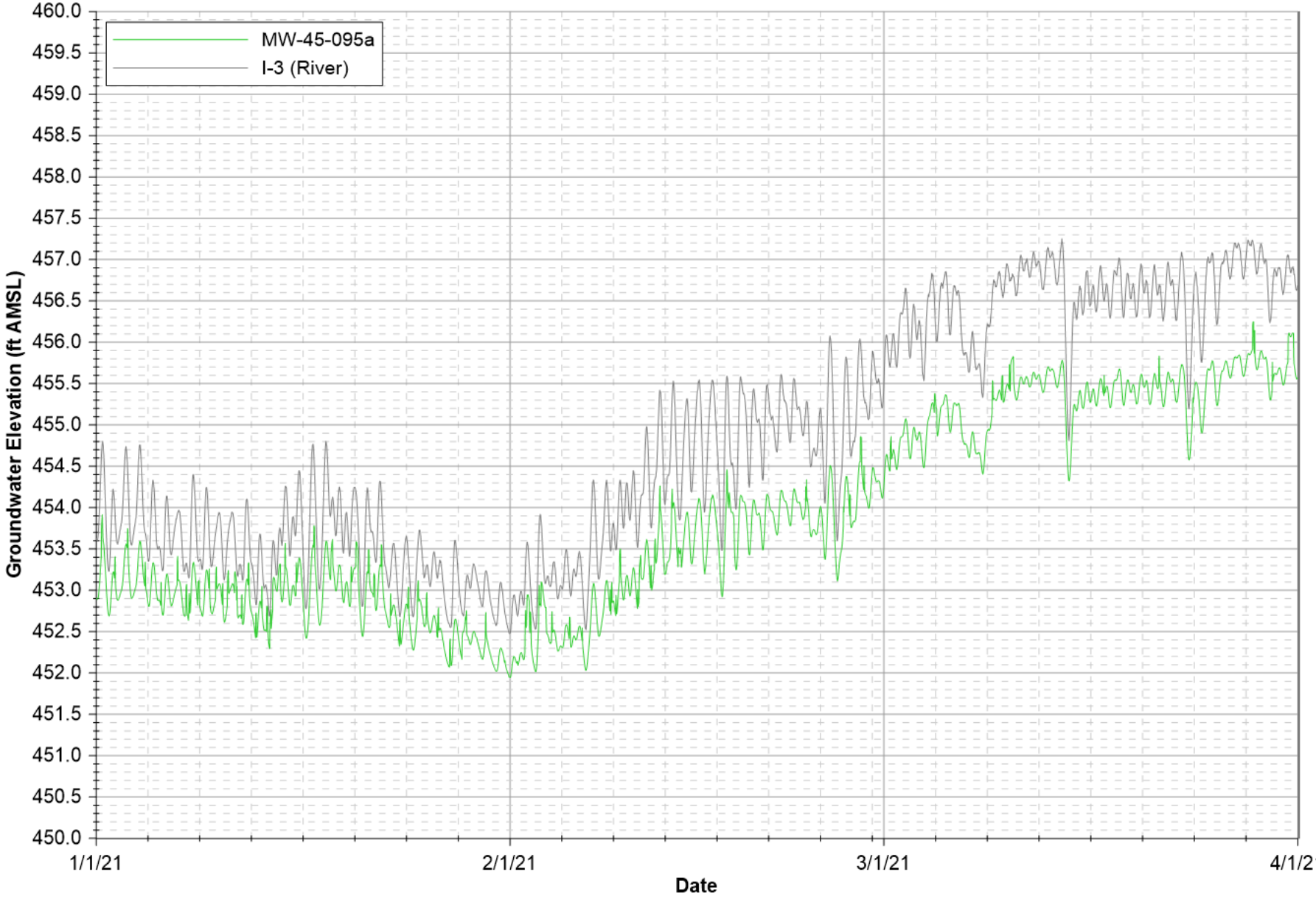
ARCADIS



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

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

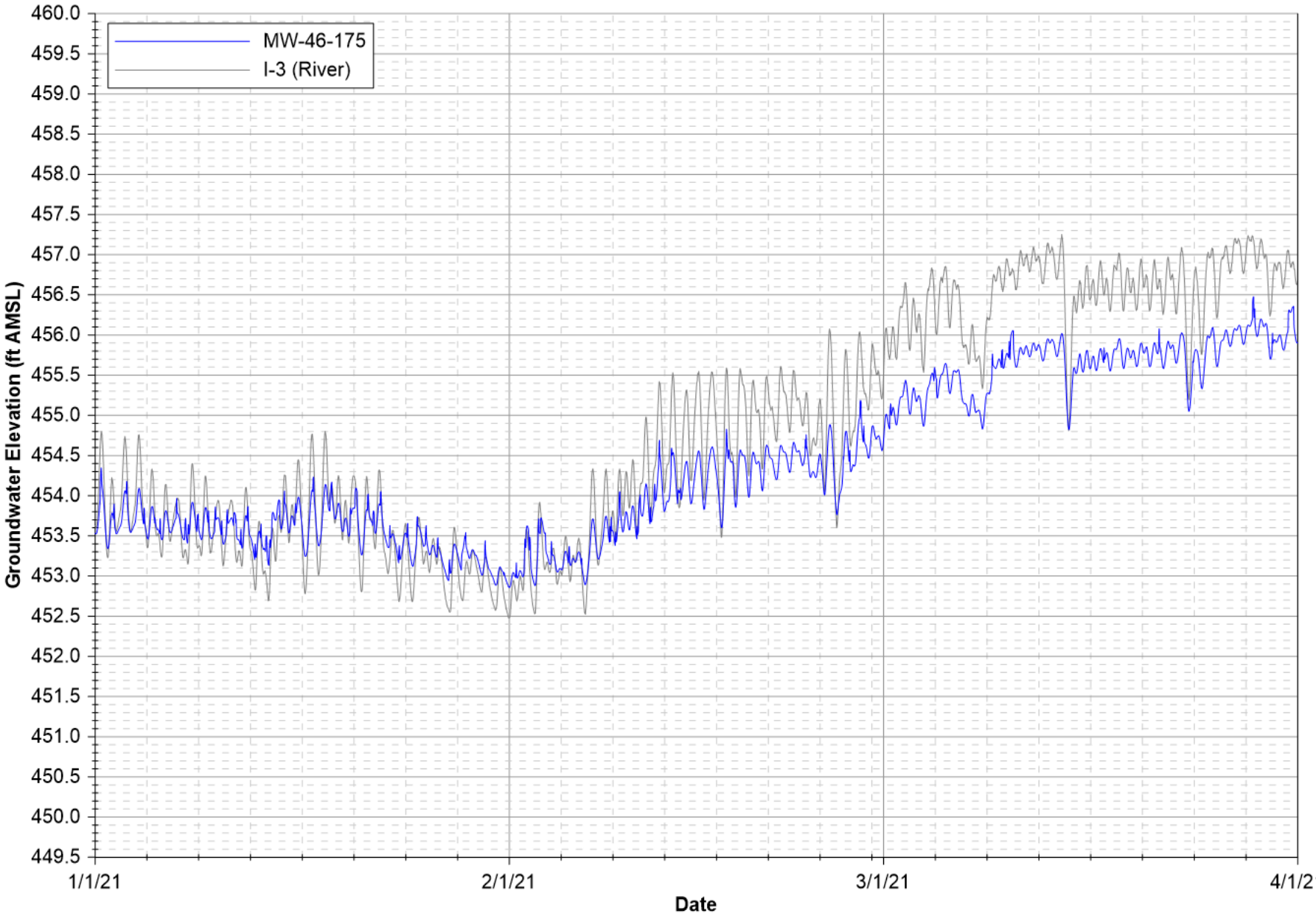
ARCADIS



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

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

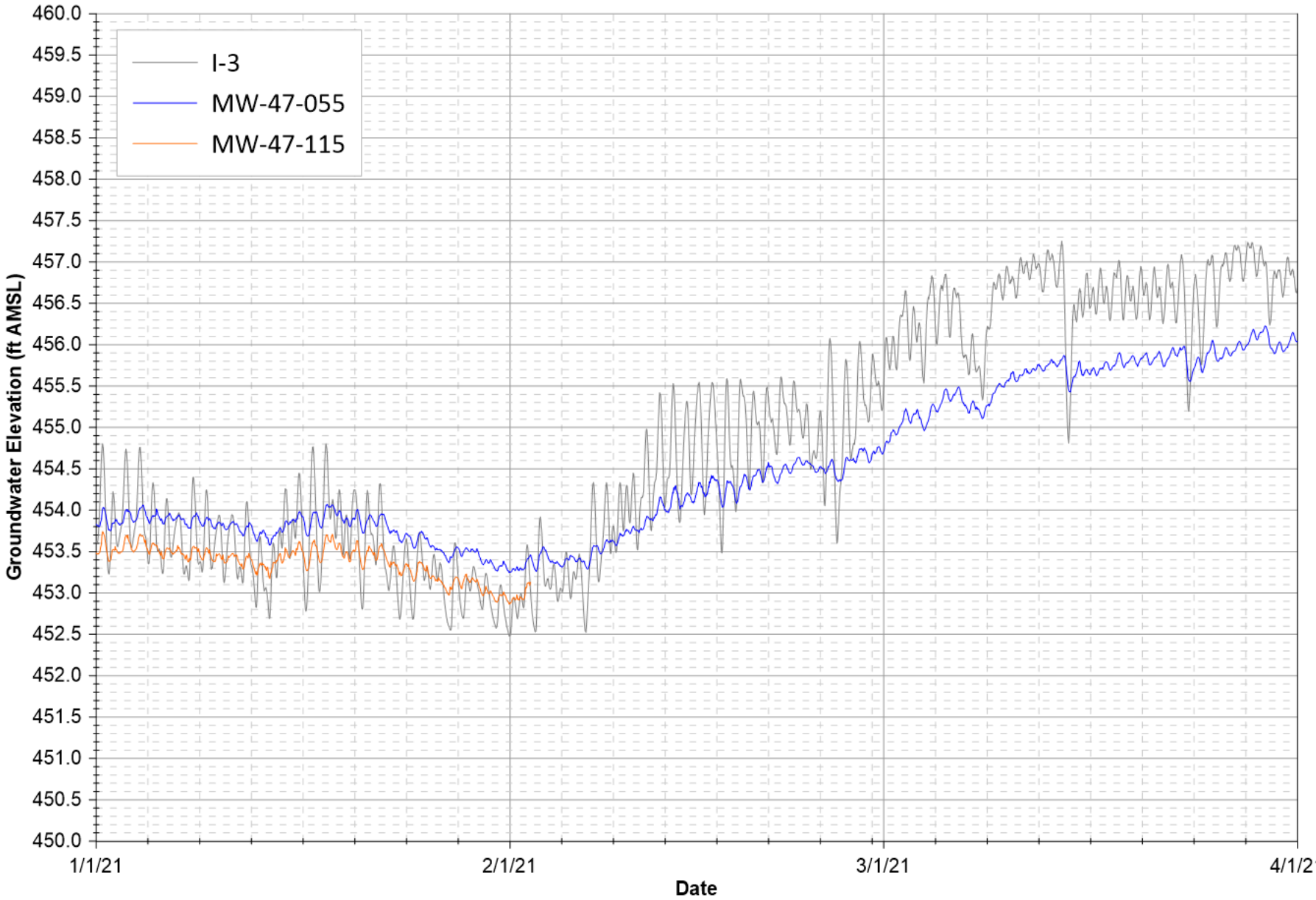
ARCADIS



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

FIGURE F-1Q
MW-46 HYDROGRAPH
FIRST 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-47-115 data unavailable from February 2, 2021 due to transducer malfunction.

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

ARCADIS

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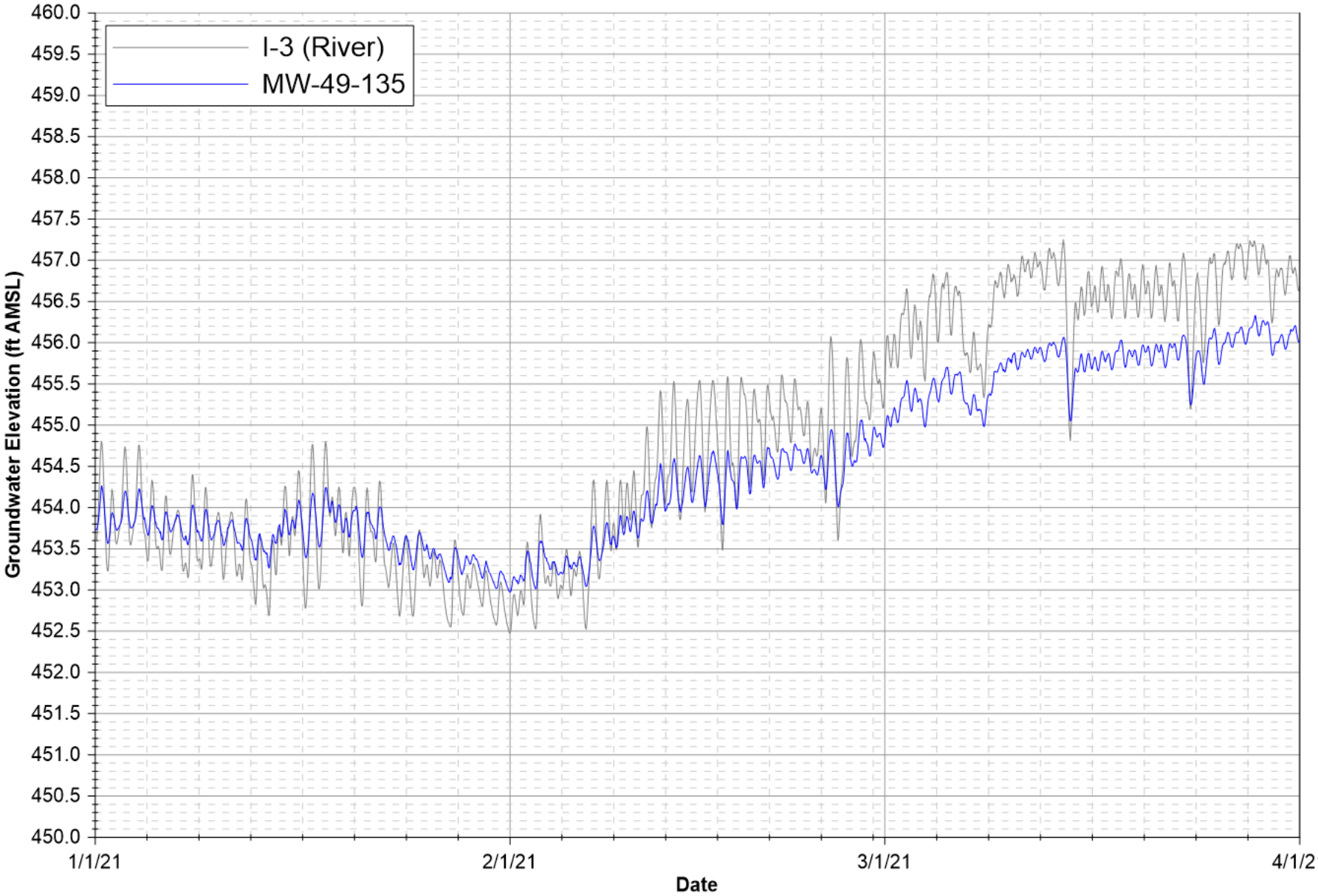
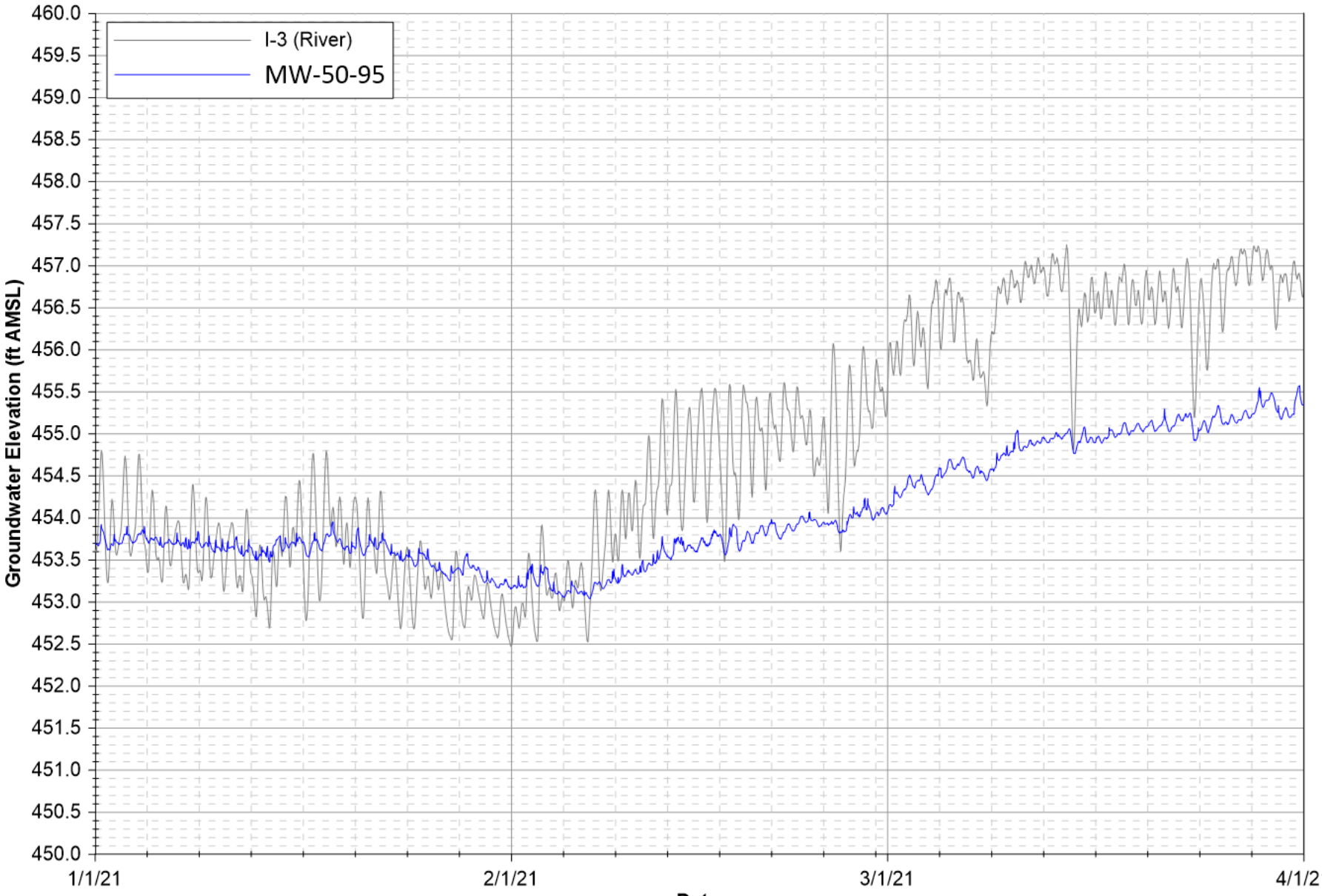


Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.

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

ARCADIS



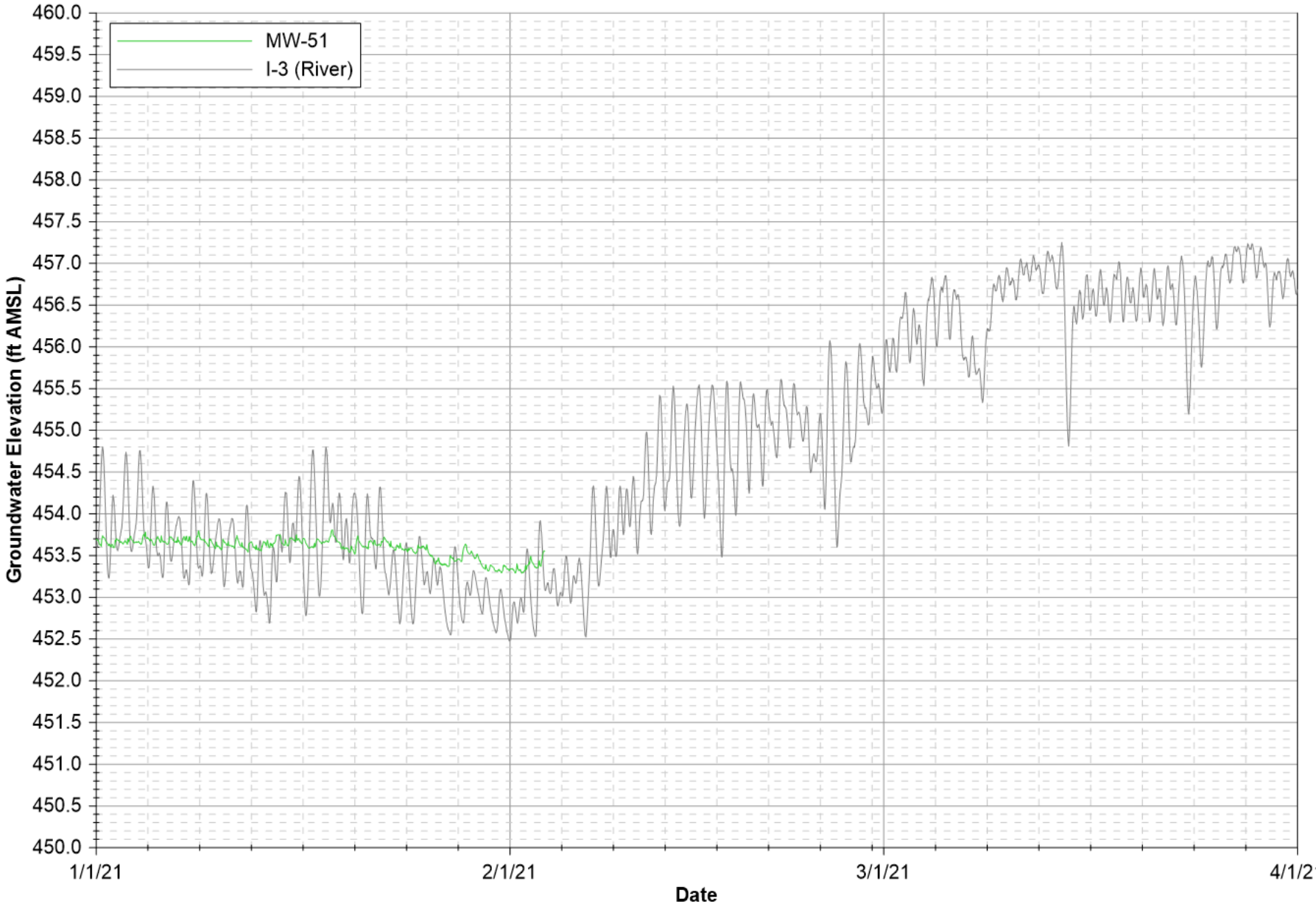
Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.

FIGURE F-1T

MW-50 HYDROGRAPH

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

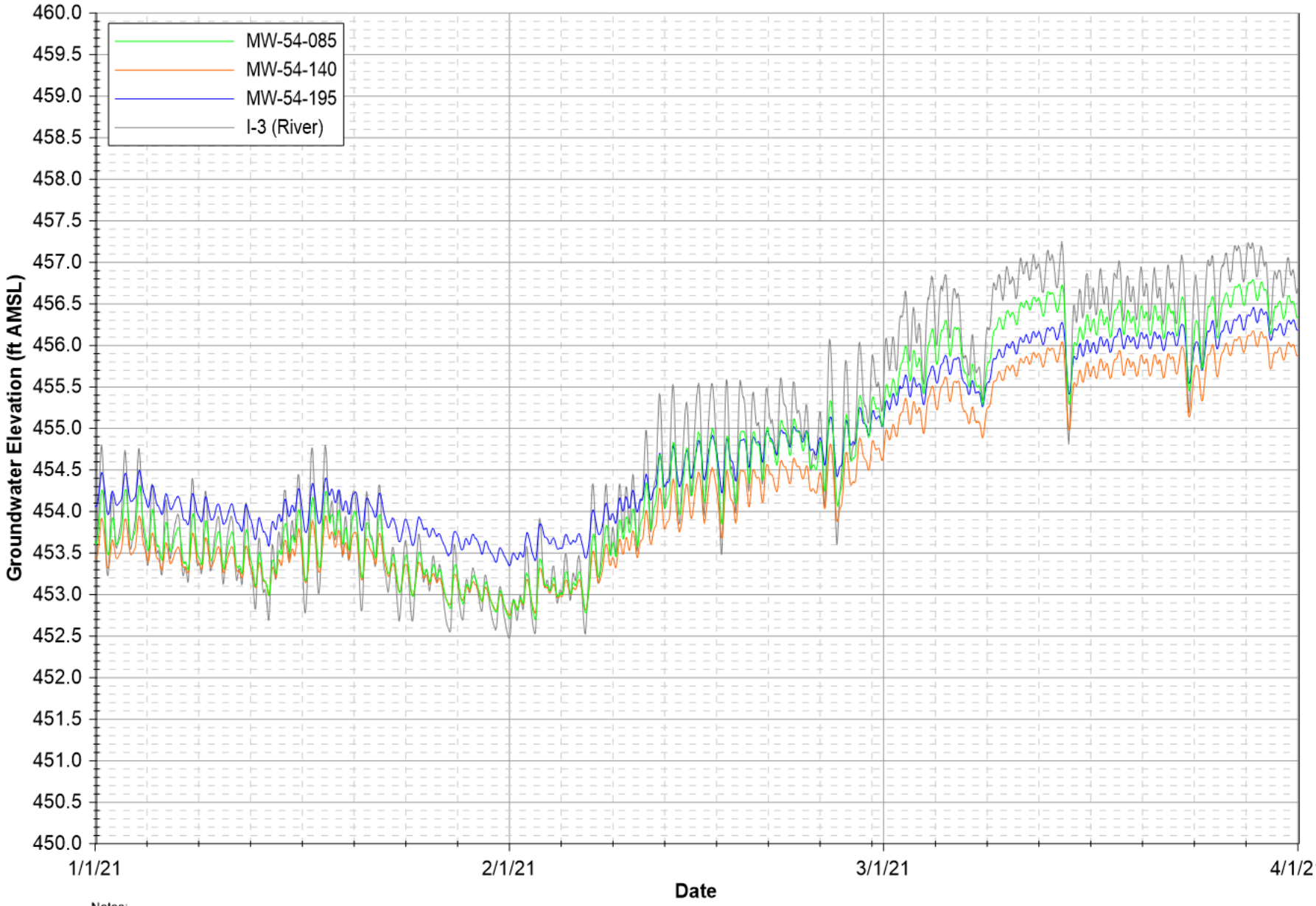
ARCADIS



Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.
3. MW-51 data unavailable from February 3, 2020 due to transducer malfunction.

FIGURE F-1U
MW-51 HYDROGRAPHS
FIRST 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-1V
MW-54 CLUSTER HYDROGRAPHS
FIRST QUARTER 2021 INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

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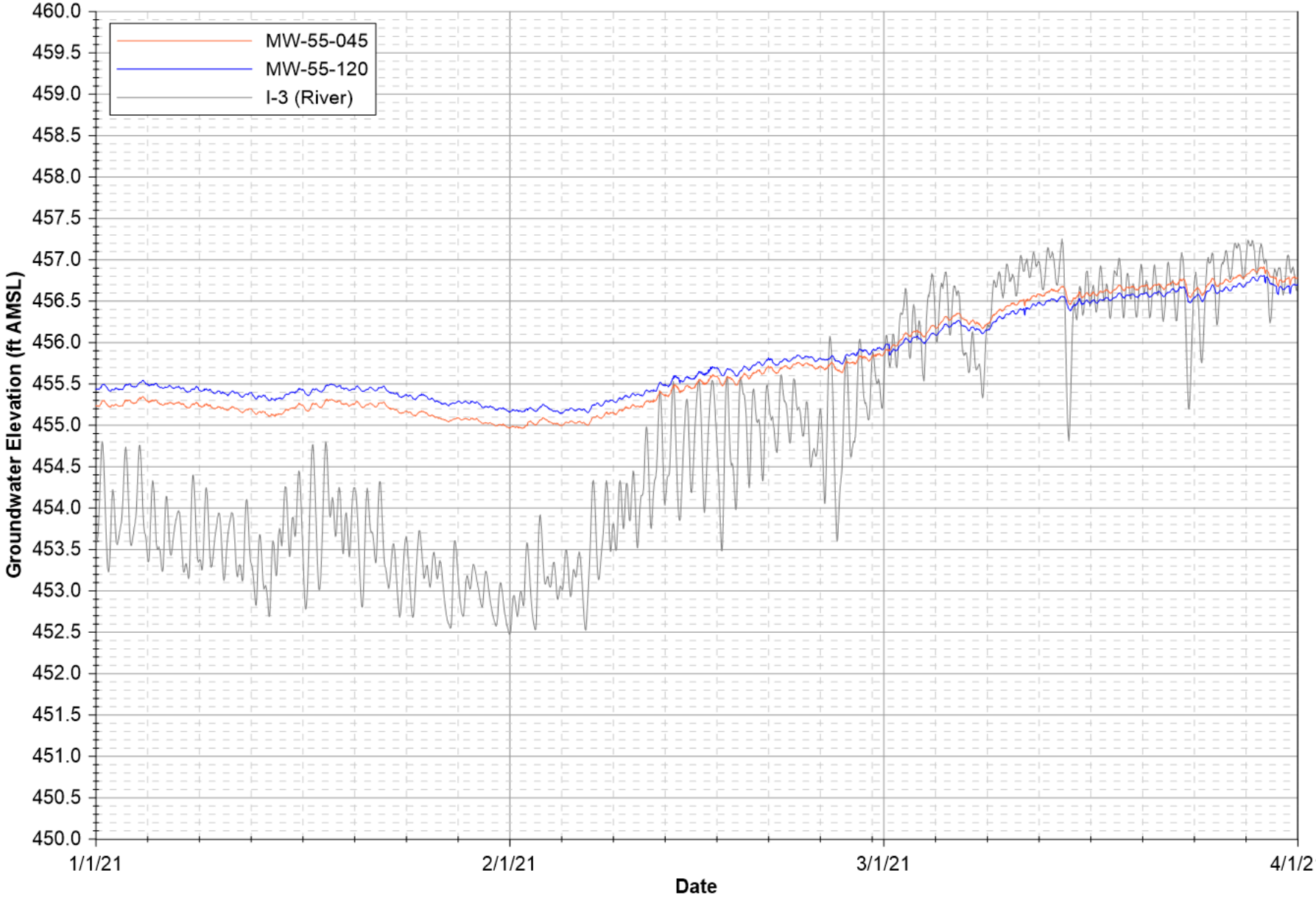
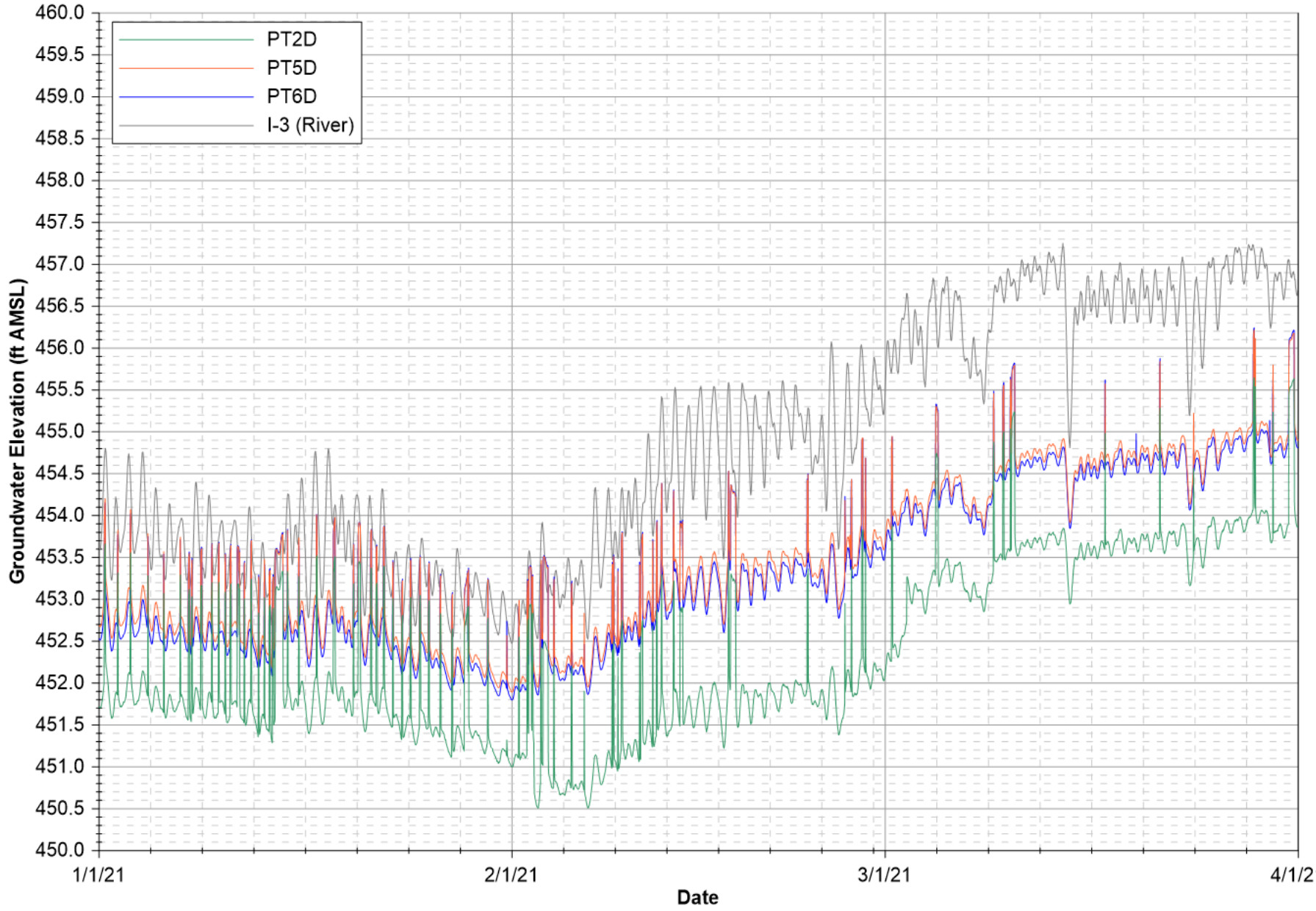


Notes:
1. Data subject to review.
2. ft AMSL = feet above mean sea level.

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

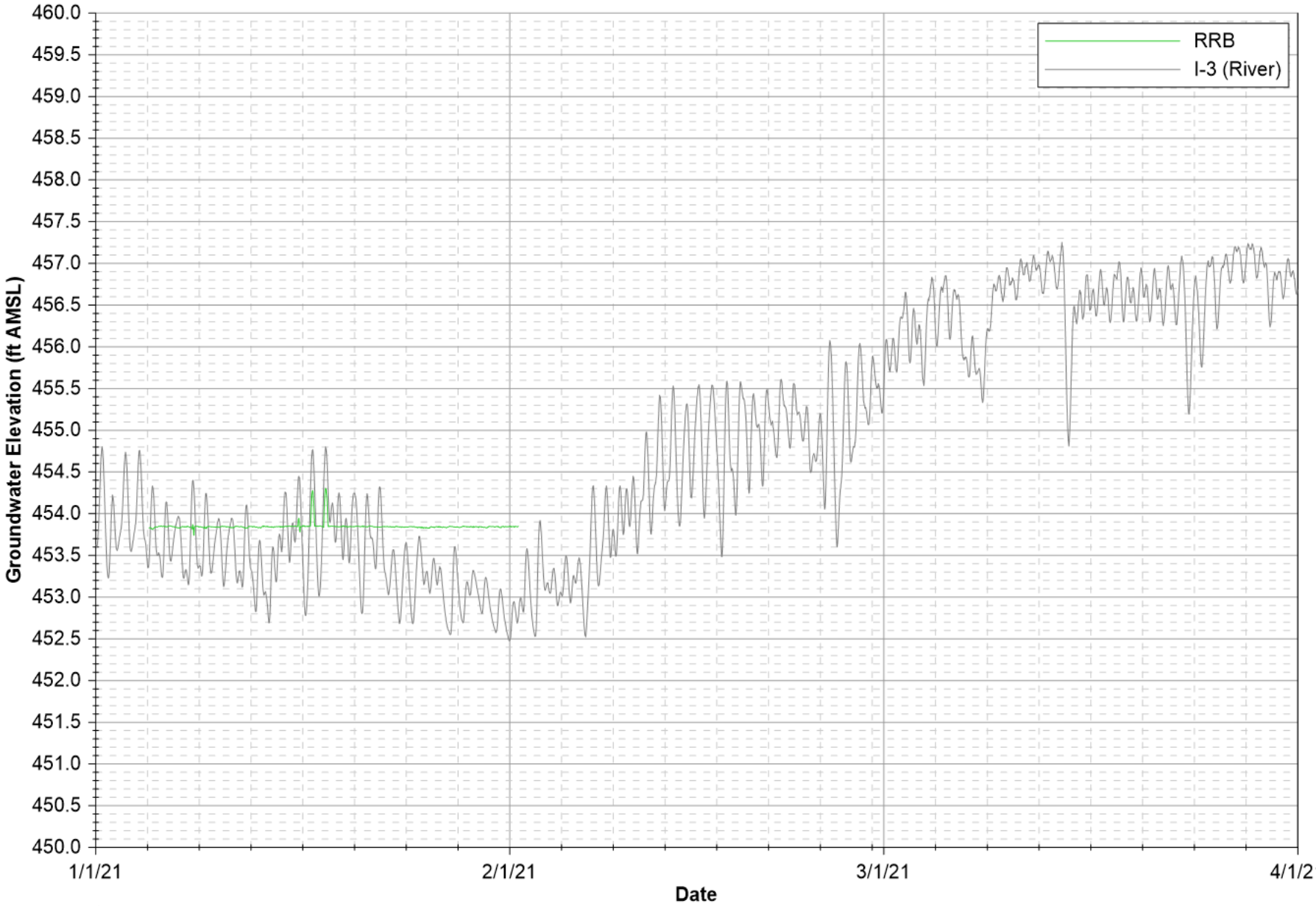
ARCADIS



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

FIGURE F-1X
INSITU PILOT STUDY WELL HYDROGRAPHS
FIRST 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. RRB data unavailable from February 1, 2021 due to transducer malfunction.

FIGURE F-1Y
RRB HYDROGRAPH
FIRST 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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