Topock Project Executive Abstract

Document Title:

Fourth Quarter 2015 and Annual 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: March15, 2016

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 combined quarterly and annual report documents the monitoring activities and performance evaluation of the interim measure (IM) hydraulic containment system under the IM-3 Performance Monitoring Program, the Groundwater Monitoring Program, and Surface Water Monitoring Program for PG&E's Topock Groundwater Extraction Site. Hydraulic and chemical monitoring data were collected and used to evaluate the IM-3 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 that indicate 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 fourth quarter 2015 and annual reporting period. On July 23, 2010, DTSC approved a revised reporting schedule for this report; this was done at the request of DTSC to minimize the time between data collection and report submittal. As a result, the fourth quarter includes only the months of November and December 2015. The average pumping rate for the IM-3 extraction system over fourth quarter 2015 was 133.8 gallons per minute, and an estimated 78.7 pounds (35.7 kilograms) of chromium were removed. To date, the IM-3 extraction system has removed 8,470 pounds (3,840 kilograms) of chromium.

Written by: PG&E

Recommendations:
This report presents changes in the PMP-GMP for 2016 onward.

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

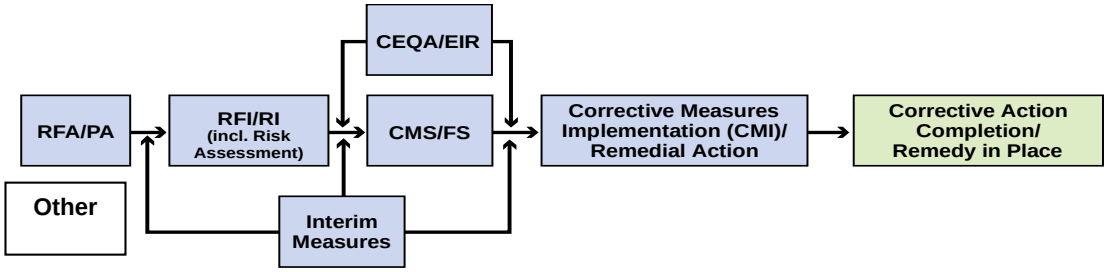
This report is required by DTSC as part of the Interim Measures Performance Monitoring Program.

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

Version 9

Pacific Gas and Electric Company

Yvonne J. Meeks
Manager

Environmental Remediation

Mailing Address
4325 South Higuera Street
San Luis Obispo, CA 93401

Location
6588 Ontario Road
San Luis Obispo, CA 93405

805.234.2257
E-Mail: YJM1@pge.com

March 15, 2016

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

Subject: *Fourth Quarter 2015 and Annual IM-3 Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California* (PGE20160315A)

Dear Mr. Yue:

Enclosed is the Fourth Quarter 2015 and Annual Interim Measure 3 (IM-3) 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 IM-3 Performance Monitoring Program and the Groundwater Monitoring Program and Surface Water Monitoring Program for the Topock project. This report presents the Fourth Quarter (November through December 2015) performance monitoring results for the IM-3's hydraulic containment system and provides the annual performance evaluation for the 2015 Reporting Period (January through December 2015). This report also presents groundwater and surface water monitoring activities, results, and analyses related to the Groundwater and Surface Water Monitoring Programs during the 2015 Reporting Period.

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; and July 20, 2015.

Please contact me at (805) 234-2257 if you have any questions on the combined monitoring report.

Sincerely,

Yvonne Meeks
Topock Remediation Project Manager

Cc: Chris Guerre/DTSC
Karen Baker/DTSC
Pam Innis/DOI
Ken Foster/CA-SLC
Nancy Garcia/AZ-SLD

ARCADIS Design & Consultancy for natural and built assets

Pacific Gas and Electric Company

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT

Topock Compressor Station,
Needles, California

March 15, 2016

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

Fred Stanin, P.G., C. Hg

Principal Hydrogeologist

Dan Cichy

Arcadis Report Lead

Dan Bush

Arcadis Monitoring Project Manager

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT

PG&E Topock Compressor Station,

Needles, California

Prepared for:

California Department of Toxic Substances Control

Prepared by:

Arcadis U.S., Inc.

101 Creekside Ridge Court

Suite 200

Roseville

California 95678

Tel 916 786 0320

Fax 916 786 0366

Our Ref.:

[RC000699.0802]

Date:

March 15, 2016

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

F Groundwater Monitoring Data for Groundwater Monitoring Program and Performance Monitoring Program

G Interim Measures Extraction System Operations Log, Fourth Quarter 2015

ACRONYMS AND ABBREVIATIONS

$\delta^{2}H$	deuterium
$\delta^{18}O$	oxygen-18, stable isotope of oxygen
µg/L	micrograms per liter
ADEQ	Arizona Department of Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COPC	contaminant of potential concern
Cr(VI)	hexavalent chromium
DOI	U.S. Department of the Interior
DTSC	California Environmental Protection Agency, Department of Toxic Substances Control
ft/ft	foot or feet per foot
GMP	Groundwater Monitoring Program
gpm	gallons per minute
IM	interim measure
IM-3	Interim Measures Number 3
IMCP	Interim Measures Contingency Plan
MCL	maximum contaminant level
mg/L	milligrams per liter
MS/MSD	matrix spike/matrix spike duplicate
ORP	oxidation-reduction potential
PG&E	Pacific Gas and Electric Company
PMP	Performance Monitoring Program
RCRA	Resource Conservation and Recovery Act
RMP	Surface Water Monitoring Program
T22	Title 22
TDS	total dissolved solids
USBR	United States Bureau of Reclamation
USEPA	United States Environmental Protection Agency
UTL	upper tolerance limit

EXECUTIVE SUMMARY

This combined quarterly and annual 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 that indicate 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 Fourth Quarter 2015 and Annual Reporting Period. On July 23, 2010, DTSC approved a revised reporting schedule for this report. This was done at the request of DTSC to minimize the time between data collection and report submittal. As a result, the Fourth Quarter includes only the months of November and December 2015. The average pumping rate for the IM extraction system over Fourth Quarter 2015 was 133.8 gallons per minute, and an estimated 78.7 pounds (35.7 kilograms) of chromium were removed. To date, the IM extraction system has removed 8,470 pounds (3,840 kilograms) of chromium.

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 located 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)
- Interim Measures No. 3 (IM-3) Performance Monitoring Program (PMP)

This report presents the monitoring data collected from PG&E's GMP, RMP, and PMP between November 1, 2015 and December 31, 2015 (hereafter referred to as **Fourth Quarter 2015**).

In addition, this report serves as an annual report and provides a summary of groundwater and surface water monitoring results for samples collected between January 1, 2015 and December 31, 2015 (hereafter referred to as the **Annual Reporting Period)** under the Topock GMP, RMP, and PMP programs. 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 Fourth Quarter 2015 monitoring activities and site operations conducted in support of these programs.

Section 3 presents GMP and RMP monitoring results for the Fourth Quarter 2015 (November and December) and Annual Reporting Period.

Section 4 presents PMP monitoring results and the IM evaluation for the Fourth Quarter 2015 (November and December) reporting period.

Section 5 presents the PMP IM evaluation for the Annual Reporting Period.

Section 6 describes upcoming monitoring events for the First Quarter 2016.

Section 7 provides recommendations regarding future monitoring activities.

Section 8 lists the references cited throughout this report.

This combined GMP (including RMP) and PMP reporting format was approved by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) in May 2009 (DTSC 2009a).

1.1 Recent Regulatory Action

- On July 23, 2010, DTSC approved a new sampling event timing and reporting schedule for the PMP, GMP, and RMP programs (DTSC 2010a) in order to minimize the time between data collection and report submittal. As a result, the Fourth Quarter 2015 includes only the months of November and December.
- On June 27, 2014, DTSC approved changes to the GMP sampling schedule, sample frequencies, and sampling methods (DTSC 2014b). This approval was based on recommendations documented in the Fourth Quarter 2013 GMP/PMP Annual Report (CH2M Hill 2014b) for modifications to Figure 1-2. These modifications included showing the sampling frequencies with the sampling purge method indicated by the font of the well identification labels. Starting in Third Quarter 2014, the groundwater sample collection method for most monitoring wells was conditionally switched from the traditional three-volume method to the low-flow (minimal drawdown) method (following the standard operating procedures detailed in the Sampling and Analysis Field Procedures Topock Program Manual, Revision 1, Pacific Gas and Electric Company, Topock Project [CH2M Hill 2005a] and relevant updates). As requested in the June letter, sampling method trials began at MW-38s, MW-38D, MW-40s, and MW-40d in Fourth Quarter 2014 (see Section 2.1.3).
- On June 29, 2015, the Arizona Department of Environmental Quality (ADEQ) recommended that PG&E increase the sampling frequency of MW-55-120 from semiannually to quarterly (ADEQ 2015). This was initiated by PG&E in Third Quarter 2015 and is planned to continue through at least Second Quarter 2016.
- On July 20, 2015, DTSC conditionally approved a proposal to evaluate a modification to the IM-3 pumping regime by allowing PE-01 to be shut off with pumping shifted to TW-03D and TW-02D or TW-02S so long as gradient targets are maintained and contingency is not triggered based on hexavalent chromium [Cr(VI)] concentrations in select floodplain wells (DTSC 2015). Because PE-01 pumps water with low concentrations of chromium (typically less than 5 micrograms per liter [µg/L]), shifting the flow from this well to a higher concentration extraction well can increase the rate of

chromium removal from the floodplain. After a brief period of testing hydraulic gradients and operating the IM-3 treatment plant with PE-01 off in August and September 2015, PE-01 pumping was resumed in September 2015, and it remained online through the Fourth Quarter of 2015.

1.2 History of Groundwater Impact at the Site

1.2.1 Cr(VI) impacts to Groundwater

The Topock Compressor Station began operations in 1951. Remediation efforts are ongoing to address Cr(VI) 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 2016).

1.2.2 Background Concentrations of Cr(VI)

Based on a regional study of naturally occurring metals in groundwater and a statistical evaluation of these data (CH2M Hill 2009a), naturally occurring Cr(VI) in groundwater was calculated to exhibit an upper tolerance limit (UTL) concentration of 32 µg/L. This concentration is used as the background concentration for remedial activities. At the site, the Cr(VI) 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 the majority 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

The Topock GMP and RMP were initiated as part of a Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) facility investigation/remedial investigation groundwater investigation. The RCRA program is being regulated under a Corrective Action Consent Agreement issued by the DTSC in 1996 for the Topock site (United States Environmental Protection Agency [USEPA] ID No. CAT080011729).

Groundwater monitoring data collected to date have been documented in regular monitoring reports (available on the DTSC website). In addition, data from between July 1997 and October 2007 are summarized in the Revised Final RCRA Facility Investigation/Remedial Investigation Report, Volume 2–

Hydrogeologic Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California, dated February 11, 2009 (CH2M Hill 2009a). Additional groundwater and surface water monitoring data from November 2007 through September 2008 are presented in the Final RCRA Facility Investigation/Remedial Investigation Report, Volume 2 Addendum–Hydrogeologic Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California, dated June 29, 2009 (CH2M Hill 2009b).

In compliance with the requirements for Groundwater and Surface Water Monitoring Program directive of April 2005 (DTSC 2005a), this report presents the Fourth Quarter 2015 and annual GMP and RMP report for the IM monitoring activities conducted from November 1, 2015 through December 31, 2015.

1.3.2 GMP and RMP Sampling Networks

The GMP monitoring well network and RMP surface water sampling network are shown on Figures 1-2 and 1-3, respectively, and summarized below. The complete GMP network includes more than 100 wells that monitor groundwater in the alluvial aquifer and bedrock, and the RMP includes 16 surface water monitoring locations.

GMP Groundwater Monitoring Wells	RMP Surface Water Monitoring Locations
129 monitoring wells in California, including two normally dry wells	10 river channel locations
8 monitoring wells in Arizona	4 shoreline locations
2 water supply wells	2 other surface water sampling locations (adjacent to the shoreline)
2 IM-3 extraction wells	
5 test wells	

The well construction and sampling methods for wells in the GMP and other monitoring wells at the site are summarized in Appendix A, Table A-1.

1.4 Interim Measure Performance Monitoring Program

1.4.1 Basis for PMP Program

In compliance with the requirements for IM monitoring and reporting outlined in the DTSC IM performance directive of February 2005 and in subsequent directives from the DTSC in 2007 (DTSC 2005b, 2007a-c),

this report presents the Fourth Quarter 2015 PMP evaluation results for the IM monitoring activities from November 1, 2015 through December 31, 2015.

The Topock IM project consists of groundwater extraction for hydraulic control of the plume boundaries in the Colorado River floodplain and management of extracted groundwater. The groundwater extraction, treatment, and injection systems are collectively referred to as IM-3. The IM monitors only the Alluvial Aquifer. Currently, the IM-3 facilities include 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. Extraction wells PE-01 and TW-03D operated full time through Fourth Quarter 2015.

Figure 1-1 shows the locations of the IM-3 extraction, conveyance, treatment, and injection facilities.

In a letter dated February 14, 2005, DTSC established the criteria for evaluating the performance of the IM (DTSC 2005c). As defined by DTSC, the performance standard for this IM is to *"establish and maintain a net landward hydraulic gradient, both horizontally and vertically, that ensures that hexavalent chromium [Cr(VI)] concentrations at or greater than 20 micrograms per liter [µg/L] in the floodplain are contained for removal and treatment"* (DTSC 2005b). A Draft Performance Monitoring Plan for Interim Measures in the Floodplain Area, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California (CH2M Hill 2005b) was submitted to DTSC on April 15, 2005 (herein referred to as the Performance Monitoring Plan).

The February 2005 DTSC directive also defined the monitoring and reporting requirements for the IM (DTSC 2005b-c). In October 2007, DTSC modified the reporting requirements for the PMP (DTSC 2007a) to discontinue monthly performance monitoring reports (the quarterly and annual reporting requirements were unchanged). Additional updates and modifications to the PMP were approved by DTSC in letters dated October 12, 2007; July 14, 2008; July 17, 2008; July 23, 2010, and June 27, 2014 (DTSC 2007a, 2008a-b, 2010a, 2014b). On July 20, 2015, DTSC conditionally approved the 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 (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.

1.4.2 PMP Monitoring Network

Figure 1-4 shows the locations of wells used for the performance monitoring program. The PMP includes data collection for hydraulic gradient measurements, IM chemical performance monitoring, IM groundwater extraction, and the IM Contingency Plan (IMCP). With approval from DTSC, the list of wells included in the PMP was modified beginning August 1, 2008 (PG&E 2008). The PMP wells and monitoring locations are described in the table below.

PMP Wells and Monitoring Locations

Hydraulic Monitoring Network – 53 Wells total (including 17 shallow, 14 intermediate, 22 deep)

- Floodplain wells: monitoring wells on the Colorado River floodplain
- Intermediate wells: monitoring wells immediately north, west, and southwest of the floodplain
- Interior wells: monitoring wells upgradient of IM pumping

Chemical Performance Monitoring (11)

- 9 Annual Wells
- 1 River Sampling Location
- 1 Biennial Well

IMCP Wells (24 Wells)

- 6 Shallow Wells
- 5 Intermediate Wells
- 13 Deep Wells

IM Extraction Wells (4 Wells)

- TW-02D
- TW-03D
- TW-02S
- PE-01

Three extraction wells (TW-02D, TW-03D, and TW-02S) are located on the MW-20 bench. Extraction well PE-01 is on the floodplain approximately 450 feet east of extraction well TW-03D, as shown on Figure 1-4.

Groundwater monitoring wells installed on the Arizona side of the Colorado River are not formally part of the PMP, but some of these wells (MW-54-085, MW-54-140, MW-54-195, MW-55-045, and MW-55-120) have provided groundwater elevation data for evaluating the hydraulic gradient on the Arizona side of the river.

1.4.3 PMP – Aquifer Hydraulics

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

1.5 Sustainability

The GMP, RMP, and PMP monitoring programs strive to use sustainable sampling and data collection practices. This section briefly describes some of the sustainability practices now in use.

As approved by the California Regional Water Quality Control Board in 2006, groundwater sampling purge water is disposed via the onsite IM-3 treatment plant and injection process, eliminating offsite transport and disposal of sampling purge water. Additionally, the RMP boat contractor has always been a local Lake Havasu City-based business. Benefits of employing local resources for sampling support are reduced fuel consumption and greenhouse gas emissions, and increased local business support. In 2012, the analytical laboratory services supporting Topock monitoring was changed from a Los Angeles-based lab to the current California-certified Las Vegas-based lab, reducing lab courier travel by more than half. In 2007, DTCS approved the use of USEPA Method 218.6, which has a 28-day holding time in place of USEPA Method SW846 Method 7199 for Cr(VI) analysis, which has a 24-hour holding time. Subsequently, PG&E also adopted the 14-day holding time nitrate method for Topock to replace the previous 48-hour holding time method. These method changes reduced courier travel mileage and increased field efficiency with less frequent sample pickups. The use of the DTSC website and electronic report submittal has reduced the number of report hard copies and conserved natural resources. The number of report hard copies has been reduced over the years from 16 to 10 for the quarterly reports and from 18 to 12 for the annual reports to conserve resources.

To reduce the potential for impacts to floodplain areas with nesting habitat for sensitive avian species, water level data telemetry systems were installed from 2011 through 2012 at the five key gradient compliance well locations. The telemetry systems are still currently used. The solar-powered data telemetry systems eliminated the need for weekly download visits (reduced mobilizations of offsite technical support resources) and allows for monthly or less frequent visits for key well transducer calibrations and maintenance.

The DTSC approved the provisional use of low-flow sampling on June 27, 2014 (DTSC 2014b) at most alluvial screened wells. Low-flow sampling reduced the volume of purge water and sampling footprint at most wells. For wells still using the three-volume purge sampling methods (primarily bedrock and long screened wells), pumps and tubing are sized for the optimum purge technique at each monitoring well. Utility vehicles (for example, Polaris Ranger or Kawasaki Mule) and one 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. These best practices reduce generator use, impacts from well access, and decontamination water volume to further decrease the monitoring footprint.

More recently, on July 20, 2015, DTSC conditionally approved a modification to the IM-3 pumping regime by allowing PE-01 to be shut off with pumping shifted to TW-03D and TW-02D or TW-02S. This modification allows for an increase in the rate of chromium removal from the floodplain, thereby extending the benefit of additional mass removal by the existing system to the overall site cleanup while maintaining hydraulic control of the plume.

2 FOURTH QUARTER 2015 MONITORING ACTIVITIES AND GMP ALTERNATIVE SAMPLING METHODS ANALYSIS

This section summarizes the monitoring and sampling activities completed during Fourth Quarter 2015 for the GMP, RMP, and PMP. This section also includes results of sampling method trials at select wells.

2.1 Groundwater Monitoring Program

2.1.1 Monthly Sampling

Groundwater was sampled from the active IM extraction wells (PE-01 and TW-03D) in November and December 2015 and was analyzed for Cr(VI), chromium, total dissolved solids (TDS), pH, and several additional analytes.

2.1.2 Quarterly/Annual Sampling

The Fourth Quarter 2015 GMP groundwater monitoring event was conducted between December 1 and December 10, 2015, and included sampling from 143 groundwater monitoring wells.

Samples from these wells were submitted for laboratory analysis of Cr(VI), chromium, and specific conductance. Additional field-measured parameters consisted of oxidation-reduction potential (ORP) and pH.

In addition, groundwater samples were collected at selected GMP wells for analysis of:

- California Code of Regulations Title 22 (T22) metals analyses, which includes arsenic at six alluvial wells (MW-10, MW-12, MW-26, MW-44-115, MW-50-200, and MW-51)
- Arsenic from a subset of wells screened in fluvial sediments, as directed by DTSC in the Corrective Measures Study review comment No. 186 (DTSC 2009b)
- Arsenic from bedrock monitoring wells
- Contaminants of potential concern (COPCs), including molybdenum, nitrate/nitrite as nitrogen (referred to as nitrate hereafter), selenium, and potential in situ byproducts (manganese, iron, and arsenic) from a subset of wells (DTSC 2010c, 2011, 2015).

As part of baseline sampling in support of the groundwater remedy design, select monitoring wells were analyzed for additional non-routine parameters during the Fourth Quarter 2015 monitoring event.

Sample analysis included chloride, sulfate, bromide, calcium, magnesium, potassium, sodium, boron, alkalinity, TDS, and stable isotopes of oxygen ($\delta^{18}O$) and deuterium ($\delta^{2}H$).

Results and conclusions from the Fourth Quarter 2015 and annual GMP monitoring are discussed further in subsequent sections with historical data where applicable.

2.1.3 Alternative Sampling Methods

2.1.3.1 Groundwater Sampling Method Changes Approved in 2014

On June 27, 2014, the DTSC approved a change from the traditional three-volume purge sampling method to using a low-flow sampling method (DTSC 2014b). This approval applied to wells screened in alluvial/fluvial sediments with saturated screen lengths of 20 feet or less. Sample collection using the low-flow method at wells meeting the screen length criterion was initiated during the Third Quarter 2014 sampling event and has continued through Fourth Quarter 2015.

2.1.3.2 Results of Sampling Method Trials at Select Wells

In conformance with the June 27, 2014 email from DTSC (DTSC 2014b), PG&E began conducting sampling method trials at MW-38S, MW-38D, MW-40S, and MW-40D during Fourth Quarter 2014, and the trial continued through 2015. At MW-38S and MW-38D, both low-flow and three-volume purge samples were collected for comparison at approved sampling intervals in 2015. At MW-40S and MW-40D, HYDRASleeve™ and low-flow samples were collected for comparison at approved sampling intervals in 2015. Results for Cr(VI) sampling to date at each well are shown in Table 2-1, with additional sampling parameter results provided in Table D-5 (Appendix D).

At MW-38S, results for both low-flow and three-volume pure samples were non-detect (or low concentration detections) through four sampling events in 2015 and Fourth Quarter 2014. For this reason, Section 7 of this report includes a recommendation that MW-38S be removed from the comparison method trial and sampled by only the low-flow method moving forward.

At MW-38D, results for low-flow and three-volume pure samples were consistent (within 4 µg/L or less) through three monitoring events including two rounds of semi-annual sampling in 2015 and sampling in Fourth Quarter 2014. These results show that low-flow sampling is providing comparable results to three-volume sampling. Section 7 of this report includes a recommendation that MW-38D also be removed from the comparison method trial and sampled by only the low-flow method moving forward.

At MW-40S, results for low-flow and HYDRASleeve™ samples were consistent for the annual sampling during Fourth Quarter 2015 and Fourth Quarter 2014. These results suggest that HYDRASleeve™ sampling may be a viable sampling alternative at this location to low-flow sampling (three-volume purge sampling was not evaluated at MW-40S). Section 7 of this report includes a recommendation to continue the method trial sampling at this location, but increase the frequency to semiannual to collect more data for the method trial in 2016.

At MW-40D, results for low-flow and HYDRASleeve™ samples were consistent for two of three semiannual sampling events between Fourth Quarter 2014 and Fourth Quarter 2015, with the HYDRASleeve™ reading non-detect for one event where low-flow yielded a detection of 120 µg/L. These results suggest that HYDRASleeve™ sampling may be a viable alternative at this location to low-flow sampling; however, additional sampling is needed to complete the evaluation. Section 7 of this report includes a recommendation to continue the method trial sampling at this location in 2016 with no change.

2.2 Surface Water Monitoring Program

Quarterly surface water sampling was conducted on December 8 through 10, 2015 from the RMP monitoring network. Samples were analyzed for Cr(VI), chromium, specific conductance, and pH. Samples were also analyzed for COPCs (molybdenum, nitrate, and selenium), in situ byproducts (manganese, iron, and arsenic), and geochemical indicator parameters (barium and total suspended solids) to develop baseline concentrations for future remedy performance evaluations.

2.3 Performance Monitoring Program

Groundwater samples for the PMP were collected during the Fourth Quarter 2015 GMP sampling event. In addition, PMP pressure transducers, which monitor hydraulic gradients of the alluvial aquifer, were downloaded in the second week of each month (November and December). The transducers in the key monitoring wells (MW-27-085, MW-31-135, MW-33-150, MW-34-100, and MW-45-095; Figure 1-4) are also downloaded via a cellular telemetry system.

3 RESULTS FOR SITE-WIDE GROUNDWATER MONITORING AND SURFACE WATER SAMPLING

This section presents the analytical results for groundwater and surface water monitoring conducted during Fourth Quarter 2015. In addition, this section summarizes the site-wide groundwater and surface water sample results for the 2015 Annual Reporting Period.

3.1 Groundwater Results for Cr(VI) and Chromium

Table 3-1 presents the Fourth Quarter 2014 through Fourth Quarter 2015 groundwater sample results for Cr(VI) and chromium, among other parameters. The laboratory reports for samples analyzed during Fourth Quarter 2015 are provided in Appendix B.

3.1.1 Fourth Quarter Groundwater Results for Cr(VI) and Chromium

Figures 3-1a through 3-1c present the Fourth Quarter 2015 Cr(VI) results in map view for wells monitoring the upper-depth (shallow wells), middle-depth (mid-depth wells), and lower-depth (deep wells) intervals, respectively, of the alluvial aquifer and bedrock. Figures 3-1a through 3-1c also show the interpreted extent of groundwater Cr(VI) 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 Cr(VI) in groundwater from the background study (CH2M Hill 2009a).

During Fourth Quarter 2015, the maximum detected Cr(VI) concentration was 36,000 µg/L in well MW-68-180. The maximum detected chromium concentration was also in MW-68-180 at 40,000 µg/L.

3.1.2 Annual Evaluation of Groundwater Results for Cr(VI) and Chromium

Appendix C presents graphs of Cr(VI) concentration versus time (Figures C-1 through C-19) for the GMP monitoring wells since the initiation of IM groundwater extraction in 2004. This section discusses observed qualitative trends in Cr(VI) concentrations through 2015 for wells that are not evaluated under the PMP (see also Section 5).

A review of Appendix C, Figures C-1 through C-19, reveals the following observed Cr(VI) trends. These observations are qualitative (i.e., based on visual review of the concentration plots), and are not quantified using statistical analysis. Cr(VI) and chromium results (see also Table 3-1) for the Arizona wells and Park Moabi (water production) wells are also discussed below.

Monitoring Well	Trend in Cr(VI) Concentrations
MW-14	Declining concentrations since 2010 (Figure C-2).
MW-18	Declining concentrations from 2007 to 2010; stable since 2010 (Figure C-2).
MW-25	Steadily decreasing concentrations, with the lowest concentration to date reported in May 2015 (Figure C-3).
MW-26	Initially decreasing concentrations; slightly increasing concentrations since 2013 (Figure C-4).
MW-31 cluster	Initially decreasing concentrations; stable since 2009 with a slight increase in 2015 (Figure C-4).
MW-37D	Decreasing concentrations reduced to below 32 µg/L since December 2014 (Figure C-8).
MW-40D	Generally increasing concentrations from 2004 to 2011; since 2011, concentrations have decreased (Figure C-9).
MW-50-095	Decreasing concentrations from 2007 to 2011; currently stable below 32 µg/L(Figure C-12).
MW-50-200	Fluctuating but generally decreasing concentrations since 2007 (Figure C-12).
MW-62-110	Fluctuating but generally increasing concentrations until a decrease to non-detect in October 2015 (Figure C-14); confirmed by the Fourth Quarter (December) 2015 result, and the well will continue to be monitored to determine whether these results are anomalous.
MW-65 cluster	Slightly increasing concentrations in MW-65-160; in MW-65-225, concentrations increased to a maximum in 2012 before generally decreasing, and another decrease was observed in September 2014 with the switch to low-flow sampling; since September 2014, concentrations in MW-65-225 have generally increased (Figure C-15).
MW-66-165 and MW66BR-270	Stable concentrations since well cluster installation in 2011 (Figure C-16).
MW-66-230	Increasing concentrations from 2011 to 2013; fluctuating concentrations since 2013 (Figure C-16).
MW-67 cluster	Initial increasing concentrations in 2011 but generally stable since January 2012; concentration decrease observed in MW-67-260 following switch to low-flow sampling (Figure C-16).
MW-68-180	General overall increasing trend with seasonally fluctuating concentrations (higher in fall/winter, lower in spring); the maximum Cr(VI) concentrations observed in site groundwater have been detected at this well (Figure C-16).
MW-68-240	Generally stable concentrations since 2012 (Figure C-16). Concentrations at MW-68BR-280 have been non-detect since the well was installed.
MW-69-195	Increasing concentrations from 2011 to early 2013; generally stable since 2013 (Figure C-17).

Monitoring Well	Trend in Cr(VI) Concentrations
MW-70-105	Fluctuating but generally stable concentrations since 2013 (Figure C-17).
MW-70BR-225	Fluctuating but generally stable concentrations since 2013 (Figure C-17).

MW-54 cluster, MW-55 cluster, and MW-56 cluster (Arizona wells)	In 2015, Cr(VI) and chromium were non-detect in four of eight wells. Cr(VI) was detected at a low concentration (0.50 J µg/L) in the three MW-54 cluster wells.
	For MW-55-120:
	• Chromium and Cr(VI) concentrations have gradually increased since 2008, reaching maximums of 8.2 and 8 µg/L, respectively, in December 2015.
	  - The current chromium concentration is well below the federal drinking water standard (maximum contaminant level [MCL] of 100 µg/L) and Arizona's Aquifer Water Quality Standard of 50 µg/L.
	  - Concentrations are consistent with regional background concentrations.
	• Increasing chromium and Cr(VI) trends at MW-55-120 may be a result of geochemical conditions near the well screen slowly returning to equilibrium conditions with the aquifer since initial well installation disturbance.

Park Moabi-3 (PM-03) and Park Moabi-4 (PM-04) (water production wells)	In PM-03, Cr(VI) and chromium were detected at concentrations of 9.3 and 8.8 µg/L, respectively, in December 2015. In PM-04, Cr(VI) and chromium were detected at concentrations of 17 and 17 µg/L, respectively, in December 2015. • Although, the Cr(VI) detection for PM-04 is higher than the California MCL of 10 µg/L, it is lower than the regional background concentration of 32 µg/L and is consistent with previous results. • The total chromium detections were lower than the California MCL of 50 µg/L and consistent with regional background concentrations and previous results.

3.2 Other Groundwater Monitoring Results

Table 3-2a presents the COPCs (molybdenum, nitrate, and selenium) and in situ byproducts (arsenic and manganese) sampling results for groundwater monitoring well samples collected in 2015. The Fourth Quarter 2015 data presented in Table 3-2a are summarized in Table 3-2b. Field parameter data and additional water quality results are provided in Appendix D.

3.2.1 Contaminants of Potential Concern and In Situ Byproducts

Figures 3-2a through 3-2e present the molybdenum, nitrate (as N), selenium, arsenic, and manganese results for Fourth Quarter 2015, respectively. Results were compared to the background UTLs calculated and reported in CH2M Hill 2009a and MCLs where available. Background UTLs were only calculated for regional alluvial wells during the background study; therefore, these background UTLs may not be appropriate for bedrock wells.

Graphs of the concentrations of molybdenum, nitrate (as N), and selenium over time are presented in Appendix C. Results for in situ byproducts and geochemical indicator parameters are presented in Tables 3-2a and 3-2b and in Table D-1 in Appendix D. An evaluation of in situ byproduct sample results for floodplain wells with additional geochemical parameters collected for PMP performance monitoring is presented in Section 5.3.2. Below is a summary of results for molybdenum, nitrate (as N), selenium, and manganese. Arsenic is discussed in Section 3.2.2.

Constituent (# of wells sampled)	Calculated Background UTL (#exceedances in Q4 2015)	MCL (#exceedances in Q4 2015)	Highest Detected Concentration (Location)
Molybdenum (157)	36.3 µg/L (68)	None (NA)	440 µg/L (MW-33-040)
Nitrate as N (110)[1]	5.03 mg/L (25)	10.0 µg/L (18)	64 mg/L (MW-67-185)
Selenium (157)	10.3 µg/L (14)[2]	50 µg/L (2)	300 µg/L (MW-67-185)
Manganese (150)	None (NA)	50 µg/L (59)[3]	13,000 µg/L (MW-66-BR-270)

Notes:

[1] Nitrate samples were analyzed using USEPA Method 353.2, except for TW-03D and PE-01, which were analyzed using USEPA Method 300.0. USEPA Method 353.2 reports a combination of nitrate and nitrite as nitrogen. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for USEPA Method 353.2 are expected to be essentially the same as previous samples analyzed using USEPA Method 300.0 and reported as nitrate as nitrogen.

[2] Includes non-detects with reporting limits higher than 10.3 µg/L.

[3] This is a secondary MCL.

3.2.2 Arsenic Sampling in Monitoring Wells

Ninety-two fluvial/alluvial and 28 bedrock wells were sampled for arsenic in Fourth Quarter 2015. Highlights of the results (Tables 3-2a and 3-2b) are as follow.

Well Type (# of wells sampled)	Calculated Background UTL (#exceedances in Q4 2015)	MCL (# exceedances in Q4 2015)	Highest Detected Concentration (Location)
Alluvial/Fluvial (92)	24.3 µg/L (2)	10 µg/L (13)	36 µg/L (MW-12)
Bedrock (28)	24.3 µg/L (---)	10 µg/L (4)	15 µg/L (MW-7BR-200)

Note:

[1] The California MCL for arsenic is 10 µg/L. The background study UTL for arsenic is 24.3 µg/L.

--- = not applicable

3.2.3 Title 22 Metals

Table 3-3 presents the T22 metals results for the GMP monitoring wells MW-10, MW-12, MW-22, MW-26, MW-44-115, MW-50-200, and MW-51 sampled during Fourth Quarter 2015 or previous 2015 monitoring events. The concentrations of T22 metals detected in these monitoring wells remained generally stable overall during the Annual Reporting Period.

3.2.4 Laboratory Specific Conductance Results

Laboratory specific conductance results for the 2015 reporting period are presented in Table 3-1. The salient trend in specific conductance is a correlation of lower specific conductance over time at floodplain wells with an increasing river water isotopic signature. This is interpreted to indicate that IM-3 pumping has been drawing river water into the floodplain groundwater (see Section 5.3.2). For wells adjacent to the Colorado River, generally more of a river water signature (based on specific conductance) has been historically observed during the summer months when there are high river levels.

3.2.5 Water Level Monitoring

Table D-2 in Appendix D presents the manual water level measurements and salinity data collected during the 2015 Annual Reporting Period. Groundwater salinity during Fourth Quarter 2015 ranged from 0.06 percent (MW-27-020, MW-28-025, and MW-34-055) to 1.4 percent (well MW-50-200), consistent with results of prior monitoring. Due to the variation in groundwater salinity at the site, the groundwater elevations measured in the monitoring wells have been adjusted (normalized) to an equivalent freshwater head (Fetter 1994).

Figure 3-3 presents the groundwater elevation contours for the shallow-depth interval of the Alluvial Aquifer, representative of the water table. A site-wide water level survey was conducted on December 3, 2015, involving the manual collection of groundwater level data at 26 shallow wells within an approximate 1-hour period. Because groundwater levels at the site fluctuate continuously in response to changes in the river stage, these groundwater elevation contours are affected by transient conditions during the period of measurement and may not be representative of the average groundwater gradient directions.

3.3 Surface Water Results for Cr(VI) and Chromium

During the 2015 Annual Reporting Period, Cr(VI) and chromium were not detected at concentrations higher than reporting limits at any surface water monitoring locations (Table 3-4). Table 3-5 presents results for the COPCs (molybdenum, nitrate as N, and selenium), in situ byproducts (manganese, iron, and arsenic), and other geochemical indicator parameters in surface water. These constituents appear to

be generally stable across the 2015 Annual Reporting Period. There were some moderate concentrations of dissolved iron and manganese detected in samples collected from near marsh areas adjacent to the Colorado River (C-MAR-D, C-MAR-S, and RRB) due to naturally reducing conditions.

3.4 Data Validation and Completeness

Laboratory analytical data from the Fourth Quarter 2015 sampling events were reviewed by project chemists to assess data quality and to identify deviations from analytical requirements.

The following bullets summarize the notable analytical qualifications in data reported for Fourth Quarter 2015:

- Thirty Cr(VI) (USEPA Method 218.6) results exhibited a matrix interference issue that required a dilution to achieve satisfactory matrix spike recovery, resulting in an elevated reporting limit. No flags were applied.
- The analysis of hexavalent chromium was performed outside of the USEPA-recommended hold-time for MW-05-TQ415, MW-04-T4Q15, MW-08-TQ415, P1-T4Q15, P2-T4Q15, P3-T4Q15, and P4-T4Q15. The associated sample results were qualified as estimated detects and “J” flagged or qualified as estimated non-detects and “UJ” flagged.
- Fifteen samples containing detectable levels of boron were qualified as non-detects, “U” flagged at the measured concentrations.
- Bromide was recovered at concentrations lower than quality control (QC) limits in the matrix spike (MS) and/or matrix spike duplicate (MSD) of samples MW-16-Q415, MW-28-090-Q415, MW-33-150-Q415, and MW-33-090-Q415. The associated parent samples were qualified as estimated non-detects and flagged “UJ”.
- Iron was recovered at concentrations lower than QC limits in the MS and MSD of sample C-NR3-S-Q415. The associated parent sample was qualified as an estimated detect and flagged “J”.
- Dissolved potassium was recovered at concentrations lower than QC limits in the MS and MSD of sample R-28-D-Q415. The associated parent sample result was qualified as an estimated detect and flagged “J”.
- Dissolved chromium was recovered at concentrations lower than QC limits in the MS and MSD of sample MW-23-080-Q415. The associated parent sample result was qualified as an estimated detect and flagged “J”.

- Dissolved molybdenum was recovered at concentrations higher than QC limits in the MS or MSD of samples MW-47-055-Q415, MW-62-190, and MW-23-080-Q415. The associated parent sample result was qualified as an estimated detect and flagged "J".
- Dissolved magnesium was recovered at concentrations lower than QC limits in the MSD of sample MW-47-055-Q415. The associated parent sample result was qualified as an estimated detect and flagged "J". Dissolved aluminum, dissolved iron, dissolved boron, and dissolved magnesium were recovered at concentrations lower than QC limits in the MS of CW-04D-4Q15. The associated detected results were qualified as estimated detects and flagged "J", and the associated non-detect results were qualified as estimated non-detects and flagged "UJ".
- Dissolved cobalt, dissolved selenium, dissolved molybdenum, and total iron were recovered at concentrations lower than QC limits in MS and/or MSD of samples OW-01D-4Q15 and CQ-01M-4Q15. The associated detected results were qualified as estimated detects and flagged "J" and the associated non-detect results were qualified as estimated non-detects and flagged "UJ".
- Dissolved iron and dissolved magnesium were recovered at concentrations lower than QC limits in the MS and MSD of PE-01-Q415, respectively. The associated detected results were qualified as estimated detects and flagged "J", and the associated non-detect results were qualified as estimated non-detects and flagged "UJ".
- The percent difference between the sample/lab duplicate pair for TDS exceed QC criteria in samples MW-27-080-Q415, MW-46-205-Q415, MW-56D-Q415, and PGE-08-Q415. The associated results were qualified as estimated detects and flagged "J".
- Dissolved arsenic and dissolved manganese in the field duplicate pair of sample MW-41M-Q415 did not meet QC criteria. The associated sample results were qualified as estimated detects and flagged "J".
- Dissolved boron, dissolved magnesium, and dissolved calcium in the field duplicate pair of sample MW-49-365-Q415 did not meet QC criteria. The associated sample results were qualified as estimated detects and flagged "J."
- Dissolved iron in the field duplicate pair of sample MW-30-050-365-Q415 did not meet QC criteria. The associated sample results were qualified as estimated detects and flagged "J."
- Based on the March 2007 USEPA ruling, and reaffirmed in the May 2012 USEPA ruling, pH has a 15-minute holding time. As a result, all samples analyzed in a certified lab by Method SM4500-HB (pH) are analyzed outside the USEPA-recommended holding time. Therefore, the pH results for the Fourth Quarter 2015 sampling events analyzed in a certified lab are considered estimated.
- Some samples (initially analyzed within the USEPA-recommended holding times for analysis) were analyzed by a non-ADEQ-approved laboratory. This required that original samples be sent to an

ADEQ-approved laboratory for analysis. These additional results from the ADEQ-approved laboratory are shown in the table shaded gray. Some of these analyses were performed outside of the USEPA's recommended holding time. These data are considered estimated because the ADEQ-approved laboratory data confirmed the data analysis performed within the USEPA-recommended holding time by the non-ADEQ-approved laboratory.

No other significant analytical deficiencies were identified in the Fourth Quarter 2015 data. Additional details are provided in the data validation reports kept in the project file and available upon request.

In addition, PG&E identified no "suspect" detections of Cr(VI) in surface water samples or any other "suspect" samples requiring reanalysis at the laboratory; therefore, in conformance with the agencies' April 4, 2014 direction letter (DTSC 2014a), no notifications were made to DTSC and the United States Department of the Interior (DOI).

3.5 Summary of 2015 Groundwater Monitoring Program and Surface Water Monitoring Program Results

Key observations and data trends for this quarter and previous periods include the following:

- Chromium concentrations in many GMP monitoring wells near the floodplain and active extraction wells are stable or declining, with fluctuating and/or increasing concentrations present at some locations. Increasing concentrations are limited to wells located near the National Trails Highway that are under the hydraulic influence of active extraction well TW-03D.
- Concentrations in several of the East Ravine/Topock Compressor Station wells are generally fluctuating or stable with a few exceptions. Concentrations at bedrock well MW-62-110 have been fluctuating, but overall are increasing until a decrease to non-detect in October and December 2015. Concentrations at MW-68-180 show a general overall increasing trend with seasonal fluctuations seasonally and are currently the highest of any well at the site (Figure C-16).
- During the 2015 reporting period, Cr(VI) and chromium were not detected at concentrations higher than reporting limits at any surface water monitoring locations.
- Molybdenum, selenium, and nitrate continue to be detected in a subset of monitoring wells at concentrations higher than their background UTLs (CH2M Hill 2009a-c).
- Sixteen arsenic concentrations among the 106 fluvial/alluvial and bedrock well samples exceeded the California MCL (10 µg/L), while two of these samples yielded results higher than the background study UTL of 24.3 µg/L.

4 FOURTH QUARTER INTERIM MEASURES PERFORMANCE MONITORING PROGRAM EVALUATION

This section presents the quarterly PMP evaluation summary.

4.1 Water Quality Results for Performance Monitoring Program Floodplain Wells

Table F-1 in Appendix F presents the results of general chemistry and stable isotope analyses for 15 PMP monitoring wells and two river stations during sampling events from March 2005 through December 2015. These monitoring locations were selected to evaluate long-term trends in general water quality in response to IM groundwater extraction. Water samples from the selected performance monitoring locations are analyzed for general chemistry parameters, including TDS, chloride, sulfate, nitrate, bromide, calcium, potassium, magnesium, sodium, boron, alkalinity, $\delta^{2}H$, and $\delta^{18}O$, to monitor the effects of IM pumping on groundwater chemistry. Section 5.3.2.2 of this report provides an evaluation of the general chemistry groundwater data for the floodplain area.

4.2 Cr(VI) Distribution and Trends in Performance Monitoring Program Wells

The Fourth Quarter 2015 distribution of Cr(VI) in the upper (shallow wells), middle (mid-depth wells), and lower (deep wells) intervals of the alluvial aquifer is shown in plan view and cross-section view on Figure 4-1.[1] Figure 4-2 presents the Fourth Quarter 2015 Cr(VI) results for cross-section B, oriented parallel to the Colorado River. The locations of cross-sections A and B are shown on Figure 4-1.

Appendix C includes graphs of Cr(VI) concentration vs time in selected monitoring well clusters through December 2015. Analytical results for the 2015 Annual Reporting Period are presented in Table 3-1. An evaluation of chromium trends in PMP wells is presented in the annual performance evaluation in Section 5.3.

[1] On Figures 4-1 and 4-2, the Cr(VI) concentrations are color-coded based on the groundwater background Cr(VI) concentration, which is 32 µg/L (CH2M Hill 2009a). The 20 µg/L and 50 µg/L Cr(VI) concentration contours presented on Figures 4-1 and 4-2 are shown in accordance with DTSC's 2005 IM directive and are not based on the background Cr(VI) concentration for groundwater.

4.3 Performance Monitoring Program Contingency Plan Cr(VI) Monitoring

The Topock IMCP was developed to detect and control any possible migration of the Cr(VI) plume toward the Colorado River (DTSC 2005b). Currently, the IMCP consists of 24 wells that activate contingencies per criteria in the IMCP plan if their trigger levels are exceeded. The IMCP well Cr(VI) results from the Fourth Quarter 2015 and Annual Reporting Period were all lower than their trigger levels. Appendix C includes Cr(VI) concentration graphs for the IMCP wells and select other site monitoring wells.

4.4 Extraction Systems Operations

From November 1, 2015 through December 31, 2015, the volume of groundwater extracted and treated by the IM-3 system was 11,748,448 gallons. An estimated 78.7 pounds (35.7 kilograms) of chromium were removed from the aquifer between October 1, 2015 and December 31, 2015 (Table 4-1).

During Fourth Quarter 2015, extraction wells TW-03D and PE-01 operated at a combined pumping rate of 133.8 gallons per minute (gpm), including periods of planned and unplanned downtime. The average monthly pumping rates were 134.6 gpm (November 2015) and 132.9 gpm (December 2015) during the Fourth Quarter 2015. Extraction wells TW-02D and TW-02S were operated briefly during December 2015. The operational runtime percentage for the IM extraction system was 98.7 percent during this reporting period. The operations log for the extraction system during Fourth Quarter 2015, including planned and unplanned downtime, is included in Appendix G.

The concentrate (i.e., saline water) from the reverse osmosis system was shipped off site as a non-hazardous waste and was transported to Liquid Environmental Solutions in Phoenix, Arizona for treatment and disposal. Two containers of solids from the IM-3 facility were disposed of at the U.S. Ecology Chemical Waste Management facility in Beatty, Nevada during Fourth Quarter 2015. Daily IM-3 inspections included general facility inspections, flow measurements, and site security monitoring. Daily logs with documentation of inspections are maintained on site.

4.5 Hydraulic Gradient and River Levels during Quarterly Period

During the reporting period, water levels were recorded at intervals of 30 minutes with pressure transducers in 56 wells (excluding five Arizona locations) and two river monitoring stations (I-3 and RRB; Figure 4-3a). The data are typically continuous, with only short interruptions for sampling or maintenance.

Deep-zone water levels shown on Figure 4-3c indicate that potentiometric levels in monitoring wells in Arizona are higher than those in wells across the river on the California floodplain. This means that the 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.

Hydraulic gradients were measured during the Fourth Quarter 2015 for well pairs selected for performance monitoring of the two pumping centers (TW-03D and PE-01).Table 4-2 presents the monthly average hydraulic gradients that were measured for each of the gradient well pairs in November and December 2015 as well as the overall average of all well pairs. Strong landward gradients were measured each month. The overall average gradients for all well pairs were 0.0055 and 0.0059 foot per foot (ft/ft). This is 5.5 and 5.9 times greater than the required gradient of 0.001 ft/ft, respectively. The monthly average gradients for the northern well pair were 2.0 and 2.1 times the target gradient of 0.001 ft/ft, respectively. For the central well pair, the monthly average gradients were 10.6 to 11.4 times the target gradient, respectively. The southern well pair average gradients were 4.0 and 4.1 times the target gradient, respectively. Graphs of the hydraulic gradients, monthly average pumping rates, and river levels for the Fourth Quarter 2015 are discussed in the annual performance evaluation in Section 5.2.

Daily average groundwater and river elevations calculated from the pressure transducer data for the Fourth Quarter 2015 reporting period are summarized in Table E-1 in Appendix E. Groundwater elevations (or total hydraulic heads) are adjusted for temperature and salinity differences between wells (i.e., adjusted to a common freshwater equivalent). Groundwater elevation hydrographs for the PMP wells during the 2015 reporting period are included in Appendix E. The elevation of the Colorado River measured at the I-3 gauge station (location shown on Figure 4-3a) is also shown on the hydrographs in Appendix E.

Average Fourth Quarter 2015 groundwater elevations for the shallow, mid-depth, and deep wells are presented and contoured in plan view on Figures 4-3a through 4-3c. Average groundwater elevations for wells on floodplain cross-section A are presented and contoured on Figure 4-4. Several monitoring wells are significantly deeper than other wells in the lower depth interval. Due to complex vertical gradients present at portions of the Topock site, water levels for some wells are not considered in the contouring in the plan views on Figures 4-3a,b,c and in the cross-section of Figure 4-4.

For the Fourth Quarter 2015 reporting period, transducer data were recorded in wells located on the Arizona side of the Colorado River. The quarterly average groundwater elevations for wells MW-55-120,

MW-54-085, MW-54-140, and MW-54-195 are presented on Figure 4-3c, if available, and are used for contouring where appropriate. With the exception of 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.

4.6 Projected River Levels during Next Quarter

The Colorado River stage near the Topock Compressor Station is measured at the I-3 location and is directly influenced by releases from Davis Dam and, to a lesser degree, from Lake Havasu elevations, both of which are controlled by the United States Bureau of Reclamation (USBR). Total releases from Davis Dam follow a predictable annual cycle, with largest monthly releases typically in spring and early summer and smallest monthly releases in late fall/winter (November and December). Superimposed on this annual cycle is a diurnal cycle determined primarily by daily fluctuations in electric power demand. Releases within a given 24-hour period often fluctuate over a wider range of flows than that of monthly average flows over an entire year. Figure 4-5 shows the river stage measured at 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 January 2016 is based on the December 2015 USBR projections of Davis Dam release and Lake Havasu level, not the actual release and level values. The variability between measured and projected river levels is due to the difference between measured and actual Davis Dam release and Lake Havasu levels. The more recent data (last 3 years; plotted on Figure 4-5) are summarized in Table 4-3. The future projections shown on Figure 4-5 (predicted data points and lines are in different color than actual measurements) are based on USBR long-range projections of Davis Dam releases and Lake Havasu levels from December 2015. There is more uncertainty in these projections at longer times in the future because water demand is based on various elements including climatic factors.

Current USBR projections, presented in Table 4-3, show that the average Davis Dam release for January 2016 (9,400 cubic feet per second) will be more than the actual release in December 2015 (6,200 cubic feet per second). Based on January 2016 USBR projections, it is anticipated that the Colorado River level at the I-3 gage location in January 2016 will be approximately 0.2 ft higher compared to the actual levels in December 2015. Current projections show that the water levels will increase through the next quarterly reporting period (January through March), further increasing to the maximum levels of the year projected for April, as shown on Figure 4-5.

4.7 Quarterly Performance Monitoring Program Evaluation Summary

The groundwater elevation and hydraulic gradient data from November and December 2015 performance monitoring indicate that the minimum landward gradient target of 0.001 ft/ft was exceeded each month during the Fourth Quarter 2015. The overall average landward gradients during Fourth Quarter 2015 were 5.5 and 5.9 times the required minimum magnitude, respectively, as shown in Table 4-2. The gradient analysis from designated well pairs are an approved line of evidence for assessing hydraulic containment of the Cr(VI) plume created by pumping from extraction wells TW-03D and PE-01. Based on the hydraulic and monitoring data and evaluation presented in this report, the IM performance standard has been met for the Fourth Quarter 2015 reporting period.

A total of 11,748,448 gallons of groundwater was extracted during Fourth Quarter 2015 by the IM-3 treatment facility. The average pumping rate for the IM extraction system during Fourth Quarter 2015, including system downtime, was 133.8 gpm. An estimated 78.7 pounds (35.7 kilograms) of chromium were removed from groundwater during Fourth Quarter 2015, as presented in Table 4-1.

The wells that are monitored to detect trends in Cr(VI) in the IM pumping area (for example, MW-36-100, MW-39-100, MW-44-115, MW-44-125, and MW-46-175) generally continue to show overall stable or declining Cr(VI) concentrations relative to prior monitoring results, as shown in Appendix C. Presentation and evaluation of the Cr(VI) trends observed in the performance monitoring area during the Fourth Quarter 2015 reporting period are discussed in Section 5.3.

5 ANNUAL PERFORMANCE MONITORING PROGRAM EVALUATION

The section presents the annual PMP evaluation summary.

5.1 Extraction System Operations for Annual Reporting Period

5.1.1 Extraction Facilities and Operations

Extraction wells TW-03D and PE-01 operated throughout the Annual Reporting Period at the target pumping rate of 135 gpm, excluding periods of planned and unplanned downtime (Table 5-1). During the Annual Reporting Period, extraction wells TW-02D and TW-02S were operated only for short-term support of the extraction system, for operations and maintenance, or for periodic groundwater sampling.

An estimated total of 67,769,203 gallons of groundwater were extracted from January 2015 through December 2015. Approximately 318 pounds (144 kilograms) of chromium were removed from the aquifer and treated at the IM-3 treatment plant over the 2015 Annual Reporting Period (Table 4-1). The total mass of chromium removed by the IM-2 and IM-3 extraction systems during IM pumping from March 2004 through December 31, 2015 is approximately 8,470 pounds (3,840 kilograms). The average annual pumping rate during the 2015 reporting period was 129 gpm, with pumping mainly from extraction wells TW-03D and PE-01.

Figure 5-1 summarizes the monthly pumping rates, cumulative volumes extracted, and the percentage of time during which the extraction system was in operation during the 2015 Annual Reporting Period. This figure shows that pumping rates were relatively consistent month to month, with IM-3 running at close to design capacity. The consistent high pumping rates are corroborated by the high percentage of uptime for the IM extraction and treatment facilities throughout the year. The decrease in uptime during April 2015 was due to the planned annual treatment plant maintenance event. The decrease in August 2015 was due to the planned semiannual treatment plant maintenance.

5.1.2 Extracted Groundwater Quality and Trends

Extraction well TW-03D was brought online in late December 2005, and groundwater extraction at well PE-01 on the floodplain began on January 25, 2006; since that time, both wells have been operating continuously for the IM.

During the 2015 Annual Reporting Period, Cr(VI) concentrations in TW-03D decreased slightly during the early months of the year (January through May), remained stable June through October, then increased

slightly in November and December. During the Annual Reporting Period, concentrations ranged from a maximum value of 790 µg/L in January and February 2015 to a minimum value of 700 µg/L in May, June, and October 2015 (Table 5-2 and Figure 5-2). TDS concentrations were stable (Figure 5-2).

During the 2015 reporting period, Cr(VI) concentrations in the extracted groundwater at PE-01, located on the floodplain, decreased during the early months of the year (January through May), then were stable for most of the rest of the year. The detection in September was lower than those in August and October. The Cr(VI) concentrations ranged from a maximum of 5.1 µg/L in January 2015 to 0.43 µg/L in September (Figure 5-2). TDS concentrations were stable.

5.2 Capture Zone Analysis for Annual Reporting Period

5.2.1 Monthly Average Gradients

For each month of the Annual Reporting Period, the overall average hydraulic gradient (combining the three well pairs) exceeded the IM target landward gradient of 0.001 ft/ft (Table 5-3). In addition, this target was met each month for each of the three well pairs during the reporting period. This was the case even during the lower river stages observed in January and December 2015 (Figure 5-3). During the Annual Reporting Period, the average daily river levels at river stations I-3 and RRB (Figure 1-3) ranged from 455.47 to 455.24 feet above mean sea level (Table E-2).

While exceeding the performance standard each month for which the gradient was calculated, the northern well pair (MW-31-135/MW-33-150) generally exhibited the lowest measured gradients because the line connecting the two wells is not oriented in the same direction as the hydraulic gradient generated by pumping. Thus, the hydraulic gradient measurements for the northern well pair underestimate the true value.

5.2.2 Annual Average Gradients

The net annual landward gradients illustrated on the aquifer interval maps (Figures 5-4a through 5-4c, and Figure 5-5, with values listed on Table E-2) show that the gradients are landward and are comparable to the gradient maps prepared using previous monitoring data (CH2M Hill 2012b-e, 2013a-d, 2014b-e).

5.2.3 Analysis and Evaluation of Capture Zone

The methodology and results of the capture zone evaluations for 2015 are summarized in the following subsections.

5.2.3.1 Well Group Gradient Averaging

The temporal variation in magnitude and direction of horizontal hydraulic gradients in the lower-depth aquifer interval was assessed using quarterly average water levels and triangulation with linear interpretation for two well groupings (MW-31-135/MW-33-150/MW-34-100 and MW-45-095/MW-34-100/MW-27-085) in the IM performance area. Figure 5-6 shows the two well groupings and the calculated average gradients for all four quarterly monitoring periods in 2015.

This analysis shows that landward gradients were achieved during the Annual Reporting Period and that the magnitude and direction of the landward gradients were similar during each quarter. These gradients are not necessarily exactly the same as those calculated between the hydraulic gradient control well pairs (Table 5-3) because they are planar defined by each three-well group (i.e., a three-point solution) as opposed to relying on only two wells. Stronger landward gradients were calculated using the three-well method than those measured for the northern well pair MW-31-135/MW-33-150 (Table 5-3) due to a more optimally aligned gradient direction; the northern gradient pair is not aligned parallel to the direction of the hydraulic gradient in this area during IM-3 pumping.

5.2.3.2 Particle Track Analysis

Particle tracking was conducted in 2006 to calculate the direction and distance that groundwater would likely flow using selected starting points in the floodplain under the dual well (TW-3D and PE-1) IM pumping system. At the time, TW-3D and PE-1 were pumping a combined annual average rate of 131.8 gpm. The 2006 annual IM performance evaluation report (CH2M HILL, 2007) contains the particle tracking figure and the methods, input parameters, and data used for this analysis.

A particle tracking analysis using 2015 data was not performed because the pumping locations have not changed, the combined pumping rates for 2015 are estimated to be essentially the same (129.0 gpm) as 2006, the river elevations were similar, and the gradients for the lower interval were comparable for the 2006 and 2015 annual periods.

5.3 Evaluation of Groundwater Quality Trend

5.3.1 Cr(VI) Distribution and Trends

Figure 4-1 presents the Fourth Quarter 2015 Cr(VI) concentration results in floodplain wells in the upper, mid-depth, and lower intervals of the Alluvial Aquifer. The Cr(VI) contours presented on this figure incorporate data from the most comprehensive sampling event of the year.

Figure 5-7 presents graphs of Cr(VI) concentration vs time for selected deep monitoring wells in the floodplain area through December 2015. Cr(VI) results are plotted for wells MW-34-100, MW-36-090, MW-36-100, MW-44-115, MW-44-125, and MW-46-175. Analytical results for September 2013 through the 2015 Annual Reporting Period are presented in Table 3-1. The locations of these deep wells selected for performance evaluation are shown on Figure 4-1. Also, Appendix C includes Cr(VI), molybdenum, nitrate, and selenium concentration graphs for selected monitoring well clusters through December 2015.

Wells showing marked decreases in concentration are generally in the floodplain area where IM pumping is removing chromium in groundwater. Wells with historical detections near or at reporting limits remained at these levels during the Fourth Quarter 2015 period. Cr(VI) concentrations have remained steady or have decreased in many wells since IM and PE-01 pumping began in 2004 and 2005, respectively (Figure 5-7 and Appendix C).

Key Cr(VI) concentration trends over the long term for the PMP wells sampled during the 2015 reporting period include:

- Concentrations at the MW-20 cluster (located near the TW-03D pumping well) indicate generally decreasing concentrations at the shallow well MW-20-070 (since 2011), decreasing concentrations at MW-20-100 (since May 2007), and variable concentrations at MW-20-130 (Figure C-3).
- As shown on Figure 5-7 and Figure C-6, well MW-34-100 has shown a seasonally fluctuating trend in Cr(VI) concentration over the past 8 years; since June 2006, concentrations at this well have shown a general decreasing trend. Landward gradients have been present at this location since IM pumping began; therefore, the seasonal fluctuations in concentration observed at MW-34-100 are not considered an indication of any migration of the plume toward the river.
- Deep well MW-36-100 Cr(VI) concentrations initially increased upon the startup of PE-01 pumping, began to decrease in 2007, and have remained lower than 100 µg/L since late 2008, as shown on Figures 5-7 and C-7.
- Deep well MW-39-100 concentrations steadily declined since the start of IM pumping (Figure C-8).
- Deep well MW-44-115 has shown a downward trend since July 2006, as presented on Figures 5-7 and C-10. Well MW-44-125 has also shown an overall downward trend since November 2008, as presented on Figures 5-7 and C-10.
- Concentrations in deep well MW-46-175 have shown a seasonally fluctuating but overall downward trend since 2007, as presented on Figures 5-7 and C-11.
- Well TW-04, a deeper well, has shown a declining trend since March 2007, as presented on Figure C-19.

5.3.2 Groundwater Geochemistry in Interim Measures Extraction Area

5.3.2.1 Oxidation-reduction Potential Evaluation

Arsenic and manganese samples were collected to establish baseline conditions of in situ byproducts that may be produced upon implementation of the groundwater remedy. The distribution of these redox indicator parameters is generally consistent with previous years (Figures 5-8 and 5-9). Reducing conditions are prevalent in wells completed near the Colorado River (where there is a higher level of organic material in the fluvial sediments) than in wells located further to the west from the Colorado River completed in alluvial sediments with a lower organic carbon content.

5.3.2.2 General Chemistry Evaluation

Fifteen floodplain wells were sampled for chemical performance monitoring parameters over the period of March 2005 through January 2015 (Tables F-1 and D-4). Shallow-depth wells exhibit both increases and decreases in some of these same parameters during this period. The majority of the field parameters in groundwater samples from these wells remained relatively stable during this period (Table 3-1).

5.3.2.3 Stable Isotope Evaluation

Analysis of the $\delta^{18}O$ and $\delta^{2}H$ provide a method of tracking the mixing occurring in floodplain groundwater as a result of IM extraction. The lighter signatures (left side of Figure 10) are generally found in the river (R-28 and HNWR-1A) and fluvial non-plume well samples, whereas the heaviest signatures are found in selected alluvial plume wells (for example MW-20-130 on the right side of the plot), which likely contain higher percentages of water that has flowed from the upland areas or has been affected by evaporation in the cooling towers (Figure 5-10).

The effects of IM pumping on the isotopic signature of floodplain wells have been presented in previous reports (CH2M Hill 2015c). The percent river water signature was calculated by using composite statistics for (δ2H) isotope data from site river water samples (light fraction) and groundwater samples with greater than 3,000 µg/L Cr(VI) (heavy fraction; termed “industrial water”). As previously reported, it is evident that the isotopic signature in most industrial signature wells has progressed towards a river water signature since IM pumping began. This is likely a result of the continuous landward gradient created by IM pumping and the resultant mixing of industrial water with river-influenced groundwater. These changes are most likely due to lateral and downward movement of shallow floodplain water, which has an isotopic signature similar to that of river water.

5.4 Summary, Conclusions, and Status of Interim Measures Operations

5.4.1 Performance Evaluation

As of March 2015, the IM has operated full-time for 11 years and has been successful in meeting the IM objectives and performance criteria. This section summarizes the conclusions of IM operations and performance monitoring for the 2015 Annual Reporting Period.

5.4.1.1 Attainment of Performance Standard

Throughout 2015, the IM extraction system (combined wells TW-03D and PE-01) operated at the target pumping rate of 135 gpm, excluding periods of planned and unplanned downtime. The operational run-time percentage for the extraction system was 95.1 percent during the 2015 Annual Reporting Period. The average pumping rate for the IM extraction system, including downtime, during the annual period was 129 gpm.

The following are results and conclusions of the 2015 performance evaluation.

- A total of 67,769,204 gallons of groundwater was extracted and treated at the IM-3 system during the 2015 Annual Reporting Period. The IM system removed approximately 318 pounds (144 kilograms) of chromium from the aquifer during the 2015 Annual Reporting Period.
- The IM pumping rate was sufficient to exceed the minimum overall average landward gradient metric throughout the 2015 Annual Reporting Period. The strong landward gradients were maintained, even during the period of lower river stages in January 2015 and December 2015.
- The hydraulic gradients measured in the approved well pairs exceed the metric used as a line of evidence for hydraulic plume control as a result of pumping from extraction wells TW-03D and PE-01.

5.4.1.2 Cr(VI) Distribution and Trends

The following are key conclusions on Cr(VI) distribution and trends observed in the IM performance monitoring area during 2015.

- Overall, the groundwater Cr(VI) concentrations in the floodplain are stable or decreasing. The ongoing monitoring has shown marked decreases in Cr(VI) concentration in the floodplain areas where IM pumping exerts a strong influence on hydraulic gradients (for example, well clusters MW-36, MW-39, and MW-44).

- MW-34-100 has shown a seasonally fluctuating trend in Cr(VI) concentration over the past 8 years but with a general downward trend. Also, landward gradients have been present at this location since IM pumping began.
- The groundwater ORP and stable isotope data continue to confirm that continued IM extraction is drawing more oxidizing river-influenced groundwater into the performance monitoring area.

5.4.2 Status of Operations and Maintenance

Per DTSC acknowledgment in a letter dated July 20, 2015 (DTSC 2015), PG&E will continue to operate TW-03D at a target pumping rate of 135 gpm, except for periods of planned and unplanned downtime, to maintain appropriate hydraulic gradients across the Alluvial Aquifer. If needed, TW-02D, TW-02S, or PE-01 will be pumped to supplement and achieve the total flow.

Current USBR projections show that river levels will increase during the next quarterly reporting period (January through March 2016) through April and decline from April into the winter (Figure 4-5). By April 2016, the average monthly river elevations are projected to reach their maximum level of the year. The lowest river levels during the upcoming IM operations year are expected to occur in December 2016.

6 UPCOMING OPERATION AND MONITORING EVENTS

Reporting of the IM extraction and monitoring activities will continue as described in the PMP and under direction from DTSC. Monitoring results, operations, and performance monitoring data will be reported in the First Quarter 2016 Quarterly Monitoring Report, which will be submitted by April 30, 2016.

6.1 Groundwater Monitoring Program

6.1.1 Quarterly Monitoring

Consistent with the July 23, 2010 DTSC sampling schedule approval (DTSC 2010a), the First Quarter 2016 monitoring event occurred February 22 through February 25, 2016. This sampling event was conducted at 20 wells.

6.1.2 Monthly Monitoring

Monthly sampling of TW-03D will continue during the first 2 weeks of each month. PE-01 has been shut down (February 2016); however, monthly sampling will continue in coordination with IM-3 staff. Results will be reported in the First Quarter 2016 Quarterly Monitoring Report.

6.2 Surface Water Monitoring Program

The First Quarter 2016 surface water monitoring event was conducted February 23 and 24, 2016 at locations in the RMP monitoring network. In addition, the First Quarter 2016 includes an additional “low river” surface water monitoring event, conducted on January 26 and 27, 2016. Results for both events will be reported in the First Quarter 2016 Quarterly Monitoring Report.

6.3 Performance Monitoring Program

6.3.1 Extraction

The IM3 extraction system will be operated in compliance with the DTSC conditional approval letter dated July 20, 2015 (DTSC 2015). Extraction will be primarily from TW-03D coupled with PE-01 to maintain gradient control as needed during low river stages. If TW-03D cannot produce the target pumping rate of 135 gpm, then TW-02D and/or TW-02S may be pumped to supplement and achieve total flow.

As of early February 2016, PE-01 has been turned off, with the pumping shifted to TW-03D and supplemented by TW-02D. Hydraulic gradients have been monitored at key well pairs to ensure that 0.001 ft/ft landward gradient continues to be met. As requested at the July 2015 CWG meeting, monthly IM-3 hydraulic performance data have been shared with agencies, Tribes, and stakeholders. The

February 2016 data snapshot was submitted to DTSC and DOI on March 14, 2016. The next monthly data will be submitted by April 21, 2016. In addition, quarterly GMP monitoring results from wells listed within the July 20, 2015 DTSC approval letter will be compared to the maximum Cr(VI) and chromium concentrations measured in 2014 (or for biennial sampling frequency, the 2013 maximum concentrations), and results that exceed the previous maximum will be reported to DTSC within 40 days after the end of the quarterly GMP sampling event.

6.3.2 Transducer Download

Downloads of the transducers in the key gradient control wells (MW-27-085, MW-31-135, MW-33-150, MW-34-100, and MW-45-095) and the MW-33 cluster will continue via telemetry at monthly or more frequent intervals, as needed to support IM-3 pumping operations, during First Quarter 2016. Downloads of the remainder of the transducers will occur monthly on the first week of each month during First Quarter 2016.

7 RECOMMENDATIONS

This section presents the recommended modifications to the sampling program(s).

7.1 Performance Monitoring Program

Chromium sample results for all wells have generally remained lower than their respective trigger levels since they were established in August 2006 and approved in July 2008 (CH2M Hill 2006; DTSC 2008b). Most wells yielding concentrations higher than the IM performance standard of 20 µg/L for Cr(VI) show stable or decreasing trends (see Appendix C); therefore, no changes in trigger levels (or any other changes) to the PMP program are recommended at this time.

7.2 Groundwater Monitoring Program

7.2.1 Sampling at MW-45-95a

With the June 27, 2014 DTSC approval of sampling frequency modifications that were recommended in the Fourth Quarter and Annual PMP and GMP report (cite March 2014), sampling at MW-45-095a was discontinued based on the proximity of this well to extraction well PE-01, which has a similar screen interval and is sampled monthly.

7.2.2 Recommendations From the Current Sampling Methods Evaluation

This section provides recommendations based on results of a method trials analysis at select wells following 1 full year of sample collection. Recommendations provided herein are in addition to (and do not take the place of) existing recommendations under agency review discussed in Section 7.2.3.

7.2.2.1 Recommendations from Sampling Method Trials

Results from 1 year of sampling method trials at select wells were evaluated in Section 2.1.3.2 of this report. Results show consistency between the low-flow sampling method and historical three-volume purge sampling at both MW-38S and MW-38D. Therefore, it is recommended that the trial end at these two locations and both be sampled by low-flow methods moving forward. Sampling method trials for HYDRASleeve™ sampling were also continued in 2015 at wells MW-40S and MW-40D. At MW-40S, only two rounds of comparison samples have been collected to date, and while results have been consistent so far, it is recommended that low-flow and HYDRASleeve™ sample frequency be increased to the same (semiannual) frequency as MW-40D in 2016. This would collect twice the number of samples at this location in 2016 as is currently being collected and help to recommend a single future sample collection method. At MW-40D, three rounds of HYDRASleeve™ sampling results have been collected to

date. Initial results suggest that HYDRASleeve™ sampling may be a viable alternative at this location to low-flow sampling, but that additional sampling is needed to complete the evaluation. It is also recommended that the sampling trial at this location be extended through 2016 to help recommend a single future sample collection method. An updated evaluation of the HYDRASleeve™ sampling method trials at MW-40S and MW-40D will be presented in the 2016 Annual Report.

Recommendations provided herein are in addition to (and do not take the place of) existing recommendations under agency review discussed in Section 7.2.3.

7.2.3 Groundwater Monitoring Program Requests under Agency Review

With approval of the sampling frequency modification on June 27, 2014, the DTSC also requested a revised sampling plan for non-chromium metals and water quality analyses. The approved purge methods and sampling frequencies for several DTSC-approved sampling programs, as well as proposed sampling plans for other non-chromium analyses, were included in the 2014 Annual Report (CH2M Hill 2015a). These recommendations, presented in the 2014 Annual Report, are awaiting regulatory agency review and comment.

In August, 2015, PG&E sent a letter to DTSC (PG&E 2015) recommending additional wells for low-flow sampling as well as proposing an additional sampling method trial for select bedrock wells. Recommendations made in the letter still stand and are awaiting agency decision.

8 REFERENCES

Arcadis. 2014. 2014 Annual Monitoring Report for the Upland Reductive Zone in In-situ Pilot Test. November 19.

Arizona Department of Environmental Quality (ADEQ). 2010. Email. “Re: Reminder – sampling frequency modification for Arizona wells proposed with 4Q2009 data submittal.” April 23.

_____. 2015. Letter from Nicole Osuch/ADEQ to Yvonne Meeks/PG&E. “Response to Review of Arizona Monitoring Wells November – December 2014 Groundwater Sampling results.” June 29.

California Department of Toxic Substances Control (DTSC). 2005a. Letter to PG&E. “Requirements for Groundwater and Surface Water Monitoring Program, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California (EPA ID No. CAT080011729).” April 26.

_____. 2005b. Letter to PG&E. “Criteria for Evaluating Interim Measures Performance Requirements to Hydraulically Contain Chromium Plume in Floodplain Area, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California (EPA ID No. CAT080011729).” February 14.

_____. 2005c. Letter. “Contingency Plan for Sentry Well Groundwater Monitoring.” February 14.

_____. 2007a. Letter. “Approval of Updates and Modifications to the Interim Measures Performance Monitoring Program. Pacific Gas and Electric Company, Topock Compressor Station.” October 12.

_____. 2007b. Letter. “Updates and Modifications to the PG&E’s Topock Interim Measures Performance Monitoring Program. PG&E Topock Compressor Station, Needles, California.” July 27.

_____. 2007c. Letter. “Conditional Approval of Updates and Modifications to the Groundwater and Surface Water Monitoring Program, Pacific Gas and Electric Company, Topock Compressor Station.” September 28.

_____. 2008a. Letter. “Modifications to Hydraulic Data Collection for the Interim Measures Performance Monitoring Program at Pacific Gas and Electric Company (PG&E), Topock Compressor Station, Needles, California.” July 14.

_____. 2008b. Letter. “Modifications to Chemical Performance Monitoring and Contingency Plan for the Floodplain Interim Measures Performance Monitoring Program at Pacific Gas and Electric Company (PG&E), Topock Compressor Station, Needles, California.” July 17.

_____. 2009a. Email. “Re: Request for Combined Reporting of Topock GMP and PMP.” May 26.

_____. 2009b. Letter. “Comments on January 27, 2009 Draft Corrective Measures Study/Feasibility Study (CMS/FS) Report for SWMU1/AOC1, (EPA ID NO. CAT080011729).” March 26.

_____. 2010a. Email. “Re: Topock GMP sampling event timing and reporting schedule.” July 23.

_____. 2010b. Letter. “Arizona Monitoring Well Sampling Frequency Modification. Pacific Gas and Electric Company (PG&E), Topock Compressor Station, Needles, California.” April 28.

_____. 2010c. Email. “Re: Topock GMP Monitoring Frequency Modification.” March 3.

_____. 2011. Email. “Re: Topock GMP COPC sampling plan: topic for weekly tech calls.” November 18.

_____. 2013. Letter. “Repairing Wells in Accordance with California Well Standards at Pacific Gas and Electric Company (PG&E), Topock Compressor Station, Needles, California (EPA ID NO. CAT080011729).” January 28.

_____. 2014a. Directives on Outstanding Issues of the Response to Basis of Design Report/Intermediate (60%) Design Comments for PG&E Topock Compressor Station Remediation Site. April 4.

_____. 2014b. Email from Chris Guerre/DTSC to Yvonne Meeks/PG&E. “PG&E Topock: DTSC response to Section 7 2013 Annual Report Recommendations.” June 27.

_____. 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.

_____. 2016. PG&E Topock Compressor Station: Environmental Investigation and Cleanup Activities. <web page> Located at: http://dtsc-topock.com/.

California Regional Water Quality Control Board. 2006. Letter to PG&E. "Request to Treat Groundwater Generated through Groundwater Monitoring and Other Field Activities through the Interim Measures No. 3 Groundwater Remediation System Facility, PG&E Topock Compressor Station, Needles, California. January 26.

_____. 2011. Letter to DOI. "Enforcement of Applicable or Relevant and Appropriate Requirements for the Interim Measure 3 Facility – PG&E Topock Compressor Station Site." July 26.

CH2M Hill. 2005a. Performance Monitoring Plan for Interim Measures in the Floodplain Area, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California. April 15.

_____. 2005b. Sampling and Analysis Field Procedures Topock Program Manual, Revision 1, Pacific Gas and Electric Company, Topock Project. March 31.

_____. 2006. Contingency Plan for IM Performance Monitoring, Revision 1, dated August 2006. August 28.

_____. 2007. Performance Monitoring Report for Fourth Quarter 2006 and Annual Performance Evaluation, February 2006 through January 2007, PG&E Topock Compressor Station, Needles, California. April 6.

_____. 2008. Groundwater Background Study, Steps 3 and 4: Final Report of Results, PG&E Topock Compressor Station, Needles, California. July 23.

_____. 2009a. Revised Final RCRA Facility Investigation/Remedial Investigation Report, Volume 2— Hydrogeologic Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California. February 11.

_____. 2009b. Final RCRA Facility Investigation/Remedial Investigation Report, Volume 2 Addendum— Hydrogeologic Characterization and Results of Groundwater and Surface Water Investigation, Pacific Gas and Electric Company, Topock Compressor Station, Needles, California. June 29.

_____. 2009c. Final Groundwater Corrective Measures Study/Feasibility Study Report for SWMU 1/AOC 1 and AOC 10, Appendix A, PG&E Topock Compressor Station, Needles, California. December 16.

_____. 2011. Final Revised Implementation Plan for Repair of Monitoring Wells MW-38S and MW-38D and Old Well/Pipe Reconnaissance. February 11.

_____. 2012a. PG&E Program Quality Assurance Project Plan, Revision 2. August.

_____. 2012b. Fourth Quarter 2011 and Annual Interim Measures Performance Monitoring and Site- Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. March 15.

_____. 2012c. First Quarter 2012 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. April 30.

_____. 2012d. Second Quarter 2012 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. August 15.

_____. 2012e. Third Quarter 2012 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. November 30.

_____. 2012f. Topock – Proposed Technical Trial for Alternative Sampling Approaches at Selected Monitoring Wells (Technical Memorandum). August 27.

_____. 2013a. Fourth Quarter 2012 and Annual Interim Measures Performance Monitoring and Site- Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. March 15.

_____. 2013b. First Quarter 2013 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. May 15.

_____. 2013c. Second Quarter 2013 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. August 15.

_____. 2013d.Third Quarter 2013 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. November 29.

_____. 2013e. Basis of Design Report/Intermediate (60%) Design Submittal for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California. April 5.

_____. 2014a. Basis of Design Report/Pre-Final (90%) Design Submittal for the Final Groundwater Remedy. September 8.

_____. 2014b. Fourth Quarter 2013 and Annual Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. March 14.

_____. 2014c. First Quarter 2014 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. April 30.

_____. 2014d. Second Quarter 2014 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. August 15.

_____. 2014e. Third Quarter 2014 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. December 15.

_____. 2015a. Fourth Quarter 2014 Interim Measures Performance Monitoring and Site-Wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. March 13.

_____. 2015b. First Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. April 2015.

_____. 2015c. Second Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. August 2015.

_____. 2015d. Third Quarter 2015 Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California. December 2015.

Fetter, C.W. 1994. Applied Hydrogeology, Third Edition. Published by Prentice-Hall Inc., New Jersey.

Pacific Gas and Electric Company (PG&E). 2008. Approved Modifications to the Topock IM Performance Monitoring Program PG&E Topock Compressor Station, Needles, California. August 4.

_____. 2015. Proposed Trial of Alternative Sampling Approaches at Select Monitoring Wells in the Topock GMP and CMP. August 21.

TABLES

Table 1-1

Topock Monitoring Reporting Schedule

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Time Period	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Groundwater Monitoring Program	January - March	April - June	July - October	November - December
Surface Water Monitoring Program	January - March	April - June	July - October	November - December
Performance Monitoring Program	January - March	April - June	July - October	November - December
IM-3 Monitoring (Chromium removed)	January - February	March - May	June - September	October - December

TABLE 2-1
Results of MW-38 and MW-40 Sampling Method Trials, Fourth Quarter 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

		MW-38 Low Flow Evaluation									
		MW-38S (quarterly well)					MW-38D (semiannual well)				
		Sampling Event	Date	Cr(VI) Concentration By Method (ug/L)			Evaluation	Date	Cr(VI) Concentration By Method (ug/L)			Evaluation
				3V Purge	*Low Flow*	*HYDRASleeve™*			*3V Purge*	*Low Flow*	*HYDRASleeve™*	
Pre-Trial Samples		2Q 2014	5/14/2014	1.5	--	--	3V Only	5/14/2014	17	--	--	3V Only
		3Q 2014	9/22/2014	<0.2	--	--	3V Only	--	--	--	--	well not sampled
Method Trial Event Number	1[C]	4Q 2014	11/5/2014	<0.2	<0.2	--	3V vs LF	11/5/2014	17	18	--	3V vs LF
	2[C]	1Q 2015	2/9/2015	<0.2	0.22	--	3V vs LF	--	--	--	--	well not sampled
	3[C]	2Q 2015	4/30/2015	<0.2	<0.2	--	3V vs LF	4/30/2015	16	20	--	3V vs LF
	4[C]	3Q 2015	9/28/2015	<0.2	<0.2	--	3V vs LF	--	--	--	--	well not sampled
	5[A]	4Q 2015	12/1/2015	<0.2	<0.2	--	3V vs LF	12/1/2015	20	19	--	3V vs LF

		MW-40 HYDRASleeve™ Evaluation									
		MW-40S (annual well)					MW-40D (semiannaul well)				
		Sampling Event	Date	Cr(VI) Concentration By Method (ug/L)			Evaluation	Date	Cr(VI) Concentration By Method (ug/L)			Evaluation
				3V Purge	*Low Flow*	*HYDRASleeve™*			*3V Purge*	*Low Flow*	*HYDRASleeve™*	
Pre-Trial Samples		1Q 2014	--	--	--	--	well not sampled	--	--	--	--	well not sampled
		2Q 2014	--	--	--	--	well not sampled	4/24/2014	130	--	--	3V Only
		3Q 2014	--	--	--	--	well not sampled	--	--	--	--	well not sampled
Method Trial Event Number	1[C]	4Q 2014	12/4/2014	--	7.6	7.0	LF vs HYDRASleeve ™	12/4/2014	--	160	73.0	LF vs HYDRASleeve ™
	2[C]	1Q 2015	--	--	--	--	well not sampled	--	--	--	--	well not sampled
	3[C]	2Q 2015	--	--	--	--	well not sampled	5/12/2015	--	120	<1.0	LF vs HYDRASleeve ™
	4[C]	3Q 2015	--	--	--	--	well not sampled	--	--	--	--	well not sampled
	5[A]	4Q 2015	12/7/2015	--	8.1	10	LF vs HYDRASleeve ™	12/7/2015	--	98	82	LF vs HYDRASleeve ™

Note:
"--" = Not Collected
[A] Sampling event conducted by ARCADIS.
[C] Sampling event conducted by CH2M Hill
3V = Three (3) volume sampling method
LF = Low flow sampling method

Table 3-1

Groundwater Sampling Results, September 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

								Selected Field Parameters		
Location ID	Aquifer Zone	Sample Date		Sample Method	Hexavalent Chromium (ug/L)	Dissolved Chromium (ug/L)	Specific Conductance (us/Cm)	ORP (mV)	Field pH	Turbidity
MW-09	SA	12/2/2014		LF	210	210	3,206	-68	7.37	1
MW-09	SA	5/12/2015		LF	230	230	3,507	-174	7.62	1
MW-09	SA	10/7/2015		LF	200	230	3,048	89	7.34	1
MW-09	SA	12/1/2015		LF	190	200	3,400	30.8	7.44	4
MW-10	SA	12/2/2014		LF	200	220	2,945	-66	7.4	15
MW-10	SA	5/12/2015		LF	280	290	3,414	-167	7.44	16
MW-10	SA	10/7/2015		LF	190	210	2,609	71	7.42	20
MW-10	SA	12/1/2015		LF	150	170	2,946	66.7	7.42	39
MW-11	SA	12/2/2014	FD	LF	130	120	--	--	--	--
MW-11	SA	12/2/2014		LF	130	120	2,526	-5	7.2	20
MW-11	SA	5/12/2015		LF	130	130	2,565	-141	7.47	2
MW-11	SA	10/7/2015		LF	130	130	2,378	75	7.42	17
MW-11	SA	12/2/2015	FD	LF	120	110	--	--	--	--
MW-11	SA	12/2/2015		LF	120	110	2,733	76.6	7.63	3
MW-12	SA	12/15/2014		LF	2,300	2,300	7,006	-59	7.6	1
MW-12	SA	5/19/2015		LF	1,900	2,200	7,122	-81	7.74	1
MW-12	SA	12/2/2015		LF	2,300	2,300	6,602	97.8	7.99	1
MW-13	SA	11/13/2014		LF	21	21	2,390	30	7.28	4
MW-13	SA	12/7/2015		LF	23	22	2,220	62.5	7.29	4
MW-14	SA	11/12/2014		LF	15	16	2,380	12	7.54	18
MW-14	SA	5/6/2015		LF	16	18	2,239	-111	7.45	6
MW-14	SA	12/7/2015		LF	17	16	2,209	30.9	7.63	106
MW-15	SA	11/11/2014		LF	13	13	2,284	28	7.35	2
MW-15	SA	12/9/2015		LF	13	12	1,805	69	7.57	4
MW-16	SA	12/8/2015		LF	11	11	1,128	63	7.52	9
MW-17	SA	12/9/2015		LF	13	14	1,369	153	7.7	2
MW-18	SA	11/13/2014		LF	21	21	1,643	24	7.45	1
MW-18	SA	12/7/2015		LF	22	21	1,509	28.6	7.45	2
MW-19	SA	12/10/2014		LF	630	680	2,458	-78	7.58	3
MW-19	SA	5/14/2015		LF	630	690	2,490	-108	7.44	15
MW-19	SA	12/7/2015		LF	450	430	1,866	58.8	7.44	6
MW-20-070	SA	12/15/2014		LF	2,000	2,100	2,049	-86	7.73	1
MW-20-070	SA	5/19/2015	FD	LF	1,900	2,200	--	--	--	--
MW-20-070	SA	5/19/2015		LF	1,900	2,200	2,005	-178	7.34	4
MW-20-070	SA	12/8/2015		LF	1,900	1,900	1,793	62.2	7.7	2
MW-20-100	MA	12/15/2014		LF	1,900	1,900	2,801	-83	7.48	6
MW-20-100	MA	5/19/2015		LF	2,400	2,800	2,692	-190	7.23	3
MW-20-100	MA	12/8/2015		LF	1,600	1,700	2,362	52.9	7.28	8
MW-20-130	DA	12/15/2014	FD	LF	6,500	6,300	--	--	--	--
MW-20-130	DA	12/15/2014		LF	6,600	6,600	11,340	-151	7.46	1
MW-20-130	DA	5/19/2015		LF	7,600	7,900	11,790	-252	7.2	2
MW-20-130	DA	12/8/2015	FD	LF	7,700	8,000	--	--	--	--
MW-20-130	DA	12/8/2015		LF	7,700	8,000	11,709	59.3	7.48	20
MW-21	SA	11/11/2014		LF	2.4	2.7	11,320	-13	7.12	7
MW-21	SA	5/6/2015		LF	1.5	1.4	10,660	-343	7.17	36
MW-21	SA	12/9/2015		LF	1.5	1.4	11,581	-18	7.2	2
MW-22	SA	12/18/2014		LF	ND (1)	ND (5)	29,323	-42.3	6.62	6
MW-22	SA	4/22/2015		LF	ND (1)	ND (1)	29,772	-391	6.9	5
MW-22	SA	12/3/2015		LF	ND (1)	ND (1)	21,990	-79.6	6.54	9
MW-23-060	BR	11/10/2014		3V	38	32	18,280	-62	9.18	1
MW-23-060	BR	4/30/2015		3V	38	34	17,330	70	8.88	1
MW-23-060	BR	12/3/2015		VP	36	32	16,993	-44	9.78	2
MW-23-080	BR	11/10/2014		3V	5.3	5.2	18,420	-220	10.03	1
MW-23-080	BR	4/30/2015		3V	3	2.5	17,350	-143	10.06	1
MW-23-080	BR	12/3/2015		VP	1.8	3.2 J	16,281	-39.5	10.42	1

Table 3-1

Groundwater Sampling Results, September 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

									Selected Field Parameters		
Location ID	Aquifer Zone	Sample Date		Sample Method	Hexavalent Chromium (ug/L)	Dissolved Chromium (ug/L)	Specific Conductance (us/Cm)	ORP (mV)	Field pH	Turbidity
MW-24A	SA	11/4/2014		LF	ND (0.2)	ND (5)	2,126	-204	8.12	15
MW-24A	SA	4/29/2015	FD	LF	0.3	ND (1)	--	--	--	--
MW-24A	SA	4/29/2015		LF	0.28	ND (1)	2,005	-198	8.29	5
MW-24A	SA	12/1/2015		LF	ND (0.2)	4	1,779	-142.2	8.57	12
MW-24B	DA	12/18/2014		LF	ND (1)	5.4	19,150	-250	8.25	5
MW-24B	DA	4/29/2015		LF	ND (1)	1.8	20,200	-280	7.7	3
MW-24B	DA	12/1/2015		LF	32	35	18,741	-92.8	8.14	6
MW-24BR	BR	12/3/2014		3V	--	--	16,680	-194	7.94	6
MW-24BR	BR	12/4/2014		3V	ND (1)	ND (1)	--	--	--	--
MW-24BR	BR	12/2/2015		VP	ND (1)	ND (1)	13,576	-218.7	7.73	5
MW-25	SA	12/2/2014		LF	140	130	1,967	-42	7.38	1
MW-25	SA	5/11/2015		LF	91	87	2,081	-141	8	1
MW-25	SA	12/7/2015		LF	150	140	5,888	85.7	7.94	14
MW-26	SA	12/15/2014	FD	LF	2,200	2,300	--	--	--	--
MW-26	SA	12/15/2014		LF	2,400	2,300	4,667	-60	7.44	2
MW-26	SA	5/19/2015		LF	2,400	2,500	4,682	-240	7.5	2
MW-26	SA	12/8/2015	FD	LF	2,600	2,700	--	--	--	--
MW-26	SA	12/8/2015		LF	2,600	2,700	4,077	67.7	7.26	23
MW-27-020	SA	11/4/2014		LF	ND (0.2)	ND (1)	985	-20.5	7.5	2
MW-27-020	SA	12/3/2015		LF	ND (0.2)	ND (1)	1,086	-39.6	7.6	2
MW-27-060	MA	11/4/2014	FD	LF	ND (0.2)	ND (1)	--	--	--	--
MW-27-060	MA	11/4/2014		LF	ND (0.2)	ND (1)	977.3	-116.3	7.58	4
MW-27-060	MA	12/3/2015	FD	LF	ND (0.2)	ND (1)	--	--	--	--
MW-27-060	MA	12/3/2015		LF	ND (0.2)	ND (1)	1,009	-133.6	7.53	19
MW-27-085	DA	11/4/2014		LF	ND (0.2)	ND (1)	8,893	-24.6	7.39	1
MW-27-085	DA	4/20/2015	FD	LF	ND (0.2)	ND (1)	--	--	--	--
MW-27-085	DA	4/20/2015		LF	ND (0.2)	ND (1)	10,030	-38.6	7.43	1
MW-27-085	DA	12/3/2015		LF	ND (0.2)	ND (1)	9,975	-58	7.24	2
MW-28-025	SA	11/11/2014		LF	ND (0.2)	ND (1)	1,061	105.9	7.09	1
MW-28-025	SA	4/21/2015		LF	ND (0.2)	ND (1)	968.4	-280	6.99	1
MW-28-025	SA	12/2/2015		LF	ND (0.2)	ND (1)	1,215	75.8	7.19	1
MW-28-090	DA	11/11/2014		LF	ND (0.2)	ND (1)	6,117	-28.1	7.1	7
MW-28-090	DA	4/21/2015		LF	ND (0.2)	ND (1)	5,002	-38	7.09	10
MW-28-090	DA	12/2/2015		LF	ND (0.2)	ND (1)	4,972	-43.6	7.13	1
MW-29	SA	11/10/2014		LF	ND (0.2)	ND (1)	2,329	-111.4	7.31	1
MW-29	SA	4/21/2015		LF	ND (0.2)	ND (1)	2,490	-309	7.18	1
MW-29	SA	12/1/2015		LF	0.24	ND (1)	2,718	-120.3	7.17	1
MW-30-030	SA	11/10/2014		LF	0.21	ND (1)	10,548	-117.3	7.56	2
MW-30-030	SA	12/3/2015		LF	ND (0.2)	2.3	11,993	-112.3	7.65	18
MW-30-050	MA	11/10/2014	FD	LF	ND (0.2)	ND (1)	--	--	--	--
MW-30-050	MA	11/10/2014		LF	ND (0.2)	ND (1)	1,040	7.3	7.58	1
MW-30-050	MA	12/3/2015	FD	LF	ND (0.2)	ND (1)	--	--	--	--
MW-30-050	MA	12/3/2015		LF	ND (0.2)	ND (1)	1,048	-56	7.42	2
MW-31-060	SA	12/3/2014		LF	600	660	3,212	-10	7.68	25
MW-31-060	SA	5/13/2015		LF	480	490	3,707	-188	7.52	1
MW-31-060	SA	12/7/2015		LF	920	880	2,853	-26.5	7.63	2
MW-31-135	DA	11/5/2014		LF	12	12	12,960	-202	7.8	8
MW-31-135	DA	12/7/2015		LF	13	12	12,693	-187.3	7.75	2
MW-32-020	SA	11/11/2014	FD	LF	ND (1)	ND (5)	--	--	--	--
MW-32-020	SA	11/11/2014		LF	ND (1)	ND (5)	43,426	-94.2	6.84	4
MW-32-020	SA	12/3/2015	FD	LF	ND (1)	ND (5)	--	--	--	--
MW-32-020	SA	12/3/2015		LF	ND (1)	1.2	38,706	-58.6	6.83	3
MW-32-035	SA	11/11/2014		LF	ND (1)	ND (1)	11,596	-112.1	7.09	11
MW-32-035	SA	12/1/2014		LF	--	--	11,700	-268	7.16	13
MW-32-035	SA	4/20/2015		LF	ND (0.2)	ND (1)	10,970	-262	7.48	5

Table 3-1

Groundwater Sampling Results, September 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

							Selected Field Parameters		
Location ID	**Aquifer Zone**	**Sample Date**	**Sample Method**	**Hexavalent Chromium (ug/L)**	**Dissolved Chromium (ug/L)**	**Specific Conductance (us/Cm)**	**ORP (mV)**	**Field pH**	**Turbidity**
MW-32-035	SA	12/3/2015	LF	ND (1)	ND (1)	11,259	-121.3	7.16	15
MW-33-040	SA	11/11/2014	LF	ND (1)	ND (1)	16,551	101.5	7.6	1
MW-33-040	SA	4/27/2015	LF	ND (0.2)	ND (1)	7,221	-254	8.04	3
MW-33-040	SA	12/1/2015	LF	ND (1)	ND (1)	17,803	71	7.7	5
MW-33-090	MA	11/12/2014	LF	7.9	7.7	10,356	139.3	7.41	1
MW-33-090	MA	4/27/2015	LF	6.8	5.7	10,130	-305	7.23	4
MW-33-090	MA	12/1/2015	LF	6.2	5.8	10,238	132.8	7.38	1
MW-33-150	DA	11/12/2014	LF	0.86	ND (1)	15,900	110.2	7.41	2
MW-33-150	DA	4/27/2015	LF	4	3.2	15,700	-245	7.45	4
MW-33-150	DA	12/1/2015	LF	2.9	4.3	15,737	111	7.12	2
MW-33-210	DA	11/12/2014	LF	13	12	20,519	140.8	7.4	8
MW-33-210	DA	4/27/2015 FD	LF	7.7 J	6.3 J	--	--	--	--
MW-33-210	DA	4/27/2015	LF	7.9 J	6.4 J	20,570	-268	7.33	3
MW-33-210	DA	12/1/2015	LF	14	13	20,058	80.6	7.39	6
MW-34-055	MA	11/6/2014	LF	ND (0.2)	ND (1)	826.8	-35	7.57	1
MW-34-055	MA	12/3/2015	LF	ND (0.2)	1.4	1,005	-41.9	7.59	1
MW-34-080	DA	11/6/2014	LF	ND (0.2)	ND (1)	5,841	-4	7.34	2
MW-34-080	DA	12/1/2014	LF	--	--	3,621	-44	7.37	1
MW-34-080	DA	4/20/2015	LF	ND (0.2)	ND (1)	3,009	-157	7.91	1
MW-34-080	DA	12/3/2015	LF	ND (0.2)	ND (1)	5,687	-35.8	7.2	1
MW-34-100	DA	10/2/2014	LF	100	89	17,650	-226	7.4	1
MW-34-100	DA	12/1/2014 FD	LF	230	220	--	--	--	--
MW-34-100	DA	12/1/2014	LF	220	230	15,300	-62	7.6	2
MW-34-100	DA	2/16/2015	LF	230	210	14,930	-268	7.98	2
MW-34-100	DA	4/20/2015 FD	LF	7.7 J	5.7 J	--	--	--	--
MW-34-100	DA	4/20/2015	LF	7.6 J	5.4 J	15,390	-409	7.7	3
MW-34-100	DA	10/6/2015	LF	70	67	20,216	10.2	7.66	1
MW-34-100	DA	12/3/2015 FD	LF	260	250	--	--	--	--
MW-34-100	DA	12/3/2015	LF	260	260	17,459	-90.9	7.82	2
MW-35-060	SA	11/13/2014	LF	21	20	7,740	-97	7.31	1
MW-35-060	SA	5/7/2015	LF	24	24	6,860	-222	7.33	2
MW-35-060	SA	12/7/2015	LF	22	23	7,101	49	7.02	1
MW-35-135	DA	11/13/2014	LF	30	28	11,130	-197	7.61	2
MW-35-135	DA	5/7/2015	LF	28	25	11,040	--	7.33	4
MW-35-135	DA	12/7/2015	VP	30	28	11,487	57	7.33	2
MW-36-020	SA	12/15/2014	LF	ND (0.2)	ND (1)	10,640	-133.2	7.51	1
MW-36-020	SA	12/8/2015	LF	ND (0.2)	ND (1)	11,586	-139.6	7.2	2
MW-36-040	SA	12/15/2014	LF	0.34	ND (1)	1,104	-111.4	7.9	1
MW-36-040	SA	12/8/2015	LF	0.42	ND (1)	1,136	-146.7	7.62	1
MW-36-050	MA	12/15/2014	LF	ND (0.2)	ND (1)	1,118	-35.2	7.68	1
MW-36-050	MA	12/8/2015	LF	ND (0.2)	ND (1)	1,113	-80.6	7.46	1
MW-36-070	MA	12/15/2014	LF	ND (0.2)	ND (1)	967	-23.6	7.76	1
MW-36-070	MA	12/8/2015	LF	ND (0.2)	ND (1)	985	11.6	7.61	1
MW-36-090	DA	12/15/2014	LF	ND (0.2)	ND (1)	1,060	15.7	8.45	1
MW-36-090	DA	4/23/2015	LF	ND (0.2)	ND (1)	1,020	-357	7.8	2
MW-36-090	DA	12/8/2015	LF	ND (0.2)	2.2	10.35	-49.1	7.99	1
MW-36-100	DA	11/13/2014	LF	65	62	7,144	-20	7.22	2
MW-36-100	DA	4/23/2015	LF	59	51	7,147	--	7.26	3
MW-36-100	DA	12/8/2015	LF	63	58	7,765	-24	7.18	7
MW-37D	DA	12/2/2014	LF	8	7.5	16,540	-190	7.56	3
MW-37D	DA	4/27/2015	LF	8.3 J	6.7 J	17,480	-221	7.63	4
MW-37D	DA	12/7/2015	LF	6.5	6.3	13,989	19	7.64	15
MW-37S	MA	11/12/2014	LF	11	11	6,607	-88	7.58	4
MW-37S	MA	12/8/2015	LF	12	11	6,028	31.3	7.6	15
MW-38D	DA	11/5/2014	3V	17	15	23,500	-264	8.3	2

Table 3-1

Groundwater Sampling Results, September 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

								Selected Field Parameters		
Location ID	Aquifer Zone	Sample Date		Sample Method	Hexavalent Chromium (ug/L)	Dissolved Chromium (ug/L)	Specific Conductance (us/Cm)	ORP (mV)	Field pH	Turbidity
MW-38D	DA	11/5/2014		LF	18	17	23,540	-246	8	9
MW-38D	DA	4/30/2015		3V	16	14	21,320	-276	7.86	1
MW-38D	DA	4/30/2015		LF	20	20	21,320	-332	7.7	1
MW-38D	DA	12/1/2015		3V	20	23	--	--	--	--
MW-38D	DA	12/1/2015		LF	19	19	26,048	-73.4	8.03	13
MW-38S	SA	9/22/2014		3V	ND (0.2)	ND (1)	1,683	--	7.88	1
MW-38S	SA	11/5/2014		3V	ND (0.2)	ND (1)	1,904	-257	7.79	1
MW-38S	SA	11/5/2014		LF	ND (0.2)	ND (1)	1,929	-248	7.81	1
MW-38S	SA	2/9/2015		3V	ND (0.2)	ND (1)	1,752	-226	7.52	2
MW-38S	SA	2/9/2015		LF	0.22	ND (1)	1,738	-195	7.4	2
MW-38S	SA	4/30/2015		3V	ND (0.2)	ND (1)	1,870	-290	7.58	1
MW-38S	SA	4/30/2015		LF	ND (0.2)	ND (1)	1,878	-240	7.23	2
MW-38S	SA	9/28/2015		3V	ND (0.2)	ND (1)	1,800	--	7.72	1
MW-38S	SA	9/28/2015		LF	ND (0.2)	ND (1)	1,800	--	7.69	1
MW-38S	SA	12/1/2015		3V	ND (0.2)	ND (1)	--	--	--	--
MW-38S	SA	12/1/2015		LF	ND (0.2)	ND (1)	1,889	-140.99	7.85	4
MW-39-040	SA	12/16/2014		LF	ND (0.2)	ND (1)	1,315	-129.7	7.99	2
MW-39-040	SA	12/4/2015		LF	ND (0.2)	ND (1)	1,297	-123.3	7.85	2
MW-39-050	MA	12/16/2014		LF	ND (0.2)	ND (1)	1,279	8.9	7.8	1
MW-39-050	MA	12/4/2015		LF	ND (0.2)	ND (1)	1,235	-120.5	7.49	2
MW-39-060	MA	12/16/2014	FD	LF	ND (0.2)	ND (1)	--	--	--	--
MW-39-060	MA	12/16/2014		LF	ND (0.2)	ND (1)	1,409	38.6	8	1
MW-39-060	MA	12/4/2015	FD	LF	0.38	ND (1)	--	--	--	--
MW-39-060	MA	12/4/2015		LF	0.46	ND (1)	1,352	66.4	7.8	1
MW-39-070	MA	12/16/2014		LF	ND (0.2)	ND (1)	2,172	24.8	7.9	1
MW-39-070	MA	12/4/2015		LF	0.58	ND (1)	1,970	-12.6	7.6	2
MW-39-080	DA	12/16/2014		LF	ND (0.2)	ND (1)	4,225	44.2	7.65	1
MW-39-080	DA	12/4/2015		LF	ND (0.2)	ND (1)	2,298	-121.9	7.65	2
MW-39-100	DA	12/1/2014		LF	57	49	14,410	-310	6.7	2
MW-39-100	DA	4/21/2015		LF	7.4 J	5.9 J	13,030	-216	7.57	1
MW-39-100	DA	12/4/2015		LF	23	24	13,396	-224.4	6.8	2
MW-40D	DA	12/4/2014		H	73	67	--	--	--	--
MW-40D	DA	12/4/2014		LF	160	140	18,040	-89	7.49	2
MW-40D	DA	5/12/2015		H	ND (1)	ND (1)	--	--	--	--
MW-40D	DA	5/12/2015		LF	120	110	17,870	-310	7	9
MW-40D	DA	12/7/2015	FD	H	97	88	--	--	--	--
MW-40D	DA	12/7/2015		H	82	78	--	--	--	--
MW-40D	DA	12/7/2015		LF	98	87	16,019	37.8	7.42	3
MW-40S	SA	12/4/2014		H	7	6.7	--	--	--	--
MW-40S	SA	12/4/2014		LF	7.6	7.1	2,788	-37	7.24	8
MW-40S	SA	12/7/2015		H	10	9.1	--	--	--	--
MW-40S	SA	12/7/2015		LF	8.1	11	2,625	60.8	7.47	5
MW-41D	DA	12/17/2014		LF	ND (1)	1	22,450	-94	7.28	1
MW-41D	DA	5/6/2015		LF	ND (1)	ND (1)	22,282	-269	6.92	1
MW-41D	DA	12/7/2015		LF	3	2.8	21,002	57	7.2	1
MW-41M	DA	11/4/2014	FD	LF	9.5	9	--	--	--	--
MW-41M	DA	11/4/2014		LF	9.5	8.8	16,120	-110	7.02	1
MW-41M	DA	12/7/2015	FD	LF	9.5	14	--	--	--	--
MW-41M	DA	12/7/2015		LF	9.5	15	15,360	19	7.23	2
MW-41S	SA	11/4/2014		LF	17	17	5,904	-105	7.59	2
MW-41S	SA	12/7/2015		--	15	14	--	--	--	--
MW-42-030	SA	11/5/2014		LF	0.54	ND (1)	2,515	-165.4	7.96	13
MW-42-030	SA	12/3/2015		LF	0.84	ND (1)	3,315	-159.6	7.82	9
MW-42-055	MA	11/6/2014		LF	0.35	2.8	1,233	-70.9	8.18	7
MW-42-055	MA	4/20/2015		LF	0.22	1.7	1,227	-309	8.29	4

Table 3-1

Groundwater Sampling Results, September 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

								Selected Field Parameters		
Location ID	Aquifer Zone	Sample Date		Sample Method	Hexavalent Chromium (ug/L)	Dissolved Chromium (ug/L)	Specific Conductance (us/Cm)	ORP (mV)	Field pH	Turbidity
MW-42-055	MA	12/3/2015		LF	0.4	2.1	1,233	-76.9	8.17	3
MW-42-065	MA	11/6/2014		LF	ND (0.2)	ND (1)	6,386	21.5	7.37	2
MW-42-065	MA	4/20/2015		LF	ND (0.2)	ND (1)	5,615	-346	7.52	2
MW-42-065	MA	12/3/2015		LF	ND (0.2)	ND (1)	5,984	42.1	7.36	2
MW-43-025	SA	11/5/2014		LF	ND (0.2)	ND (1)	1,479	-142	7.25	2
MW-43-025	SA	12/8/2015		LF	ND (0.2)	ND (1)	1,446	-114.8	7.21	3
MW-43-075	DA	11/5/2014		LF	ND (0.2)	ND (1)	10,290	-87.2	7.06	8
MW-43-075	DA	12/2/2015		LF	ND (0.2)	ND (1)	10,215	-59	7.02	2
MW-43-090	DA	11/5/2014		LF	ND (1)	ND (1)	17,042	-39.7	6.94	42
MW-43-090	DA	12/2/2015		LF	ND (1)	ND (1)	16,806	-37.7	7.12	12
MW-44-070	MA	11/11/2014		LF	ND (0.2)	ND (1)	1,904	28.5	7.55	4
MW-44-070	MA	4/23/2015		LF	ND (0.2)	ND (1)	1,910	-336	7.05	3
MW-44-070	MA	12/4/2015		LF	ND (0.2)	ND (1)	1,732	38.5	7.68	6
MW-44-115	DA	9/23/2014	FD	LF	37	31	--	--	--	--
MW-44-115	DA	9/23/2014		LF	37	32	10,750	--	7.95	5
MW-44-115	DA	11/12/2014		LF	32	30	10,393	52.4	7.87	8
MW-44-115	DA	2/17/2015	FD	LF	37	31	--	--	--	--
MW-44-115	DA	2/17/2015		LF	37	31	10,500	-204	7.11	8
MW-44-115	DA	4/23/2015		LF	31	28	10,330	-296	6.9	5
MW-44-115	DA	10/6/2015	FD	LF	27	26	--	--	--	--
MW-44-115	DA	10/6/2015		LF	27	27	11,518	55	7.91	8
MW-44-115	DA	12/4/2015		LF	26	34	11,965	39.2	7.88	4
MW-44-125	DA	11/12/2014	FD	LF	2.9 J	4.8	--	--	--	--
MW-44-125	DA	11/12/2014		LF	4 J	5.9	6,245	-51.1	7.5	2
MW-44-125	DA	4/23/2015	FD	LF	1.5 J	6.2	--	--	--	--
MW-44-125	DA	4/23/2015		LF	1.2 J	5.4	7,001	-340	7.13	3
MW-44-125	DA	12/4/2015	FD	LF	0.23	2.2	--	--	--	--
MW-44-125	DA	12/4/2015		LF	0.3	2	6,612	-39.6	7.4	2
MW-46-175	DA	9/23/2014		LF	14	13	17,540	-301	8.35	1
MW-46-175	DA	11/13/2014		LF	23	25	17,085	64.8	8.21	6
MW-46-175	DA	2/16/2015		LF	25	21	16,740	-271	8.15	2
MW-46-175	DA	4/21/2015		LF	13 J	9.4 J	17,400	-307	8.18	1
MW-46-175	DA	10/6/2015		LF	11	11	18,842	46	8.3	1
MW-46-175	DA	12/2/2015		LF	23	21	19,193	131.8	8.22	1
MW-46-205	DA	11/13/2014		LF	1.5	1.9	20,679	128	8.14	2
MW-46-205	DA	4/21/2015		LF	1.4	ND (1)	19,920	-278	8.21	1
MW-46-205	DA	12/2/2015		LF	1.6	1.6	21,085	95.8	8.06	1
MW-47-055	SA	11/11/2014		LF	16	16	5,707	-74	7.45	1
MW-47-055	SA	5/7/2015		LF	15	15	5,246	-167	7.75	2
MW-47-055	SA	12/2/2015		LF	23	21	4,923	-121.7	7.43	2
MW-47-115	DA	11/11/2014		LF	19	17	15,350	-286	7.34	2
MW-47-115	DA	5/7/2015		LF	23	22	13,920	--	7.15	8
MW-47-115	DA	12/2/2015		LF	19	17	14,750	16.9	7.34	9
MW-48	BR	11/6/2014		3V	--	--	20,010	-83	6.96	5
MW-48	BR	5/7/2015		3V	ND (1)	ND (1)	18,400	-37	6.4	9
MW-48	BR	12/4/2015		LF	ND (1)	ND (1)	17,187	125.7	7.32	10
MW-49-135	DA	12/22/2014		LF	2.3	2	13,370	-228	7.7	12
MW-49-135	DA	12/1/2015		VP	1.8	1.8	14,214	-188.3	7.66	1
MW-49-275	DA	12/17/2014		LF	ND (1)	1.2	24,290	-154	7.99	5
MW-49-275	DA	12/1/2015		LF	ND (1)	4.7	25,605	-48.9	8.11	5
MW-49-365	DA	12/17/2014	FD	LF	ND (1)	ND (5)	--	--	--	--
MW-49-365	DA	12/17/2014		LF	ND (1)	ND (5)	24,250	-188	7.82	1
MW-49-365	DA	12/1/2015	FD	LF	ND (1)	ND (1)	--	--	--	--
MW-49-365	DA	12/1/2015		LF	ND (1)	ND (1)	38,105	-179.6	7.96	1
MW-50-095	MA	11/11/2014		LF	13	12	6,106	-73	7.49	2

Table 3-1

Groundwater Sampling Results, September 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

								Selected Field Parameters		
Location ID	Aquifer Zone	Sample Date		Sample Method	Hexavalent Chromium (ug/L)	Dissolved Chromium (ug/L)	Specific Conductance (us/Cm)	ORP (mV)	Field pH	Turbidity
MW-50-095	MA	5/6/2015		LF	14	13	5,886	-200	7.59	2
MW-50-095	MA	12/8/2015		LF	14	13	5,364	35	7.77	9
MW-50-200	DA	12/16/2014		LF	4,800	5,200	21,260	-7	7.72	10
MW-50-200	DA	5/20/2015		LF	3,800	4,000	21,300	-235	6.86	1
MW-50-200	DA	12/7/2015		LF	4,900	5,100	17,611	33.8	7.63	15
MW-51	MA	12/15/2014		LF	4,400	4,800	13,000	-132	7.5	1
MW-51	MA	5/20/2015		LF	4,600	5,100	13,020	-271	7.5	1
MW-51	MA	12/8/2015		LF	4,800	4,900	12,818	83	7.28	1
MW-52D	DA	12/17/2014		Slant	ND (1)	ND (1)	23,374	-149.6	7.85	1
MW-52D	DA	4/22/2015		Slant	ND (1)	ND (1)	19,770	--	8	1
MW-52D	DA	12/2/2015		--	ND (1)	ND (1)	--	--	--	--
MW-52D	DA	12/2/2015		VP	--	--	22,169	-81	7.56	1
MW-52M	DA	12/17/2014		Slant	ND (1)	ND (1)	17,177	-121.4	7.49	1
MW-52M	DA	4/22/2015		Slant	ND (1)	ND (1)	14,990	--	7.68	1
MW-52M	DA	12/2/2015		VP	ND (1)	ND (1)	17,970	-68	7.32	1
MW-52S	MA	12/17/2014		Slant	ND (1)	ND (1)	9,895	-87.7	6.81	1
MW-52S	MA	4/22/2015		Slant	ND (0.2)	ND (1)	8,670	--	6.85	1
MW-52S	MA	12/2/2015		VP	ND (0.2)	ND (1)	10,045	-71.8	6.87	1
MW-53D	DA	12/17/2014		Slant	ND (1)	ND (5)	28,324	-152.1	8.16	1
MW-53D	DA	4/22/2015		Slant	ND (1)	ND (1)	23,180	-320	8.14	1
MW-53D	DA	12/2/2015		VP	ND (1)	ND (1)	27,065	-127.8	7.91	1
MW-53M	DA	12/17/2014		Slant	ND (1)	ND (1)	21,752	-159.3	8.03	1
MW-53M	DA	4/22/2015		Slant	ND (1)	ND (1)	17,440	-396	7.75	1
MW-53M	DA	12/2/2015		VP	ND (1)	ND (1)	17,623	-185.5	7.81	1
MW-54-085	DA	11/18/2014	FD	LF	ND (0.2)	ND (1)	--	--	--	--
MW-54-085	DA	11/18/2014		LF	ND (0.2)	ND (1)	10,680	-220	7.32	7
MW-54-085	DA	4/28/2015		LF	ND (1)	ND (1)	8,986	-236	7.46	2
MW-54-085	DA	12/9/2015	FD	LF	ND (0.2)	ND (1)	--	--	--	--
MW-54-085	DA	12/9/2015		LF	0.50 J	ND (10)	8,050 J	-49.9	7.33	1
MW-54-140	DA	11/18/2014		LF	ND (0.2)	ND (1)	12,970	-240	7.7	4
MW-54-140	DA	4/28/2015		LF	ND (1)	ND (1)	13,220	-260	7.5	4
MW-54-140	DA	12/9/2015		--	0.50 J	ND (10)	9,870 J	-55	7.64	1
MW-54-195	DA	11/18/2014		LF	ND (2)	ND (1)	19,270	-288	7.89	1
MW-54-195	DA	4/28/2015		LF	ND (2)	ND (1)	19,720	-271	8	4
MW-54-195	DA	12/9/2015		LF	0.50 J	ND (10)	14,700 J	-183.6	7.87	1
MW-55-045	MA	11/18/2014		LF	ND (1)	ND (1)	1,551	-266	7.44	34
MW-55-045	MA	4/29/2015	FD	LF	ND (0.2)	ND (1)	--	--	--	--
MW-55-045	MA	4/29/2015		LF	ND (0.2)	ND (1)	1,481	-182	7.7	3
MW-55-045	MA	12/7/2015		LF	ND (0.2)	ND (1)	1,450	-112.8	7.58	2
MW-55-120	DA	11/18/2014		LF	7.5	7.16	9,410	-87	7.7	3
MW-55-120	DA	4/29/2015		LF	6.7	7	7,982	-150	7.7	9
MW-55-120	DA	10/21/2015		LF	7.8 J	7.04	9,461	60	7.93	7
MW-55-120	DA	12/7/2015		LF	8	8.2	8,450	-26	7.88	3
MW-56D	DA	12/18/2014		Slant	ND (1)	ND (5)	22,283	-135.2	7.58	1
MW-56D	DA	4/28/2015		Slant	ND (2)	ND (1)	19,880	-284	7.67	3
MW-56D	DA	12/9/2015		VP	ND (1)	ND (1)	20,870	-116	6.88	1
MW-56M	DA	12/18/2014		Slant	ND (1)	ND (5)	15,319	-90.1	7.16	1
MW-56M	DA	4/28/2015		Slant	ND (2)	ND (1)	14,020	-240	7.23	2
MW-56M	DA	12/9/2015		--	ND (1)	ND (1)	14,997	-147	6.89	1
MW-56S	SA	12/18/2014		Slant	ND (0.2)	ND (1)	6,647	-72.1	6.99	1
MW-56S	SA	4/28/2015		Slant	ND (0.2)	ND (1)	5,982	-256	6.99	1
MW-56S	SA	12/9/2015		--	ND (0.2)	ND (1)	6,538	-137	6.68	1
MW-57-070	BR	12/10/2014		3V	530	520	3,008	-30	7.04	8
MW-57-070	BR	5/21/2015		3V	410	420	2,963	-236	7.18	2
MW-57-070	BR	12/4/2015		VP	520	550	2,916	-23.3	7.13	6

Table 3-1

Groundwater Sampling Results, September 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

								Selected Field Parameters		
Location ID	**Aquifer Zone**	**Sample Date**		**Sample Method**	**Hexavalent Chromium (ug/L)**	**Dissolved Chromium (ug/L)**	**Specific Conductance (us/Cm)**	**ORP (mV)**	**Field pH**	**Turbidity**
MW-57-185	BR	11/10/2014		3V	9.5	8.9	20,460	-218	9.2	1
MW-57-185	BR	5/11/2015		3V	10	9	19,360	-302	9.06	1
MW-57-185	BR	12/4/2015		VP	9.9	8.5	18,677	-44.5	8.34	5
MW-58BR	BR	9/24/2014		LF	2.1	2.2	10,100	--	7.53	1
MW-58BR	BR	12/9/2014		LF	3.6	3	10,200	-179	7.55	0.5
MW-58BR	BR	2/10/2015		LF	3.6	3.5	9,617	-220	7.62	1
MW-58BR	BR	5/18/2015		LF	ND (0.2)	ND (1)	9,500	-221	7.17	1
MW-58BR	BR	9/30/2015		LF	ND (0.2)	ND (1)	8,262	--	7.51	7
MW-58BR	BR	12/7/2015		LF	2.9	2.9	9,295	-14.6	7.5	6
MW-59-100	SA	12/15/2014	FD	LF	4,200	3,900	--	--	--	--
MW-59-100	SA	12/15/2014		LF	4,100	4,100	11,930	-30	7.09	1
MW-59-100	SA	5/19/2015		LF	3,900	4,300	12,870	-120	7	2
MW-59-100	SA	12/3/2015	FD	LF	4,400	4,400	--	--	--	--
MW-59-100	SA	12/3/2015		LF	4,500	4,300	11,728	61.8	6.89	6
MW-60-125	BR	12/10/2014		3V	950	980	9,956	-130	7.42	5
MW-60-125	BR	5/14/2015		3V	1,100	1,200	10,120	-174	7.03	4
MW-60-125	BR	12/4/2015		VP	960	840	8,363	60.3	7.42	27
MW-60BR-245	BR	9/24/2014		3V	--	--	17,950	--	8.36	1
MW-60BR-245	BR	9/25/2014		3V	1.5	3	--	--	--	--
MW-60BR-245	BR	12/3/2014		3V	--	--	19,150	-243	7.79	2
MW-60BR-245	BR	12/4/2014		3V	ND (1)	ND (1)	--	--	--	--
MW-60BR-245	BR	2/10/2015		3V	3.6	5.2	18,210	-236	7.93	2
MW-60BR-245	BR	5/14/2015		3V	ND (1)	ND (1)	19,290	--	7.42	2
MW-60BR-245	BR	9/29/2015		3V	ND (1)	1.4	18,435	--	8.15	4
MW-60BR-245	BR	12/4/2015		VP	61	53	16,720	-251.2	7.94	1
MW-61-110	BR	12/10/2014		3V	570	540	17,620	-123	7.14	5
MW-61-110	BR	5/13/2015		3V	440	500	17,340	-136	7.31	2
MW-61-110	BR	12/4/2015		VP	540	530	15,709	-33.8	7.58	6
MW-62-065	BR	9/23/2014		3V	540	500	6,430	--	7.37	2
MW-62-065	BR	12/9/2014		3V	530	500	7,010	-113	7.38	4
MW-62-065	BR	2/16/2015	FD	3V	530	510	--	--	--	--
MW-62-065	BR	2/16/2015		3V	520	510	6,854	-30	7.09	2
MW-62-065	BR	5/13/2015	FD	3V	580	620	--	--	--	--
MW-62-065	BR	5/13/2015		3V	580	620	7,126	-98	7.38	2
MW-62-065	BR	10/7/2015		3V	560	610	6,522	70	7.33	10
MW-62-065	BR	12/3/2015		VP	570	570	6,709	63	7.29	10
MW-62-110	BR	9/23/2014		Flute	1,000	1,000	--	--	7.52	0.3
MW-62-110	BR	12/9/2014		Flute	1,200	1,200	9,506	-50	6.85	0.5
MW-62-110	BR	2/11/2015		Flute	1,200	1,300	9,233	72	7.02	2
MW-62-110	BR	5/19/2015		Flute	1,000	1,100	9,826	-115	6.5	2
MW-62-110	BR	10/1/2015		Flute	ND (10)	2.6	14,326	--	6.57	1
MW-62-110	BR	12/4/2015		VP	0.29	ND (1)	8,853	-144.8	7.71	13
MW-62-190	BR	12/9/2014		Flute	ND (1)	ND (1)	18,650	-59	6.74	0.6
MW-62-190	BR	5/19/2015		Flute	ND (0.2)	ND (1)	19,200	-278	6.4	2
MW-62-190	BR	12/4/2015		VP	ND (1)	ND (1)	18,041	-222.7	7.7	5
MW-63-065	BR	9/22/2014		3V	1.6	1.4	7,200	--	7.16	2
MW-63-065	BR	11/5/2014		3V	1.6	1.6	7,641	-21	6.98	8
MW-63-065	BR	2/10/2015		3V	1.5	1.9	7,308	-70	7.22	6
MW-63-065	BR	4/29/2015		3V	1.4	1.3	7,424	-158	7.05	6
MW-63-065	BR	9/28/2015		3V	1.3	1.2	8,239	68	7.08	2
MW-63-065	BR	12/4/2015		VP	1.7	7.7	6,793	29	7.27	9
MW-64BR	BR	9/30/2014		LF	ND (1)	ND (1)	14,920	-190	7.29	16
MW-64BR	BR	12/8/2014		LF	ND (1)	ND (1)	14,500	-135	7.31	6
MW-64BR	BR	2/18/2015		LF	ND (1)	1.3	14,630	-194	7.28	621
MW-64BR	BR	5/18/2015		LF	ND (5)	11	15,400	-172	7.39	1,000 >

Table 3-1

Groundwater Sampling Results, September 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

								Selected Field Parameters		
Location ID	Aquifer Zone	Sample Date		Sample Method	Hexavalent Chromium (ug/L)	Dissolved Chromium (ug/L)	Specific Conductance (us/Cm)	ORP (mV)	Field pH	Turbidity
MW-64BR	BR	10/1/2015		LF	ND (1)	1.5	15,540	--	7.35	23
MW-64BR	BR	12/7/2015		LF	ND (1)	ND (1)	14,651	-101.8	7.27	3
MW-65-160	SA	9/25/2014		LF	90	83	4,033	--	7.25	12
MW-65-160	SA	12/3/2014		LF	97	92	4,586	-82	7.2	219
MW-65-160	SA	3/24/2015		LF	140	120	4,159	-130	7.04	1
MW-65-160	SA	5/11/2015	FD	LF	110	110	--	--	--	--
MW-65-160	SA	5/11/2015		LF	110	110	4,082	-236	7.95	2
MW-65-160	SA	9/30/2015		LF	140	150	4,028	56	7.17	8
MW-65-160	SA	12/2/2015		--	130	160	3,485	28.2	7.04	31
MW-65-225	DA	9/25/2014		LF	130	110	16,710	--	7.46	75
MW-65-225	DA	12/3/2014		LF	120	130	18,230	-60	7.38	10
MW-65-225	DA	2/17/2015		LF	150	140	18,410	-143	7.34	9
MW-65-225	DA	5/11/2015		LF	160	140	17,680	-140	7.14	6
MW-65-225	DA	9/30/2015		LF	180	210	16,405	29	7.38	9
MW-65-225	DA	12/2/2015		LF	250	250	14,606	98.5	7.3	10
MW-66-165	SA	12/10/2014		LF	590	580	5,109	-73	7.21	10
MW-66-165	SA	5/13/2015		LF	650	760	5,010	-179	7.43	8
MW-66-165	SA	12/2/2015		LF	490	540	5,054	80.6	7.35	58
MW-66-230	DA	12/22/2014		LF	5,500	6,400	20,470	-81	7.55	7
MW-66-230	DA	5/21/2015		LF	6,500	7,000	20,440	--	7.03	1
MW-66-230	DA	12/3/2015		LF	7,700	6,800	18,647	37.7	7.78	5
MW-66BR-270	BR	12/3/2014		3V	--	--	19,730	-376	8.79	9
MW-66BR-270	BR	12/16/2014		3V	ND (1)	ND (5)	--	--	--	--
MW-66BR-270	BR	5/18/2015		3V	ND (0.2)	ND (1)	19,780	--	8.4	28
MW-66BR-270	BR	12/9/2015		VP	ND (1)	ND (1)	6,081	-314.7	9.25	22
MW-67-185	SA	12/11/2014		LF	1,900	1,600	7,782	-48	7.12	10
MW-67-185	SA	5/20/2015		LF	1,800	2,100	8,364	-145	7.69	7
MW-67-185	SA	12/2/2015		LF	1,700	1,700	8,417	67	7.22	137
MW-67-225	MA	12/11/2014		LF	3,200	3,200	8,704	-129	7.58	116
MW-67-225	MA	5/20/2015		LF	3,200	3,400	8,722	-275	7.35	8
MW-67-225	MA	12/2/2015		--	3,400	3,300	--	--	--	--
MW-67-225	MA	12/2/2015		LF	--	--	8,610	39.8	7.57	119
MW-67-260	DA	12/11/2014		LF	740	680	20,090	-201	8.37	10
MW-67-260	DA	5/20/2015		LF	700	730	20,330	--	8.59	1
MW-67-260	DA	12/2/2015		LF	1,100	1,100	21,437	-25.9	8.4	7
MW-68-180	SA	9/30/2014		LF	27,000	28,000	4,702	5	7.3	24
MW-68-180	SA	12/9/2014		LF	30,000	31,000	5,148	-58	7.56	10
MW-68-180	SA	2/18/2015		LF	31,000	33,000	4,673	-54	7.54	4
MW-68-180	SA	5/18/2015		LF	12,000	13,000	3,905	-140	7.7	8
MW-68-180	SA	9/30/2015	FD	LF	32,000	44,000	--	--	--	--
MW-68-180	SA	9/30/2015		LF	32,000	44,000	5,048	70	7.33	8
MW-68-180	SA	12/2/2015		LF	36,000	40,000	4,489	126.7	7.2	18
MW-68-240	DA	12/18/2014		LF	2,100	2,200	18,960	-81	7.1	1
MW-68-240	DA	5/21/2015		LF	2,200	2,500	19,560	--	7.1	1
MW-68-240	DA	12/2/2015		--	2,300	2,200	--	--	--	--
MW-68-240	DA	12/2/2015		LF	--	--	15,799	118.7	7.13	3
MW-68BR-280	BR	12/18/2014		3V	ND (1)	ND (5)	21,045	-198	8.65	5
MW-68BR-280	BR	5/27/2015		3V	ND (1)	ND (1)	21,920	-369	8.21	4
MW-68BR-280	BR	12/3/2015		--	ND (1)	ND (1)	--	--	--	--
MW-68BR-280	BR	12/3/2015		LF	--	--	20,108	-166.5	8.71	6
MW-69-195	BR	9/25/2014	FD	3V	930	990	--	--	--	--
MW-69-195	BR	9/25/2014		3V	860	950	3,637	--	7.28	4
MW-69-195	BR	12/11/2014		3V	950	970	4,128	0	7.06	1
MW-69-195	BR	2/17/2015		3V	930	800	4,097	-75	7.59	2
MW-69-195	BR	5/14/2015	FD	3V	980	1,100	--	--	--	--

Table 3-1

Groundwater Sampling Results, September 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

							Selected Field Parameters		
Location ID	Aquifer Zone	Sample Date	Sample Method	Hexavalent Chromium (ug/L)	Dissolved Chromium (ug/L)	Specific Conductance (us/Cm)	ORP (mV)	Field pH	Turbidity
MW-69-195	BR	5/14/2015	3V	970	1,100	4,120	-112	7	1
MW-69-195	BR	10/1/2015	3V	890	940	4,189	79	7.27	1
MW-69-195	BR	12/4/2015	VP	830	790	3,608	-30.3	7.37	5
MW-70-105	BR	12/2/2014	3V	130	120	4,251	-240	7.69	2
MW-70-105	BR	5/7/2015	3V	150	130	4,236	-246	7.68	1
MW-70-105	BR	12/7/2015	VP	150	140	3,209	52.4	7.69	3
MW-70BR-225	BR	12/16/2014	3V	1,900	2,200	15,190	-188	7.4	0.4
MW-70BR-225	BR	5/27/2015	3V	2,300	2,400	14,820	--	7.46	1
MW-70BR-225	BR	12/7/2015	VP	2,000	2,000	11,756	82.7	7.32	3
MW-71-035	SA	11/6/2014	LF	--	--	21,660	-69	6.71	362
MW-71-035	SA	5/6/2015	LF	ND (1)	ND (1)	13,050	-173	6.91	313
MW-71-035	SA	12/4/2015	LF	1.2	15	17,985	137.8	6.85	287
MW-72-080	BR	9/22/2014	3V	140	120	16,330	--	7.73	2
MW-72-080	BR	12/1/2014	3V	130	110	17,390	-276	7.62	2
MW-72-080	BR	2/11/2015	3V	130	110	17,110	-151	7.91	5
MW-72-080	BR	5/11/2015	3V	92	85	16,500	-206	7.54	2
MW-72-080	BR	9/29/2015	3V	130	120	17,343	48	7.66	1
MW-72-080	BR	12/7/2015	VP	140	120	16,991	50	7.4	3
MW-72BR-200	BR	9/24/2014	3V	5.4	4.5	16,700	--	8.29	1
MW-72BR-200	BR	11/17/2014	3V	5.8	6	17,100	-302	8.18	1
MW-72BR-200	BR	2/11/2015	3V	6.5	5.6	16,400	-284	8.29	1
MW-72BR-200	BR	5/4/2015	3V	4.3	3.7	15,570	-305	8.06	1
MW-72BR-200	BR	9/29/2015	3V	4.2	4.1	15,034	25	8.23	1
MW-72BR-200	BR	12/8/2015	VP	6.4	6.2	16,348	-111	8.01	1
MW-73-080	BR	9/23/2014	3V	27	23	11,780	100	7.12	100
MW-73-080	BR	12/1/2014	3V	--	--	11,610	11	6.61	30
MW-73-080	BR	12/2/2014	3V	41	37	--	--	--	--
MW-73-080	BR	2/10/2015	3V	21	20	963	-86	8.16	88
MW-73-080	BR	5/6/2015	3V	42	41	7,954	-158	7.64	36
MW-73-080	BR	9/29/2015	3V	51	45	11,915	47	7.35	16
MW-73-080	BR	12/8/2015	VP	48	43	11,070	85	7.32	45
MW-74-240	BR	12/9/2014	3V	--	--	998	-190	8.3	48
MW-74-240	BR	12/11/2014	3V	ND (0.2)	ND (1)	--	--	--	--
MW-74-240	BR	5/14/2015	3V	ND (0.2)	1.2	986.8	-394	8.4	84
MW-74-240	BR	12/7/2015	--	0.31	8.2	768	-148.6	8.64	269
OW-03D	DA	11/12/2014	LF	11	10	10,980	-136	7.74	1
OW-03D	DA	12/7/2015	LF	13	12	10,964	-95.1	7.62	2
OW-03M	MA	11/12/2014	LF	16	15	7,015	-109	7.66	2
OW-03M	MA	12/7/2015	LF	17	18	6,494	-135.5	7.85	5
OW-03S	SA	11/12/2014 FD	3V	23	24	--	--	--	--
OW-03S	SA	11/12/2014	3V	23	23	1,735	18	7.67	13
OW-03S	SA	12/7/2015 FD	VP	25	24	--	--	--	--
OW-03S	SA	12/7/2015	VP	25	25	1,513	44.4	7.75	10
PE-01	DA	9/2/2014	Tap	3.8	4	--	--	--	--
PE-01	DA	10/7/2014	Tap	3.7	4.2	--	--	--	--
PE-01	DA	11/4/2014	Tap	4	4.7	--	--	--	--
PE-01	DA	12/2/2014	Tap	4.2	4.9	--	--	--	--
PE-01	DA	1/6/2015	Tap	5.1	4.2	--	--	--	--
PE-01	DA	2/3/2015	Tap	4.7	3.8	--	--	--	--
PE-01	DA	3/17/2015	Tap	4	3.4	--	--	--	--
PE-01	DA	4/7/2015	Tap	3.6	3.6	--	--	--	--
PE-01	DA	5/5/2015	Tap	2.9	2.5	--	--	--	--
PE-01	DA	6/2/2015	Tap	3.4	3.1	--	--	7.54	--
PE-01	DA	7/7/2015	WV	3.2	3.1	--	--	--	--
PE-01	DA	8/4/2015	Tap	3.2	2.9	--	--	--	--

Table 3-1

Groundwater Sampling Results, September 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

							Selected Field Parameters		
Location ID	**Aquifer Zone**	**Sample Date**	**Sample Method**	**Hexavalent Chromium (ug/L)**	**Dissolved Chromium (ug/L)**	**Specific Conductance (us/Cm)**	**ORP (mV)**	**Field pH**	**Turbidity**
PE-01	DA	9/1/2015	Tap	0.43	1.4	--	--	--	--
PE-01	DA	10/6/2015	Tap	3.2	2.7	--	--	--	--
PE-01	DA	10/27/2015	SS	--	2.7	4,422	31.3	7.84	--
PE-01	DA	11/3/2015	WV	3.4	3.1	--	--	--	--
PE-01	DA	11/10/2015	SS	--	3.5	4,418	173.5	7.58	2
PE-01	DA	12/1/2015	WV	3.6	3.3	--	--	--	--
PE-01	DA	12/7/2015	--	3.8	--	4,437	2.1	7.96	1
PGE-07BR	BR	12/4/2014	3V	ND (1)	ND (1)	22,840	-191	6.93	19
PGE-07BR	BR	12/2/2015	VP	ND (1)	ND (1)	19,948	-298.7	6.85	19
PGE-08	BR	1/7/2015	3V	ND (1)	ND (1)	21,410	-418	8.2	1
PGE-08	BR	12/10/2015	VP	ND (1)	ND (1)	20,490	-120.8	8.09	2
PM-03	--	12/23/2014	Tap	9.2	8.6	1,597	-38	7.35	0.68
PM-03	--	3/17/2015	Tap	9.3	8.4 (UF)	1,451	-42	7.31	0.7
PM-03	--	12/8/2015	SS	9.3	8.8	1,209	-36.6	7.41	1
PM-04	--	12/23/2014	Tap	18	16	2,132	-39	7.48	0.76
PM-04	--	3/17/2015	Tap	18	17 (UF)	2,110	-46	7.38	0.8
PM-04	--	12/8/2015	SS	17	17	2,093	-25.9	7.36	1
TW-01	SA	12/22/2014	3V	--	--	8,318	-118	7.26	1
TW-01	SA	5/27/2015	3V	2,500	2,600	8,058	--	7.07	1
TW-01	SA	12/1/2015	VP	2,400	2,300	8,807	63.9	7.56	1
TW-02D	DA	12/15/2014 FD	Tap	47	43	--	--	--	--
TW-02D	DA	12/15/2014	Tap	48	44	6,746	99.1	7.64	1
TW-02D	DA	12/9/2015 FD	--	97	88	--	--	--	--
TW-02D	DA	12/9/2015	--	96	88	6,810	99	7.78	1
TW-02S	SA	1/13/2015	Tap	590	570	5,082	-42	7.45	1
TW-02S	SA	9/1/2015	Tap	330	330	--	--	--	--
TW-02S	SA	12/9/2015	SS	330	330	2,256	186	7.49	1
TW-03D	DA	9/2/2014	Tap	703	729	--	--	--	--
TW-03D	DA	10/7/2014	Tap	720	733	--	--	--	--
TW-03D	DA	11/4/2014	Tap	711	706	--	--	--	--
TW-03D	DA	12/2/2014	Tap	733	757	--	--	--	--
TW-03D	DA	1/6/2015	Tap	790	790	--	--	--	--
TW-03D	DA	2/3/2015	Tap	790	760	--	--	--	--
TW-03D	DA	3/17/2015	Tap	740	690	--	--	--	--
TW-03D	DA	4/7/2015	Tap	730	730	--	--	--	--
TW-03D	DA	5/5/2015	Tap	700	640	--	--	--	--
TW-03D	DA	6/2/2015	Tap	700	650	--	--	7.64	--
TW-03D	DA	7/7/2015	WV	710	770	--	--	--	--
TW-03D	DA	8/4/2015	Tap	710	670	--	--	--	--
TW-03D	DA	9/1/2015	Tap	720	720	--	--	--	--
TW-03D	DA	10/6/2015	Tap	700	680	--	--	--	--
TW-03D	DA	10/27/2015	SS	760	--	8,224	51.1	7.43	2
TW-03D	DA	11/3/2015	WV	740	670	--	--	--	--
TW-03D	DA	11/10/2015	SS	720	740	8,242	219.4	7.31	2
TW-03D	DA	12/1/2015	WV	730	690	--	--	--	--
TW-03D	DA	12/7/2015	SS	750 J	--	8,042	-4.4	7.53	5
TW-04	DA	12/8/2015	VP	6.9	6.4	22,796	73.2	7.68	2
TW-05	DA	12/8/2015	VP	16	14	16,290	109.1	7.67	2

Notes:

--- = data was either not collected, not available or was rejected
FD = field duplicate sample.
J = concentration or reporting limit (RL) estimated by laboratory or data validation.
mV = millivolts.

Table 3-1

Groundwater Sampling Results, September 2014 through December 2015
Fourth Quarter 2015 and Annual 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 Method	Hexavalent Chromium (ug/L)	Dissolved Chromium (ug/L)	Specific Conductance (us/Cm)	Selected Field Parameters		
							ORP (mV)	Field pH	Turbidity

ND = not detected at listed RL.
ORP = oxidation-reduction potential.
RL = reporting limit.
UF = unfiltered.
ug/L = micrograms per liter.
uS/cm = microSiemens per centimeter.

Sample results initially analyzed within the EPA recommended holding times for analysis by a non-ADEQ approved laboratory. The values that are shaded in the table are from the ADEQ approved laboratory. Some of these analysese were performec outside of the EPA's recommended holding time. The data are considered estimated since the ADEQ-approved laboratory data confirmed the data performed within the EPA recommended holding time by the non-ADEQ-approved laboratory.

Sample Methods:
3V = three volume.
LF = Low Flow (minimal drawdown)

Wells are assigned to separate aquifer zones for results reporting:
SA = shallow interval of Alluvial Aquifer.
MA = mid-depth interval of Alluvial Aquifer.
DA = deep interval of Alluvial Aquifer.
PA = perched aquifer (unsaturated zone).
BR = well completed in bedrock (Miocene Conglomerate or pre-Tertiary crystalline rock).

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

The RLs for certain hexavalent chromium results from Method E218.6 analyses have been elevated above the standard RL of 0.2 µg/L due to required sample dilution to accommodate matrix interferences.

Starting in Third Quarter 2014, the groundwater sample collection method was switched from the traditional three-volume purge method (3V) to the minimal drawdown, or micropurge (MP) method at many short screen wells screened in alluvial sediments. The method for purging prior to sample collection is indicated in the sample method column of this table.

Table 3-2a

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2015 through December 2015

Fourth Quarter 2015 and Annual 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 Method	Arsenic Dissolved (ug/L)	Molybdenum Dissolved (ug/L)	Selenium Dissolved (ug/L)	Manganese Dissolved (ug/L)	Nitrate as N (mg/L)
MW-09	SA	5/12/2015		LF	1.7	3	5.1	ND (0.5)	10
MW-09	SA	10/7/2015		LF	1.6	2.7	5.6	ND (0.5)	10
MW-09	SA	12/1/2015		LF	1.6	3.6	4.8	0.53	11
MW-10	SA	5/12/2015		LF	--	26	6.2	--	11
MW-10	SA	10/7/2015		LF	3.4	20	6.1	6.9	11
MW-10	SA	12/1/2015		LF	2.9	19	5.3	43	11
MW-11	SA	5/12/2015		LF	1.4	6	4.8	ND (0.5)	6.6
MW-11	SA	10/7/2015		LF	1.4	5.4	4.6	ND (0.5)	6
MW-11	SA	12/2/2015	FD	LF	1.5	6.1	4.8	ND (0.5)	5.9
MW-11	SA	12/2/2015		LF	1.7	6.4	5	ND (0.5)	6.1
MW-12	SA	5/19/2015		LF	--	12	20	--	15
MW-12	SA	12/2/2015		LF	36	9.9	17	12	15
MW-13	SA	12/7/2015		LF	1.9	14	3	0.74	--
MW-14	SA	5/6/2015		LF	0.88	15	2.3	ND (0.5)	4.1
MW-14	SA	12/7/2015		LF	0.87	14	2.3	ND (0.5)	4.6
MW-15	SA	12/9/2015		LF	--	17	3.1	ND (0.5)	--
MW-16	SA	12/8/2015		LF	--	15	1.9	0.52	--
MW-17	SA	12/9/2015		LF	--	20	7.7	1.1	--
MW-18	SA	12/7/2015		LF	--	5.6	3.6	ND (0.5)	--
MW-19	SA	12/7/2015		LF	--	12	3.5	ND (0.5)	--
MW-20-070	SA	5/19/2015	FD	LF	--	42	4.9	--	7.6
MW-20-070	SA	5/19/2015		LF	--	41	4.6	--	7.9
MW-20-070	SA	12/8/2015		LF	--	44	4.3	ND (0.5)	7
MW-20-100	MA	5/19/2015		LF	--	3.7	5.3	--	9.6
MW-20-100	MA	12/8/2015		LF	--	4.9	4.8	ND (0.5)	7.3
MW-20-130	DA	5/19/2015		LF	4.8	35	29	ND (0.5)	14
MW-20-130	DA	12/8/2015	FD	LF	4.5	48	28	1.7	13
MW-20-130	DA	12/8/2015		LF	4.5	48	27	1.7	12
MW-21	SA	5/6/2015		LF	--	88	15	--	2.2
MW-21	SA	12/9/2015		LF	--	110	24	ND (0.5)	0.51
MW-22	SA	4/22/2015		LF	12	--	--	2,200	--
MW-22	SA	12/3/2015		LF	15	38	ND (2.5)	4,700	--
MW-23-060	BR	4/30/2015		3V	3.1	--	--	ND (0.5)	--
MW-23-060	BR	12/3/2015		VP	4.2	24	4.8	1.3	--
MW-23-080	BR	4/30/2015		3V	3.6	--	--	ND (0.5)	--
MW-23-080	BR	12/3/2015		VP	4.1	43 J	5.4	1.2	--
MW-24A	SA	4/29/2015	FD	LF	ND (0.1)	120	ND (0.5)	12	ND (0.05)
MW-24A	SA	4/29/2015		LF	ND (0.1)	120	ND (0.5)	12	ND (0.058)
MW-24A	SA	12/1/2015		LF	0.15	110	ND (0.5)	25	ND (0.05)
MW-24B	DA	4/29/2015		LF	2.3	54	ND (1)	ND (0.5)	ND (0.054)
MW-24B	DA	12/1/2015		LF	2.8	68	2	93	0.25
MW-24BR	BR	12/2/2015		VP	0.37	64	ND (0.5)	260	2.1
MW-25	SA	5/11/2015		LF	1.1	2.4	6.1	ND (0.5)	9.2
MW-25	SA	12/7/2015		LF	1.2	5.5	6.6	ND (0.5)	10
MW-26	SA	5/19/2015		LF	1.8	30	46	ND (0.5)	23
MW-26	SA	12/8/2015	FD	LF	1.8	34	45	ND (0.5)	20
MW-26	SA	12/8/2015		LF	1.9	35	47	ND (0.5)	20
MW-27-020	SA	12/3/2015		LF	1.5	5.9	ND (0.5)	74	ND (0.05)
MW-27-060	MA	12/3/2015	FD	LF	13	4.7	ND (0.5)	350	ND (0.05)
MW-27-060	MA	12/3/2015		LF	12	4.5	ND (0.5)	350	ND (0.05)
MW-27-085	DA	4/20/2015	FD	LF	1	15	ND (2.5)	18	ND (0.05)
MW-27-085	DA	4/20/2015		LF	1	15	ND (0.5)	18	ND (0.05)
MW-27-085	DA	12/3/2015		LF	1.4	20	ND (0.5)	68	ND (0.05)
MW-28-025	SA	4/21/2015		LF	1.1	3.3	ND (0.5)	ND (0.5)	ND (0.05)
MW-28-025	SA	12/2/2015		LF	0.81	4.2	1.1	3.5	ND (0.05)
MW-28-090	DA	4/21/2015		LF	1.7	19	ND (0.5)	140	ND (0.05)
MW-28-090	DA	12/2/2015		LF	2.1	22	ND (0.5)	170	ND (0.05)
MW-29	SA	4/21/2015		LF	6.8	22	2.8	280	0.19
MW-29	SA	12/1/2015		LF	15	22	ND (0.5)	340	ND (0.05)
MW-30-030	SA	12/3/2015		LF	2.5	100	ND (2.5)	310	0.06
MW-30-050	MA	12/3/2015	FD	LF	3	5.3	ND (0.5)	160	ND (0.05)
MW-30-050	MA	12/3/2015		LF	2.9	5.1	ND (0.5)	160	ND (0.05)

Table 3-2a

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2015 through December 2015

Fourth Quarter 2015 and Annual 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 Method	Arsenic Dissolved (ug/L)	Molybdenum Dissolved (ug/L)	Selenium Dissolved (ug/L)	Manganese Dissolved (ug/L)	Nitrate as N (mg/L)
MW-31-060	SA	5/13/2015		LF	1.1	--	--	ND (0.5)	--
MW-31-060	SA	12/7/2015		LF	1.2	20	3.1	1.9	4.7
MW-31-135	DA	12/7/2015		LF	3.4	27	ND (2.5)	ND (0.5)	--
MW-32-020	SA	12/3/2015	FD	LF	4.3	390	3.2	330	--
MW-32-020	SA	12/3/2015		LF	3.9	350	3.7	320	--
MW-32-035	SA	4/20/2015		LF	2.3	9.7	ND (0.5)	310	2.3
MW-32-035	SA	12/3/2015		LF	17	14	ND (2.5)	1,100	0.058
MW-33-040	SA	4/27/2015		LF	11	130	ND (0.5)	ND (0.5)	ND (0.05)
MW-33-040	SA	12/1/2015		LF	10	440	0.69	ND (0.5)	0.38
MW-33-090	MA	4/27/2015		LF	0.99	12	ND (0.5)	ND (0.5)	1
MW-33-090	MA	12/1/2015		LF	1.1	13	ND (0.5)	4.6	1.1
MW-33-150	DA	4/27/2015		LF	1	51	ND (2.5)	ND (0.5)	1.4
MW-33-150	DA	12/1/2015		LF	1.1	51	0.65	3.7	1.5
MW-33-210	DA	4/27/2015	FD	LF	0.88	20	ND (2.5)	ND (0.5)	1.2
MW-33-210	DA	4/27/2015		LF	0.92	20	ND (2.5)	ND (0.5)	1.2
MW-33-210	DA	12/1/2015		LF	1	18	ND (2.5)	3	1.7
MW-34-055	MA	12/3/2015		LF	2.4	4.6	ND (0.5)	87	ND (0.05)
MW-34-080	DA	4/20/2015		LF	1.3	11	ND (0.5)	ND (0.5)	ND (0.05)
MW-34-080	DA	12/3/2015		LF	1.3	12	ND (0.5)	25	ND (0.05)
MW-34-100	DA	2/16/2015		LF	1.5	76	ND (2.5)	ND (0.5)	0.61
MW-34-100	DA	4/20/2015	FD	LF	0.86	30	ND (0.5)	ND (0.5)	ND (0.056)
MW-34-100	DA	4/20/2015		LF	0.84	28	ND (2.5)	ND (0.5)	ND (0.05)
MW-34-100	DA	10/6/2015		LF	1.4	61	ND (0.5)	38	0.29
MW-34-100	DA	12/3/2015	FD	LF	1.5	110	ND (2.5)	14	0.73
MW-34-100	DA	12/3/2015		LF	1.4	110	ND (0.5)	14	0.74
MW-35-060	SA	5/7/2015		LF	1.1	10	1	ND (0.5)	2.5
MW-35-060	SA	12/7/2015		LF	1	9.6	1	4.3	2.1
MW-35-135	DA	5/7/2015		LF	0.85	20	0.98	ND (0.5)	2.8
MW-35-135	DA	12/7/2015		VP	0.87	26	1	ND (0.5)	2.7
MW-36-020	SA	12/8/2015		LF	1.8	60	1.2	450	--
MW-36-040	SA	12/8/2015		LF	4.6	5.8	ND (0.5)	120	ND (0.05)
MW-36-050	MA	12/8/2015		LF	3.8	4.3	ND (0.5)	250	--
MW-36-070	MA	12/8/2015		LF	2.9	4.7	ND (0.5)	120	--
MW-36-090	DA	4/23/2015		LF	20	--	--	0.81	--
MW-36-090	DA	12/8/2015		LF	21	14	ND (0.5)	7.4	--
MW-36-100	DA	4/23/2015		LF	8.3	29	ND (0.5)	ND (0.5)	ND (0.13)
MW-36-100	DA	12/8/2015		LF	8.5	24	ND (0.5)	28	0.13
MW-37D	DA	4/27/2015		LF	--	46	ND (2.5)	--	0.22
MW-37D	DA	12/7/2015		LF	--	53	ND (0.5)	2	0.26
MW-37S	MA	12/8/2015		LF	1.7	16	0.68	ND (0.5)	--
MW-38D	DA	4/30/2015		3V	6.3	90	ND (2.5)	ND (0.5 J)	ND (0.066)
MW-38D	DA	4/30/2015		LF	6.8	90	ND (1)	ND (0.5)	ND (0.05)
MW-38D	DA	12/1/2015		--	7.7	95	ND (2.5)	59	0.054
MW-38D	DA	12/1/2015		LF	7.3	92	ND (2.5)	43	0.05
MW-38S	SA	2/9/2015		3V	14	43	ND (0.5)	230	ND (0.05)
MW-38S	SA	2/9/2015		LF	15	44	ND (0.5)	220	ND (0.05)
MW-38S	SA	4/30/2015		3V	13	38	ND (0.5)	240	ND (0.05)
MW-38S	SA	4/30/2015		LF	13	37	ND (0.5)	240	ND (0.071)
MW-38S	SA	9/28/2015		3V	14	37	ND (0.5)	250	ND (0.05)
MW-38S	SA	9/28/2015		LF	14	37	ND (0.5)	240	ND (0.05)
MW-38S	SA	12/1/2015		--	13	41	ND (0.5)	230	ND (0.05)
MW-38S	SA	12/1/2015		LF	14	40	ND (0.5)	230	ND (0.05)
MW-39-040	SA	12/4/2015		LF	18	--	--	140	--
MW-39-050	MA	12/4/2015		LF	2.4	6.1	ND (0.5)	140	--
MW-39-060	MA	12/4/2015	FD	LF	4.2	8.2	ND (0.5)	50	0.076
MW-39-060	MA	12/4/2015		LF	4.4	8.7	ND (0.5)	53	ND (0.05)
MW-39-070	MA	12/4/2015		LF	--	46	ND (0.5)	1.3	--
MW-39-080	DA	12/4/2015		LF	--	58	ND (0.5)	--	--
MW-39-100	DA	4/21/2015		LF	4.1	8.8	ND (0.5)	ND (0.5)	ND (0.097)
MW-39-100	DA	12/4/2015		LF	3	7.6	ND (0.5)	31	ND (0.05)
MW-40D	DA	5/12/2015		H	17	64	ND (2.5)	1,500	0.88
MW-40D	DA	5/12/2015		LF	4.3	53	ND (2.5)	ND (0.5 J)	2.9

Table 3-2a

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2015 through December 2015

Fourth Quarter 2015 and Annual 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 Method	Arsenic Dissolved (ug/L)	Molybdenum Dissolved (ug/L)	Selenium Dissolved (ug/L)	Manganese Dissolved (ug/L)	Nitrate as N (mg/L)
MW-40D	DA	12/7/2015	FD	--	3.9	48	ND (2.5)	47	0.23
MW-40D	DA	12/7/2015		--	4.2	48	ND (2.5)	54	0.067
MW-40D	DA	12/7/2015		LF	3.9	49	ND (2.5)	47	0.26
MW-40S	SA	12/7/2015		--	1.7	12	2.8	ND (0.5)	4.3
MW-40S	SA	12/7/2015		LF	1.3	9.2	2	ND (0.5)	3.7
MW-41D	DA	5/6/2015		LF	1.8	99	ND (2.5)	ND (0.5)	0.52
MW-41D	DA	12/7/2015		LF	1.7	90	ND (0.5)	ND (0.5)	0.38
MW-41M	DA	12/7/2015	FD	LF	2.2	25	ND (2.5)	4.6	0.66
MW-41M	DA	12/7/2015		LF	2	26	ND (0.5)	2.8	0.64
MW-41S	SA	12/7/2015		--	1.6	16	0.65	1.2	1.3
MW-42-030	SA	12/3/2015		LF	3.4	21	ND (0.5)	43	0.15
MW-42-055	MA	4/20/2015		LF	21	--	--	12	--
MW-42-055	MA	12/3/2015		LF	27	10	ND (0.5)	20	--
MW-42-065	MA	4/20/2015		LF	3.2	--	--	680	--
MW-42-065	MA	12/3/2015		LF	4	20	ND (0.5)	920	--
MW-43-025	SA	12/8/2015		LF	17	4.9	ND (0.5)	200	--
MW-43-075	DA	12/2/2015		LF	13	13	ND (0.5)	820	--
MW-43-090	DA	12/2/2015		LF	1.2	29	ND (0.5)	23	--
MW-44-070	MA	4/23/2015		LF	3.7	--	--	110	--
MW-44-070	MA	12/4/2015		LF	6.6	6.2	ND (0.5)	28	--
MW-44-115	DA	2/17/2015	FD	LF	5.5	86	ND (2.5)	ND (0.5)	0.23
MW-44-115	DA	2/17/2015		LF	5.6	88	ND (2.5)	ND (0.5)	0.23
MW-44-115	DA	4/23/2015		LF	5.2	90	ND (0.5)	ND (0.5)	0.2
MW-44-115	DA	10/6/2015	FD	LF	5.9	80	ND (0.5)	6.4	0.17
MW-44-115	DA	10/6/2015		LF	5.9	85	ND (0.5)	5.7	0.17
MW-44-115	DA	12/4/2015		LF	5.6	93	ND (0.5)	22	0.16
MW-44-125	DA	4/23/2015	FD	LF	3.1	51	ND (0.5)	400	ND (0.13)
MW-44-125	DA	4/23/2015		LF	3.1	49	ND (0.5)	390	ND (0.11)
MW-44-125	DA	12/4/2015	FD	LF	4.1	100	ND (0.5)	310	ND (0.05)
MW-44-125	DA	12/4/2015		LF	4.3	69	ND (0.5)	210	ND (0.05)
MW-46-175	DA	2/16/2015		LF	--	200	ND (2.5)	--	1.1
MW-46-175	DA	4/21/2015		LF	--	120	ND (0.5)	--	1.1
MW-46-175	DA	10/6/2015		LF	--	160	0.81	--	0.99
MW-46-175	DA	12/2/2015		LF	--	220	ND (2.5)	13	1.1
MW-46-205	DA	12/2/2015		LF	--	400	ND (2.5)	--	--
MW-47-055	SA	5/7/2015		LF	1	--	--	ND (0.5)	--
MW-47-055	SA	12/2/2015		LF	0.74	13 J	1.1	0.85	--
MW-47-115	DA	12/2/2015		LF	--	26	0.95	6.1	--
MW-48	BR	12/4/2015		LF	--	10	ND (0.5)	--	--
MW-49-135	DA	12/1/2015		VP	1.9	44	1.1	290	--
MW-49-275	DA	12/1/2015		LF	--	270	ND (2.5)	450	--
MW-49-365	DA	12/1/2015	FD	LF	--	180	ND (2.5)	--	--
MW-49-365	DA	12/1/2015		LF	1.6	190	ND (2.5)	--	--
MW-50-095	MA	12/8/2015		LF	--	18	0.82	1.5	--
MW-50-200	DA	12/7/2015		LF	3.2	46	2.6	0.89	--
MW-51	MA	5/20/2015		LF	3.4	48	15	ND (0.5)	11
MW-51	MA	12/8/2015		LF	3.8	46	15	1.5	9.9
MW-52D	DA	4/22/2015		Slant	2.8	--	--	77	--
MW-52D	DA	12/2/2015		--	2.7	98	ND (2.5)	260	--
MW-52M	DA	4/22/2015		Slant	1.5	--	--	38	--
MW-52M	DA	12/2/2015		VP	0.81	38	ND (0.5)	160	--
MW-52S	MA	4/22/2015		Slant	0.12	--	--	2,000	--
MW-52S	MA	12/2/2015		VP	0.37	5.1	ND (0.5)	1,300	--
MW-53D	DA	4/22/2015		Slant	3	--	--	1,200	--
MW-53D	DA	12/2/2015		VP	2.6	190	ND (2.5)	1,100	--
MW-53M	DA	4/22/2015		Slant	0.68	--	--	270	--
MW-53M	DA	12/2/2015		VP	0.51	77	ND (2.5)	420	--
MW-54-085	DA	4/28/2015		LF	4.45	--	--	614	--
MW-54-085	DA	12/9/2015	FD	LF	2.4	46	ND (0.5)	890	--
MW-54-085	DA	12/9/2015		LF	3.1 J	4.8 J	ND (22)	879	--
MW-54-140	DA	4/28/2015		LF	3.09	--	--	104	--
MW-54-140	DA	12/9/2015		--	3.0 J	12.6 J	ND (22)	102	--

Table 3-2a

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2015 through December 2015

Fourth Quarter 2015 and Annual 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 Method	Arsenic Dissolved (ug/L)	Molybdenum Dissolved (ug/L)	Selenium Dissolved (ug/L)	Manganese Dissolved (ug/L)	Nitrate as N (mg/L)
MW-54-195	DA	4/28/2015		LF	1.09	--	--	175	--
MW-54-195	DA	12/9/2015		LF	ND (5)	4.67	ND (22)	202	--
MW-55-045	MA	12/7/2015		LF	--	43	ND (0.5)	960	--
MW-55-120	DA	12/7/2015		LF	--	51	ND (2.5)	17	--
MW-56D	DA	12/9/2015		VP	--	46	ND (2.5)	--	--
MW-56M	DA	12/9/2015		--	--	10	ND (2.5)	--	--
MW-56S	SA	12/9/2015		--	--	33	ND (0.5)	--	--
MW-57-070	BR	5/21/2015		3V	1.3	3.5	3	ND (0.5)	8.2
MW-57-070	BR	12/4/2015		VP	1.4	2.3	3.2	ND (0.5)	6.9
MW-57-185	BR	5/11/2015		3V	15	88	ND (2.5)	220	ND (0.05)
MW-57-185	BR	12/4/2015		VP	13	89	ND (2.5)	320	ND (0.05)
MW-58BR	BR	2/10/2015		LF	1.2	25	1.1	390	0.34
MW-58BR	BR	5/18/2015		LF	1.2	26	1.3	130	0.21
MW-58BR	BR	9/30/2015		LF	2.9	22	0.58	490	0.096
MW-58BR	BR	12/7/2015		LF	1.5	27	1.2	360	0.22
MW-59-100	SA	5/19/2015		LF	2.2	6.7	2.5	ND (0.5)	3.2
MW-59-100	SA	12/3/2015	FD	LF	2	6.4	3	1.4	3.1
MW-59-100	SA	12/3/2015		LF	1.9	6.4	2.8	1.2	3
MW-60-125	BR	5/14/2015		3V	1.3	18	5.1	ND (0.5)	6.5
MW-60-125	BR	12/4/2015		VP	1.3	18	5.7	2.3	4.2
MW-60BR-245	BR	2/10/2015		3V	6.2	62	ND (2.5)	ND (0.5)	0.095
MW-60BR-245	BR	5/14/2015		3V	6.7	63	1.1	ND (0.5 J)	0.17
MW-60BR-245	BR	9/29/2015		3V	5.9	63	1.4	28	0.14
MW-60BR-245	BR	12/4/2015		VP	7	62	ND (2.5)	22	0.17
MW-61-110	BR	5/13/2015		3V	3.3	25	ND (2.5)	78	1.4
MW-61-110	BR	12/4/2015		VP	3.3	25	ND (2.5)	180	0.91
MW-62-065	BR	2/16/2015	FD	3V	1.5	14	3.4	ND (0.5)	4
MW-62-065	BR	2/16/2015		3V	1.5	14	3.2	ND (0.5)	4.1
MW-62-065	BR	5/13/2015	FD	3V	1.5	14	3.5	ND (0.5)	4.4
MW-62-065	BR	5/13/2015		3V	1.4	13	3.1	ND (0.5)	4.2
MW-62-065	BR	10/7/2015		3V	1.3	13	3.7	1.2	4.1
MW-62-065	BR	12/3/2015		VP	1.3	14	3.4	2.7	4.6
MW-62-110	BR	2/11/2015		Flute	6.3	43	3.6	52	3.9
MW-62-110	BR	5/19/2015		Flute	7.4	39	2.5	53	3.7
MW-62-110	BR	10/1/2015		Flute	6.8	72	ND (0.5)	91	0.11
MW-62-110	BR	12/4/2015		VP	7.7	54	ND (0.5)	89	ND (0.05)
MW-62-190	BR	5/19/2015		Flute	3.8	68	ND (2.5)	490	ND (0.05)
MW-62-190	BR	12/4/2015		VP	3.9	22 J	ND (2.5)	840	0.052
MW-63-065	BR	2/10/2015		3V	1.4	19	0.85	ND (0.5)	0.98
MW-63-065	BR	4/29/2015		3V	1.2	17	0.77	ND (0.5)	0.95
MW-63-065	BR	9/28/2015		3V	1.3	16	0.96	3.3	1.1
MW-63-065	BR	12/4/2015		VP	1.9	19	1.1	34	1.2
MW-64BR	BR	2/18/2015		LF	2.8	67	ND (0.5)	770	ND (0.05)
MW-64BR	BR	5/18/2015		LF	6	70	ND (2.5)	1,400	ND (0.05)
MW-64BR	BR	10/1/2015		LF	3.2	62	ND (0.5)	1,000	ND (0.05)
MW-64BR	BR	12/7/2015		LF	3.3	68	ND (2.5)	920	ND (0.05)
MW-65-160	SA	3/24/2015		LF	0.67	25	6.9	ND (0.5)	13
MW-65-160	SA	5/11/2015	FD	LF	0.64	26	7.2	ND (0.5)	13
MW-65-160	SA	5/11/2015		LF	0.62	26	7.6	ND (0.5)	12
MW-65-160	SA	9/30/2015		LF	0.61	30	7.2	1.1	11
MW-65-160	SA	12/2/2015		--	0.73	32	6.9	4.8	12
MW-65-225	DA	2/17/2015		LF	2.8	55	ND (2.5)	ND (0.5)	2.1
MW-65-225	DA	5/11/2015		LF	2.9	49	ND (2.5)	ND (0.5)	2.2
MW-65-225	DA	9/30/2015		LF	2.5	49	2.7	76	2.5
MW-65-225	DA	12/2/2015		LF	2.6	60	3	49	3.5
MW-66-165	SA	5/13/2015		LF	1.2	4.7	31	ND (0.5)	30
MW-66-165	SA	12/2/2015		LF	0.9	5.5	24	ND (0.5)	27
MW-66-230	DA	5/21/2015		LF	6.3	80	12	ND (0.5)	14
MW-66-230	DA	12/3/2015		LF	4.4	83	14	1.8	16
MW-66BR-270	BR	5/18/2015		3V	ND (0.1)	2.1	ND (0.5)	ND (0.5)	ND (0.05)
MW-66BR-270	BR	12/9/2015		VP	ND (0.5)	ND (12)	ND (12)	13,000	ND (0.05)
MW-67-185	SA	5/20/2015		LF	1.2	11	300	ND (0.5)	54

Table 3-2a

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2015 through December 2015

Fourth Quarter 2015 and Annual 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 Method	Arsenic Dissolved (ug/L)	Molybdenum Dissolved (ug/L)	Selenium Dissolved (ug/L)	Manganese Dissolved (ug/L)	Nitrate as N (mg/L)
MW-67-185	SA	12/2/2015		LF	0.93	13	300	ND (0.5)	64
MW-67-225	MA	5/20/2015		LF	3.2	39	73	ND (0.5)	25
MW-67-225	MA	12/2/2015		--	3.5	43	81	36	25
MW-67-260	DA	5/20/2015		LF	8.2	89	ND (2.5)	23	0.64
MW-67-260	DA	12/2/2015		LF	8.9	90	ND (2.5)	160	0.68
MW-68-180	SA	2/18/2015		LF	2.4	46	15	ND (0.5)	30
MW-68-180	SA	5/18/2015		LF	2.8	34	11	ND (0.5)	16
MW-68-180	SA	9/30/2015	FD	LF	2.4	43	18	ND (0.5)	30
MW-68-180	SA	9/30/2015		LF	2.5	43	17	ND (0.5)	30
MW-68-180	SA	12/2/2015		LF	2.7	52	17	ND (0.5)	31
MW-68-240	DA	5/21/2015		LF	1.8	24	4.3	ND (0.5)	4.6
MW-68-240	DA	12/2/2015		--	1.5	24	ND (12)	30	5.3
MW-68BR-280	BR	5/27/2015		3V	1.3	57	ND (2.5)	ND (0.5 J)	0.08
MW-68BR-280	BR	12/3/2015		--	1.3	65	ND (2.5)	120	ND (0.05)
MW-69-195	BR	2/17/2015		3V	2.3	81	9	ND (0.5 J)	16
MW-69-195	BR	5/14/2015	FD	3V	2.3	86	9.9	ND (0.5)	17
MW-69-195	BR	5/14/2015		3V	2.3	85	10	ND (0.5)	18
MW-69-195	BR	10/1/2015		3V	2.3	82	12	0.68	17
MW-69-195	BR	12/4/2015		VP	2.3	90	12	0.88	18
MW-70-105	BR	5/7/2015		3V	4.3	79	3.3	89	3.9
MW-70-105	BR	12/7/2015		VP	4.2	80	3.7	59	4.1
MW-70BR-225	BR	5/27/2015		3V	1.9	18	2.5	ND (0.5)	3.8
MW-70BR-225	BR	12/7/2015		VP	1.8	19	2.6	3	4
MW-71-035	SA	5/6/2015		LF	10	78	ND (0.5)	3,900	0.37
MW-71-035	SA	12/4/2015		LF	9.5	46	5.2	5,200	0.67
MW-72-080	BR	2/11/2015		3V	12	78	ND (2.5)	ND (0.5)	1
MW-72-080	BR	5/11/2015		3V	11	75	ND (2.5)	ND (0.5)	0.79
MW-72-080	BR	9/29/2015		3V	12	73	1.3	24	1.1
MW-72-080	BR	12/7/2015		VP	10	80	1.4	23	1.1
MW-72BR-200	BR	2/11/2015		3V	14	78	ND (2.5)	ND (0.5)	0.16
MW-72BR-200	BR	5/4/2015		3V	12	72	ND (2.5)	ND (0.5)	ND (0.11)
MW-72BR-200	BR	9/29/2015		3V	16	79	ND (0.5)	9.7	0.12
MW-72BR-200	BR	12/8/2015		VP	15	85	ND (0.5)	6.8	0.17
MW-73-080	BR	2/10/2015		3V	2.9	23	1.9	ND (0.5)	2
MW-73-080	BR	5/6/2015		3V	1.5	25	3.9	ND (0.5)	4.1
MW-73-080	BR	9/29/2015		3V	1.3	22	4.1	16	4
MW-73-080	BR	12/8/2015		VP	1.7	26	3.9	8.7	3.8
MW-74-240	BR	5/14/2015		3V	9.9	41	1.7	9.9	1.8
MW-74-240	BR	12/7/2015		--	14	49	ND (2.5)	60	0.66
OW-03D	DA	12/7/2015		LF	--	24	ND (0.5)	0.87	--
OW-03M	MA	12/7/2015		LF	--	16	0.67	7.4	--
OW-03S	SA	12/7/2015	FD	VP	--	6.4	4.6	--	--
OW-03S	SA	12/7/2015		VP	--	6.5	4.8	--	--
PE-01	DA	1/6/2015		Tap	--	--	--	33	--
PE-01	DA	2/3/2015		Tap	--	--	--	36	--
PE-01	DA	3/17/2015		Tap	--	--	--	46	ND (0.05)
PE-01	DA	4/7/2015		Tap	--	--	--	58	ND (0.05)
PE-01	DA	5/5/2015		Tap	--	--	--	57	ND (0.05)
PE-01	DA	6/2/2015		Tap	--	--	--	54	ND (0.05)
PE-01	DA	7/7/2015		WV	--	--	--	57	ND (0.05)
PE-01	DA	8/4/2015		Tap	--	--	--	57	ND (0.05)
PE-01	DA	9/1/2015		Tap	--	--	--	79	ND (0.05)
PE-01	DA	10/6/2015		Tap	--	--	--	76	ND (0.05)
PE-01	DA	10/27/2015		SS	--	--	--	69	ND (0.05)
PE-01	DA	11/3/2015		WV	--	--	--	73	ND (0.05)
PE-01	DA	11/10/2015		SS	--	--	--	82	ND (0.05)
PE-01	DA	12/1/2015		WV	--	--	--	74	ND (0.05)
PGE-07BR	BR	12/2/2015		VP	--	ND (2.5)	ND (2.5)	--	--
PGE-08	BR	1/7/2015		3V	--	100	ND (12)	--	ND (0.05)
PGE-08	BR	12/10/2015		VP	--	120	ND (0.5)	--	ND (0.05)
PM-03	--	3/17/2015		Tap	--	--	--	ND (0.5)	3.3
PM-03	--	12/8/2015		SS	--	5.9	1.6	--	--

Table 3-2a

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2015 through December 2015
Fourth Quarter 2015 and Annual 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 Method	Arsenic Dissolved (ug/L)	Molybdenum Dissolved (ug/L)	Selenium Dissolved (ug/L)	Manganese Dissolved (ug/L)	Nitrate as N (mg/L)
PM-04	--	3/17/2015		Tap	--	--	--	ND (0.5)	2.5
PM-04	--	12/8/2015		SS	--	5.8	1.4	--	--
TW-01	SA	5/27/2015		3V	--	15	14	--	19
TW-01	SA	12/1/2015		VP	--	15	15	--	21
TW-02D	DA	12/9/2015	FD	--	2.4	16	ND (2.5)	18	0.94
TW-02D	DA	12/9/2015		--	--	16	0.73	--	--
TW-02S	SA	1/13/2015		Tap	--	15	2.8	--	4.3
TW-02S	SA	9/1/2015		Tap	--	--	--	ND (0.5)	4.3
TW-02S	SA	12/9/2015		--	--	13	2.9	--	4
TW-03D	DA	1/6/2015		Tap	--	--	--	ND (0.5 J)	--
TW-03D	DA	2/3/2015		Tap	--	--	--	ND (0.5)	--
TW-03D	DA	3/17/2015		Tap	--	--	--	ND (0.5)	3.6
TW-03D	DA	4/7/2015		Tap	--	--	--	ND (0.5)	3.4
TW-03D	DA	5/5/2015		Tap	--	--	--	ND (0.5)	3.2
TW-03D	DA	6/2/2015		Tap	--	--	--	ND (0.5)	3.5
TW-03D	DA	7/7/2015		WV	--	--	--	ND (0.5)	3.4
TW-03D	DA	8/4/2015		Tap	--	--	--	ND (0.5)	3.3
TW-03D	DA	9/1/2015		Tap	--	--	--	9.8	3.5
TW-03D	DA	10/6/2015		Tap	--	--	--	11	3.3
TW-03D	DA	10/27/2015		SS	--	--	--	10	3.3
TW-03D	DA	11/3/2015		WV	--	--	--	11	3.3
TW-03D	DA	11/10/2015		SS	--	--	--	13	3.3
TW-03D	DA	12/1/2015		WV	--	--	--	13	3.3
TW-04	DA	12/8/2015		VP	--	78	ND (2.5)	38	--
TW-05	DA	12/8/2015		VP	--	28	ND (2.5)	ND (0.5)	--

Notes:

--- = data was either not collected, not available or was rejected
3V = three volume.
COPC = contaminants of potential concern.
FD = field duplicate sample.
J = concentration or reporting limit estimated by laboratory or data validation.
LF = Low Flow (minimal drawdown)
mg/L = milligrams per liter.
ND = not detected at listed reporting limit.
ug/L = micrograms per liter.

The values that are shaded in the table are from an ADEQ approved laboratory.

Wells are assigned to separate aquifer zones for results reporting:
SA = shallow interval of Alluvial Aquifer.
MA = mid-depth interval of Alluvial Aquifer.
DA = deep interval of Alluvial Aquifer.
PA = perched aquifer (unsaturated zone).
BR = well completed in bedrock (Miocene Conglomerate or pre-Tertiary crystalline rock).

Nitrate samples were analyzed using USEPA Method 4500NO3, except for TW-3D and PE-1, which were analyzed using USEPA Method 300.0. USEPA Method 4500NO3 reports a combination of nitrate and nitrite as nitrogen. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for USEPA Method 4500NO3 are expected to be essentially the same as previous samples analyzed using USEPA Method 300.0 and reported as nitrate as nitrogen.

Starting in Third Quarter 2014, the groundwater sample collection method was switched from the traditional three-volume purge method (3V) to the minimal drawdown, or micropurge (MP) method at many short screen wells screened in alluvial sediments. The method for purging prior to sample collection is indicated in the sample method column of this table.

The background study upper tolerance limit (UTL) for arsenic is 24.3 µg/L.
The USEPA and California maximum contaminant level (MCL) for arsenic is 10 µg/L.
The background study UTL for molybdenum is 36.3 µg/L.
There is no USEPA or California MCL for molybdenum.
The background study UTL for selenium is 10.3 µg/L.
The USEPA and California MCL for selenium is 50.0 µg/L.

Table 3-2a

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Results, January 2015 through December 2015
Fourth Quarter 2015 and Annual 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 Method	Arsenic Dissolved (ug/L)	Molybdenum Dissolved (ug/L)	Selenium Dissolved (ug/L)	Manganese Dissolved (ug/L)	Nitrate as N (mg/L)

The secondary USEPA and California MCL for manganese is 50 ug/L.
The background study UTL for nitrate as nitrogen is 5.03 mg/L.
The USEPA and California MCL for nitrate as nitrogen is 10 mg/L.
The background study UTL for fluoride is 7.1 mg/L.
The USEPA MCL for fluoride is 4 mg/L, and the California MCL for fluoride is 2 mg/L.

Table 3-2b

Groundwater COPCs, In Situ Byproducts, and Other Analytes Sampling Statistics, Fourth Quarter 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Analyte	Units	Number of Wells Sampled	Number of Detects	Minimum Detect	Maximum Detect	Background Study UTL	Number Exceeding UTL	CA MCL	Number Exceeding MCL
Alluvial Acquifer									
Molybdenum, dissolved	ug/L	126	126	2.7	440	36.3	51	NE	---
Nitrate/Nitrite as Nitrogen	mg/L	84	62	0.05	64	5.03	22	10	16
Selenium, dissolved	ug/L	126	57	0.65	300	10.3	12	50	2
Arsenic, dissolved	ug/L	92	92	0.37	36	24.3	2	10	13
Manganese, dissolved	ug/L	123	100	0.52	5,200	50	46	50	46
Fluoride	mg/L	9	9	0.55	12	NE	---	NE	---
Bedrock									
Molybdenum, dissolved	ug/L	31	29	2.3	120	36.3	17	NE	---
Nitrate/Nitrite as Nitrogen	mg/L	26	19	0.052	18	5.03	3	10	2
Selenium, dissolved	ug/L	31	14	1.1	12	10.3	2	50	0
Arsenic, dissolved	ug/L	28	27	0.37	15	24.3	--	10	4
Manganese, dissolved	ug/L	27	26	0.68	13,000	50	13	50	13
Fluoride	mg/L	---	---	---	---	NE	---	NE	---
Total									
Molybdenum, dissolved	ug/L	157	155	2.3	440	36.3	68	NE	---
Nitrate/Nitrite as Nitrogen	mg/L	110	81	0.05	64	5.03	25	10	18
Selenium, dissolved	ug/L	157	71	0.65	300	10.3	14	50	2
Arsenic, dissolved	ug/L	120	119	0.37	36	24.3	2	10	17
Manganese, dissolved	ug/L	150	126	0.52	13,000	50	59	50	59
Fluoride	mg/L	9	9	0.55	12	NE	---	NE	---

Notes:

(---) = not applicable

CA MCL = California maximum contaminant level

COPC = contaminants of potential concern

NE = not established

mg/L = milligrams per liter.

ug/L = micrograms per liter.

UTL = background study upper tolerance limit

The background study UTL was developed for alluvial wells only.

Table 3-3
Title 22 Metals Results, January 2015 through December 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	California MCL: Sample Date		8 Antimony	10 Arsenic	1,000 Barium	4 Beryllium	5 Cadmium	NE Cobalt	50 Chromium	1,000* Copper	15 Lead	2 Mercury	NE Molybdenum	100 Nickel	50 Selenium	100* Silver	2 Thallium	NE Vanadium	5,000 Zinc
MW-10	5/12/2015		--	--	--	--	--	--	290	--	--	--	26	--	6.2	--	--	--	--
MW-10	10/7/2015		--	3.4	--	--	--	--	210	--	--	--	20	--	6.1	--	--	--	--
MW-10	12/1/2015		ND (0.5)	2.9	55	ND (0.5)	ND (0.5)	0.79	170	ND (1)	1.9	ND (0.2)	19	16	5.3	ND (0.5)	ND (0.5)	18	ND (10)
MW-12	5/19/2015		--	--	--	--	--	--	2,200	--	--	--	12	--	20	--	--	--	--
MW-12	12/2/2015		ND (0.5)	36	45	ND (0.5)	ND (0.5)	ND (0.5)	2,300	ND (1)	ND (25)	ND (0.2)	9.9	6.9	17	ND (0.5)	ND (12)	15	ND (10)
MW-22	4/22/2015		--	12	--	--	--	--	ND (1)	--	--	--	--	--	--	--	--	--	--
MW-22	12/3/2015		ND (2.5)	15	110	ND (2.5)	ND (2.5)	2.2	ND (1)	ND (1)	ND (5)	ND (0.2)	38	ND (5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (1)	ND (50)
MW-26	5/19/2015		--	1.8	--	--	--	--	2,500	--	--	--	30	--	46	--	--	--	--
MW-26	12/8/2015	FD	ND (0.5)	1.8	38	ND (0.5)	ND (0.5)	ND (0.5)	2,700	ND (1)	ND (1)	ND (0.2)	34	5.7	45	ND (0.5)	ND (0.5)	7	21
MW-26	12/8/2015		ND (0.5)	1.9	40	ND (0.5)	ND (0.5)	ND (0.5)	2,700	ND (1)	ND (1)	ND (0.2)	35	5.9	47	ND (0.5)	ND (0.5)	7.4	22
MW-44-115	2/17/2015	FD	--	5.5	--	--	--	--	31	--	--	--	86	--	ND (2.5)	--	--	--	--
MW-44-115	2/17/2015		--	5.6	--	--	--	--	31	--	--	--	88	--	ND (2.5)	--	--	--	--
MW-44-115	4/23/2015		--	5.2	--	--	--	--	28	--	--	--	90	--	ND (0.5)	--	--	--	--
MW-44-115	10/6/2015	FD	--	5.9	--	--	--	--	26	--	--	--	80	--	ND (0.5)	--	--	--	--
MW-44-115	10/6/2015		--	5.9	--	--	--	--	27	--	--	--	85	--	ND (0.5)	--	--	--	--
MW-44-115	12/4/2015		ND (0.5)	5.6	24	ND (2.5)	ND (0.5)	ND (0.5)	34	ND (1)	ND (5)	ND (0.2)	93	2.5	ND (0.5)	ND (0.5)	ND (2.5)	6.6	ND (10)
MW-50-200	5/20/2015		--	--	--	--	--	--	4,000	--	--	--	--	--	--	--	--	--	--
MW-50-200	12/7/2015		ND (2.5)	3.2	46	ND (25)	ND (2.5)	ND (0.5)	5,100	ND (5)	ND (50)	ND (0.2)	46	ND (5)	2.6	ND (2.5)	ND (25)	3.2	ND (50)
MW-51	5/20/2015		--	3.4	--	--	--	--	5,100	--	--	--	48	--	15	--	--	--	--
MW-51	12/8/2015		ND (0.5)	3.8	34	ND (2.5)	ND (0.5)	ND (0.5)	4,900	ND (1)	ND (5)	ND (0.2)	46	2	15	ND (0.5)	ND (2.5)	2	ND (10)

Notes:
* = Secondary USEPA MCL
--- = data was either not collected, not available or was rejected
J = concentration or reporting limit estimated by laboratory or data validation.
ND = not detected at listed reporting limit.
NE = Not Established
ug/L = micrograms per liter.
USEPA = United States Environmental Protection Agency
uS/cm = microSiemens per centimeter.

Title 22 metals are the metals listed in California Code of Regulations, Title 22, Section 66261.24(a)(2)(A).

The MCLs listed, in micrograms per liter (ug/L), are the California primary drinking water standards, except where noted.
All results are dissolved metals concentrations in µg/L from field-filtered samples.
Metals analyzed by USEPA Methods SW6020A or SW7470A.

Table 3-4

Surface Water Sampling Results, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Hexavalent Chromium (ug/L)	Dissolved Chromium (ug/L)	Specific Conductance (uS/cm)	Lab pH*
C-BNS-D	1/14/2015	ND (0.2)	ND (1)	940	8.2
C-BNS-D	2/24/2015	ND (0.2)	ND (1)	900	8.3
C-BNS-D	6/9/2015	ND (0.2)	ND (1)	980	8.2
C-BNS-D	12/8/2015	ND (0.2)	ND (1)	1,000	8.3
C-CON-D	1/15/2015	ND (0.2)	ND (1)	950	8.2
C-CON-D	2/25/2015	ND (0.2)	ND (1)	870	8.4
C-CON-D	6/10/2015	ND (0.2)	ND (1)	980	8.2
C-CON-D	12/9/2015	ND (0.2)	ND (1)	970	8.2
C-CON-S	1/15/2015	ND (0.2)	ND (1)	940	8.3
C-CON-S	2/25/2015	ND (0.2)	ND (1)	860	8.4
C-CON-S	6/10/2015	ND (0.2)	ND (1)	990	8.3
C-CON-S	12/9/2015	ND (0.2)	ND (1)	930	8.2
C-I-3-D	1/14/2015	ND (0.2)	ND (1)	930	8.2
C-I-3-D	2/24/2015	ND (0.2)	ND (1)	880	8.4
C-I-3-D	6/9/2015	ND (0.2)	ND (1)	980	8.3
C-I-3-D	12/8/2015	ND (0.2)	ND (1)	1,000	8.3
C-I-3-S	1/14/2015	ND (0.2)	ND (1)	930	8.2
C-I-3-S	2/24/2015	ND (0.2)	ND (1)	880	8.3
C-I-3-S	6/9/2015	ND (0.2)	ND (1)	980	8.2
C-I-3-S	12/8/2015	ND (0.2)	ND (1)	1,000	8.3
C-MAR-D	12/9/2015	ND (0.2)	ND (1)	1,100	8
C-MAR-S	1/14/2015	ND (0.2)	ND (1)	940	8.1
C-MAR-S	2/24/2015	ND (0.2)	ND (1)	940	8.2
C-MAR-S	6/10/2015	ND (0.2)	ND (1)	1,100	7.8
C-MAR-S	12/9/2015	ND (0.2)	ND (1)	1,000	8
C-NR1-D	1/15/2015	ND (0.2)	ND (1)	930	8.2
C-NR1-D	2/25/2015	ND (0.2)	ND (1)	880	8.3
C-NR1-D	6/10/2015	ND (0.2)	ND (1)	990	8.3
C-NR1-D	12/9/2015	ND (0.2)	ND (1)	940	8.2
C-NR1-S	1/15/2015	ND (0.2)	ND (1)	950	8.2
C-NR1-S	2/25/2015	ND (0.2)	ND (1)	860	8.4
C-NR1-S	6/10/2015	ND (0.2)	ND (1)	990	8.3
C-NR1-S	12/9/2015	ND (0.2)	ND (1)	960	8.2
C-NR3-D	1/15/2015	ND (0.2)	ND (1)	940	8.2
C-NR3-D	2/25/2015	ND (0.2)	ND (1)	870	8.3
C-NR3-D	6/10/2015	ND (0.2)	ND (1)	1,000	6.8
C-NR3-D	12/9/2015	ND (0.2)	ND (1)	960	8.2
C-NR3-S	1/15/2015	ND (0.2)	ND (1)	930	8.2
C-NR3-S	2/25/2015	ND (0.2)	ND (1)	870	8.4
C-NR3-S	6/10/2015	ND (0.2)	ND (1)	1,000	8.3
C-NR3-S	12/9/2015	ND (0.2)	ND (1)	950	8.2
C-NR4-D	1/15/2015	ND (0.2)	ND (1)	930	8.2
C-NR4-D	2/25/2015	ND (0.2)	ND (1)	870	8.4
C-NR4-D	6/10/2015	ND (0.2)	ND (1)	1,000	8.3

Table 3-4

Surface Water Sampling Results, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Hexavalent Chromium (ug/L)	Dissolved Chromium (ug/L)	Specific Conductance (uS/cm)	Lab pH*
C-NR4-D	12/9/2015	ND (0.2)	ND (1)	970	8.2
C-NR4-S	1/15/2015	ND (0.2)	ND (1)	940	8.2
C-NR4-S	2/25/2015	ND (0.2)	ND (1)	870	8.3
C-NR4-S	6/10/2015	ND (0.2)	ND (1)	1,000	8.1
C-NR4-S	12/9/2015	ND (0.2)	ND (1)	980	8.2
C-R22a-D	1/14/2015	ND (0.2)	ND (1)	930	8.3
C-R22a-D	2/24/2015	ND (0.2)	ND (1)	880	8.2
C-R22a-D	6/9/2015	ND (0.2)	ND (1)	990	8.3
C-R22a-D	12/8/2015	ND (0.2)	ND (1)	1,000	8.3
C-R22a-S	1/14/2015	ND (0.2)	ND (1)	920	8.3
C-R22a-S	2/24/2015	ND (0.2)	ND (1)	880	8.3
C-R22a-S	6/9/2015	ND (0.2)	ND (1)	990	8.2
C-R22a-S	12/8/2015	ND (0.2)	ND (1)	1,000	8.3
C-R27-D	1/14/2015	ND (0.2)	ND (1)	930	8.2
C-R27-D	2/24/2015	ND (0.2)	ND (1)	890	8.4
C-R27-D	6/9/2015	ND (0.2)	ND (1)	990	8.2
C-R27-D	12/8/2015	ND (0.2)	ND (1)	1,000	8.3
C-R27-S	1/14/2015	ND (0.2)	ND (1)	940	8.2
C-R27-S	2/24/2015	ND (0.2)	ND (1)	890	8.3
C-R27-S	6/9/2015	ND (0.2)	ND (1)	990	8.3
C-R27-S	12/8/2015	ND (0.2)	ND (1)	1,000	8.3
C-TAZ-D	1/14/2015	ND (0.2)	ND (1)	940	8.3
C-TAZ-D	2/24/2015	ND (0.2)	ND (1)	880	8.4
C-TAZ-D	6/9/2015	ND (0.2)	ND (1)	990	8.3
C-TAZ-D	12/8/2015	ND (0.2)	ND (1)	1,000	8.3
C-TAZ-S	1/14/2015	ND (0.2)	ND (1)	940	8.3
C-TAZ-S	2/24/2015	ND (0.2)	ND (1)	890	8.4
C-TAZ-S	6/9/2015	ND (0.2)	ND (1)	990	8.3
C-TAZ-S	12/8/2015	ND (0.2)	ND (1)	1,000	8.3
R-19	1/15/2015	ND (0.2)	ND (1)	940	8.3
R-19	2/25/2015	ND (0.2)	ND (1)	870	8.4
R-19	6/9/2015	ND (0.2)	ND (1)	1,000	7
R-19	9/16/2015	ND (0.2)	ND (1)	940	7.9
R-19	12/9/2015	ND (0.2)	ND (1)	960	8.2
R-28	1/15/2015	ND (0.2)	ND (1)	930	8.3
R-28	2/25/2015	ND (0.2)	ND (1)	880	8.4
R-28	6/9/2015	ND (0.2)	ND (1)	990	8.3
R-28	9/16/2015	ND (0.2)	ND (1)	940	7.9
R-28	12/9/2015	ND (0.2)	ND (1)	960	8.2
R63	1/14/2015	ND (0.2)	ND (1)	940	8.3
R63	2/24/2015	ND (0.2)	ND (1)	890	8.4
R63	6/9/2015	ND (0.2)	ND (1)	990	8.2
R63	9/16/2015	ND (0.2)	ND (1)	940	7.7
R63	12/8/2015	ND (0.2)	ND (1)	1,000	8.3

Table 3-4

Surface Water Sampling Results, January 2015 through December 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Hexavalent Chromium (ug/L)	Dissolved Chromium (ug/L)	Specific Conductance (uS/cm)	Lab pH*
RRB	1/15/2015	ND (0.2)	ND (1)	940	8.3
RRB	2/25/2015	ND (0.2)	ND (1)	880	8.4
RRB	6/10/2015	ND (0.2)	ND (1)	1,000	8
RRB	9/17/2015	ND (0.2)	ND (1)	940	7.8
RRB	12/9/2015	ND (0.2)	ND (1)	970	8.3
SW1	1/14/2015	ND (0.2)	ND (1)	1,200	7.6
SW1	2/24/2015	ND (0.2)	ND (1)	950	8
SW1	6/10/2015	ND (0.2)	ND (1)	1,000	7.5
SW1	9/17/2015	ND (0.2)	ND (1)	940	7.7
SW1	12/10/2015	ND (0.2)	ND (1)	1,100	7.9
SW2	1/14/2015	ND (0.2)	ND (1)	990	7.6
SW2	2/24/2015	ND (0.2)	ND (1)	900	8.3
SW2	6/10/2015	ND (0.2)	ND (1)	1,000	8
SW2	9/17/2015	ND (0.2)	ND (1)	950	7.8
SW2	12/10/2015	ND (0.2)	ND (1)	1,100	7.2

Notes:

* Lab pH Values were all J flagged by the lab for being out of holding time.
J = concentration or reporting limit estimated by laboratory or data validation.
ND = not detected at listed reporting limit.
ug/L = micrograms per liter.
uS/cm = microSiemens per centimeter.

Hexavalent chromium analytical Method USEPA 218.6 (reporting limit 0.2 ug/L for undiluted samples).

Other analytical methods: dissolved chromium - Method SW6020A; specific conductance - USEPA 120.1; pH -SM4500-HB.

pH is reported to two significant figures.

Table 3-5

COPCs, In Situ Byproducts, and Geochemical Indicator Parameters in Surface Water Samples, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Arsenic, Dissolved (ug/L)	Barium, Dissolved (ug/L)	Iron, Total (ug/L)	Iron, Dissolved (ug/L)	Manganese, Dissolved (ug/L)	Molybdenum, Dissolved (ug/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Selenium, Dissolved (ug/L)	Total Suspended Solids (mg/L)
C-BNS-D	1/14/2015	2.4	130	41	ND (20)	ND (0.5)	4.7	0.31	1.4	ND (10)
C-BNS-D	2/24/2015	2.5	110	89	ND (20)	ND (0.5)	4.5	0.45	1.5	ND (10)
C-BNS-D	6/9/2015	2.4	140	ND (20)	ND (20)	ND (0.5)	4.8	0.39	1.4	ND (10)
C-BNS-D	12/8/2015	2.5	140	ND (20)	--	1.7	--	0.3	--	ND (10)
C-CON-D	1/15/2015	2.6	140	47	ND (20)	ND (0.5)	4.8	0.35	1.4	ND (10)
C-CON-D	2/25/2015	2.4	130	67	ND (20)	ND (0.5)	4.8	0.45	1.5	ND (10)
C-CON-D	6/10/2015	2.3	120	21	ND (20)	ND (0.5)	4.5	0.39	1.6	ND (10)
C-CON-D	12/9/2015	2.3	130	60	28	ND (0.5)	5	0.3	1.4	ND (10)
C-CON-S	1/15/2015	2.3	120	27	ND (20)	ND (0.5)	4.4	0.38	1.3	ND (10)
C-CON-S	2/25/2015	2.4	130	68	ND (20)	ND (0.5)	4.8	0.46	1.4	ND (10)
C-CON-S	6/10/2015	2.2	150	ND (20)	ND (20)	ND (0.5)	4.3	0.39	1.2	ND (10)
C-CON-S	12/9/2015	2.2	130	43	ND (20)	ND (0.5)	4.9	0.3	1.5	ND (10)
C-I-3-D	1/14/2015	2.4	130	49	ND (20)	ND (0.5)	4.5	0.34	1.2	ND (10)
C-I-3-D	2/24/2015	2.4	110	110	ND (20)	ND (0.5)	4.3	0.46	1.4	ND (10)
C-I-3-D	6/9/2015	2.4	130	ND (20)	ND (20)	ND (0.5)	5	0.39	1.4	ND (10)
C-I-3-D	12/8/2015	2.6	140	100	--	ND (0.5)	--	0.29	--	ND (10)
C-I-3-S	1/14/2015	2.6	130	42	ND (20)	ND (0.5)	4.6	0.32	1.2	ND (10)
C-I-3-S	2/24/2015	2.4	110	53	ND (20)	ND (0.5)	4.4	0.47	1.4	ND (10)
C-I-3-S	6/9/2015	2.3	130	ND (20)	ND (20)	ND (0.5)	4.8	0.37	1.4	ND (10)
C-I-3-S	12/8/2015	2.5	140	47	--	ND (0.5)	--	0.29	--	ND (10)
C-MAR-D	12/9/2015	2.4	140	830	110	69	5.4	0.3	1.4	48
C-MAR-S	1/14/2015	2.3	120	1,100	22	28	4.6	0.4	1.4	52
C-MAR-S	2/24/2015	2.3	110	2,900	ND (20)	41	4.5	0.42	1.4	93
C-MAR-S	6/10/2015	2.8	130	1,800	250	51	4.6	0.31	1.4	53
C-MAR-S	12/9/2015	2.4	140	980	ND (20)	69	5.2	0.3	1.4	46
C-NR1-D	1/15/2015	2.4	130	47	ND (20)	ND (0.5)	4.6	0.35	1.3	ND (10)
C-NR1-D	2/25/2015	2.5	130	74	ND (20)	ND (0.5)	4.9	0.46	1.5	ND (10)
C-NR1-D	6/10/2015	2.4	130	21	ND (20)	ND (0.5)	4.6	0.39	1.5	ND (10)
C-NR1-D	12/9/2015	2.3	130	74	22	ND (0.5)	5	0.31	1.4	ND (10)
C-NR1-S	1/15/2015	2.3	130	25	ND (20)	ND (0.5)	4.6	0.34	1.3	ND (10)
C-NR1-S	2/25/2015	2.4	130	68	ND (20)	ND (0.5)	4.8	0.44	1.4	ND (10)
C-NR1-S	6/10/2015	2.2	120	ND (20)	ND (20)	ND (0.5)	4.4	0.39	1.5	ND (10)
C-NR1-S	12/9/2015	2.3	130	40	--	ND (0.5)	--	0.3	--	ND (10)
C-NR3-D	1/15/2015	2.3	120	35	ND (20)	ND (0.5)	4.6	0.34	1.3	ND (10)
C-NR3-D	2/25/2015	2.4	130	78	ND (20)	ND (0.5)	4.8	0.44	1.5	ND (10)
C-NR3-D	6/10/2015	2.2	120	ND (20)	ND (20)	ND (0.5)	4.5	0.38	1.6	ND (10)
C-NR3-D	12/9/2015	2.4	140	51	--	ND (0.5)	--	0.29	--	ND (10)
C-NR3-S	1/15/2015	2.3	120	28	ND (20)	ND (0.5)	4.5	0.32	1.5	ND (10)
C-NR3-S	2/25/2015	2.5	130	51	ND (20)	ND (0.5)	5	0.43	1.4	ND (10)

Table 3-5

COPCs, In Situ Byproducts, and Geochemical Indicator Parameters in Surface Water Samples, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Arsenic, Dissolved (ug/L)	Barium, Dissolved (ug/L)	Iron, Total (ug/L)	Iron, Dissolved (ug/L)	Manganese, Dissolved (ug/L)	Molybdenum, Dissolved (ug/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Selenium, Dissolved (ug/L)	Total Suspended Solids (mg/L)
C-NR3-S	6/10/2015	2.2	130	ND (20)	ND (20)	ND (0.5)	4.6	0.4	1.6	ND (10)
C-NR3-S	12/9/2015	2.2	130	40 J	--	ND (0.5)	--	0.32	--	ND (10)
C-NR4-D	1/15/2015	2.5	130	36	ND (20)	ND (0.5)	4.6	0.34	1.4	ND (10)
C-NR4-D	2/25/2015	2.3	120	58	ND (20)	ND (0.5)	4.5	0.47	1.4	ND (10)
C-NR4-D	6/10/2015	2.3	120	ND (20)	ND (20)	ND (0.5)	4.3	0.38	1.2	ND (10)
C-NR4-D	12/9/2015	2.3	130	39	--	ND (0.5)	--	0.29	--	ND (10)
C-NR4-S	1/15/2015	2.3	120	ND (20)	ND (20)	ND (0.5)	4.4	0.33	1.3	ND (10)
C-NR4-S	2/25/2015	2.4	130	43	ND (20)	ND (0.5)	4.9	0.44	1.5	ND (10)
C-NR4-S	6/10/2015	2.4	130	ND (20)	ND (20)	ND (0.5)	4.5	0.38	1.6	ND (10)
C-NR4-S	12/9/2015	2.3	130	32	--	ND (0.5)	--	0.3	--	ND (10)
C-R22a-D	1/14/2015	2.4	130	47	ND (20)	ND (0.5)	4.6	0.32	1.5	ND (10)
C-R22a-D	2/24/2015	2.3	110	55	ND (20)	ND (0.5)	4.3	0.48	1.5	ND (10)
C-R22a-D	6/9/2015	2.2	120	ND (20)	ND (20)	ND (0.5)	4.6	0.36	1.4	ND (10)
C-R22a-D	12/8/2015	2.5	140	56	--	0.58	--	0.31	--	ND (10)
C-R22a-S	1/14/2015	2.4	120	39	ND (20)	ND (0.5)	4.7	0.31	1.3	ND (10)
C-R22a-S	2/24/2015	2.4	110	49	ND (20)	ND (0.5)	4.3	0.44	1.5	ND (10)
C-R22a-S	6/9/2015	2.4	130	ND (20)	ND (20)	ND (0.5)	5	0.4	1.6	ND (10)
C-R22a-S	12/8/2015	2.4	140	47	--	0.53	--	0.3	--	ND (10)
C-R27-D	1/14/2015	2.4	120	42	ND (20)	ND (0.5)	4.6	0.32	1.5	ND (10)
C-R27-D	2/24/2015	2.4	110	87	ND (20)	ND (0.5)	4.2	0.44	1.4	ND (10)
C-R27-D	6/9/2015	2.4	130	21	ND (20)	ND (0.5)	4.9	0.4	1.4	ND (10)
C-R27-D	12/8/2015	2.4	140	47	--	ND (0.5)	--	0.29	--	ND (10)
C-R27-S	1/14/2015	2.5	120	30	ND (20)	ND (0.5)	4.6	0.38	1.2	ND (10)
C-R27-S	2/24/2015	2.4	110	81	ND (20)	ND (0.5)	4.5	0.48	1.4	ND (10)
C-R27-S	6/9/2015	2.5	130	ND (20)	ND (20)	ND (0.5)	5.1	0.38	1.6	ND (10)
C-R27-S	12/8/2015	2.5	140	31	--	ND (0.5)	--	0.29	--	ND (10)
C-TAZ-D	1/14/2015	2.3	120	38	ND (20)	ND (0.5)	4.6	0.34	1.5	ND (10)
C-TAZ-D	2/24/2015	2.4	140	26	ND (20)	ND (0.5)	4.4	0.44	1.4	ND (10)
C-TAZ-D	6/9/2015	2.4	130	ND (20)	ND (20)	ND (0.5)	4.8	0.4	1.6	ND (10)
C-TAZ-D	12/8/2015	2.5	130	72	--	ND (0.5)	--	0.31	--	ND (10)
C-TAZ-S	1/14/2015	2.3	120	60	ND (20)	ND (0.5)	4.5	0.33	1.4	ND (10)
C-TAZ-S	2/24/2015	2.3	110	73	37	ND (0.5)	4.3	0.47	1.4	ND (10)
C-TAZ-S	6/9/2015	2.4	130	ND (20)	ND (20)	ND (0.5)	4.9	0.39	1.7	ND (10)
C-TAZ-S	12/8/2015	2.6	150	43	--	1.3	--	0.32	--	ND (10)
R-19	1/15/2015	2.7	130	24	26	ND (0.5)	4.8	0.35	1.5	ND (10)
R-19	2/25/2015	2.4	130	40	ND (20)	ND (0.5)	4.9	0.43	1.4	ND (10)
R-19	6/9/2015	2.3	130	29	ND (20)	ND (0.5)	4.7	0.48	1.2	ND (10)
R-19	9/16/2015	2.5	130	52	21	1.4	4.1	0.34	1.4	--
R-19	12/9/2015	2.3	130	49	ND (20)	0.75	5.2	0.32	1.6	ND (10)

Table 3-5

COPCs, In Situ Byproducts, and Geochemical Indicator Parameters in Surface Water Samples, January 2015 through December 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Arsenic, Dissolved (ug/L)	Barium, Dissolved (ug/L)	Iron, Total (ug/L)	Iron, Dissolved (ug/L)	Manganese, Dissolved (ug/L)	Molybdenum, Dissolved (ug/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Selenium, Dissolved (ug/L)	Total Suspended Solids (mg/L)
R-28	1/15/2015	2.4	130	20	ND (20)	ND (0.5)	4.7	0.33	1.3	ND (10)
R-28	2/25/2015	2.3	120	35	ND (20)	ND (0.5)	4.6	0.44	1.3	ND (10)
R-28	6/9/2015	2.4	140	23	ND (20)	ND (0.5)	5	0.37	1.5	ND (10)
R-28	9/16/2015	2.5	120	45	ND (20)	1.3	4.2	0.34	1.6	--
R-28	12/9/2015	2.3	130	46	36	1.6	5	0.38	1.5	ND (10)
R63	1/14/2015	2.5	130	82 J	ND (20)	ND (0.5)	4.5	0.31	1.3	ND (10)
R63	2/24/2015	2.4	110	370	ND (20)	ND (0.5)	4.5	0.44	1.3	17 J
R63	6/9/2015	2.3	130	39	ND (20)	ND (0.5)	4.9	0.47	1.3	ND (10)
R63	9/16/2015	2.3	120	130	ND (20)	7.1	3.9	3.3	1.4	--
R63	12/8/2015	2.4	140	160	--	2.2	--	0.28	--	ND (10)
RRB	1/15/2015	2.5	130	23	ND (20)	ND (0.5)	4.6	0.33	1.3	ND (10)
RRB	2/25/2015	2.6	140	43	ND (20)	ND (0.5)	5.2	0.42	1.7	ND (10)
RRB	6/10/2015	2.6	120	320	ND (20)	8.5	4.6	0.24	1.4	15
RRB	9/17/2015	2.4	120	110	31	8.4	5	0.32	1.5	--
RRB	12/9/2015	2.3	130	45	ND (20)	1.8	5.1	0.31	1.6	ND (10)

Notes:

--- = data was either not collected, not available or was rejected
COPC = contaminants of potential concern (molybdenum, selenium, and nitrate).
mg/L = milligrams per liter.
ND = not detected at listed reporting limit.
TSS = total suspended solids.
ug/L = micrograms per liter.
USEPA = United States Environmental Protection Agency.

Geochemical indicator parameters (TSS and alkalinity).
In situ byproducts (arsenic, iron and manganese).

USEPA Methods:
Alkalinity - SM2320B.
Metals - SW6010B/SW6020A.
Nitrate - SM4500NO3.
Total Suspended Solids - SM2540D.

Table 4-1
Pumping Rate and Extracted Volume for IM System, Fourth Quarter 2015 and Annual 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Extraction Well ID	November 2015		December 2015		Fourth Quarter 2015		Annual 2015	
	Average Pumping Rate [a] (gpm)	Volume Pumped (gal)	Average Pumping Rate [a] (gpm)	Volume Pumped (gal)	Average Pumping Rate [a] (gpm)	Volume Pumped (gal)	Average Pumping Rate [a] (gpm)	Volume Pumped (gal)
TW-02S	0.00	0	0.05	2,358	0.03	2,358	0.10	52,433
TW-02D	0.00	0	0.07	3,337	0.04	3,337	0.12	63,821
TW-03D	107.17	4,629,840	105.76	4,721,062	106.47	9,350,902	102.71	53,953,743
PE-01	27.42	1,184,511	27.05	1,207,340	27.23	2,391,851	26.06	13,699,207
TOTAL	**134.6**	**5,814,350**	**132.9**	**5,934,097**	**133.8**	**11,748,448**	**129.0**	**67,769,204**

Chromium Removed This Quarter (kg)	35.7
Chromium Removed This Year (kg)	144
Chromium Removed Project to Date (kg)	3840
Chromium Removed This Quarter (lb)	78.7
Chromium Removed This Year (lb)	318
Chromium Removed Project to Date (lb)	8470

Notes:
DTSC = Department of Toxic Substances Control.
gal = gallons.
gpm = gallons per minute.
IM = Interim Measures.
kg = kilograms.
lb = pounds.

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

Chromium removed includes the period from October 1, 2015 through December 31, 2015. On July 23, 2010 DTSC approved a revised reporting schedule for this report that included a revised IM-3 sample collection period from October 1, 2015 through December 31, 2015.

Table 4-2

Average Hydraulic Gradients Measured at Well Pairs, Fourth Quarter 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well Pair[a]	Reporting Period	Mean Landward[b] Hydraulic Gradient (feet/foot)	Days in[c] Monthly Average
Overall Average	November	0.0059	NA
	December	0.0055	NA
Northern Gradient Pair MW-31-135 / MW-33-150	November	0.0021	30/30
	December	0.0020	31/31
Central Gradient Pair MW-45-095[d] / MW-33-150	November	0.0114	30/30
	December	0.0106	31/31
Southern Gradient Pair MW-45-095[d] / MW-27-085	November	0.0041	30/30
	December	0.0040	31/31

Notes:

NA = All available data used in calculating overall average except where noted.

[a] Refer to Figure 1-4 for location of well pairs.

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

[c] Number of days transducers in both wells were operating correctly / total number of days in month.

[d] MW-45-095 is also known as MW-45-095a.

Table 4-3

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

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

	Davis Dam Release			**Colorado River Elevation at I-3**		
Month	Projected (cfs)	Actual (cfs)	Difference (cfs)	Predicted (ft amsl)	Actual (ft amsl)	Difference (feet)
January 2013	8,300	8,299	1	453.2	453.28	0.04
February 2013	10,600	10,972	-372	454.3	454.63	0.4
March 2013	15,200	15,545	-345	456.0	456.29	0.3
April 2013	17,600	17,090	510	456.9	456.74	-0.1
May 2013	15,800	15,592	208	456.4	456.44	0.0
June 2013	15,700	15,588	112	456.5	456.47	0.0
July 2013	14,400	13,165	1,235	456.0	455.79	-0.2
August 2013	13,100	12,185	915	455.4	455.43	0.0
September 2013	11,700	11,446	254	454.8	455.02	0.2
October 2013	12,300	12,497	-197	454.9	455.09	0.2
November 2013	9,700	8,918	782	454.0	453.98	0.0
December 2013	6,400	7,636	-1,236	452.4	452.81	0.4
January 2014	8,300	8,970	-670	452.8	453.27	0.5
February 2014	11,600	11,850	-250	454.3	454.67	0.3
March 2014	16,600	17,473	-873	456.4	456.70	0.3
April 2014	18,200	17,718	482	457.1	457.08	0.0
May 2014	16,700	16,622	78	456.8	456.68	-0.1
June 2014	15,900	15,917	-17	456.6	456.64	0.1
July 2014	15,100	14,640	460	456.3	456.24	0.0
August 2014	12,300	11,336	964	455.2	455.26	0.1
September 2014	13,100	12,211	889	455.3	455.30	0.0
October 2014	10,700	10,434	266	454.3	454.81	0.5
November 2014	10,700	10,575	125	454.3	454.22	-0.1
December 2014	6,400	7,235	-835	452.4	452.93	0.5
January 2015	10,600	10,740	-140	454.3	454.39	0.1
February 2015	10,500	11,252	-752	454.2	454.52	0.3
March 2015	14,900	15,658	-758	455.9	456.29	0.4
April 2015	18,000	17,170	830	457.1	456.82	-0.3
May 2015	16,000	13,890	2110	456.5	456.06	-0.5
June 2015	14,500	13,616	884	456.1	455.94	-0.2
July 2015	13,400	12,411	989	455.6	455.50	-0.1
August 2015	12,100	12,627	-527	455.1	455.45	0.4

Table 4-3
Predicted and Actual Monthly Average Davis Dam Discharge and Colorado River Elevation at I-3
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

	Davis Dam Release			**Colorado River Elevation at I-3**		
Month	Projected (cfs)	Actual (cfs)	Difference (cfs)	Predicted (ft amsl)	Actual (ft amsl)	Difference (feet)
September 2015	13,300	12,734	566	455.4	INC	NA
October 2015	11,300	10,653	647	454.7	454.80	0.1
November 2015	10,000	10,066	-66	454.2	453.87	0.29
December 2015	6,200	8,556	-2356	453.3	453.48	-0.18
January 2016	9,400			453.5		

NOTES:
cfs = cubic feet per second
ft amsl = feet above mean sea level.
Projected river level for each month in the past is calculated based on the preceding months USBR projections of Davis Dam release and stage in Lake Havasu. Future projections of river level at I-3 are based upon January 2016 USBR projections. These data are reported monthly by the US Department of Interior, at http://www.usbr.gov/lc/region/g4000/24mo.pdf.
The difference in I-3 elevation is the difference between the I-3 elevation predicted and the actual elevation measured at I-3. The source of this difference is differences between BOR projections and actual dam releases/Havasu reservoir levels, rather than the multiple regression error.

TABLE 5-1
Summary of Pumping Rate and Extracted Volume for 2015 Reporting Period
Fourth Quarter 2015 and Annual Interim Measures Performance
Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Reporting Period	Target Pump Rate (gpm)	Actual Monthly Pump Rate (gpm)	Individual Extraction Well Operations				Total Volume (gallons)
			TW-02S (gallons)	TW-02D (gallons)	TW-03D (gallons)	PE-01 (gallons)	
Jan-15	135	130.8	0	0	4,609,807	1,229,354	5,839,161
Feb-15	135	134.7	0	0	4,301,829	1,129,488	5,431,317
Mar-15	135	130.5	0	317	4,584,787	1,242,135	5,827,239
Apr-15	135	117.0	0	0	3,969,631	1,084,647	5,054,278
May-15	135	119.7	0	853	4,265,034	1,076,649	5,342,536
Jun-15	135	133.2	0	0	4,558,810	1,197,206	5,756,016
Jul-15	135	131.2	0	4,606	4,610,029	1,240,070	5,854,705
Aug-15	135	114.8	11,253	0	4,056,769	1,054,865	5,122,887
Sep-15	135	135.0	38,822	54,709	4,948,388	791,959	5,833,878
Oct-15	135	133.5	0	0	4,697,756	1,260,982	5,958,738
Nov-15	135	134.6	0	0	4,629,840	1,184,511	5,814,351
Dec-15	135	132.9	2,358	3,337	4,721,062	1207340	5,934,097
Totals for 2015 Annual Period		**129.0**	**52,433**	**63,822**	**53,953,742**	**13,699,206**	**67,769,203**

Notes:
gpm: gallons per minute
The target pumping rate of 135 gpm, excluding periods of planned and unplanned downtime, was maintained by pumping from extraction wells TW-03D and PE-01 during the 2015 reporting period.
Extraction well TW-02D was only used for interim service or to support field operations.

Table 5-2

Analytical Results for Extraction Wells, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Hexavalent Chromium (ug/L)	Dissolved Chromium (ug/L)	Total Dissolved Solids (mg/L)	Lab pH*
PE-01	1/6/2015	5.1	4.2	2400	7.6
PE-01	2/3/2015	4.7	3.8	2500	7.7
PE-01	3/17/2015	4	3.4	2500	7.7
PE-01	4/7/2015	3.6	3.6	2500	7.6
PE-01	5/5/2015	2.9	2.5	2500	7.6
PE-01	6/2/2015	3.4	3.1	2400	--
PE-01	7/7/2015	3.2	3.1	2500	--
PE-01	8/4/2015	3.2	2.9	2500	--
PE-01	9/1/2015	0.43	1.4	2500	--
PE-01	10/6/2015	3.2	2.7	2500	--
PE-01	10/27/2015	--	2.7	2300	7.5
PE-01	11/3/2015	3.4	3.1	2500	--
PE-01	11/10/2015	--	3.5	2400	7.6
PE-01	12/1/2015	3.6	3.3	2400	--
PE-01	12/7/2015	3.8	--	2500	7.5
TW-02D	12/9/2015	97	88	4800	--
TW-02D	12/9/2015	96	88	4800	--
TW-02S	1/13/2015	590	570	--	--
TW-02S	9/1/2015	330	330	1400	--
TW-02S	12/9/2015	330	330	1300	--
TW-03D	1/6/2015	790	790	4800	7.5
TW-03D	2/3/2015	790	760	4800	7.5
TW-03D	3/17/2015	740	690	4900	7.7
TW-03D	4/7/2015	730	730	4700	7.5
TW-03D	5/5/2015	700	640	4400	7.1
TW-03D	6/2/2015	700	650	4400	--
TW-03D	7/7/2015	710	770	4600	--
TW-03D	8/4/2015	710	670	4600	--
TW-03D	9/1/2015	720	720	4400	--
TW-03D	10/6/2015	700	680	4600	--
TW-03D	10/27/2015	760	--	4600	7.5
TW-03D	11/3/2015	740	670	4600	--
TW-03D	11/10/2015	720	740	4600	7.2
TW-03D	12/1/2015	730	690	4500	--
TW-03D	12/7/2015	750J	--	4800J	7.3

Notes:

* Lab pH Values were all J flagged by the lab for being out of holding time.
--- = data was either not collected, not available or was rejected
J = concentration or reporting limit estimated by laboratory or data validation.
LF = lab filtered.
mg/L = milligrams per liter.
ug/L = micrograms per liter.

Groundwater samples from active extraction wells are taken at sample taps in Valve Vault 1 on the MW-20 bench.

Dissolved chromium was analyzed by Method SW6020A or USEPA200.8 or USEPA200.7, hexavalent chromium analyzed by Method SM3500-CrB or USEPA218.6, and total dissolved solids were analyzed by Method SM2540C.

TABLE 5-3
Calculated Hydraulic Gradients for Well Pairs by Month for 2015 Reporting Period
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

	Mean Landward Hydraulic Gradient (ft/ft)[a]			
Reporting Period 2015	**Overall Average[b]**	**Northern Gradient Pair[c] MW-31-135 / MW-33-150**	**Central Gradient Pair MW-45-095[d] / MW-34-100**	**Southern Gradient Pair MW-45-095[d] / MW-27-085**
January	0.0053	0.0023	0.0098	0.0039
February	0.0055	0.0024	0.0101	0.0040
March	0.0059	0.0027	0.0107	0.0043
April	0.0055	0.0020	0.0102	0.0044
May	0.0054	0.0018	0.0107	0.0038
June	0.0061	0.0023	0.0119	0.0041
July	0.0058	0.0020	0.0115	0.0040
August	0.0039	0.0018	0.0073	0.0025
September	0.0022	0.0023	0.0029	0.0012
October	0.0058	0.0019	0.0113	0.0040
November	0.0059	0.0021	0.0114	0.0041
December	0.0055	0.0020	0.0106	0.0040

Notes:

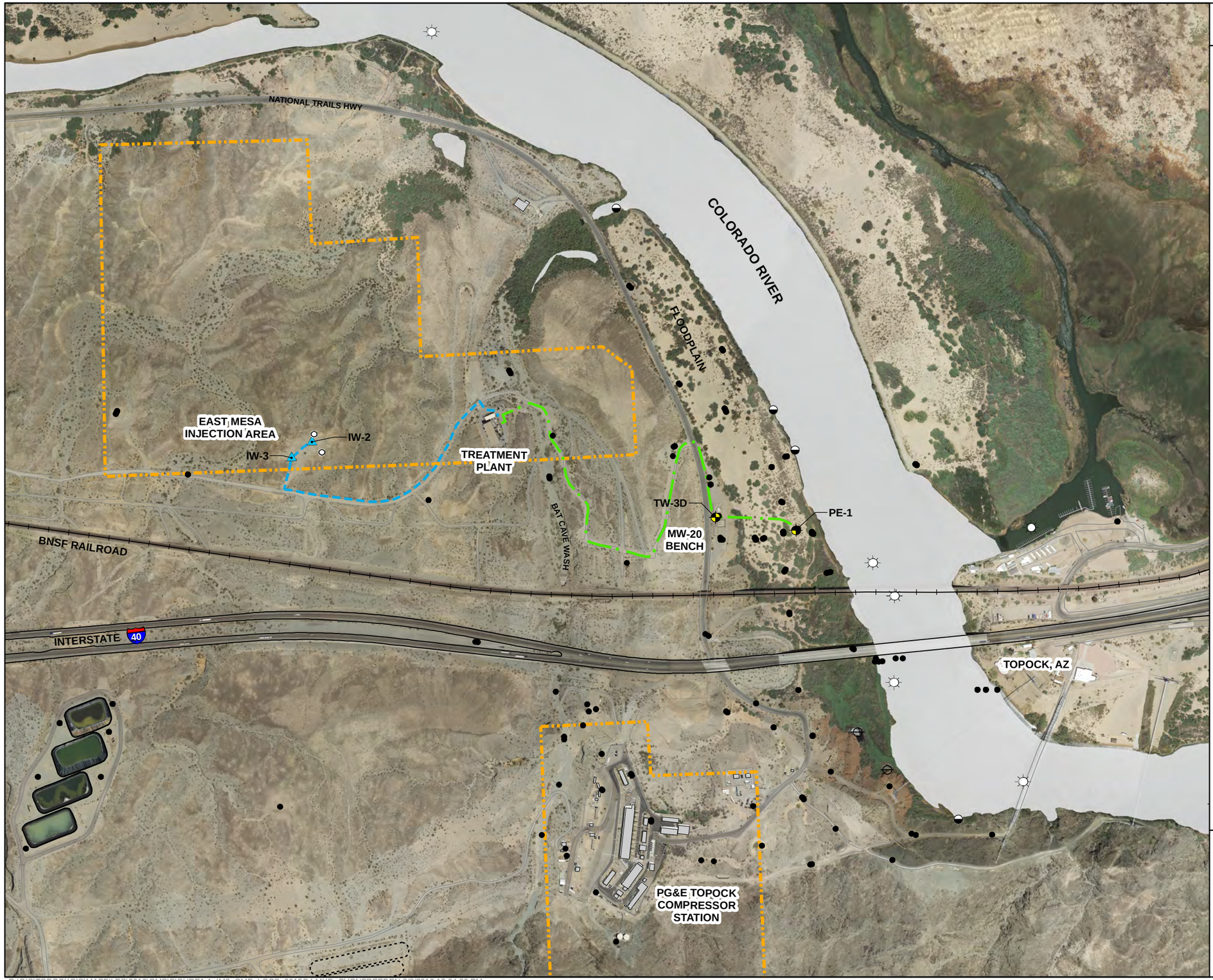
[a] For Interim measures pumping, the target landward gradient for the selected well pairs is 0.001 ft/ft

[b] Overall average gradients are calculated using all available data.

[c] Refer to Figure 1-4 for location of well pairs and Tables E-1 and E-2 for number of days in reporting period.
ft/ft = feet/foot

[d] MW-45-095 also referred to as MW-45-095a.

FIGURES



ARCADIS Design & Consultancy for natural and built assets

LEGEND

- IM-3 Extraction Well (Active)
- IM-3 Injection Well
- Monitoring Well in Site-Wide Groundwater Monitoring Program (GMP)
- Monitoring Well in IM-3 Compliance Monitoring Program
- 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.

N

0 300 600
Feet

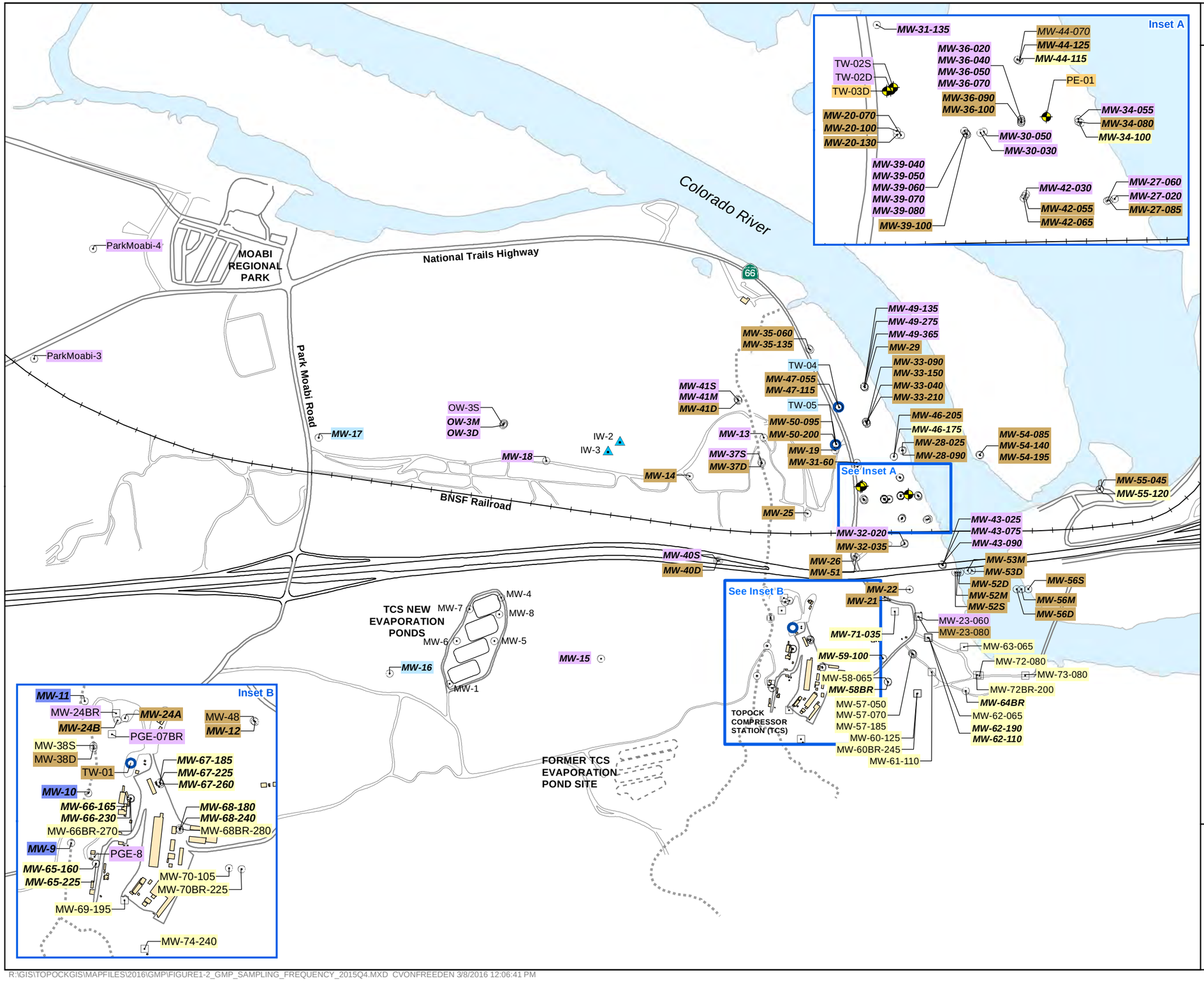
Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, NRCAN, METI, iPC, TomTom

FIGURE 1-1
LOCATIONS OF IM-3 FACILITIES AND MONITORING LOCATIONS

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Created by: CRITIGEN

R:\GIS\TOPOCKGIS\MAPFILES\2016\GMP\FIGURE1-1_IM3_GMP_LOCS_2015Q4.MXD CVONFREEDEN 3/8/2016 12:04:30 PM



ARCADIS Design & Consultancy for natural and built assets

LEGEND

- Groundwater Monitoring Well Completed in Bedrock
- Injection Well (Active)
- Groundwater Monitoring Well
- Test Well or Supply Well (Inactive)
- Extraction Well (Active)

Sampling Frequency for Groundwater Monitoring Program (GMP)

- MW-17 — Biennial sampling
- MW-13 — Annual sampling
- MW-09 — Annual; plus the next quarterly event following any channel-wide flows in Bat Cave Wash with discharge through the highway culverts
- MW-21 — Semiannual sampling
- TW-01 — Quarterly sampling
- TW-3D — Monthly sampling

Notes:
Bold/Italicized labels indicate sample collected using micropurge sampling method; otherwise, sample collected using the three-volume purge sampling method.

N

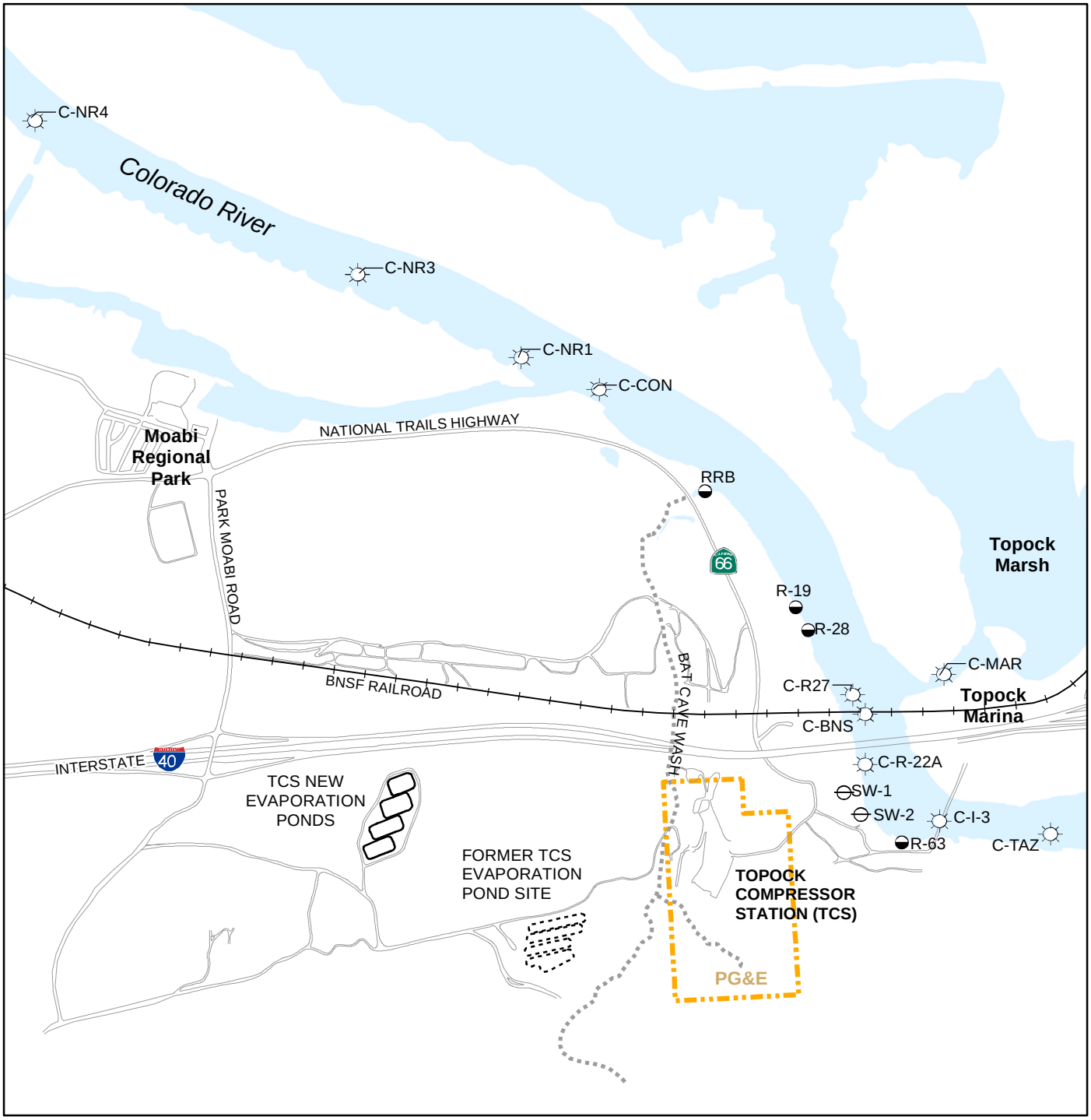
0 500 1,000
Feet

FIGURE 1-2
MONITORING LOCATIONS AND SAMPLING FREQUENCY FOR GMP

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Created by: CRITIGEN

R:\GIS\TOPOCKGIS\MAPFILES\2016\GMP\FIGURE1-2_GMP_SAMPLING_FREQUENCY_2015Q4.MXD CVONFREEDEN 3/8/2016 12:06:41 PM



LEGEND

- Shoreline Surface Water Monitoring Location
- River Channel Surface Water Monitoring Location
- Other Surface Water Monitoring Location

N

0 800 1,600
Feet

FIGURE 1-3
MONITORING LOCATIONS AND SAMPLING FREQUENCY FOR RMP

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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

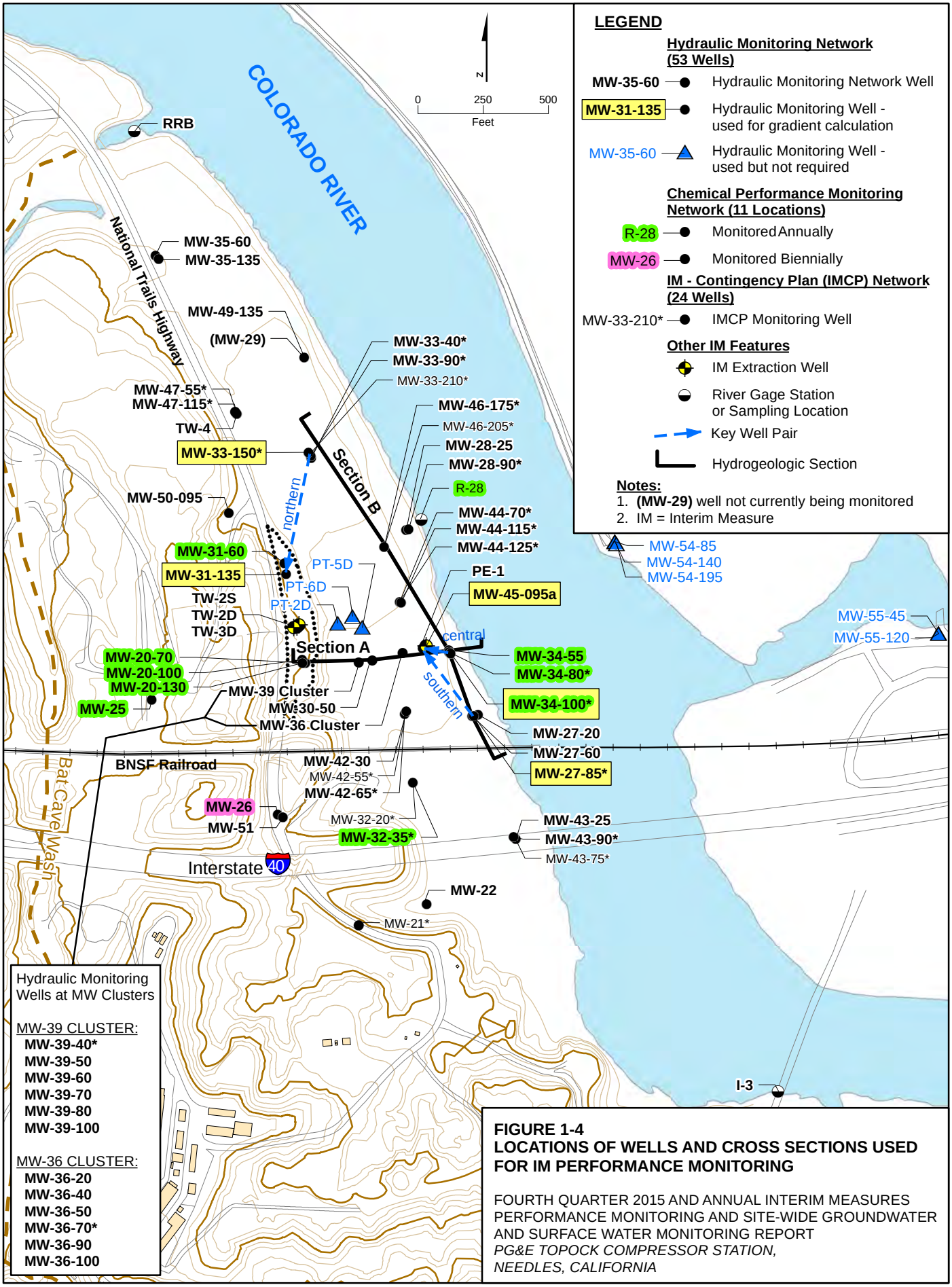
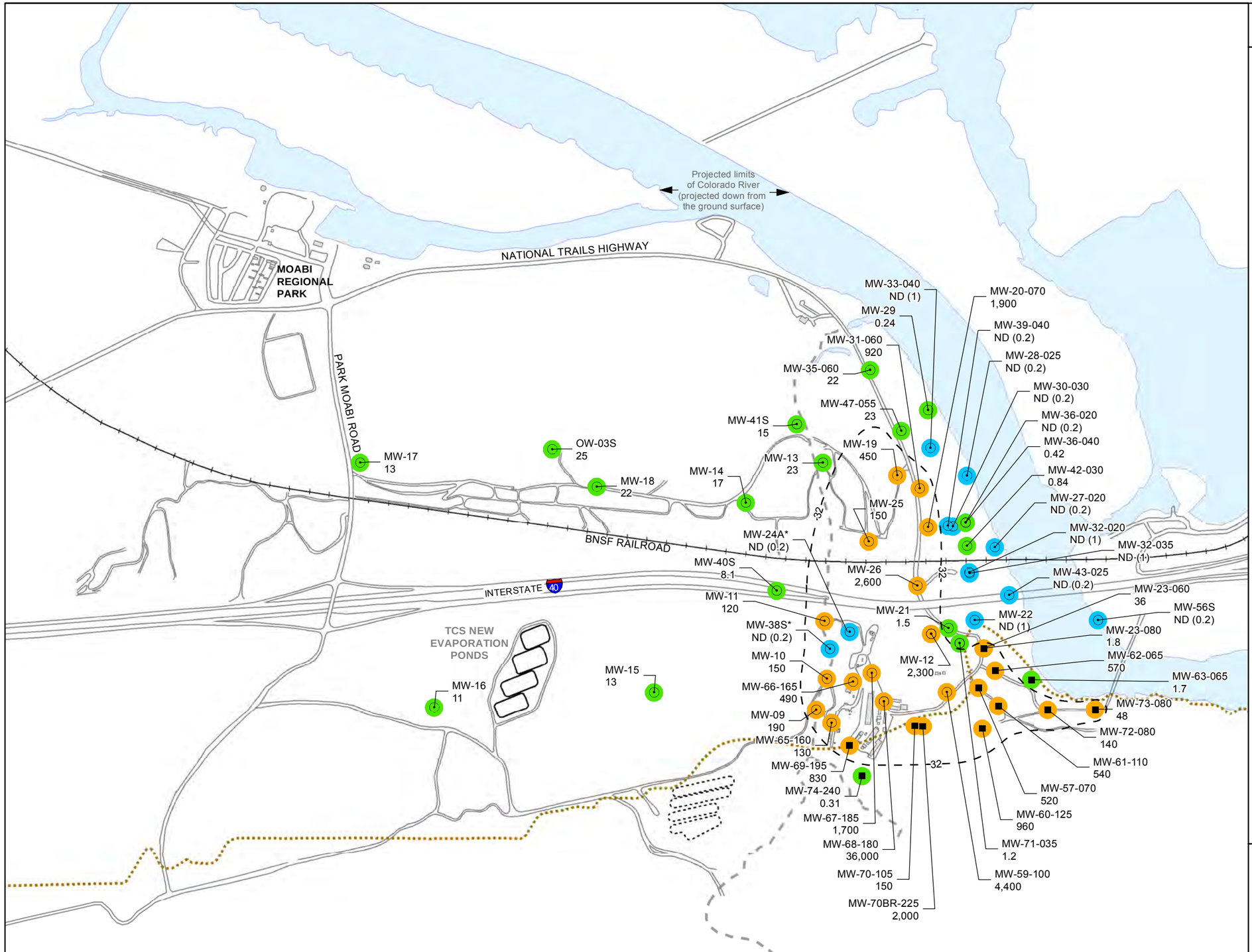


FIGURE 1-4
LOCATIONS OF WELLS AND CROSS SECTIONS USED FOR IM PERFORMANCE MONITORING

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



ARCADIS Design & Consultancy for natural and built assets

LEGEND

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

Cr(VI) Concentrations

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

MW-12-345 ——— Sampling Location
6.7 ——— Groundwater Concentration (µg/L)

Notes:
1. "ND" = Cr(VI) not detected at listed reporting limit.
2. "J" = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
3. µg/L = micrograms per liter
4. Cr(VI) = Hexavalent Chromium
5. TCS = Topock Compressor Station
6. * = Wells with sampled values < 32 µg/L shown within footprint of 32 µg/L boundary.
7. Results plotted are maximum concentration from primary and duplicate samples, see Table 3-1 for complete results.
8. The 32 µg/L line for Cr(VI) is estimated based on available groundwater sampling, hydrogeologic and geochemical data.
9. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

N

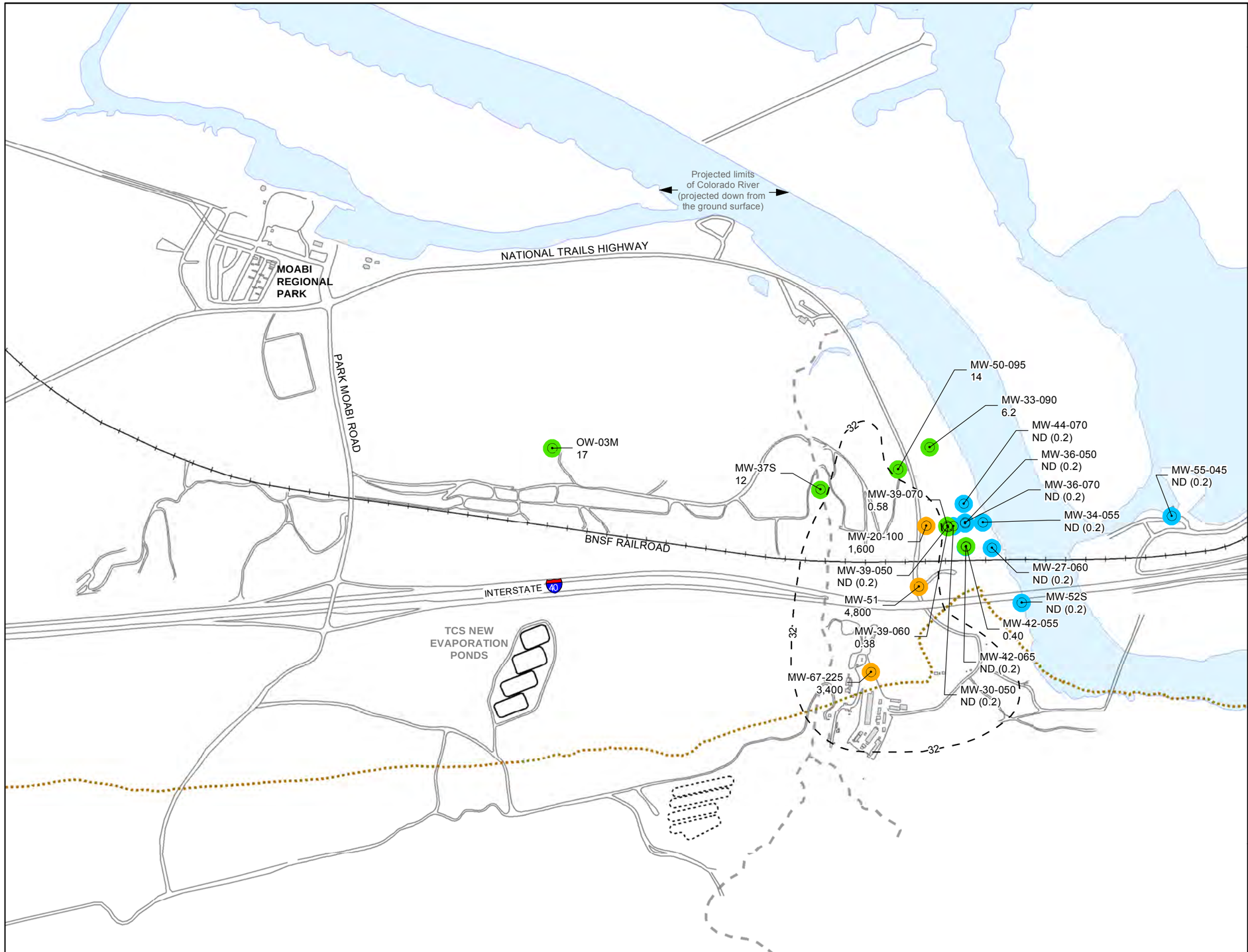
0 500 1,000
Feet

FIGURE 3-1a
Cr(VI) SAMPLING RESULTS, SHALLOW WELLS IN ALLUVIAL AQUIFER AND BEDROCK, FOURTH QUARTER 2015

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Created by: CRITIGEN

R:\GIS\TOPOCKGIS\MAPFILES\2016\GMP\FIGURE3-1A_CRVI_SHALLOW_2015Q4.MXD CVONFREEDEEN 3/8/2016 12:29:28 PM



ARCADIS Design & Consultancy for natural and built assets

LEGEND

- Alluvial Aquifer 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 outline of "mid-depth" wells with Cr(VI) concentrations ≥ 32 µg/L
- Approximate bedrock contact at 425 feet above mean sea level.

MW-12-345 ——— Sampling Location
6.7 ——— Groundwater Concentration (µg/L)

Notes:
1. "ND" = Cr(VI) not detected at listed reporting limit.
2. "J" = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
3. µg/L = micrograms per liter
4. Cr(VI) = Hexavalent Chromium
5. Results plotted are maximum concentration from primary and duplicate samples, see Table 3-1 for complete results.
6. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.
7. TCS = Topock Compressor Station
8. The 32 µg/L line for Cr(VI) is estimated based on available groundwater sampling, hydrogeologic and geochemical data.

N

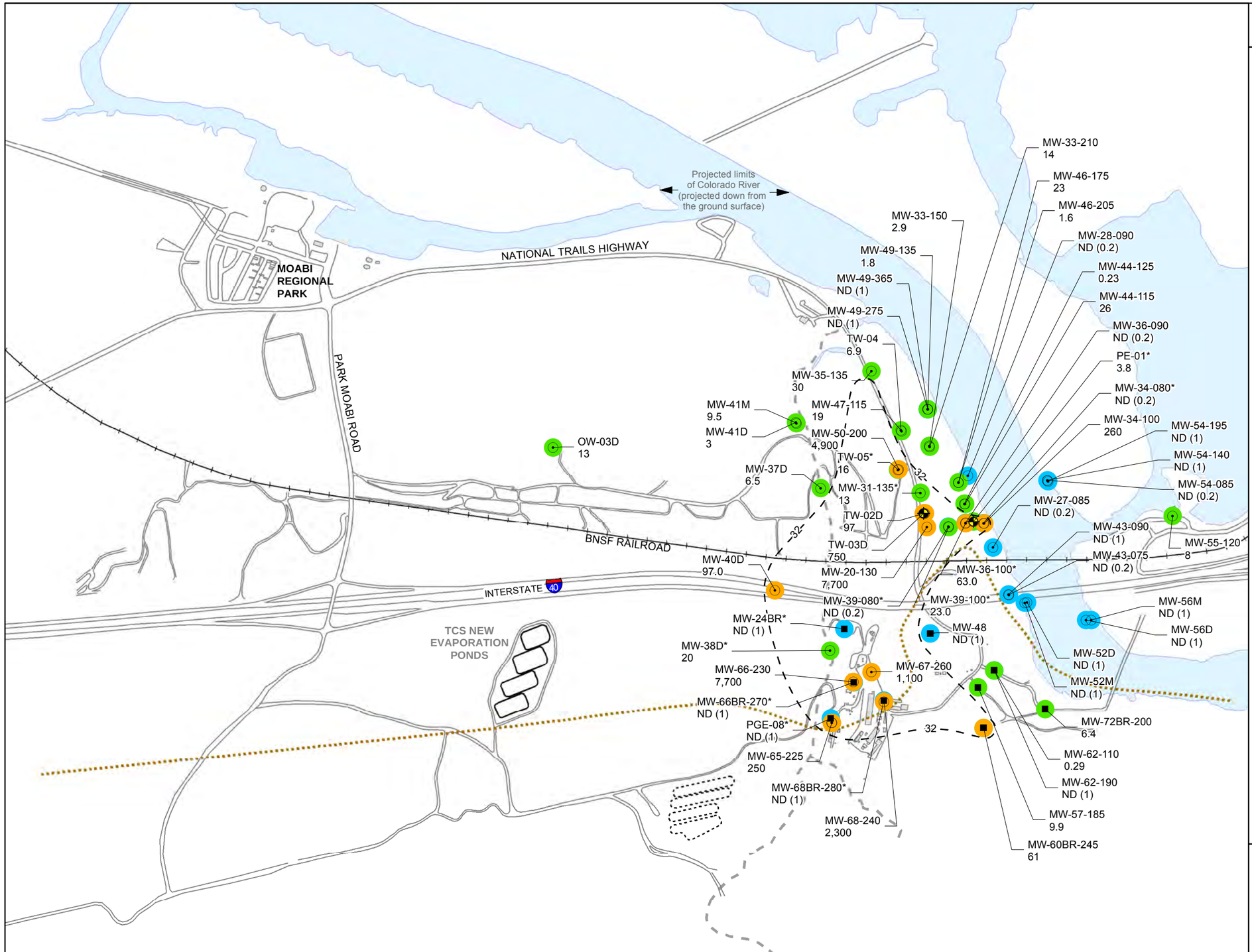
0 500 1,000
Feet

FIGURE 3-1b
Cr(VI) SAMPLING RESULTS, MID-DEPTH WELLS IN ALLUVIAL AQUIFER AND BEDROCK, FOURTH QUARTER 2015

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Created by: CRITIGEN

R:\GIS\TOPOCKGIS\MAPFILES\2016\GMP\FIGURE3-1B_CRVI_MIDDLE_2015Q4.MXD CVONFREEDEN 3/8/2016 12:36:08 PM



ARCADIS Design & Consultancy for natural and built assets

LEGEND

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

Cr(VI) Concentrations

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

MW-12-345 — Sampling Location
6.7 — Groundwater Concentration (µg/L)

Notes:
1. "ND" = Cr(VI) not detected at listed reporting limit.
2. "J" = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
3. µg/L = micrograms per liter
4. Cr(VI) = Hexavalent Chromium
5. * = Wells with sampled values < 32 µg/L shown within footprint of 32 µg/L boundary.
6. Results plotted are maximum concentration from primary and duplicate samples, see Table 3-1 for complete results.
7. The 32 µg/L line for Cr(VI) is estimated based on available groundwater sampling, hydrogeologic and geochemical data. There are no data confirming the existence of Cr(VI) under the Colorado River.
8. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.
9. TCS = Topock Compressor Station

N

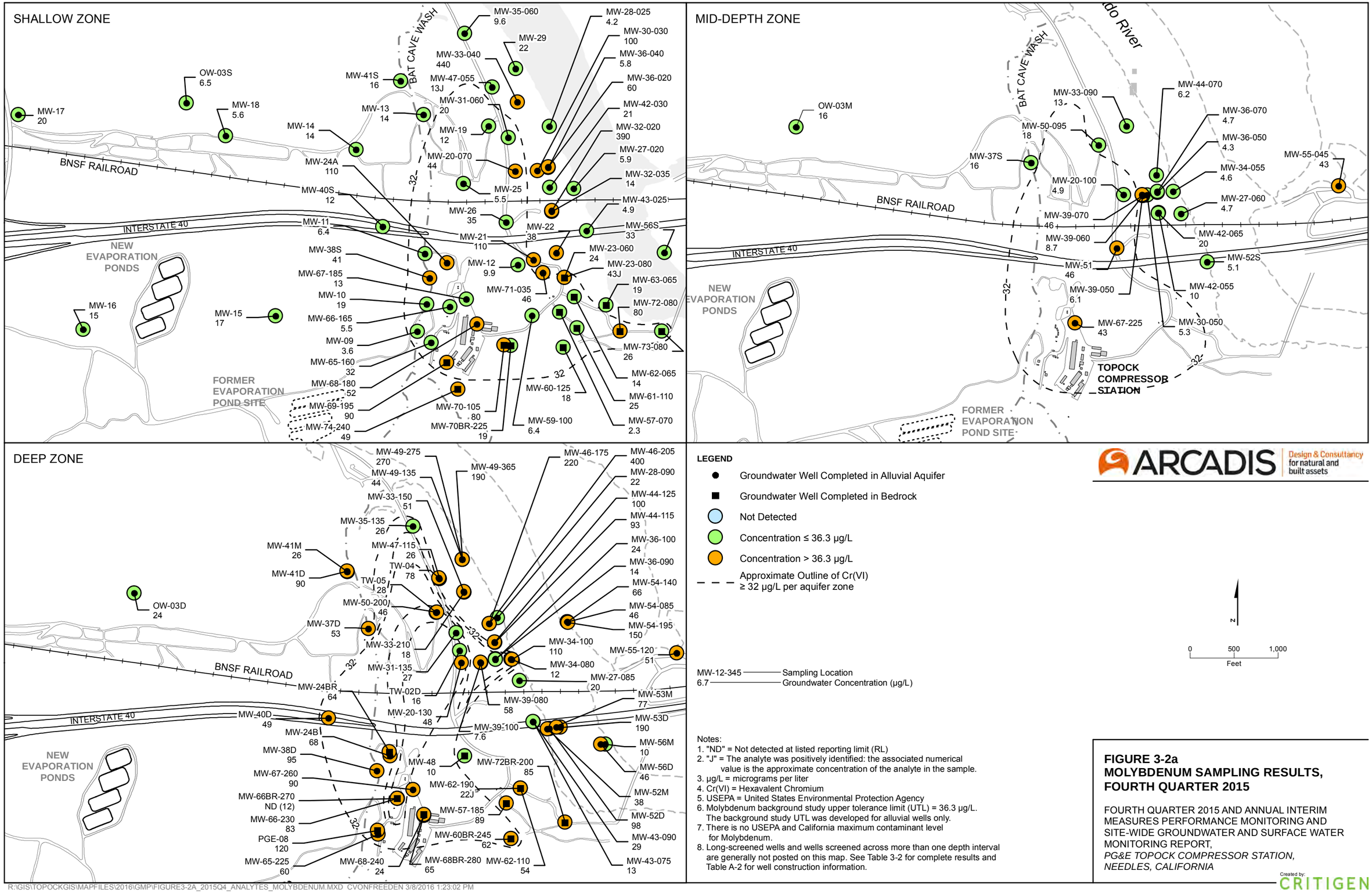
0 500 1,000
Feet

FIGURE 3-1c
Cr(VI) SAMPLING RESULTS, DEEP WELLS IN ALLUVIAL AQUIFER AND BEDROCK, FOURTH QUARTER 2015

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Created by: CRITIGEN

R:\GIS\TOPOCKGIS\MAPFILES\2016\GMP\FIGURE3-1C_CRVI_DEEP_2015Q4.MXD ECLARK 3/11/2016 4:53:45 PM



Notes:
1. "ND" = Not detected at listed reporting limit (RL)
2. "J" = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
3. µg/L = micrograms per liter
4. Cr(VI) = Hexavalent Chromium
5. USEPA = United States Environmental Protection Agency
6. Molybdenum background study upper tolerance limit (UTL) = 36.3 µg/L. The background study UTL was developed for alluvial wells only.
7. There is no USEPA and California maximum contaminant level for Molybdenum.
8. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-2 for complete results and Table A-2 for well construction information.

ARCADIS Design & Consultancy for natural and built assets

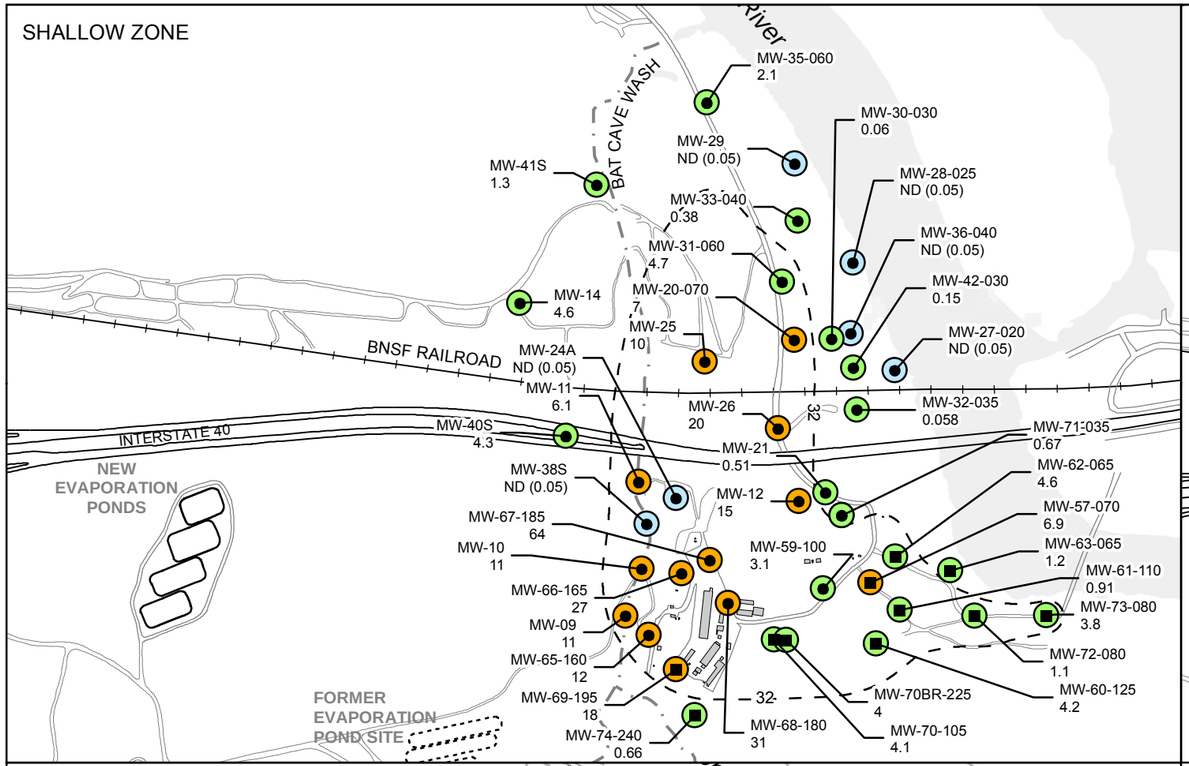
FIGURE 3-2a
MOLYBDENUM SAMPLING RESULTS, FOURTH QUARTER 2015

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

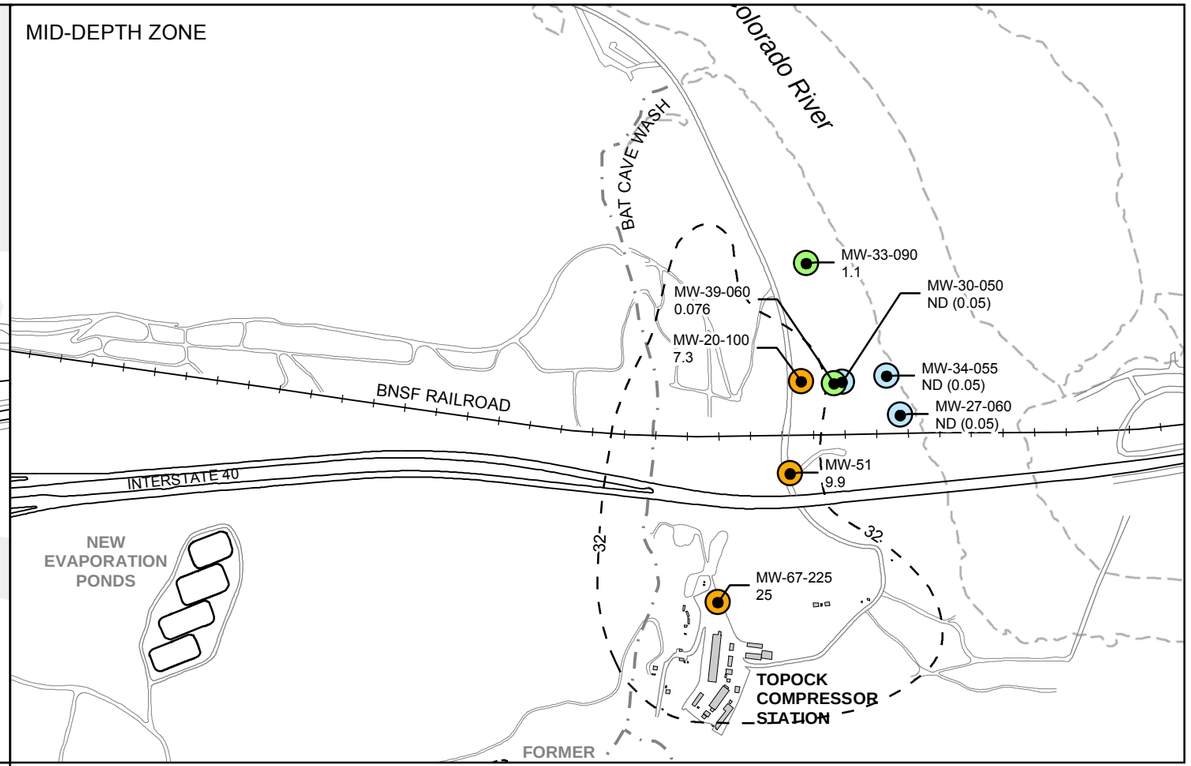
Created by: CRITIGEN

R:\GIS\TOPOCKGIS\MAPFILES\2016\GMP\FIGURE3-2A_2015Q4_ANALYTES_MOLYBDENUM.MXD CVONFREEDEN 3/8/2016 1:23:02 PM

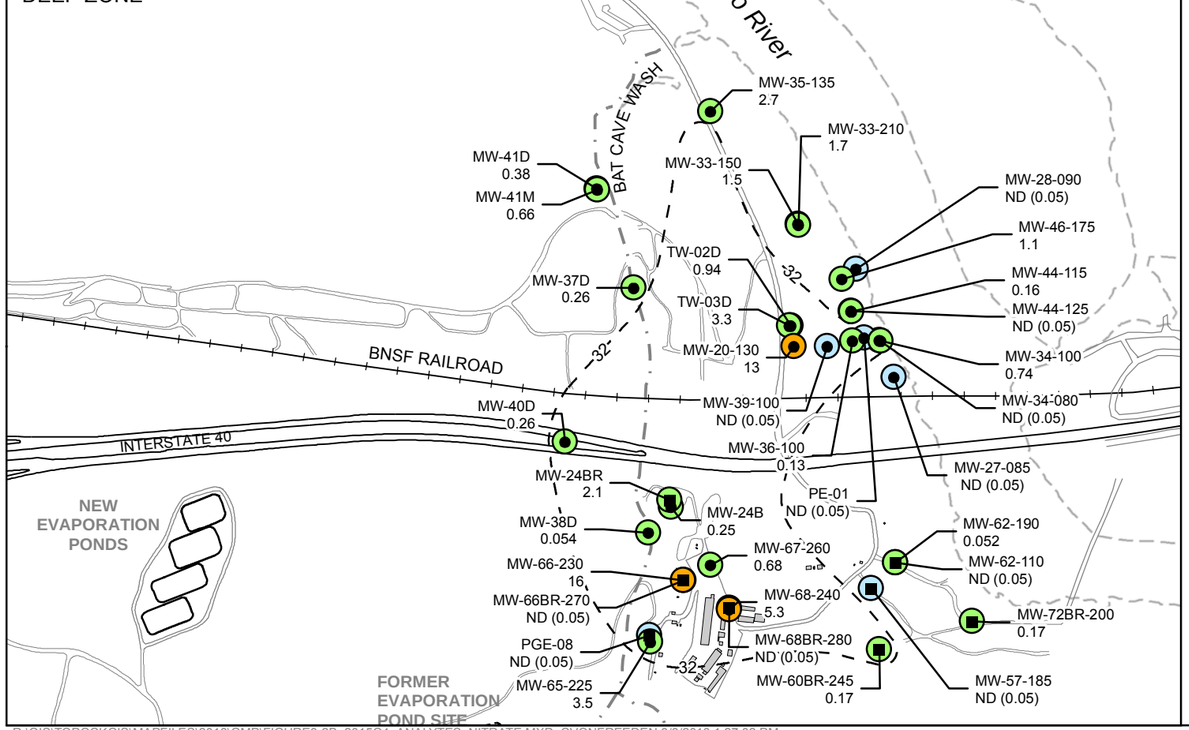
SHALLOW ZONE



MID-DEPTH ZONE



DEEP ZONE



LEGEND

- Groundwater Well Completed in Alluvial Aquifer
- Groundwater Well Completed in Bedrock
- Not Detected
- Concentration ≤ 5.03 mg/L
- Concentration > 5.03 mg/L
- Approximate Outline of Cr(VI) ≥ 32 µg/L per aquifer zone

MW-12-345 — Sampling Location
6.7 — Groundwater Concentration (mg/L)

N

0 500 1,000
Feet

Notes:
1. "ND" = Not detected at listed reporting limit (RL)
2. "J" = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
3. mg/L = Milligrams per liter
4. Cr(VI) = Hexavalent Chromium
5. Nitrate as N background study upper tolerance limit (UTL) = 5.03 mg/L The background study UTL was developed for alluvial wells only.
6. Nitrate as N maximum contaminant level = 10 mg/L
7. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-2 for complete results and Table A-2 for well construction information.

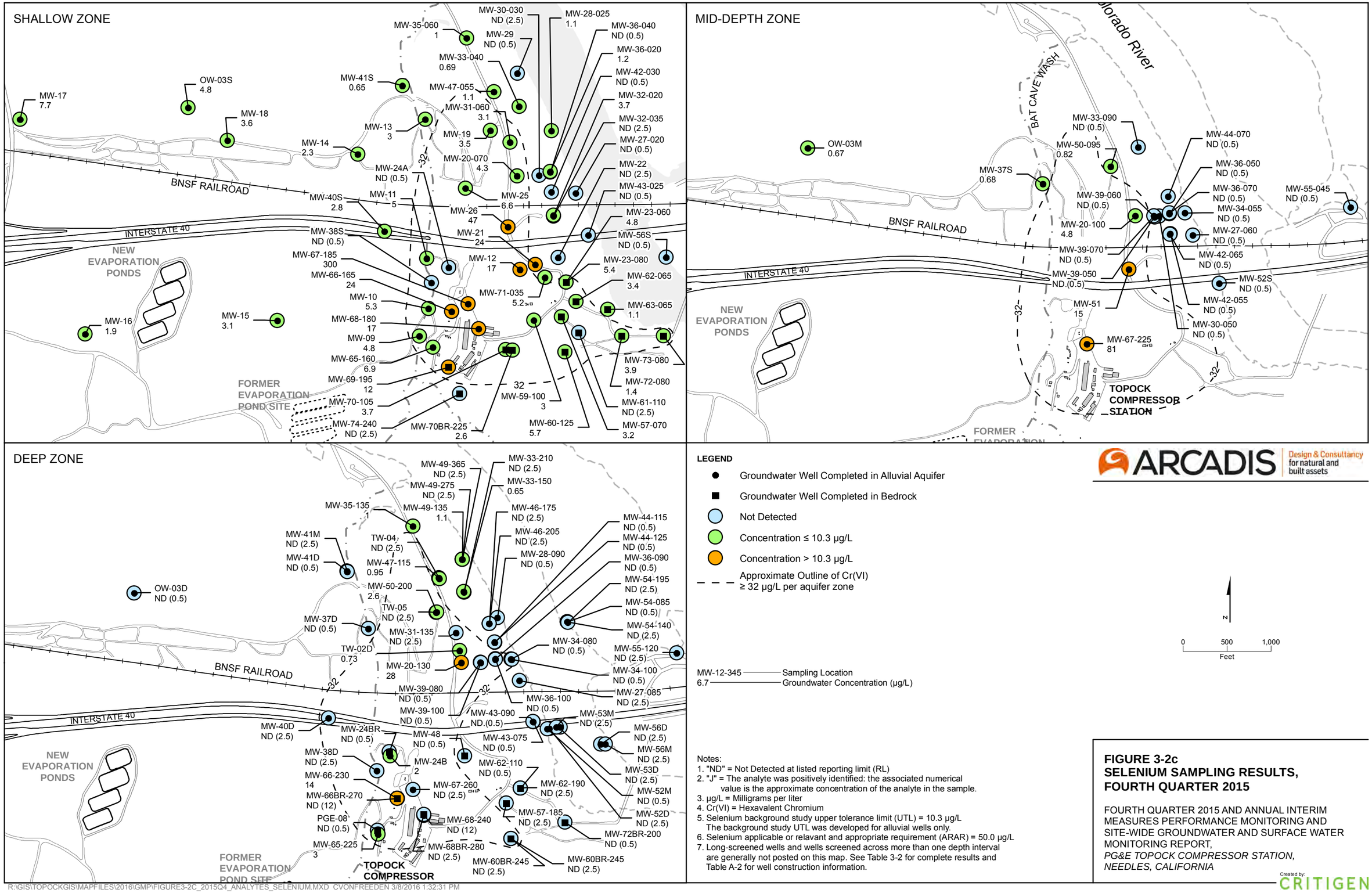
ARCADIS Design & Consultancy for natural and built assets

FIGURE 3-2b
NITRATE SAMPLING RESULTS, FOURTH QUARTER 2015

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Created by: CRITIGEN

R:\GIS\TOPOCKGIS\MAPFILES\2016\GMP\FIGURE3-2B_2015Q4_ANALYTES_NITRATE.MXD CVONFREEDEN 3/8/2016 1:27:02 PM



Notes:
1. "ND" = Not Detected at listed reporting limit (RL)
2. "J" = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
3. µg/L = Milligrams per liter
4. Cr(VI) = Hexavalent Chromium
5. Selenium background study upper tolerance limit (UTL) = 10.3 µg/L
   The background study UTL was developed for alluvial wells only.
6. Selenium applicable or relavant and appropriate requirement (ARAR) = 50.0 µg/L
7. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-2 for complete results and Table A-2 for well construction information.

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3-2c
SELENIUM SAMPLING RESULTS, FOURTH QUARTER 2015

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Created by: CRITIGEN

R:\GIS\TOPOCKGIS\MAPFILES\2016\GMP\FIGURE3-2C_2015Q4_ANALYTES_SELENIUM.MXD CVONFREEDEN 3/8/2016 1:32:31 PM

SHALLOW ZONE

MW-35-060 1
MW-47-055 0.74
MW-28-025 0.81
MW-30-030 2.5
MW-36-020 1.8
MW-29 15
MW-41S 1.6
MW-36-040 4.6
MW-42-030 3.4
MW-13 1.9
MW-33-040 10
MW-27-020 1.5
MW-31-060 1.2
MW-14 0.87
MW-39-040 18
MW-32-035 17
MW-43-025 17
MW-25 1.2
MW-32-020 4.3
MW-40S 1.7
MW-26 1.9
MW-22 15
MW-11 1.7
MW-24A 0.15
MW-71-035 9.5
MW-23-080 4.1
MW-38S 14
MW-12 36
MW-62-065 1.3
MW-67-185 0.93
MW-23-060 4.2
MW-10 2.9
MW-63-065 1.9
MW-66-165 0.9
MW-57-070 1.4
MW-09 1.6
MW-73-080 1.7
MW-65-160 0.73
MW-72-080 10
MW-69-195 2.3
MW-59-100 2
MW-61-110 3.3
MW-74-240 14
MW-68-180 2.7
MW-70-105 4.2
MW-70BR-225 1.8
MW-60-125 1.3

BAT CAVE WASH
BNSF RAILROAD
INTERSTATE 40
NEW EVAPORATION PONDS
FORMER EVAPORATION POND SITE
32

MID-DEPTH ZONE

MW-33-090 1.1
MW-37S 1.7
MW-30-050 3
MW-44-070 6.6
MW-39-050 2.4
MW-36-070 2.9
MW-39-060 4.4
MW-34-055 2.4
MW-36-050 3.8
MW-27-060 13
MW-51 3.8
MW-52S 0.37
MW-42-055 27
MW-42-065 4
MW-67-225 3.5
TOPOCK COMPRESSOR STATION
FORMER

Colorado River
BAT CAVE WASH
BNSF RAILROAD
INTERSTATE 40
NEW EVAPORATION PONDS
32

DEEP ZONE

MW-35-135 0.87
MW-49-135 1.9
MW-41M 2.2
MW-28-090 2.1
MW-41D 1.7
MW-33-210 1
MW-44-125 4.1
MW-33-150 1.1
MW-44-115 5.6
MW-50-200 3.2
MW-54-085 2.5
MW-31-135 3.4
MW-54-195 0.94
MW-34-080 1.3
TW-02D 2.4
MW-34-100 1.5
MW-54-140 2.4
MW-20-130 4.5
MW-27-085 1.4
MW-43-090 1.2
MW-40D 4.2
MW-39-100 3
MW-53D 2.6
MW-24BR 0.37
MW-36-100 8.5
MW-53M 0.51
MW-36-090 21
MW-38D 7.7
MW-52D 2.7
MW-24B 2.8
MW-43-075 13
MW-66-230 4.4
MW-62-190 3.9
MW-52M 0.81
MW-67-260 8.9
MW-66BR-270 ND (0.5)
MW-62-110 7.7
MW-72BR-200 15
MW-68BR-280 1.3
MW-68-240 1.5
MW-65-225 2.6
MW-57-185 13
MW-60BR-245 7
MW-60BR-245 7

Colorado River
BAT CAVE WASH
BNSF RAILROAD
INTERSTATE 40
NEW EVAPORATION PONDS
FORMER EVAPORATION POND SITE
TOPOCK COMPRESSOR STATION
32

LEGEND

- Groundwater Well Completed in Alluvial Aquifer
- Groundwater Well Completed in Bedrock
- Not Detected
- Concentration ≤ 10 µg/L
- Concentration > 10.1 - ≤ 24.3 µg/L
- Concentration > 24.3 µg/L
- Approximate Outline of Cr(VI) ≥ 32 µg/L per aquifer zone

MW-12-345 ——— Sampling Location
6.7 ——— Groundwater Concentration (µg/L)

N

0 500 1,000
Feet

Notes:
1. "ND" = Not Detected at listed reporting limit (RL)
2. "J" = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
3. µg/L = Milligrams per liter
4. Cr(VI) = Hexavalent Chromium
5. Arsenic background study upper tolerance limit (UTL) = 24.3 ug/L. The background study UTL was developed for alluvial wells only.
6. Arsenic maximum contaminant level = 10.0 ug/L.
7. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-2 for complete results and Table A-2 for well construction information.

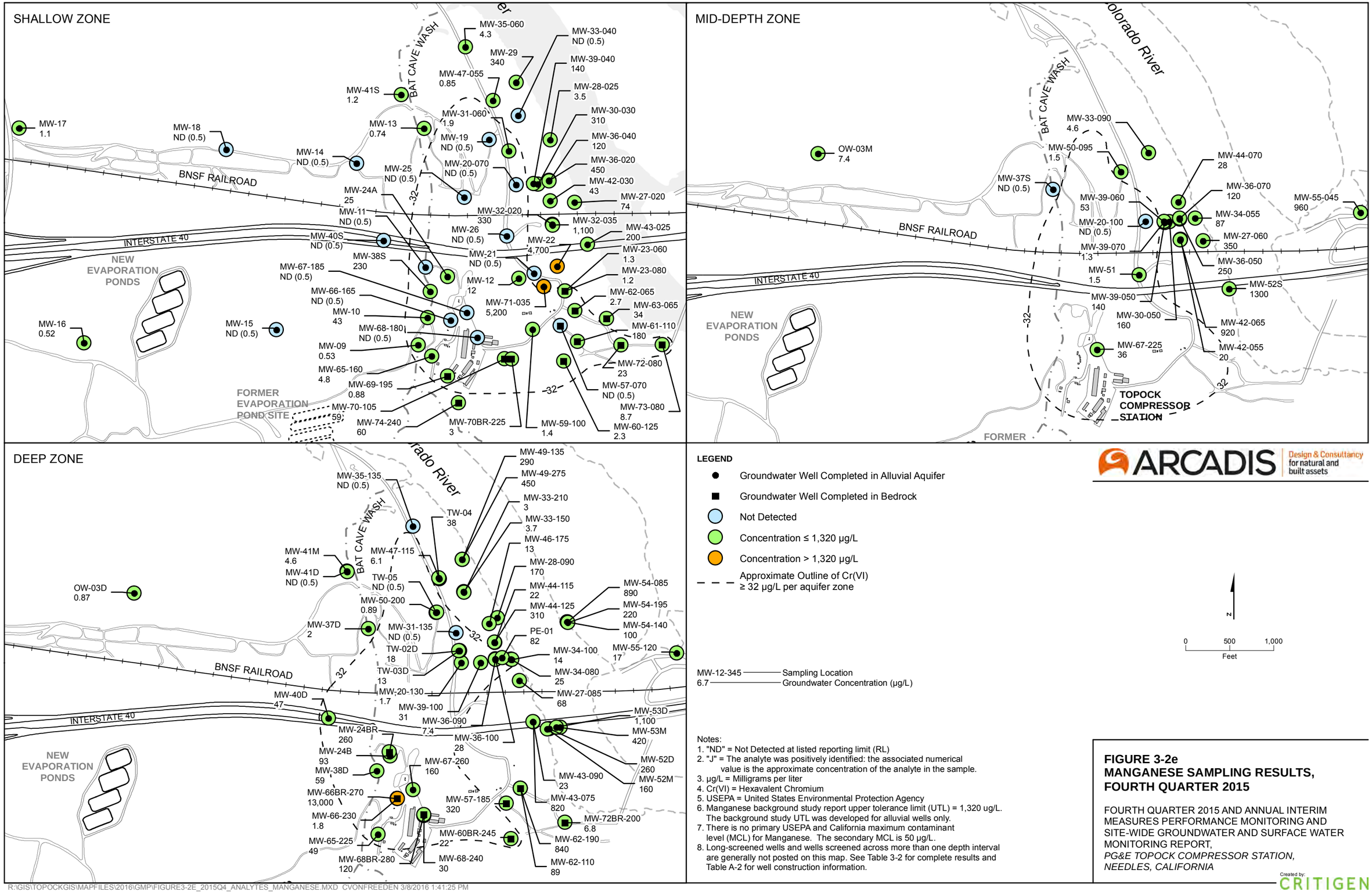
ARCADIS Design & Consultancy for natural and built assets

FIGURE 3-2d
ARSENIC SAMPLING RESULTS, FOURTH QUARTER 2015

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Created by: CRITIGEN

R:\GIS\TOPOCKGIS\MAPFILES\2016\GMP\FIGURE3-2D_2015Q4_ANALYTES_ARSENIC.MXD CVONFREEDEN 3/8/2016 1:36:40 PM



Notes:
1. "ND" = Not Detected at listed reporting limit (RL)
2. "J" = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
3. µg/L = Milligrams per liter
4. Cr(VI) = Hexavalent Chromium
5. USEPA = United States Environmental Protection Agency
6. Manganese background study report upper tolerance limit (UTL) = 1,320 ug/L. The background study UTL was developed for alluvial wells only.
7. There is no primary USEPA and California maximum contaminant level (MCL) for Manganese. The secondary MCL is 50 µg/L.
8. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-2 for complete results and Table A-2 for well construction information.

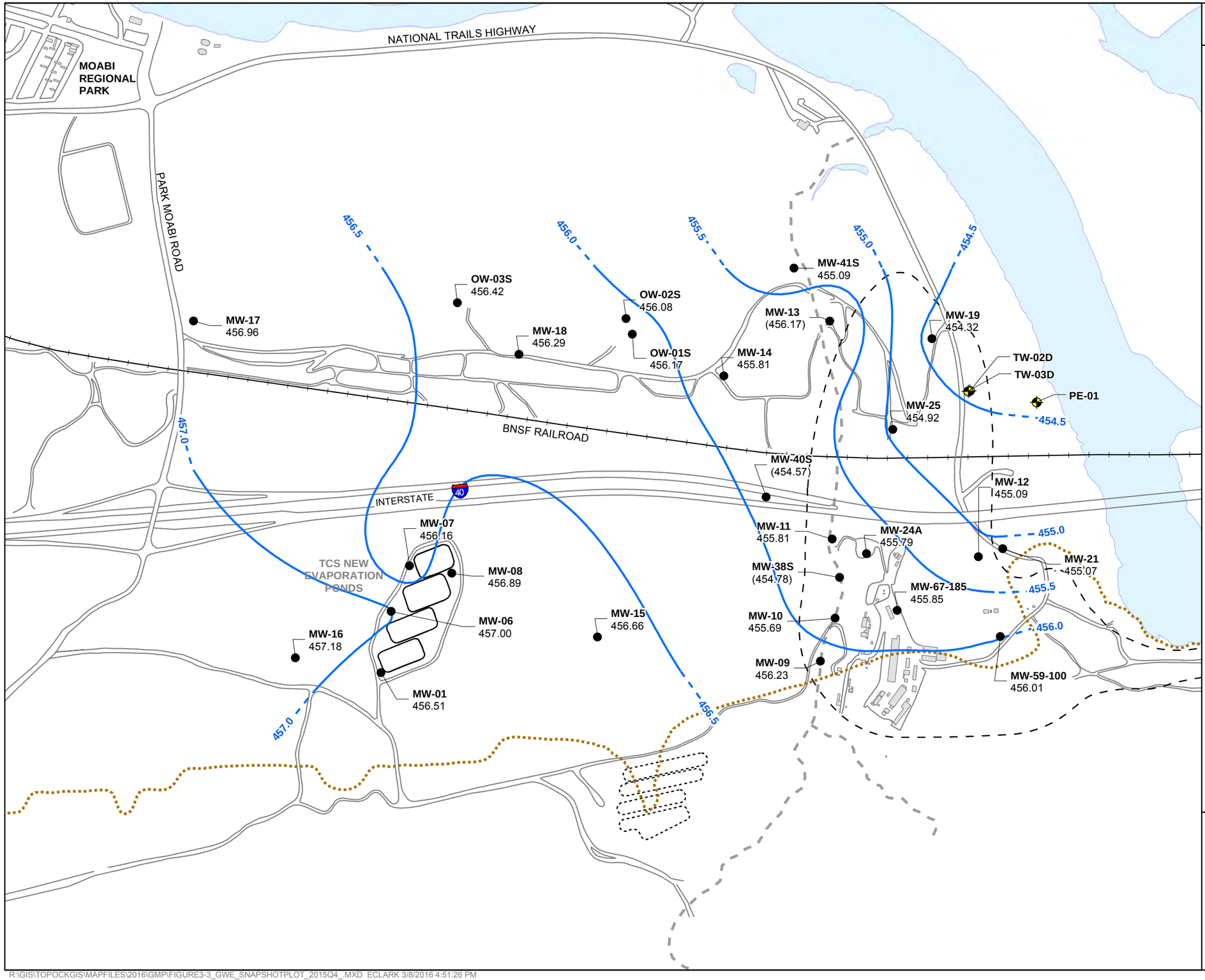
ARCADIS Design & Consultancy for natural and built assets

FIGURE 3-2e
MANGANESE SAMPLING RESULTS, FOURTH QUARTER 2015

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Created by: CRITIGEN

R:\GIS\TOPOCKGIS\MAPFILES\2016\GMP\FIGURE3-2E_2015Q4_ANALYTES_MANGANESE.MXD CVONFREEDEN 3/8/2016 1:41:25 PM



ARCADIS Design & Consultancy for natural and built assets

LEGEND

- Alluvial Aquifer well sampled during sampling event
- Extraction Well
- Groundwater Elevation Contour 0.5 ft, dashed where inferred
- Approximate outline of monitoring wells in Alluvial Aquifer and Bedrock with Cr(VI) concentrations ≥ 32 µg/L
- Approximate bedrock contact at 455 ft AMSL

MW-14 — Sampling Location
455.81 — Groundwater Elevation (feet AMSL)
(454.78) — Groundwater Elevation not used in contouring (feet AMSL)

Notes:
1. Water level contours for the floodplain area are presented in IM Performance Monitoring Reports.
2. Extraction wells TW-03D and PE-01 are pumping from lower portion of the aquifer.
3. Gradients shown on this figure show transient conditions in the aquifer at the time of measurement and may not reflect the expected average groundwater flow directions.
4. AMSL = Above Mean Sea Level

N

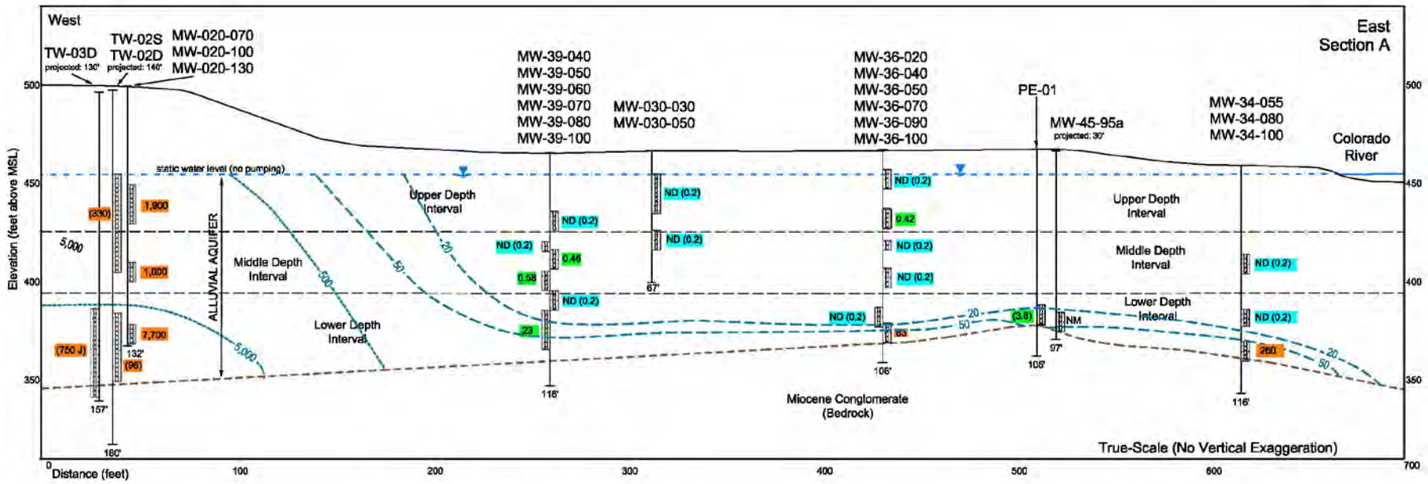
0 500 1,000
Feet

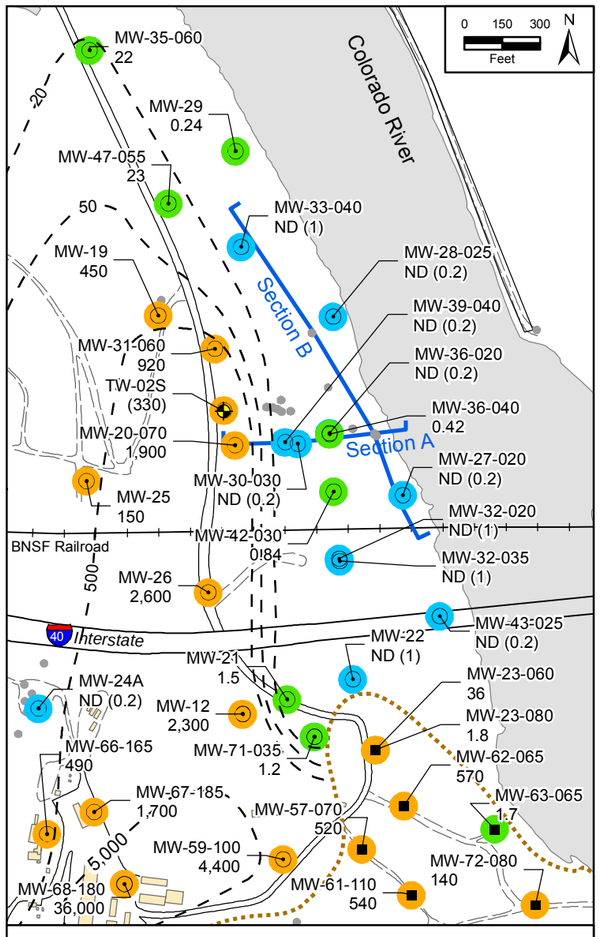
FIGURE 3-3
GROUNDWATER ELEVATION MAP SHALLOW ZONE OF THE ALLUVIAL AQUIFER (WATER TABLE), DECEMBER 3, 2015

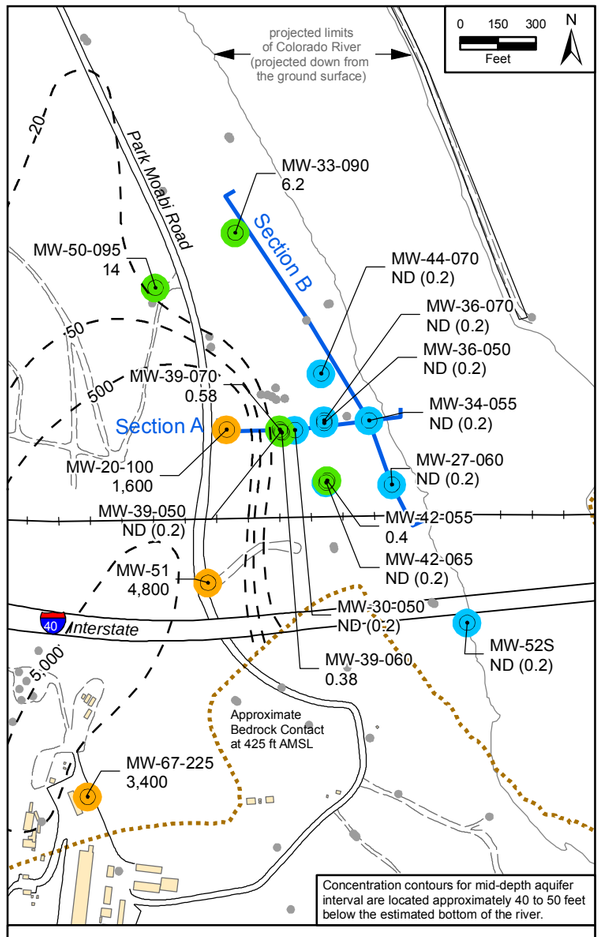
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

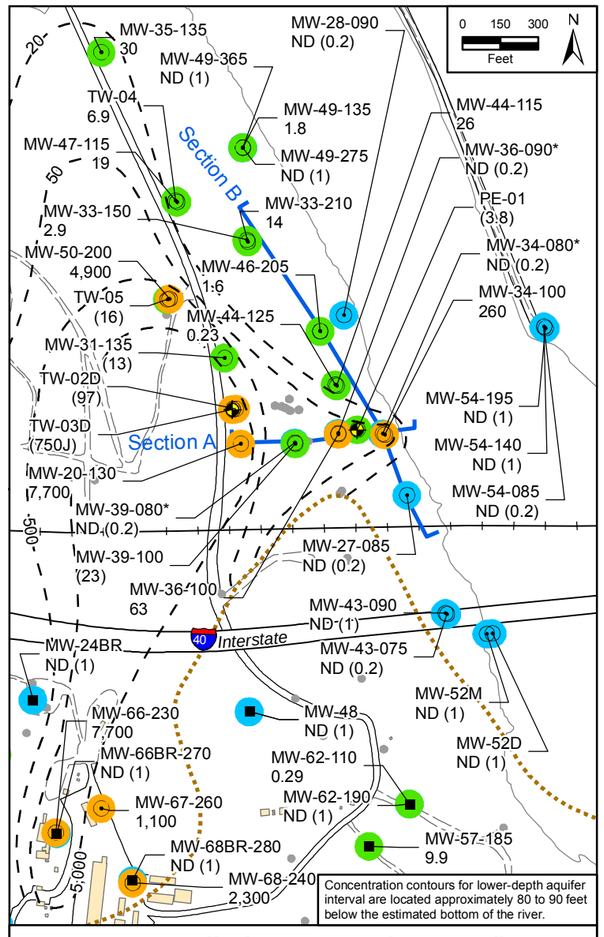
Created by: CRITIGEN

R:\GIS\TOPOCKGIS\MAPFILES\2016\GMP\FIGURE3-3_GWE_SNAPSHOTPLOT_2015Q4_.MXD ECLARK 3/8/2016 4:51:26 PM









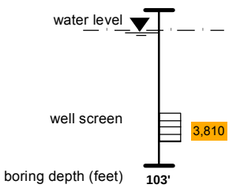
ARCADIS Design & Consultancy for natural and built assets

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-31-135 ——— Sampling Location
6.7 ——— Groundwater Concentration (µg/L)
(6.7) ——— Groundwater concentration (µg/L) not used for contouring

Notes:

1. "ND" = Cr(VI) not detected at listed reporting limit.
2. "J" = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
3. " * " = Deep interval "ND" samples screened vertically above detect sample.
4. µg/L = micrograms per liter
5. Cr(VI) = Hexavalent Chromium
6. The Cr(VI) concentration contours of 20 and 50 µg/L are shown in accordance with DTSC's 2005 IM performance monitoring directive. The IM performance standard was established for containment of Cr(VI) concentrations greater than 20 ug/L in the floodplain portion of the Alluvial Aquifer.
7. The 20 and 50 µg/L lines for Cr(VI) are estimated based on available groundwater sampling, hydrogeologic and geochemical data. There are no data confirming the existence of Cr(VI) under the Colorado River.
8. 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.
9. Long-screened wells and wells screened across more than one depth interval are generally not posted on this map. See Table 3-1 for complete results.

FIGURE 4-1
CR(VI) CONCENTRATIONS IN ALLUVIAL AQUIFER AND BEDROCK, FOURTH QUARTER 2015

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Created by: CRITIGEN

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

ND (0.2)
6.2
2.9
14
237'

ND (0.2)
ND (0.2)
23
1.6
216'

ND (0.2)
ND (0.2)
26
0.3
134'

ND (0.2)
ND (0.2)
ND (0.2)
260
116'

ND (0.2)
ND (0.2)
ND (0.2)
107'

20
50

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.
ND = not detected at listed reporting limit.
µg/L = micrograms per liter.

1. See Table 3-1 for additional sampling data and prior results for wells on this figure.

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

Legend

water level

well screen

260

boring depth (feet)

103'

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

Hexavalent Chromium [Cr(VI)] concentration in micrograms per liter (µg/L), equivalent to parts per billion (ppb).

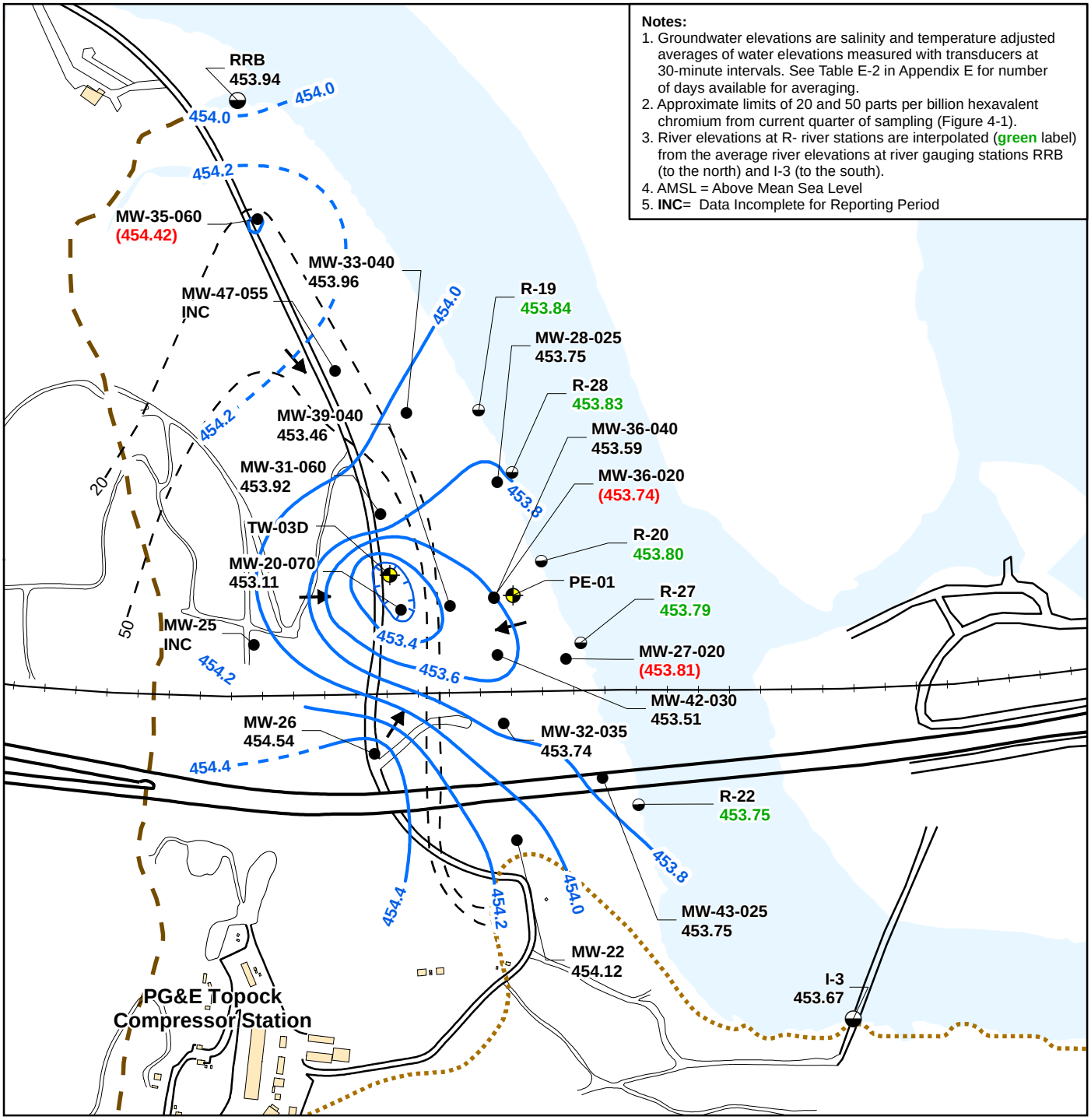
ND (0.2) Not detected at listed reporting limit

14 Concentration between reporting limit and 32 µg/L

260 Concentration greater than or equal to 32 µg/L

FIGURE 4-2
Cr(VI) CONCENTRATIONS FLOODPLAIN CROSS-SECTION B
FOURTH QUARTER 2015
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



LEGEND

- Monitoring Well
- River Station
- Extraction Well
- Bedrock Contact at 455 ft Elevation
- Interpreted Groundwater Flow Direction
- Groundwater Elevation Contour 0.2 ft (dashed where inferred)
- Inferred Cr(VI) Concentration Contour (see note 2)

MW-20-070 — Gauging Location
453.11 — Average Groundwater Elevation (ft AMSL)

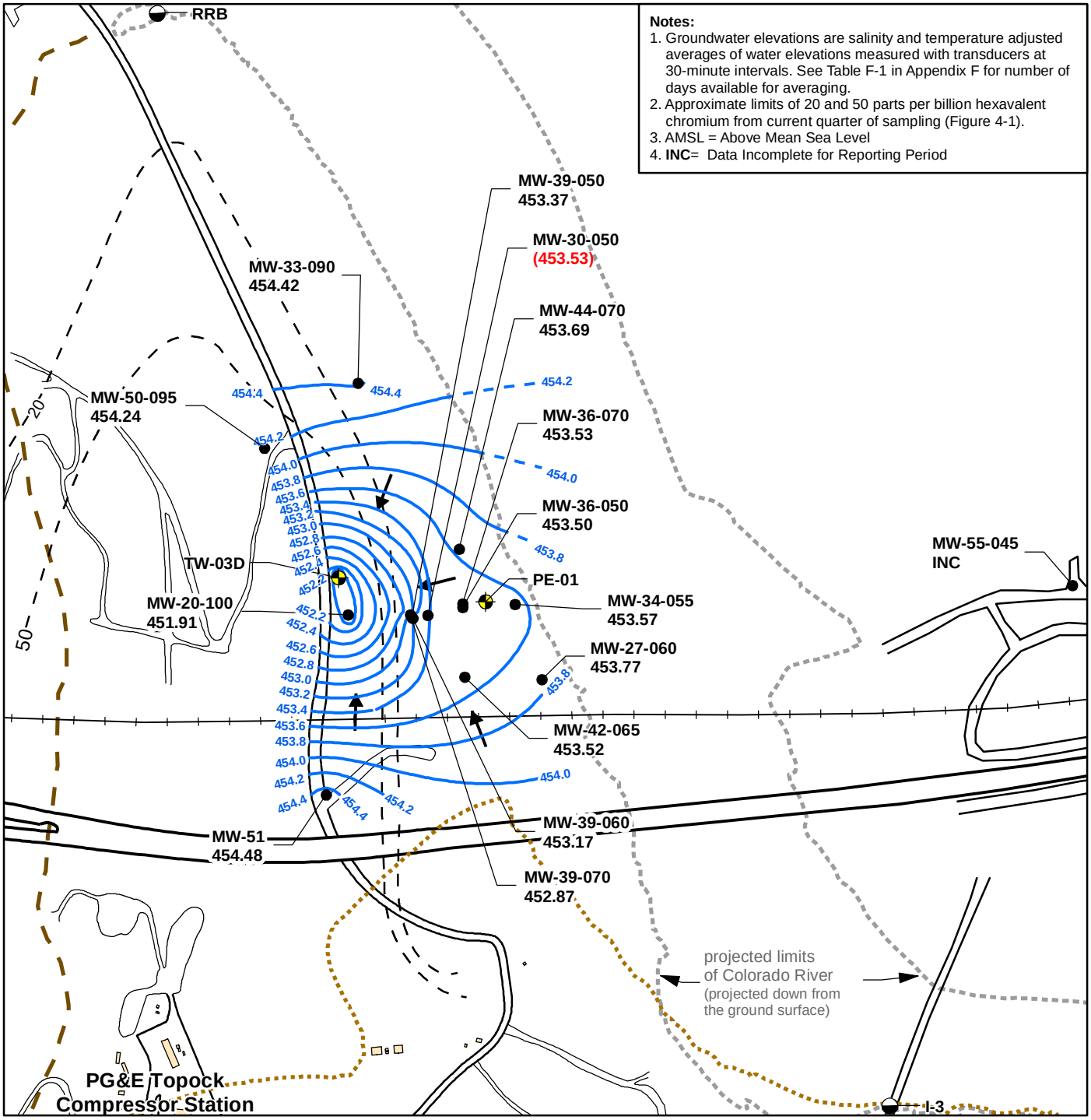
R-27 — River Station (see note 3)
453.79 — River Elevation (ft AMSL) Interpolated Average
(453.74) — Elevation in red parentheses not used for contouring

0 300 600
Feet

N

FIGURE 4-3a
AVERAGE GROUNDWATER ELEVATIONS IN SHALLOW WELLS AND RIVER ELEVATIONS, FOURTH QUARTER 2015

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:
1. Groundwater elevations are salinity and temperature adjusted averages of water elevations measured with transducers at 30-minute intervals. See Table F-1 in Appendix F for number of days available for averaging.
2. Approximate limits of 20 and 50 parts per billion hexavalent chromium from current quarter of sampling (Figure 4-1).
3. AMSL = Above Mean Sea Level
4. **INC**= Data Incomplete for Reporting Period

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 Contour (see note 2)

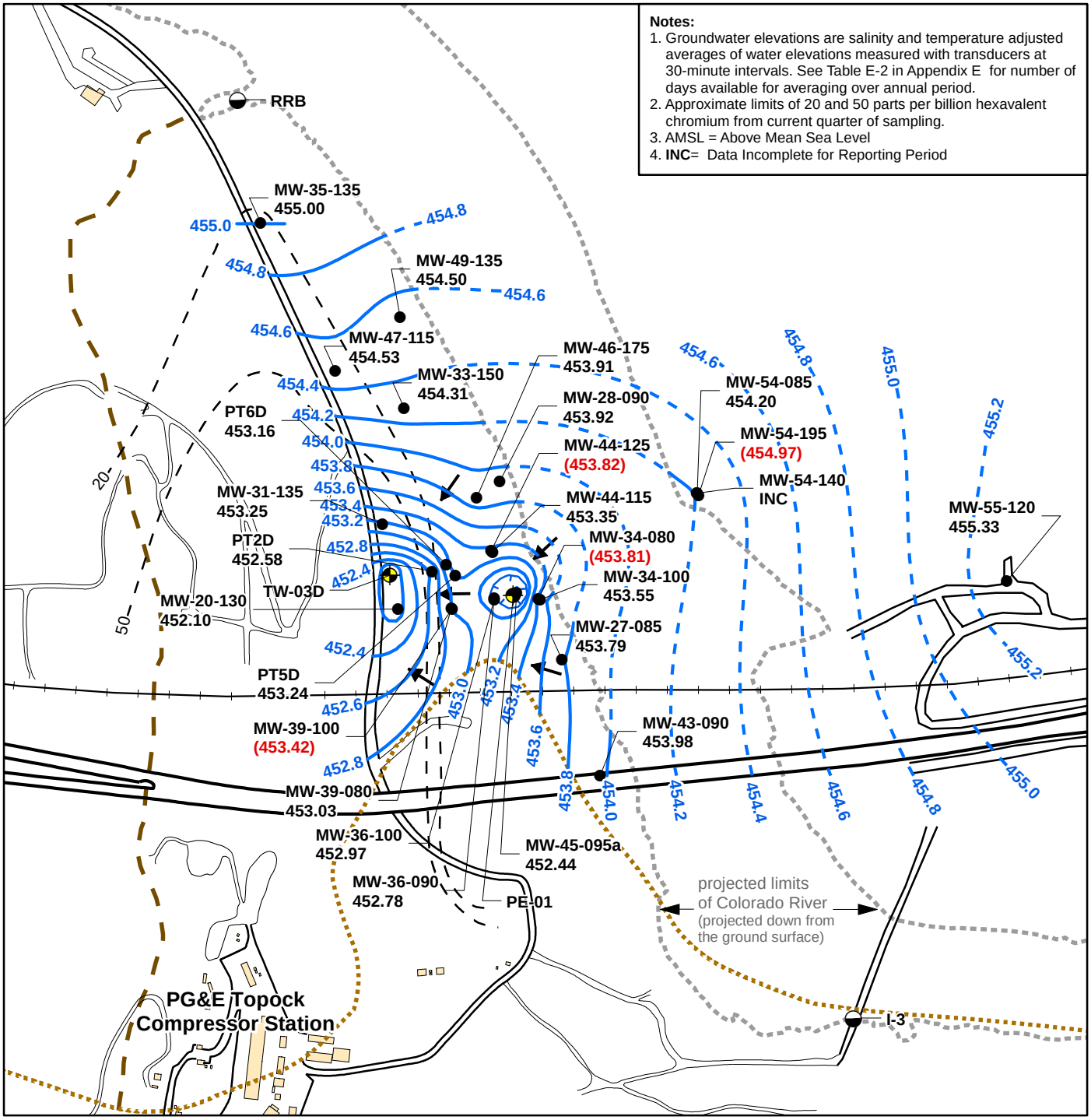
0 250 500
Feet

N

MW-34-055——Gauging Location
453.57————Average Groundwater Elevation (ft AMSL)

FIGURE 4-3b
AVERAGE GROUNDWATER ELEVATIONS IN MID-DEPTH WELLS, FOURTH QUARTER 2015

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



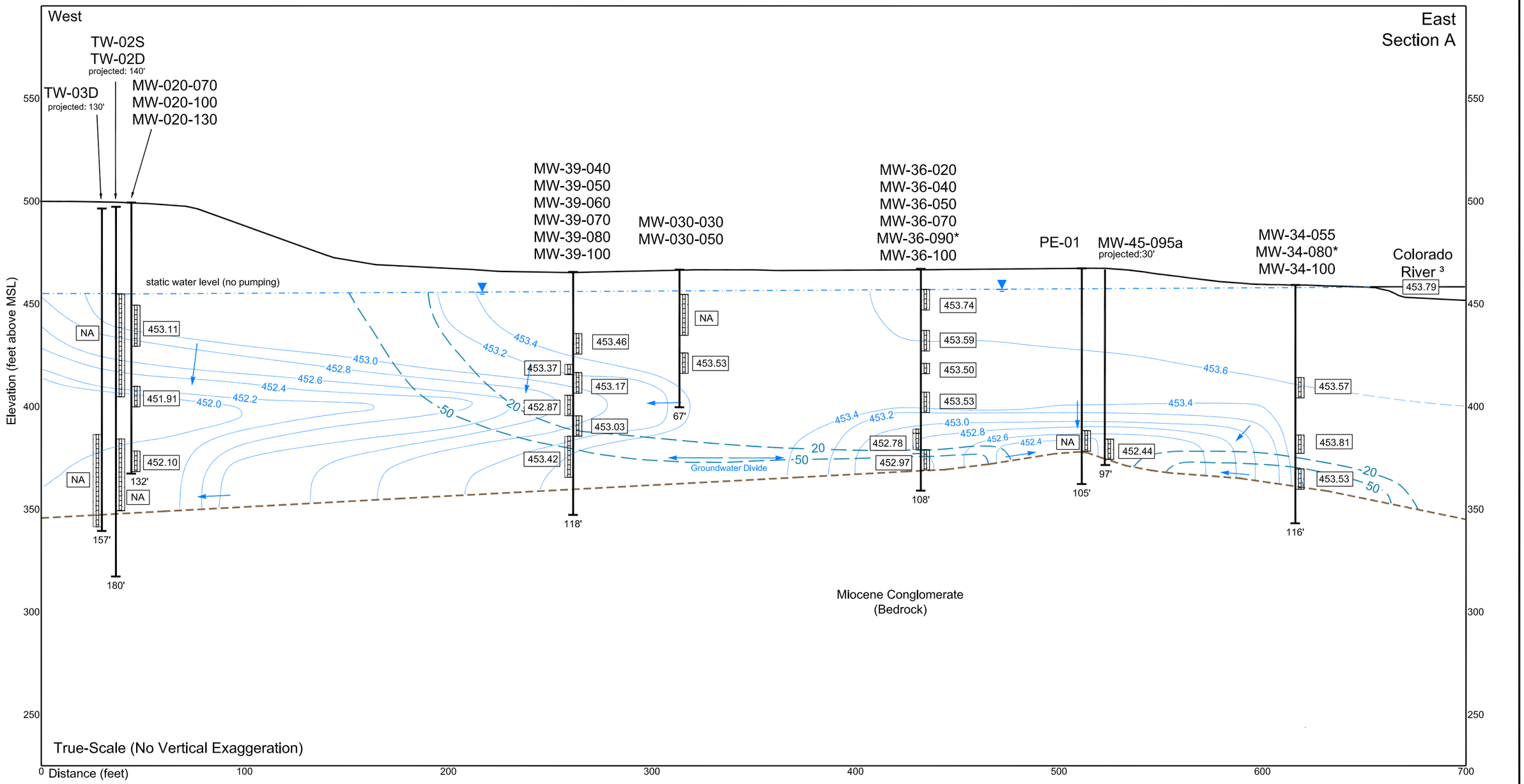
LEGEND

- Monitoring Well
- River Station
- Extraction Well
- Bedrock Contact at 396 ft AMSL Elevation
- Interpreted Groundwater Flow Direction
- Groundwater Elevation Contour 0.2 ft (dashed where inferred)
- Inferred Cr(VI) Concentration Contour (see note 2)

MW-28-090 — Gauging Location
453.92 — Average Groundwater Elevation (ft AMSL)
(453.82) — Elevation in red parentheses not used for contouring

FIGURE 4-3c
AVERAGE GROUNDWATER ELEVATIONS IN DEEP WELLS, FOURTH QUARTER 2015

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:

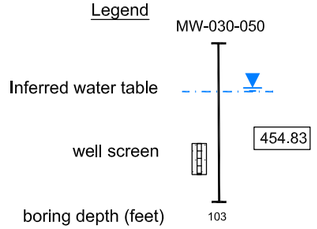
1. Results show average groundwater elevations for November 2015 through December 2015 measured with transducers at 30 minute intervals.

2. Groundwater elevations adjusted for salinity and temperature. Well MW-36-090* and MW-34-080* are excluded from contouring.

3. Colorado River elevation shown as interpolated quarterly average at R-27.

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

Legend



20
Inferred hexavalent chromium contour (ppb) in Alluvial Aquifer.

453.5
Groundwater head contour

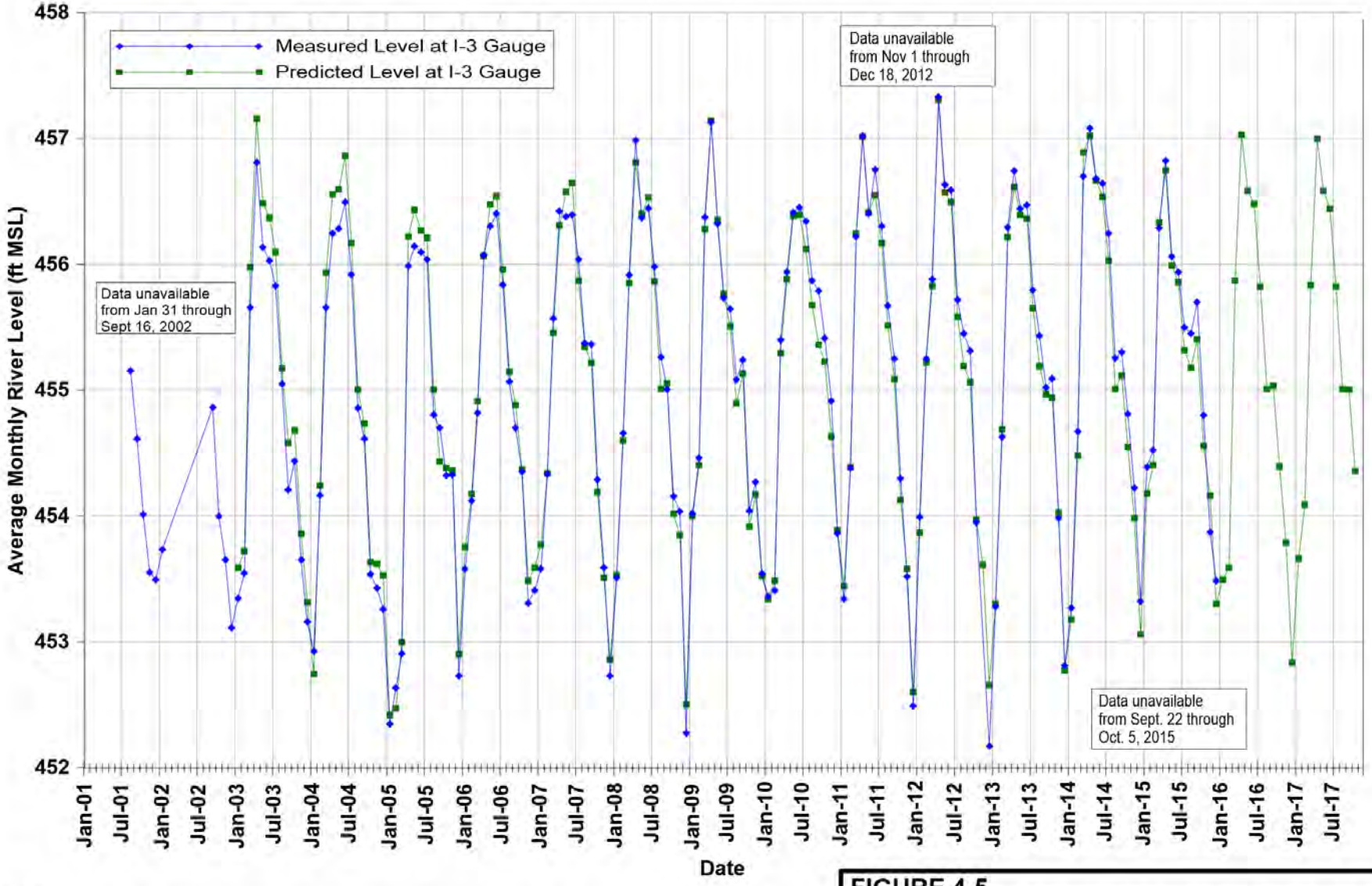
453.5
Inferred groundwater head contour

Interpreted groundwater flow direction

Average groundwater head (ft AMSL)

FIGURE 4-4
AVERAGE GROUNDWATER ELEVATIONS FOR WELLS IN FLOODPLAIN CROSS-SECTION A, FOURTH QUARTER 2015
FOURTH QUARTER 2015 AND ANNUAL 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 USBR projections of Davis Dam release and stage in Lake Havasu. Future projections of river level at I-3 are based upon November 2015 USBR projections. These data are reported monthly by the US Department of Interior, at http://www.usbr.gov/lc/region/g4000/24mo.pdf

FIGURE 4-5
PAST AND PREDICTED FUTURE RIVER LEVELS AT TOPOCK COMPRESSOR STATION

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

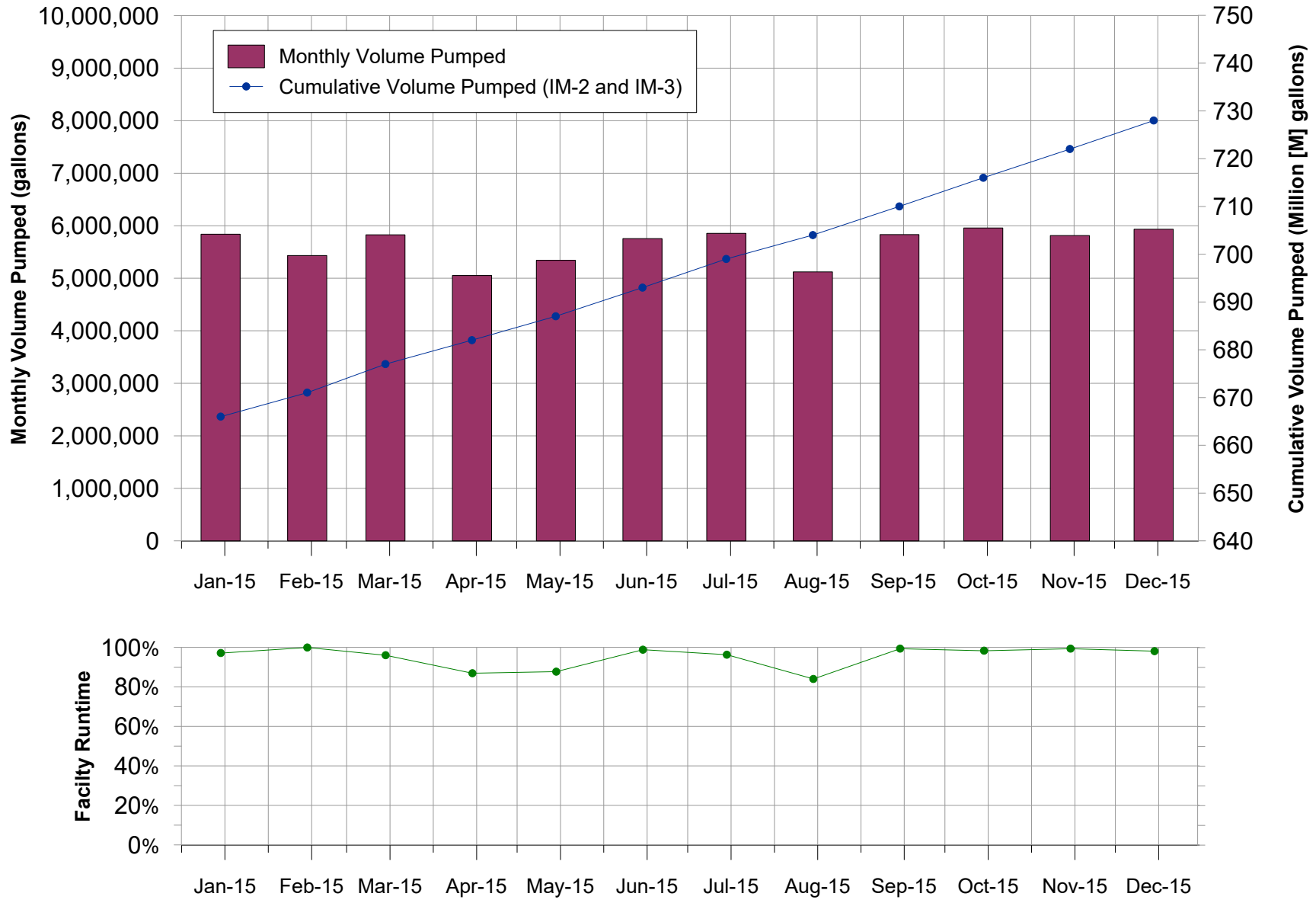
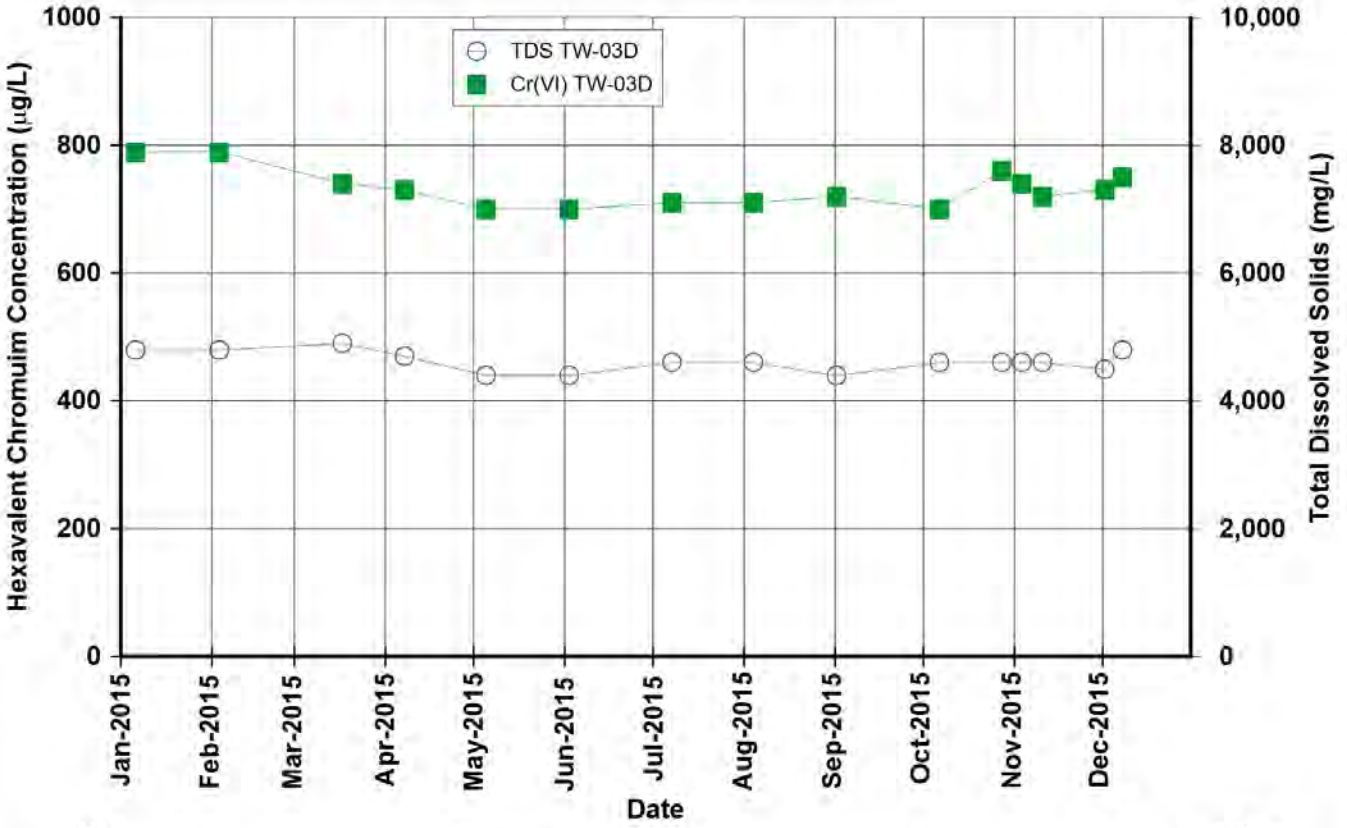
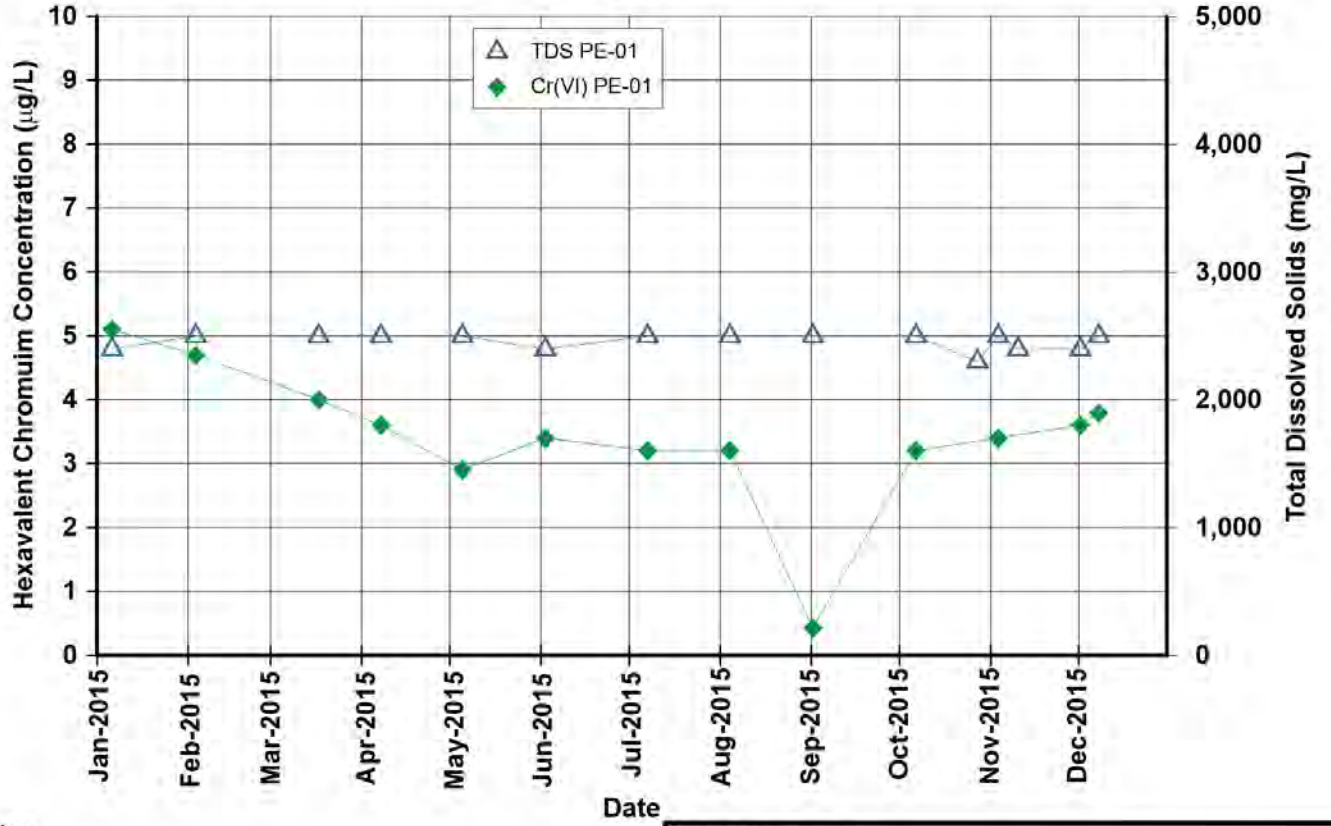


FIGURE 5-1
MONTHLY COMBINED PUMPING VOLUMES AND PERCENT UPTIME, 2015 REPORTING PERIOD
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

CH2MHILL

\\zinfandel\Proj\PacificGasElectricCo\TopockProgram\Project_2011-2013_Combined_Monitoring\Reporting\GMP_PMP\2014_Q4\Draft_2014_Q4_GMP_PMP\Figures\Grapher_Files





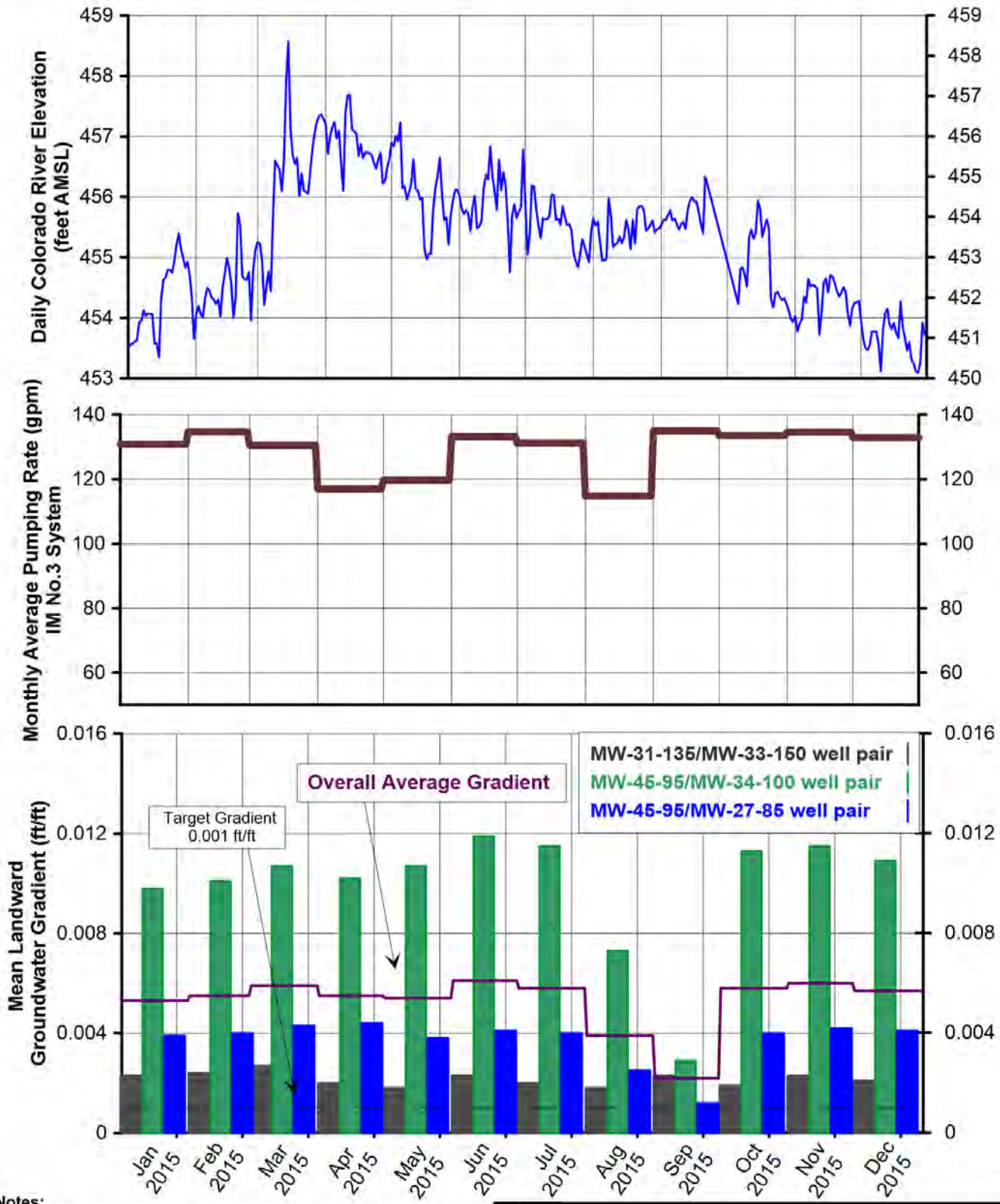
Notes:
gpm = gallons per minute.
µg/L = micrograms per liter.
mg/L = milligrams per liter.

TW-3D pumping began on 20-Dec-05.
PE-1 pumping began on 26-Jan-06.

For average pumping information see Table 5-1.

FIGURE 5-2
Cr(VI) AND TOTAL DISSOLVED SOLIDS CONCENTRATIONS IN EXTRACTION WELLS TW-03D AND PE-01, 2015 REPORTING PERIOD
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



Notes:

1. For IM pumping, the target landward gradient for well pairs is 0.001 feet/foot.
2. Refer to Table 4-1 and Section 4.4 for discussion of pumping data.
3. Pumping rate plotted is the combined rate of extraction wells TW-3D and PE-1 in operation each month.
4. Refer to Table 4-2 and Section 4.5 for discussion of gradient data.
5. AMSL = above mean sea level.

FIGURE 5-3
MEASURED HYDRAULIC GRADIENTS, RIVER ELEVATION, AND PUMPING RATE, 2015 REPORTING PERIOD

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

\\arcadis-us.com\officedata\Denver-CO-Technical\Aproject\PG&E - Groundwater Monitoring\Topock_Reporting Team\00_Reports\02_PMP-GMP_Reports\00_Q4_2015\Draft Reports\02_Figures

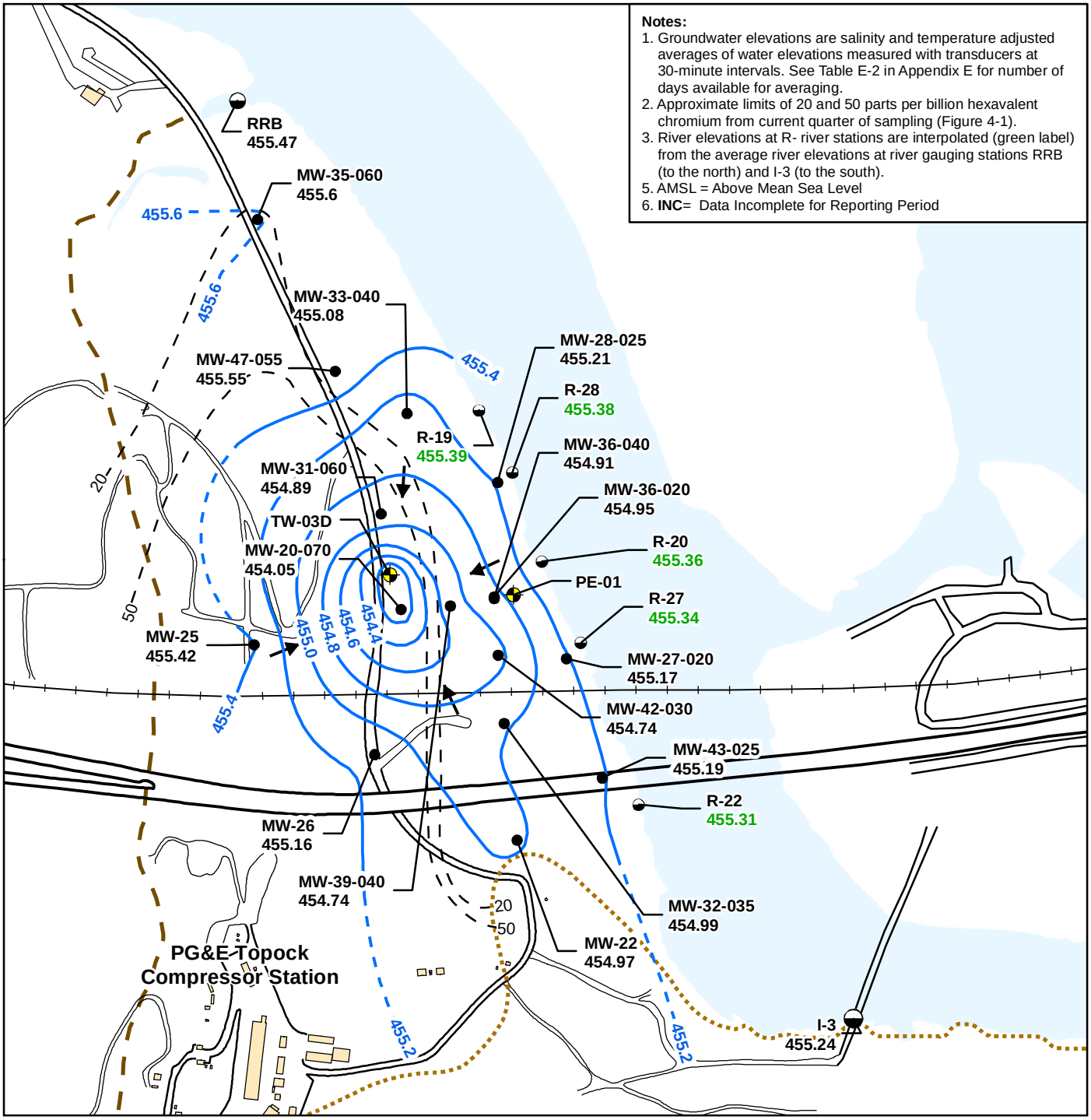
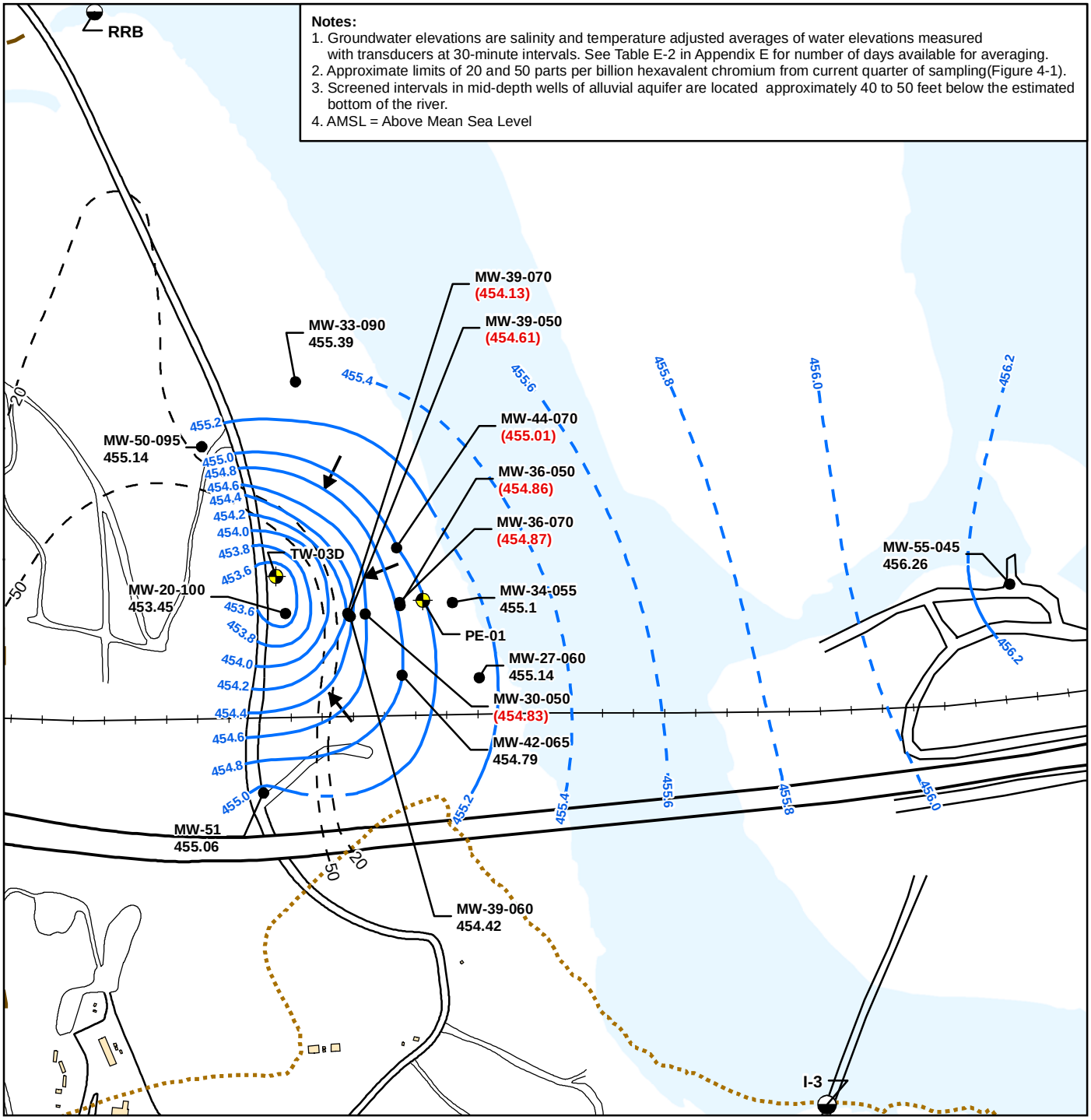


FIGURE 5-4a
AVERAGE GROUNDWATER ELEVATIONS IN SHALLOW WELLS AND RIVER ELEVATIONS, 2015 REPORTING PERIOD

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



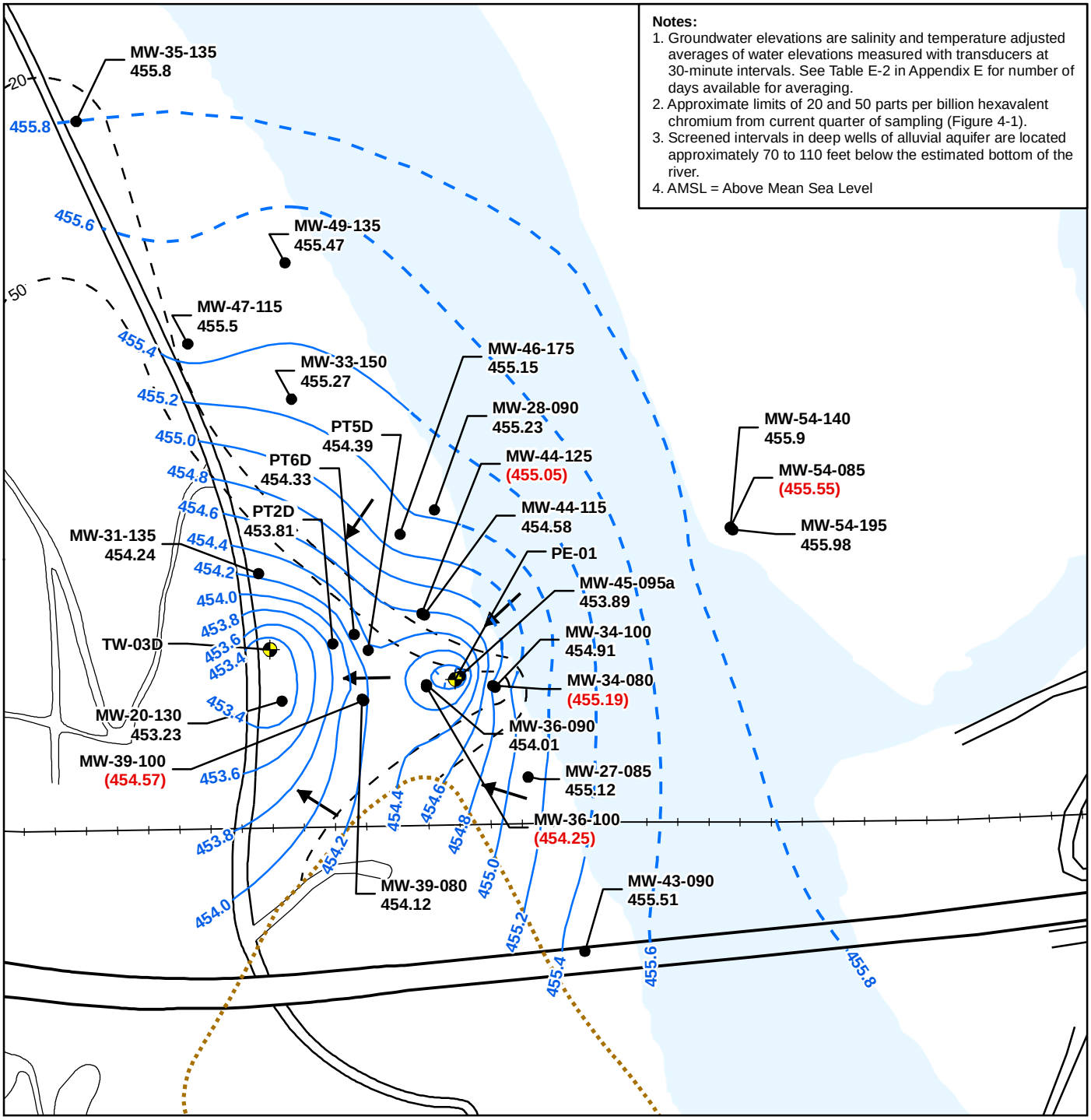
LEGEND

- Monitoring Well
- River Station
- Extraction Well
- Bedrock Contact at 425 ft elevation
- Interpreted Groundwater Flow Direction
- Groundwater Elevation Contour 0.2 ft (dashed where inferred)
- Inferred Cr(VI) Concentration Contour (see note 2)

MW-27-060 ——— Gauging Location
455.14 ——— Average Groundwater Elevation (ft AMSL)
(454.83) ——— Elevations in red parentheses not used for contouring

FIGURE 5-4b
AVERAGE GROUNDWATER ELEVATIONS IN MID-DEPTH WELLS, 2015 REPORTING PERIOD

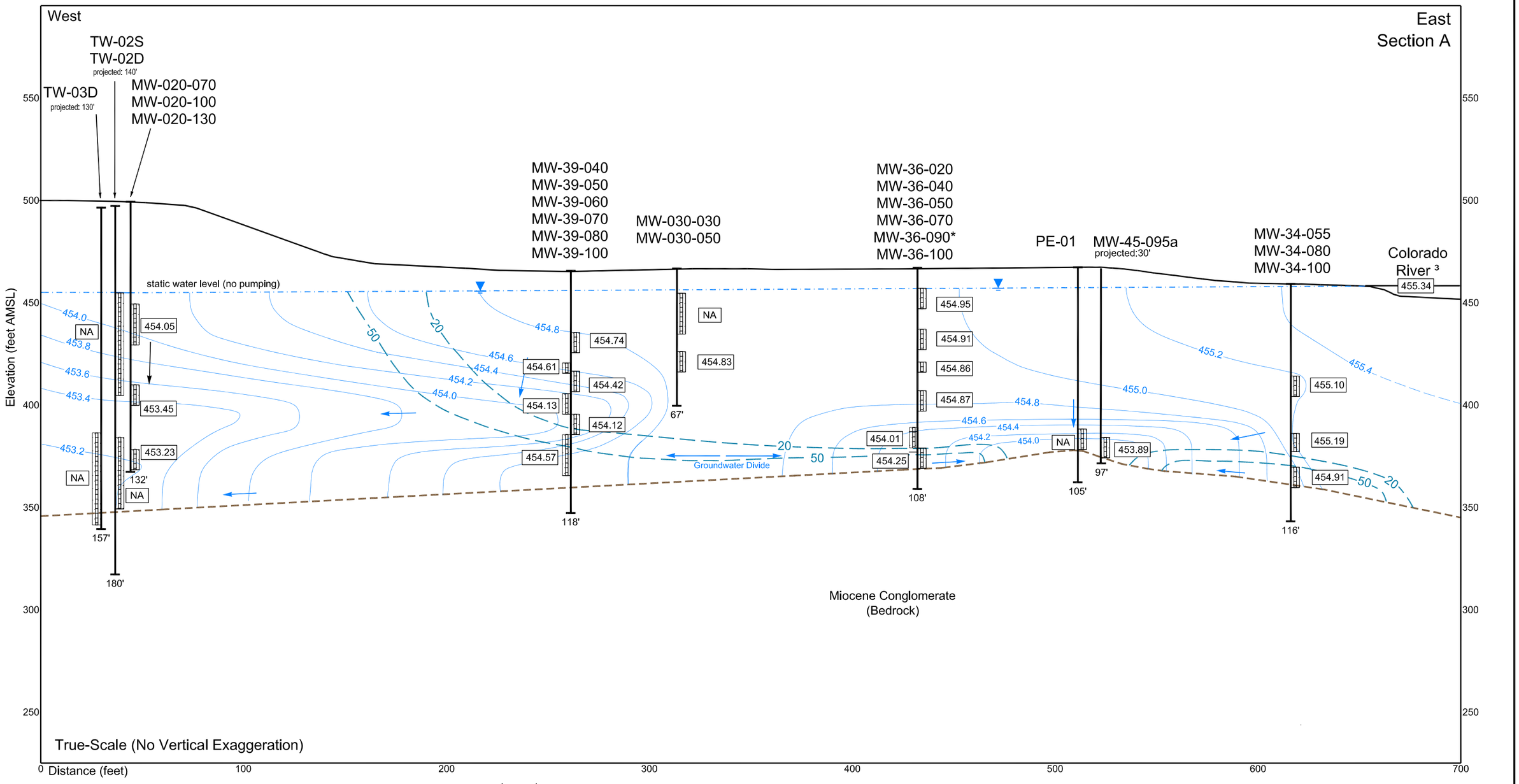
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



MW-34-100——Gauging Location
454.91——Average Groundwater Elevation (ft AMSL)
(455.55)——Elevation in red parentheses not used for contouring

FIGURE 5-4c
AVERAGE GROUNDWATER ELEVATIONS IN DEEP WELLS, 2015 REPORTING PERIOD

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:

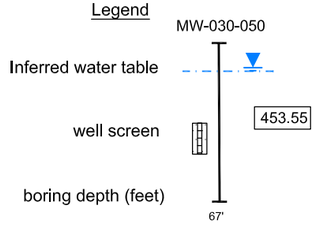
1. Results show average groundwater elevations for 2015 measured with transducers at 30 minute intervals.

2. Groundwater elevations adjusted for salinity and temperature. Well MW-36-090* and MW-34-080* are excluded from contouring.

3. Colorado River elevation shown as interpolated annual average at R-27.

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

Legend



20
Inferred hexavalent chromium contour (ppb) in Alluvial Aquifer.

453.5
Groundwater head contour

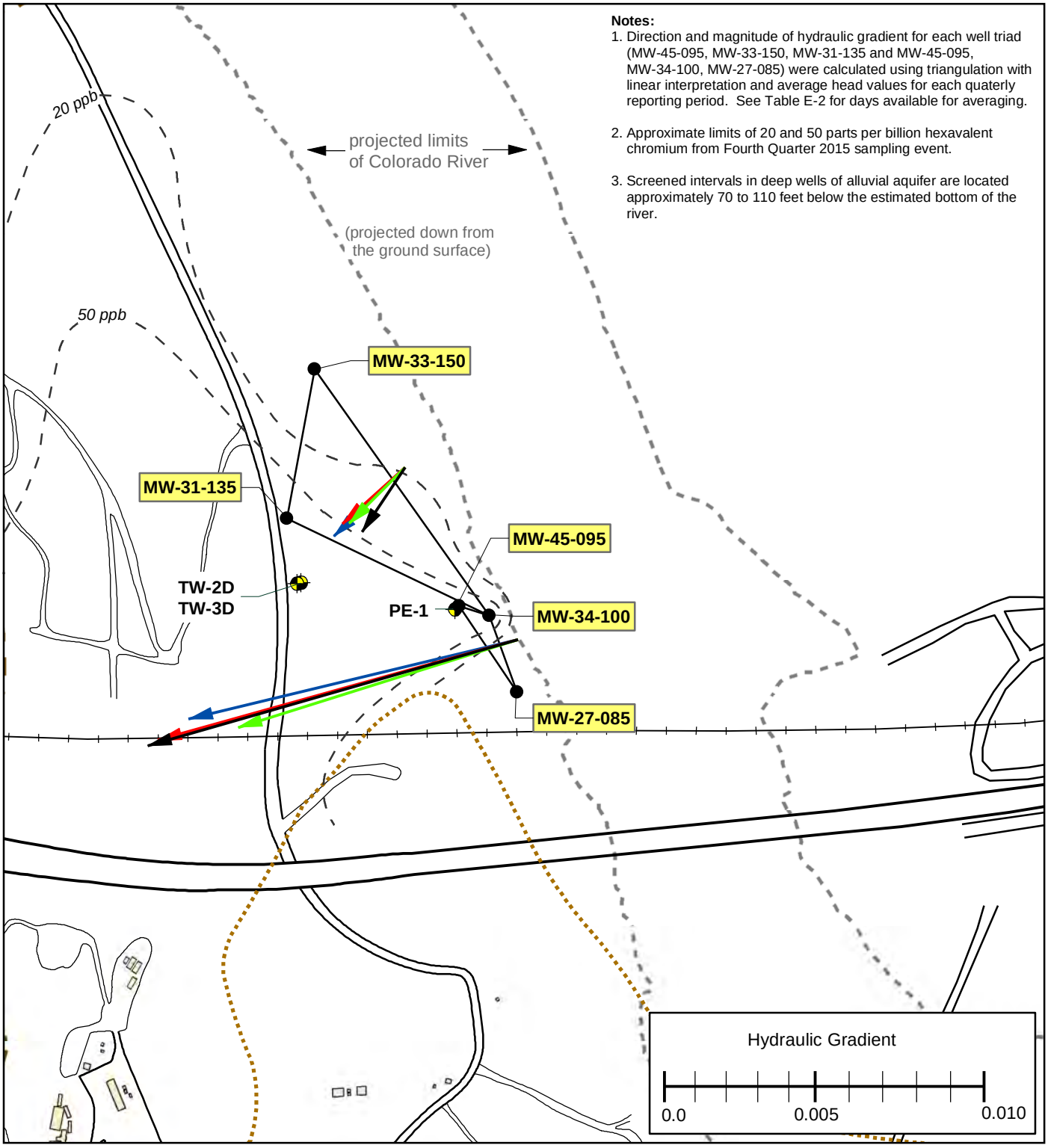
453.5
Inferred groundwater head contour

Interpreted groundwater flow direction

Average groundwater head (ft AMSL)

FIGURE 5-5
AVERAGE GROUNDWATER ELEVATIONS FOR WELLS IN FLOODPLAIN CROSS-SECTION A, 2015 REPORTING PERIOD
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



LEGEND

- IM Extraction Well
- Monitoring Well Used for Hydraulic Gradient Calculation

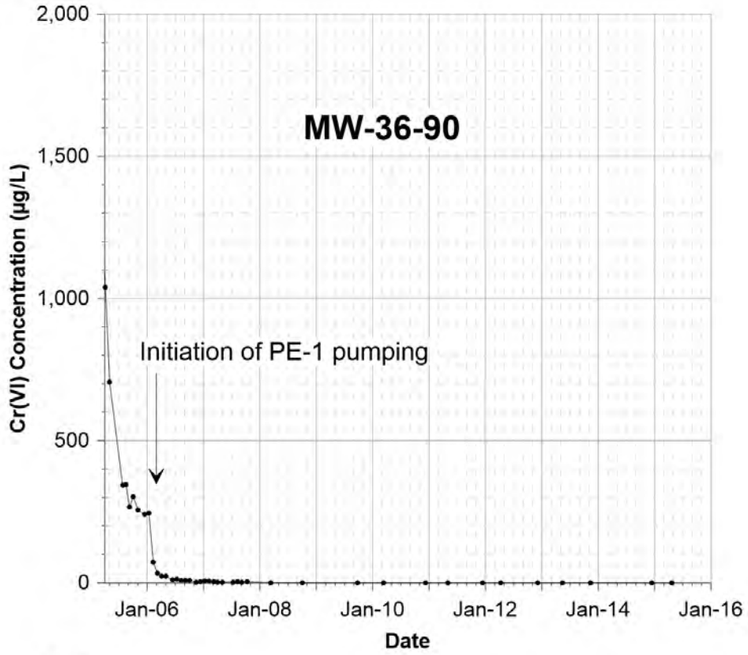
Calculated Average Gradients Magnitude and Direction

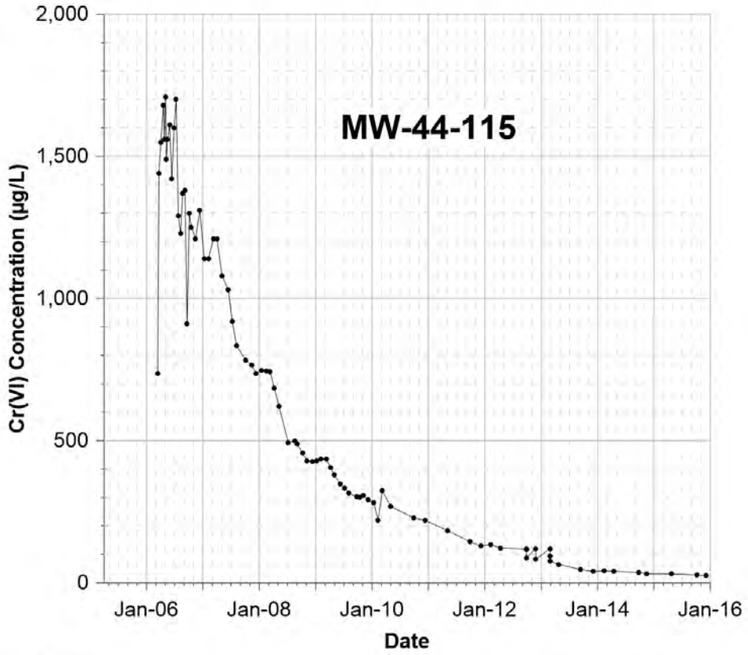
- First Quarter 2015
- Second Quarter 2015
- Third Quarter 2015
- Fourth Quarter 2015
- Approximate bedrock contact at 395 feet above mean sea level.

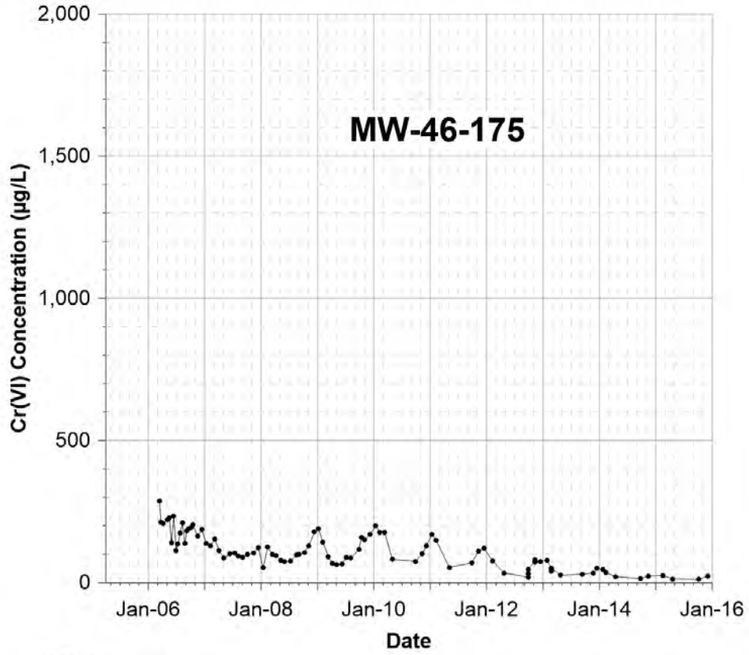
FIGURE 5-6
MAGNITUDE AND DIRECTION OF HYDRAULIC GRADIENTS IN LOWER DEPTH INTERVAL DURING 2015 ANNUAL PERIOD

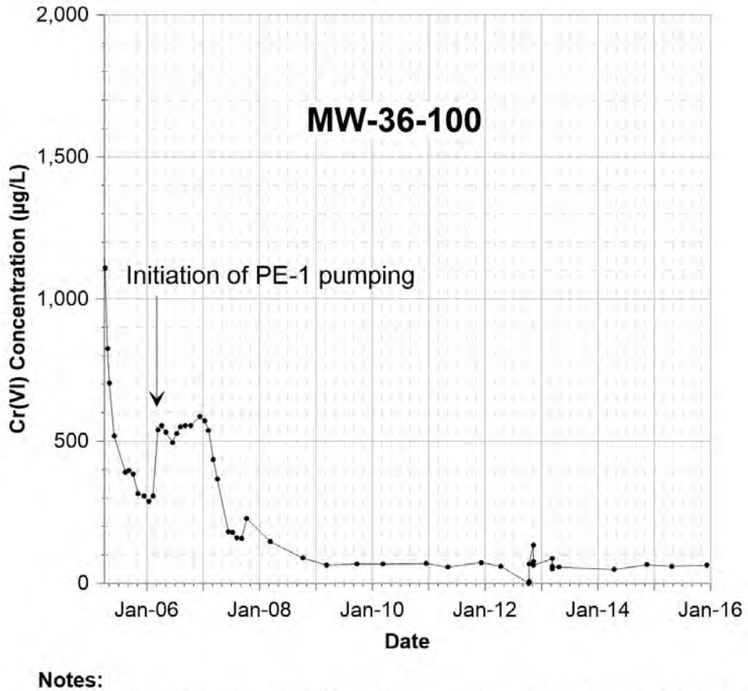
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

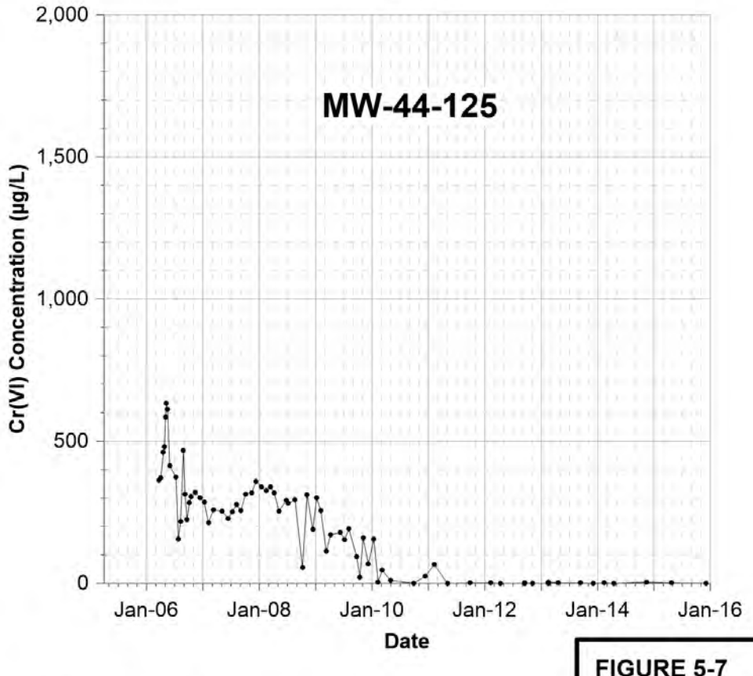
Created by: CRITIGEN

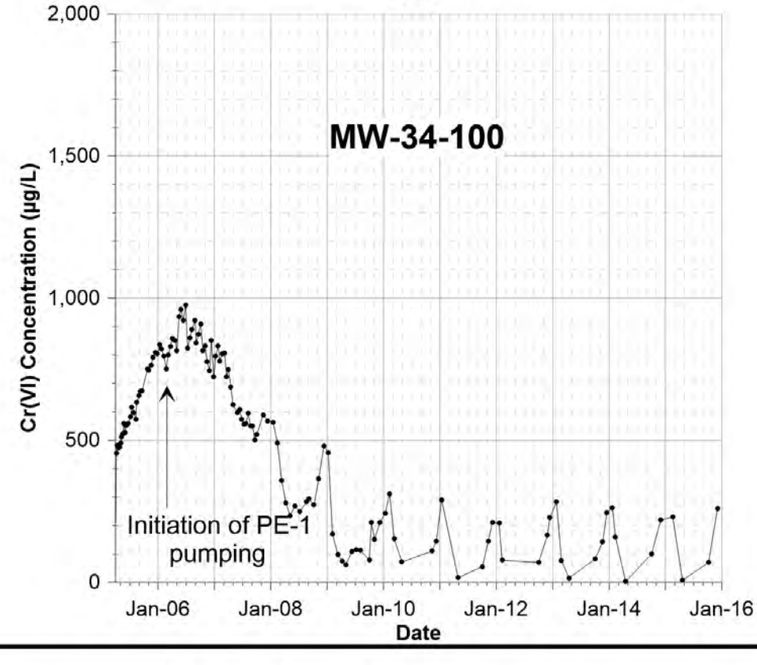










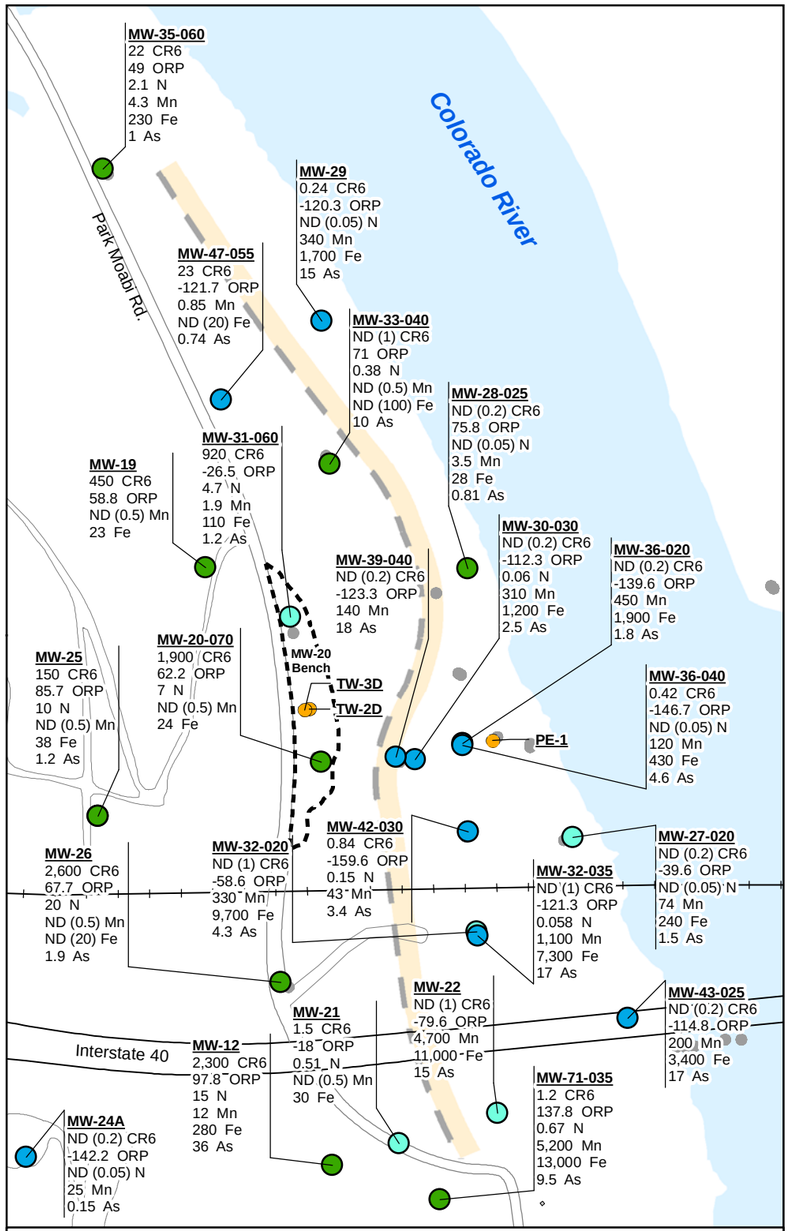


Notes:

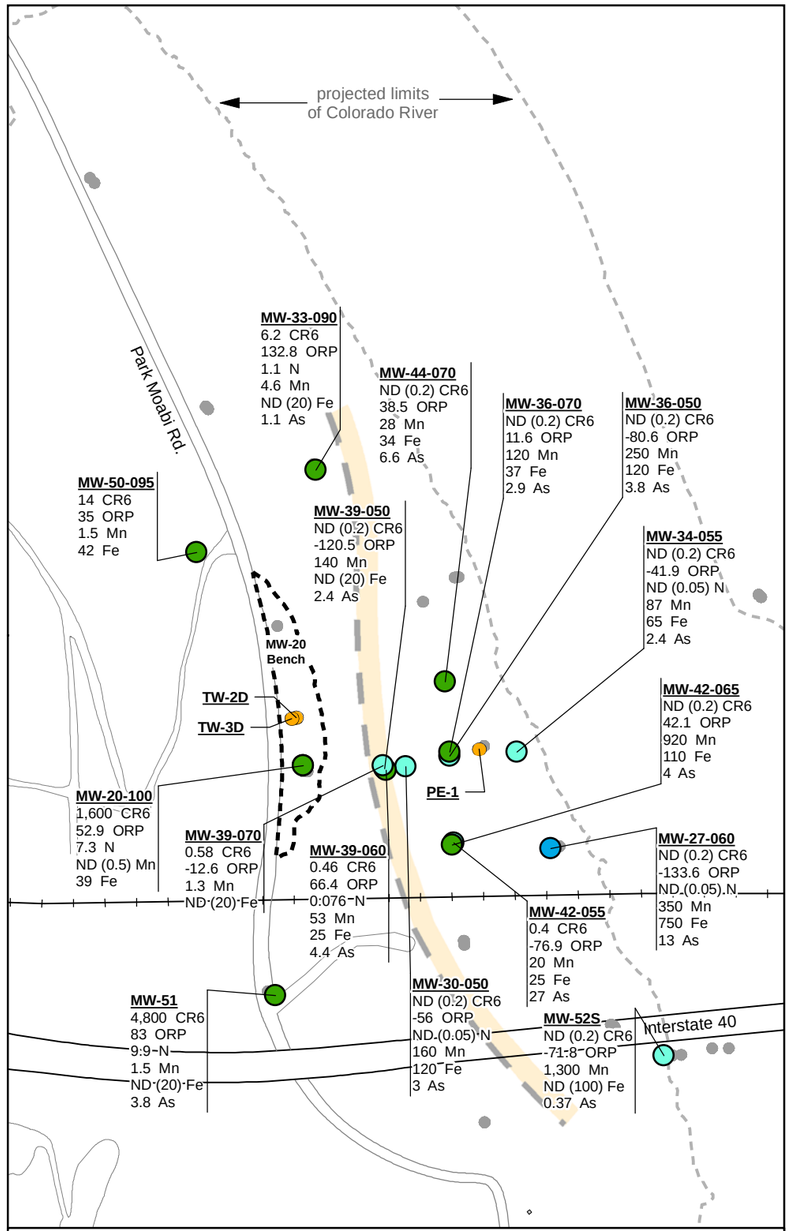
1. Hexavalent chromium [Cr(VI)] results in micrograms per liter (µg/L), equivalent to parts per billion (ppb).
2. Results plotted are maximum concentrations from primary and duplicate samples; see Table 3-1 for complete results.
3. MW-36 wells selected to monitor effects of PE-1 pumping on plume west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

FIGURE 5-7
Cr(VI) CONCENTRATION TRENDS IN SELECTED PERFORMANCE MONITORING WELLS, APRIL 2005 THROUGH DECEMBER 2015
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

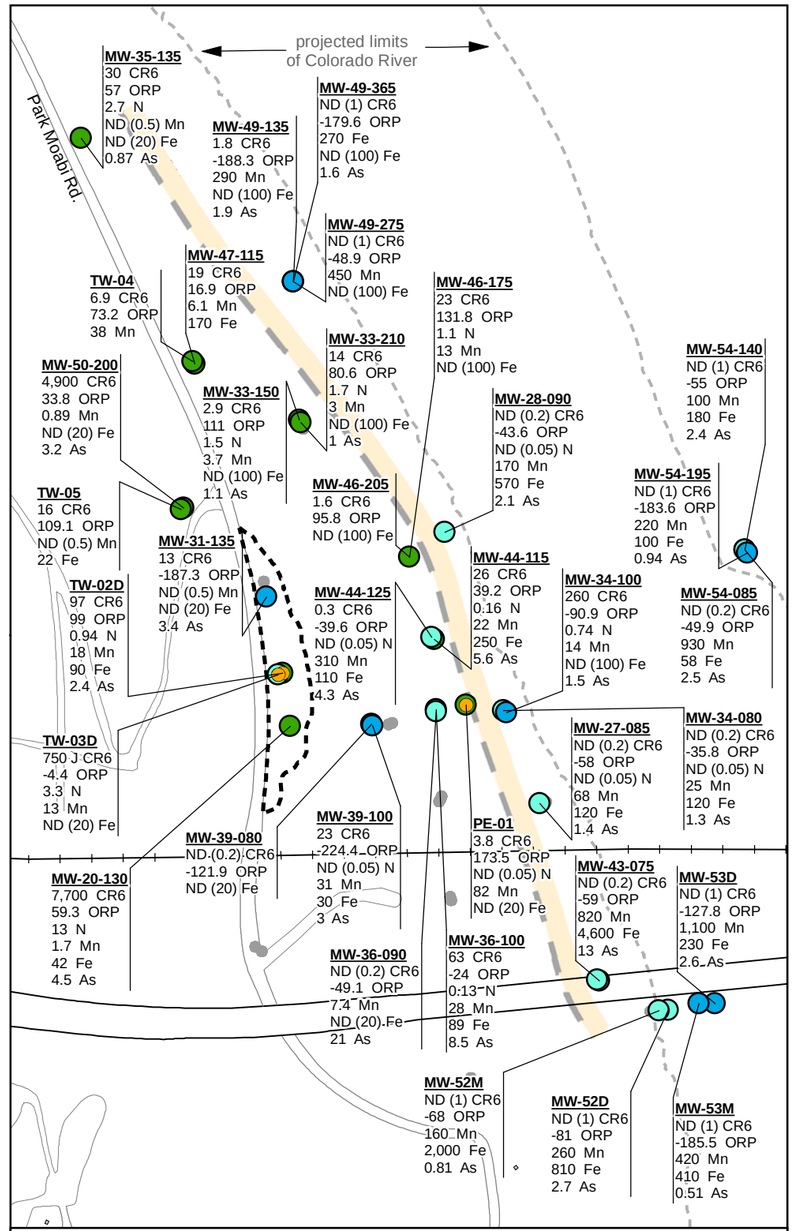
ARCADIS



Shallow Wells (Upper Depth Interval) - 2015



Intermediate Wells (Middle Depth Interval) - 2015



Deep Wells (Lower Depth Interval) - 2015

LEGEND

- Approximate limit of reducing groundwater based upon a **combination** of redox indicator parameters.
- Groundwater ORP < -90 mV
- Groundwater -90 mV < ORP < 1 mV
- Groundwater ORP > 1 mV
- IM3 Extraction Wells (TW-2D, TW-3D, and PE-1)

MW-22
ND (1)
-65.7
ND (2.5)
4400
9400
12

Groundwater Results, Fourth Quarter 2014
CR6 - Hexavalent chromium, micrograms per liter (µg/L)
ORP - Oxidation reduction potential, millivolts (mV)
N - Nitrate/Nitrite, milligrams per liter (mg/L)
Mn - Manganese, mircrograms per liter (µg/L)
Fe - Iron, mircrograms per liter (µg/L)
As - Arsenic, mircrograms per liter (µg/L)

Notes:
1. "ND" = Cr(VI) not detected at listed reporting limit.
2. "J" = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

N

0 200 400 Feet

FIGURE 5-8
DISTRIBUTION OF CR(VI), GEOCHEMICAL INDICATOR PARAMETERS, AND IN SITU BYPRODUCTS IN FLOODPLAIN WELLS

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

Created by: CRITIGEN

West

East
Section A

TW-02S
TW-02D
projected: 140'

TW-03D
projected: 130'

MW-020-070
MW-020-100
MW-020-130

MW-39-040
MW-39-050
MW-39-060
MW-39-070
MW-39-080
MW-39-100

MW-030-030
MW-030-050

MW-36-020
MW-36-040
MW-36-050
MW-36-070
MW-36-090
MW-36-100

PE-01

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

Colorado River

static water level (no pumping)

Upper Depth Interval

Middle Depth Interval

Lower Depth Interval

ALLUVIAL AQUIFER

Approximate contact between alluvial fan (west) and fluvial (east) deposits

Elevation (feet AMSL)

330
186
4
NA
39
NA

1,900
62.2
7.0
ND (0.5)
24
NA

1,600
52.9
7.3
ND (0.5)
39
NA

7,700
59.3
13
1.7
42
4.5

730 (750 J)
-4.4
3.3
13
ND (20)
NA

97
99
0.94
18
90
2.4

ND (0.2)
-120.5
NA
140
ND (20)
2.4

0.58
-12.6
NA
1.3
ND (20)
NA

23
-224.4
ND (0.05)
31
30
3

ND (0.2)
-123.3
NA
140
NA
18

0.46
66.4
0.076
53
25
4.4

ND (0.2)
-121.9
NA
NA
ND (20)
NA

ND (0.2)
-112.3
0.06
310
1,200
2.5

ND (0.2)
-56
ND (0.05)
160
120
3

0.42
-146.7
ND (0.05)
120
430
4.6

ND (0.2)
11.6
NA
120
37
2.9

63
-24
0.13
28
89
8.5

ND (0.2)
-139.6
NA
450
1,900
1.8

ND (0.2)
-80.6
NA
250
120
3.8

ND (0.2)
-49.1
NA
7.4
ND (20)
21

3.8
2.1
ND (0.05)
74
ND (20)
NA

ND (0.2)
-41.9
ND (0.05)
87
65
2.4

ND (0.2)
-35.8
ND (0.05)
25
120
1.3

260
-90.9
0.74
14
ND (100)
1.5

157'
180'
132'
118'
67'
108'
105'
116'

Miocene Conglomerate
(Bedrock)

True-Scale (No Vertical Exaggeration)

Distance (feet)

550
500
450
400
350
300
250

0
100
200
300
400
500
600
700

Legend

water level

well screen

boring depth (feet)

1,900
62.2
7.0
ND (0.5)
24
NA

103

Groundwater Results

Hexavalent chromium, micrograms per liter (µg/L)
Oxidation reduction potential, millivolts (mV)
Nitrate/Nitrite as N or Nitrate as N, milligrams per liter (mg/L)
Manganese (Mn), micrograms per liter (µg/L)
Iron (Fe), micrograms per liter (µg/L)
Arsenic (As), micrograms per liter (µg/L)

ORP values less than -090 mV highlighted blue
Positive ORP values highlighted green

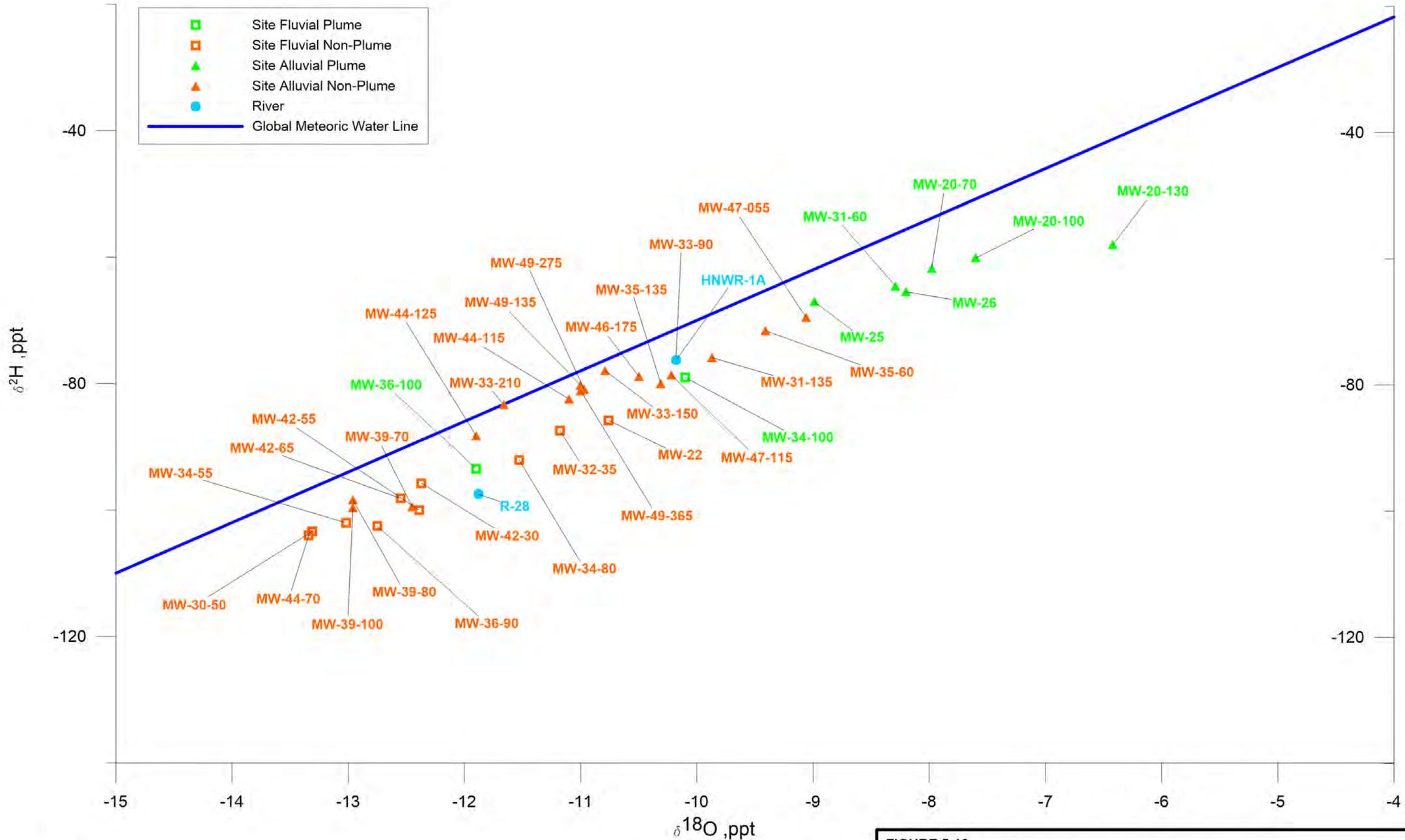
Approximate limit of reducing water; based on a combination of redox indicator parameters.

Groundwater ORP <-090mV
Groundwater ORP -090mV <ORP<1mV
Groundwater ORP >1mV

Notes:
ND = not detected at listed reporting limit.
NA = data not collected during reporting period.

FIGURE 5-9
DISTRIBUTION OF CR(VI), GEOCHEMICAL INDICATOR PARAMETERS, AND IN SITU BYPRODUCTS IN FLOODPLAIN WELLS CROSS-SECTION A, FOURTH QUARTER 2015
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER
AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



Notes:
ppt = parts per thousand.

1. Values for Performance Monitoring Program (PMP) wells are from the Fourth Quarter 2015 reporting period.

FIGURE 5-10
STABLE ISOTOPES OF OXYGEN AND DEUTERIUM,
FOURTH QUARTER 2015
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES
PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER
AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

APPENDIX A

Well Inspections and Construction Information

TABLE A-1
Well Construction and Sampling Summary, Fourth Quarter 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Screen Elevation Interval (ft amsl)	Measuring Point Screen Elevation Interval (ft amsl)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
GMP MONITORING WELLS									
MW-9	Bat Cave Wash	536.56	77 - 87	Alluvial	4 in PVC	89.4	80.30	Minimal Drawdown	
MW-10	Bat Cave Wash	530.65	74 - 94	Alluvial	4 in PVC	96.9	74.90	Minimal Drawdown	
MW-11	Bat Cave Wash	522.54	62.5 - 82.5	Alluvial	4 in PVC	86.1	66.73	Minimal Drawdown	
MW-12	East of Station	484.01	27.5 - 47.5	Alluvial	4 in PVC	50.4	28.91	Minimal Drawdown	
MW-13	Bat Cave Wash	488.64	28.5 - 48.5	Alluvial	4 in PVC	52.0	32.41	Minimal Drawdown	
MW-14	East Mesa	570.99	111 - 131	Alluvial	4 in PVC	133.8	115.11	Minimal Drawdown	
MW-15	East of New	641.52	180.5 - 200.5	Alluvial	4 in PVC	203.0	184.78	Minimal Drawdown	
MW-16	Near New Ponds	657.31	198 - 218	Alluvial	4 in PVC	218.1	200.05	Minimal Drawdown	
MW-17	West of Mesa	589.96	130 - 150	Alluvial	4 in PVC	153.6	132.92	Minimal Drawdown	
MW-18	West Mesa	545.32	85 - 105	Alluvial	4 in PVC	106.7	88.96	Minimal Drawdown	
MW-19	Route 66	499.92	46 - 66	Alluvial	4 in PVC	65.8	45.54	Minimal Drawdown	
MW-20-70	MW-20 bench	500.07	50 - 70	Alluvial	4 in PVC	69.6	47.50	Minimal Drawdown	
MW-20-100	MW-20 bench	500.58	89.5 - 99.5	Alluvial	4 in PVC	101.4	48.40	Minimal Drawdown	
MW-20-130	MW-20 bench	500.66	121 - 131	Alluvial	4 in PVC	132.3	49.20	Minimal Drawdown	
MW-21	Route 66	505.55	39 - 59	Alluvial	4 in PVC	58.5	50.49	Minimal Drawdown	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	7.00	Minimal Drawdown	
MW-23-060	East Ravine	504.08	50 - 60	Bedrock	2 in Sch 40 PVC	60.2	49.00	Three Volume	
MW-23-080	East Ravine	504.13	75 - 80	Bedrock	2 in Sch 40 PVC	80.8	51.00	Three Volume	
MW-24A	MW-24 Bench	567.16	104 - 124	Alluvial	4 in PVC	127.5	111.30	Minimal Drawdown	

TABLE A-1
Well Construction and Sampling Summary, Fourth Quarter 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Screen Elevation Interval (ft amsl)	Measuring Point Screen Elevation Interval (ft amsl)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
GMP MONITORING WELLS									
MW-24B	MW-24 Bench	564.76	193 - 213	Alluvial	4 in PVC	214.8	109.60	Minimal Drawdown	
MW-24BR	MW-24 Bench	563.95	378 - 437	Bedrock	4 in PVC	441.0	108.20	Fixed Volume	low recharge well; typically purges dry at 1 casing volume
MW-25	Near Bat Cave	542.90	84.5 - 104.5	Alluvial	4 in PVC	106.5	87.91	Minimal Drawdown	
MW-26	Route 66	502.22	51.5 - 71.5	Alluvial	2 in PVC	70.1	48.00	Minimal Drawdown	
MW-27-20	Floodplain	460.56	7 - 17	Fluvial	2 in PVC	14.4	6.20	Minimal Drawdown	
MW-27-60	Floodplain	461.49	47.3 - 57.3	Fluvial	2 in PVC	59.0	7.20	Minimal Drawdown	
MW-27-85	Floodplain	460.99	77.5 - 87.5	Fluvial	2 in PVC	80.0	6.70	Minimal Drawdown	
MW-28-25	Floodplain	466.77	13 - 23	Fluvial	2 in PVC	21.1	12.50	Minimal Drawdown	
MW-28-90	Floodplain	467.53	70 - 90	Fluvial	2 in PVC	98.4	12.70	Minimal Drawdown	
MW-29	Floodplain	485.21	29.5 - 39.5	Fluvial	2 in PVC	41.5	30.20	Minimal Drawdown	
MW-30-30	Floodplain	468.12	12 - 32	Fluvial	2 in PVC	26.9	14.00	Minimal Drawdown	
MW-30-50	Floodplain	468.81	40 - 50	Fluvial	4 in PVC	52.6	14.80	Minimal Drawdown	
MW-31-60	MW-20 Bench	496.81	41.5 - 61.5	Alluvial	4 in PVC	64.0	43.00	Minimal Drawdown	
MW-31-135	MW-20 Bench	498.11	113 - 133	Alluvial	2 in PVC	135.4	46.00	Minimal Drawdown	
MW-32-20	Floodplain	461.51	10 - 20	Fluvial	2 in PVC	19.6	7.50	Minimal Drawdown	
MW-32-35	Floodplain	461.63	27.5 - 35	Fluvial	4 in PVC	37.2	7.80	Minimal Drawdown	
MW-33-40	Floodplain	487.38	29 - 39	Fluvial	2 in PVC	41.8	33.40	Minimal Drawdown	
MW-33-90	Floodplain	487.55	69 - 89	Alluvial	4 in PVC	88.3	33.50	Minimal Drawdown	
MW-33-150	Floodplain	487.77	132 - 152	Alluvial	2 in PVC	155.4	34.00	Minimal Drawdown*	
MW-33-210	Floodplain	487.25	190 - 210	Alluvial	2 in PVC	223.0	33.70	Minimal Drawdown	
MW-34-55	Floodplain	460.95	45 - 55	Fluvial	4 in PVC	56.6	7.10	Minimal Drawdown	

TABLE A-1
Well Construction and Sampling Summary, Fourth Quarter 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Screen Elevation Interval (ft amsl)	Measuring Point Screen Elevation Interval (ft amsl)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
GMP MONITORING WELLS									
MW-34-80	Floodplain	461.20	73 - 83	Fluvial	4 in PVC	84.3	7.50	Minimal Drawdown	
MW-34-100	Floodplain	460.97	89.5 - 99.5	Fluvial	2 in PVC	117.0	7.60	Minimal Drawdown	
MW-35-60	Route 66	484.33	41 - 61	Alluvial	2 in PVC	56.8	29.60	Minimal Drawdown	
MW-35-135	Route 66	484.24	116 - 136	Alluvial	2 in PVC	158.7	29.30	Minimal Drawdown	
MW-36-20	Floodplain	469.33	10 - 20	Fluvial	1 in PVC	20.3	16.20	Minimal Drawdown	
MW-36-40	Floodplain	469.59	30 - 40	Fluvial	1 in PVC	40.3	15.60	Minimal Drawdown	
MW-36-50	Floodplain	469.62	46 - 51	Fluvial	1 in PVC	108.0	15.40	Minimal Drawdown	
MW-36-70	Floodplain	469.27	60 - 70	Fluvial	1 in PVC	70.3	15.50	Minimal Drawdown	
MW-36-90	Floodplain	469.64	80 - 90	Fluvial	1 in PVC	90.3	13.80	Minimal Drawdown	
MW-36-100	Floodplain	469.65	88 - 98	Fluvial	2 in PVC	108.0	16.20	Minimal Drawdown	
MW-37D	Bat Cave Wash	486.19	180 - 200	Alluvial	2 in PVC	226.7	31.50	Minimal Drawdown	
MW-37S	Bat Cave Wash	485.97	64 - 84	Alluvial	2 in PVC	85.0	31.00	Minimal Drawdown	
MW-38D	Bat Cave Wash	525.31	163 - 183	Alluvial	2 in PVC	190.9	70.40	Minimal Drawdown	
MW-38S	Bat Cave Wash	526.59	75 - 95	Alluvial	2 in PVC	98.1	70.63	Minimal Drawdown	
MW-39-40	Floodplain	468.02	30 - 40	Fluvial	1 in PVC	42.1	15.00	Minimal Drawdown	
MW-39-50	Floodplain	467.93	47 - 52	Fluvial	1 in PVC	54.6	15.00	Minimal Drawdown	
MW-39-60	Floodplain	468.00	49 - 59	Alluvial	1 in PVC	15.2	15.20	Minimal Drawdown	
MW-39-70	Floodplain	468.02	60 - 70	Alluvial	1 in PVC	71.7	15.60	Minimal Drawdown	
MW-39-80	Floodplain	467.92	70 - 80	Alluvial	1 in PVC	82.6	15.50	Minimal Drawdown	
MW-39-100	Floodplain	468.12	80 - 100	Alluvial	2 in PVC	117.7	15.00	Minimal Drawdown	
MW-40D	I-40 Median	566.08	240 - 260	Alluvial	2 in PVC	266.0	111.00	Minimal Drawdown	
MW-40S	I-40 Median	566.04	115 - 135	Alluvial	2 in PVC	134.0	111.39	Minimal Drawdown	
MW-41D	Bat Cave Wash	479.42	271 - 291	Alluvial	2 in PVC	311.5	24.30	Minimal Drawdown	

TABLE A-1
Well Construction and Sampling Summary, Fourth Quarter 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Screen Elevation Interval (ft amsl)	Measuring Point Screen Elevation Interval (ft amsl)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
GMP MONITORING WELLS									
MW-41S	Bat Cave Wash	480.07	40 - 60	Alluvial	2 in PVC	60.0	24.93	Minimal Drawdown	
MW-42-30	Floodplain	463.74	9.8 - 29.8	Fluvial	2 in Sch 40 PVC	30.1	10.40	Minimal Drawdown	
MW-42-55	Floodplain	463.85	42.5 - 52.5	Fluvial	2 in PVC	52.8	9.80	Minimal Drawdown	
MW-42-65	Floodplain	463.37	56.2 - 66.2	Fluvial	2 in PVC	80.0	9.40	Minimal Drawdown	
MW-43-25	Floodplain	462.54	15 - 25	Fluvial	2 in PVC	25.0	8.50	Minimal Drawdown	
MW-43-75	Floodplain	462.71	65 - 75	Fluvial	2 in PVC	75.0	9.00	Minimal Drawdown	
MW-43-90	Floodplain	462.76	80 - 90	Fluvial	2 in PVC	97.0	9.30	Minimal Drawdown	
MW-44-70	Floodplain	471.84	61 - 71	Fluvial	2 in PVC	70.0	18.80	Minimal Drawdown	
MW-44-115	Floodplain	471.94	105 - 115	Alluvial	2 in PVC	113.5	18.40	Minimal Drawdown	
MW-44-125	Floodplain	472.11	116 - 125	Alluvial	2 in PVC	128.8	18.10	Minimal Drawdown	
MW-45-095a	Floodplain	468.27	83 - 93	Fluvial	2 in PVC	97.0	18.30	Temp. pump	pressure transducer location
MW-46-175	Floodplain	482.16	165 - 175	Alluvial	2 in PVC	175.5	28.50	Minimal Drawdown	
MW-46-205	Floodplain	482.23	196.5 - 206.5	Alluvial	2 in PVC	206.5	28.90	Minimal Drawdown	
MW-47-55	Floodplain	484.04	45 - 55	Alluvial	2 in PVC	55.0	29.40	Minimal Drawdown	
MW-47-115	Floodplain	484.17	105 - 115	Alluvial	2 in PVC	115.0	29.80	Minimal Drawdown	
MW-48	East of Station	486.22	124 - 134	Bedrock	2 in PVC	138.0	31.20	Three Volume	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	30.90	Minimal Drawdown	
MW-49-275	Floodplain	483.95	255 - 275	Alluvial	2 in PVC	274.7	31.10	Minimal Drawdown	
MW-49-365	Floodplain	484.01	346 - 366	Alluvial	2 in PVC	367.4	32.60	Minimal Drawdown	
MW-50-095	Route 66	496.49	85 - 95	Alluvial	2 in PVC	95.0	42.00	Minimal Drawdown	

TABLE A-1
Well Construction and Sampling Summary, Fourth Quarter 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Screen Elevation Interval (ft amsl)	Measuring Point Screen Elevation Interval (ft amsl)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
GMP MONITORING WELLS									
MW-50-200	Route 66	496.35	190 - 200	Alluvial	2 in PVC	204.5	43.10	Minimal Drawdown	
MW-51	Route 66	501.56	97 - 112	Alluvial	4 in PVC	113.3	47.50	Minimal Drawdown	
MW-52D	Floodplain	462.16	85 - 87	Fluvial	0.75 in MLABS	89.5	14.90	Fixed Volume	
MW-52M	Floodplain	462.16	66 - 68	Fluvial	0.75 in MLABS	70.5	11.30	Fixed Volume	
MW-52S	Floodplain	462.16	47 - 49	Fluvial	0.75 in MLABS	51.5	9.80	Fixed Volume	
MW-53D	Floodplain	461.32	123.5 - 125	Fluvial	0.75 in MLABS	---	14.30	Fixed Volume	
MW-53M	Floodplain	461.32	98.5 - 100	Fluvial	0.75 in MLABS	---	13.70	Fixed Volume	
MW-54-85	Arizona	466.10	77 - 87	Fluvial	2 in PVC	93.2	11.30	Minimal Drawdown	
MW-54-140	Arizona	465.98	128 - 138	Fluvial	2 in PVC	138.0	11.30	Minimal Drawdown	
MW-54-195	Arizona	466.32	185 - 195	Fluvial	2 in PVC	195.0	12.10	Minimal Drawdown	
MW-55-45	Arizona	465.84	37 - 47	Fluvial	2 in PVC	54.0	10.20	Minimal Drawdown	
MW-55-120	Arizona	465.82	108 - 118	Fluvial	2 in PVC	120.3	10.10	Minimal Drawdown	Redeveloped Q3 of 2015. Being sampled quarterly for 1 year.
MW-56D	Arizona	461.36	103.5 - 105.5	Fluvial	0.75 in MLABS	---	16.30	Fixed Volume	
MW-56M	Arizona	461.36	73.5 - 75.5	Fluvial	0.75 in MLABS	---	15.20	Fixed Volume	
MW-56S	Arizona	461.36	33.5 - 35.5	Fluvial	0.75 in MLABS	---	14.10	Fixed Volume	
MW-57-050	East Ravine	508.76	40 - 50	Bedrock	2 in Sch 40 PVC	50.0	51.60	Three Volume	
MW-57-070	East Ravine	509.37	55 - 70	Bedrock	2 in Sch 40 PVC	70.0	53.40	Three Volume	
MW-57-185	East Ravine	508.97	70 - 184	Bedrock	4 in Sch 40 PVC	184.7	52.50	Three Volume	
MW-58-065	East Ravine	523.26	54 - 64	Bedrock	2 in Sch 40 PVC	66.0	67.50	Three Volume	
MW-58BR	East Ravine	---	0 - 0	Bedrock	---	---	67.80	Minimal Drawdown	
MW-59-100	East Ravine	541.61	86 - 101	Alluvial	2 in Sch 40 PVC	101.0	85.61	Minimal Drawdown	
MW-60-125	East Ravine	555.47	103 - 123	Bedrock	2 in Sch 40 PVC	122.5	99.80	Three Volume	

TABLE A-1
Well Construction and Sampling Summary, Fourth Quarter 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Screen Elevation Interval (ft amsl)	Measuring Point Screen Elevation Interval (ft amsl)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
GMP MONITORING WELLS									
MW-60BR-245	East Ravine	554.95	136 - 245	Bedrock	5 in	244.1	99.80	Three Volume	
MW-61-110	East Ravine	544.03	92 - 112	Bedrock	2 in Sch 40 PVC	112.5	88.60	Three Volume	
MW-62-065	East Ravine	503.56	44.5 - 64.5	Bedrock	2 in Sch 40 PVC	67.4	48.80	Three Volume	
MW-62-110	East Ravine	504.05	85 - 110	Bedrock	---	110.0	37.50	Flute	
MW-62-190	East Ravine	504.05	155 - 192	Bedrock	---	190.0	36.50	Flute	
MW-63-065	East Ravine	504.47	46 - 66	Bedrock	2 in Sch 40 PVC	65.6	50.20	Three Volume	
MW-64BR	East Ravine	575.60	2 - 258	Bedrock	3 in	260.0	120.60	Minimal Drawdown	
MW-65-160	Topock	596.59	150 - 160	Alluvial	2 in PVC	160.1	141.20	Minimal Drawdown	
MW-65-225	Topock	596.58	215 - 225	Alluvial	2 in PVC	225.1	141.20	Minimal Drawdown	
MW-66-165	Topock	586.16	142 - 162	Alluvial	2 in PVC	162.1	130.60	Minimal Drawdown	
MW-66-230	Topock	586.22	218 - 228	Alluvial	2 in PVC	228.1	131.20	Minimal Drawdown	
MW-66BR-270	Topock	586.15	248 - 271	Bedrock	5 in	270.6	153.00	Three Volume	
MW-67-185	Topock	625.91	177 - 187	Alluvial	2 in	186.7	170.03	Minimal Drawdown	
MW-67-225	Topock	625.83	210 - 225	Alluvial	2 in PVC	225.0	170.40	Minimal Drawdown	
MW-67-260	Topock	625.81	250 - 260	Alluvial	2 in PVC	260.0	170.50	Minimal Drawdown	
MW-68-180	Topock	621.17	165 - 180	Alluvial	2 in PVC	180.1	165.90	Minimal Drawdown	
MW-68-240	Topock	621.17	220 - 240	Alluvial	2 in PVC	240.1	166.10	Minimal Drawdown	
MW-68BR-280	Topock	620.64	257 - 279	Bedrock	5 in	278.2	165.30	Three Volume	
MW-69-195	Topock	631.36	176 - 196	Bedrock	2 in	195.5	175.50	Three Volume	

TABLE A-1
Well Construction and Sampling Summary, Fourth Quarter 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Screen Elevation Interval (ft amsl)	Measuring Point Screen Elevation Interval (ft amsl)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
GMP MONITORING WELLS									
MW-70-105	East Ravine	541.47	85 - 105	Bedrock	2 in PVC	107.8	84.80	Three Volume	
MW-70BR-225	East Ravine	539.84	120 - 227	Bedrock	5 in	229.3	83.50	Three Volume	
MW-71-035	East Ravine	483.69	26 - 36	Alluvial	2 in	36.2	28.60	Minimal Drawdown	
MW-72-080	East Ravine	513.32	60 - 80	Bedrock	2 in	80.1	59.10	Three Volume	
MW-72BR-200	East Ravine	513.79	107 - 200	Bedrock	---	200.0	58.80	Three Volume	
MW-73-080	East Ravine	505.84	60.2 - 80.2	Bedrock	2 in	79.9	51.40	Three Volume	
MW-74-240	East Ravine	672.34	220 - 240	Bedrock	2 in	239.7	215.90	Three Volume	
OW-03D	West Mesa	558.63	242 - 262	Alluvial	2 in Sch 40 PVC	272.5	102.10	Minimal Drawdown	
OW-03M	West Mesa	558.9	180 - 200	Alluvial	2 in Sch 40 PVC	200.3	102.30	Minimal Drawdown	
OW-03S	West Mesa	558.58	86 - 116	Alluvial	2 in Sch 40 PVC	116.3	102.10	Three Volume	
PGE-07BR	MW-24 Bench	---	249 - 300	Bedrock	7 in	300.0	110.50	Three Volume	inactive supply
PGE-08	Station	596.01	405 - 554	Bedrock	6.75 in Steel	564.0	141.10	Three Volume	inactive injection
Other Site Wells not in GMP									
MW-01	New Ponds	661.76	201 - 211	Alluvial	4 in PVC	217.0	205.20	Three Volume	active PG&E pond monitoring well
MW-03	New Ponds	650.51	193 - 203	Alluvial	4 in PVC	205.0	195.40	Three Volume	active PG&E pond monitoring well
MW-04	New Ponds	625.73	164.5 - 174.5	Alluvial	4 in PVC	176.3	170.15	Three Volume	active PG&E pond monitoring well
MW-05	New Ponds	635.69	175.9 - 184.9	Alluvial	4 in PVC	186.2	179.60	Three Volume	active PG&E pond monitoring well
MW-06	New Ponds	642.84	184.5 - 193.5	Alluvial	4 in PVC	194.9	185.81	Three Volume	active PG&E pond monitoring well
MW-07	New Ponds	631.91	172.7 - 182.7	Alluvial	4 in PVC	185.0	175.71	Three Volume	active PG&E pond monitoring well
MW-08	New Ponds	627.54	169 - 178	Alluvial	4 in PVC	179.9	170.61	Three Volume	active PG&E pond monitoring well

TABLE A-1
Well Construction and Sampling Summary, Fourth Quarter 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide
Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Site Area	Measuring Point Screen Elevation Interval (ft amsl)	Measuring Point Screen Elevation Interval (ft amsl)	Well Screen Lithology	Well Casing (inches)	Well Depth (ft bgs)	Depth to Water (ft btoc)	Sampling System	Remarks
Test and Extraction Wells									
PE-01	Floodplain	457.52	79 - 89	Fluvial	6 in Sch 40	99.0	16.40	Extraction Well	active IM extraction well
TW-01	Plan B Test	620.55	169 - 269	Alluvial	5 in PVC	271.0	160.00	Three Volume	inactive pilot test well
TW-02D	MW-20 bench	493.29	113 - 148	Alluvial	6 in Sch 80 PVC	150.0	69.30	Extraction Well	inactive IM extraction well
TW-02S	MW-20 bench	499.05	42.5 - 92.5	Alluvial	6 in Sch 80 PVC	97.5	40.90	Extraction Well	inactive IM extraction well
TW-03D	MW-20 bench	498.09	111 - 156	Alluvial	8 in PVC	156.0	46.50	Extraction Well	active IM extraction well
TW-04	Floodplain	484.11	210 - 250	Alluvial	4 in PVC	255.0	31.10	Three Volume	
TW-05	Route 66	496.30	110 - 150	Alluvial	4 in PVC	155.0	43.00	Three Volume	
Water Supply Wells									
Park Moabi-3	Park Moabi	518.55	80 - 200	Alluvial	8 in Steel	252.0	61.30	Active supply well	call Park Ranger to schedule sampling
Park Moabi-4	Park Moabi	---	93 - 140	Alluvial	Steel	---	---	Active supply well	

Notes:
amsl = above mean sea level. bgs = below ground surface. btoc = below top of casing.
CD pump = dedicated constant-discharge electric submersible pump. Ded. RF = dedicated Redi - Flo submersible pump.
Flute = Flexible Liner Underground Technologies. GMP = Groundwater Monitoring Program.
NA = not known or available. PVC = polyvinyl chloride.
Redi-Flo AR = adjustable-rate electric submersible pump. Temp pump = temporary pump.
Depth to water shown is the most recently measured depth to water.
All GMP wells except low recharge wells, active IM extraction wells, and Park Moabi wells are purged and sampled using well-volume method.

Table A-2
Well Inspection Log, Fourth Quarter 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well/ Piezometer	Inspection Date	Survey Mark Present? (Y/N)	Standing or Ponded Water? (Y/N)	Lock in Place? (Y/N)	Evidence of Well Subsidence? (Y/N)	Well Labeled on Casing or Pad? (Y/N)	Traffic Poles Intact? (Y/N)	Concrete Pad Intact? (Y/N)	Erosion Around Wellhead? (Y/N)	Steel Casing Intact? (Y/N)	PVC Cap Present? (Y/N)	Standing Water in Annulus? (Y/N)	Well Casing Intact? (Y/N)	Photo taken this quarter? (Y/N)	Required Actions	Action Completed? (Y/N)	Action Completed Date	Notes
CW-01D	10/29/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
CW-01M	10/29/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
CW-02D	10/28/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
CW-02M	10/28/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
CW-03D	10/28/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
CW-03M	10/28/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
CW-04D	10/28/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
CW-04M	10/28/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
MW-09	12/1/2015	Y	N	Y	N	Y	NA	Y	N	N	Y	N	Y	Y	NA			
MW-10	12/1/2015	Y	N	Y	N	Y		Y	N	Y	Y	N	Y		NA			
MW-11	12/2/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-12	12/2/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-13	12/7/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-14	12/7/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-15	12/9/2015	Y	N	Y	N	Y	Y	N	N	Y	Y	N	Y	Y	NA			
MW-16	12/8/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-17	12/9/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-18	12/7/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-19	12/7/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-20-070	12/8/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-20-100	12/8/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-20-130	12/8/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-21	12/8/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-22	12/3/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-23-060	12/3/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-23-080	12/3/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-24A	12/1/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-24B	12/1/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-24BR	12/1/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-25	12/7/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	NA	Y	Y	NA			
MW-26	12/8/2015	Y	N	Y	N	Y	NA	Y	N	NA	Y	N	Y	Y	NA			
MW-27-020	12/3/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-27-060	12/2/2015	Y	N	Y	N	Y		Y	N	Y	Y	N	Y	Y	NA			
MW-27-085	12/3/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-28-025	12/2/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-28-090	12/1/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-29	11/30/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-30-030	12/2/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-30-050	12/3/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-31-060	12/7/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-31-135	12/7/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-32-020	12/3/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-32-035	12/2/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-33-040	12/1/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-33-090	11/30/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-33-150	11/30/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-33-210	12/1/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-34-055	12/3/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-34-080	12/3/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-34-100	12/2/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y	NA			
MW-35-060	12/7/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-35-135	12/7/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-36-020	12/8/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-36-040	12/8/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-36-050	12/8/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-36-070	12/8/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-36-090	12/8/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-36-100	12/8/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-37D	12/7/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-37S	12/8/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-38D	12/1/2015	Y	N	Y	N	Y		Y	N	Y	Y	N	Y	Y	NA			
MW-38S	12/1/2015	Y	N	Y	N	Y		Y	N	Y	Y	N	Y	Y	NA			
MW-39-040	12/4/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-39-050	12/4/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-39-060	12/4/2015	Y	N	Y	N	Y		Y	N	Y	Y	N	Y	Y	NA			
MW-39-070	12/4/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-39-080	12/4/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-39-100	12/4/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			

Table A-2
Well Inspection Log, Fourth Quarter 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well/ Piezometer	Inspection Date	Survey Mark Present? (Y/N)	Standing or Ponded Water? (Y/N)	Lock in Place? (Y/N)	Evidence of Well Subsidence? (Y/N)	Well Labeled on Casing or Pad? (Y/N)	Traffic Poles Intact? (Y/N)	Concrete Pad Intact? (Y/N)	Erosion Around Wellhead? (Y/N)	Steel Casing Intact? (Y/N)	PVC Cap Present? (Y/N)	Standing Water in Annulus? (Y/N)	Well Casing Intact? (Y/N)	Photo taken this quarter? (Y/N)	Required Actions	Action Completed? (Y/N)	Action Completed Date	Notes
MW-40D	12/7/2015	Y	N	N	N	Y	NA	Y	N	NA	Y	N	Y	Y	NA			
MW-40S	12/7/2015	Y	N	N	N	Y	NA	Y	N	NA	Y	N	Y	Y	NA			
MW-41D	12/7/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-41M	12/7/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-41S	12/7/2015	Y	N	Y		Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-42-030	12/3/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-42-055	12/3/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-42-065	12/2/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-43-025	12/8/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-43-075	12/2/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-43-090	12/1/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-44-070	12/4/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-44-115	12/4/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-44-125	12/4/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-46-175	12/1/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-46-205	12/2/2015	Y	N	Y	N	Y	NA	Y	N	Y	N	N	Y	Y	NA			
MW-47-055	12/1/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-47-115	12/2/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-48	12/2/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-49-135	11/30/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-49-275	12/1/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-49-365	12/1/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-50-095	12/8/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-50-200	12/7/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
MW-51	12/8/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-52D	12/2/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	N	Y	NA			
MW-52M	12/2/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-52S	12/2/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-53D	12/1/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-53M	12/1/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-54-085	12/9/2015	Y	N	N	N	Y	NA	Y	N	NA	Y	N	Y	Y	NA			well secured by security bolts
MW-54-140	12/9/2015	Y	N	N	N	Y	NA	Y	N	NA	Y	N	Y	Y	NA			well secured by security bolts
MW-54-195	12/9/2015	Y	N	Y	N	Y	NA	N	N	NA	Y	N	Y	Y	NA			well secured by security bolts
MW-55-045	12/7/2015	Y	N	Y	N	Y	NA	Y	N	NA	Y	N	Y	Y	NA			
MW-55-120	12/7/2015	Y	N	Y	N	Y	NA	Y	N	NA	Y	N	Y	Y	NA			
MW-56D	12/9/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			one bent traffic pole
MW-56M	12/9/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-56S	12/9/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-57-050	12/4/2015	Y	N	Y		Y	NA	Y	N	NA	Y	N	Y		NA			
MW-57-070	12/4/2015	Y	NA	NA	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
MW-57-185	12/4/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-58-065	12/7/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-58BR	12/7/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-59-100	12/3/2015	Y	N		N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-60-125	12/4/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-60BR-245	12/4/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-61-110	12/4/2015	Y		Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-62-065	12/3/2015		N	Y	N	Y	NA	Y	N	Y		N	Y	Y	NA			
MW-62-110	12/3/2015	Y	NA	N	N	Y	NA	Y	N	NA	NA	NA	Y	Y	NA			
MW-62-190	12/3/2015	Y	N	N	N	Y	NA	Y	N	NA	NA	NA	Y	Y	NA			
MW-63-065	12/4/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-64BR	12/4/2015	Y	N	Y	N	Y	NA	Y	Yes	Y	Y	N	Y	Y	NA			
MW-64BR	12/7/2015	Y	N	N	N	Y	NA	Y	N	NA	Y	N	Y	Y	NA			
MW-65-160	12/2/2015	Y	N	NA	N	Y	NA	Y	N	Y	NA	N	Y	Y	NA			
MW-65-225	12/2/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-66-165	12/2/2015	Y	N	Y	N	Y	NA	Y	N	NA	Y	N	Y	Y	NA			
MW-66-230	12/3/2015	Y	N	Y	N	Y	NA	Y	N	NA	Y	N	Y	Y	NA			
MW-66BR-270	12/2/2015	Y	Y	Y	N	Y	NA	Y	N	Y	Y	Y	Y	Y	NA			
MW-67-185	12/2/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y		Y	Y	NA			
MW-67-225	12/2/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-67-260	12/2/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-68-180	12/2/2015	Y	N	N	N	Y	NA	Y	Y	Y	Y	N	Y	Y	NA			
MW-68-240	12/2/2015	Y	N	N	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-68BR-280	12/3/2015	Y	N	N	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-69-195	12/4/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-70-105	12/7/2015		N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-70BR-225	12/7/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-71-035	12/3/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-72-080	12/7/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-72BR-200	12/8/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-73-080	12/7/2015	Y	Y	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
MW-74-240	12/4/2015	Y	N	Y	N	Y	Y			NA	Y	N	Y	Y	NA			

Table A-2
Well Inspection Log, Fourth Quarter 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

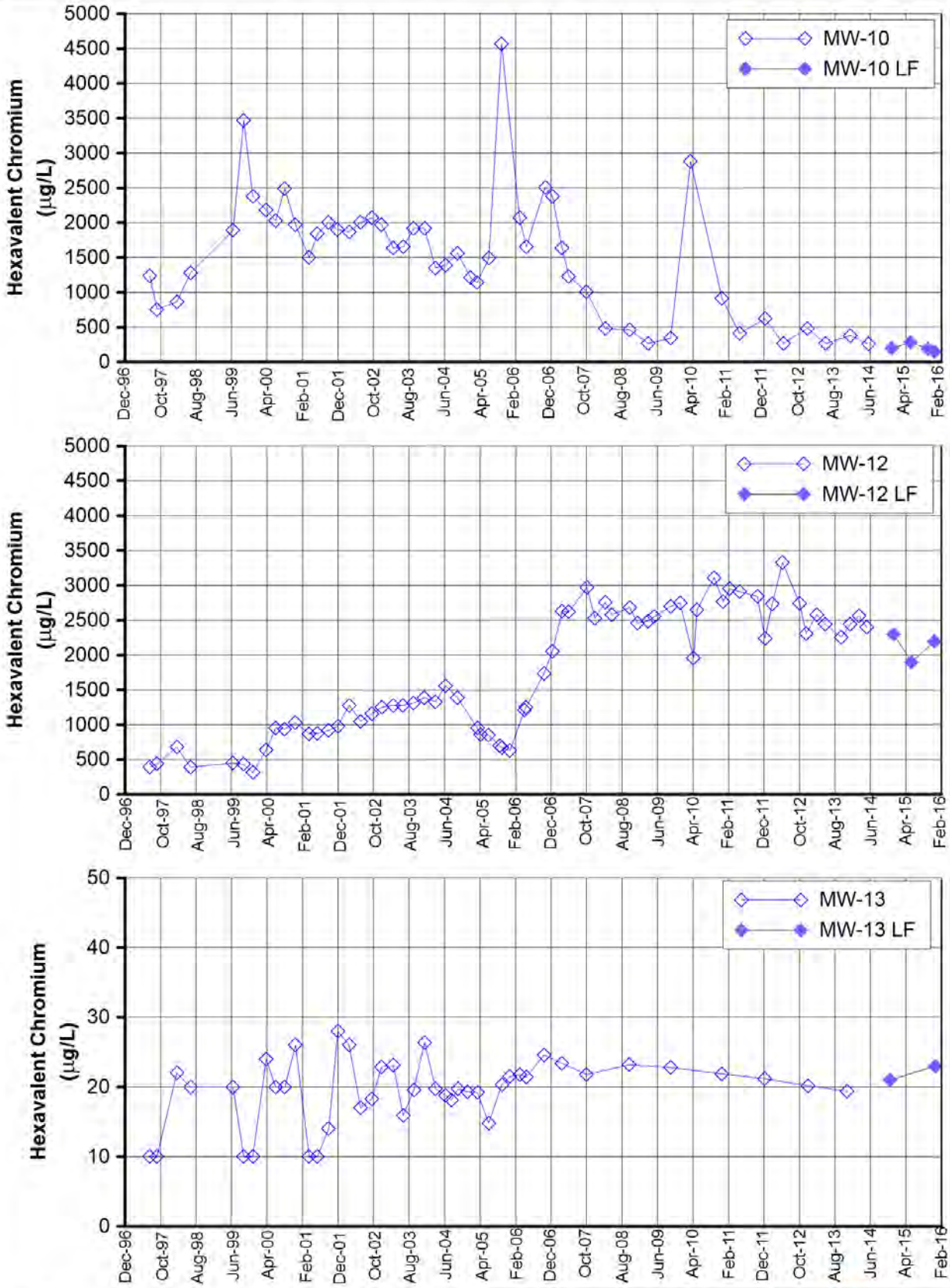
Well/ Piezometer	Inspection Date	Survey Mark Present? (Y/N)	Standing or Ponded Water? (Y/N)	Lock in Place? (Y/N)	Evidence of Well Subsidence? (Y/N)	Well Labeled on Casing or Pad? (Y/N)	Traffic Poles Intact? (Y/N)	Concrete Pad Intact? (Y/N)	Erosion Around Wellhead? (Y/N)	Steel Casing Intact? (Y/N)	PVC Cap Present? (Y/N)	Standing Water in Annulus? (Y/N)	Well Casing Intact? (Y/N)	Photo taken this quarter? (Y/N)	Required Actions	Action Completed? (Y/N)	Action Completed Date	Notes
OW-01D	10/27/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
OW-01M	10/27/2015	Y	N	Y	N	Y	N	Y	N	Y	N	N	Y	Y	NA			
OW-01S	10/26/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
OW-02D	10/27/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
OW-02M	10/27/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
OW-02S	10/27/2015	Y	N	Y	N	Y	Y	N	N	Y	Y	N	Y	Y	NA			
OW-03D	12/4/2015	Y	N	Y	N	Y	Y	Y	N	Y		N	Y	Y	NA			
OW-03D	12/7/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
OW-03M	12/7/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
OW-03S	12/7/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
OW-05D	10/27/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
OW-05M	10/27/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
OW-05S	10/28/2015	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	NA			
PE-01	12/7/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	N	NA	Y	NA			
PE-01	10/27/2015	N	N	N	N	Y	N	N	N	N	N	N	N	Y	NA			
PE-01	11/10/2015	N	N	N	N	N	N	Y	N	N	Y	N	Y	Y	NA			
PGE-07BR	12/1/2015	Y	N	Y	N	Y	NA	Y	N	Y	Y	N	Y	Y	NA			
PGE-08	12/10/2015	Y	N	Y	N	Y	NA	Y	N	NA	Y	N	Y	Y	NA			
PM-03	12/8/2015	Y	N	Y	N	NA	NA	NA	NA	NA	NA	N	NA	Y	NA			
PM-04	12/8/2015	Y	N	Y	N	N	NA	NA	NA	NA	NA	NA	NA	Y	NA			
TW-01	12/1/2015	N	N	N	N	Y	NA	Y	N	Y	NA	N	Y	Y	NA			
TW-02D	12/9/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Y	NA			
TW-02S	12/9/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Y	NA			
TW-03D	12/7/2015	Y	Y	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
TW-04	12/8/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
TW-05	12/8/2015	Y	N	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	NA			
TW-03D	10/27/2015	N	N	N	N	Y	N	N	N	N	N	N	N	Y	NA			
TW-03D	11/10/2015	N	N	N	N	Y	N	Y	N	N	N	N	Y	Y	NA			

APPENDIX B

Lab Reports, November through December 2015 (Provided on CD Only with Hard Copy Submittal)

APPENDIX C

Chromium, Molybdenum, Nitrate, and Selenium Concentration Graphs

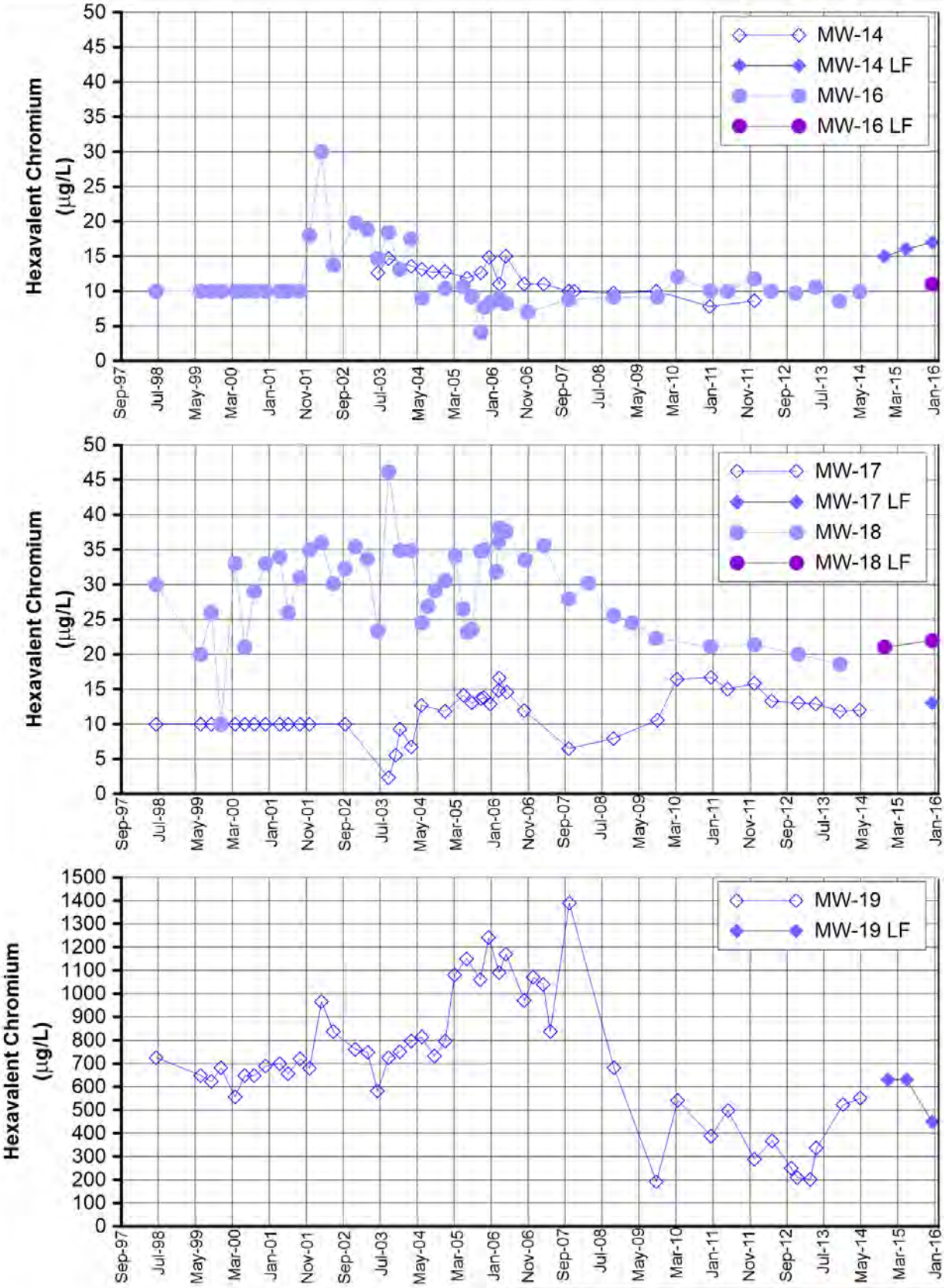


Notes:

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 C-1
HEXAVALENT CHROMIUM
IN MW-10, MW-12, AND MW-13
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

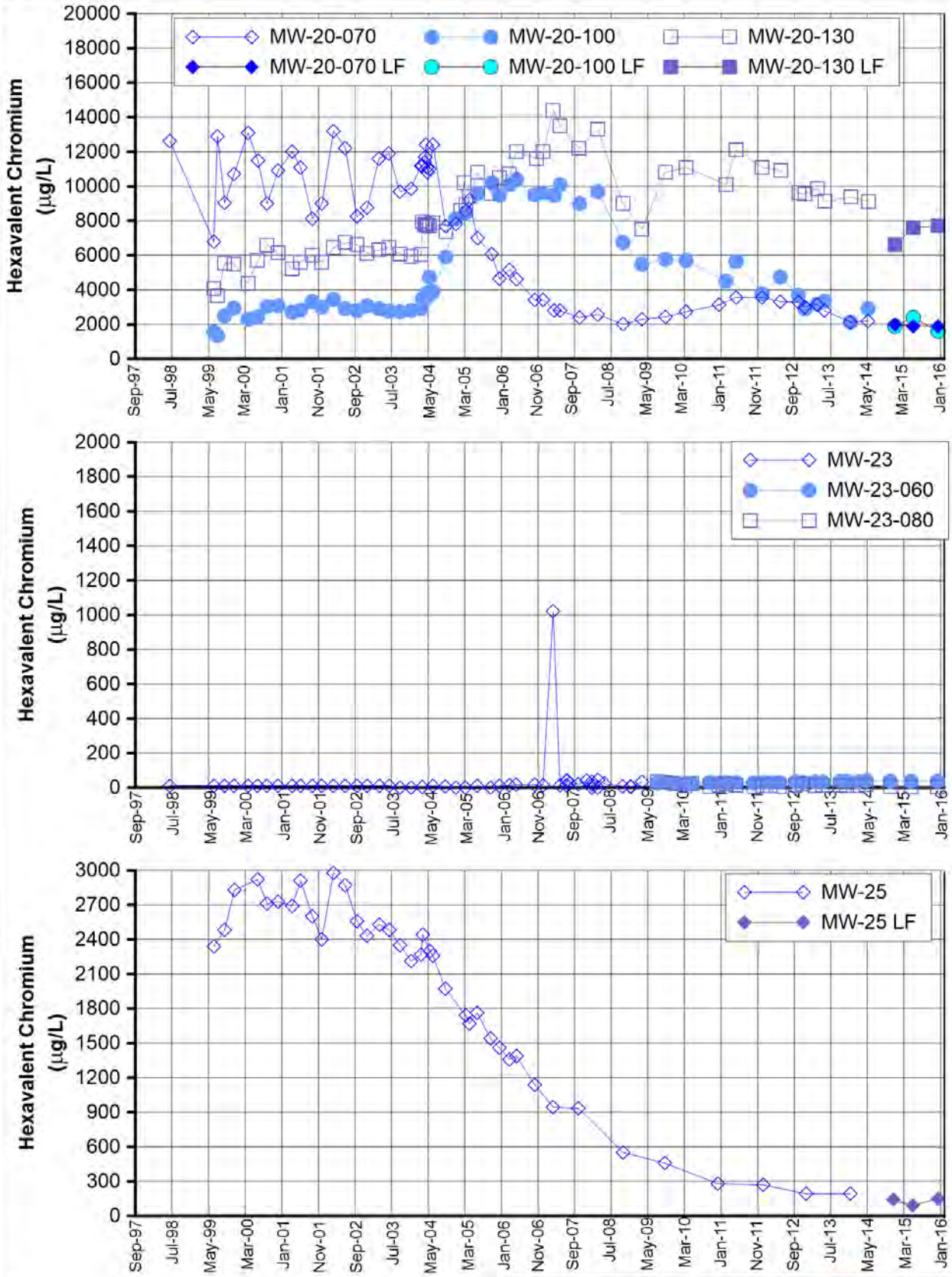


Notes:

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 C-2
HEXAVALENT CHROMIUM
IN MW-14, MW-16, MW-17, MW-18, AND MW-19
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

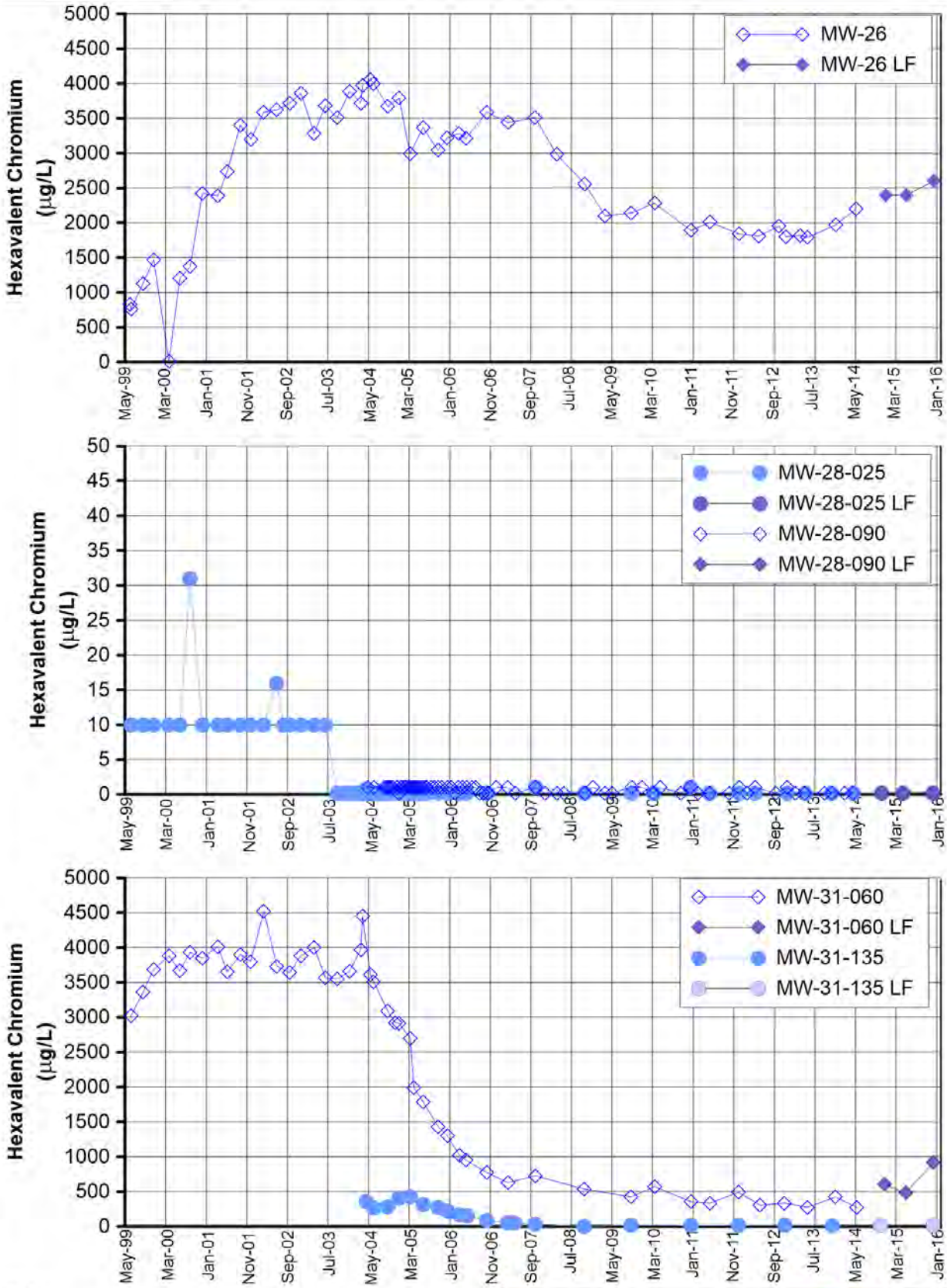


Notes:

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 C-3
HEXAVALENT CHROMIUM
IN MW-20 AND MW-23 CLUSTERS AND MW-25
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



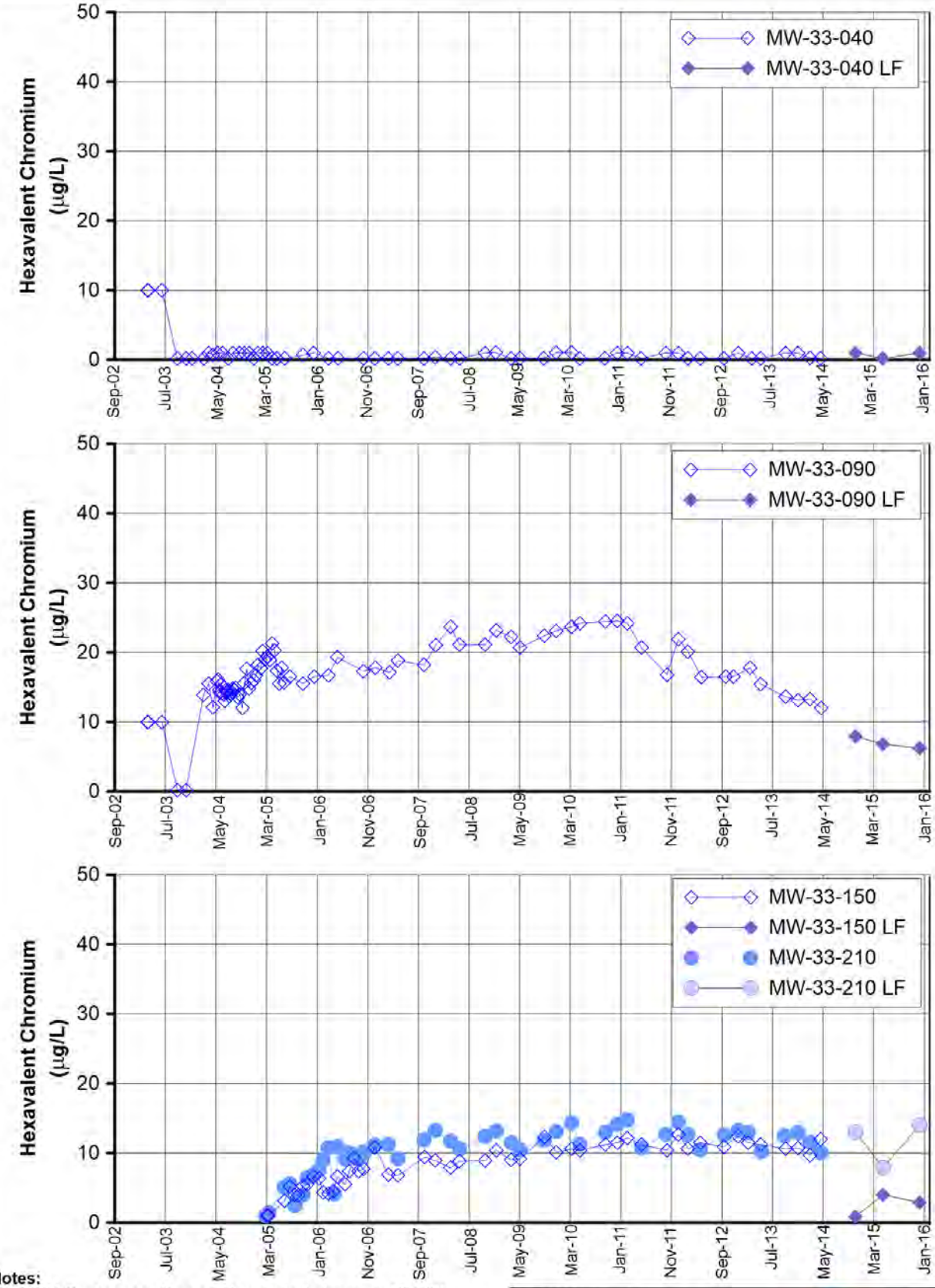
Notes:

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 C-4
HEXAVALENT CHROMIUM
IN MW-26, MW-28, AND MW-31 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



Notes:

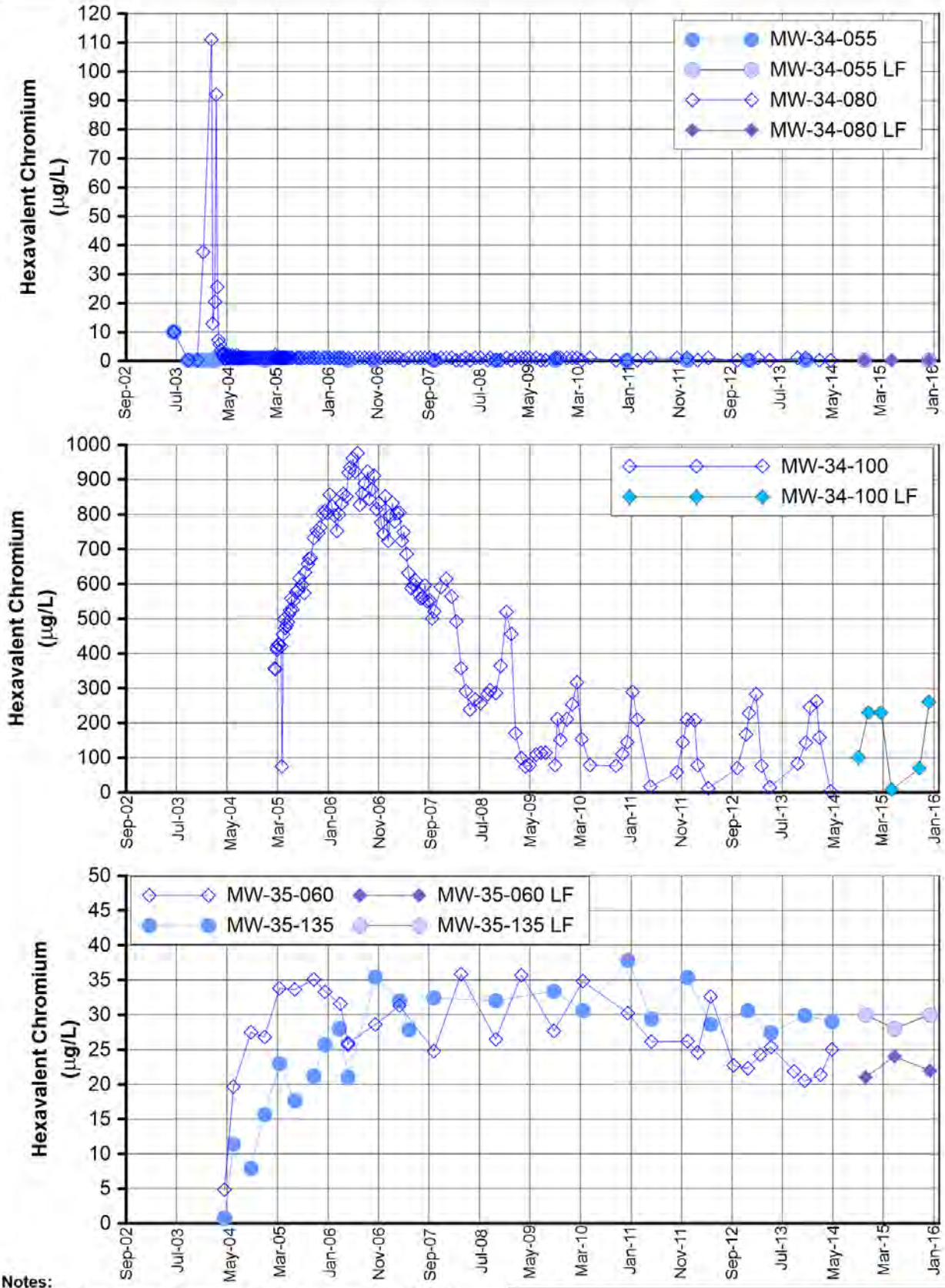
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-33-040 is 20 µg/L.
3) The trigger level for MW-33-090 is 25 µg/L.
4) The trigger level for MW-33-150 is 20 µg/L.
5) The trigger level for MW-33-210 is 20 µg/L.

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 C-5
HEXAVALENT CHROMIUM IN MW-33 CLUSTER

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



Notes:

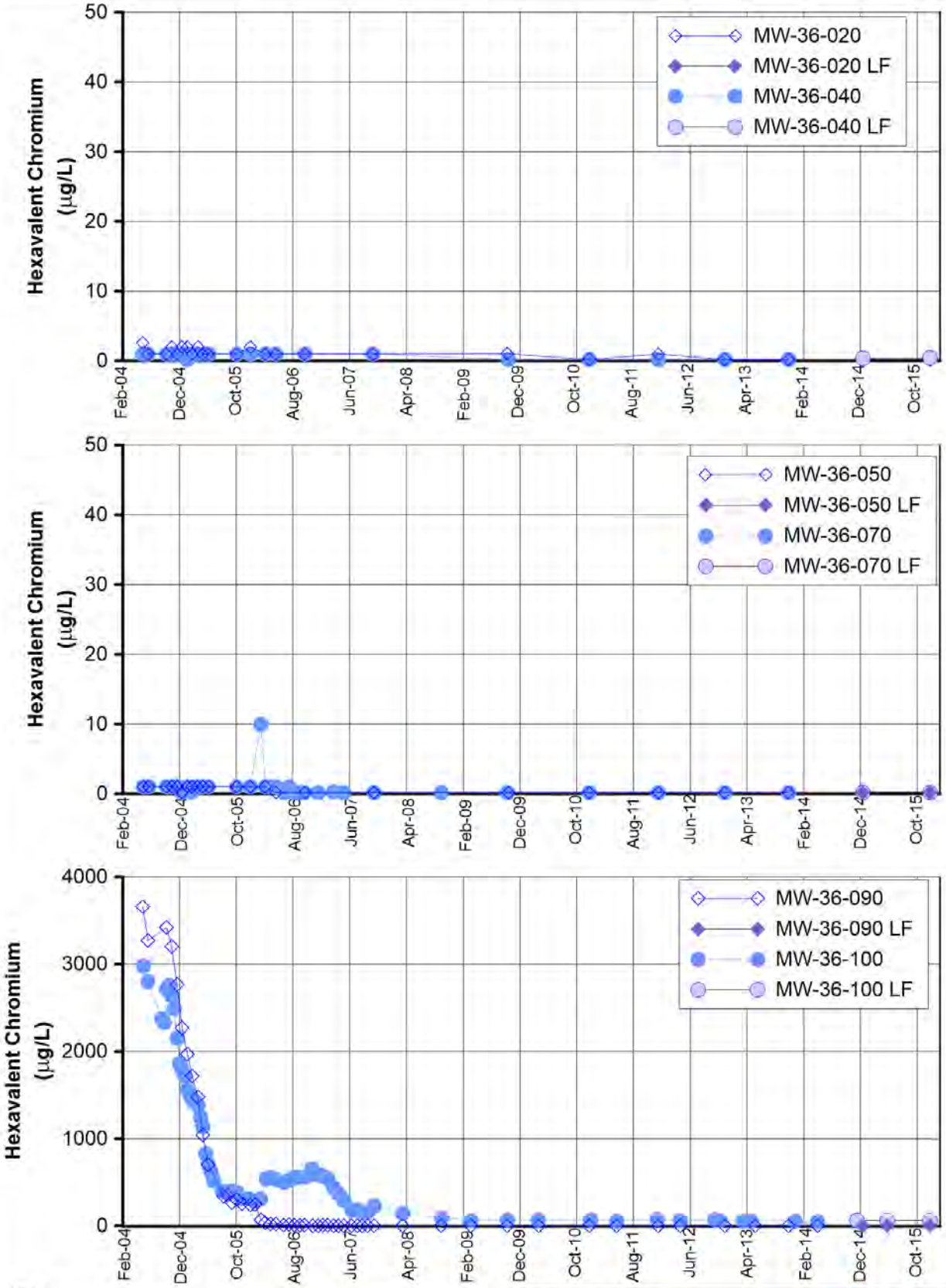
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-34-080 is 20 µg/L.
3) The trigger level for MW-34-100 is 750 µg/L.

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 C-6
HEXAVALENT CHROMIUM
IN MW-34 AND MW-35 CLUSTERS

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

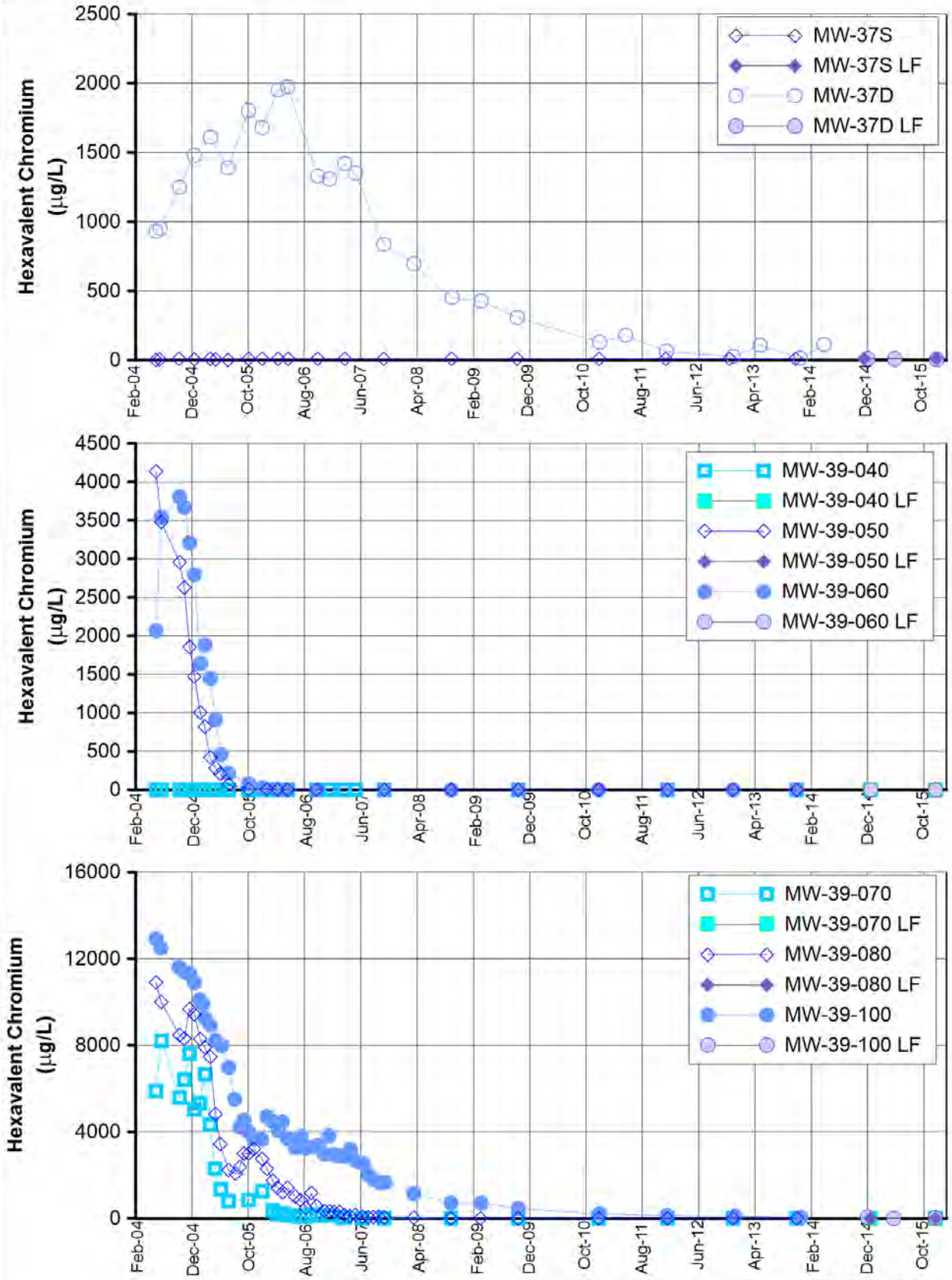


Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-36-070 is 20 µg/L.

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 C-7
HEXAVALENT CHROMIUM IN MW-36 CLUSTER
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



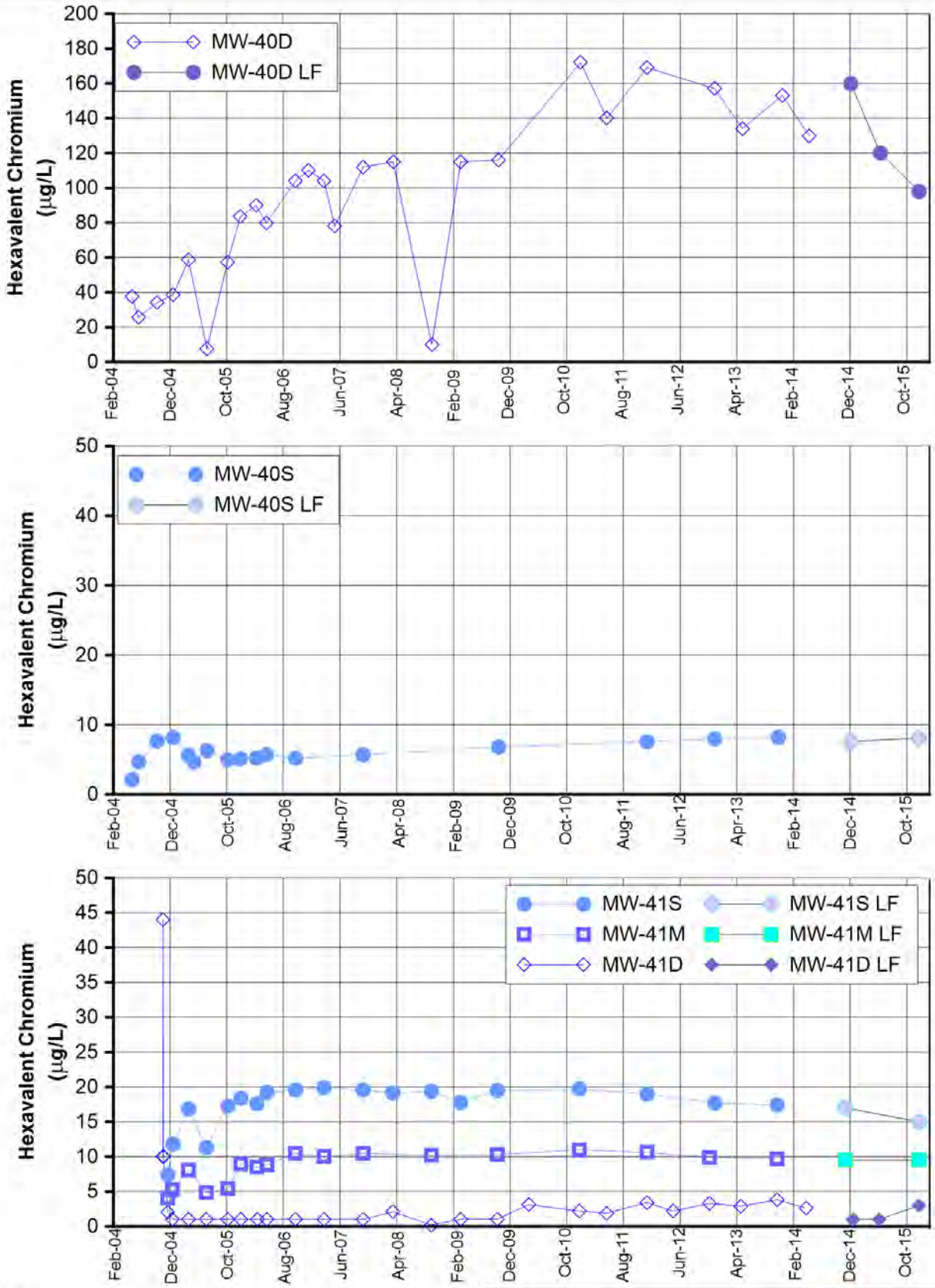
Notes:
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-39-040 is 20 µg/L.

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 C-8
HEXAVALENT CHROMIUM IN MW-37 AND MW-39 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

\\arcadis-us.com\officedata\Denver-CO-Technical\Aproject\PG&E - Groundwater Monitoring\Topock_Reporting Team\00_Reports\02_PMP-GMP_Reports\00_Q4_2015\Draft Reports\03_Appendices

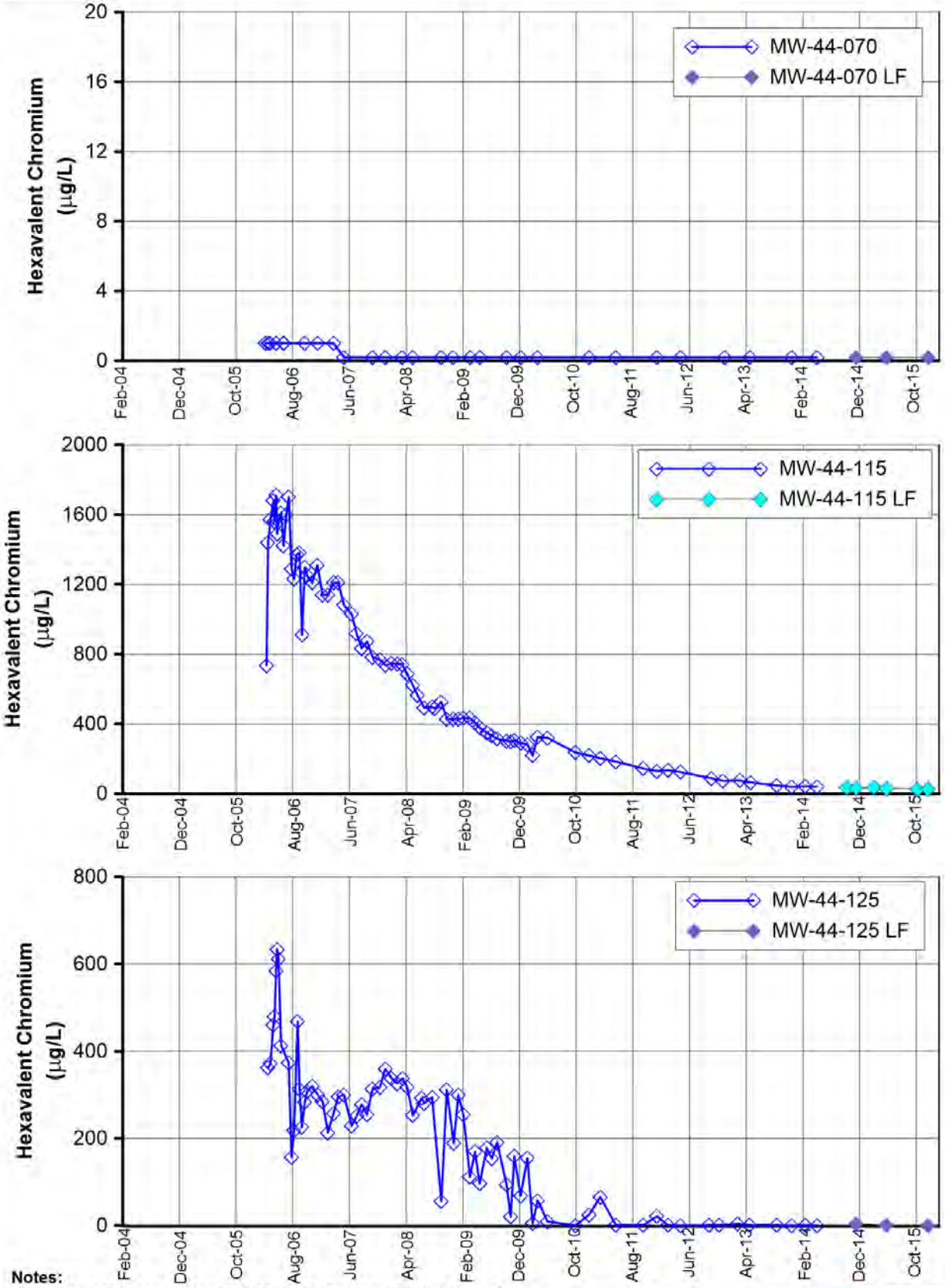


Notes:

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 C-9
HEXAVALENT CHROMIUM
IN MW-40 AND MW-41 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



Notes:

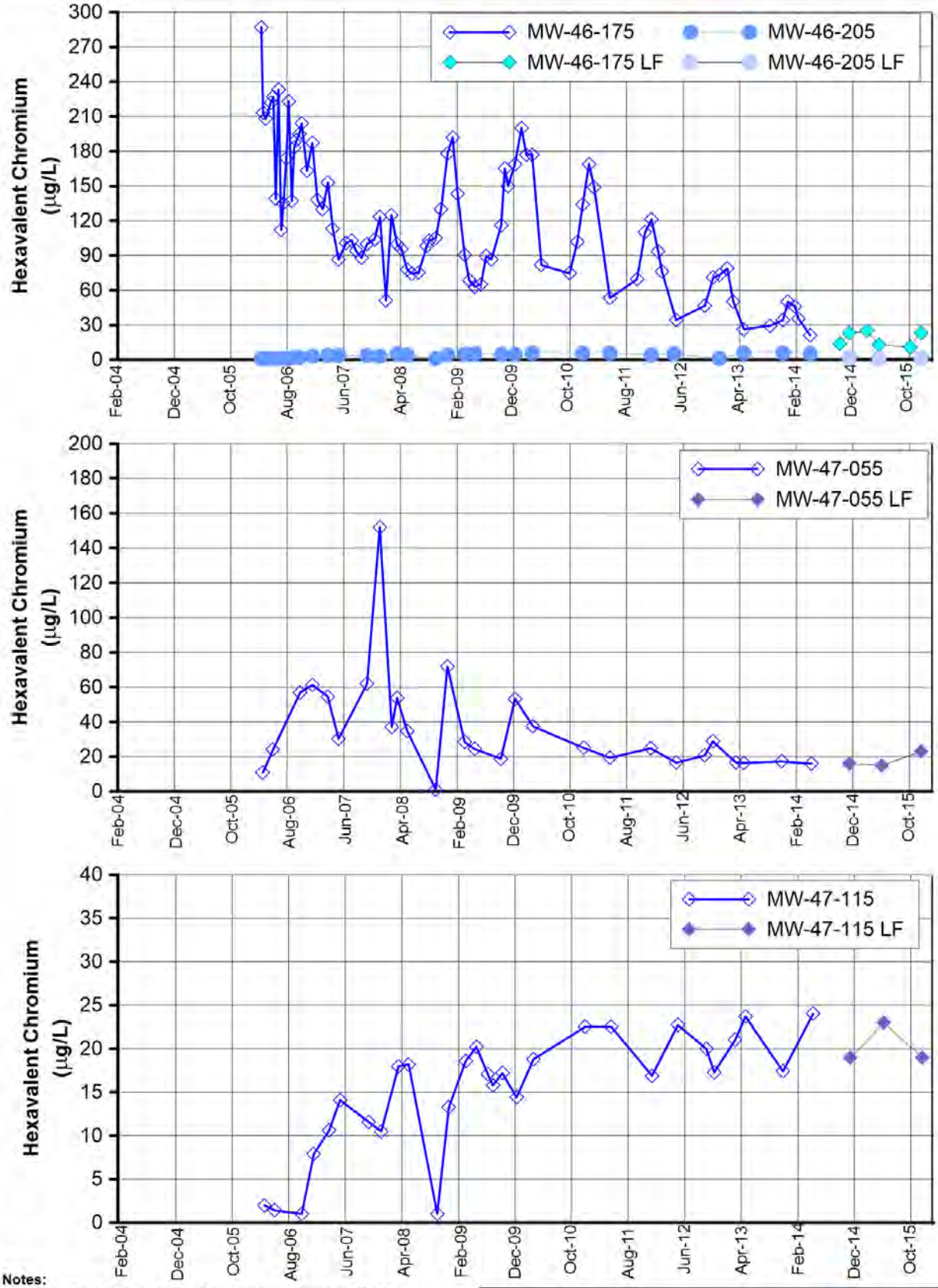
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-44-070 is 20 µg/L.
3) The trigger level for MW-44-115 is 1,200 µg/L.
4) The trigger level for MW-44-125 is 475 µg/L.

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 C-10
HEXAVALENT CHROMIUM IN MW-44 CLUSTER
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

\\arcadis-us.com\officedata\Denver-CO-Technical\Aproject\PG&E - Groundwater Monitoring\Topock_Reporting Team\00_Reports\02_PMP-GMP_Reports\00_Q4_2015\Draft Reports\03_Appendices



Notes:

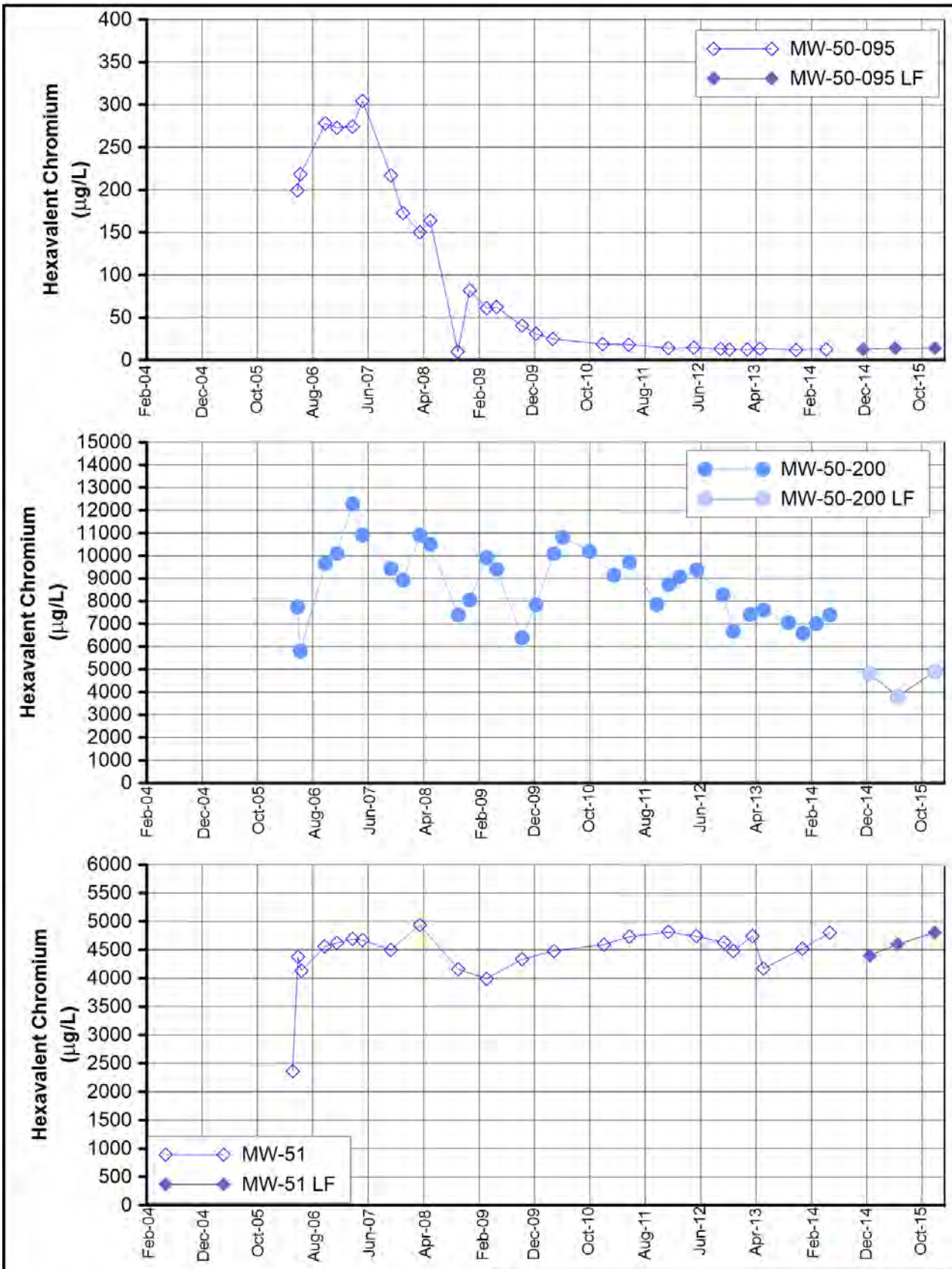
1) The IM Contingency Plan and hexavalent chromium [Cr(VI)] trigger levels were updated July 17, 2008 (DTSC, 2008b).
2) The trigger level for MW-46-175 is 225 µg/L.
3) The trigger level for MW-46-205 is 20 µg/L.
4) The trigger level for MW-47-055 is 475 µg/L.
5) The trigger level for MW-47-115 is 31 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 C-11
HEXAVALENT CHROMIUM
IN MW-46 AND MW-47 CLUSTERS

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

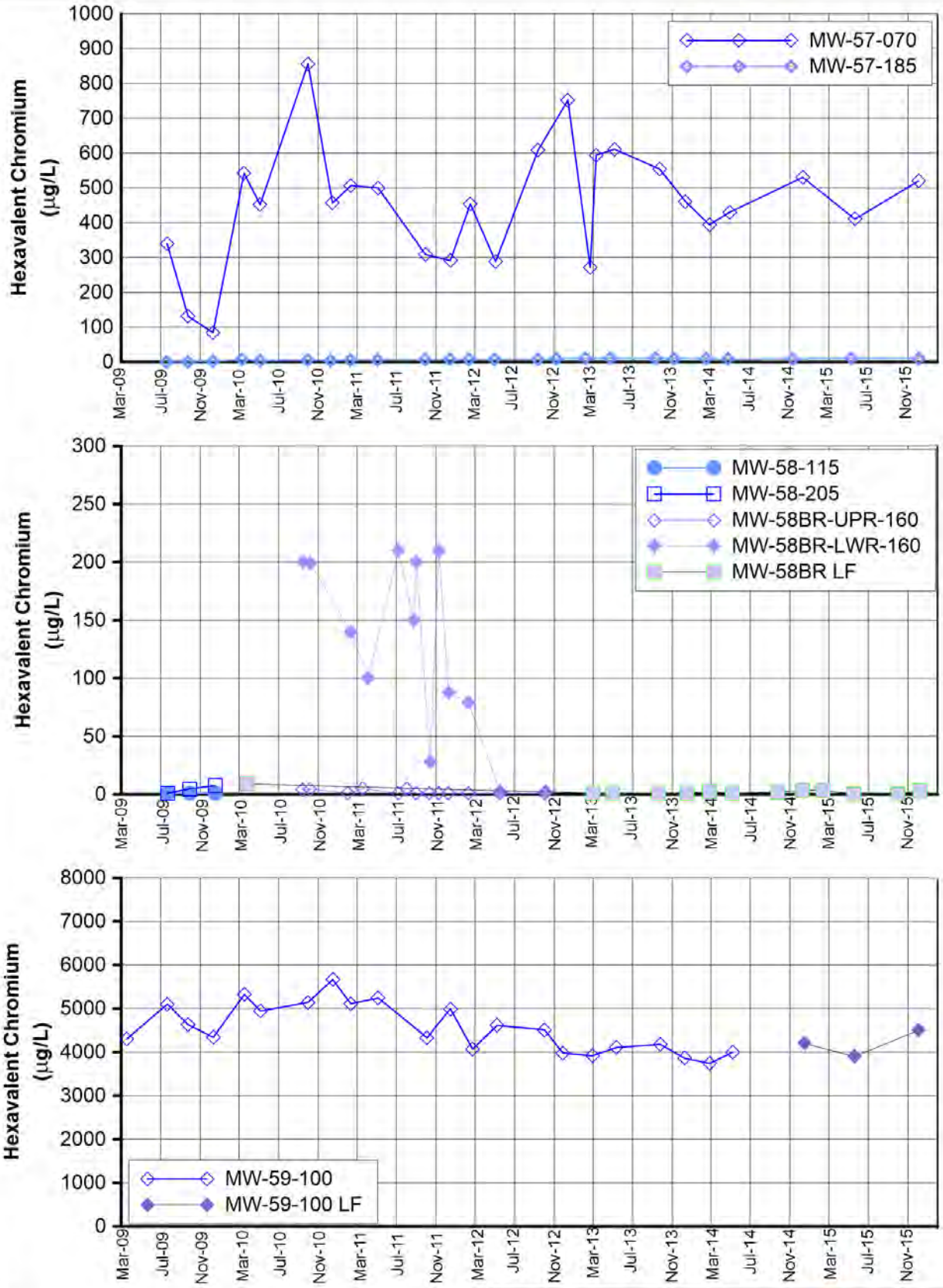


Notes:

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 C-12
HEXAVALENT CHROMIUM
IN MW-50 AND MW-51 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

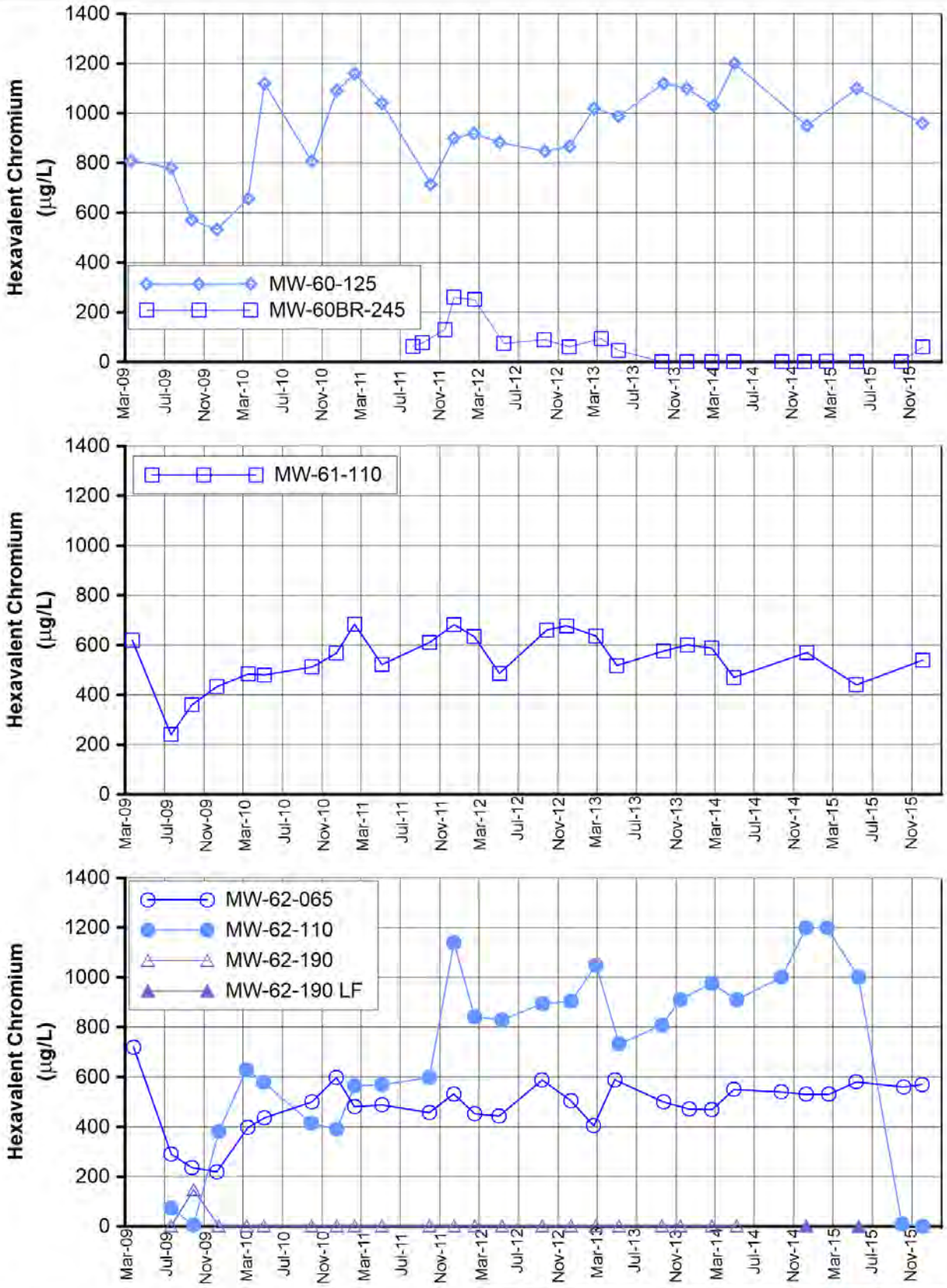


Note:

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 C-13
HEXAVALENT CHROMIUM
IN MW-57 CLUSTER, MW-58 CLUSTER AND MW-59-100
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

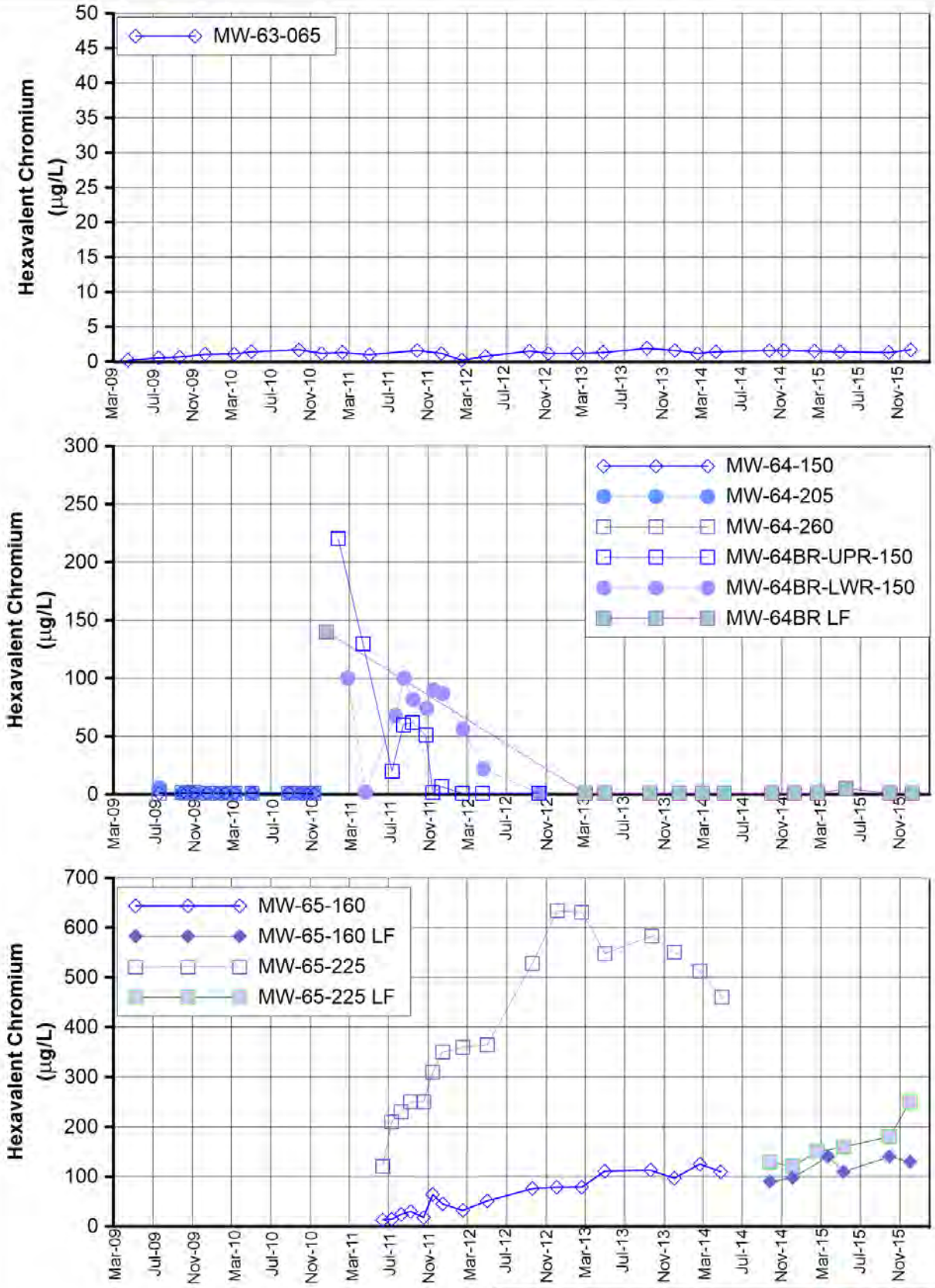


Notes:

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 C-14
HEXAVALENT CHROMIUM
IN MW-60 CLUSTER, MW-61-110 AND MW-62 CLUSTER
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

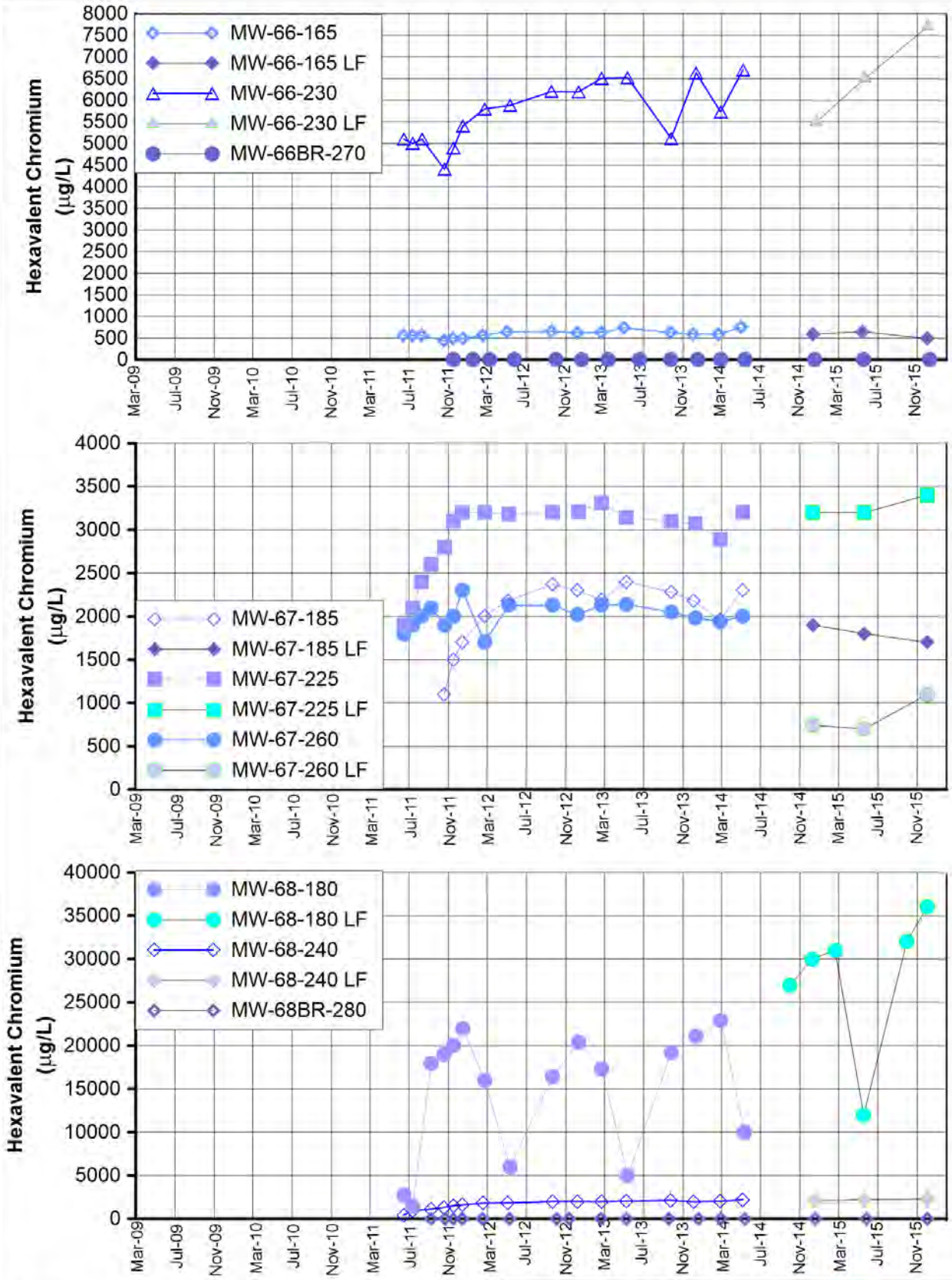


Notes:

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 C-15
HEXAVALENT CHROMIUM
IN MW-63-065, MW-64 CLUSTER AND MW-65 CLUSTER
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

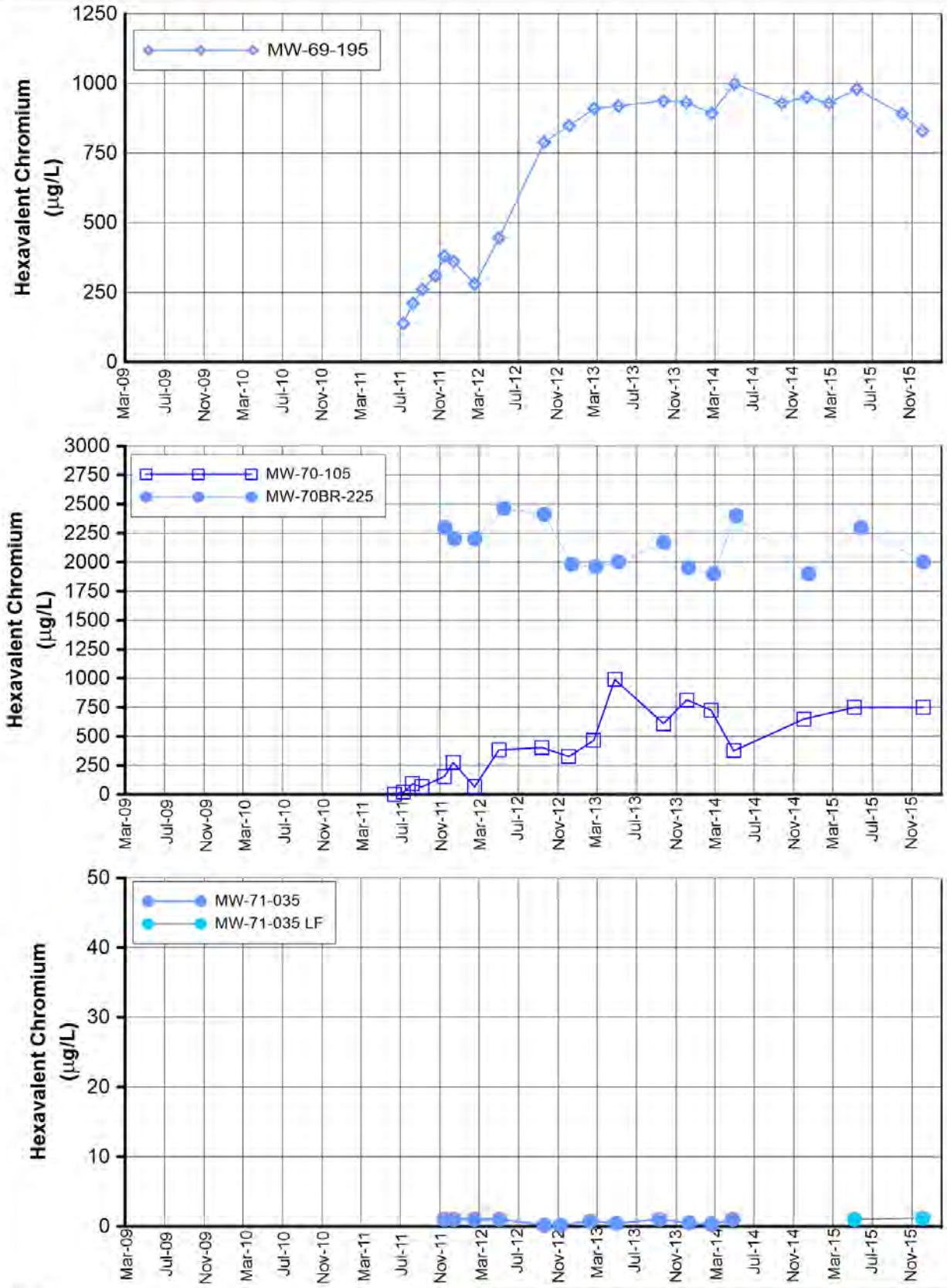


Notes:

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 C-16
HEXAVALENT CHROMIUM
IN MW-66, MW-67, AND MW-68 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



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 C-17
HEXAVALENT CHROMIUM
IN MW-69-195, MW-70 CLUSTER, AND MW-71-035
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

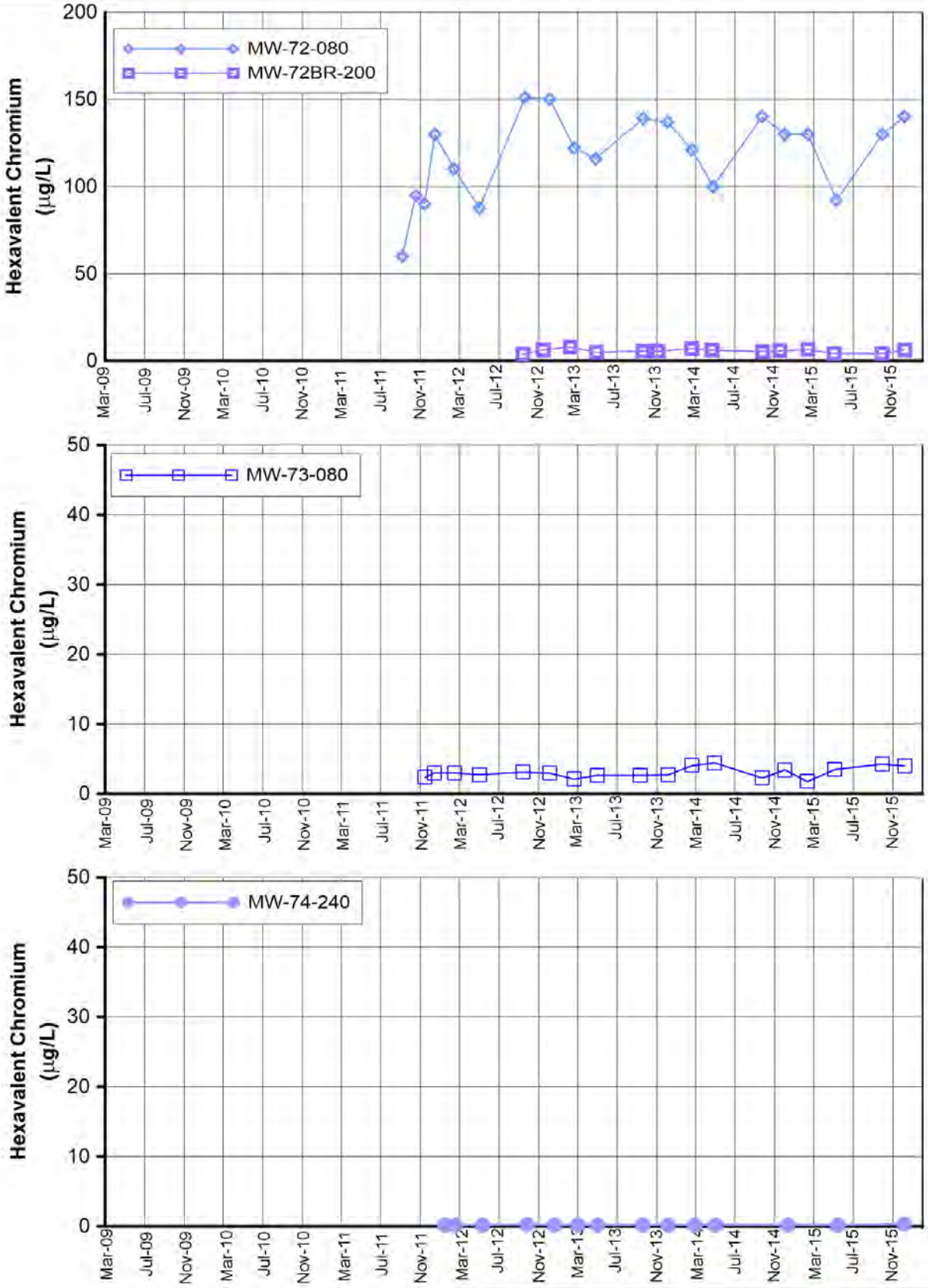


FIGURE C-18
HEXAVALENT CHROMIUM
IN MW-72 CLUSTER, MW-73-080, AND MW-74-240
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

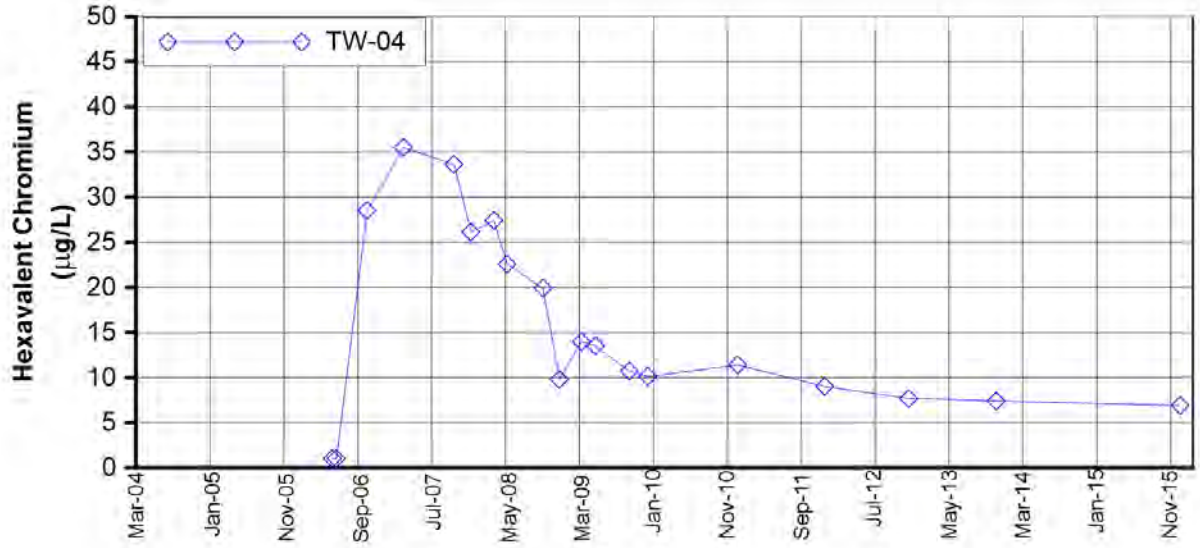
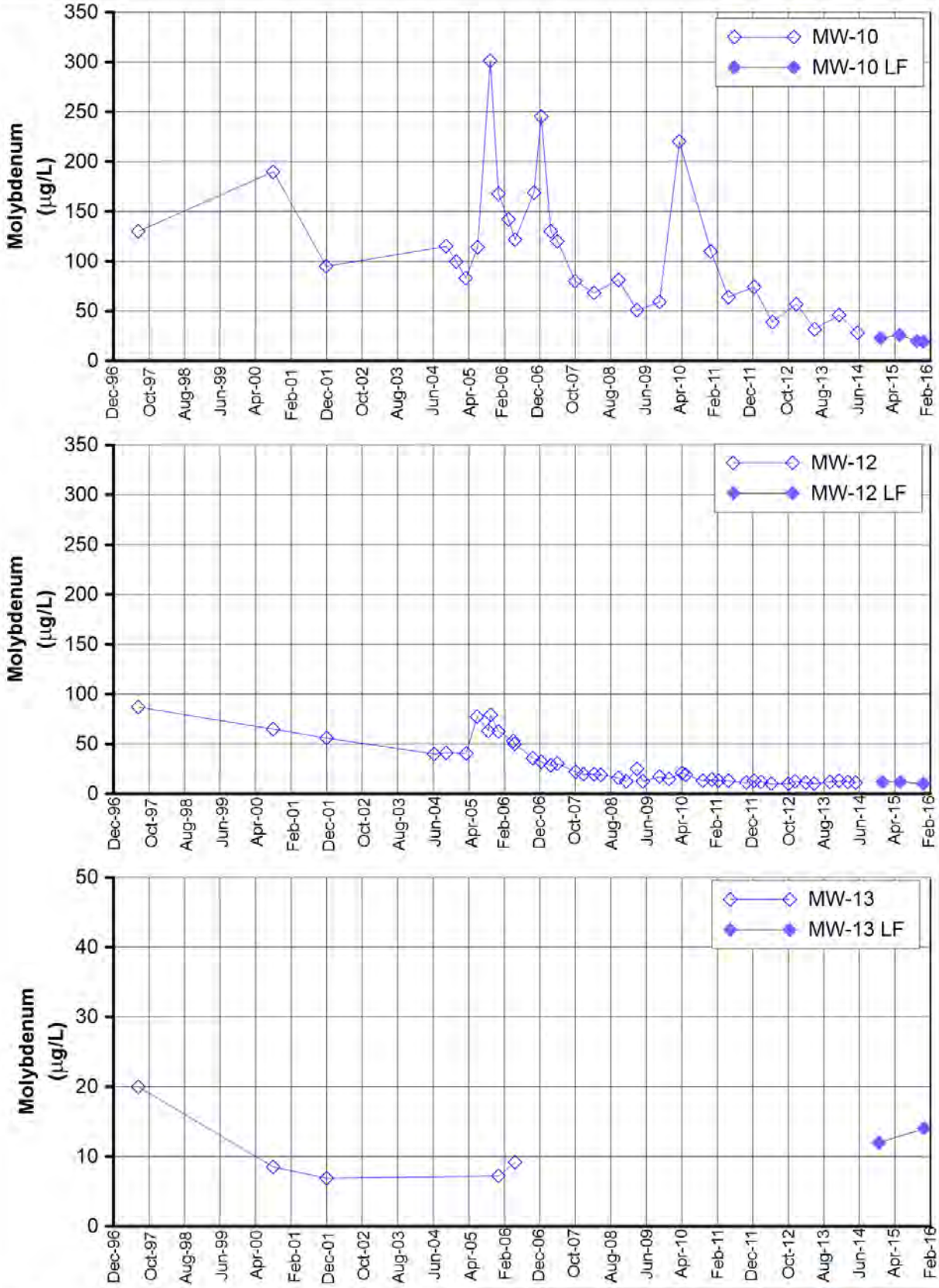


FIGURE C-19
HEXAVALENT CHROMIUM IN TW-04
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

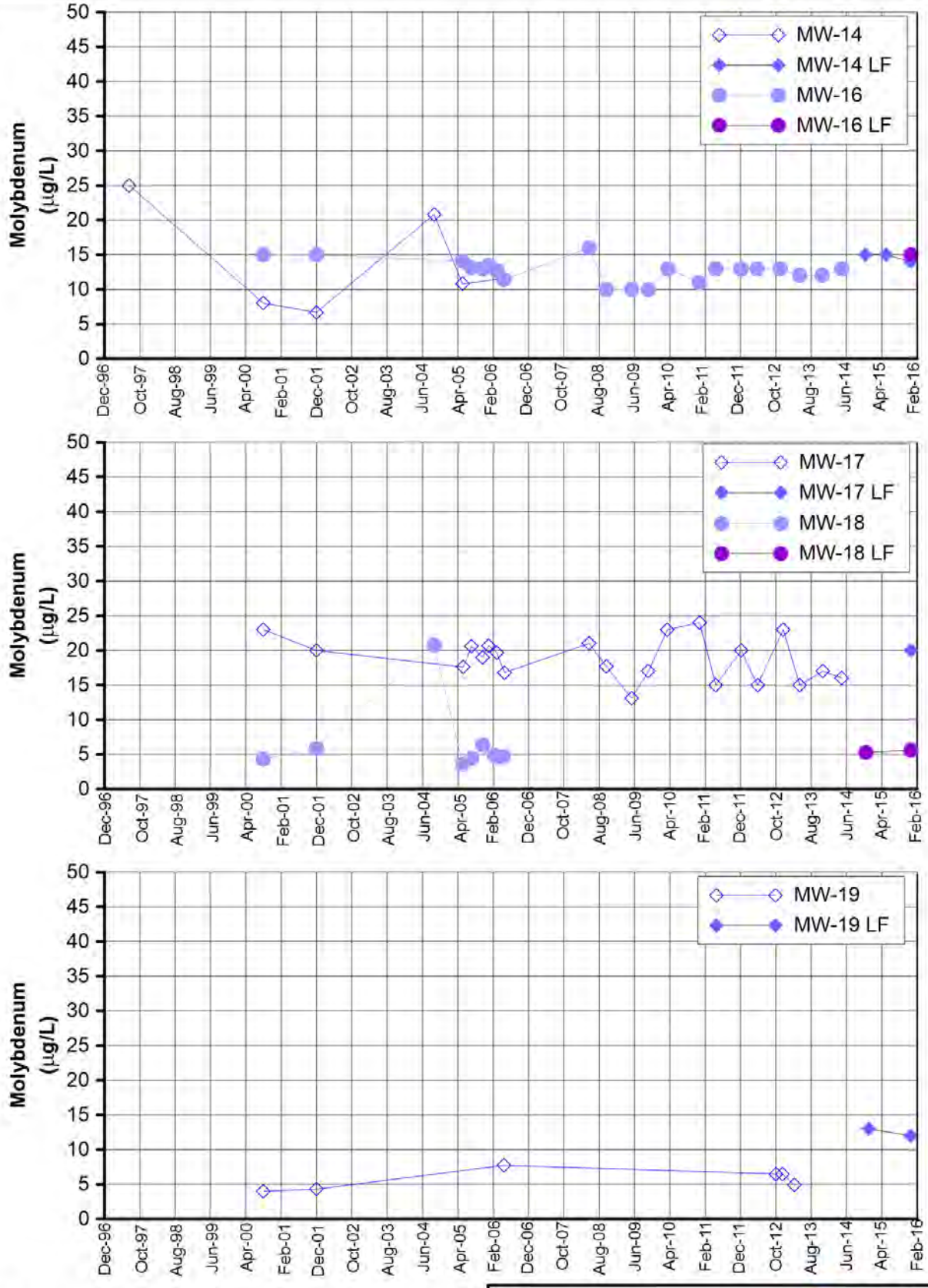


Notes:

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 C-20
MOLYBDENUM
IN MW-10, MW-12, AND MW-13
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

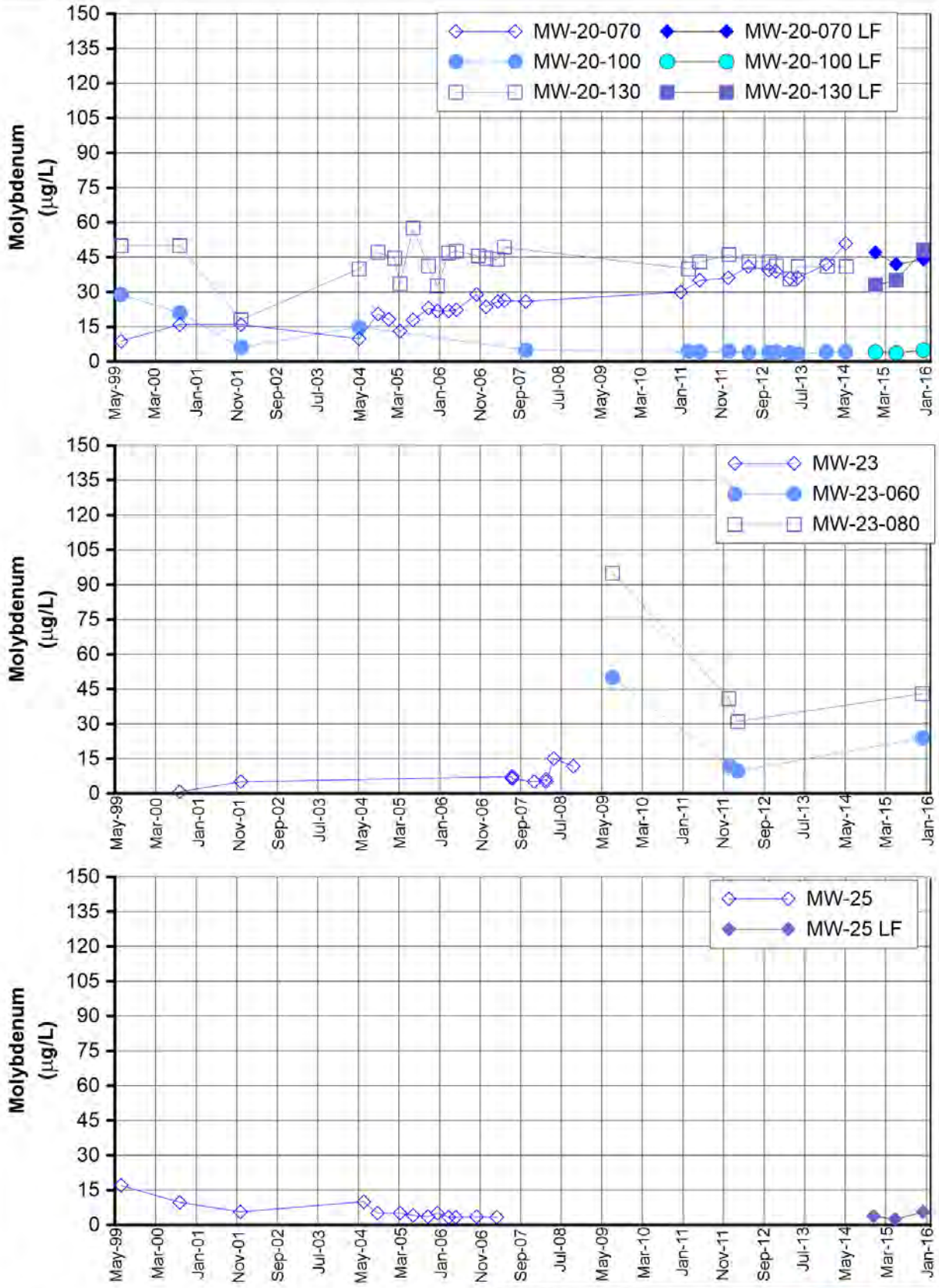


Notes:

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 C-21
MOLYBDENUM
IN MW-14, MW-16, MW-17, MW-18, AND MW-19
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

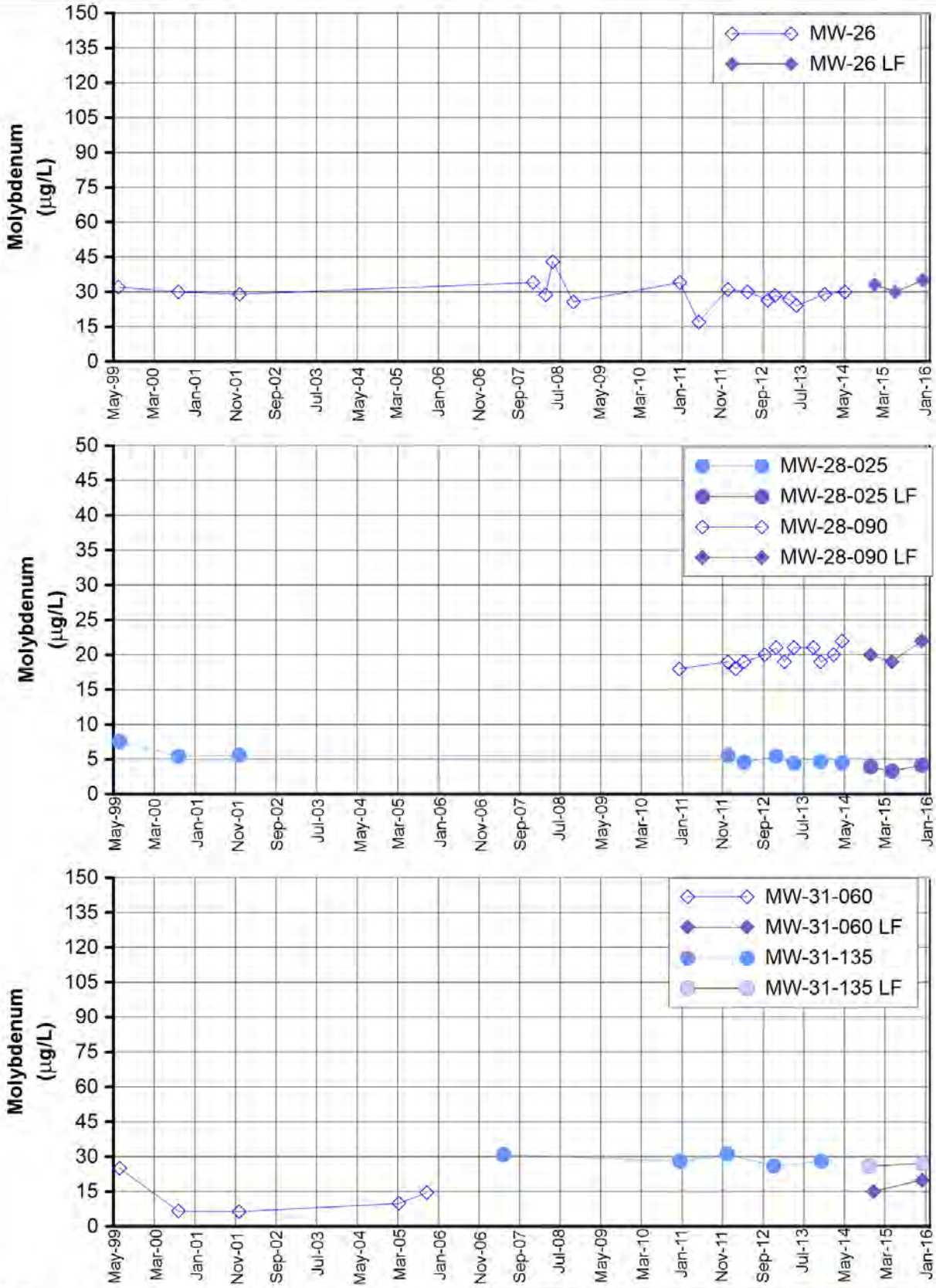


Notes:

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 C-22
MOLYBDENUM
IN MW-20, MW-23, AND MW-25 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

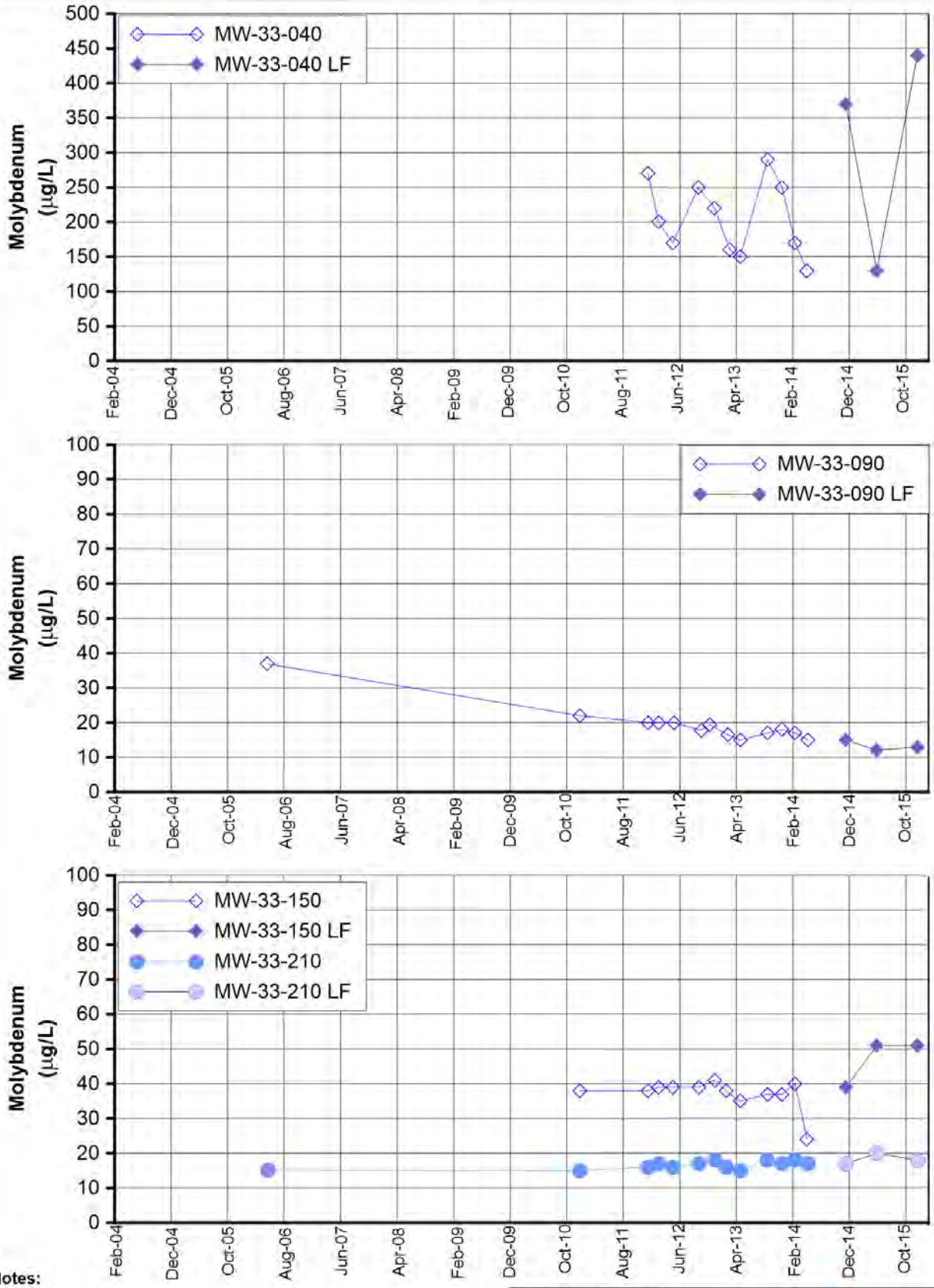


Notes:

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 C-23
MOLYBDENUM
IN MW-26, MW-28, AND MW-31 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



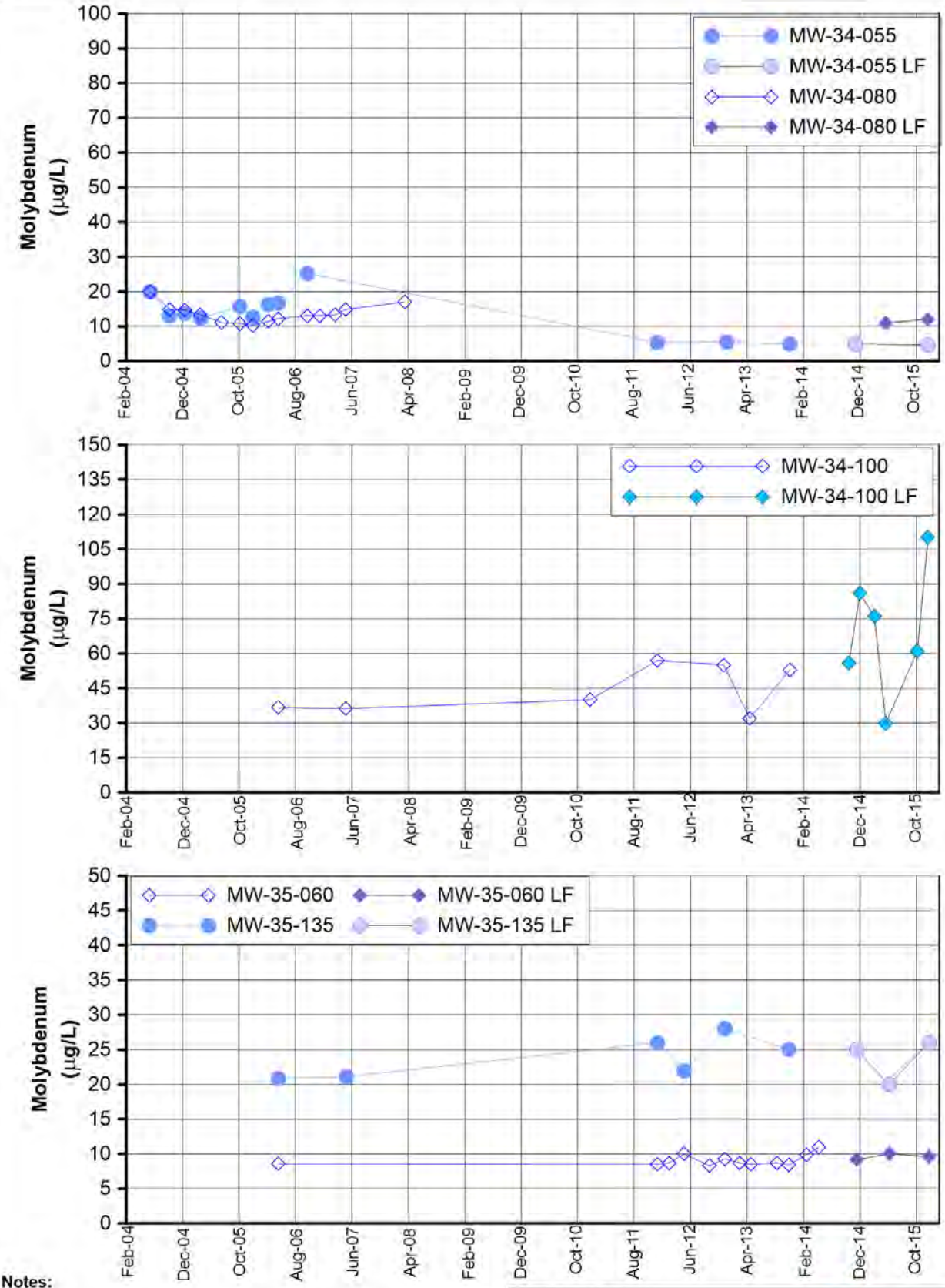
Notes:

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 C-24
MOLYBDENUM
IN MW-33 CLUSTER

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

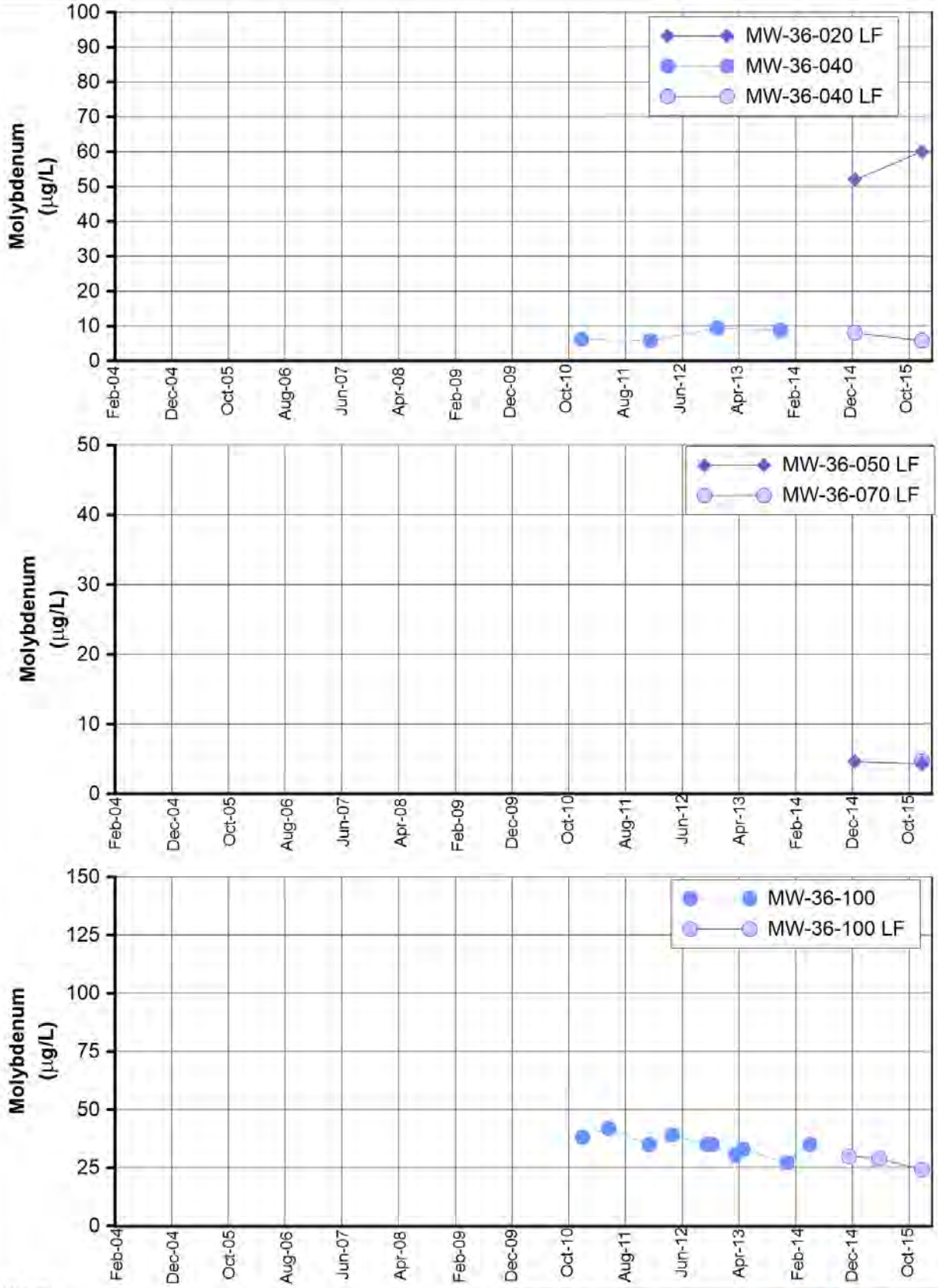


Notes:

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 C-25
MOLYBDENUM
IN MW-34 AND MW-35 CLUSTERS
FOURTH QUARTER 2014 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



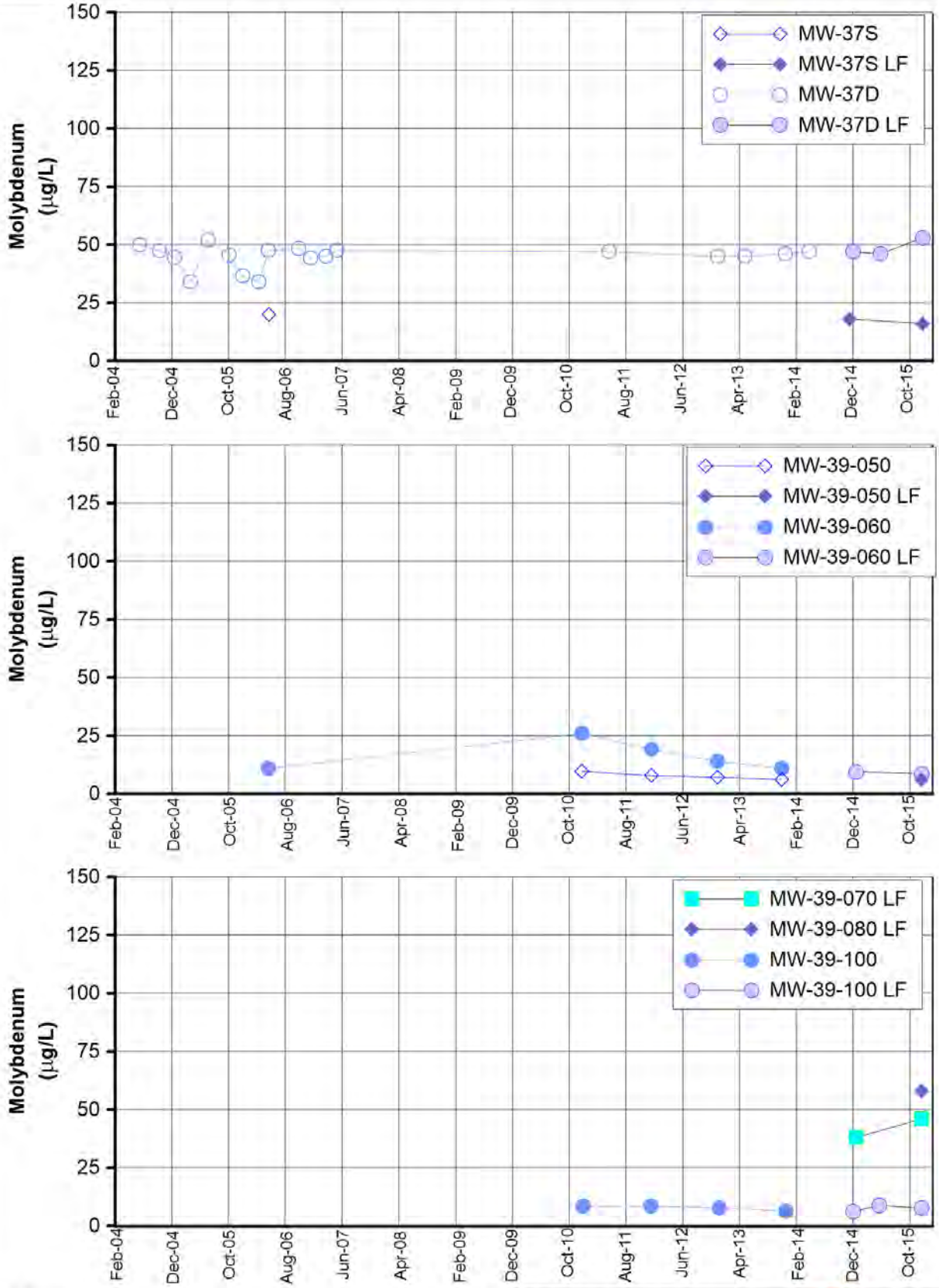
Notes:

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 C-26
MOLYBDENUM
IN MW-36 CLUSTER

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

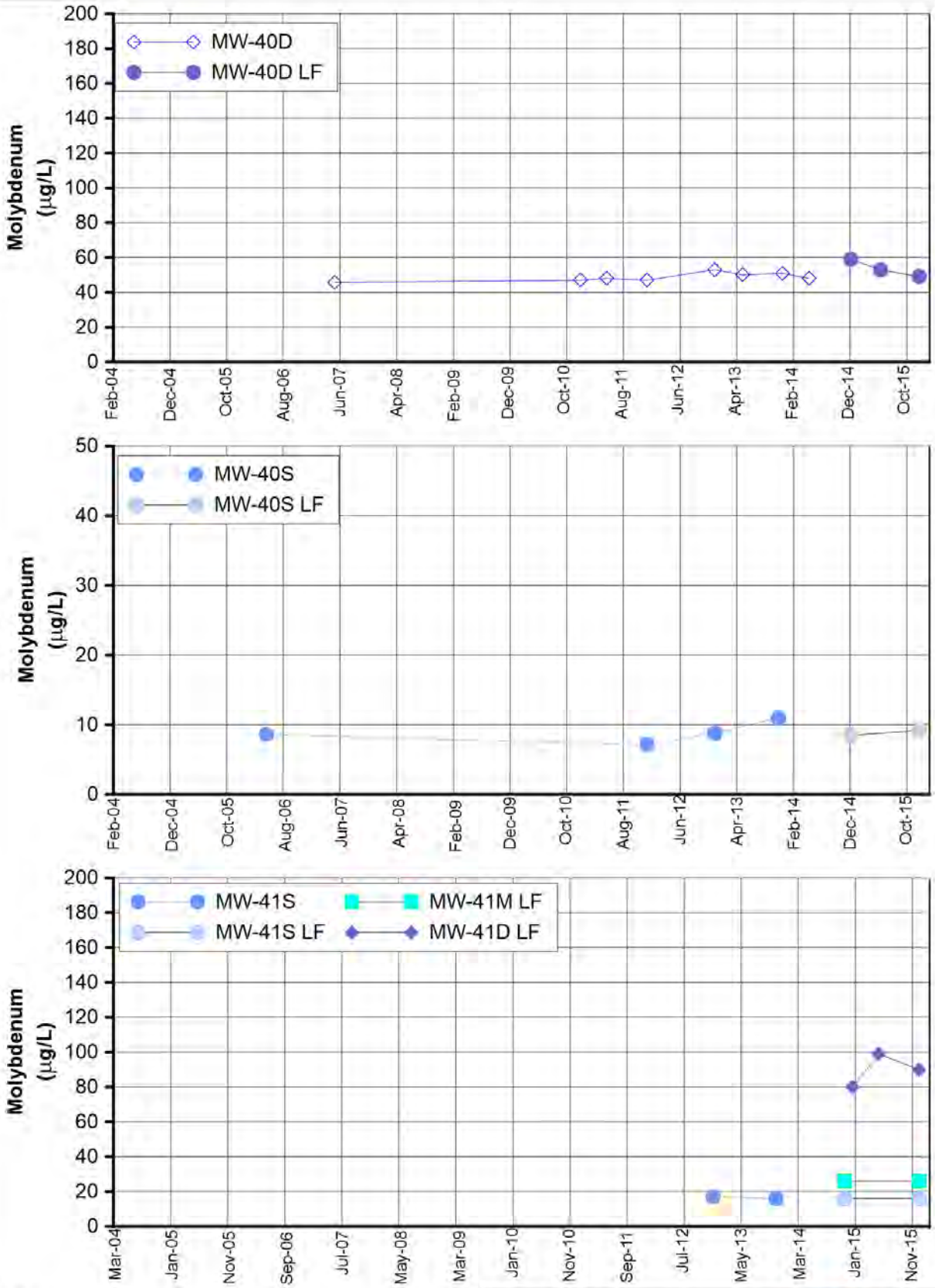


Notes:

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 C-27
MOLYBDENUM
IN MW-37 AND MW-39 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

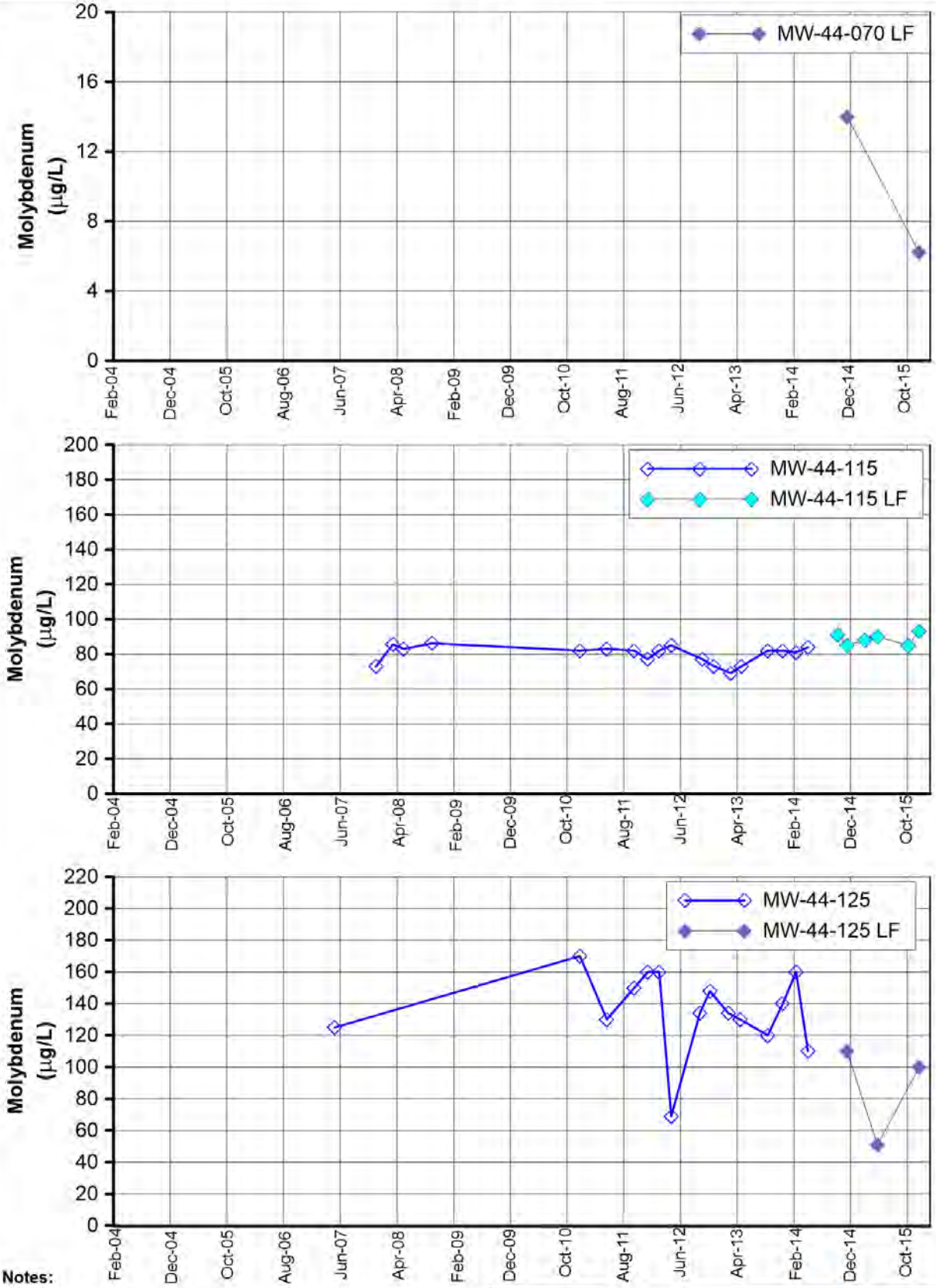


Notes:

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 C-28
MOLYBDENUM
IN MW-40 AND MW-41 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



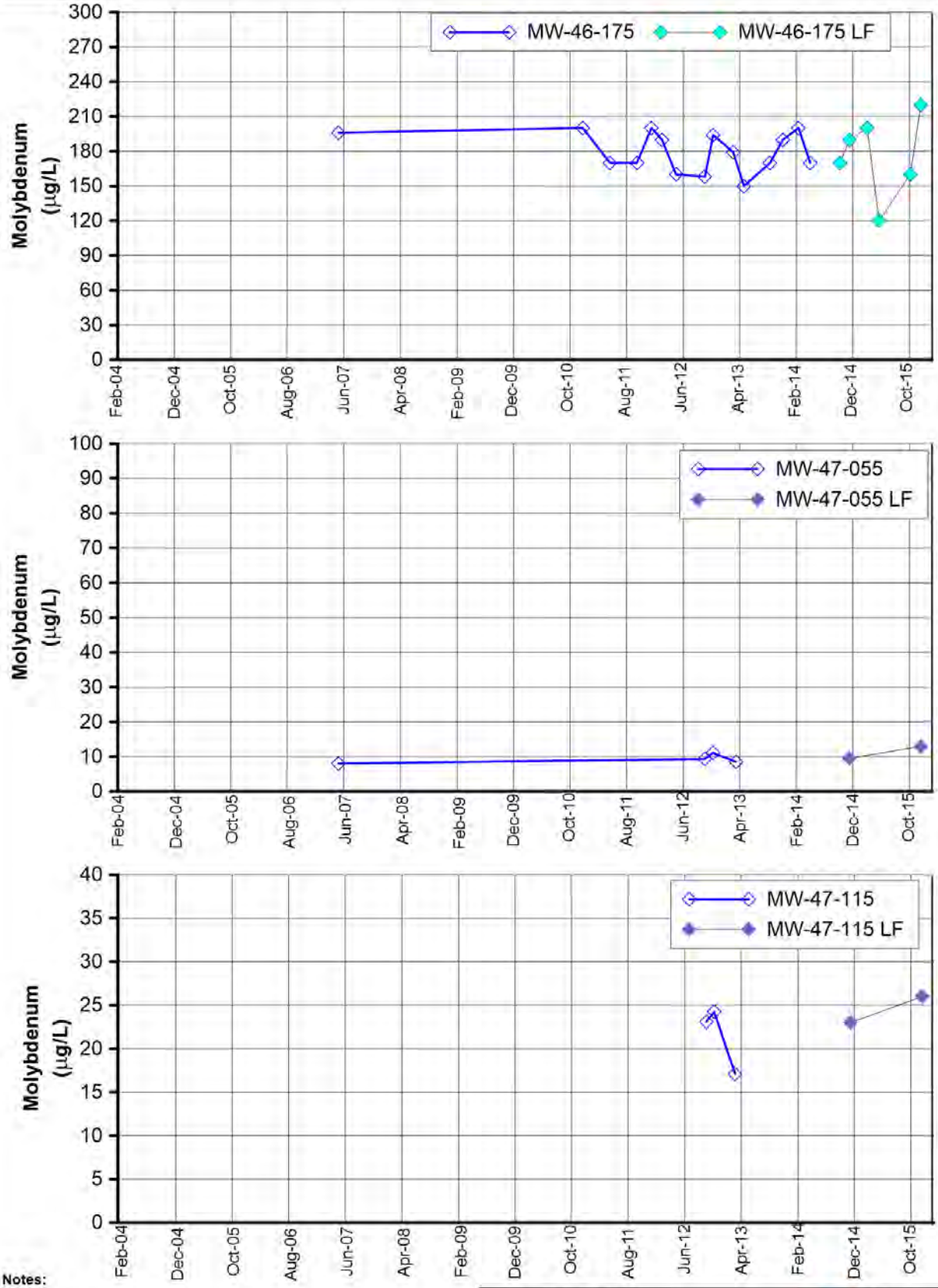
Notes:

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 C-29
MOLYBDENUM
IN MW-44 CLUSTER

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

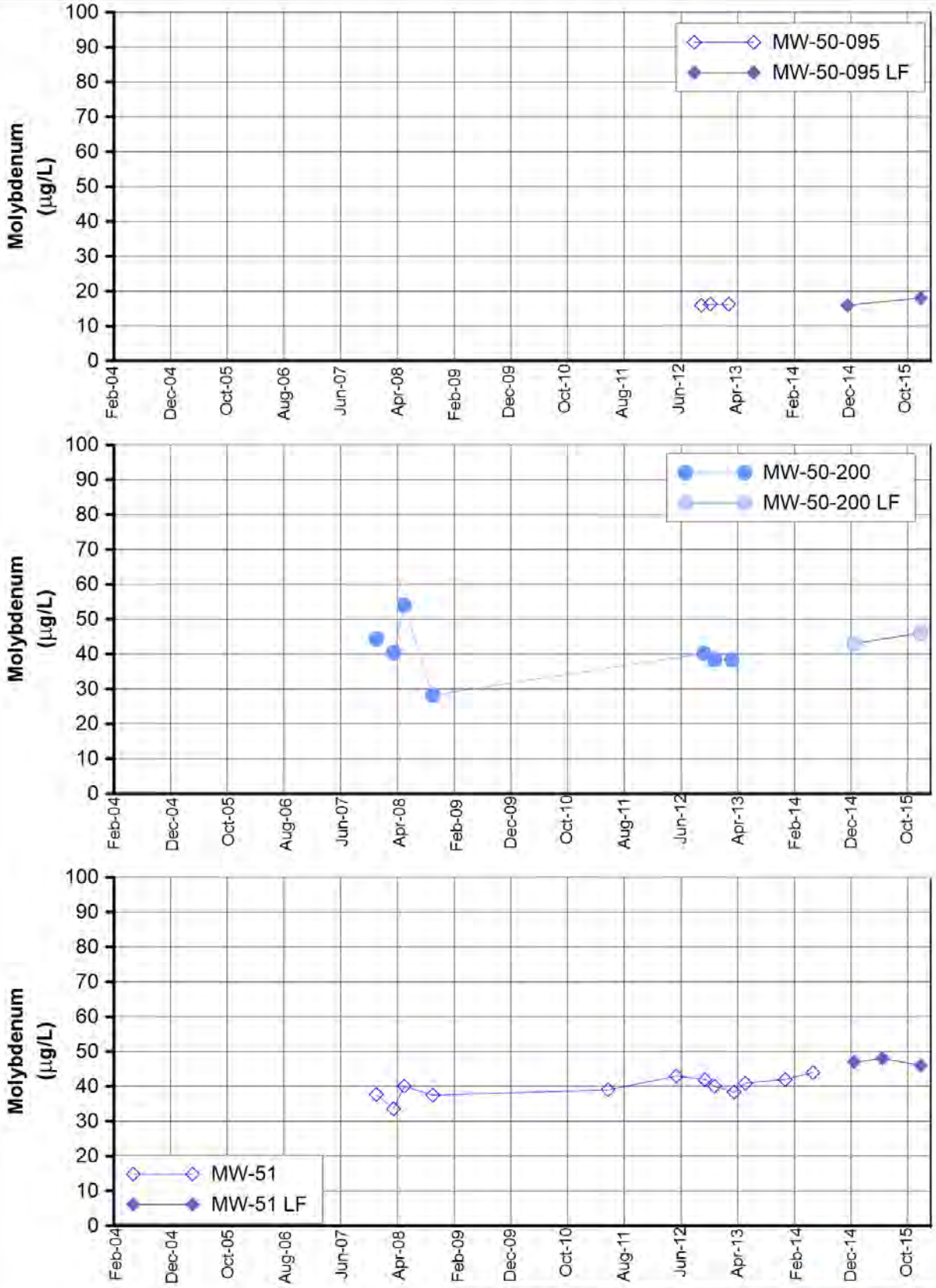


Notes:

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 C-30
MOLYBDENUM
IN MW-46 AND MW-47 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

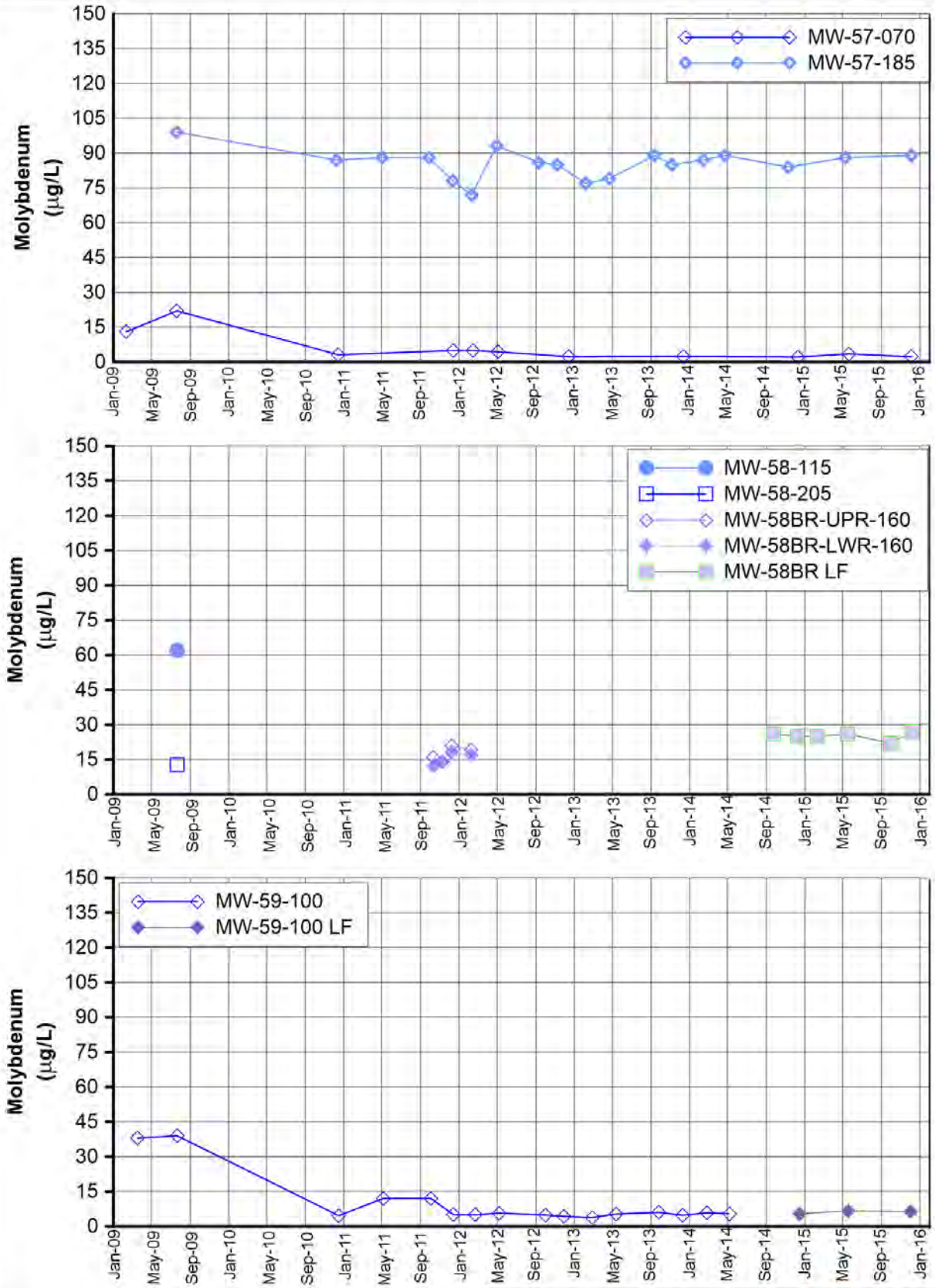


Notes:

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 C-31
MOLYBDENUM
IN MW-50 AND MW-51 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

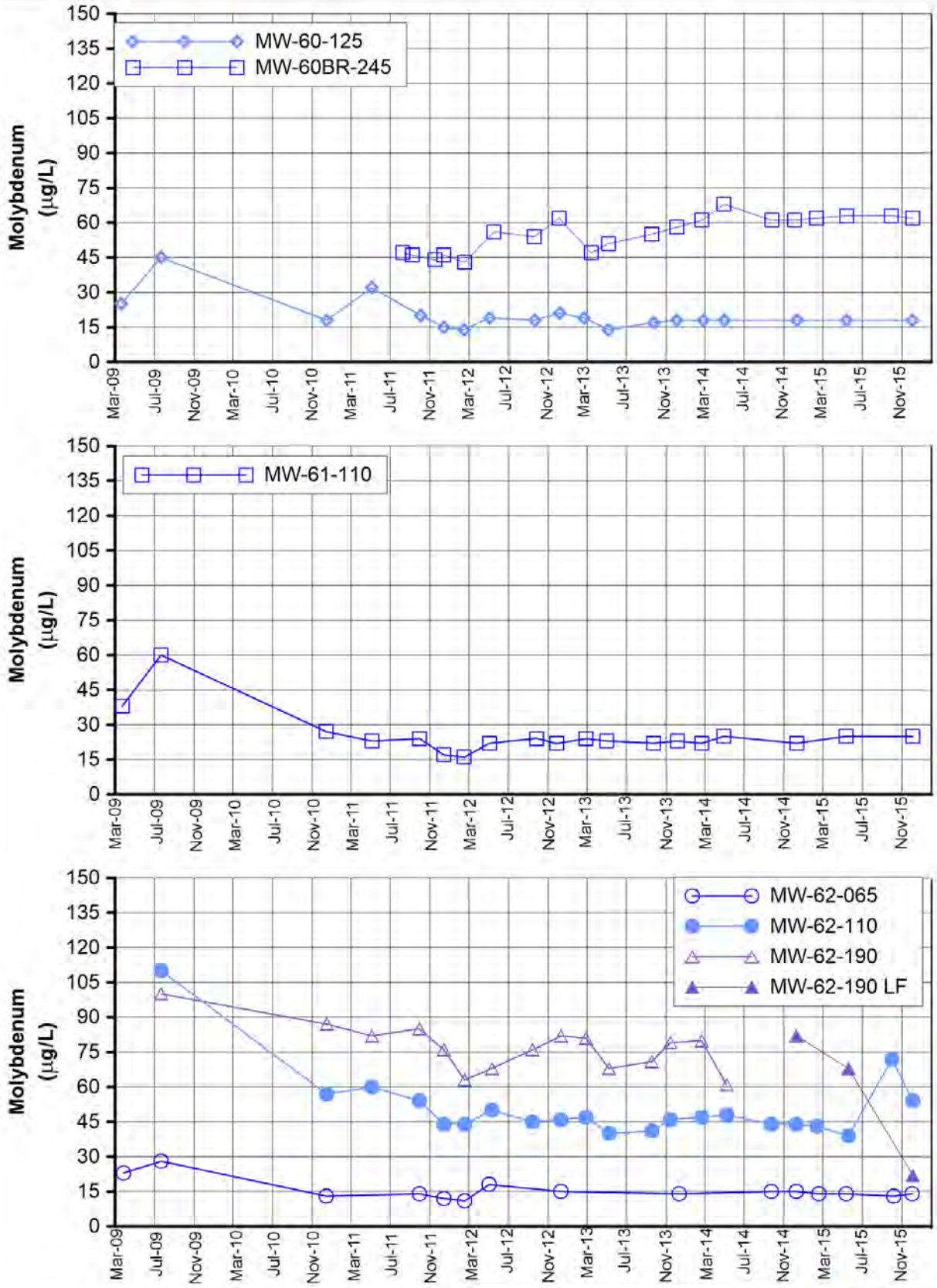


Note:

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 C-32
MOLYBDENUM
IN MW-57 CLUSTER, MW-58 CLUSTER AND MW-59-100
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

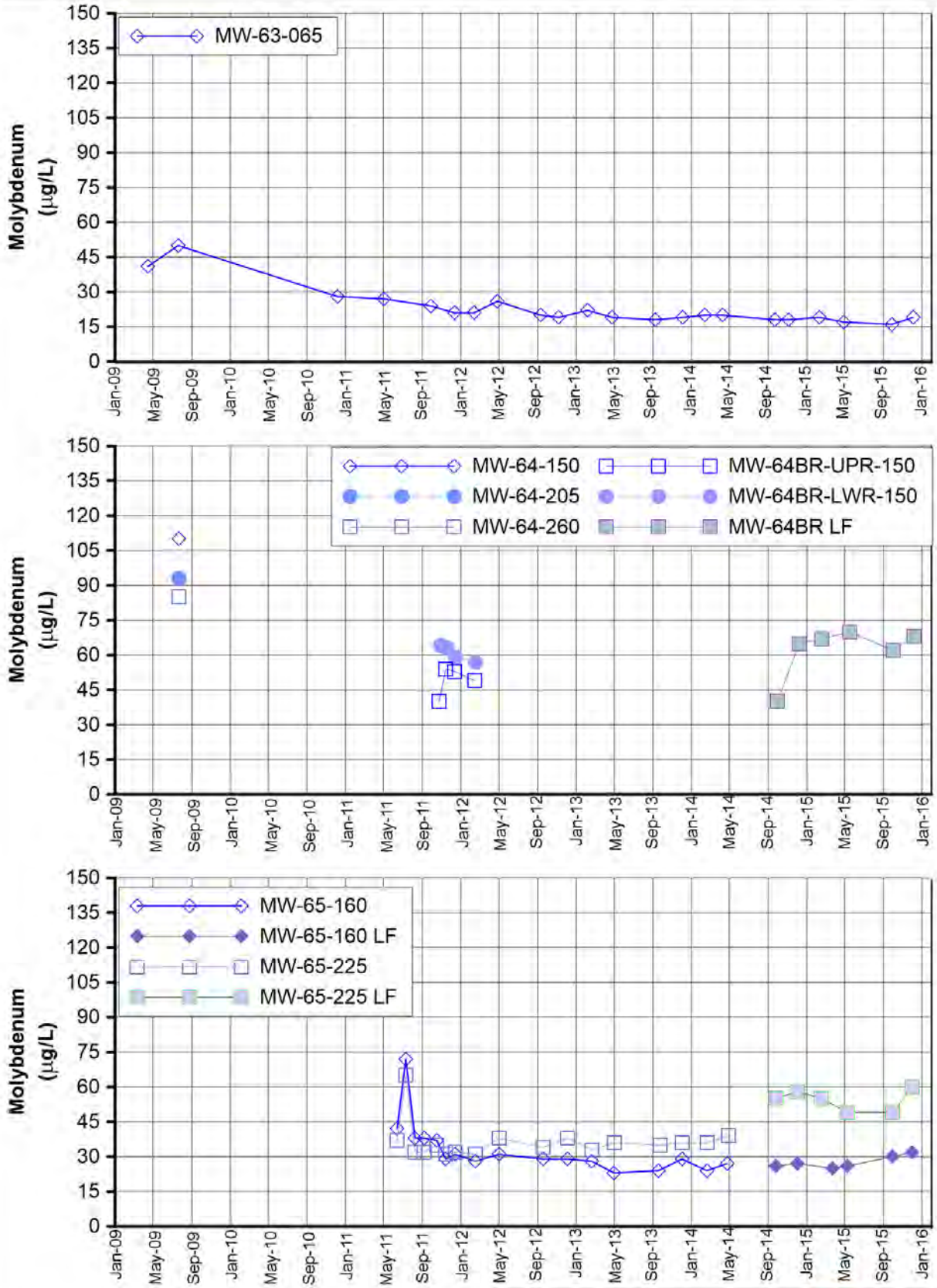


Notes:

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 C-33
MOLYBDENUM
IN MW-60 CLUSTER, MW-61-110, AND MW-62 CLUSTER
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

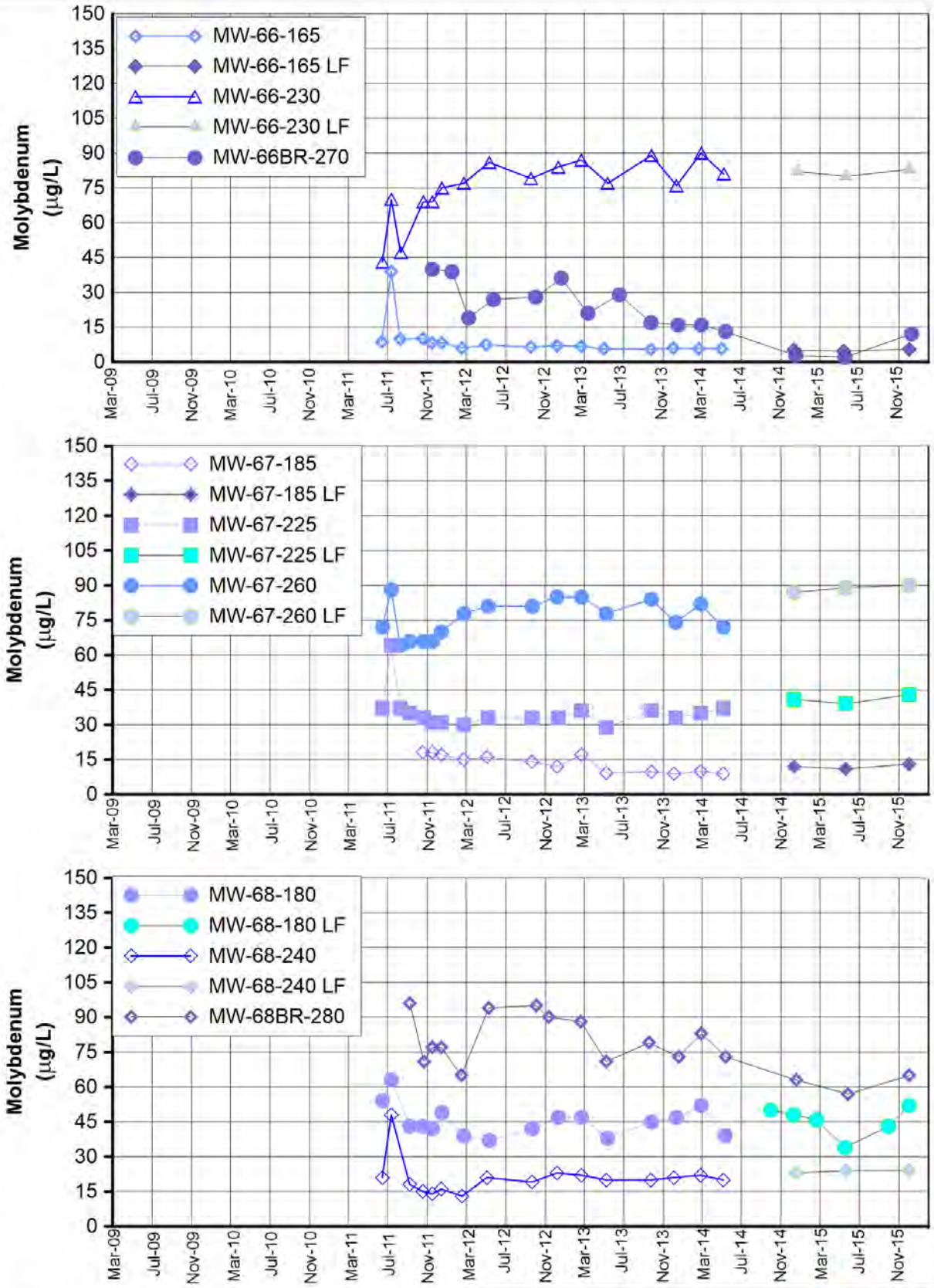


Notes:

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 C-34
MOLYBDENUM
IN MW-63-065, MW-64 CLUSTER AND MW-65 CLUSTER
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

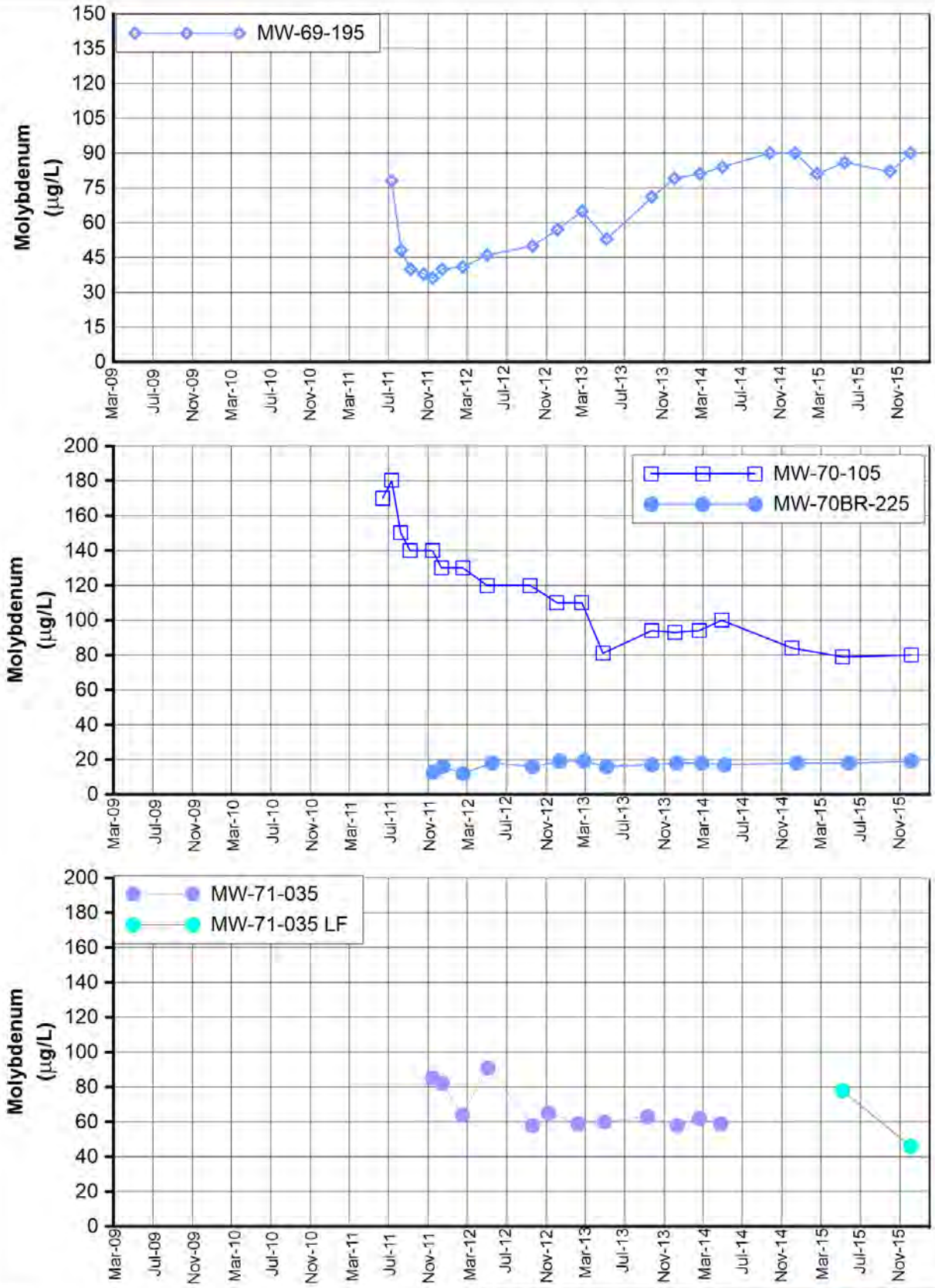


Notes:

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 C-35
MOLYBDENUM
IN MW-66, MW-67, AND MW-68 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



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 C-36
MOLYBDENUM
IN MW-69-195, THE MW-70 CLUSTER, AND MW-71-035
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

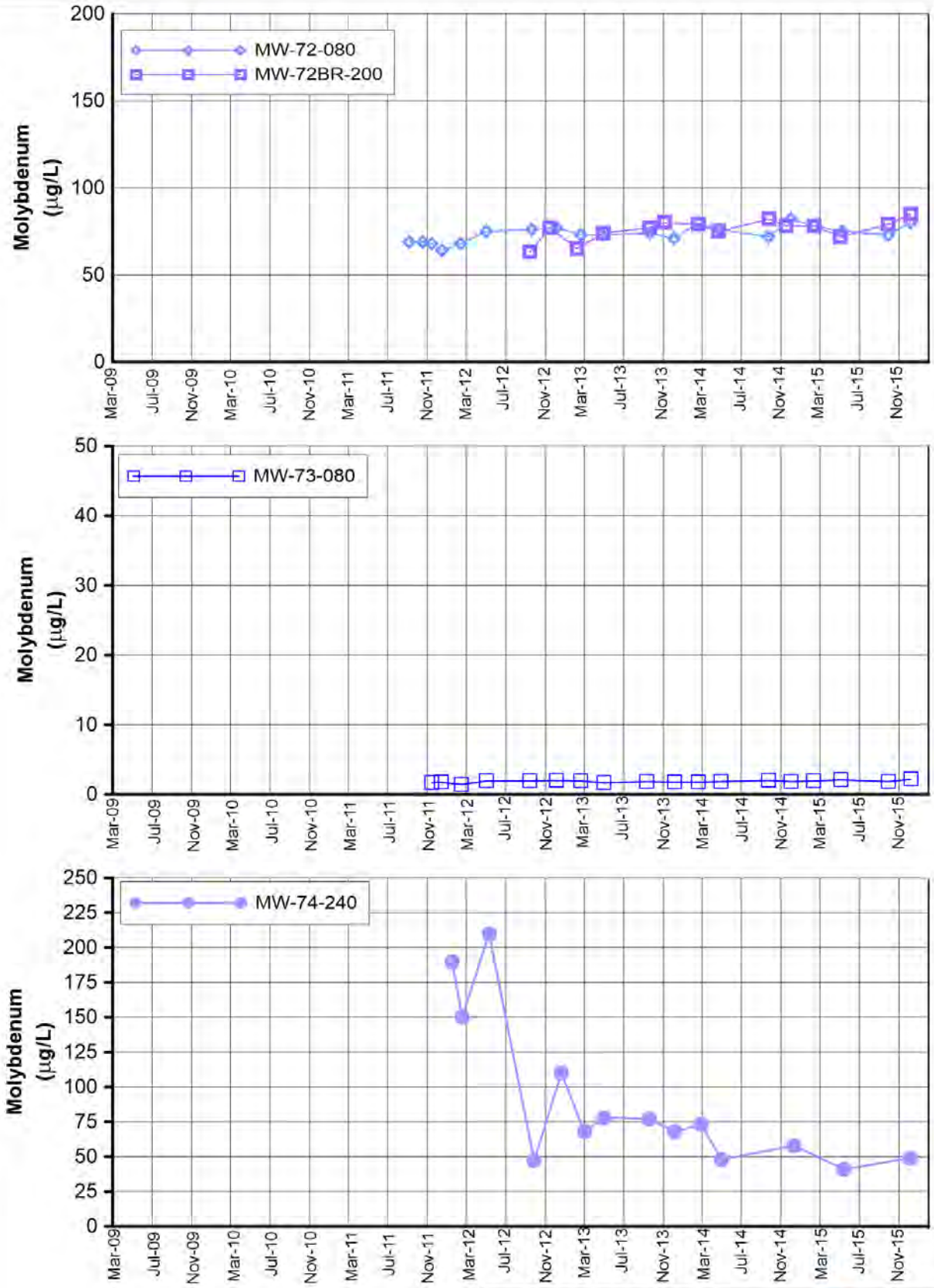
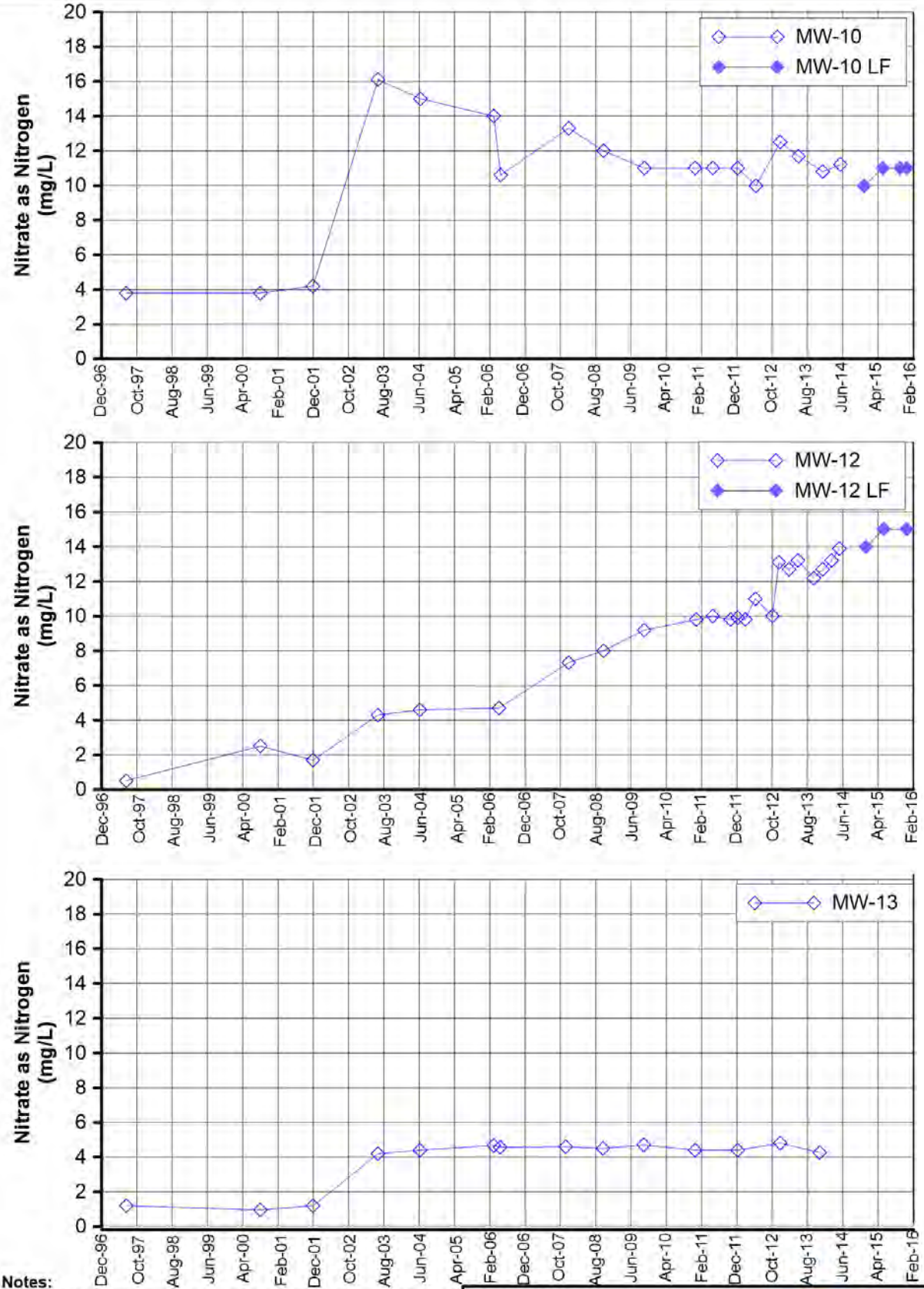


FIGURE C-37
MOLYBDENUM
IN MW-72 CLUSTER, MW-73-080, AND MW-74-240
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



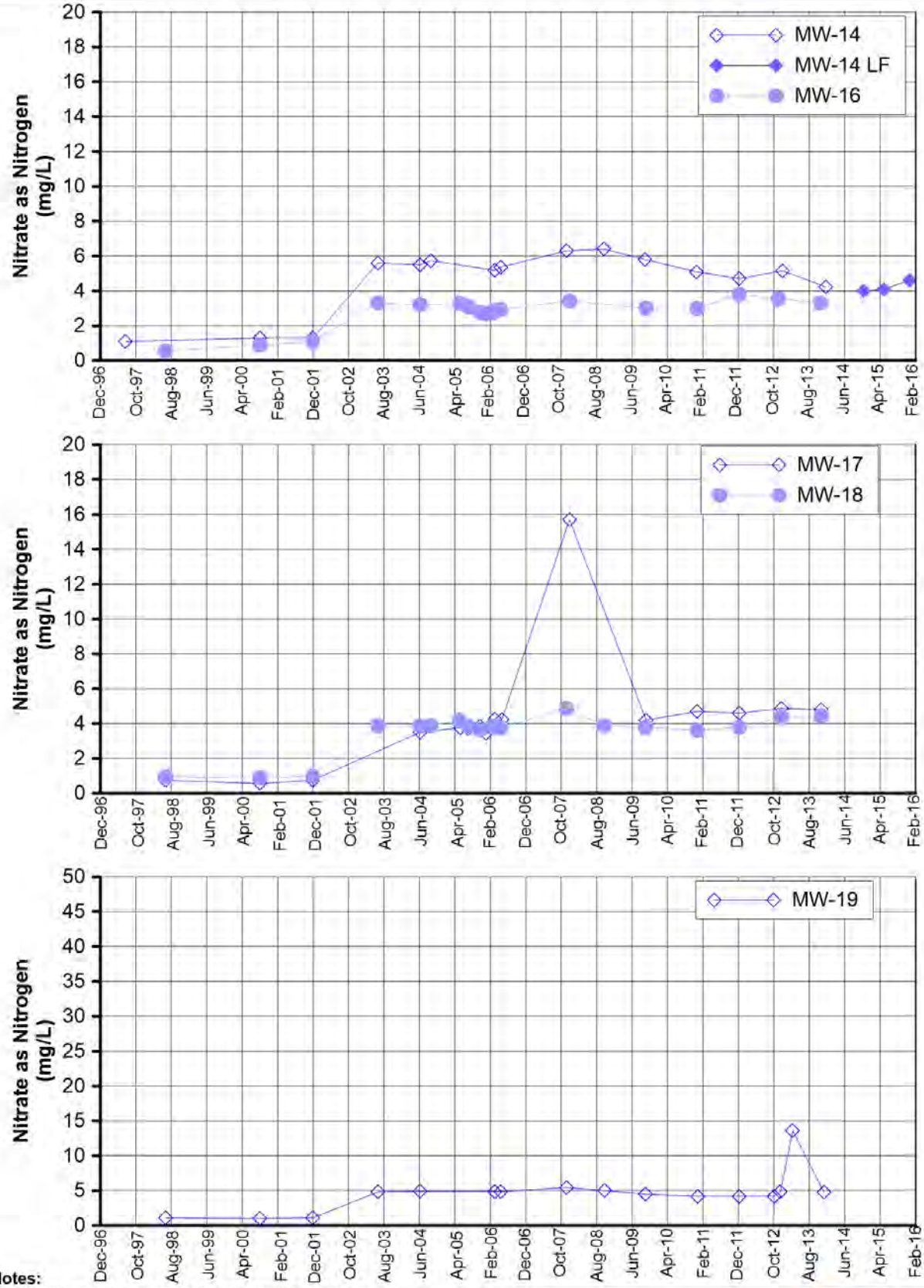
Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-38
NITRATE as NITROGEN
IN MW-10, MW-12, AND MW-13

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

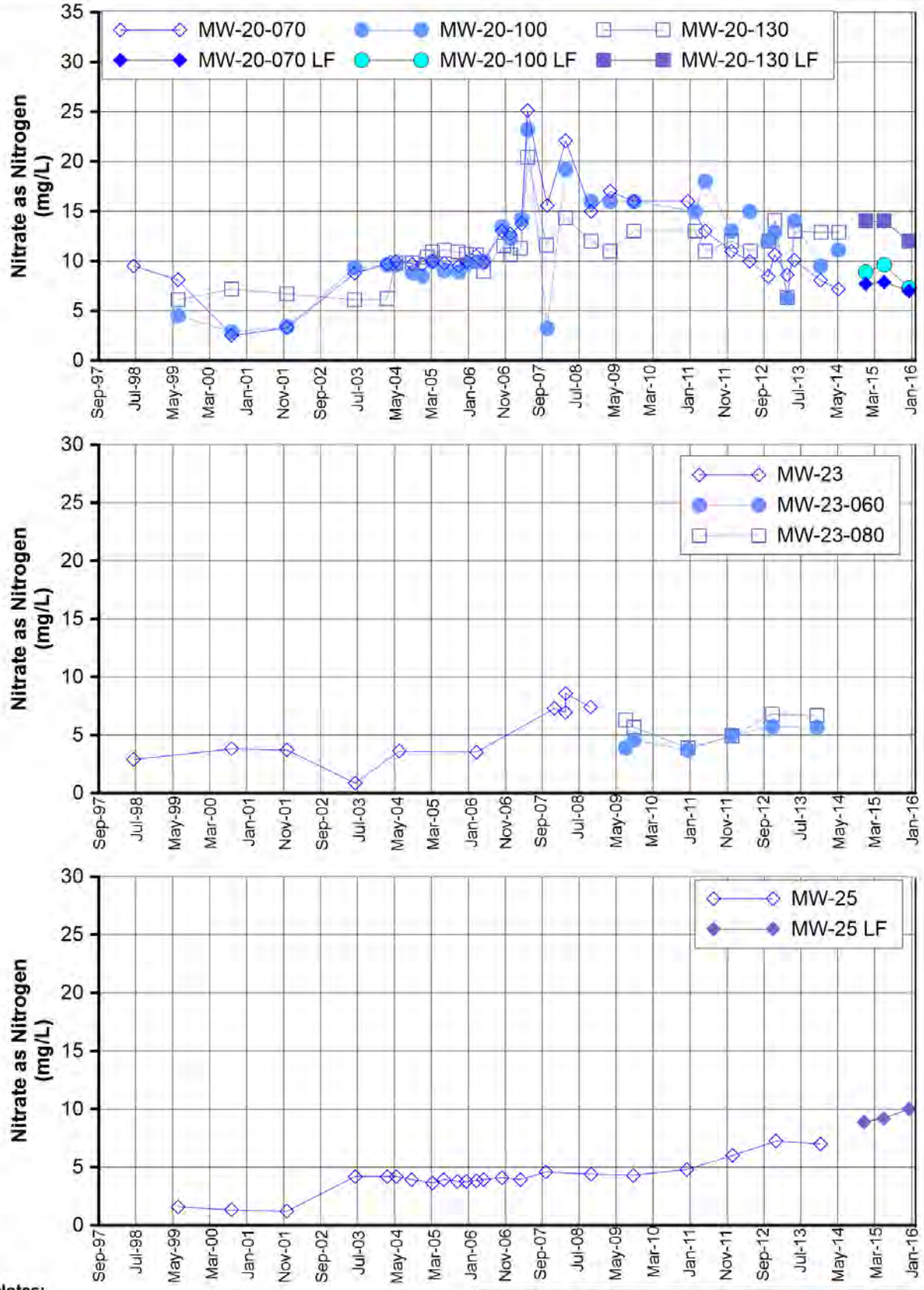


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-39
NITRATE as NITROGEN
IN MW-14, MW-16, MW-17, MW-18, AND MW-19
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

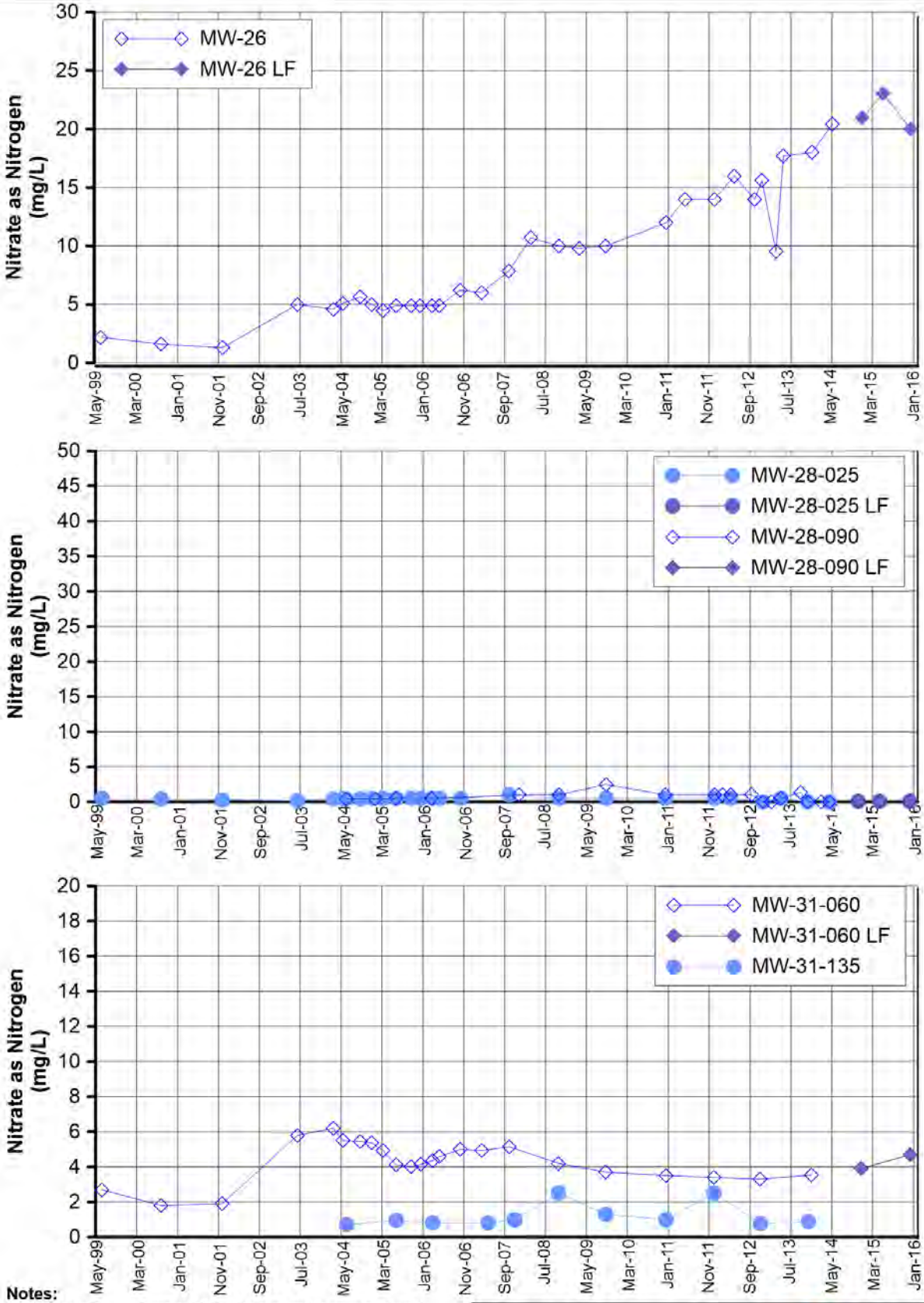


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-40
NITRATE as NITROGEN
IN MW-20, MW-23, AND MW-25 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

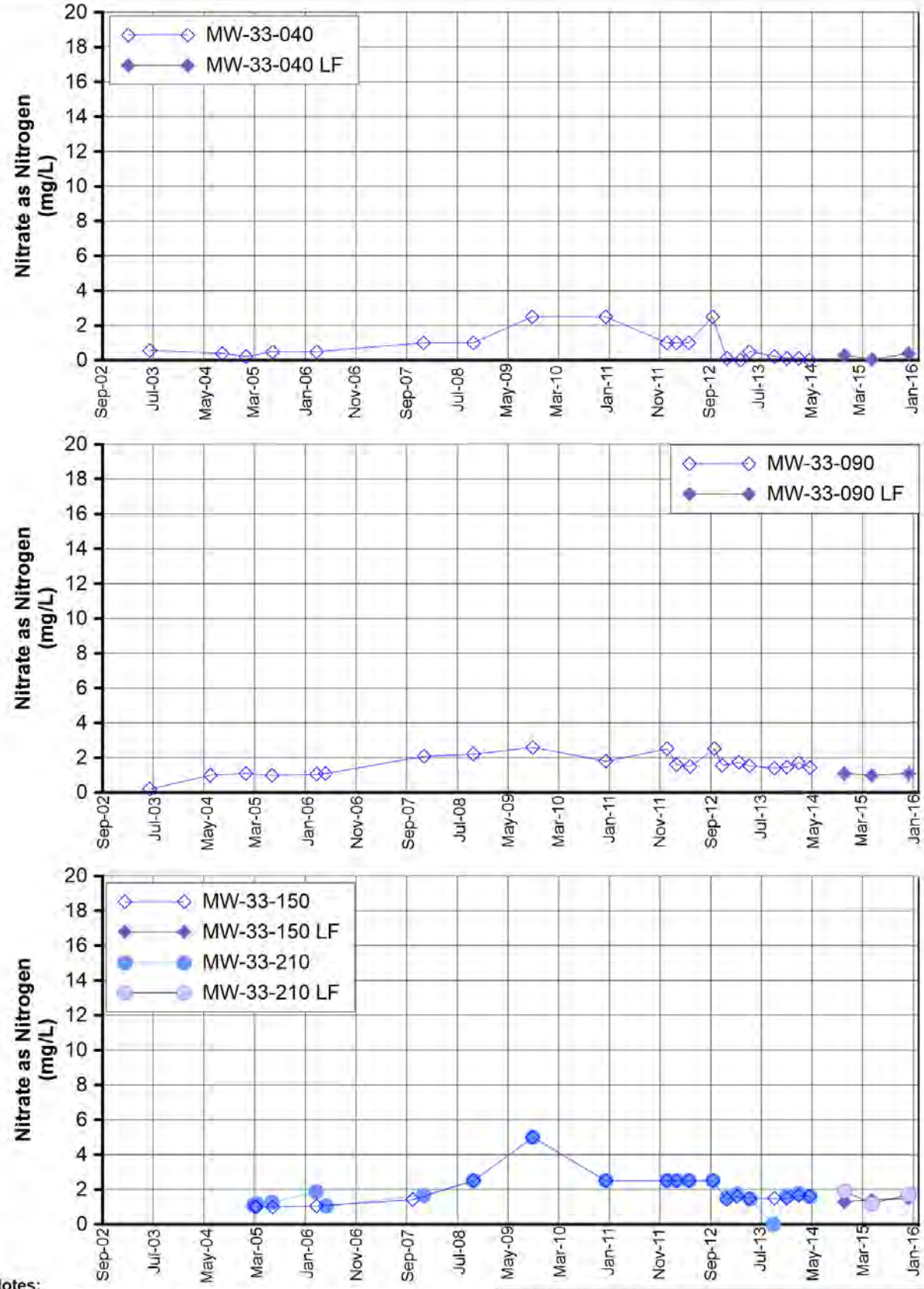


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-41
NITRATE as NITROGEN
IN MW-26, MW-28, AND MW-31 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



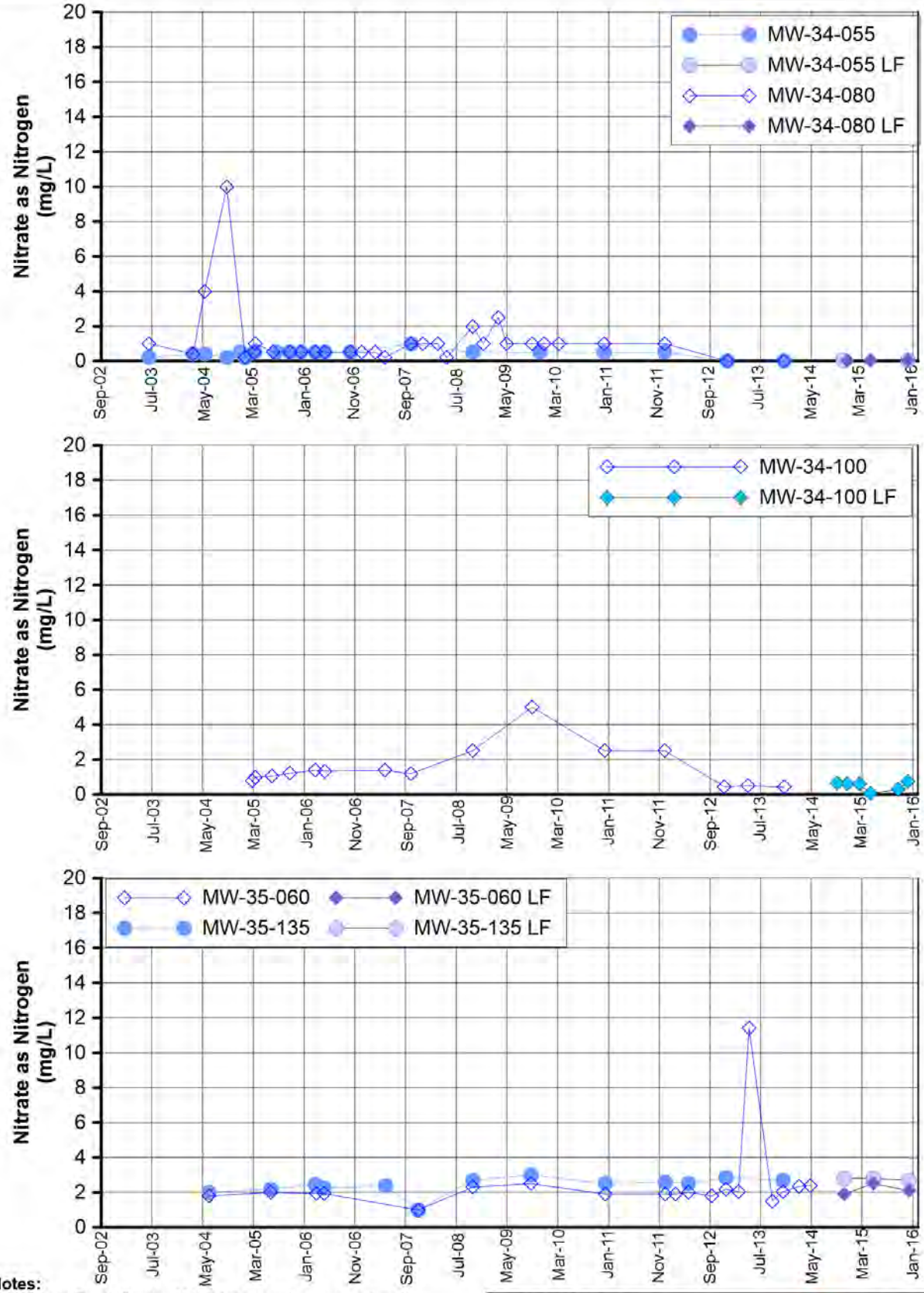
Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-42
NITRATE as NITROGEN
IN MW-33 CLUSTER

ARCADIS

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

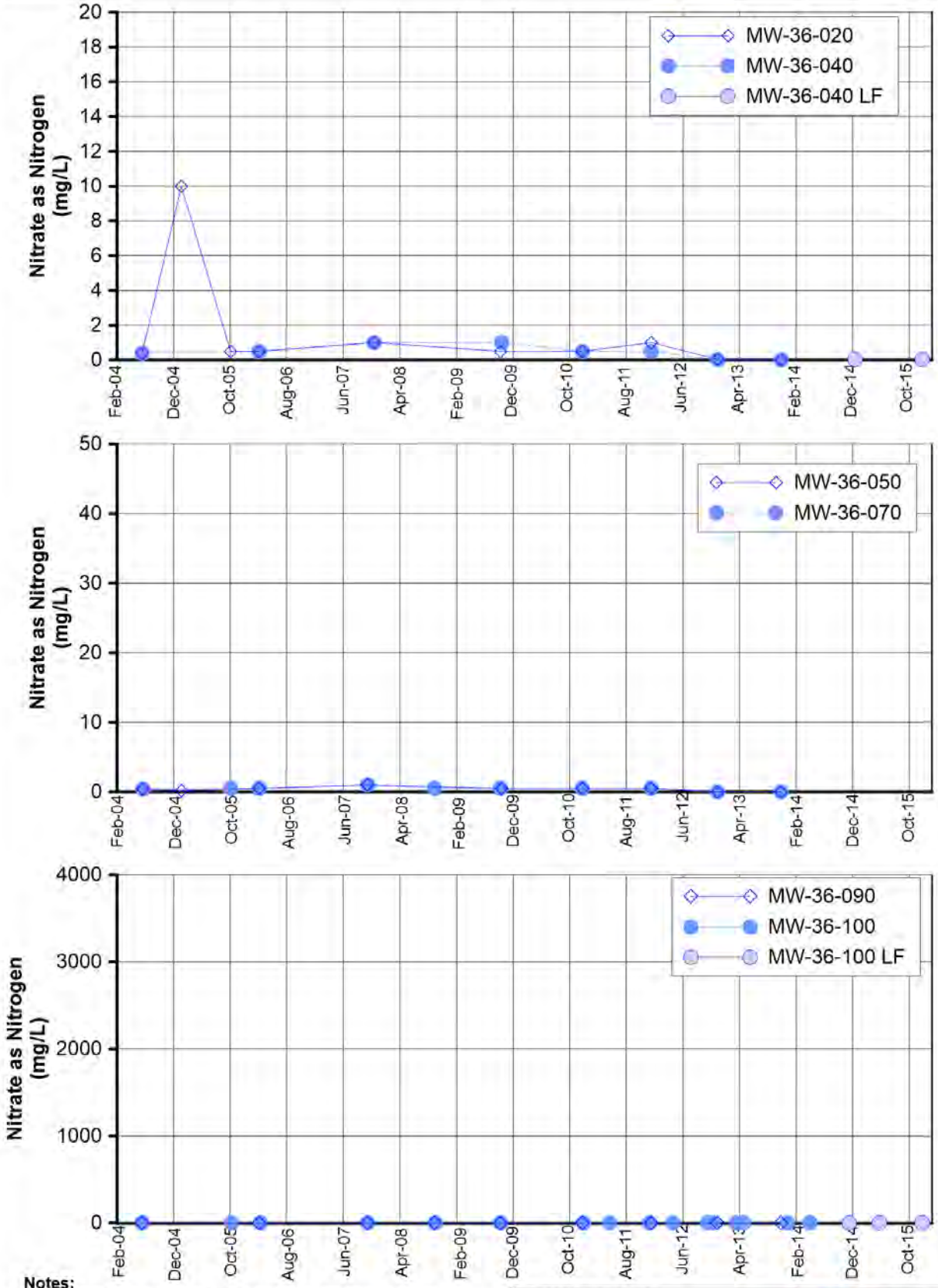


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-43
NITRATE as NITROGEN
IN MW-34 AND MW-35 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



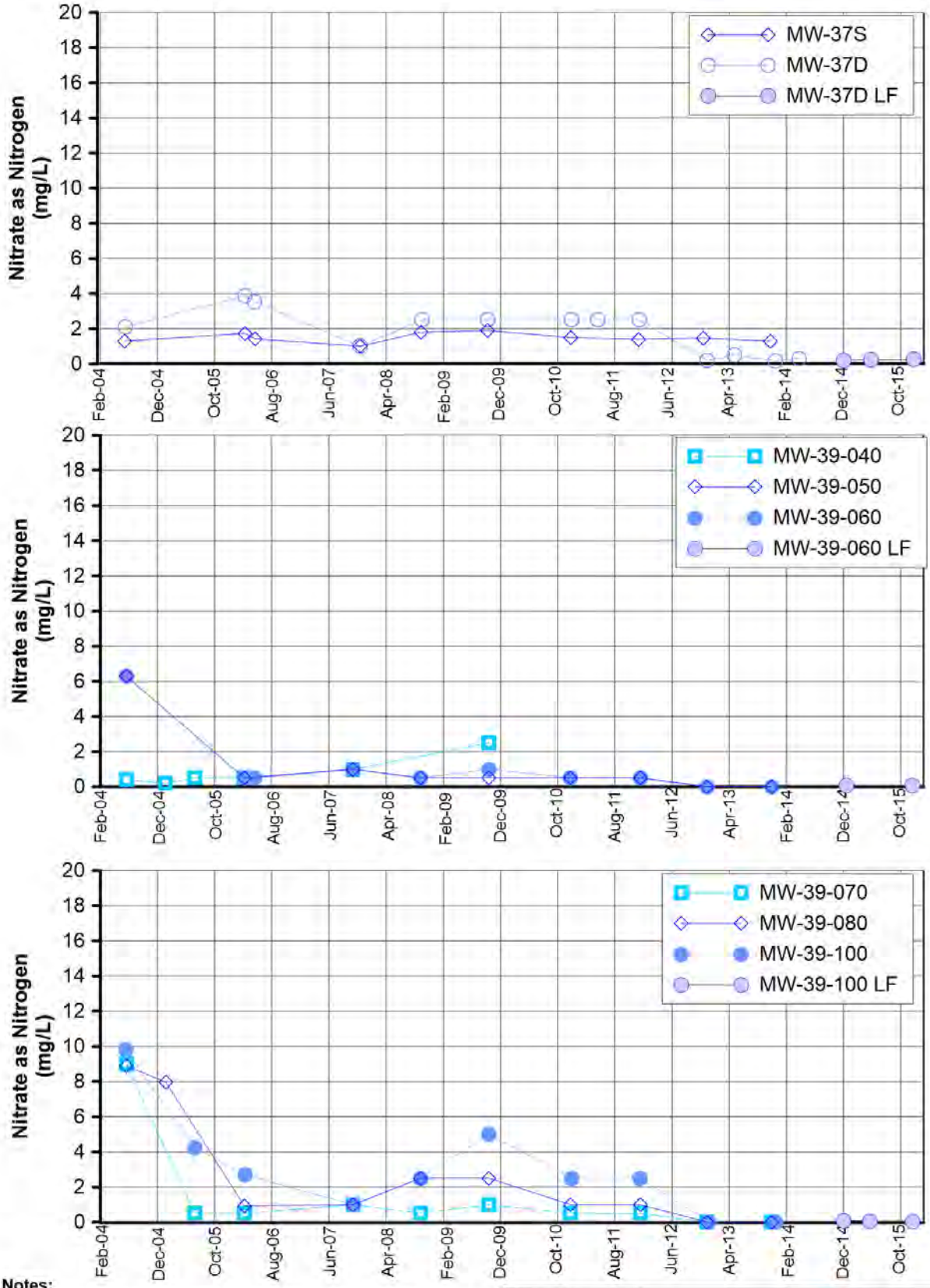
Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-44
NITRATE as NITROGEN
IN MW-36 CLUSTER

ARCADIS

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

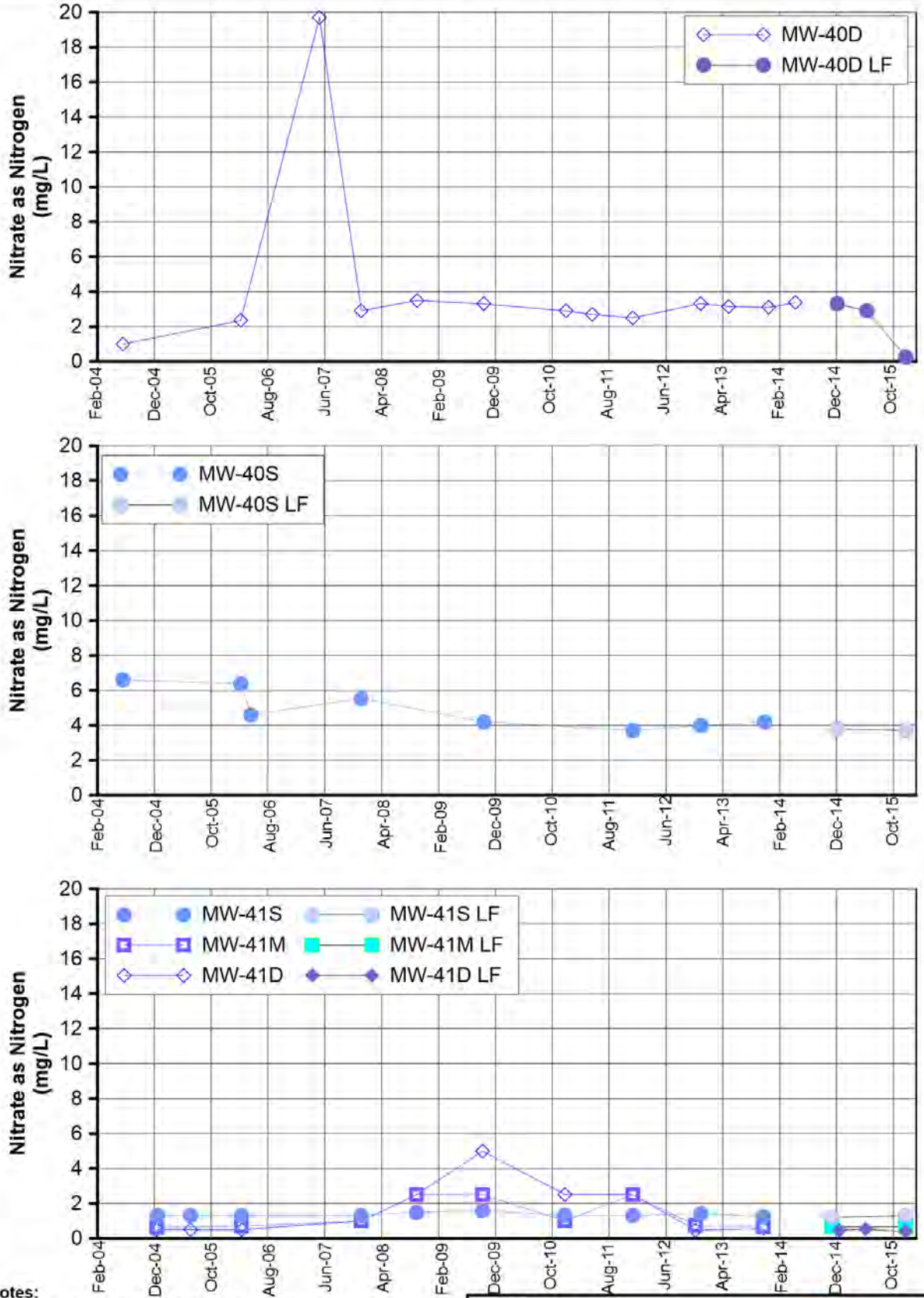


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-45
NITRATE as NITROGEN
IN MW-37 AND MW-39 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

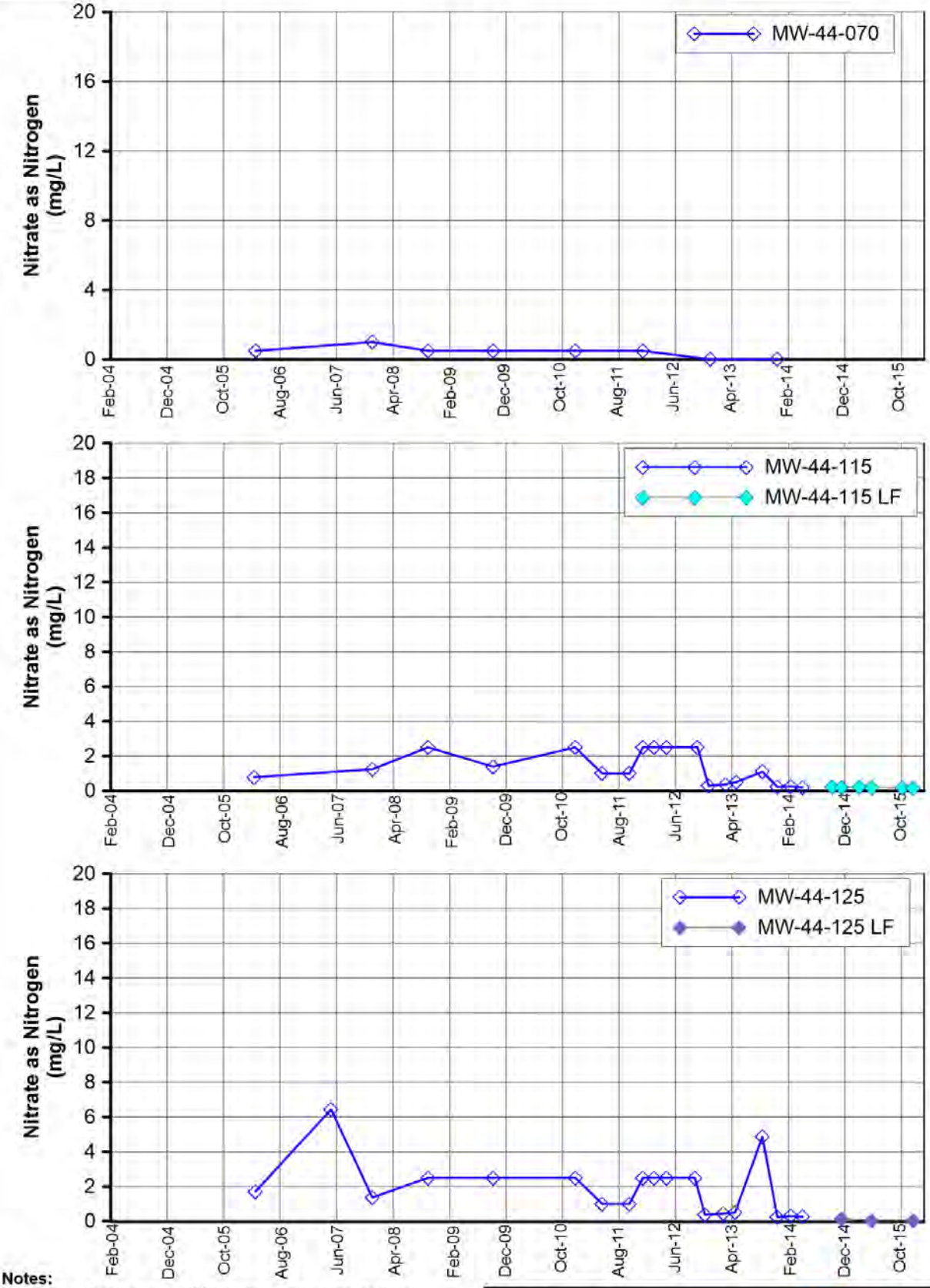


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-46
NITRATE as NITROGEN
IN MW-40 AND MW-41 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

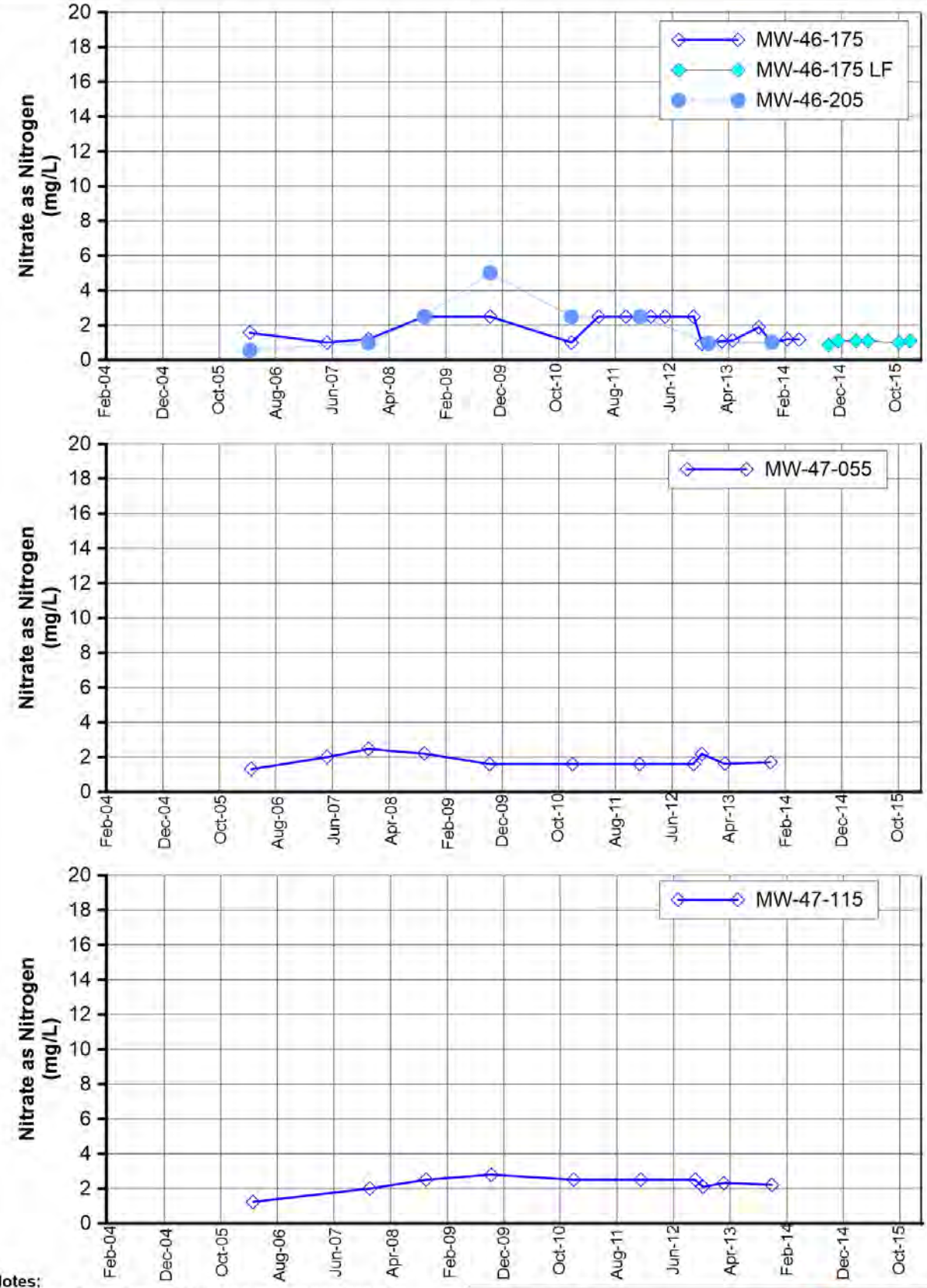


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-47
NITRATE as NITROGEN IN MW-44 CLUSTER
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

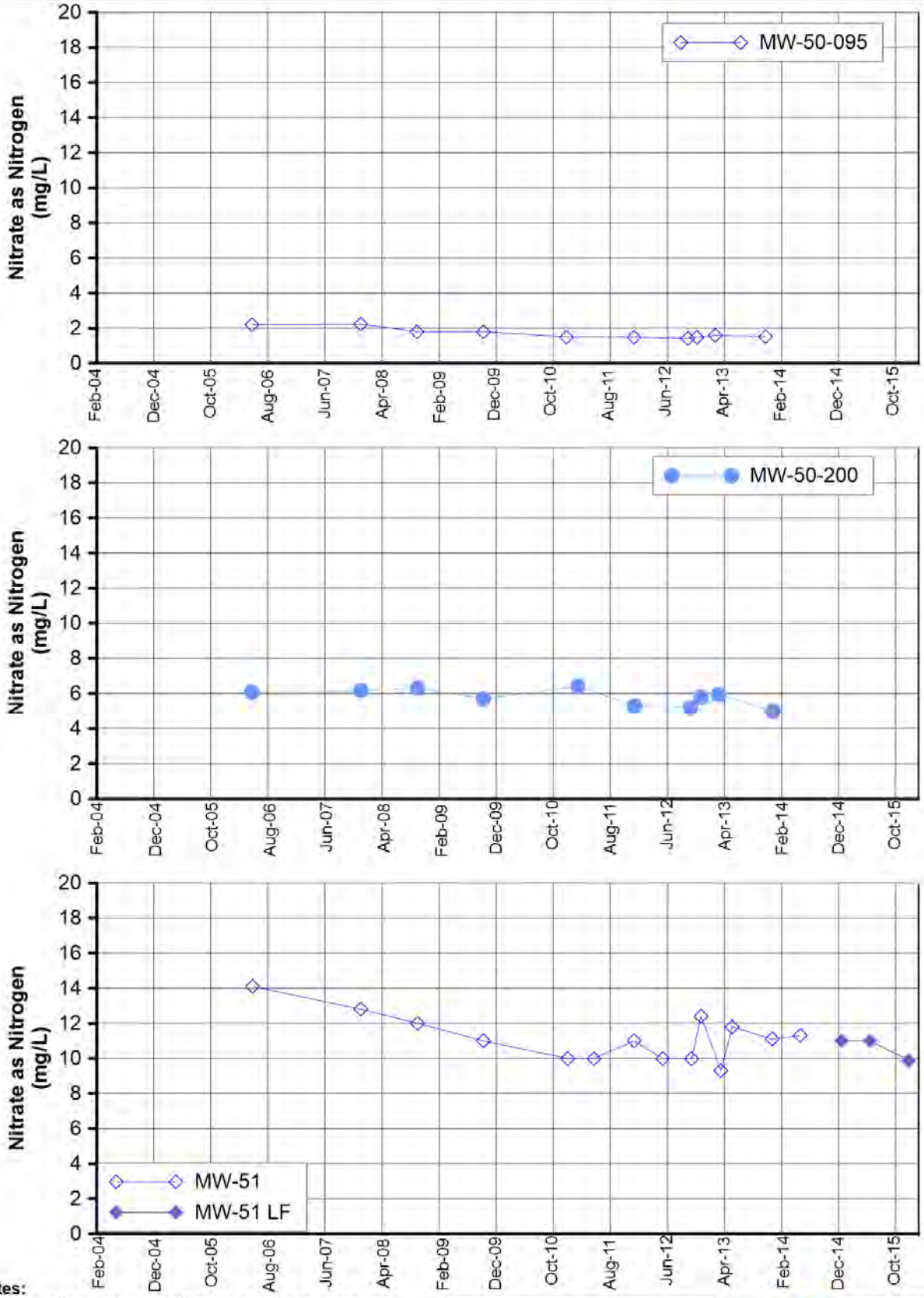


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-48
NITRATE as NITROGEN
IN MW-46 AND MW-47 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

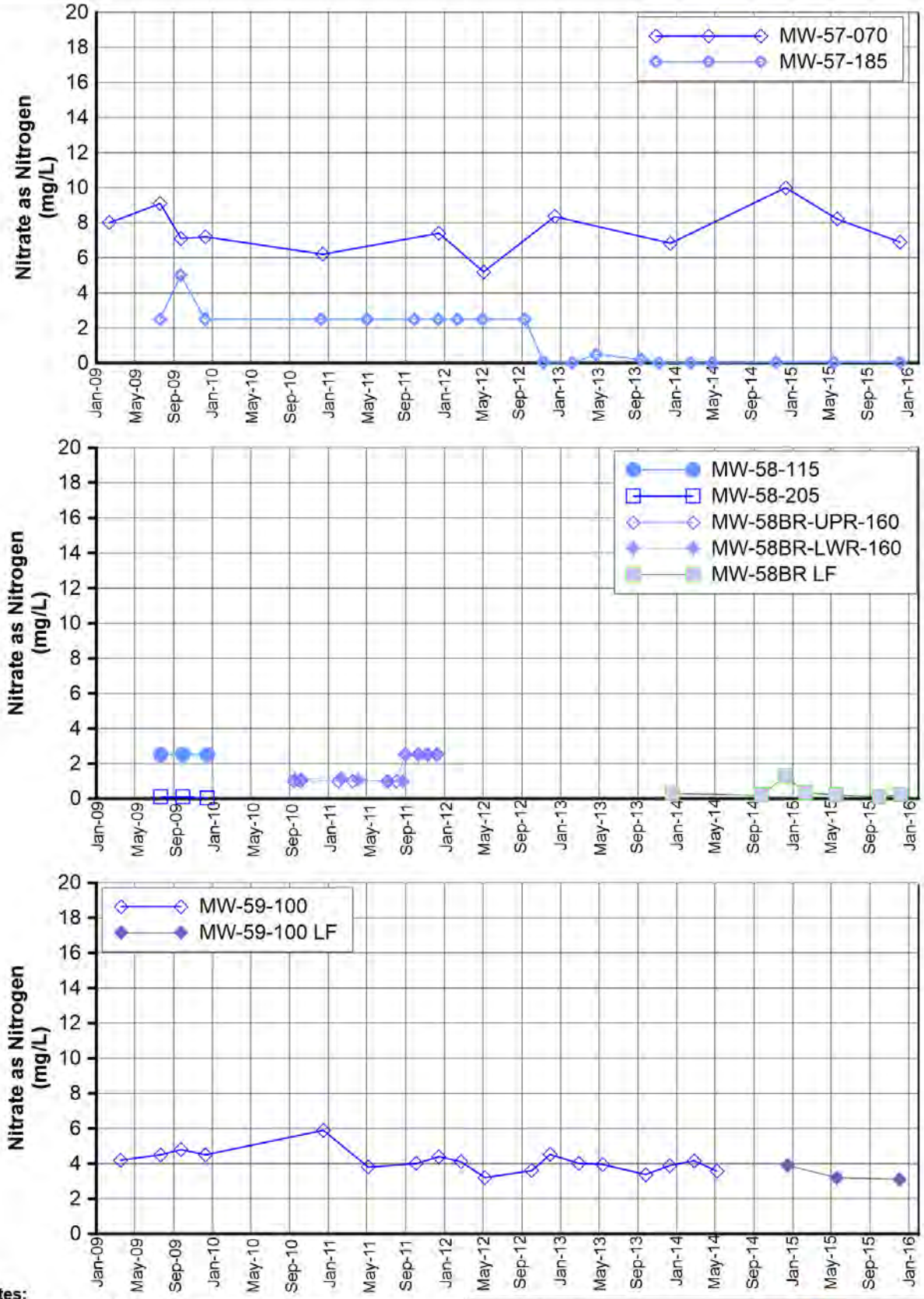


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-49
NITRATE as NITROGEN
IN MW-50 AND MW-51 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

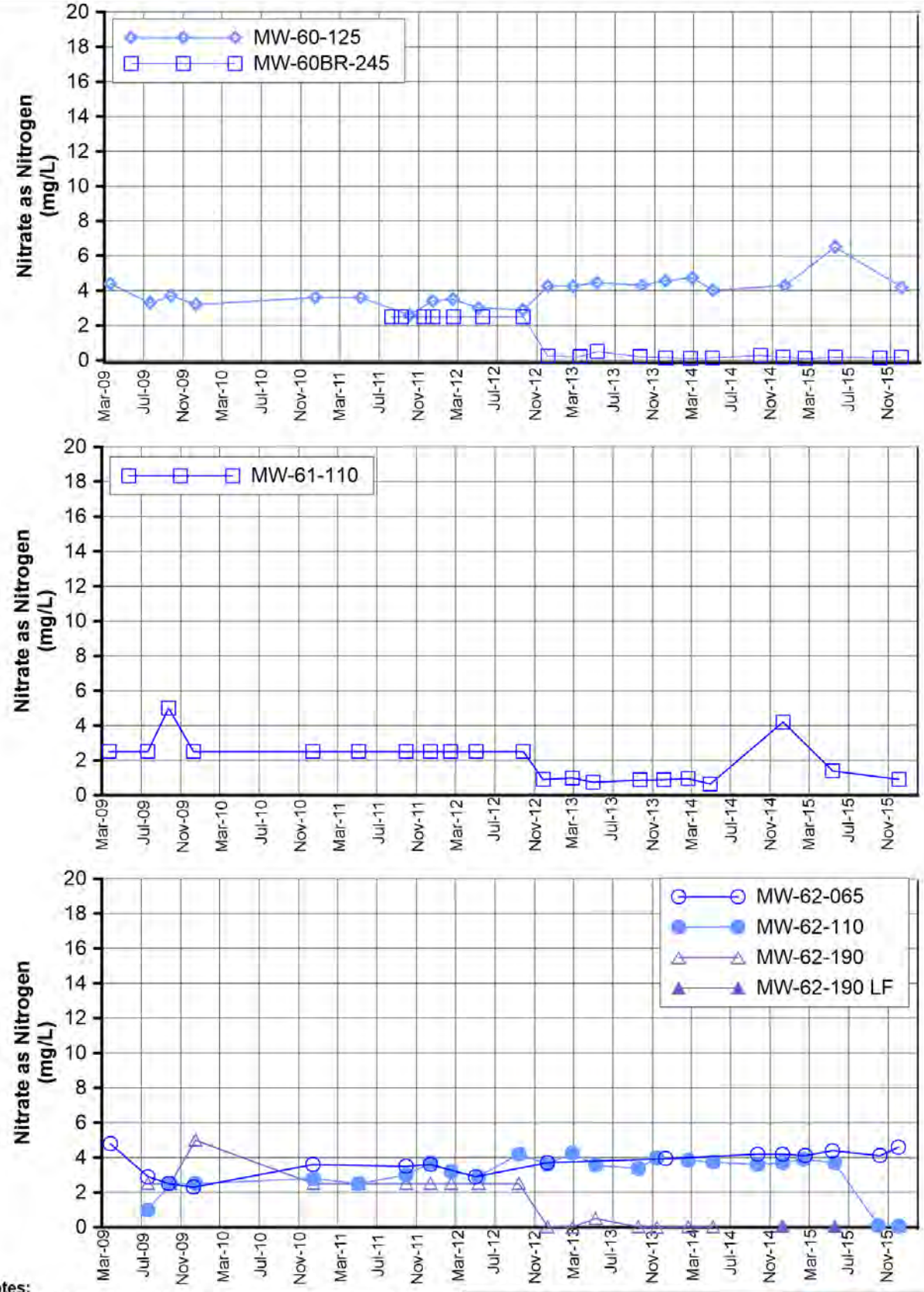


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-50
NITRATE as NITROGEN
IN MW-57 CLUSTER, MW-58 CLUSTER AND MW-59-100
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

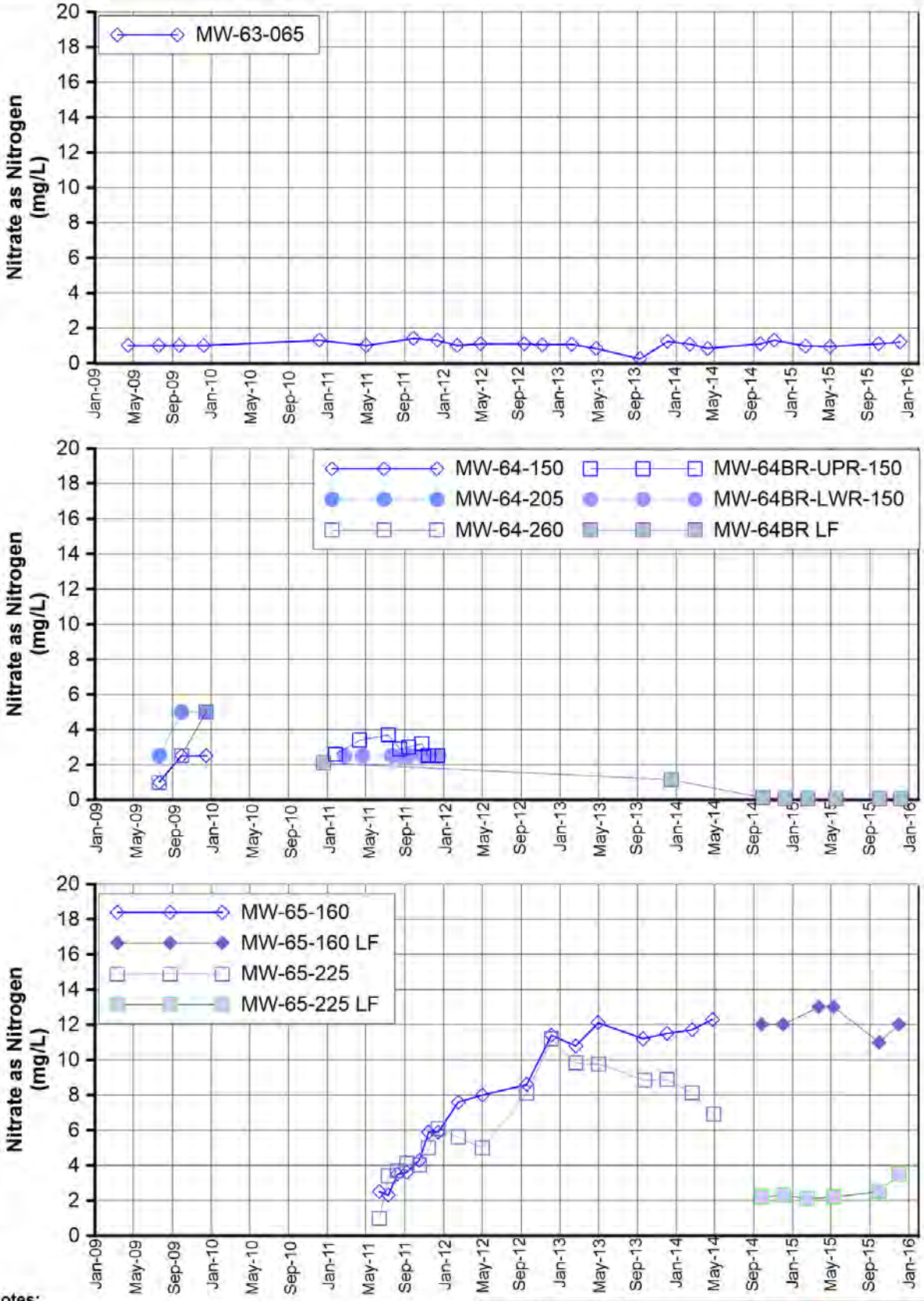


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-51
NITRATE as NITROGEN
IN MW-60 CLUSTER, MW-61-110, AND MW-62 CLUSTER
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

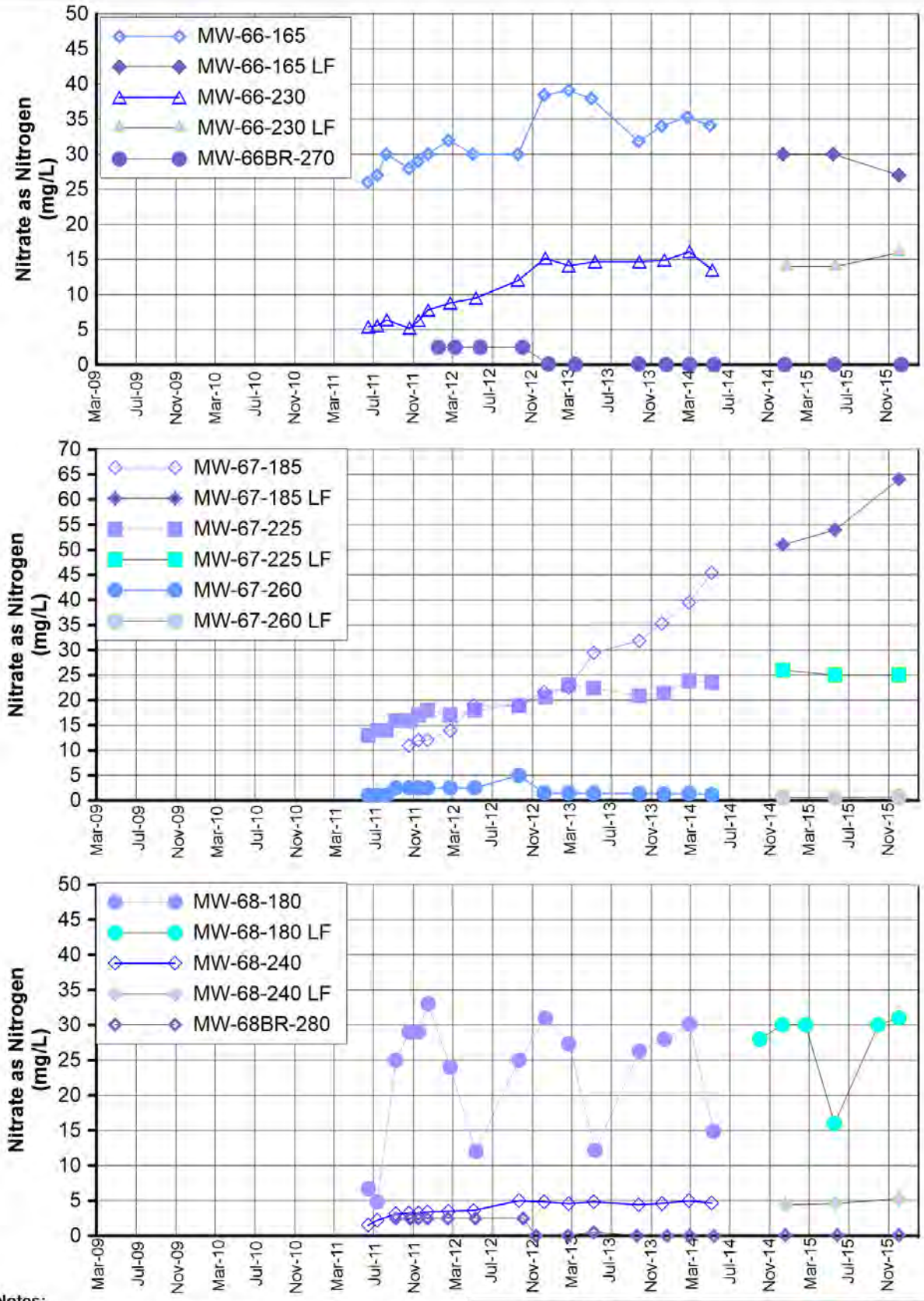


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-52
NITRATE as NITROGEN
IN MW-63-065, MW-64 CLUSTER AND MW-65 CLUSTER
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

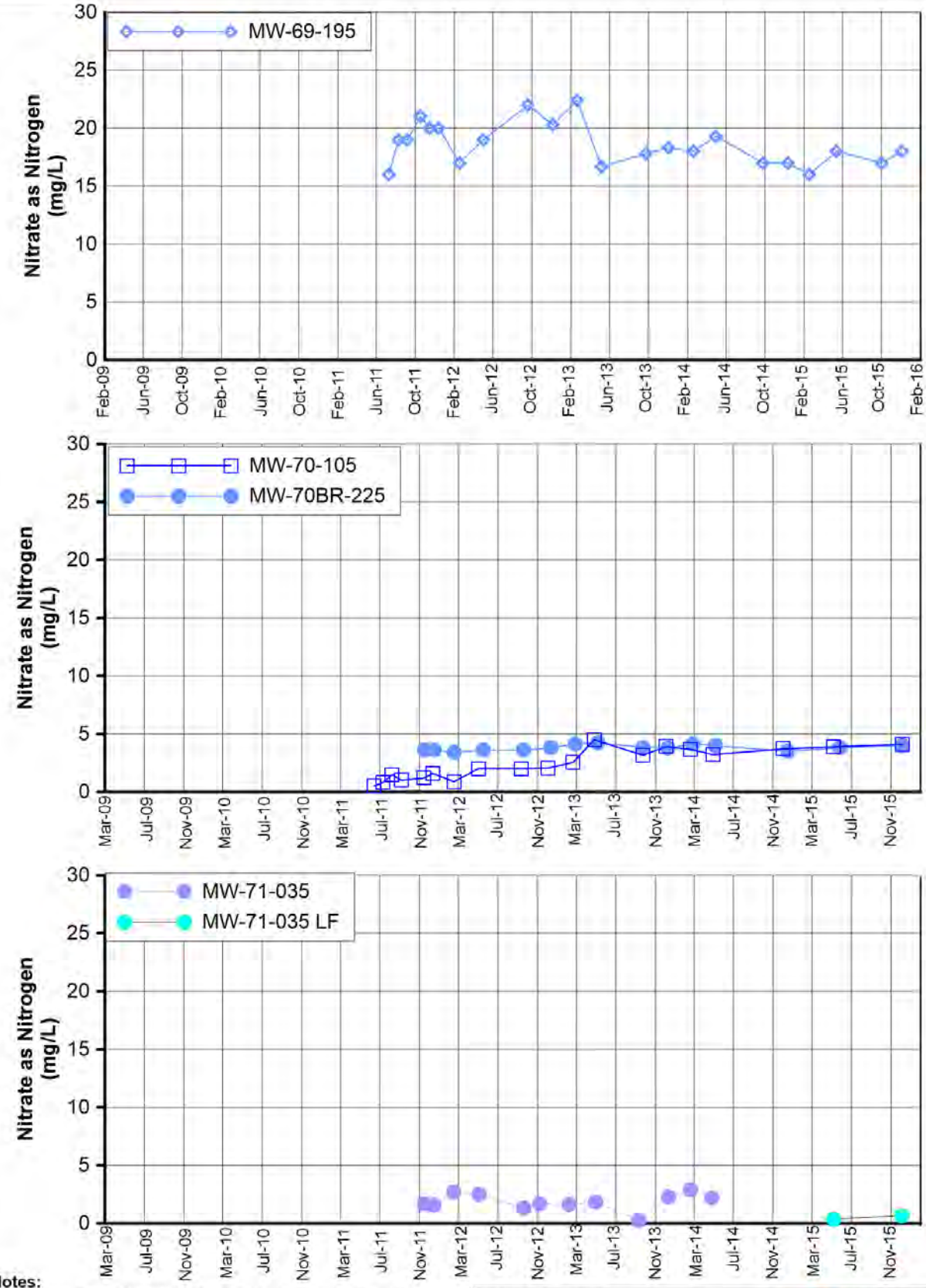


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-53
NITRATE as NITROGEN
IN MW-66, MW-67, AND MW-68 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

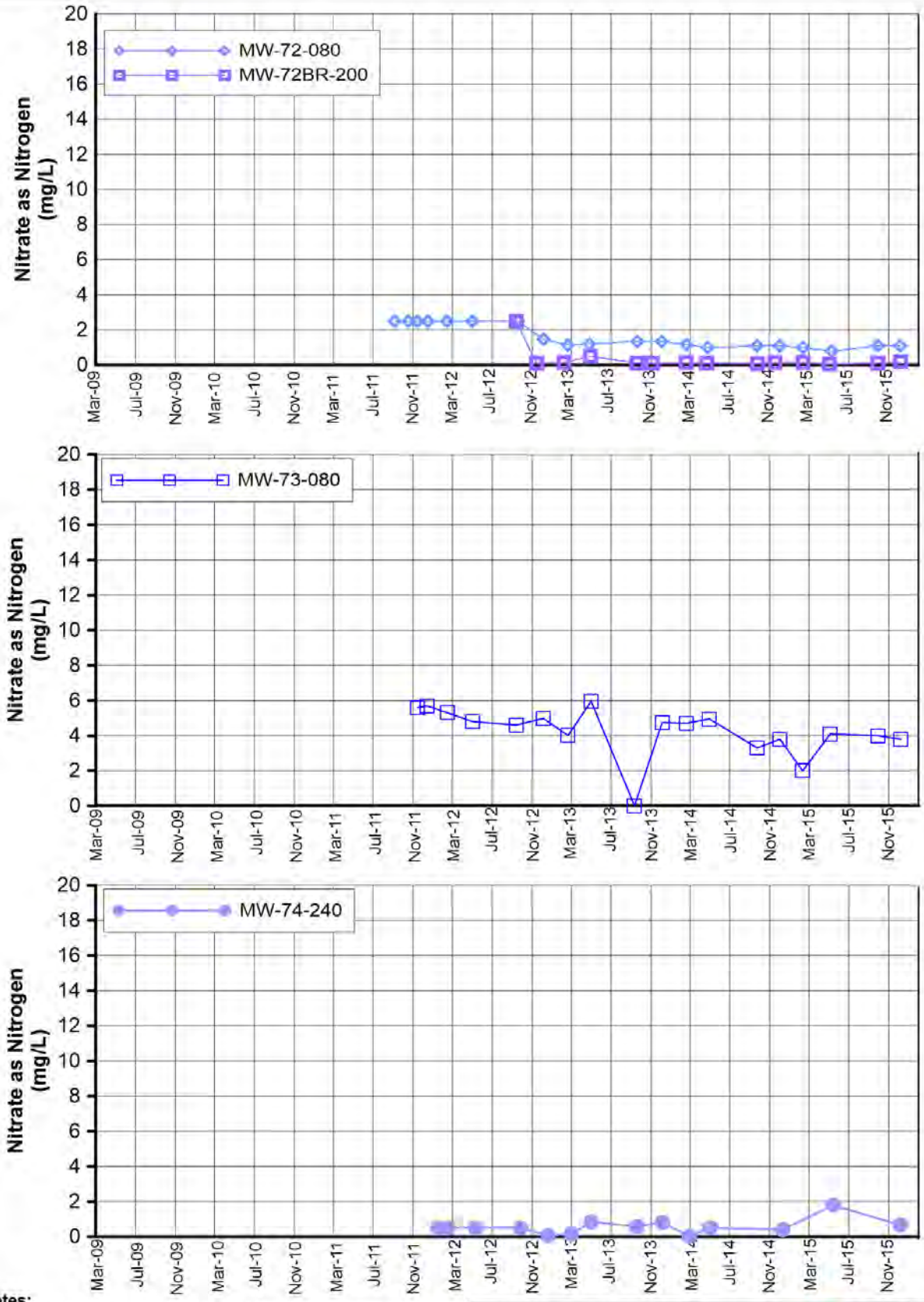


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-54
NITRATE as NITROGEN
IN MW-69-195, THE MW-70 CLUSTER, AND MW-71-035
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

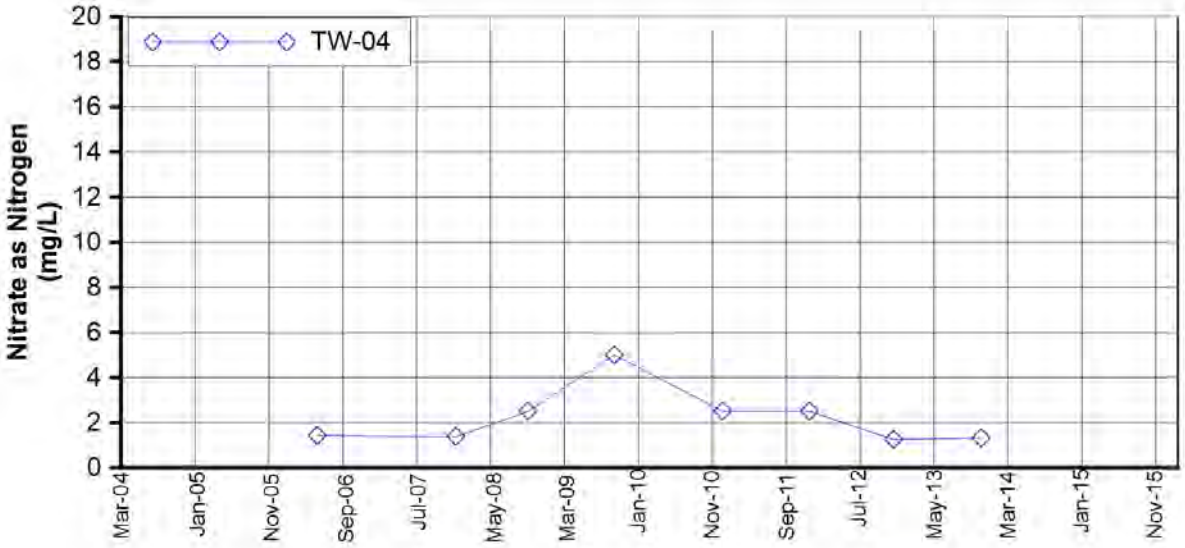


Notes:

1. Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.
2. 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 C-55
NITRATE as NITROGEN
IN MW-72 CLUSTER, MW-73-080, AND MW-74-240
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

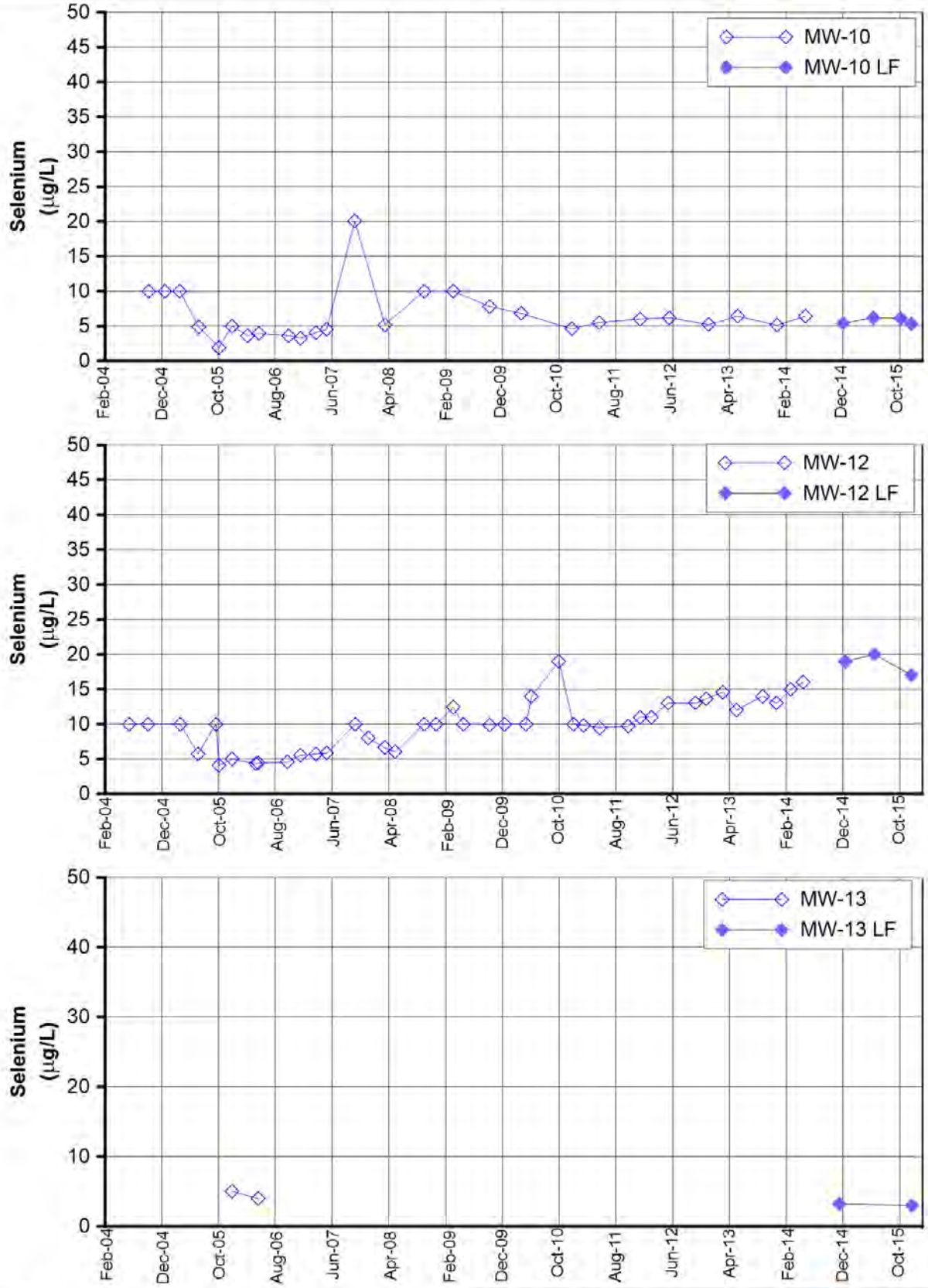
ARCADIS



Notes:
Starting in Fourth Quarter 2012 nitrate samples were analyzed using method USEPA 353.2, which reports a combination of nitrate and nitrite. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for method USEPA 353.2 are expected to be essentially the same as previous samples analyzed using method USEPA 300.0 and reported as nitrate as nitrogen.

FIGURE C-56
NITRATE as NITROGEN IN TW-04
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

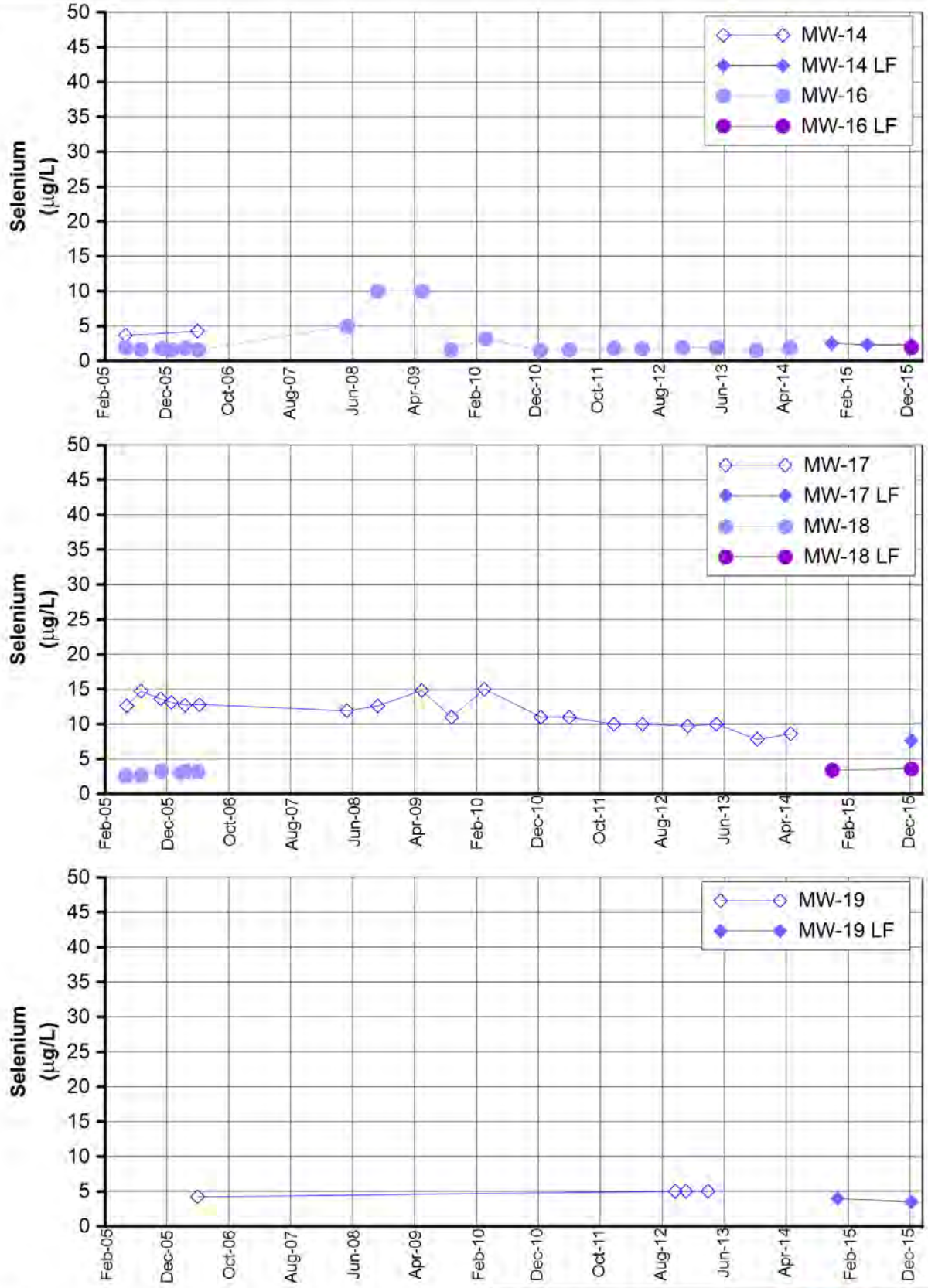


Notes:

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 C-57
SELENIUM
IN MW-10, MW-12, AND MW-13
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

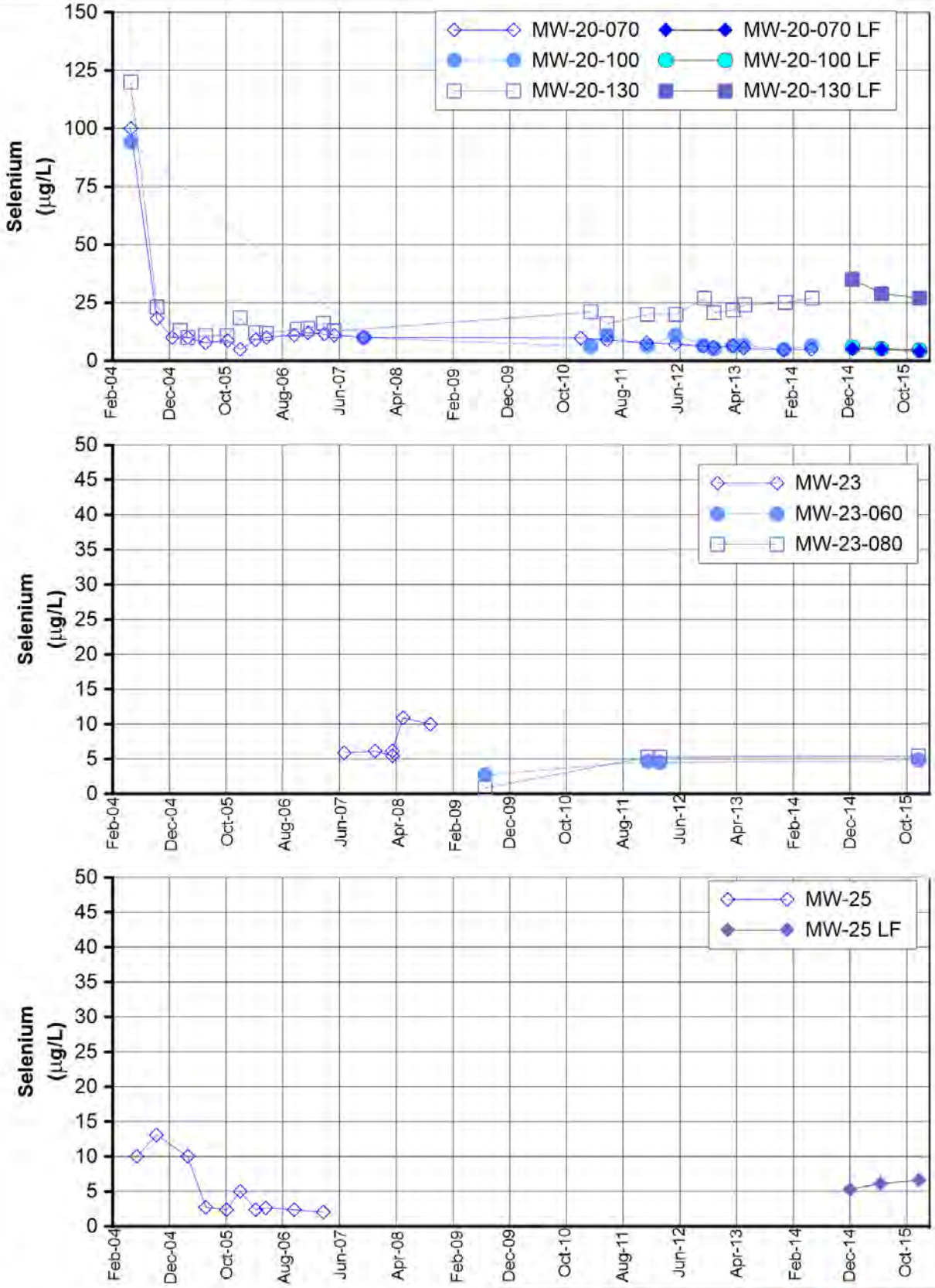


Notes:

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 C-58
SELENIUM
IN MW-14, MW-16, MW-17, MW-18, AND MW-19
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

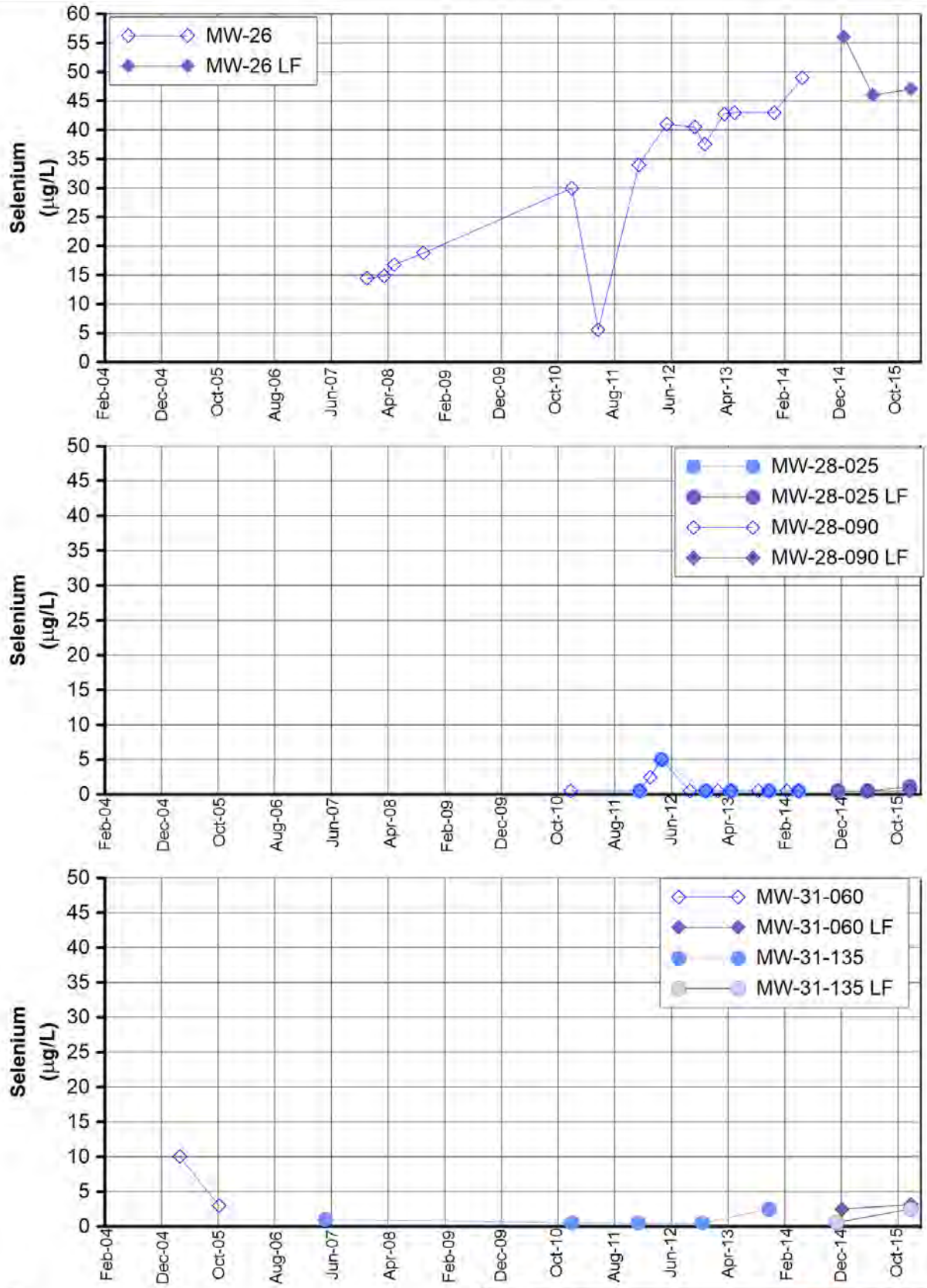


Notes:

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 C-59
SELENIUM
IN MW-20 AND MW-23 CLUSTERS AND MW-25
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

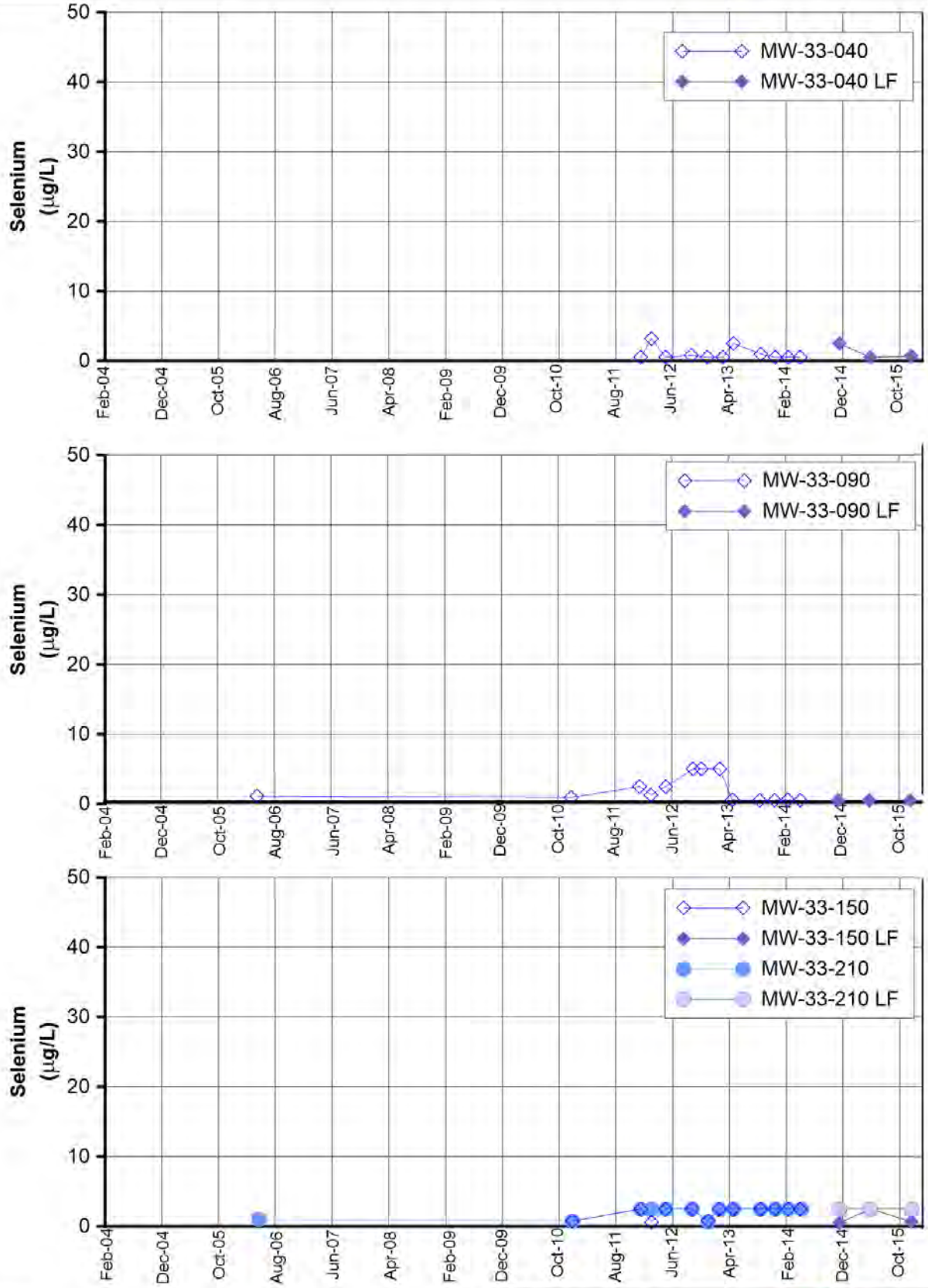


Notes:

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 C-60
SELENIUM
IN MW-26, MW-28, AND MW-31 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



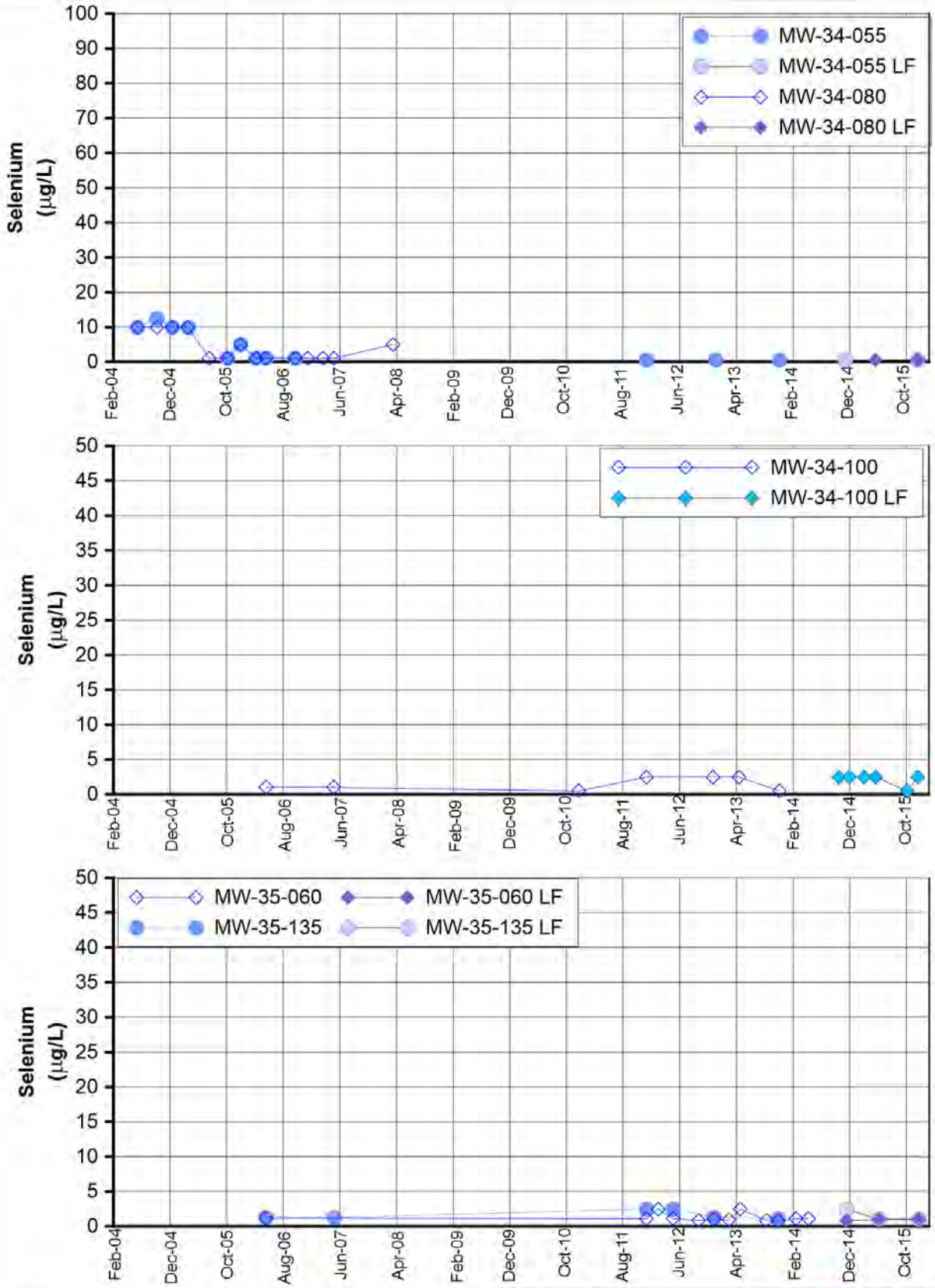
Notes:

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 C-61
SELENIUM
IN MW-33 CLUSTER

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

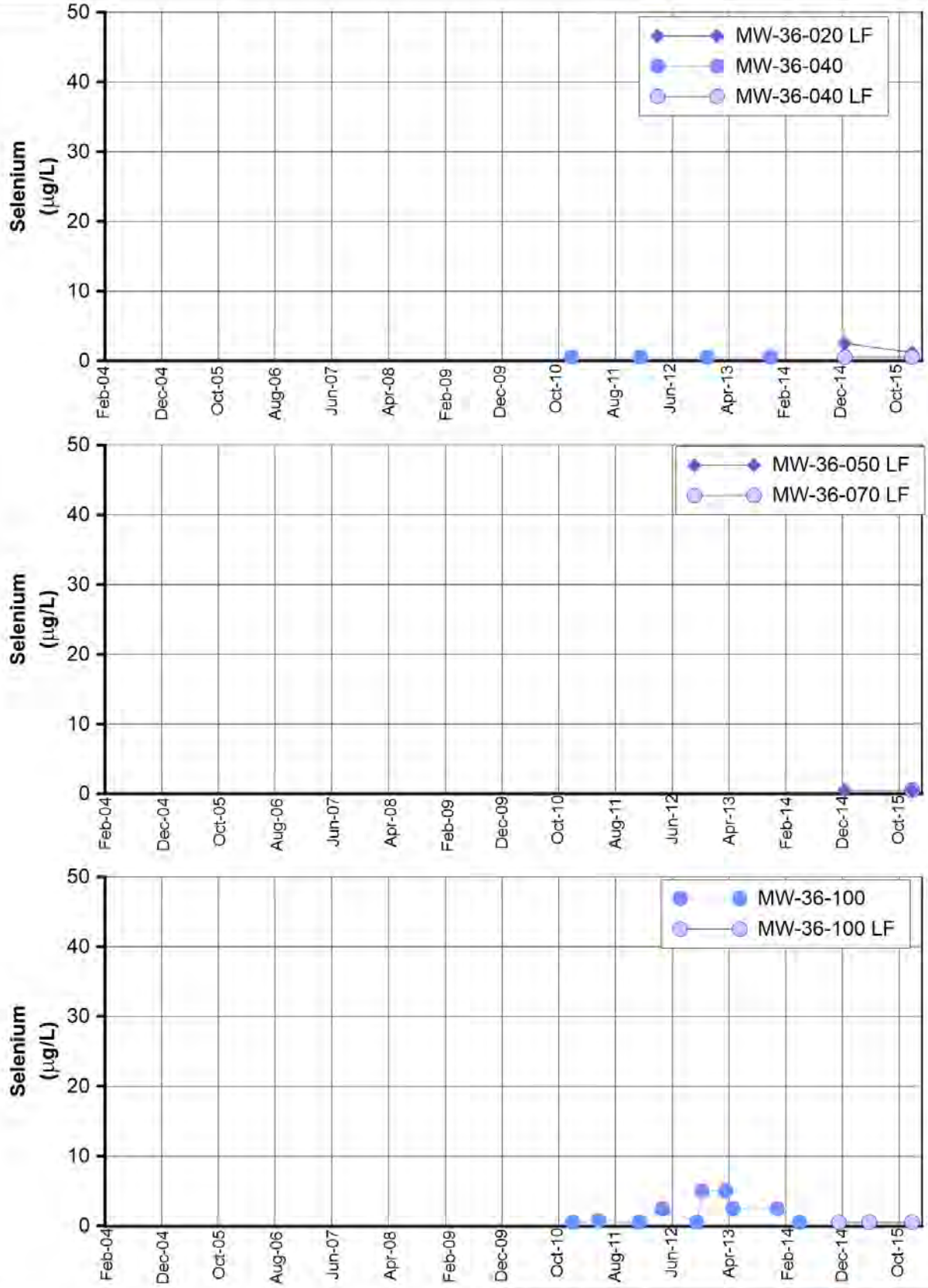


Notes:

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 C-62
SELENIUM
IN MW-34 AND MW-35 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



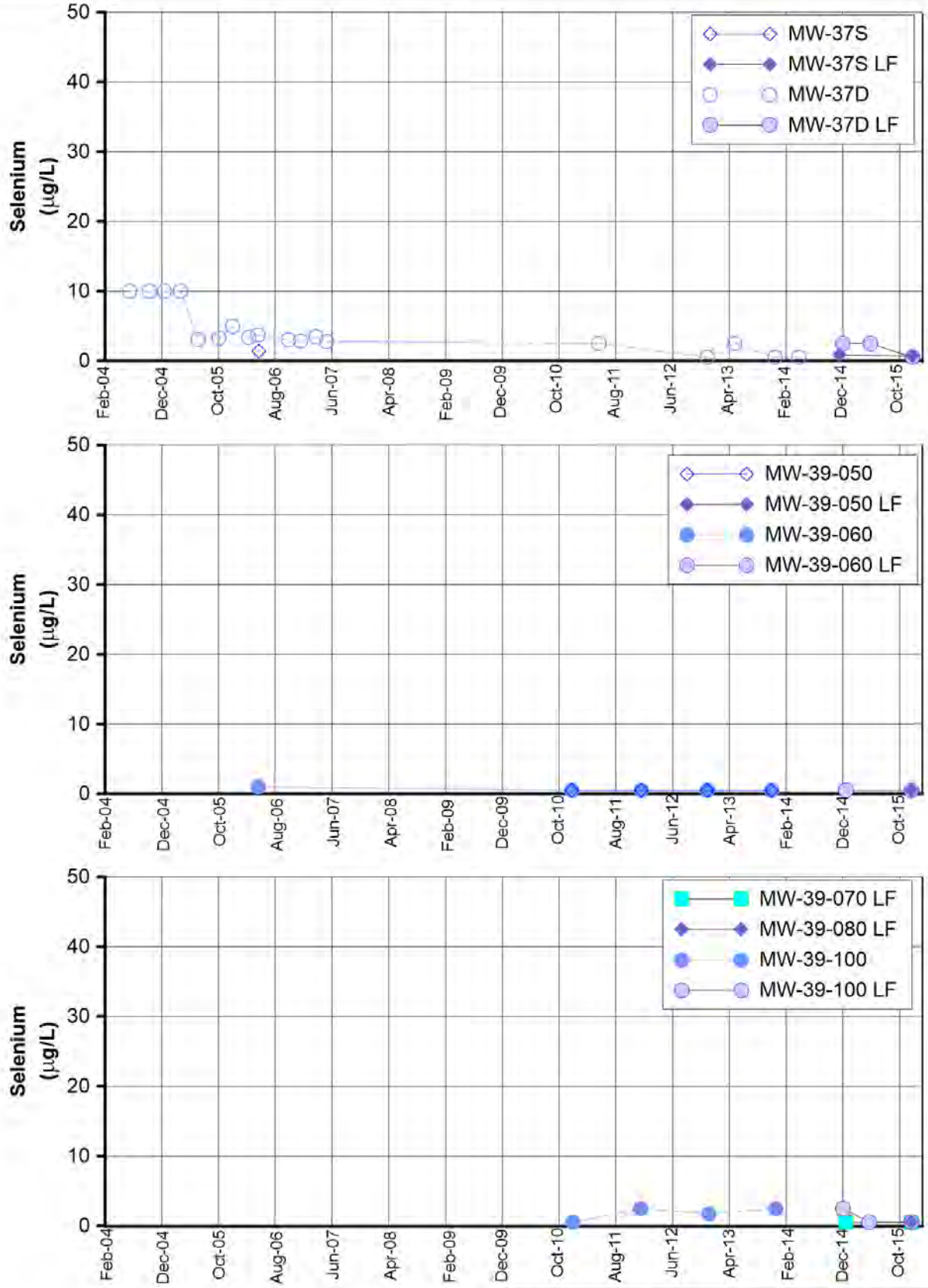
Notes:

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 C-63
SELENIUM
IN MW-36 CLUSTER

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

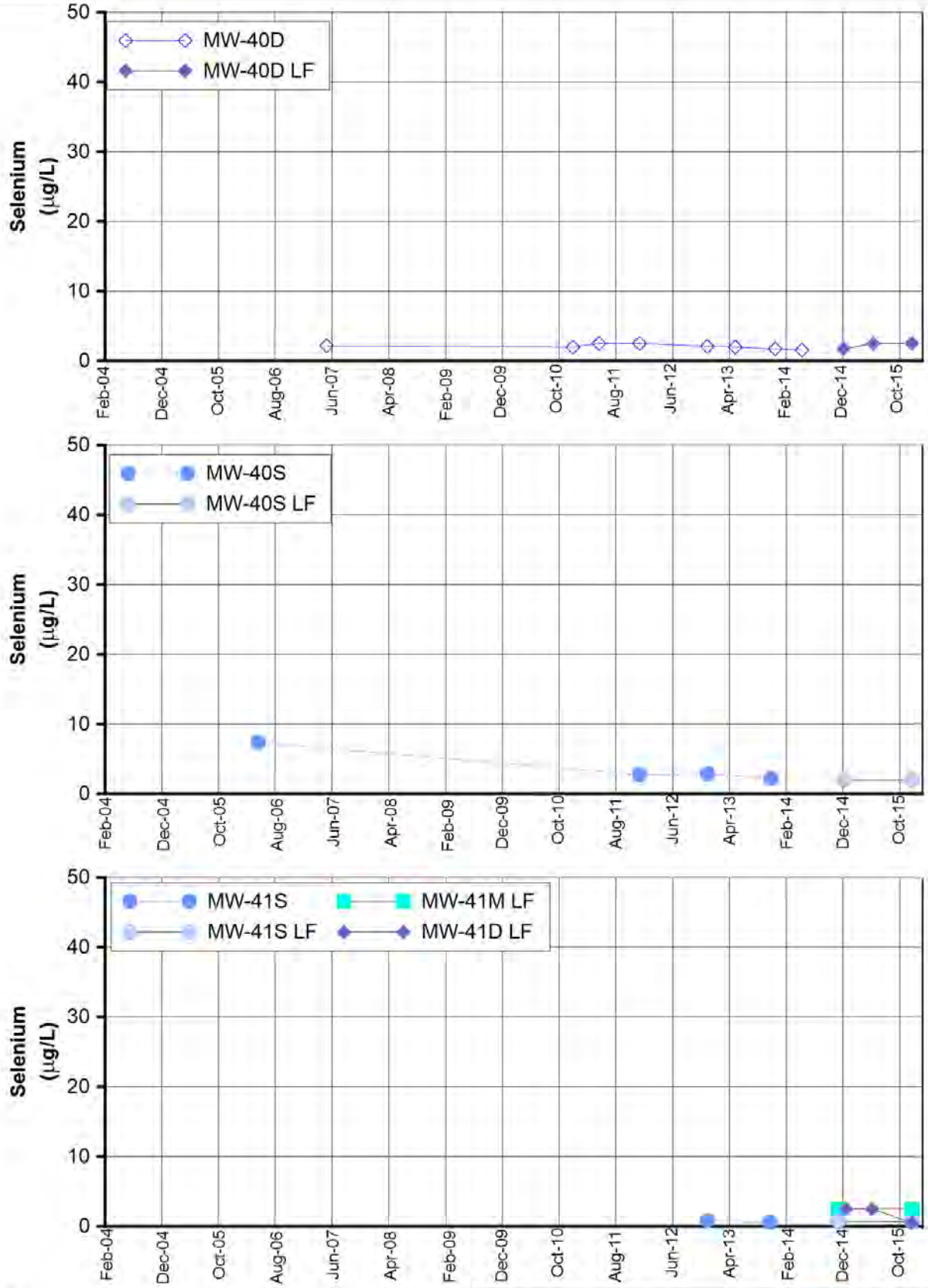


Notes:

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 C-64
SELENIUM
IN MW-37 AND MW-39 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

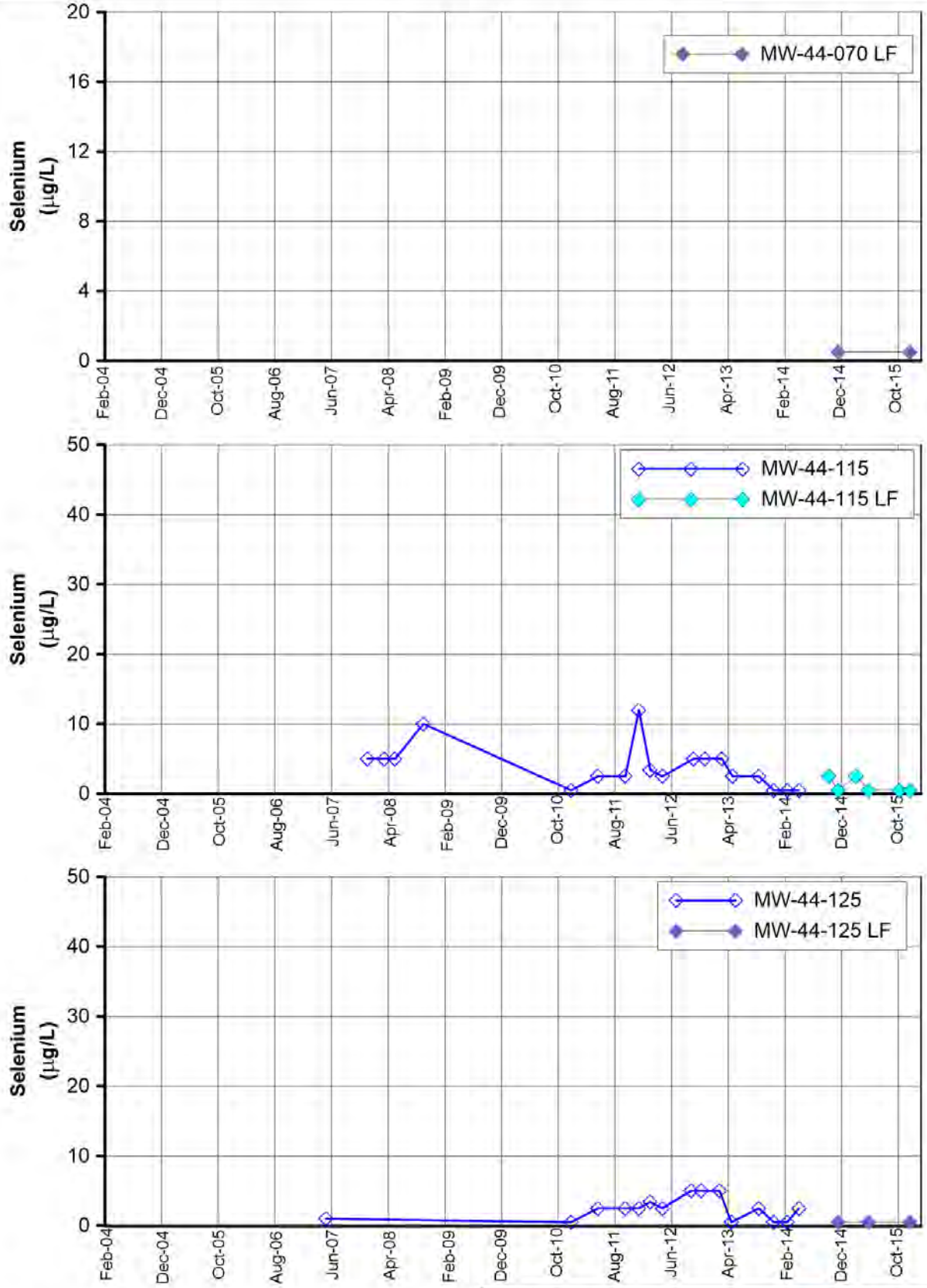


Notes:

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 C-65
SELENIUM
IN MW-40 AND MW-41 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



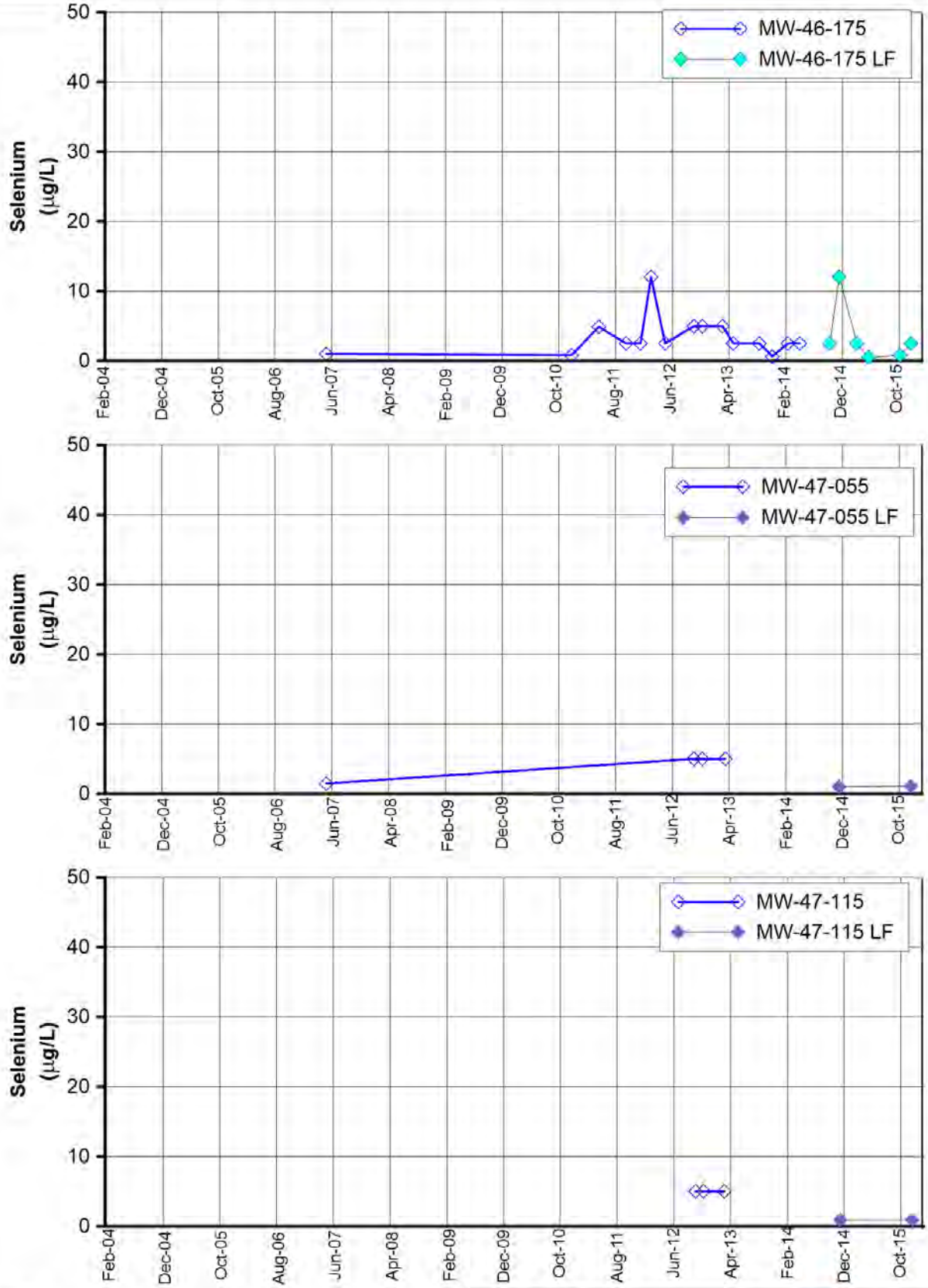
Notes:

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 C-66
SELENIUM
IN MW-44 CLUSTER

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

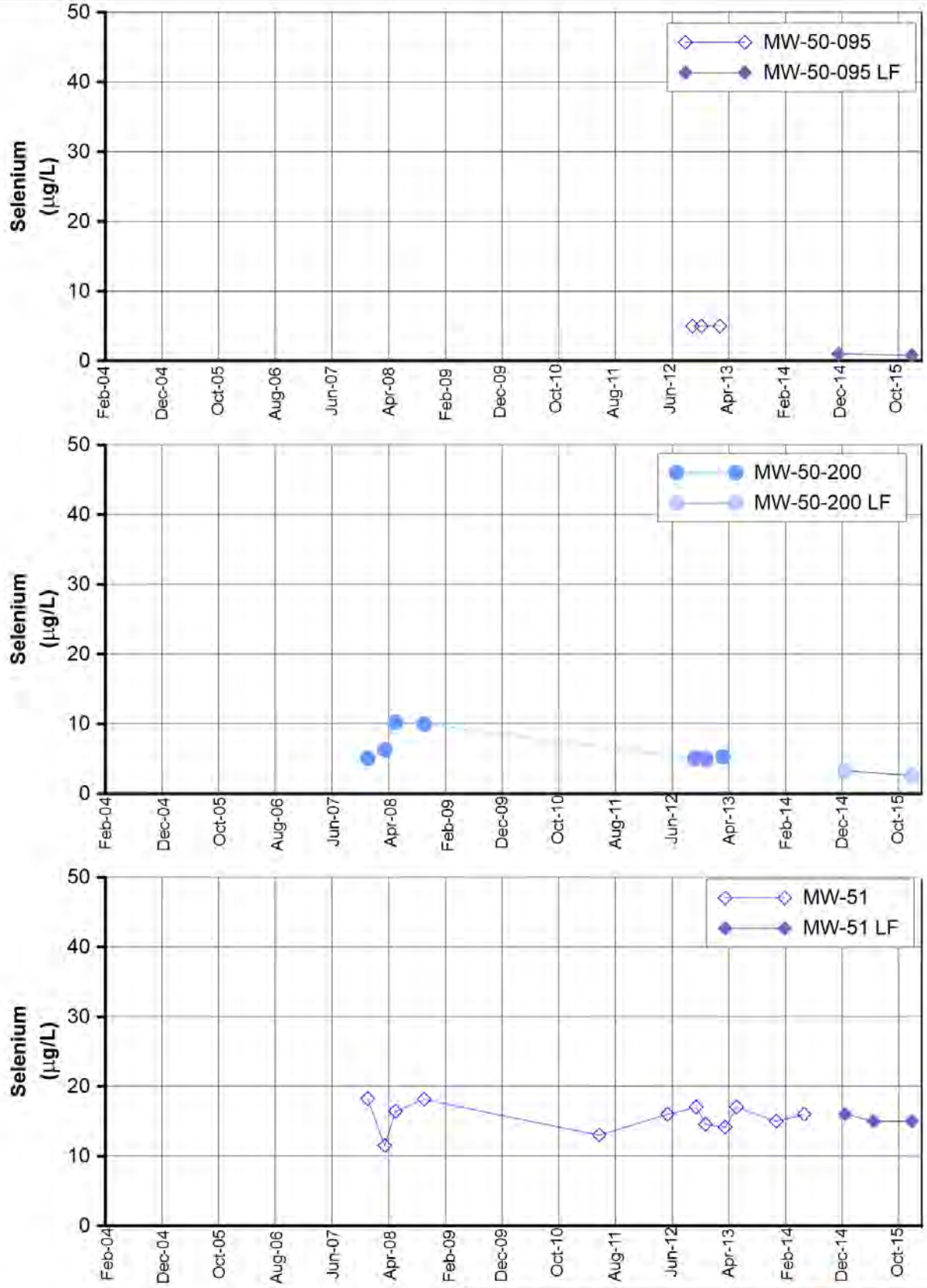


Notes:

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 C-67
SELENIUM
IN MW-46 AND MW-47 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

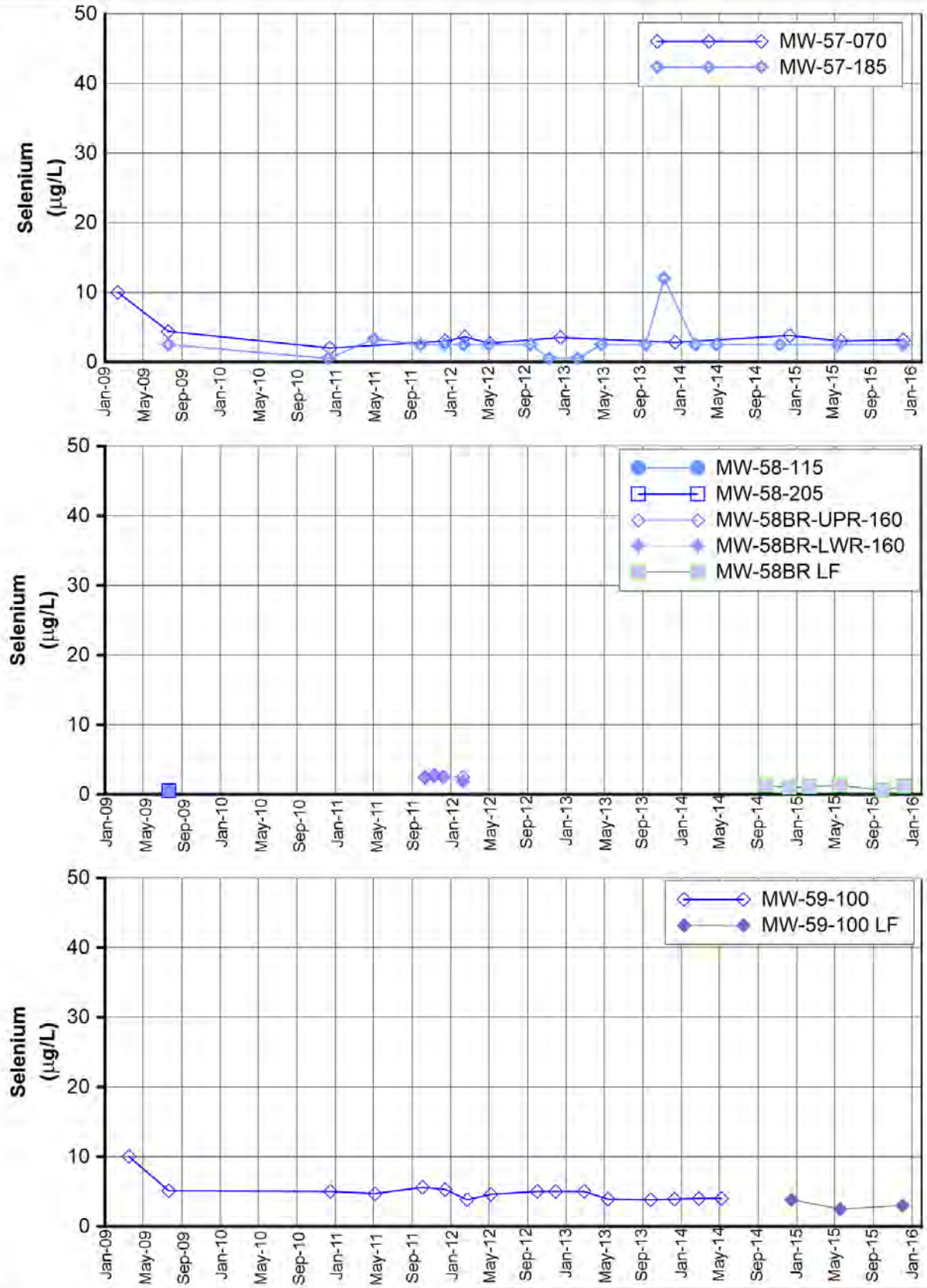


Notes:

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 C-68
SELENIUM
IN MW-50 AND MW-51 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

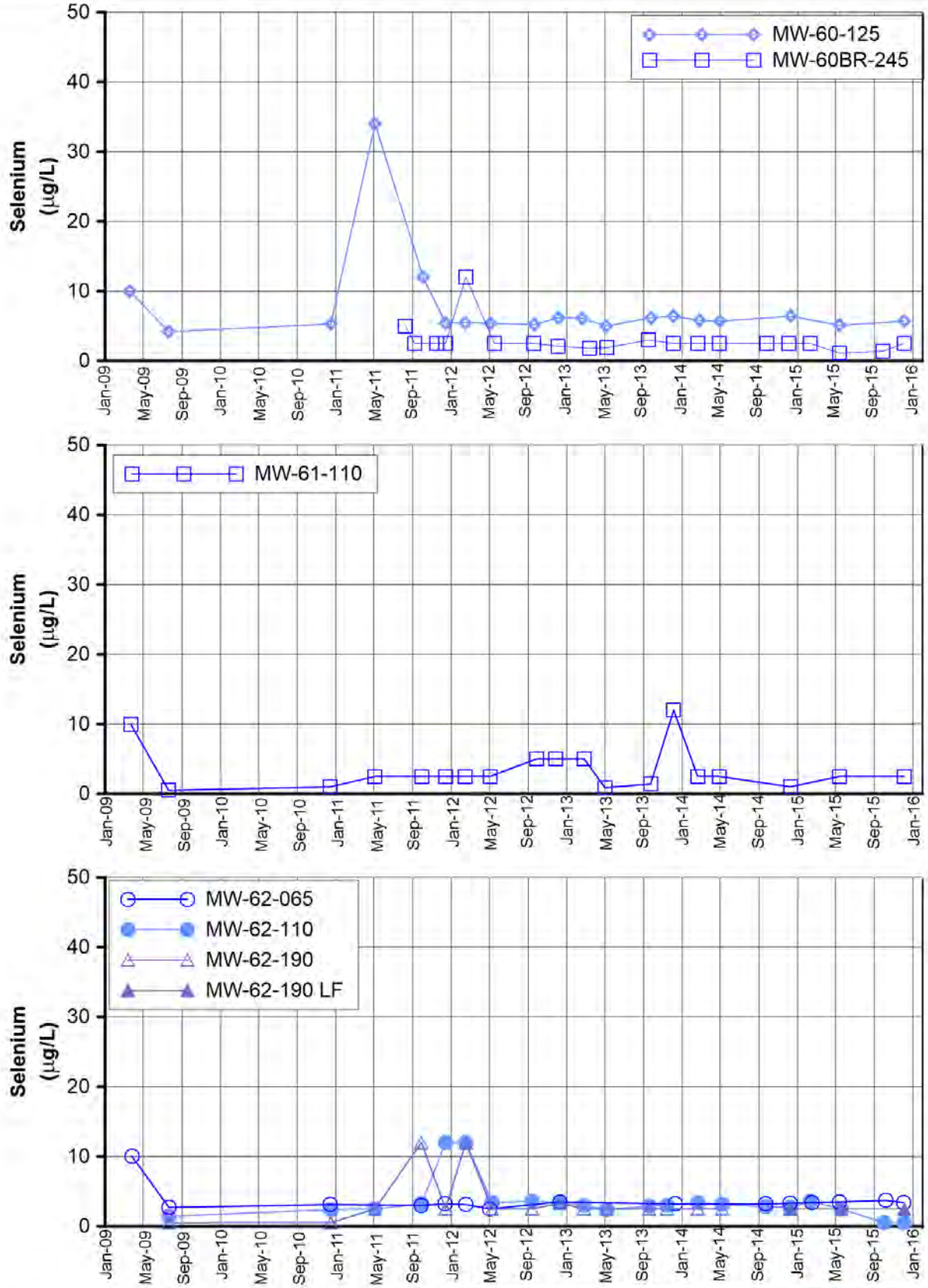


Note:

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 C-69
SELENIUM
IN MW-57 CLUSTER, MW-58 CLUSTER AND MW-59-100
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

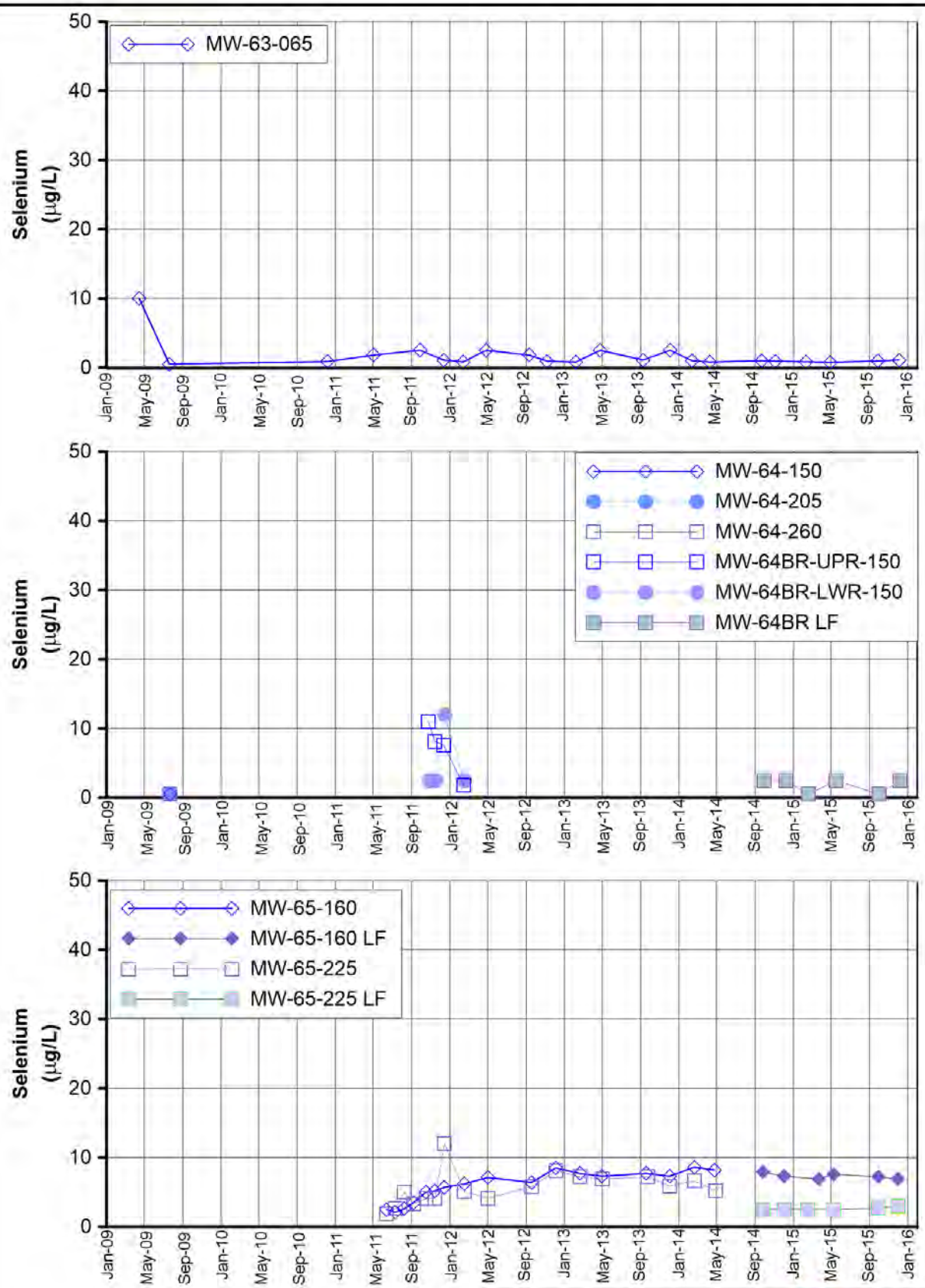


Notes:

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 C-70
SELENIUM
IN MW-60 CLUSTER, MW-61-110, AND MW-62 CLUSTER
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

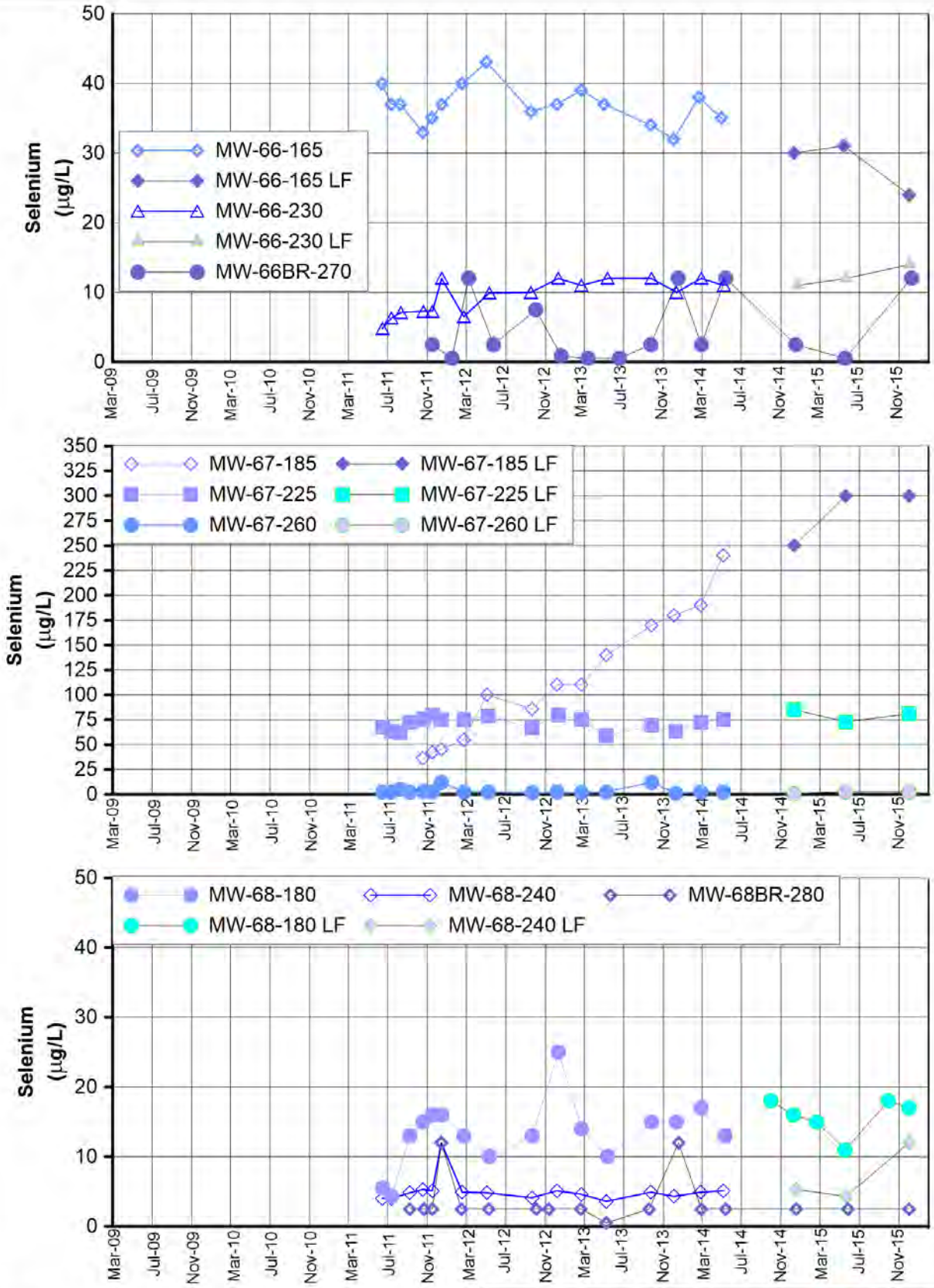


Notes:

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 C-71
SELENIUM
IN MW-63-065, MW-64 CLUSTER AND MW-65 CLUSTER
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

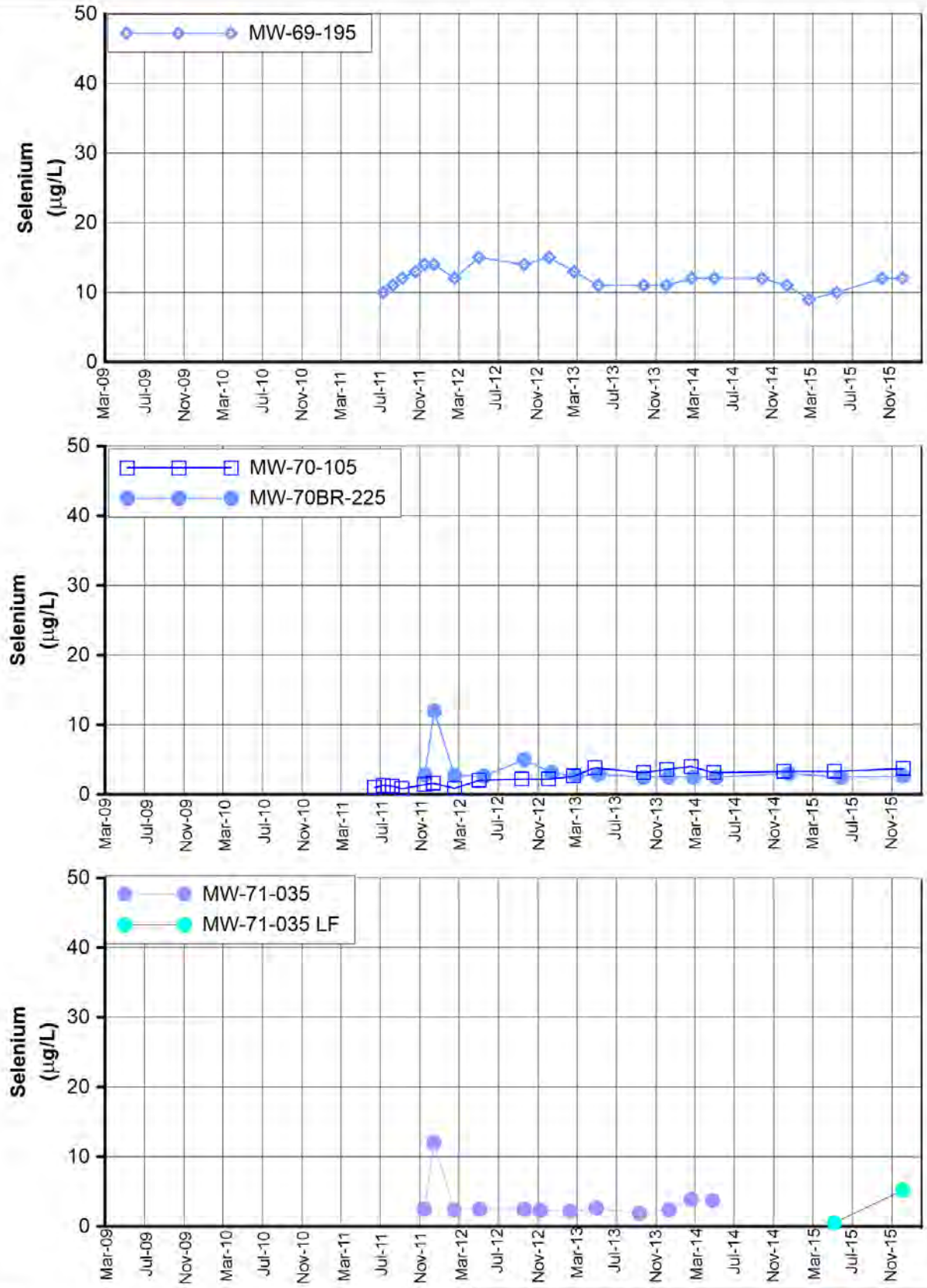


Notes:

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 C-72
SELENIUM
IN MW-66, MW-67, AND MW-68 CLUSTERS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS



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 C-73
SELENIUM
IN MW-69-195, THE MW-70 CLUSTER, AND MW-71-035
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

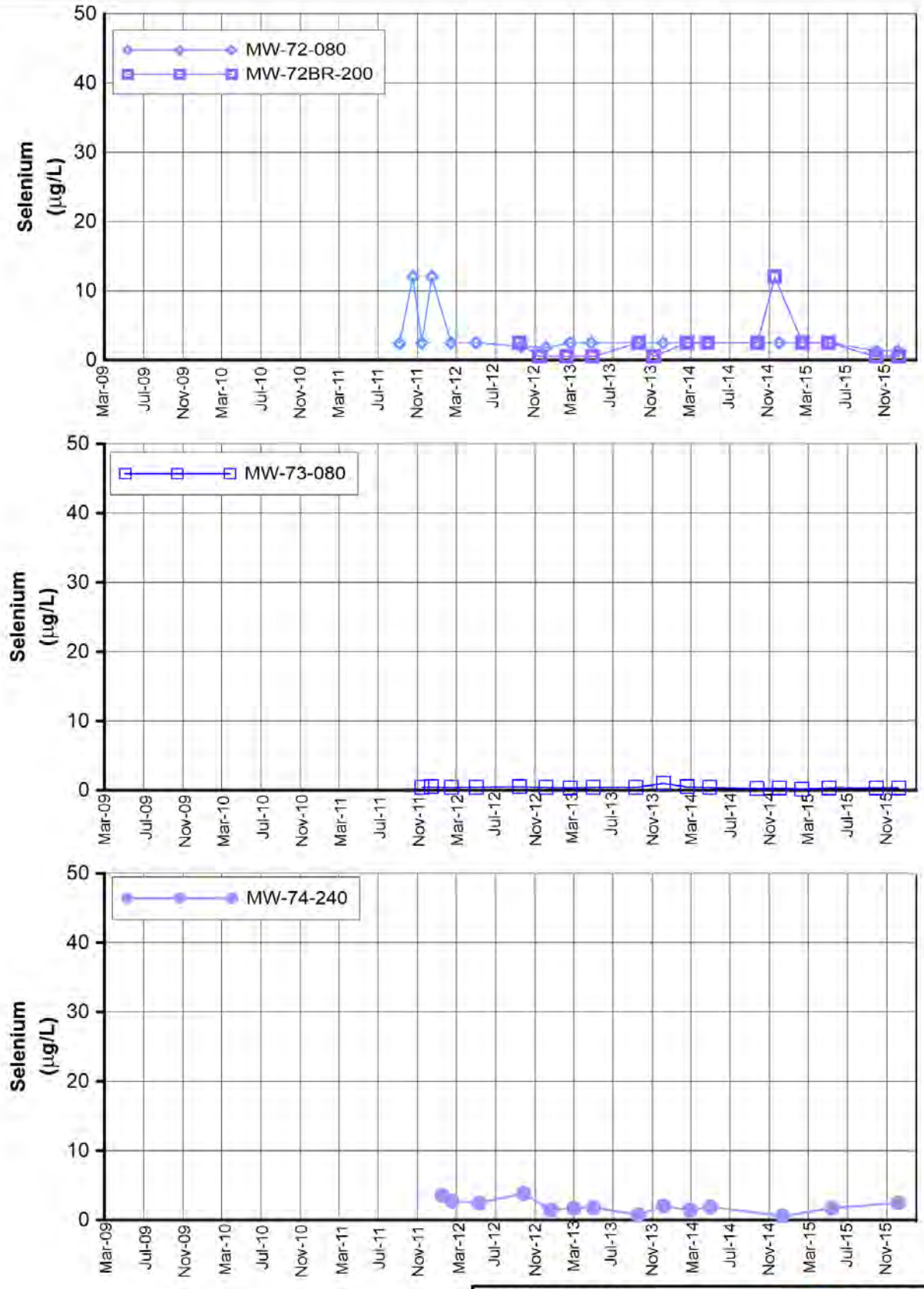


FIGURE C-74
SELENIUM
IN MW-72 CLUSTER, MW-73-080, AND MW-74-240
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

ARCADIS

APPENDIX D

Other Groundwater Monitoring Results

Table D-1

In Situ Byproducts and Geochemical Indicator Parameter Analytical Results, Fourth Quarter 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date		Arsenic, Dissolved (ug/L)	Manganese, Dissolved (ug/L)	Iron, Dissolved (ug/L)	Ammonia (mg/L)	Nitrate/Nitrite as N (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	Field ORP (mV)
MW-09	10/7/2015		1.6	ND (0.5)	29 J	--	10	240	--	89
MW-09	12/1/2015		1.6	0.53	21	--	11	220	--	30.8
MW-10	10/7/2015		3.4	6.9	110	--	11	260	--	71
MW-10	12/1/2015		2.9	43	400	--	11	260	--	66.7
MW-11	10/7/2015		1.4	ND (0.5)	41	--	6	200	--	75
MW-11	12/2/2015	FD	1.5	ND (0.5)	ND (20)	--	5.9	180	--	--
MW-11	12/2/2015		1.7	ND (0.5)	ND (20)	--	6.1	190	--	76.6
MW-12	12/2/2015		36	12	280	--	15	450	--	97.8
MW-13	12/7/2015		1.9	0.74	ND (20)	--	--	140	--	62.5
MW-14	12/7/2015		0.87	ND (0.5)	24	--	4.6	100	--	30.9
MW-15	12/9/2015		--	ND (0.5)	21	--	--	130	--	69
MW-16	12/8/2015		--	0.52	22	--	--	130	--	63
MW-17	12/9/2015		--	1.1	63	--	--	360	--	153
MW-18	12/7/2015		--	ND (0.5)	ND (20)	--	--	91	--	28.6
MW-19	12/7/2015		--	ND (0.5)	23	--	--	170	--	58.8
MW-20-070	12/8/2015		--	ND (0.5)	24	--	7	220	--	62.2
MW-20-100	12/8/2015		--	ND (0.5)	39	--	7.3	240	--	52.9
MW-20-130	12/8/2015	FD	4.5	1.7	39	--	13	1,100	--	--
MW-20-130	12/8/2015		4.5	1.7	42	--	12	1,000	--	59.3
MW-21	12/9/2015		--	ND (0.5)	30	--	0.51	1,900	--	-18
MW-22	12/3/2015		15	4,700	11,000	--	--	2,100	--	-79.6
MW-23-060	12/3/2015		4.2	1.3	ND (100)	--	--	650	--	-44
MW-23-080	12/3/2015		4.1	1.2	ND (100)	--	--	910	--	-39.5
MW-24A	12/1/2015		0.15	25	--	--	ND (0.05)	--	--	-142.2
MW-24B	12/1/2015		2.8	93	--	--	0.25	--	--	-92.8
MW-24BR	12/2/2015		0.37	260	220	--	2.1	470	--	-218.7
MW-25	12/7/2015		1.2	ND (0.5)	38	--	10	150	--	85.7
MW-26	12/8/2015	FD	1.8	ND (0.5)	ND (20)	--	20	520	--	--
MW-26	12/8/2015		1.9	ND (0.5)	ND (20)	--	20	500	--	67.7
MW-27-020	12/3/2015		1.5	74	240	--	ND (0.05)	250	--	-39.6
MW-27-060	12/3/2015	FD	13	350	730	--	ND (0.05)	150	0.55	--
MW-27-060	12/3/2015		12	350	750	--	ND (0.05)	150	0.55	-133.6
MW-27-085	12/3/2015		1.4	68	120	--	ND (0.05)	910	1.8	-58
MW-28-025	12/2/2015		0.81	3.5	28	--	ND (0.05)	260	--	75.8
MW-28-090	12/2/2015		2.1	170	570	--	ND (0.05)	520	1.5	-43.6
MW-29	12/1/2015		15	340	1,700	--	ND (0.05)	210	--	-120.3
MW-30-030	12/3/2015		2.5	310	1,200	--	0.06	2,600	--	-112.3
MW-30-050	12/3/2015	FD	3	160	120	--	ND (0.05)	190	--	--
MW-30-050	12/3/2015		2.9	160	73	--	ND (0.05)	190	--	-56
MW-31-060	12/7/2015		1.2	1.9	110	--	4.7	200	--	-26.5
MW-31-135	12/7/2015		3.4	ND (0.5)	ND (20)	--	--	450	--	-187.3
MW-32-020	12/3/2015	FD	4.3	330	9,200	--	--	6,700	--	--
MW-32-020	12/3/2015		3.9	320	9,700	--	--	6,500	--	-58.6
MW-32-035	12/3/2015		17	1,100	7,300	--	0.058	1,200	--	-121.3
MW-33-040	12/1/2015		10	ND (0.5)	ND (100)	--	0.38	1,600	12	71
MW-33-090	12/1/2015		1.1	4.6	ND (20)	--	1.1	690	2.2	132.8
MW-33-150	12/1/2015		1.1	3.7	ND (100)	--	1.5	740	2.2	111
MW-33-210	12/1/2015		1	3	ND (100)	--	1.7	1,100	1	80.6
MW-34-055	12/3/2015		2.4	87	65	--	ND (0.05)	230	--	-41.9
MW-34-080	12/3/2015		1.3	25	120	--	ND (0.05)	510	--	-35.8
MW-34-100	10/6/2015		1.4	38	--	--	0.29	--	--	10.2
MW-34-100	12/3/2015	FD	1.5	14	ND (100)	--	0.73	1,000	--	--
MW-34-100	12/3/2015		1.4	14	ND (100)	--	0.74	980	--	-90.9
MW-35-060	12/7/2015		1	4.3	230	--	2.1	320	--	49
MW-35-135	12/7/2015		0.87	ND (0.5)	ND (20)	--	2.7	700	--	57
MW-36-020	12/8/2015		1.8	450	1,900	--	--	2,500	--	-139.6
MW-36-040	12/8/2015		4.6	120	430	--	ND (0.05)	140	--	-146.7
MW-36-050	12/8/2015		3.8	250	120	--	--	190	--	-80.6
MW-36-070	12/8/2015		2.9	120	37	--	--	190	--	11.6
MW-36-090	12/8/2015		21	7.4	ND (20)	--	--	180	--	-49.1
MW-36-100	12/8/2015		8.5	28	89	--	0.13	620	--	-24
MW-37D	12/7/2015		--	2	ND (20)	--	0.26	640	--	19

Table D-1
In Situ Byproducts and Geochemical Indicator Parameter Analytical Results, Fourth Quarter 2015
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date		Arsenic, Dissolved (ug/L)	Manganese, Dissolved (ug/L)	Iron, Dissolved (ug/L)	Ammonia (mg/L)	Nitrate/Nitrite as N (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	Field ORP (mV)
MW-37S	12/8/2015		1.7	ND (0.5)	ND (20)	--	--	290	--	31.3
MW-38D	12/1/2015		7.7	59	ND (100)	--	0.054	700	--	-73.4
MW-38S	12/1/2015		14	230	91	--	ND (0.05)	160	--	-140.99
MW-39-040	12/4/2015		18	140	--	--	--	--	--	-123.3
MW-39-050	12/4/2015		2.4	140	ND (20)	--	--	200	--	-120.5
MW-39-060	12/4/2015	FD	4.2	50	25	--	0.076	200	--	--
MW-39-060	12/4/2015		4.4	53	22	--	ND (0.05)	210	--	66.4
MW-39-070	12/4/2015		--	1.3	ND (20)	--	--	250	--	-12.6
MW-39-080	12/4/2015		--	--	ND (20)	--	--	340	--	-121.9
MW-39-100	12/4/2015		3	31	30	--	ND (0.05)	1,300	--	-224.4
MW-40D	12/7/2015	FD	3.9	47	ND (20)	--	0.23	640	--	--
MW-40D	12/7/2015		4.2	54	46	--	0.26	670	--	37.8
MW-40S	12/7/2015		1.7	ND (0.5)	--	--	4.3	--	--	60.8
MW-41D	12/7/2015		1.7	ND (0.5)	25	--	0.38	730	--	57
MW-41M	12/7/2015	FD	2.2	4.6	100	--	0.66	540	--	--
MW-41M	12/7/2015		2	2.8	120	--	0.64	530	--	19
MW-41S	12/7/2015		1.6	1.2	ND (20)	--	1.3	280	--	--
MW-42-030	12/3/2015		3.4	43	--	--	0.15	--	--	-159.6
MW-42-055	12/3/2015		27	20	25	--	--	190	--	-76.9
MW-42-065	12/3/2015		4	920	110	--	--	490	--	42.1
MW-43-025	12/8/2015		17	200	3,400	--	--	290	--	-114.8
MW-43-075	12/2/2015		13	820	4,600	--	--	1,200	--	-59
MW-43-090	12/2/2015		1.2	23	120	--	--	920	--	-37.7
MW-44-070	12/4/2015		6.6	28	34	--	--	200	--	38.5
MW-44-115	10/6/2015	FD	5.9	6.4	--	--	0.17	--	--	--
MW-44-115	10/6/2015		5.9	5.7	--	--	0.17	--	--	55
MW-44-115	12/4/2015		5.6	22	250	--	0.16	810	--	39.2
MW-44-125	12/4/2015	FD	4.1	310	110	--	ND (0.05)	410	--	--
MW-44-125	12/4/2015		4.3	210	85	--	ND (0.05)	520	--	-39.6
MW-46-175	10/6/2015		--	--	--	--	0.99	--	--	46
MW-46-175	12/2/2015		--	13	ND (100)	--	1.1	800	--	131.8
MW-46-205	12/2/2015		--	--	ND (100)	--	--	830	--	95.8
MW-47-055	12/2/2015		0.74	0.85	ND (20)	--	--	220	--	-121.7
MW-47-115	12/2/2015		--	6.1	170	--	--	730	--	16.9
MW-48	12/4/2015		--	--	ND (100)	--	--	560	--	125.7
MW-49-135	12/1/2015		1.9	290	ND (100)	--	--	750	--	-188.3
MW-49-275	12/1/2015		--	450	ND (100)	--	--	1,300	--	-48.9
MW-49-365	12/1/2015	FD	--	--	270	--	--	1,100	--	--
MW-49-365	12/1/2015		1.6	--	ND (100)	--	--	1,100	--	-179.6
MW-50-095	12/8/2015		--	1.5	42	--	--	270	--	35
MW-50-200	12/7/2015		3.2	0.89	ND (20)	--	--	850	--	33.8
MW-51	12/8/2015		3.8	1.5	ND (20)	--	9.9	660	--	83
MW-52D	12/2/2015		2.7	260	810	--	--	900	--	-81
MW-52M	12/2/2015		0.81	160	2,000	--	--	630	--	-68
MW-52S	12/2/2015		0.37	1,300	ND (100)	--	--	940	--	-71.8
MW-53D	12/2/2015		2.6	1,100	230	--	--	1,200	--	-127.8
MW-53M	12/2/2015		0.51	420	410	--	--	760	--	-185.5
MW-54-085	12/9/2015	FD	2.4	890	39	--	--	540	--	--
MW-54-085	12/9/2015		2.5	930	58	--	--	560	--	-49.9
MW-54-140	12/9/2015		2.4	100	180	--	--	500	--	-55
MW-54-195	12/9/2015		0.94	220	100	--	--	900	--	-183.6
MW-55-045	12/7/2015		--	960	150	--	--	72	--	-112.8
MW-55-120	10/21/2015		--	--	--	--	--	--	--	60
MW-55-120	12/7/2015		--	17	43	--	--	260	--	-26
MW-56D	12/9/2015		--	--	920	--	--	1,300	--	-116
MW-56M	12/9/2015		--	--	2,700	--	--	930	--	-147
MW-56S	12/9/2015		--	--	7,100	--	--	1,000	--	-137
MW-57-070	12/4/2015		1.4	ND (0.5)	21	--	6.9	91	--	-23.3
MW-57-185	12/4/2015		13	320	ND (20)	--	ND (0.05)	720	--	-44.5
MW-58BR	12/7/2015		1.5	360	22	--	0.22	490	--	-14.6
MW-59-100	12/3/2015	FD	2	1.4	ND (20)	--	3.1	650	--	--
MW-59-100	12/3/2015		1.9	1.2	ND (20)	--	3	640	--	61.8

Table D-1

In Situ Byproducts and Geochemical Indicator Parameter Analytical Results, Fourth Quarter 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report, PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date		Arsenic, Dissolved (ug/L)	Manganese, Dissolved (ug/L)	Iron, Dissolved (ug/L)	Ammonia (mg/L)	Nitrate/Nitrite as N (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	Field ORP (mV)
MW-60-125	12/4/2015		1.3	2.3	43	--	4.2	460	--	60.3
MW-60BR-245	12/4/2015		7	22	89	--	0.17	780	--	-251.2
MW-61-110	12/4/2015		3.3	180	55	--	0.91	690	--	-33.8
MW-62-065	10/7/2015		1.3	1.2	--	--	4.1	--	--	70
MW-62-065	12/3/2015		1.3	2.7	43	--	4.6	410	--	63
MW-62-110	10/1/2015		6.8	91	--	--	0.11	--	--	--
MW-62-110	12/4/2015		7.7	89	73	--	ND (0.05)	480	--	-144.8
MW-62-190	12/4/2015		3.9	840	42	--	0.052	740	--	-222.7
MW-63-065	12/4/2015		1.9	34	1,900	--	1.2	600	--	29
MW-64BR	10/1/2015		3.2	1,000	--	--	ND (0.05)	--	--	--
MW-64BR	12/7/2015		3.3	920	430	--	ND (0.05)	580	--	-101.8
MW-65-160	12/2/2015		0.73	4.8	310	--	12	380	--	28.2
MW-65-225	12/2/2015		2.6	49	ND (100)	--	3.5	820	--	98.5
MW-66-165	12/2/2015		0.9	ND (0.5)	21	--	27	450	--	80.6
MW-66-230	12/3/2015		4.4	1.8	ND (100)	--	16	1,100	--	37.7
MW-66BR-270	12/9/2015		ND (0.5)	13,000	130,000	--	ND (0.05)	220	--	-314.7
MW-67-185	12/2/2015		0.93	ND (0.5)	83	--	64	490	--	67
MW-67-225	12/2/2015		3.5	36	560	--	25	1,100	--	39.8
MW-67-260	12/2/2015		8.9	160	ND (100)	--	0.68	760	--	-25.9
MW-68-180	12/2/2015		2.7	ND (0.5)	ND (20)	--	31	1,100	--	126.7
MW-68-240	12/2/2015		1.5	30	ND (100)	--	5.3	850	--	118.7
MW-68BR-280	12/3/2015		1.3	120	ND (100)	--	ND (0.05)	700	--	-166.5
MW-69-195	10/1/2015		2.3	0.68	--	--	17	--	--	79
MW-69-195	12/4/2015		2.3	0.88	ND (20)	--	18	590	--	-30.3
MW-70-105	12/7/2015		4.2	59	34	--	4.1	260	--	52.4
MW-70BR-225	12/7/2015		1.8	3	ND (20)	--	4	760	--	82.7
MW-71-035	12/4/2015		9.5	5,200	13,000	--	0.67	1,200	--	137.8
MW-72-080	12/7/2015		10	23	120	--	1.1	690	--	50
MW-72BR-200	12/8/2015		15	6.8	34	--	0.17	660	--	-111
MW-73-080	12/8/2015		1.7	8.7	88	--	3.8	440	--	85
MW-74-240	12/7/2015		14	60	2,300	--	0.66	71	--	-148.6
OW-03D	12/7/2015		--	0.87	ND (20)	--	--	420	--	-95.1
OW-03M	12/7/2015		--	7.4	1,100	--	--	310	--	-135.5
OW-03S	12/7/2015	FD	--	--	ND (20)	--	--	74	--	--
OW-03S	12/7/2015		--	--	55	--	--	77	--	44.4
PE-01	10/6/2015		--	76	ND (20)	--	ND (0.05)	380	--	--
PE-01	10/27/2015		--	69	ND (20 J)	--	ND (0.05)	370	--	31.3
PE-01	11/3/2015		--	73	ND (20)	--	ND (0.05)	370	--	--
PE-01	11/10/2015		--	82	ND (20)	--	ND (0.05)	360	--	173.5
PE-01	12/1/2015		--	74	ND (20)	--	ND (0.05)	350	--	--
PE-01	12/7/2015		--	--	--	--	--	360	1.3	2.1
PGE-07BR	12/2/2015		--	--	150,000	--	--	420	--	-298.7
PGE-08	12/10/2015		--	--	69	--	ND (0.05)	1,800	--	-120.8
PM-03	12/8/2015		--	--	26	--	--	64	--	-36.6
PM-04	12/8/2015		--	--	ND (20)	--	--	130	--	-25.9
TW-01	12/1/2015		--	--	ND (20)	--	21	700	--	63.9
TW-02D	12/9/2015	FD	2.4	18	24	--	0.94	490	--	--
TW-02D	12/9/2015		--	--	90	--	--	490	--	99
TW-02S	12/9/2015		--	--	39	--	4	160	--	186
TW-03D	10/6/2015		--	11	ND (20)	--	3.3	520	--	--
TW-03D	10/27/2015		--	10	ND (20)	--	3.3	490	--	51.1
TW-03D	11/3/2015		--	11	ND (20)	--	3.3	480	--	--
TW-03D	11/10/2015		--	13	ND (20)	--	3.3	480	--	219.4
TW-03D	12/1/2015		--	13	ND (20)	--	3.3	490	--	--
TW-03D	12/7/2015		--	--	--	--	--	490 J	2.3 J	-4.4
TW-04	12/8/2015		--	38	--	--	--	1,000	--	73.2
TW-05	12/8/2015		--	ND (0.5)	22	--	--	590	--	109.1

Notes:

--- = data was either not collected, not available or was rejected

FD = field duplicate sample.

J = concentration or RL estimated by laboratory or data validation.

Table D-1

In Situ Byproducts and Geochemical Indicator Parameter Analytical Results, Fourth Quarter 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Arsenic, Dissolved (ug/L)	Manganese, Dissolved (ug/L)	Iron, Dissolved (ug/L)	Ammonia (mg/L)	Nitrate/Nitrite as N (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	Field ORP (mV)

mg/L = milligrams per liter.
mV = millivolts.
ND = not detected at listed reporting limit (RL).
ORP = oxidation-reduction potential.
ug/L = micrograms per liter.

ORP is reported to two significant figures.

Starting in Fourth Quarter 2012, nitrate samples were analyzed using USEPA Method 353.2, except for TW-3D and PE-1, which were still analyzed using USEPA Method 300.0. USEPA Method 353.2 reports a combination of nitrate and nitrite as nitrogen. The contribution of nitrite to the reported result of nitrate plus nitrite as nitrogen is expected to be negligible; therefore, sample results for USEPA Method 353.2 are expected to be essentially the same as previous samples analyzed using USEPA Method 300.0 and reported as nitrate as nitrogen.

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
CW-01D	300	566.46	2/10/15 10:35 AM	109.99	0.50	456.36
CW-01D	300	566.46	5/14/15 8:31 AM	108.66	0.50	457.69
CW-01D	300	566.46	7/14/15 6:53 AM	108.83	0.50	457.52
CW-01M	190	566.07	2/10/15 10:33 AM	109.94	0.50	456.07
CW-01M	190	566.07	5/14/15 8:28 AM	108.42	0.50	457.59
CW-01M	190	566.07	7/14/15 6:50 AM	108.67	0.50	457.34
CW-02D	355	549.43	2/10/15 10:43 AM	93.02	0.50	456.18
CW-02D	355	549.43	5/14/15 8:37 AM	91.65	0.50	457.55
CW-02D	355	549.43	7/14/15 7:00 AM	91.82	0.50	457.38
CW-02M	208	549.45	2/10/15 10:40 AM	93.50	0.50	455.87
CW-02M	208	549.45	5/14/15 8:35 AM	91.94	0.50	457.42
CW-02M	208	549.45	7/14/15 6:57 AM	92.22	0.50	457.14
CW-03D	340	534.14	2/10/15 10:49 AM	77.66	0.50	456.24
CW-03D	340	534.14	5/14/15 8:43 AM	76.29	0.50	457.61
CW-03D	340	534.14	7/14/15 7:06 AM	76.48	0.50	457.42
CW-03M	222	534.10	2/10/15 10:47 AM	78.32	0.58	455.76
CW-03M	222	534.10	5/14/15 8:41 AM	76.78	0.58	457.30
CW-03M	222	534.10	7/14/15 7:04 AM	77.04	0.58	457.04
CW-04D	303	518.55	2/10/15 10:57 AM	62.04	0.50	456.29
CW-04D	303	518.55	5/14/15 8:53 AM	60.70	0.50	457.63
CW-04D	303	518.55	7/14/15 7:17 AM	60.86	0.50	457.47
CW-04M	170	518.55	2/10/15 10:55 AM	62.24	0.49	456.23
CW-04M	170	518.55	5/14/15 8:51 AM	60.74	0.49	457.73
CW-04M	170	518.55	7/14/15 7:15 AM	60.96	0.49	457.51
I-3	--	460.30	1/5/15 11:19 AM	6.79	--	453.51
I-3	--	460.30	2/5/15 11:09 AM	6.30	--	454.00
I-3	--	460.30	3/6/15 1:48 PM	5.85	--	454.45
I-3	--	460.30	4/1/15 12:59 PM	3.89	--	456.41
I-3	--	460.30	5/6/15 12:06 PM	5.03	--	455.27
I-3	--	460.30	6/9/15 9:15 AM	4.50	--	455.80
I-3	--	460.30	7/2/15 12:05 PM	6.01	--	454.29
I-3	--	460.30	7/9/15 8:51 AM	4.16	--	456.14
I-3	--	460.30	8/4/15 9:26 AM	4.79	--	455.51
I-3	--	460.30	9/2/15 7:50 AM	3.89	--	456.41
I-3	--	460.30	9/21/15 10:03 AM	4.72	--	455.58
I-3	--	460.30	10/6/15 8:56 AM	5.12	--	455.18
I-3	--	460.30	11/5/15 11:44 AM	6.30	--	454.00
MW-09	89	536.56	5/12/15 10:02 AM	79.55	0.20	456.98
MW-09	89	536.56	10/7/15 6:52 AM	79.95	0.20	456.58
MW-10	97	530.65	5/12/15 10:45 AM	73.98	0.20	456.61
MW-10	97	530.65	8/13/15 11:15 AM	74.20	0.20	456.39
MW-10	97	530.65	10/7/15 7:58 AM	74.46	0.20	456.13
MW-11	86	522.61	5/12/15 11:22 AM	65.69	0.16	456.86
MW-11	86	522.61	5/12/15 11:58 AM	65.68	0.16	456.87
MW-11	86	522.61	8/13/15 11:44 AM	65.98	0.16	456.57
MW-11	86	522.61	10/7/15 8:38 AM	66.25	0.16	456.30
MW-12	50	484.01	1/13/15 9:21 AM	29.56	0.44	454.44
MW-12	50	484.01	2/6/15 11:04 AM	29.33	0.44	454.67
MW-12	50	484.01	2/11/15 2:48 PM	29.29	0.44	454.71
MW-12	50	484.01	3/6/15 12:11 PM	29.13	0.44	454.87
MW-12	50	484.01	4/1/15 1:08 PM	28.36	0.44	455.64
MW-12	50	484.01	5/6/15 9:43 AM	27.60	0.44	456.39
MW-12	50	484.01	5/19/15 10:12 AM	27.81	0.45	456.19
MW-12	50	484.01	6/9/15 9:39 AM	27.89	0.45	456.11
MW-12	50	484.01	7/2/15 11:51 AM	27.90	0.45	456.10
MW-12	50	484.01	8/5/15 12:28 PM	28.09	0.45	455.91
MW-12	50	484.01	9/2/15 11:24 AM	28.11	0.45	455.89
MW-12	50	484.01	10/6/15 1:40 PM	28.23	0.45	455.77
MW-12	50	484.01	11/5/15 11:24 AM	28.58	0.45	455.42

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-14	134	570.99	5/6/15 10:54 AM	113.77	0.10	457.15
MW-19	66	499.92	5/14/15 10:10 AM	43.69	0.15	456.17
MW-20-070	70	500.15	1/13/15 9:59 AM	47.29	0.15	452.80
MW-20-070	70	500.15	2/11/15 2:35 PM	46.98	0.15	453.10
MW-20-070	70	500.15	3/17/15 12:26 PM	45.45	0.15	454.63
MW-20-070	70	500.15	4/1/15 11:27 AM	45.12	0.15	454.96
MW-20-070	70	500.15	5/6/15 8:41 AM	44.68	0.15	455.40
MW-20-070	70	500.15	5/19/15 7:04 AM	45.50	0.14	454.58
MW-20-070	70	500.15	6/9/15 10:27 AM	45.52	0.14	454.56
MW-20-070	70	500.15	7/2/15 10:10 AM	45.47	0.14	454.61
MW-20-070	70	500.15	8/5/15 12:39 PM	45.85	0.14	454.24
MW-20-070	70	500.15	9/2/15 10:54 AM	45.90	0.14	454.19
MW-20-070	70	500.15	10/7/15 1:48 PM	46.09	0.14	454.00
MW-20-070	70	500.15	11/4/15 3:07 PM	46.75	0.14	453.33
MW-20-100	101	500.58	1/13/15 10:12 AM	48.15	0.19	452.28
MW-20-100	101	500.58	1/20/15 12:10 PM	47.81	0.19	452.62
MW-20-100	101	500.58	2/5/15 2:09 PM	47.85	0.19	452.58
MW-20-100	101	500.58	3/6/15 12:47 PM	47.50	0.19	452.94
MW-20-100	101	500.58	4/1/15 11:34 AM	46.05	0.19	454.38
MW-20-100	101	500.58	5/6/15 8:51 AM	45.72	0.19	454.70
MW-20-100	101	500.58	5/19/15 7:32 AM	46.70	0.19	453.82
MW-20-100	101	500.58	6/3/15 8:52 AM	46.22	0.19	454.21
MW-20-100	101	500.58	7/2/15 10:15 AM	46.49	0.19	453.94
MW-20-100	101	500.58	8/5/15 12:48 PM	46.85	0.19	453.58
MW-20-100	101	500.58	9/2/15 10:58 AM	45.80	0.19	454.63
MW-20-100	101	500.58	10/7/15 1:54 PM	47.06	0.19	453.38
MW-20-100	101	500.58	11/4/15 3:03 PM	47.68	0.19	452.75
MW-20-130	132	500.66	1/13/15 10:03 AM	48.91	0.77	451.89
MW-20-130	132	500.66	1/22/15 1:39 PM	48.48	0.77	452.29
MW-20-130	132	500.66	2/5/15 2:04 PM	48.63	0.77	452.14
MW-20-130	132	500.66	2/26/15 11:32 AM	48.45	0.77	452.33
MW-20-130	132	500.66	3/6/15 12:34 PM	48.26	0.77	452.52
MW-20-130	132	500.66	4/1/15 11:32 AM	46.73	0.77	454.04
MW-20-130	132	500.66	5/6/15 8:45 AM	46.55	0.77	454.22
MW-20-130	132	500.66	5/19/15 8:03 AM	47.34	0.76	453.42
MW-20-130	132	500.66	6/3/15 8:49 AM	46.95	0.76	453.83
MW-20-130	132	500.66	7/2/15 10:19 AM	47.33	0.76	453.43
MW-20-130	132	500.66	8/5/15 12:44 PM	47.66	0.76	453.12
MW-20-130	132	500.66	9/2/15 11:03 AM	45.97	0.76	454.81
MW-20-130	132	500.66	9/15/15 10:53 AM	47.35	0.76	453.43
MW-20-130	132	500.66	10/7/15 1:58 PM	47.88	0.76	452.90
MW-20-130	132	500.66	11/4/15 2:58 PM	48.50	0.76	452.26
MW-21	58	505.55	1/13/15 1:58 PM	51.30	0.78	454.26
MW-21	58	505.55	2/6/15 11:21 AM	51.12	0.78	454.44
MW-21	58	505.55	2/26/15 11:15 AM	51.05	0.78	454.51
MW-21	58	505.55	3/3/15 2:01 PM	50.99	0.78	454.57
MW-21	58	505.55	4/1/15 12:18 PM	50.16	0.78	455.40
MW-21	58	505.55	5/5/15 10:12 AM	49.40	0.78	456.17
MW-21	58	505.55	5/6/15 9:14 AM	55.75	0.78	449.80
MW-21	58	505.55	6/3/15 9:15 AM	49.53	0.69	456.03
MW-21	58	505.55	7/2/15 11:21 AM	49.62	0.69	455.94
MW-21	58	505.55	8/4/15 6:42 AM	49.81	0.69	455.75
MW-21	58	505.55	9/2/15 8:48 AM	49.84	0.69	455.72
MW-21	58	505.55	10/7/15 7:56 AM	48.98	0.69	456.58
MW-21	58	505.55	11/5/15 11:53 AM	50.20	0.69	455.36
MW-22	12	460.72	1/13/15 10:22 AM	6.92	1.67	453.85
MW-22	12	460.72	2/5/15 12:54 PM	6.54	1.67	454.23
MW-22	12	460.72	3/5/15 12:39 PM	6.22	1.67	454.56
MW-22	12	460.72	3/31/15 11:05 AM	4.82	1.67	455.97

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-22	12	460.72	4/22/15 1:02 PM	5.01	1.67	455.78
MW-22	12	460.72	4/22/15 1:59 PM	5.09	1.67	455.70
MW-22	12	460.72	5/3/15 9:44 AM	4.86	1.67	455.93
MW-22	12	460.72	6/2/15 8:26 AM	5.32	1.81	455.47
MW-22	12	460.72	7/1/15 7:40 AM	5.32	1.81	455.47
MW-22	12	460.72	8/3/15 6:48 AM	5.44	1.81	455.34
MW-22	12	460.72	9/2/15 7:03 AM	5.49	1.81	455.29
MW-22	12	460.72	10/6/15 9:43 AM	5.47	1.81	455.31
MW-22	12	460.72	11/4/15 12:02 PM	5.40	1.81	455.39
MW-23-060	60	504.08	1/5/15 12:14 PM	50.15	1.09	453.97
MW-23-060	60	504.08	2/5/15 11:19 AM	49.71	1.09	454.40
MW-23-060	60	504.08	3/6/15 12:24 PM	49.47	1.09	454.65
MW-23-060	60	504.08	4/1/15 12:41 PM	48.58	1.09	455.54
MW-23-060	60	504.08	4/30/15 11:20 AM	48.17	1.09	455.95
MW-23-060	60	504.08	4/30/15 1:54 PM	55.22	1.09	448.88
MW-23-060	60	504.08	5/6/15 9:01 AM	48.03	1.09	456.09
MW-23-060	60	504.08	6/3/15 9:00 AM	48.23	1.09	455.90
MW-23-060	60	504.08	7/2/15 11:36 AM	48.38	1.09	455.74
MW-23-060	60	504.08	8/5/15 12:09 PM	48.15	1.09	455.98
MW-23-060	60	504.08	9/2/15 11:13 AM	48.56	1.09	455.57
MW-23-060	60	504.08	10/7/15 10:00 AM	48.63	1.09	455.50
MW-23-060	60	504.08	11/5/15 1:21 PM	49.20	1.09	454.91
MW-23-080	81	504.13	1/5/15 12:10 PM	50.21	1.11	454.06
MW-23-080	81	504.13	2/5/15 11:25 AM	49.75	1.11	454.48
MW-23-080	81	504.13	3/6/15 12:20 PM	49.53	1.11	454.73
MW-23-080	81	504.13	4/1/15 12:37 PM	48.42	1.11	455.82
MW-23-080	81	504.13	4/30/15 12:22 PM	50.75	1.11	453.48
MW-23-080	81	504.13	4/30/15 1:56 PM	59.20	1.11	445.00
MW-23-080	81	504.13	5/6/15 9:05 AM	48.12	1.11	456.12
MW-23-080	81	504.13	6/3/15 9:05 AM	48.29	1.11	455.97
MW-23-080	81	504.13	7/2/15 11:37 AM	48.41	1.11	455.83
MW-23-080	81	504.13	8/5/15 12:14 PM	48.68	1.11	455.58
MW-23-080	81	504.13	9/2/15 11:16 AM	48.62	1.11	455.64
MW-23-080	81	504.13	10/7/15 10:03 AM	48.76	1.11	455.50
MW-23-080	81	504.13	11/5/15 1:25 PM	49.12	1.11	455.11
MW-24A	127	567.16	4/29/15 10:52 AM	110.42	0.68	456.75
MW-24B	215	564.76	4/29/15 12:58 PM	108.29	1.00	456.76
MW-25	107	542.90	1/13/15 1:42 PM	88.75	0.10	454.10
MW-25	107	542.90	2/5/15 2:34 PM	88.22	0.10	454.62
MW-25	107	542.90	3/6/15 1:11 PM	88.24	0.10	454.60
MW-25	107	542.90	4/1/15 9:54 AM	87.07	0.10	455.76
MW-25	107	542.90	5/6/15 7:41 AM	86.55	0.10	456.28
MW-25	107	542.90	5/11/15 12:57 PM	86.45	0.10	456.38
MW-25	107	542.90	6/3/15 10:20 AM	86.72	0.11	456.12
MW-25	107	542.90	7/2/15 12:20 PM	86.91	0.11	455.92
MW-25	107	542.90	8/4/15 10:17 AM	87.01	0.11	455.80
MW-25	107	542.90	9/2/15 10:05 AM	87.12	0.11	455.72
MW-25	107	542.90	10/7/15 8:40 AM	87.28	0.11	455.56
MW-25	107	542.90	11/5/15 10:40 AM	87.67	0.11	455.17
MW-26	70	502.22	1/13/15 2:07 PM	48.10	0.27	454.08
MW-26	70	502.22	2/6/15 11:37 AM	47.87	0.27	454.30
MW-26	70	502.22	3/6/15 2:08 PM	47.97	0.27	454.20
MW-26	70	502.22	4/1/15 12:24 PM	46.58	0.27	455.59
MW-26	70	502.22	5/19/15 11:09 AM	46.36	0.27	455.81
MW-26	70	502.22	5/19/15 11:45 AM	46.55	0.27	455.62
MW-26	70	502.22	6/3/15 9:25 AM	46.36	0.27	455.82
MW-26	70	502.22	7/2/15 10:36 AM	46.41	0.27	455.76
MW-26	70	502.22	7/9/15 7:13 AM	46.53	0.27	455.65
MW-26	70	502.22	8/4/15 6:57 AM	46.70	0.27	455.48

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-26	70	502.22	9/2/15 9:36 AM	46.76	0.27	455.42
MW-26	70	502.22	10/7/15 8:05 AM	46.91	0.27	455.27
MW-26	70	502.22	11/5/15 12:00 PM	47.28	0.27	454.89
MW-27-020	14	460.56	1/5/15 12:59 PM	7.08	0.06	453.47
MW-27-020	14	460.56	2/4/15 11:53 AM	6.44	0.06	454.11
MW-27-020	14	460.56	2/26/15 12:39 PM	6.25	0.06	454.30
MW-27-020	14	460.56	3/5/15 1:05 PM	6.19	0.06	454.36
MW-27-020	14	460.56	3/30/15 10:00 AM	3.46	0.06	457.09
MW-27-020	14	460.56	5/3/15 7:05 AM	3.27	0.06	457.27
MW-27-020	14	460.56	6/2/15 6:01 AM	4.26	0.07	456.29
MW-27-020	14	460.56	7/1/15 6:50 AM	4.16	0.07	456.38
MW-27-020	14	460.56	8/3/15 7:14 AM	4.72	0.07	455.83
MW-27-020	14	460.56	9/1/15 8:01 AM	4.69	0.07	455.86
MW-27-020	14	460.56	10/5/15 7:32 AM	5.79	0.07	454.76
MW-27-020	14	460.56	11/4/15 12:25 PM	6.47	0.07	454.08
MW-27-060	59	461.38	1/5/15 12:20 PM	7.94	0.07	453.35
MW-27-060	59	461.38	2/4/15 11:35 AM	7.34	0.07	453.95
MW-27-060	59	461.38	3/5/15 1:17 PM	7.30	0.07	453.99
MW-27-060	59	461.38	3/30/15 9:28 AM	4.36	0.07	456.97
MW-27-060	59	461.38	5/3/15 7:05 AM	4.08	0.07	457.21
MW-27-060	59	461.38	6/2/15 5:58 AM	4.86	0.07	456.46
MW-27-060	59	461.38	7/1/15 6:42 AM	5.20	0.07	456.09
MW-27-060	59	461.38	8/3/15 7:05 AM	5.29	0.07	456.01
MW-27-060	59	461.38	9/1/15 7:52 AM	5.36	0.07	455.93
MW-27-060	59	461.38	10/5/15 7:22 AM	6.65	0.07	454.64
MW-27-060	59	461.38	11/4/15 12:40 PM	7.34	0.07	453.95
MW-27-085	80	460.99	1/5/15 12:42 PM	7.87	0.63	453.34
MW-27-085	80	460.99	2/4/15 11:46 AM	7.25	0.63	453.91
MW-27-085	80	460.99	3/5/15 1:13 PM	7.18	0.63	453.98
MW-27-085	80	460.99	3/30/15 9:50 AM	4.37	0.63	456.79
MW-27-085	80	460.99	4/20/15 1:54 PM	5.45	0.62	455.77
MW-27-085	80	460.99	4/20/15 2:45 PM	5.45	0.62	455.77
MW-27-085	80	460.99	5/3/15 7:00 AM	3.96	0.62	457.27
MW-27-085	80	460.99	5/4/15 6:22 AM	3.92	0.62	457.31
MW-27-085	80	460.99	6/1/15 12:14 PM	5.52	0.62	455.70
MW-27-085	80	460.99	7/1/15 6:45 AM	5.14	0.62	456.02
MW-27-085	80	460.99	7/1/15 6:48 AM	5.14	0.62	456.02
MW-27-085	80	460.99	8/3/15 7:09 AM	5.22	0.62	455.99
MW-27-085	80	460.99	9/1/15 7:57 AM	5.26	0.62	455.94
MW-27-085	80	460.99	9/15/15 8:24 AM	5.14	0.62	456.06
MW-27-085	80	460.99	9/15/15 8:21 AM	5.14	0.62	456.06
MW-27-085	80	460.99	10/5/15 7:36 AM	6.51	0.62	454.68
MW-27-085	80	460.99	10/5/15 7:38 AM	6.51	0.62	454.68
MW-27-085	80	460.99	11/4/15 12:31 PM	7.23	0.62	453.92
MW-27-085	80	460.99	11/4/15 12:35 PM	7.23	0.62	453.92
MW-27-085B	80	460.99	1/5/15 12:42 PM	7.87	0.67	453.35
MW-27-085B	80	460.99	2/4/15 11:46 AM	7.25	0.67	453.98
MW-27-085B	80	460.99	3/5/15 1:13 PM	7.18	0.67	453.99
MW-27-085B	80	460.99	3/30/15 9:50 AM	4.37	0.67	--
MW-27-085B	80	460.99	5/3/15 7:00 AM	3.96	0.67	457.28
MW-27-085B	80	460.99	5/4/15 6:22 AM	3.92	0.67	457.32
MW-27-085B	80	460.99	6/1/15 12:21 PM	5.52	0.67	455.72
MW-27-085B	80	460.99	7/1/15 6:45 AM	5.14	0.67	456.10
MW-27-085B	80	460.99	7/1/15 6:48 AM	5.14	0.67	456.10
MW-27-085B	80	460.99	8/3/15 7:09 AM	5.22	0.67	456.02
MW-27-085B	80	460.99	9/1/15 7:57 AM	5.26	0.62	455.95
MW-27-085B	80	460.99	9/15/15 8:21 AM	5.14	0.62	456.06
MW-27-085B	80	460.99	9/15/15 8:24 AM	5.14	0.62	456.06
MW-27-085B	80	460.99	10/5/15 7:36 AM	6.51	0.62	454.69

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-27-085B	80	460.99	10/5/15 7:38 AM	6.51	0.62	454.69
MW-27-085B	80	460.99	11/4/15 12:35 PM	7.23	0.62	453.96
MW-27-085B	80	460.99	11/4/15 12:31 PM	7.23	0.62	453.96
MW-28-025	21	466.77	1/14/15 12:36 PM	13.21	0.07	453.54
MW-28-025	21	466.77	2/6/15 12:13 PM	12.68	0.07	454.07
MW-28-025	21	466.77	2/18/15 2:40 PM	12.91	0.07	453.84
MW-28-025	21	466.77	3/5/15 12:15 PM	12.67	0.07	454.08
MW-28-025	21	466.77	4/1/15 10:43 AM	9.95	0.07	456.79
MW-28-025	21	466.77	4/21/15 6:07 AM	9.55	0.07	457.19
MW-28-025	21	466.77	4/21/15 7:51 AM	9.73	0.07	457.01
MW-28-025	21	466.77	5/6/15 6:50 AM	10.05	0.07	456.69
MW-28-025	21	466.77	6/3/15 6:58 AM	10.50	0.06	456.25
MW-28-025	21	466.77	7/2/15 8:41 AM	11.22	0.06	455.52
MW-28-025	21	466.77	8/4/15 8:39 AM	11.19	0.06	455.56
MW-28-025	21	466.77	9/1/15 12:31 PM	11.53	0.06	455.21
MW-28-025	21	466.77	10/5/15 9:44 AM	12.37	0.06	454.37
MW-28-025	21	466.77	11/5/15 12:08 PM	12.84	0.06	453.91
MW-28-090	98	467.53	1/13/15 2:59 PM	14.40	0.47	453.29
MW-28-090	98	467.53	2/6/15 12:11 PM	13.57	0.47	454.07
MW-28-090	98	467.53	3/5/15 12:11 PM	13.61	0.47	454.03
MW-28-090	98	467.53	4/1/15 10:34 AM	11.06	0.47	456.58
MW-28-090	98	467.53	4/21/15 6:06 AM	10.49	0.47	457.15
MW-28-090	98	467.53	4/21/15 7:55 AM	10.87	0.47	456.77
MW-28-090	98	467.53	5/6/15 6:48 AM	11.08	0.47	456.56
MW-28-090	98	467.53	6/3/15 7:03 AM	11.29	0.46	456.40
MW-28-090	98	467.53	7/2/15 8:45 AM	12.35	0.46	455.28
MW-28-090	98	467.53	8/4/15 8:33 AM	12.06	0.46	455.63
MW-28-090	98	467.53	9/1/15 12:28 PM	12.79	0.46	454.84
MW-28-090	98	467.53	9/15/15 10:20 AM	11.98	0.46	455.71
MW-28-090	98	467.53	10/5/15 9:41 AM	13.28	0.46	454.35
MW-28-090	98	467.53	11/5/15 10:12 AM	13.34	0.46	454.29
MW-29	42	485.21	4/21/15 11:00 AM	28.45	0.16	456.74
MW-30-050	53	468.81	1/4/15 12:48 PM	15.97	0.08	452.79
MW-30-050	53	468.81	2/4/15 2:28 PM	15.20	0.08	453.51
MW-30-050	53	468.81	3/5/15 2:24 PM	15.01	0.08	453.70
MW-30-050	53	468.81	3/31/15 10:49 AM	12.56	0.08	456.20
MW-30-050	53	468.81	5/3/15 8:10 AM	12.08	0.08	456.62
MW-30-050	53	468.81	6/2/15 7:09 AM	12.86	0.07	455.90
MW-30-050	53	468.81	7/1/15 10:29 AM	13.73	0.07	454.97
MW-30-050	53	468.81	8/3/15 8:13 AM	13.29	0.07	455.47
MW-30-050	53	468.81	9/1/15 9:06 AM	13.40	0.07	455.30
MW-30-050	53	468.81	10/6/15 10:34 AM	14.23	0.07	454.53
MW-30-050	53	468.81	11/4/15 1:44 PM	14.94	0.07	453.77
MW-31-060	64	496.81	1/13/15 10:50 AM	43.09	0.22	453.67
MW-31-060	64	496.81	2/5/15 2:22 PM	42.77	0.22	453.99
MW-31-060	64	496.81	3/6/15 12:53 PM	42.41	0.22	454.36
MW-31-060	64	496.81	4/1/15 11:45 AM	40.85	0.22	455.91
MW-31-060	64	496.81	5/6/15 8:17 AM	40.53	0.22	456.22
MW-31-060	64	496.81	5/13/15 1:26 PM	41.00	0.22	455.76
MW-31-060	64	496.81	6/3/15 7:53 AM	41.10	0.22	455.66
MW-31-060	64	496.81	7/2/15 9:14 AM	41.27	0.22	455.49
MW-31-060	64	496.81	7/9/15 8:00 AM	41.34	0.22	455.43
MW-31-060	64	496.81	8/4/15 10:25 AM	41.57	0.22	455.20
MW-31-060	64	496.81	9/2/15 10:37 AM	41.69	0.22	455.08
MW-31-060	64	496.81	10/5/15 10:17 AM	42.09	0.22	454.67
MW-31-060	64	496.81	11/5/15 11:10 AM	42.57	0.22	454.19
MW-31-135	135	498.11	1/13/15 10:44 AM	45.23	0.69	452.94
MW-31-135	135	498.11	1/15/15 3:12 PM	45.48	0.69	452.76
MW-31-135	135	498.11	1/22/15 1:30 PM	44.78	0.69	453.39

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-31-135	135	498.11	2/4/15 2:24 PM	44.99	0.69	453.18
MW-31-135	135	498.11	2/5/15 2:16 PM	44.95	0.69	453.22
MW-31-135	135	498.11	3/6/15 12:58 PM	44.57	0.69	453.60
MW-31-135	135	498.11	4/1/15 11:39 AM	43.03	0.69	455.21
MW-31-135	135	498.11	5/6/15 8:34 AM	42.79	0.69	455.38
MW-31-135	135	498.11	6/3/15 8:07 AM	43.21	0.69	454.96
MW-31-135	135	498.11	7/2/15 9:55 AM	43.62	0.69	454.63
MW-31-135	135	498.11	7/9/15 7:33 AM	43.39	0.69	454.78
MW-31-135	135	498.11	8/3/15 9:14 AM	43.52	0.69	454.72
MW-31-135	135	498.11	8/3/15 9:16 AM	43.52	0.69	454.72
MW-31-135	135	498.11	9/1/15 12:54 PM	44.08	0.69	454.16
MW-31-135	135	498.11	9/1/15 12:58 PM	44.08	0.69	454.16
MW-31-135	135	498.11	9/15/15 10:49 AM	43.64	0.69	454.60
MW-31-135	135	498.11	9/15/15 10:46 AM	43.64	0.69	454.60
MW-31-135	135	498.11	10/5/15 10:22 AM	44.30	0.69	453.94
MW-31-135	135	498.11	10/5/15 10:24 AM	44.30	0.69	453.94
MW-31-135	135	498.11	11/5/15 11:15 AM	44.73	0.69	453.44
MW-31-135	135	498.11	11/5/15 11:18 AM	44.73	0.69	453.44
MW-31-135B	135	498.11	1/13/15 10:44 AM	45.23	0.67	452.98
MW-31-135B	135	498.11	1/15/15 3:12 PM	45.48	0.67	452.73
MW-31-135B	135	498.11	1/22/15 1:30 PM	44.78	0.67	453.44
MW-31-135B	135	498.11	2/5/15 2:16 PM	44.95	0.67	453.27
MW-31-135B	135	498.11	3/6/15 12:58 PM	44.57	0.67	453.66
MW-31-135B	135	498.11	4/1/15 11:39 AM	43.03	0.67	455.20
MW-31-135B	135	498.11	5/6/15 8:34 AM	42.79	0.67	455.44
MW-31-135B	135	498.11	6/3/15 8:07 AM	43.21	0.67	455.02
MW-31-135B	135	498.11	7/2/15 9:55 AM	43.62	0.67	454.61
MW-31-135B	135	498.11	7/9/15 7:33 AM	43.39	0.67	--
MW-31-135B	135	498.11	8/3/15 9:14 AM	43.52	0.67	454.71
MW-31-135B	135	498.11	8/3/15 9:16 AM	43.52	0.67	454.71
MW-31-135B	135	498.11	9/1/15 12:54 PM	44.08	0.69	454.16
MW-31-135B	135	498.11	9/1/15 12:58 PM	44.08	0.69	454.16
MW-31-135B	135	498.11	9/15/15 10:46 AM	43.64	0.69	454.60
MW-31-135B	135	498.11	9/15/15 10:49 AM	43.64	0.69	454.60
MW-31-135B	135	498.11	10/5/15 10:22 AM	44.30	0.69	453.94
MW-31-135B	135	498.11	10/5/15 10:24 AM	44.30	0.69	453.94
MW-31-135B	135	498.11	11/5/15 11:15 AM	44.73	0.69	453.51
MW-31-135B	135	498.11	11/5/15 11:18 AM	44.73	0.69	453.51
MW-32-035	37	461.63	1/13/15 10:32 AM	8.00	0.82	453.72
MW-32-035	37	461.63	2/5/15 1:01 PM	7.76	0.82	453.95
MW-32-035	37	461.63	3/5/15 12:57 PM	7.54	0.82	454.19
MW-32-035	37	461.63	3/31/15 10:57 AM	5.22	0.82	456.52
MW-32-035	37	461.63	4/20/15 12:46 PM	5.78	0.82	455.94
MW-32-035	37	461.63	5/3/15 9:25 AM	5.07	0.82	456.65
MW-32-035	37	461.63	6/2/15 8:06 AM	5.78	0.82	455.95
MW-32-035	37	461.63	7/1/15 7:19 AM	5.91	0.82	455.81
MW-32-035	37	461.63	8/3/15 7:00 AM	6.13	0.82	455.55
MW-32-035	37	461.63	9/2/15 6:55 AM	6.05	0.82	455.65
MW-32-035	37	461.63	10/6/15 9:51 AM	6.80	0.82	454.89
MW-32-035	37	461.63	11/4/15 12:20 PM	7.64	0.82	454.07
MW-33-040	42	487.38	1/5/15 2:01 PM	33.86	0.55	453.52
MW-33-040	42	487.38	2/11/15 11:18 AM	33.23	0.55	454.15
MW-33-040	42	487.38	3/3/15 10:42 AM	32.56	0.55	454.82
MW-33-040	42	487.38	3/18/15 8:54 AM	31.47	0.55	455.92
MW-33-040	42	487.38	4/1/15 10:25 AM	31.07	0.55	456.31
MW-33-040	42	487.38	4/27/15 11:25 AM	31.31	0.55	456.07
MW-33-040	42	487.38	4/27/15 7:25 AM	31.06	0.55	456.32
MW-33-040	42	487.38	5/6/15 6:35 AM	30.88	0.55	456.50
MW-33-040	42	487.38	6/3/15 6:51 AM	31.37	0.57	456.01

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-33-040	42	487.38	6/15/15 10:22 AM	31.06	0.57	456.33
MW-33-040	42	487.38	7/2/15 7:56 AM	31.75	0.57	455.63
MW-33-040	42	487.38	8/4/15 8:27 AM	31.87	0.57	455.52
MW-33-040	42	487.38	9/1/15 12:08 PM	32.21	0.57	455.17
MW-33-040	42	487.38	10/5/15 9:20 AM	32.64	0.57	454.74
MW-33-040	42	487.38	11/5/15 10:01 AM	33.13	0.57	454.25
MW-33-090	88	487.55	1/5/15 1:57 PM	33.97	0.67	453.64
MW-33-090	88	487.55	2/11/15 10:56 AM	33.31	0.67	454.30
MW-33-090	88	487.55	3/3/15 10:44 AM	32.62	0.67	455.03
MW-33-090	88	487.55	3/18/15 8:57 AM	31.46	0.67	456.19
MW-33-090	88	487.55	4/1/15 10:22 AM	31.02	0.67	456.59
MW-33-090	88	487.55	4/27/15 11:25 AM	31.45	0.67	456.16
MW-33-090	88	487.55	4/27/15 7:27 AM	31.12	0.67	456.49
MW-33-090	88	487.55	5/6/15 6:40 AM	30.93	0.67	456.69
MW-33-090	88	487.55	6/3/15 6:51 AM	31.38	0.66	456.23
MW-33-090	88	487.55	6/15/15 10:28 AM	31.03	0.66	456.62
MW-33-090	88	487.55	7/2/15 8:02 AM	31.87	0.66	455.74
MW-33-090	88	487.55	8/4/15 8:22 AM	31.91	0.66	455.75
MW-33-090	88	487.55	9/1/15 12:13 PM	32.08	0.66	455.53
MW-33-090	88	487.55	10/5/15 9:24 AM	32.79	0.66	454.82
MW-33-090	88	487.55	11/5/15 9:58 AM	33.15	0.66	454.46
MW-33-150	155	487.77	1/5/15 1:44 PM	34.59	1.04	453.63
MW-33-150	155	487.77	1/20/15 11:55 AM	33.83	1.04	454.49
MW-33-150	155	487.77	1/22/15 2:52 PM	33.77	1.04	454.45
MW-33-150	155	487.77	2/4/15 2:50 PM	34.06	1.04	454.16
MW-33-150	155	487.77	2/5/15 3:00 PM	33.99	1.04	454.23
MW-33-150	155	487.77	2/26/15 1:45 PM	34.01	1.04	454.27
MW-33-150	155	487.77	2/26/15 2:02 PM	34.01	1.04	454.27
MW-33-150	155	487.77	3/3/15 10:37 AM	33.33	1.04	454.94
MW-33-150	155	487.77	3/3/15 10:39 AM	32.56	1.04	455.71
MW-33-150	155	487.77	3/18/15 9:19 AM	32.30	1.04	455.97
MW-33-150	155	487.77	4/1/15 10:18 AM	31.80	1.02	456.46
MW-33-150	155	487.77	4/27/15 7:29 AM	31.88	1.02	456.38
MW-33-150	155	487.77	4/27/15 11:26 AM	32.24	1.02	456.02
MW-33-150	155	487.77	5/4/15 6:40 AM	31.20	1.02	457.06
MW-33-150	155	487.77	6/1/15 12:45 PM	32.47	1.02	455.79
MW-33-150	155	487.77	7/2/15 8:17 AM	32.56	1.02	455.65
MW-33-150	155	487.77	7/9/15 12:54 PM	32.77	1.02	455.49
MW-33-150	155	487.77	8/3/15 9:05 AM	32.47	1.02	455.79
MW-33-150	155	487.77	8/3/15 9:07 AM	32.47	1.02	455.79
MW-33-150	155	487.77	9/1/15 12:03 PM	32.90	1.02	455.35
MW-33-150	155	487.77	9/1/15 12:01 PM	32.90	1.02	455.35
MW-33-150	155	487.77	9/15/15 10:34 AM	32.62	1.02	455.64
MW-33-150	155	487.77	9/15/15 10:37 AM	32.62	1.02	455.64
MW-33-150	155	487.77	10/5/15 9:13 AM	33.40	1.02	454.85
MW-33-150	155	487.77	10/5/15 9:15 AM	33.40	1.02	454.85
MW-33-150	155	487.77	11/4/15 9:51 AM	33.74	1.02	454.46
MW-33-150	155	487.77	11/5/15 9:54 AM	33.74	1.02	454.46
MW-33-150B	155	487.77	1/5/15 1:44 PM	34.59	1.11	453.74
MW-33-150B	155	487.77	1/20/15 11:55 AM	33.83	1.11	454.51
MW-33-150B	155	487.77	1/22/15 2:52 PM	33.77	1.11	454.59
MW-33-150B	155	487.77	2/4/15 2:50 PM	34.06	1.11	454.30
MW-33-150B	155	487.77	2/5/15 3:00 PM	33.99	1.11	454.37
MW-33-150B	155	487.77	2/26/15 1:45 PM	34.01	1.11	454.34
MW-33-150B	155	487.77	2/26/15 2:02 PM	34.01	1.11	454.34
MW-33-150B	155	487.77	3/3/15 10:39 AM	32.56	1.11	455.77
MW-33-150B	155	487.77	3/3/15 10:37 AM	33.33	1.11	455.00
MW-33-150B	155	487.77	4/1/15 10:18 AM	31.80	1.11	456.54
MW-33-150B	155	487.77	5/4/15 6:40 AM	31.20	1.11	457.15

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-33-150B	155	487.77	6/1/15 12:51 PM	32.47	1.11	455.90
MW-33-150B	155	487.77	7/2/15 8:17 AM	32.56	1.11	--
MW-33-150B	155	487.77	7/9/15 12:54 PM	32.77	1.11	455.58
MW-33-150B	155	487.77	8/3/15 9:05 AM	32.47	1.11	455.88
MW-33-150B	155	487.77	8/3/15 9:07 AM	32.47	1.11	455.88
MW-33-150B	155	487.77	9/1/15 12:03 PM	32.90	1.02	455.38
MW-33-150B	155	487.77	9/1/15 12:01 PM	32.90	1.02	455.38
MW-33-150B	155	487.77	9/15/15 10:37 AM	32.62	1.02	455.66
MW-33-150B	155	487.77	9/15/15 10:34 AM	32.62	1.02	455.66
MW-33-150B	155	487.77	10/5/15 9:13 AM	33.40	1.02	454.88
MW-33-150B	155	487.77	10/5/15 9:15 AM	33.40	1.02	454.88
MW-33-150B	155	487.77	11/4/15 9:51 AM	33.74	1.02	454.53
MW-33-150B	155	487.77	11/5/15 9:54 AM	33.74	1.02	454.53
MW-33-210	223	487.25	4/27/15 7:28 AM	31.75	1.23	456.45
MW-34-055	57	460.95	1/4/15 11:12 AM	7.80	0.10	453.10
MW-34-055	57	460.95	2/4/15 12:38 PM	7.10	0.10	453.76
MW-34-055	57	460.95	3/5/15 1:33 PM	6.98	0.10	453.88
MW-34-055	57	460.95	3/30/15 10:15 AM	4.19	0.10	456.72
MW-34-055	57	460.95	5/3/15 7:23 AM	3.55	0.10	457.31
MW-34-055	57	460.95	6/2/15 6:18 AM	4.36	0.06	456.53
MW-34-055	57	460.95	7/1/15 7:11 AM	4.96	0.06	455.89
MW-34-055	57	460.95	8/3/15 7:29 AM	4.81	0.06	456.06
MW-34-055	57	460.95	9/1/15 8:10 AM	4.83	0.06	456.02
MW-34-055	57	460.95	10/5/15 7:52 AM	6.31	0.06	454.54
MW-34-055	57	460.95	11/4/15 12:47 PM	6.97	0.06	453.88
MW-34-080	84	461.20	1/4/15 11:08 AM	8.11	0.50	453.22
MW-34-080	84	461.20	2/4/15 12:29 PM	7.40	0.50	453.90
MW-34-080	84	461.20	3/5/15 1:38 PM	7.32	0.50	453.98
MW-34-080	84	461.20	3/30/15 10:24 AM	4.82	0.50	456.55
MW-34-080	84	461.20	4/20/15 9:56 AM	4.95	0.50	456.35
MW-34-080	84	461.20	4/20/15 11:35 AM	5.34	0.50	455.96
MW-34-080	84	461.20	5/3/15 7:19 AM	3.75	0.50	457.55
MW-34-080	84	461.20	6/2/15 6:15 AM	4.79	0.45	456.54
MW-34-080	84	461.20	7/1/15 7:08 AM	5.35	0.45	455.92
MW-34-080	84	461.20	8/3/15 7:25 AM	5.23	0.45	456.08
MW-34-080	84	461.20	9/1/15 8:15 AM	5.08	0.45	456.19
MW-34-080	84	461.20	9/15/15 8:51 AM	5.29	0.45	456.00
MW-34-080	84	461.20	10/5/15 7:56 AM	6.71	0.45	454.56
MW-34-080	84	461.20	11/4/15 12:51 PM	7.34	0.45	453.93
MW-34-100	117	460.97	1/4/15 11:03 AM	8.68	1.12	452.97
MW-34-100	117	460.97	1/7/15 2:54 PM	8.06	1.12	453.60
MW-34-100	117	460.97	2/4/15 12:03 PM	7.97	1.12	453.61
MW-34-100	117	460.97	2/16/15 12:42 PM	7.65	1.12	454.02
MW-34-100	117	460.97	2/16/15 11:55 AM	7.56	1.12	454.11
MW-34-100	117	460.97	3/6/15 2:27 PM	7.46	1.12	454.12
MW-34-100	117	460.97	3/30/15 10:07 AM	5.22	1.12	456.37
MW-34-100	117	460.97	4/20/15 10:38 AM	5.68	1.06	455.96
MW-34-100	117	460.97	4/20/15 11:40 AM	5.88	1.06	455.76
MW-34-100	117	460.97	5/6/15 11:20 AM	6.05	1.06	455.49
MW-34-100	117	460.97	6/2/15 6:10 AM	5.36	1.06	456.18
MW-34-100	117	460.97	7/1/15 7:00 AM	5.85	1.06	455.69
MW-34-100	117	460.97	7/1/15 7:03 AM	5.85	1.06	455.69
MW-34-100	117	460.97	8/3/15 7:20 AM	5.79	1.06	455.80
MW-34-100	117	460.97	9/1/15 8:20 AM	5.59	1.02	455.95
MW-34-100	117	460.97	9/15/15 8:43 AM	5.75	1.02	455.78
MW-34-100	117	460.97	9/15/15 8:46 AM	5.75	1.02	455.78
MW-34-100	117	460.97	10/5/15 8:02 AM	7.14	1.02	454.38
MW-34-100	117	460.97	10/5/15 8:06 AM	7.14	1.02	454.38
MW-34-100	117	460.97	10/6/15 7:05 AM	6.00	1.02	455.51

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-34-100	117	460.97	10/6/15 7:48 AM	6.00	1.02	455.51
MW-34-100	117	460.97	11/4/15 12:56 PM	7.76	1.02	453.74
MW-34-100	117	460.97	11/4/15 1:00 PM	7.76	1.02	453.74
MW-34-100B	117	460.97	1/4/15 11:03 AM	8.68	1.03	452.92
MW-34-100B	117	460.97	1/7/15 2:54 PM	8.06	1.03	453.54
MW-34-100B	117	460.97	2/4/15 12:03 PM	7.97	1.03	453.65
MW-34-100B	117	460.97	3/6/15 2:27 PM	7.46	1.03	454.16
MW-34-100B	117	460.97	3/30/15 10:07 AM	5.22	1.03	456.42
MW-34-100B	117	460.97	5/6/15 11:20 AM	6.05	1.03	455.59
MW-34-100B	117	460.97	6/2/15 6:10 AM	5.36	1.03	456.28
MW-34-100B	117	460.97	7/1/15 7:03 AM	5.85	1.03	455.79
MW-34-100B	117	460.97	7/1/15 7:00 AM	5.85	1.03	455.79
MW-34-100B	117	460.97	8/3/15 7:20 AM	5.79	1.03	455.85
MW-34-100B	117	460.97	9/1/15 8:20 AM	5.59	1.02	456.04
MW-34-100B	117	460.97	9/15/15 8:43 AM	5.75	1.02	455.87
MW-34-100B	117	460.97	9/15/15 8:46 AM	5.75	1.02	455.87
MW-34-100B	117	460.97	10/5/15 8:06 AM	7.14	1.02	454.47
MW-34-100B	117	460.97	10/5/15 8:02 AM	7.14	1.02	454.47
MW-34-100B	117	460.97	11/4/15 1:00 PM	7.76	1.02	453.83
MW-34-100B	117	460.97	11/4/15 12:56 PM	7.76	1.02	453.83
MW-35-060	57	484.33	1/13/15 9:48 AM	29.97	0.45	454.35
MW-35-060	57	484.33	2/6/15 11:53 AM	29.65	0.45	454.67
MW-35-060	57	484.33	3/5/15 11:35 AM	29.48	0.45	454.84
MW-35-060	57	484.33	4/1/15 11:20 AM	27.24	0.45	457.07
MW-35-060	57	484.33	5/6/15 7:21 AM	27.27	0.45	457.04
MW-35-060	57	484.33	5/7/15 9:51 AM	7.62	0.45	476.69
MW-35-060	57	484.33	5/7/15 10:35 AM	27.69	0.45	456.62
MW-35-060	57	484.33	6/3/15 7:33 AM	27.88	0.44	456.44
MW-35-060	57	484.33	7/1/15 12:00 PM	28.32	0.44	455.99
MW-35-060	57	484.33	8/4/15 9:51 AM	28.32	0.44	456.00
MW-35-060	57	484.33	9/2/15 10:31 AM	28.33	0.44	455.99
MW-35-060	57	484.33	10/5/15 10:11 AM	29.19	0.44	455.12
MW-35-060	57	484.33	11/5/15 10:31 AM	30.60	0.44	453.71
MW-35-135	159	484.24	1/13/15 9:44 AM	29.72	0.67	454.68
MW-35-135	159	484.24	2/6/15 11:50 AM	29.42	0.67	454.96
MW-35-135	159	484.24	3/5/15 11:39 AM	29.24	0.67	455.17
MW-35-135	159	484.24	4/1/15 11:16 AM	27.48	0.67	456.91
MW-35-135	159	484.24	5/6/15 7:16 AM	27.26	0.67	457.13
MW-35-135	159	484.24	5/7/15 10:42 AM	27.57	0.67	456.82
MW-35-135	159	484.24	5/7/15 11:30 AM	27.61	0.67	456.78
MW-35-135	159	484.24	6/3/15 7:30 AM	27.74	0.68	456.68
MW-35-135	159	484.24	7/1/15 11:55 AM	28.10	0.68	456.30
MW-35-135	159	484.24	8/4/15 9:47 AM	28.07	0.68	456.36
MW-35-135	159	484.24	9/2/15 10:28 AM	28.19	0.68	456.24
MW-35-135	159	484.24	10/5/15 10:08 AM	28.75	0.68	455.65
MW-35-135	159	484.24	11/5/15 10:28 AM	29.23	0.68	455.17
MW-36-020	20	469.33	1/4/15 1:15 PM	16.34	0.40	452.99
MW-36-020	20	469.33	2/4/15 2:51 PM	15.64	0.40	453.69
MW-36-020	20	469.33	3/5/15 2:30 PM	15.29	0.40	454.04
MW-36-020	20	469.33	3/31/15 9:43 AM	12.98	0.40	456.35
MW-36-020	20	469.33	5/3/15 8:35 AM	12.70	0.40	456.63
MW-36-020	20	469.33	6/2/15 7:26 AM	13.49	0.45	455.85
MW-36-020	20	469.33	7/1/15 8:25 AM	13.82	0.45	455.51
MW-36-020	20	469.33	8/3/15 8:31 AM	13.87	0.45	455.47
MW-36-020	20	469.33	9/1/15 9:26 AM	13.90	0.45	455.43
MW-36-020	20	469.33	10/7/15 10:51 AM	14.62	0.45	454.71
MW-36-020	20	469.33	11/4/15 1:54 PM	15.37	0.45	453.96
MW-36-040	40	469.59	1/4/15 1:26 PM	16.70	0.10	452.84
MW-36-040	40	469.59	2/4/15 3:00 PM	16.05	0.10	453.49

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-36-040	40	469.59	3/5/15 2:39 PM	15.75	0.10	453.81
MW-36-040	40	469.59	3/31/15 9:55 AM	13.06	0.10	456.50
MW-36-040	40	469.59	5/3/15 8:40 AM	12.81	0.10	456.73
MW-36-040	40	469.59	6/2/15 7:35 AM	13.55	0.08	456.01
MW-36-040	40	469.59	7/1/15 8:31 AM	14.10	0.08	455.43
MW-36-040	40	469.59	8/3/15 8:38 AM	14.02	0.08	455.54
MW-36-040	40	469.59	9/1/15 9:35 AM	14.11	0.08	455.42
MW-36-040	40	469.59	10/7/15 10:59 AM	14.99	0.08	454.57
MW-36-040	40	469.59	11/4/15 2:02 PM	15.83	0.08	453.71
MW-36-050	108	469.62	1/4/15 1:34 PM	16.72	0.09	452.79
MW-36-050	108	469.62	2/4/15 3:10 PM	16.08	0.09	453.35
MW-36-050	108	469.62	3/5/15 2:53 PM	16.78	0.09	452.65
MW-36-050	108	469.62	3/31/15 10:08 AM	13.10	0.09	456.41
MW-36-050	108	469.62	5/3/15 8:47 AM	12.83	0.09	456.59
MW-36-050	108	469.62	6/9/15 9:56 AM	14.15	0.08	455.33
MW-36-050	108	469.62	7/1/15 8:45 AM	14.15	0.08	455.27
MW-36-050	108	469.62	8/3/15 8:47 AM	14.03	0.08	455.50
MW-36-050	108	469.62	9/1/15 9:58 AM	14.16	0.08	455.26
MW-36-050	108	469.62	10/7/15 11:16 AM	15.06	0.08	454.48
MW-36-070	70	469.27	1/4/15 1:18 PM	16.40	0.10	452.79
MW-36-070	70	469.27	2/4/15 2:46 PM	15.75	0.10	453.40
MW-36-070	70	469.27	3/5/15 2:34 PM	15.45	0.10	453.75
MW-36-070	70	469.27	3/31/15 9:49 AM	12.70	0.10	456.50
MW-36-070	70	469.27	5/3/15 8:38 AM	12.45	0.10	456.69
MW-36-070	70	469.27	6/2/15 7:30 AM	13.18	0.07	456.01
MW-36-070	70	469.27	7/1/15 8:28 AM	13.79	0.07	455.34
MW-36-070	70	469.27	8/3/15 8:34 AM	13.65	0.07	455.54
MW-36-070	70	469.27	9/1/15 9:29 AM	13.73	0.07	455.40
MW-36-070	70	469.27	10/7/15 10:54 AM	14.67	0.07	454.52
MW-36-070	70	469.27	11/4/15 1:56 PM	15.50	0.07	453.64
MW-36-090	90	469.64	1/4/15 1:22 PM	17.50	0.08	452.04
MW-36-090	90	469.64	2/4/15 2:56 PM	16.86	0.08	452.62
MW-36-090	90	469.64	3/5/15 2:44 PM	16.57	0.08	452.90
MW-36-090	90	469.64	3/31/15 10:03 AM	14.15	0.08	455.40
MW-36-090	90	469.64	4/23/15 11:45 AM	14.75	0.08	454.72
MW-36-090	90	469.64	4/23/15 12:47 PM	14.85	0.08	454.62
MW-36-090	90	469.64	5/3/15 8:42 AM	13.42	0.08	456.05
MW-36-090	90	469.64	6/2/15 7:33 AM	14.52	0.07	455.02
MW-36-090	90	469.64	7/1/15 8:33 AM	15.02	0.07	454.45
MW-36-090	90	469.64	8/3/15 8:41 AM	14.94	0.07	454.60
MW-36-090	90	469.64	9/1/15 9:52 AM	14.71	0.07	454.76
MW-36-090	90	469.64	9/15/15 9:29 AM	14.97	0.07	454.57
MW-36-090	90	469.64	10/7/15 11:01 AM	14.82	0.07	454.72
MW-36-090	90	469.64	11/4/15 2:06 PM	16.59	0.07	452.88
MW-36-100	108	469.65	1/4/15 1:30 PM	17.56	0.61	452.30
MW-36-100	108	469.65	2/4/15 3:04 PM	16.92	0.61	452.85
MW-36-100	108	469.65	3/5/15 2:48 PM	16.64	0.61	453.14
MW-36-100	108	469.65	3/31/15 10:13 AM	14.22	0.61	455.66
MW-36-100	108	469.65	4/23/15 12:48 PM	14.91	0.61	454.87
MW-36-100	108	469.65	5/3/15 8:49 AM	13.46	0.61	456.32
MW-36-100	108	469.65	6/2/15 7:38 AM	14.60	0.48	455.20
MW-36-100	108	469.65	7/1/15 8:36 AM	15.10	0.48	454.59
MW-36-100	108	469.65	8/3/15 8:49 AM	15.01	0.48	454.79
MW-36-100	108	469.65	9/1/15 9:55 AM	14.74	0.48	454.95
MW-36-100	108	469.65	9/15/15 9:25 AM	15.01	0.48	454.78
MW-36-100	108	469.65	10/7/15 11:11 AM	15.90	0.48	453.88
MW-36-100	108	469.65	11/4/15 2:15 PM	16.68	0.48	453.01
MW-37D	227	486.19	4/27/15 1:08 PM	30.20	1.00	456.52
MW-37S	85	485.97	8/13/15 12:39 PM	30.22	0.34	455.65

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-38D	191	525.31	4/30/15 7:44 AM	69.81	1.40	456.15
MW-38S	98	525.51	2/9/15 9:30 AM	71.21	0.16	454.22
MW-38S	98	525.51	2/9/15 11:25 AM	71.16	0.16	454.27
MW-38S	98	525.51	4/30/15 6:34 AM	69.86	0.16	455.56
MW-38S	98	525.51	4/30/15 8:20 AM	69.85	0.16	455.57
MW-38S	98	525.51	8/13/15 11:32 AM	69.94	0.16	455.48
MW-38S	98	525.51	9/28/15 8:52 AM	70.05	0.16	455.37
MW-38S	98	525.51	9/28/15 6:50 AM	70.05	0.16	455.37
MW-39-040	42	468.02	1/4/15 12:39 PM	15.23	0.47	452.82
MW-39-040	42	468.02	2/4/15 2:23 PM	14.54	0.47	453.48
MW-39-040	42	468.02	3/5/15 2:16 PM	14.28	0.47	453.74
MW-39-040	42	468.02	3/31/15 9:10 AM	11.66	0.47	456.40
MW-39-040	42	468.02	5/3/15 7:51 AM	11.29	0.47	456.73
MW-39-040	42	468.02	6/2/15 6:47 AM	12.15	0.10	455.83
MW-39-040	42	468.02	7/1/15 10:05 AM	12.95	0.10	455.00
MW-39-040	42	468.02	8/3/15 8:04 AM	12.59	0.10	455.39
MW-39-040	42	468.02	9/1/15 8:53 AM	12.70	0.10	455.25
MW-39-040	42	468.02	10/6/15 10:20 AM	13.47	0.10	454.51
MW-39-040	42	468.02	11/4/15 1:34 PM	14.15	0.10	453.80
MW-39-050	55	467.93	1/4/15 12:33 PM	15.20	0.11	452.67
MW-39-050	55	467.93	2/4/15 2:18 PM	14.52	0.11	453.32
MW-39-050	55	467.93	3/5/15 2:06 PM	14.27	0.11	453.57
MW-39-050	55	467.93	3/31/15 8:58 AM	11.67	0.11	456.20
MW-39-050	55	467.93	5/3/15 7:45 AM	11.27	0.11	456.56
MW-39-050	55	467.93	6/2/15 6:41 AM	12.15	0.09	455.72
MW-39-050	55	467.93	7/9/15 9:43 AM	12.70	0.09	455.14
MW-39-050	55	467.93	8/3/15 7:58 AM	12.60	0.09	455.26
MW-39-050	55	467.93	9/1/15 8:47 AM	12.70	0.09	455.13
MW-39-050	55	467.93	10/6/15 12:14 PM	13.45	0.09	454.41
MW-39-050	55	467.93	11/4/15 1:26 PM	14.15	0.09	453.68
MW-39-060	66	468.00	1/4/15 12:22 PM	15.40	0.11	452.52
MW-39-060	66	468.00	2/4/15 2:06 PM	14.73	0.11	453.15
MW-39-060	66	468.00	3/5/15 2:00 PM	14.49	0.11	453.39
MW-39-060	66	468.00	3/31/15 8:54 AM	11.95	0.11	455.97
MW-39-060	66	468.00	5/3/15 7:42 AM	11.52	0.11	456.35
MW-39-060	66	468.00	6/2/15 6:34 AM	12.42	0.10	455.50
MW-39-060	66	468.00	7/9/15 9:33 AM	12.90	0.10	454.99
MW-39-060	66	468.00	8/3/15 7:55 AM	12.85	0.10	455.08
MW-39-060	66	468.00	9/1/15 8:43 AM	12.98	0.10	454.89
MW-39-060	66	468.00	10/6/15 10:07 AM	13.67	0.10	454.25
MW-39-060	66	468.00	11/4/15 1:23 PM	14.21	0.10	453.67
MW-39-070	72	468.02	1/4/15 12:37 PM	15.85	0.20	452.13
MW-39-070	72	468.02	2/18/15 2:18 PM	15.11	0.20	452.87
MW-39-070	72	468.02	3/5/15 2:20 PM	14.94	0.20	453.04
MW-39-070	72	468.02	3/31/15 9:14 AM	12.66	0.20	455.32
MW-39-070	72	468.02	5/3/15 7:54 AM	12.17	0.20	455.75
MW-39-070	72	468.02	6/2/15 6:50 AM	13.02	0.17	454.95
MW-39-070	72	468.02	7/1/15 10:08 AM	13.62	0.17	454.29
MW-39-070	72	468.02	8/3/15 8:07 AM	13.43	0.17	454.54
MW-39-070	72	468.02	9/1/15 8:56 AM	13.82	0.17	454.09
MW-39-070	72	468.02	10/6/15 10:22 AM	14.16	0.17	453.81
MW-39-070	72	468.02	11/4/15 1:38 PM	14.08	0.17	453.83
MW-39-080	83	467.92	1/4/15 12:30 PM	15.72	0.52	452.29
MW-39-080	83	467.92	2/4/15 2:14 PM	15.06	0.52	452.89
MW-39-080	83	467.92	3/5/15 2:10 PM	14.81	0.52	453.21
MW-39-080	83	467.92	3/31/15 9:04 AM	12.55	0.52	455.47
MW-39-080	83	467.92	5/3/15 7:48 AM	12.03	0.52	455.92
MW-39-080	83	467.92	6/2/15 6:44 AM	12.93	0.41	455.04
MW-39-080	83	467.92	7/2/15 10:47 AM	13.78	0.41	454.12

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-39-080	83	467.92	8/3/15 8:01 AM	13.33	0.41	454.64
MW-39-080	83	467.92	9/1/15 8:50 AM	13.50	0.41	454.40
MW-39-080	83	467.92	9/15/15 9:07 AM	13.35	0.41	454.62
MW-39-080	83	467.92	10/6/15 10:17 AM	14.06	0.41	453.91
MW-39-080	83	467.92	11/4/15 1:30 PM	14.29	0.41	453.61
MW-39-100	118	468.12	1/4/15 12:27 PM	15.96	1.20	452.84
MW-39-100	118	468.12	2/4/15 2:10 PM	15.29	1.20	453.36
MW-39-100	118	468.12	3/5/15 1:58 PM	15.06	1.20	453.59
MW-39-100	118	468.12	3/31/15 8:49 AM	12.73	1.20	456.09
MW-39-100	118	468.12	4/21/15 12:52 PM	13.28	1.20	455.38
MW-39-100	118	468.12	4/21/15 12:02 PM	13.22	1.20	455.44
MW-39-100	118	468.12	5/6/15 11:38 AM	13.38	1.20	455.28
MW-39-100	118	468.12	6/2/15 6:38 AM	13.23	1.05	455.47
MW-39-100	118	468.12	7/9/15 9:24 AM	13.64	1.05	454.99
MW-39-100	118	468.12	8/3/15 7:51 AM	13.58	1.05	455.09
MW-39-100	118	468.12	9/1/15 8:40 AM	13.69	1.05	454.86
MW-39-100	118	468.12	9/15/15 9:03 AM	13.60	1.05	455.07
MW-39-100	118	468.12	10/6/15 10:10 AM	14.28	1.05	454.38
MW-39-100	118	468.12	11/4/15 1:20 PM	14.57	1.05	453.97
MW-40D	266	566.08	5/12/15 1:10 PM	109.82	1.03	456.64
MW-41D	312	479.42	5/6/15 8:30 AM	23.19	1.37	457.75
MW-42-030	30	463.74	1/14/15 12:10 PM	10.46	0.28	453.25
MW-42-030	30	463.74	2/4/15 1:56 PM	10.23	0.28	453.48
MW-42-030	30	463.74	3/5/15 1:53 PM	9.96	0.28	453.77
MW-42-030	30	463.74	3/30/15 10:38 AM	7.61	0.28	456.12
MW-42-030	30	463.74	5/3/15 7:34 AM	7.02	0.28	456.69
MW-42-030	30	463.74	6/2/15 6:28 AM	7.98	0.26	455.75
MW-42-030	30	463.74	7/1/15 7:53 AM	8.32	0.26	455.39
MW-42-030	30	463.74	8/3/15 7:45 AM	8.44	0.26	455.29
MW-42-030	30	463.74	9/1/15 8:33 AM	8.47	0.26	455.24
MW-42-030	30	463.74	10/6/15 10:01 AM	9.19	0.26	454.54
MW-42-030	30	463.74	11/4/15 1:08 PM	10.05	0.26	453.66
MW-42-055	53	463.85	4/20/15 8:14 AM	7.40	0.67	456.55
MW-42-065	80	463.37	1/4/15 12:10 PM	10.55	0.51	452.92
MW-42-065	80	463.37	2/4/15 2:00 PM	9.84	0.51	453.60
MW-42-065	80	463.37	3/5/15 1:48 PM	9.58	0.51	453.86
MW-42-065	80	463.37	3/30/15 10:33 AM	7.20	0.51	456.28
MW-42-065	80	463.37	4/20/15 9:10 AM	7.14	0.51	456.30
MW-42-065	80	463.37	4/20/15 9:51 AM	7.32	0.51	456.12
MW-42-065	80	463.37	5/3/15 7:32 AM	6.60	0.51	456.84
MW-42-065	80	463.37	6/2/15 6:24 AM	7.59	0.45	455.87
MW-42-065	80	463.37	7/1/15 7:50 AM	7.91	0.45	455.50
MW-42-065	80	463.37	8/3/15 7:39 AM	8.02	0.45	455.39
MW-42-065	80	463.37	9/1/15 8:29 AM	8.04	0.45	455.37
MW-42-065	80	463.37	10/6/15 9:58 AM	8.78	0.45	454.68
MW-42-065	80	463.37	11/4/15 1:12 PM	9.64	0.45	453.77
MW-43-025	25	462.54	1/5/15 1:17 PM	9.18	0.08	453.34
MW-43-025	25	462.54	2/5/15 12:48 PM	8.53	0.08	453.98
MW-43-025	25	462.54	3/5/15 12:46 PM	8.41	0.08	454.10
MW-43-025	25	462.54	3/31/15 11:18 AM	5.71	0.08	456.81
MW-43-025	25	462.54	5/3/15 9:37 AM	5.70	0.08	456.81
MW-43-025	25	462.54	6/2/15 8:18 AM	6.26	0.09	456.26
MW-43-025	25	462.54	7/1/15 7:32 AM	6.42	0.09	456.09
MW-43-025	25	462.54	8/3/15 6:40 AM	6.45	0.09	456.07
MW-43-025	25	462.54	9/2/15 7:15 AM	6.36	0.09	456.16
MW-43-025	25	462.54	10/6/15 9:35 AM	7.51	0.09	455.01
MW-43-025	25	462.54	11/4/15 12:13 PM	8.53	0.09	453.99
MW-43-090	97	462.76	1/5/15 1:13 PM	9.63	1.15	453.64
MW-43-090	97	462.76	2/5/15 12:43 PM	9.10	1.15	454.17

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-43-090	97	462.76	3/5/15 12:50 PM	8.90	1.15	454.41
MW-43-090	97	462.76	3/31/15 11:14 AM	6.19	1.15	457.14
MW-43-090	97	462.76	5/3/15 9:34 AM	6.18	1.15	457.11
MW-43-090	97	462.76	6/2/15 8:14 AM	6.71	1.15	456.62
MW-43-090	97	462.76	7/1/15 7:29 AM	6.91	1.15	456.37
MW-43-090	97	462.76	8/3/15 6:36 AM	6.85	1.15	456.48
MW-43-090	97	462.76	9/2/15 7:12 AM	6.78	1.15	456.54
MW-43-090	97	462.76	10/6/15 9:32 AM	7.96	1.15	455.35
MW-43-090	97	462.76	11/4/15 12:08 PM	9.01	1.15	454.26
MW-44-070	70	471.90	1/4/15 2:00 PM	18.96	0.16	452.91
MW-44-070	70	471.90	2/5/15 1:39 PM	18.12	0.16	453.73
MW-44-070	70	471.90	3/5/15 11:37 AM	17.39	0.16	454.46
MW-44-070	70	471.90	3/31/15 9:33 AM	15.16	0.16	456.70
MW-44-070	70	471.90	4/23/15 5:57 AM	14.90	0.16	456.95
MW-44-070	70	471.90	4/23/15 7:05 AM	15.10	0.16	456.75
MW-44-070	70	471.90	5/3/15 9:13 AM	15.12	0.16	456.73
MW-44-070	70	471.90	6/9/15 10:17 AM	16.44	0.14	455.42
MW-44-070	70	471.90	7/1/15 11:01 AM	16.83	0.14	455.01
MW-44-070	70	471.90	8/3/15 8:22 AM	16.11	0.14	455.75
MW-44-070	70	471.90	9/1/15 9:19 AM	16.25	0.14	455.59
MW-44-070	70	471.90	10/6/15 11:00 AM	17.25	0.14	454.61
MW-44-070	70	471.90	11/4/15 2:43 PM	18.19	0.14	453.65
MW-44-115	114	472.01	1/4/15 1:54 PM	19.70	0.72	452.63
MW-44-115	114	472.01	2/5/15 1:35 PM	18.82	0.72	453.43
MW-44-115	114	472.01	2/17/15 8:15 AM	18.41	0.72	453.84
MW-44-115	114	472.01	2/17/15 9:02 AM	18.42	0.72	453.83
MW-44-115	114	472.01	3/6/15 11:29 AM	18.31	0.72	453.95
MW-44-115	114	472.01	3/31/15 9:23 AM	16.26	0.72	456.09
MW-44-115	114	472.01	4/23/15 9:57 AM	16.73	0.72	455.53
MW-44-115	114	472.01	4/23/15 8:40 AM	16.51	0.72	455.75
MW-44-115	114	472.01	5/3/15 9:03 AM	16.04	0.72	456.22
MW-44-115	114	472.01	5/18/15 10:06 AM	17.66	0.72	454.60
MW-44-115	114	472.01	6/2/15 7:59 AM	16.75	0.72	455.58
MW-44-115	114	472.01	7/1/15 10:55 AM	17.64	0.72	454.62
MW-44-115	114	472.01	8/3/15 8:18 AM	17.08	0.72	455.25
MW-44-115	114	472.01	9/1/15 9:13 AM	17.13	0.72	455.13
MW-44-115	114	472.01	9/15/15 9:20 AM	17.13	0.72	455.20
MW-44-115	114	472.01	10/6/15 8:37 AM	17.80	0.72	454.53
MW-44-115	114	472.01	10/6/15 10:41 AM	18.03	0.72	454.30
MW-44-115	114	472.01	10/6/15 7:52 AM	17.65	0.72	454.68
MW-44-115	114	472.01	11/4/15 2:38 PM	18.89	0.72	453.36
MW-44-125	129	472.04	1/4/15 2:03 PM	19.23	0.72	453.13
MW-44-125	129	472.04	2/5/15 1:44 PM	18.33	0.72	453.98
MW-44-125	129	472.04	2/26/15 1:00 PM	18.44	0.72	453.93
MW-44-125	129	472.04	3/6/15 11:35 AM	17.83	0.72	454.54
MW-44-125	129	472.04	3/31/15 9:29 AM	15.81	0.72	456.58
MW-44-125	129	472.04	4/23/15 7:05 AM	15.72	0.72	456.60
MW-44-125	129	472.04	4/23/15 8:28 AM	16.14	0.72	456.18
MW-44-125	129	472.04	5/3/15 9:15 AM	15.63	0.72	456.69
MW-44-125	129	472.04	6/2/15 7:54 AM	16.28	0.64	456.05
MW-44-125	129	472.04	7/1/15 11:04 AM	17.19	0.64	455.06
MW-44-125	129	472.04	8/3/15 8:26 AM	16.80	0.64	455.52
MW-44-125	129	472.04	9/1/15 9:16 AM	16.68	0.64	455.57
MW-44-125	129	472.04	9/15/15 9:15 AM	16.64	0.64	455.67
MW-44-125	129	472.04	10/6/15 10:54 AM	17.59	0.64	454.71
MW-44-125	129	472.04	11/4/15 2:49 PM	18.40	0.64	453.85
MW-45-095a	97	470.03	1/4/15 1:44 PM	18.35	0.24	451.70
MW-45-095a	97	470.03	2/4/15 3:19 PM	17.72	0.24	452.29
MW-45-095a	97	470.03	3/6/15 11:23 AM	16.89	0.24	453.12

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-45-095a	97	470.03	3/31/15 10:20 AM	14.97	0.24	455.04
MW-45-095a	97	470.03	5/3/15 8:56 AM	11.80	0.24	458.20
MW-45-095a	97	470.03	6/9/15 10:06 AM	15.90	0.24	454.10
MW-45-095a	97	470.03	7/1/15 10:40 AM	16.32	0.24	453.73
MW-45-095a	97	470.03	7/1/15 10:43 AM	16.32	0.24	453.73
MW-45-095a	97	470.03	7/9/15 9:58 AM	15.87	0.24	454.13
MW-45-095a	97	470.03	8/3/15 8:55 AM	15.71	0.24	454.29
MW-45-095a	97	470.03	9/1/15 11:50 AM	13.43	0.28	456.65
MW-45-095a	97	470.03	9/15/15 9:34 AM	15.74	0.28	454.33
MW-45-095a	97	470.03	9/15/15 9:39 AM	15.74	0.28	454.33
MW-45-095a	97	470.03	10/5/15 9:05 AM	16.97	0.28	453.10
MW-45-095a	97	470.03	10/5/15 9:03 AM	16.97	0.28	453.10
MW-45-095a	97	470.03	11/4/15 2:24 PM	17.52	0.28	452.51
MW-45-095a	97	470.03	11/5/15 2:03 PM	17.52	0.28	452.51
MW-45-095aB	97	470.03	1/4/15 1:44 PM	18.35	0.41	451.76
MW-45-095aB	97	470.03	2/4/15 3:19 PM	17.72	0.41	452.40
MW-45-095aB	97	470.03	3/6/15 11:23 AM	16.89	0.41	453.23
MW-45-095aB	97	470.03	3/31/15 10:20 AM	14.97	0.41	455.16
MW-45-095aB	97	470.03	5/3/15 8:56 AM	11.80	0.41	458.33
MW-45-095aB	97	470.03	6/9/15 10:06 AM	15.90	0.41	454.23
MW-45-095aB	97	470.03	7/1/15 10:40 AM	16.32	0.41	453.81
MW-45-095aB	97	470.03	7/1/15 10:43 AM	16.32	0.41	453.81
MW-45-095aB	97	470.03	7/9/15 9:58 AM	15.87	0.41	454.22
MW-45-095aB	97	470.03	8/3/15 8:55 AM	15.71	0.41	454.41
MW-45-095aB	97	470.03	9/1/15 11:50 AM	13.43	0.28	456.61
MW-45-095aB	97	470.03	9/15/15 9:34 AM	15.74	0.28	454.30
MW-45-095aB	97	470.03	9/15/15 9:39 AM	15.74	0.28	454.30
MW-45-095aB	97	470.03	10/5/15 9:03 AM	16.97	0.28	453.07
MW-45-095aB	97	470.03	10/5/15 9:05 AM	16.97	0.28	453.07
MW-45-095aB	97	470.03	11/4/15 2:24 PM	17.52	0.28	452.51
MW-45-095aB	97	470.03	11/5/15 2:03 PM	17.52	0.28	--
MW-46-175	176	482.16	1/13/15 3:06 PM	29.53	1.17	453.56
MW-46-175	176	482.16	2/5/15 3:09 PM	28.99	1.17	453.98
MW-46-175	176	482.16	2/16/15 10:33 AM	28.55	1.17	454.42
MW-46-175	176	482.16	2/16/15 11:35 AM	28.55	1.17	454.42
MW-46-175	176	482.16	3/5/15 12:25 PM	28.89	1.17	454.20
MW-46-175	176	482.16	4/1/15 10:47 AM	26.76	1.17	456.22
MW-46-175	176	482.16	4/21/15 9:34 AM	26.88	1.17	456.10
MW-46-175	176	482.16	4/21/15 8:02 AM	26.60	1.17	456.38
MW-46-175	176	482.16	5/6/15 7:00 AM	26.68	1.17	456.30
MW-46-175	176	482.16	6/3/15 7:11 AM	26.98	1.17	456.14
MW-46-175	176	482.16	7/2/15 8:29 AM	27.62	1.17	455.36
MW-46-175	176	482.16	8/4/15 8:46 AM	27.58	1.17	455.54
MW-46-175	176	482.16	9/1/15 12:20 PM	27.90	1.17	455.08
MW-46-175	176	482.16	9/15/15 10:11 AM	27.51	1.17	455.61
MW-46-175	176	482.16	10/5/15 9:32 AM	28.47	1.17	454.50
MW-46-175	176	482.16	10/6/15 9:42 AM	28.11	1.17	454.87
MW-46-175	176	482.16	10/6/15 10:37 AM	28.21	1.17	454.77
MW-46-175	176	482.16	11/5/15 10:07 AM	28.73	1.17	454.24
MW-46-205	207	482.23	4/21/15 8:05 AM	26.95	1.39	456.51
MW-47-055	55	484.04	1/13/15 2:31 PM	29.86	0.30	454.15
MW-47-055	55	484.04	2/5/15 2:48 PM	29.49	0.30	454.51
MW-47-055	55	484.04	3/5/15 11:52 AM	29.23	0.30	454.77
MW-47-055	55	484.04	4/1/15 11:05 AM	27.32	0.30	456.68
MW-47-055	55	484.04	5/6/15 6:28 AM	27.12	0.30	456.88
MW-47-055	55	484.04	5/7/15 7:10 AM	27.30	0.30	456.70
MW-47-055	55	484.04	5/7/15 7:55 AM	27.33	0.30	456.67
MW-47-055	55	484.04	6/3/15 6:30 AM	27.73	0.29	456.28
MW-47-055	55	484.04	7/2/15 7:14 AM	27.91	0.29	456.09

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-47-055	55	484.04	8/4/15 7:50 AM	28.12	0.29	455.89
MW-47-055	55	484.04	9/1/15 12:44 PM	28.30	0.29	455.70
MW-47-055	55	484.04	10/5/15 9:58 AM	28.81	0.29	455.19
MW-47-055	55	484.04	11/5/15 9:34 AM	29.35	0.29	454.65
MW-47-115	115	484.17	1/13/15 2:27 PM	30.27	0.89	454.15
MW-47-115	115	484.17	2/5/15 2:44 PM	29.82	0.89	454.56
MW-47-115	115	484.17	3/5/15 11:48 AM	29.67	0.89	454.71
MW-47-115	115	484.17	4/1/15 11:01 AM	27.86	0.89	456.52
MW-47-115	115	484.17	5/6/15 6:25 AM	27.58	0.89	456.81
MW-47-115	115	484.17	5/7/15 8:14 AM	27.80	0.89	456.58
MW-47-115	115	484.17	5/7/15 9:15 AM	27.86	0.89	456.52
MW-47-115	115	484.17	6/3/15 6:38 AM	28.09	0.90	456.34
MW-47-115	115	484.17	7/2/15 7:29 AM	28.37	0.90	456.02
MW-47-115	115	484.17	8/4/15 7:55 AM	28.48	0.90	455.96
MW-47-115	115	484.17	9/1/15 12:47 PM	28.76	0.90	455.63
MW-47-115	115	484.17	10/5/15 10:02 AM	29.19	0.90	455.20
MW-47-115	115	484.17	11/5/15 9:36 AM	29.64	0.90	454.75
MW-48	138	486.22	5/5/15 8:15 AM	30.24	1.16	456.37
MW-49-135	135	484.02	1/13/15 3:21 PM	29.41	0.89	455.02
MW-49-135	135	484.02	2/5/15 11:58 AM	29.85	0.89	454.52
MW-49-135	135	484.02	3/5/15 12:00 PM	29.71	0.89	454.72
MW-49-135	135	484.02	4/1/15 10:55 AM	27.59	0.89	456.79
MW-49-135	135	484.02	5/18/15 10:41 AM	28.66	0.89	455.72
MW-49-135	135	484.02	6/3/15 7:20 AM	27.86	0.89	456.55
MW-49-135	135	484.02	7/2/15 7:41 AM	28.38	0.89	456.00
MW-49-135	135	484.02	8/4/15 8:07 AM	28.32	0.89	456.09
MW-49-135	135	484.02	9/1/15 12:39 PM	28.79	0.89	455.59
MW-49-135	135	484.02	10/5/15 9:50 AM	29.32	0.89	455.06
MW-49-135	135	484.02	11/5/15 9:41 AM	29.59	0.89	454.78
MW-50-095	95	496.49	1/14/15 1:25 PM	42.62	0.33	453.78
MW-50-095	95	496.49	2/5/15 2:28 PM	42.22	0.33	454.18
MW-50-095	95	496.49	3/5/15 1:04 PM	41.89	0.33	454.52
MW-50-095	95	496.49	4/1/15 3:30 PM	40.39	0.33	456.00
MW-50-095	95	496.49	5/6/15 7:32 AM	40.07	0.33	456.32
MW-50-095	95	496.49	5/6/15 12:16 PM	40.23	0.33	456.17
MW-50-095	95	496.49	5/6/15 1:37 PM	40.25	0.33	456.15
MW-50-095	95	496.49	6/3/15 10:14 AM	40.66	0.35	455.75
MW-50-095	95	496.49	7/2/15 9:02 AM	40.78	0.35	455.62
MW-50-095	95	496.49	8/4/15 10:00 AM	40.97	0.35	455.44
MW-50-095	95	496.49	9/2/15 9:56 AM	41.07	0.35	455.34
MW-50-095	95	496.49	10/6/15 8:28 AM	41.35	0.35	455.06
MW-50-095	95	496.49	11/5/15 1:15 PM	41.96	0.35	454.44
MW-50-200	205	496.35	5/20/15 6:16 AM	41.22	1.40	456.06
MW-51	113	501.56	1/13/15 2:15 PM	47.60	0.70	454.03
MW-51	113	501.56	2/6/15 11:28 AM	47.34	0.70	454.26
MW-51	113	501.56	3/6/15 2:14 PM	47.06	0.70	454.54
MW-51	113	501.56	4/1/15 12:30 PM	46.18	0.70	455.42
MW-51	113	501.56	5/19/15 11:55 AM	45.85	0.70	455.75
MW-51	113	501.56	5/20/15 1:23 PM	45.85	0.72	455.76
MW-51	113	501.56	6/3/15 9:32 AM	45.81	0.72	455.80
MW-51	113	501.56	7/2/15 10:27 AM	45.92	0.72	455.69
MW-51	113	501.56	8/4/15 7:07 AM	46.16	0.72	455.48
MW-51	113	501.56	9/2/15 9:48 AM	46.23	0.72	455.41
MW-51	113	501.56	10/6/15 8:16 AM	46.29	0.72	455.35
MW-51	113	501.56	11/5/15 12:05 PM	46.68	0.72	454.93
MW-54-085	93	466.10	1/5/15 4:27 PM	12.27	0.66	453.94
MW-54-085	93	466.10	2/5/15 8:38 AM	11.45	0.66	454.76
MW-54-085	93	466.10	3/2/15 1:53 PM	10.73	0.66	455.47
MW-54-085	93	466.10	3/30/15 1:49 PM	9.17	0.66	457.05

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-54-085	93	466.10	4/28/15 1:08 PM	10.15	0.66	456.06
MW-54-085	93	466.10	4/28/15 11:04 AM	9.82	0.66	456.39
MW-54-085	93	466.10	5/14/15 1:15 PM	10.35	0.66	455.86
MW-54-085	93	466.10	6/11/15 12:44 PM	10.51	0.67	455.72
MW-54-085	93	466.10	6/29/15 12:17 PM	10.48	0.67	455.74
MW-54-085	93	466.10	8/4/15 12:53 PM	10.83	0.67	455.31
MW-54-085	93	466.10	9/3/15 1:10 PM	10.64	0.67	455.55
MW-54-085	93	466.10	10/5/15 12:51 PM	11.73	0.67	454.49
MW-54-085	93	466.10	11/4/15 9:47 AM	11.56	0.67	454.66
MW-54-140	138	465.98	1/5/15 4:29 PM	11.95	0.83	454.38
MW-54-140	138	465.98	2/5/15 8:45 AM	11.29	0.83	455.05
MW-54-140	138	465.98	3/2/15 1:57 PM	10.64	0.83	455.65
MW-54-140	138	465.98	3/30/15 1:53 PM	9.27	0.83	457.03
MW-54-140	138	465.98	4/28/15 11:06 AM	9.78	0.83	456.56
MW-54-140	138	465.98	4/28/15 1:08 PM	10.05	0.83	456.29
MW-54-140	138	465.98	5/14/15 1:22 PM	10.22	0.83	456.12
MW-54-140	138	465.98	6/11/15 12:48 PM	10.42	0.84	455.88
MW-54-140	138	465.98	6/29/15 12:20 PM	10.39	0.84	455.95
MW-54-140	138	465.98	8/4/15 1:06 PM	10.77	0.84	455.39
MW-54-140	138	465.98	9/3/15 1:39 PM	10.67	0.84	455.60
MW-54-140	138	465.98	10/5/15 12:57 PM	11.41	0.84	454.93
MW-54-140	138	465.98	11/4/15 9:41 AM	11.37	0.84	454.97
MW-54-195	195	466.32	1/5/15 4:11 PM	12.74	1.25	454.64
MW-54-195	195	466.32	2/5/15 8:27 AM	12.10	1.25	455.28
MW-54-195	195	466.32	3/2/15 1:46 PM	11.51	1.25	455.87
MW-54-195	195	466.32	3/30/15 1:43 PM	10.19	1.25	457.15
MW-54-195	195	466.32	4/28/15 1:09 PM	10.80	1.25	456.58
MW-54-195	195	466.32	4/28/15 11:07 AM	10.58	1.25	456.81
MW-54-195	195	466.32	5/14/15 12:57 PM	10.96	1.25	456.42
MW-54-195	195	466.32	6/11/15 12:35 PM	11.19	1.27	456.16
MW-54-195	195	466.32	6/29/15 12:26 PM	11.18	1.27	456.23
MW-54-195	195	466.32	8/4/15 12:36 PM	11.51	1.27	455.81
MW-54-195	195	466.32	9/3/15 1:02 PM	11.39	1.27	455.92
MW-54-195	195	466.32	10/5/15 12:05 PM	12.13	1.27	455.27
MW-54-195	195	466.32	11/4/15 9:55 AM	12.18	1.27	455.22
MW-55-045	54	465.66	1/5/15 2:49 PM	10.42	0.10	455.11
MW-55-045	54	465.66	2/5/15 9:31 AM	9.99	0.10	455.54
MW-55-045	54	465.66	3/3/15 11:51 AM	9.53	0.10	456.00
MW-55-045	54	465.66	3/30/15 11:43 AM	8.37	0.10	457.17
MW-55-045	54	465.66	4/29/15 8:12 AM	8.50	0.10	457.02
MW-55-045	54	465.66	4/29/15 9:39 AM	8.55	0.10	456.97
MW-55-045	54	465.66	5/14/15 10:55 AM	8.78	0.10	456.75
MW-55-045	54	465.66	6/11/15 10:47 AM	9.14	0.10	456.41
MW-55-045	54	465.66	6/29/15 11:00 AM	9.18	0.10	456.35
MW-55-045	54	465.66	8/4/15 10:57 AM	9.42	0.10	456.12
MW-55-045	54	465.66	9/3/15 10:54 AM	9.35	0.10	456.19
MW-55-045	54	465.66	10/5/15 11:29 AM	9.71	0.10	455.82
MW-55-045	54	465.66	11/4/15 11:09 AM	10.03	0.10	455.50
MW-55-120	120	465.46	1/5/15 2:54 PM	10.35	0.57	455.13
MW-55-120	120	465.46	2/5/15 9:36 AM	9.95	0.57	455.53
MW-55-120	120	465.46	3/3/15 11:56 AM	9.54	0.57	455.96
MW-55-120	120	465.46	3/30/15 11:47 AM	8.48	0.57	457.02
MW-55-120	120	465.46	4/29/15 8:56 AM	8.55	0.57	456.93
MW-55-120	120	465.46	4/29/15 9:46 AM	8.57	0.57	456.91
MW-55-120	120	465.46	5/14/15 11:10 AM	8.78	0.57	456.70
MW-55-120	120	465.46	6/11/15 10:50 AM	9.11	0.57	456.39
MW-55-120	120	465.46	6/29/15 11:03 AM	9.16	0.57	456.32
MW-55-120	120	465.46	8/4/15 10:59 AM	9.40	0.57	456.11
MW-55-120	120	465.46	9/3/15 10:58 AM	9.36	0.57	456.15

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-55-120	120	465.46	10/5/15 11:32 AM	9.62	0.57	455.86
MW-55-120	120	465.46	10/21/15 9:28 AM	9.43	0.57	456.05
MW-55-120	120	465.46	11/4/15 11:05 AM	10.00	0.57	455.48
MW-57-050	50	508.76	2/16/15 7:10 AM	51.60	--	--
MW-57-070	70	509.37	5/21/15 11:55 AM	52.09	0.15	457.22
MW-57-185	185	508.97	5/11/15 6:22 AM	57.76	1.25	451.79
MW-58-065	66	523.26	2/10/15 12:40 PM	67.50	--	--
MW-58-065	66	523.26	5/18/15 7:42 AM	66.58	--	--
MW-58BR	--	--	2/10/15 12:58 PM	67.82	0.56	--
MW-58BR	--	--	5/18/15 7:30 AM	66.50	0.56	--
MW-58BR	--	--	9/30/15 11:10 AM	66.45	0.56	--
MW-59-100	101	541.61	5/19/15 2:03 PM	84.82	0.66	456.80
MW-59-100	101	541.61	5/19/15 1:12 PM	84.82	0.66	456.80
MW-60-125	123	555.47	5/14/15 7:46 AM	98.51	0.58	456.95
MW-60BR-245	244	554.95	2/9/15 12:57 PM	99.81	1.13	455.68
MW-60BR-245	244	554.95	5/13/15 6:48 AM	98.40	1.13	457.10
MW-60BR-245	244	554.95	9/28/15 12:00 PM	98.60	1.13	456.89
MW-61-110	113	544.03	5/13/15 9:23 AM	87.16	1.02	456.95
MW-62-065	67	503.56	2/16/15 8:06 AM	48.81	0.42	454.73
MW-62-065	67	503.56	5/13/15 8:00 AM	47.20	0.42	456.33
MW-62-065	67	503.56	10/7/15 9:52 AM	47.96	0.42	455.58
MW-63-065	66	504.47	2/10/15 9:58 AM	50.21	0.48	454.26
MW-63-065	66	504.47	4/29/15 6:52 AM	47.82	0.48	456.65
MW-63-065	66	504.47	9/28/15 8:37 AM	47.76	0.48	456.71
MW-64BR	260	575.60	2/18/15 9:07 AM	120.60	0.90	455.39
MW-64BR	260	575.60	5/18/15 8:55 AM	119.52	0.90	456.46
MW-64BR	260	575.60	10/1/15 6:20 AM	120.60	0.90	455.37
MW-65-160	160	596.59	2/17/15 9:45 AM	141.18	0.27	455.35
MW-65-160	160	596.59	3/24/15 7:50 AM	140.66	0.27	455.87
MW-65-160	160	596.59	5/11/15 9:14 AM	139.75	0.27	456.78
MW-65-160	160	596.59	9/30/15 8:48 AM	141.60	0.27	454.94
MW-65-225	225	596.58	2/17/15 10:56 AM	141.19	0.75	455.45
MW-65-225	225	596.58	5/11/15 9:36 AM	139.73	0.75	456.91
MW-65-225	225	596.58	9/30/15 9:31 AM	139.95	0.75	456.69
MW-66-165	162	586.16	5/13/15 11:40 AM	129.40	0.29	456.68
MW-66-230	228	586.22	5/21/15 6:53 AM	129.86	1.22	456.76
MW-67-185	187	625.91	5/20/15 12:02 PM	169.14	0.33	456.72
MW-67-225	225	625.83	5/20/15 8:14 AM	169.31	0.50	456.45
MW-67-260	260	625.81	5/20/15 9:52 AM	169.35	1.14	456.77
MW-68-180	180	621.17	2/18/15 12:04 PM	165.85	0.25	455.28
MW-68-180	180	621.17	5/18/15 11:38 AM	164.35	0.25	456.77
MW-68-180	180	621.17	9/30/15 7:21 AM	164.75	0.25	456.37
MW-68-240	240	621.17	5/21/15 8:31 AM	164.60	1.04	456.77
MW-68BR-280	278	620.64	5/27/15 9:47 AM	162.96	1.33	458.29
MW-69-195	196	631.36	2/17/15 12:28 PM	175.48	0.24	455.82
MW-69-195	196	631.36	5/14/15 6:20 AM	174.05	0.24	457.24
MW-69-195	196	631.36	10/1/15 11:05 AM	174.30	0.24	456.99
MW-70-105	108	541.47	5/7/15 12:20 PM	83.96	0.23	457.44
MW-70BR-225	229	539.84	5/27/15 12:58 PM	82.30	0.91	457.85
MW-71-035	36	483.69	5/5/15 8:45 AM	26.67	0.53	457.02
MW-72-080	80	513.32	2/11/15 12:38 PM	59.06	1.03	454.34
MW-72-080	80	513.32	5/11/15 11:58 AM	59.45	1.03	453.95
MW-72-080	80	513.32	9/29/15 11:22 AM	57.60	1.03	455.80
MW-72BR-200	200	513.79	2/11/15 8:28 AM	58.85	1.01	455.41
MW-72BR-200	200	513.79	5/4/15 10:05 AM	56.55	1.01	457.72
MW-72BR-200	200	513.79	9/29/15 6:10 AM	57.46	1.01	456.81
MW-73-080	80	505.84	2/9/15 1:40 PM	51.42	0.70	454.46
MW-73-080	80	505.84	5/5/15 10:44 AM	48.65	0.70	457.23
MW-73-080	80	505.84	9/28/15 11:22 AM	49.27	0.70	456.61

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
MW-74-240	240	672.34	5/12/15 6:47 AM	214.98	0.06	457.28
OW-01D	277	550.37	2/10/15 11:08 AM	93.78	0.50	456.44
OW-01D	277	550.37	5/14/15 9:06 AM	92.47	0.50	457.75
OW-01D	277	550.37	7/14/15 7:31 AM	92.70	0.50	457.52
OW-01M	186	550.36	2/10/15 11:06 AM	94.17	0.49	456.11
OW-01M	186	550.36	5/14/15 9:04 AM	92.64	0.49	457.64
OW-01M	186	550.36	7/14/15 7:29 AM	92.92	0.49	457.36
OW-01S	114	550.21	1/22/15 12:44 PM	94.74	0.37	455.44
OW-01S	114	550.21	2/10/15 11:03 AM	94.44	0.42	455.75
OW-01S	114	550.21	2/19/15 11:34 AM	94.39	0.37	455.80
OW-01S	114	550.21	3/18/15 10:13 AM	93.84	0.37	456.35
OW-01S	114	550.21	4/16/15 10:28 AM	93.11	0.37	457.08
OW-01S	114	550.21	5/14/15 9:01 AM	92.85	0.42	457.34
OW-01S	114	550.21	5/20/15 10:09 AM	92.98	0.42	457.21
OW-01S	114	550.21	6/16/15 1:03 PM	93.02	0.42	457.17
OW-01S	114	550.21	7/14/15 7:25 AM	93.13	0.42	457.05
OW-01S	114	550.21	8/18/15 6:45 AM	93.39	0.42	456.81
OW-01S	114	550.21	9/16/15 7:59 AM	93.43	0.42	456.75
OW-01S	114	550.21	10/21/15 8:28 AM	93.49	0.42	456.69
OW-02D	340	549.01	2/10/15 11:16 AM	92.38	0.49	456.39
OW-02D	340	549.01	5/14/15 9:14 AM	91.06	0.49	457.71
OW-02D	340	549.01	7/14/15 7:42 AM	91.28	0.49	457.49
OW-02M	210	548.52	2/10/15 11:13 AM	92.30	0.49	456.11
OW-02M	210	548.52	5/14/15 9:11 AM	90.80	0.49	457.61
OW-02M	210	548.52	7/14/15 7:39 AM	91.09	0.49	457.32
OW-02S	104	548.88	1/22/15 12:56 PM	93.38	0.15	455.47
OW-02S	104	548.88	2/10/15 11:11 AM	93.07	0.16	455.78
OW-02S	104	548.88	2/19/15 11:41 AM	93.04	0.15	455.81
OW-02S	104	548.88	3/18/15 10:24 AM	92.44	0.15	456.41
OW-02S	104	548.88	4/16/15 10:38 AM	91.68	0.15	457.17
OW-02S	104	548.88	5/14/15 9:09 AM	91.46	0.16	457.39
OW-02S	104	548.88	5/20/15 10:15 AM	91.63	0.16	457.22
OW-02S	104	548.88	6/16/15 1:09 PM	91.62	0.16	457.23
OW-02S	104	548.88	7/14/15 7:36 AM	91.78	0.16	457.06
OW-02S	104	548.88	8/18/15 6:50 AM	92.02	0.16	456.83
OW-02S	104	548.88	9/16/15 8:05 AM	92.06	0.16	456.78
OW-02S	104	548.88	10/21/15 8:33 AM	92.14	0.16	456.70
OW-05D	350	552.41	1/22/15 1:16 PM	95.85	0.55	456.44
OW-05D	350	552.41	2/10/15 11:23 AM	95.50	0.49	456.85
OW-05D	350	552.41	2/19/15 11:56 AM	95.57	0.55	456.90
OW-05D	350	552.41	3/18/15 10:43 AM	95.40	0.55	457.07
OW-05D	350	552.41	4/16/15 10:53 AM	95.37	0.55	457.11
OW-05D	350	552.41	5/14/15 9:22 AM	94.32	0.49	458.06
OW-05D	350	552.41	5/20/15 10:50 AM	94.42	0.49	457.96
OW-05D	350	552.41	6/16/15 1:32 PM	94.35	0.49	458.02
OW-05D	350	552.41	7/8/15 6:43 AM	94.32	0.49	457.86
OW-05D	350	552.41	7/14/15 7:55 AM	94.49	0.49	457.69
OW-05D	350	552.41	8/18/15 7:08 AM	94.80	0.49	457.55
OW-05D	350	552.41	9/16/15 8:27 AM	94.80	0.49	457.38
OW-05D	350	552.41	10/21/15 8:48 AM	94.97	0.49	457.21
OW-05M	250	551.81	1/22/15 1:09 PM	95.21	0.50	456.49
OW-05M	250	551.81	2/10/15 11:21 AM	94.66	0.49	457.11
OW-05M	250	551.81	2/19/15 11:51 AM	94.72	0.50	457.07
OW-05M	250	551.81	3/18/15 10:33 AM	94.82	0.50	456.97
OW-05M	250	551.81	4/16/15 10:49 AM	94.70	0.50	457.10
OW-05M	250	551.81	5/14/15 9:20 AM	93.25	0.49	458.54
OW-05M	250	551.81	5/20/15 10:38 AM	93.33	0.49	458.47
OW-05M	250	551.81	6/16/15 1:20 PM	93.28	0.49	458.52
OW-05M	250	551.81	7/14/15 7:51 AM	93.55	0.49	458.14

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
OW-05M	250	551.81	8/18/15 7:01 AM	94.27	0.49	511.90
OW-05M	250	551.81	9/16/15 8:23 AM	94.19	0.49	457.50
OW-05M	250	551.81	10/21/15 8:44 AM	94.39	0.49	457.30
OW-05S	110	551.83	1/22/15 1:03 PM	96.21	0.29	455.59
OW-05S	110	551.83	2/10/15 11:19 AM	95.90	0.37	455.92
OW-05S	110	551.83	2/19/15 11:47 AM	95.87	0.29	455.94
OW-05S	110	551.83	3/18/15 10:29 AM	95.35	0.29	456.46
OW-05S	110	551.83	4/16/15 10:44 AM	94.61	0.29	457.20
OW-05S	110	551.83	5/14/15 9:18 AM	94.35	0.37	457.45
OW-05S	110	551.83	5/20/15 10:34 AM	94.45	0.37	457.35
OW-05S	110	551.83	6/16/15 1:15 PM	94.47	0.37	457.34
OW-05S	110	551.83	7/14/15 7:47 AM	94.62	0.37	457.18
OW-05S	110	551.83	8/18/15 6:56 AM	94.87	0.37	512.45
OW-05S	110	551.83	9/16/15 8:13 AM	94.92	0.37	456.88
OW-05S	110	551.83	10/21/15 8:38 AM	94.97	0.37	456.83
PGE-08	564	596.01	1/7/15 11:08 AM	141.10	1.20	456.50
PT2D	105	473.48	1/14/15 10:23 AM	21.22	0.69	452.45
PT2D	105	473.48	2/5/15 1:25 PM	20.73	0.69	452.94
PT2D	105	473.48	3/6/15 11:58 AM	20.53	0.69	453.14
PT2D	105	473.48	3/31/15 10:41 AM	18.76	0.69	454.91
PT2D	105	473.48	5/3/15 8:25 AM	18.41	0.69	455.26
PT2D	105	473.48	6/2/15 6:56 AM	18.95	0.80	454.79
PT2D	105	473.48	7/1/15 10:15 AM	19.61	0.80	454.13
PT2D	105	473.48	8/4/15 7:37 AM	19.53	0.80	454.21
PT2D	105	473.48	9/2/15 6:47 AM	19.37	0.80	454.37
PT2D	105	473.48	9/15/15 9:57 AM	19.49	0.80	454.25
PT2D	105	473.48	10/7/15 10:31 AM	20.06	0.80	453.68
PT2D	105	473.48	11/5/15 12:26 PM	20.85	0.80	452.89
PT5D	105	473.65	1/14/15 10:19 AM	21.05	0.90	452.97
PT5D	105	473.65	2/5/15 1:13 PM	20.48	0.90	453.54
PT5D	105	473.65	3/6/15 11:46 AM	20.34	0.90	453.68
PT5D	105	473.65	3/31/15 10:30 AM	18.51	0.90	455.52
PT5D	105	473.65	5/3/15 8:15 AM	18.23	0.90	455.80
PT5D	105	473.65	6/2/15 7:06 AM	18.76	1.02	455.35
PT5D	105	473.65	7/1/15 10:23 AM	19.47	1.02	454.63
PT5D	105	473.65	8/4/15 7:28 AM	19.30	1.02	454.81
PT5D	105	473.65	9/2/15 6:37 AM	18.99	1.02	455.12
PT5D	105	473.65	9/15/15 9:52 AM	19.25	1.02	454.86
PT5D	105	473.65	10/7/15 10:20 AM	20.04	1.02	454.06
PT5D	105	473.65	11/5/15 12:13 PM	20.96	1.02	--
PT6D	105	476.08	1/14/15 10:29 AM	23.32	0.76	453.02
PT6D	105	476.08	2/5/15 1:18 PM	22.21	0.76	454.13
PT6D	105	476.08	3/6/15 11:51 AM	22.62	0.76	453.72
PT6D	105	476.08	3/31/15 10:35 AM	20.80	0.76	455.55
PT6D	105	476.08	5/3/15 8:19 AM	20.38	0.76	455.97
PT6D	105	476.08	6/2/15 7:02 AM	21.03	0.71	455.29
PT6D	105	476.08	7/1/15 10:19 AM	21.74	0.71	454.58
PT6D	105	476.08	8/4/15 7:32 AM	21.60	0.71	454.72
PT6D	105	476.08	9/2/15 6:42 AM	21.37	0.71	454.95
PT6D	105	476.08	10/7/15 10:26 AM	22.16	0.71	454.16
PT6D	105	476.08	11/5/15 12:19 PM	23.00	0.71	453.32
RRB	--	458.73	1/14/15 10:03 AM	4.58	--	454.15
RRB	--	458.73	2/5/15 11:47 AM	4.56	--	454.17
RRB	--	458.73	3/6/15 2:44 PM	4.10	--	454.63
RRB	--	458.73	4/1/15 2:05 PM	2.00	--	456.73
RRB	--	458.73	5/20/15 12:32 PM	3.27	--	455.46
RRB	--	458.73	9/3/15 7:49 AM	2.06	--	456.67
RRB	--	458.73	10/6/15 1:19 PM	4.43	--	454.30
RRB	--	458.73	11/5/15 12:57 PM	4.72	--	454.01

Table D-2

Manual Water Level Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Well Depth (feet BMP)	Measuring Point Eleveation (feet amsl)	Monitoring Date/Time	Water Level Measurement (feet BMP)	Salinity (percent)	Groundwater Eleveation Adjusted for Salinity (feet amsl)
TW-02S	98	499.05	1/13/15 11:28 AM	40.93	0.22	458.00

Notes:

--- = data was not collected, was not available, was rejected or there was a field instrument malfunction.
amsl = above mean sea level
BMP = below well measuring point.

Well depths rounded off to whole foot.
Salinity used to adjust water level to freshwater equivalent. Salinity values have been averaged in accordance with the Performance Monitoring Program

Table D-3

Field Water Quality Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Specific Conductance (uS/cm)	Temperature (deg C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
C-BNS-D	1/14/2015	1,598	12.82	7.93	-151	10.79
C-BNS-D	2/24/2015	804.7	14.11	8.2	-67	10.04
C-BNS-D	6/9/2015	909.4	21.9	8	-138	8.64
C-BNS-D	12/8/2015	1,055	14.97	8.27	176.8	10.09
C-CON-D	1/15/2015	775.2	12.66	7.38	-80	10.16
C-CON-D	2/25/2015	1,033	14.85	8.05	-80	9.94
C-CON-D	6/10/2015	962	20.76	7.54	-210	8.82
C-CON-D	12/9/2015	1,067	14.44	7.88	150.4	9.47
C-CON-S	1/15/2015	778.9	12.71	8.3	-111	10.38
C-CON-S	2/25/2015	1,018	14.14	8.06	-97	10.54
C-CON-S	6/10/2015	957.3	20.79	7.75	-212	8.99
C-CON-S	12/9/2015	1,060	14.13	7.97	140.4	9.56
C-I-3-D	1/14/2015	1,653	12.54	7.74	-132	10.76
C-I-3-D	2/24/2015	799.5	13.84	8.03	-55	10.26
C-I-3-D	6/9/2015	908.9	22.09	7.65	-111	8.66
C-I-3-D	12/8/2015	1,090	14.02	7.81	163.8	9.97
C-I-3-S	1/14/2015	1,584	12.53	8.07	-141	11.22
C-I-3-S	2/24/2015	796.5	13.69	8.17	-54	10.44
C-I-3-S	6/9/2015	902	21.82	7.76	-117	8.73
C-I-3-S	12/8/2015	1,082	14.49	7.84	190.4	9.44
C-MAR-D	12/9/2015	1,182	12.49	7.62	106.1	9.33
C-MAR-S	1/14/2015	1,603	12.03	7.45	-105	10.42
C-MAR-S	2/24/2015	863	14.33	8.15	-61	10.09
C-MAR-S	6/10/2015	1,113	23.25	7.92	-227	7.11
C-MAR-S	12/9/2015	1,194	12.6	7.64	89.8	9.85
C-NR1-D	1/15/2015	774.6	12.66	8	-106	10.57
C-NR1-D	2/25/2015	1,021	14.08	7.96	-107	10.15
C-NR1-D	6/10/2015	954	20.68	7.87	-213	8.93
C-NR1-D	12/9/2015	1,067	14.27	7.98	127.5	9.52
C-NR1-S	1/15/2015	775.6	12.67	7.86	-111	10.7
C-NR1-S	2/25/2015	1,020	14.19	7.99	-109	10.27
C-NR1-S	6/10/2015	958	20.85	7.94	-215	8.9
C-NR1-S	12/9/2015	1,083	14.33	8.01	136.4	9.34
C-NR3-D	1/15/2015	778	12.76	7.88	-108	10.6
C-NR3-D	2/25/2015	1,029	14.28	7.9	-118	9.85
C-NR3-D	6/10/2015	961	20.96	7.95	-217	8.66
C-NR3-D	12/9/2015	1,028	14.34	7.99	155.6	9.7
C-NR3-S	1/15/2015	811.8	12.66	7.97	-115	10.77
C-NR3-S	2/25/2015	1,027	14.19	8.06	-121	10.25
C-NR3-S	6/10/2015	961.6	21.02	8.02	-224	8.71
C-NR3-S	12/9/2015	1,092	13.87	8	124.7	9.73
C-NR4-D	1/15/2015	778	12.67	7.88	-110	10.41
C-NR4-D	2/25/2015	1,031	14.27	7.98	-111	9.91
C-NR4-D	6/10/2015	1,086	20.9	8.03	-224	8.37
C-NR4-D	12/9/2015	1,063	13.79	7.99	108.2	9.98
C-NR4-S	1/15/2015	1,062	12.63	8	-115	10.69
C-NR4-S	2/25/2015	1,026	14.19	8.06	-112	10.22
C-NR4-S	6/10/2015	958	20.87	7.96	-225	8.61
C-NR4-S	12/9/2015	1,061	13.82	8.02	111.4	9.88
C-R22a-D	1/14/2015	1,598	12.82	7.95	-146	11
C-R22a-D	2/24/2015	800.7	13.85	8.25	-56	10.57
C-R22a-D	6/9/2015	919.2	22.63	7.96	-137	8.67

Table D-3

Field Water Quality Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Specific Conductance (uS/cm)	Temperature (deg C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
C-R22a-D	12/8/2015	1,079	15.28	8.25	176.3	9.75
C-R22a-S	1/14/2015	1,599	12.84	7.97	-150	10.98
C-R22a-S	2/24/2015	803.1	14.02	8.26	-57	10.54
C-R22a-S	6/9/2015	910	22.17	8.02	-140	8.97
C-R22a-S	12/8/2015	1,080	15	8.27	201.5	9.76
C-R27-D	1/14/2015	1,598	12.8	7.89	-148	10.88
C-R27-D	2/24/2015	804.4	14.07	8.17	-60	10.38
C-R27-D	6/9/2015	902	21.88	8.02	-139	8.57
C-R27-D	12/8/2015	1,041	15.52	8.18	134.7	9.61
C-R27-S	1/14/2015	1,600	12.81	8	-150	10.89
C-R27-S	2/24/2015	806.5	14.14	8.2	-65	10.25
C-R27-S	6/9/2015	899.2	21.77	8.06	-141	8.98
C-R27-S	12/8/2015	1,046	15.22	8.06	123.8	9.78
C-TAZ-D	1/14/2015	1,592	12.79	7.54	-101	10.36
C-TAZ-D	2/24/2015	802.3	13.94	7.7	-46	10.4
C-TAZ-D	6/9/2015	912	21.94	7.33	-104	8.76
C-TAZ-D	12/8/2015	1,076	13.73	7.28	118.9	8.99
C-TAZ-S	1/14/2015	1,590	12.71	7.69	-132	10.79
C-TAZ-S	2/24/2015	802.4	13.94	7.72	-50	10.31
C-TAZ-S	6/9/2015	902.5	21.68	7.36	-107	8.97
C-TAZ-S	12/8/2015	1,069	13.85	7.72	148.1	10.34
MW-09	5/12/2015	3,507	30.01	7.62	-174	4.58
MW-09	10/7/2015	3,048	28	7.34	89	4.31
MW-09	12/1/2015	3,400	30.2	7.44	30.8	2.47
MW-10	5/12/2015	3,414	29.46	7.44	-167	4.61
MW-10	10/7/2015	2,609	29	7.42	71	5.45
MW-10	12/1/2015	2,946	29.4	7.42	66.7	3.12
MW-11	5/12/2015	2,565	30.11	7.47	-141	8.01
MW-11	10/7/2015	2,378	30	7.42	75	7.46
MW-11	12/2/2015	2,733	30.4	7.63	76.6	4.3
MW-12	5/19/2015	7,122	28.95	7.74	-81	4.89
MW-12	12/2/2015	6,602	27.7	7.99	97.8	3.14
MW-13	12/7/2015	2,220	28.3	7.29	62.5	5.86
MW-14	5/6/2015	2,239	30.38	7.45	-111	6.54
MW-14	12/7/2015	2,209	31.1	7.63	30.9	7.45
MW-15	12/9/2015	1,805	31.5	7.57	69	7.82
MW-16	12/8/2015	1,128	31.4	7.52	63	8.15
MW-17	12/9/2015	1,369	27	7.7	153	7.91
MW-18	12/7/2015	1,509	30	7.45	28.6	7.33
MW-19	5/14/2015	2,490	28.7	7.44	-108	6.44
MW-19	12/7/2015	1,866	29.7	7.44	58.8	4.86
MW-20-070	5/19/2015	2,005	28.69	7.34	-178	8
MW-20-070	12/8/2015	1,793	29.2	7.7	62.2	4.72
MW-20-100	5/19/2015	2,692	28.98	7.23	-190	6.35
MW-20-100	12/8/2015	2,362	30	7.28	52.9	4.01
MW-20-130	5/19/2015	11,790	29.15	7.2	-252	1.14
MW-20-130	12/8/2015	11,709	29.2	7.48	59.3	0.74
MW-21	5/6/2015	10,660	28.49	7.17	-343	0.04
MW-21	12/9/2015	11,581	24.9	7.2	-18	1.99
MW-22	4/22/2015	29,772	24.98	6.9	-391	--
MW-22	12/3/2015	21,990	24.6	6.54	-79.6	0.39
MW-23-060	4/30/2015	17,330	29.81	8.88	70	4.87

Table D-3

Field Water Quality Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Specific Conductance (uS/cm)	Temperature (deg C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
MW-23-060	12/3/2015	16,993	27.9	9.78	-44	3.38
MW-23-080	4/30/2015	17,350	29.69	10.06	-143	0.14
MW-23-080	12/3/2015	16,281	29.7	10.42	-39.5	0.18
MW-24A	4/29/2015	2,005	32.94	8.29	-198	0.05
MW-24A	12/1/2015	1,779	31.8	8.57	-142.2	0.2
MW-24B	4/29/2015	20,200	31.95	7.7	-280	0.1
MW-24B	12/1/2015	18,741	28.8	8.14	-92.8	0.22
MW-24BR	12/2/2015	13,576	31	7.73	-218.7	0.07
MW-25	5/11/2015	2,081	30.03	8	-141	6.5
MW-25	12/7/2015	5,888	31.2	7.94	85.7	7.25
MW-26	5/19/2015	4,682	29.83	7.5	-240	6.6
MW-27-020	12/3/2015	1,086	20.4	7.6	-39.6	0.23
MW-27-060	12/3/2015	1,009	18.3	7.53	-133.6	0.24
MW-27-085	4/20/2015	10,030	20.22	7.43	-38.6	0.1
MW-27-085	12/3/2015	9,975	18.9	7.24	-58	0.27
MW-28-025	4/21/2015	968.4	20.7	6.99	-280	0
MW-28-025	12/2/2015	1,215	22.9	7.19	75.8	0.35
MW-28-090	4/21/2015	5,002	19.6	7.09	-38	0.04
MW-28-090	12/2/2015	4,972	19.2	7.13	-43.6	0.3
MW-29	4/21/2015	2,490	24.44	7.18	-309	0.02
MW-29	12/1/2015	2,718	23.8	7.17	-120.3	0.3
MW-30-030	12/3/2015	11,993	22.6	7.65	-112.3	0.19
MW-30-050	12/3/2015	1,048	21.1	7.42	-56	0.2
MW-31-060	5/13/2015	3,707	28.79	7.52	-188	5.39
MW-31-060	12/7/2015	2,853	29	7.63	-26.5	5.99
MW-31-135	12/7/2015	12,693	28.8	7.75	-187.3	0.41
MW-32-020	12/3/2015	38,706	26.3	6.83	-58.6	0.21
MW-32-035	4/20/2015	10,970	24.82	7.48	-262	0.6
MW-32-035	12/3/2015	11,259	24.6	7.16	-121.3	0.23
MW-33-040	4/27/2015	7,221	26.56	8.04	-254	0.37
MW-33-040	12/1/2015	17,803	24.1	7.7	71	0.46
MW-33-090	4/27/2015	10,130	26.57	7.23	-305	0.07
MW-33-090	12/1/2015	10,238	25.8	7.38	132.8	0.39
MW-33-150	4/27/2015	15,700	26.69	7.45	-245	0.4
MW-33-150	12/1/2015	15,737	24.5	7.12	111	0.88
MW-33-210	4/27/2015	20,570	27.46	7.33	-268	0.14
MW-33-210	12/1/2015	20,058	26.2	7.39	80.6	0.22
MW-34-055	12/3/2015	1,005	19.2	7.59	-41.9	0.27
MW-34-080	4/20/2015	3,009	19.82	7.91	-157	5.8
MW-34-080	12/3/2015	5,687	19.3	7.2	-35.8	0.34
MW-34-100	2/16/2015	14,930	19.34	7.98	-268	0.03
MW-34-100	4/20/2015	15,390	19.7	7.7	-409	0.01
MW-34-100	10/6/2015	20,216	19.8	7.66	10.2	0.01
MW-34-100	12/3/2015	17,459	19.6	7.82	-90.9	0.2
MW-35-060	5/7/2015	6,860	26.98	7.33	-222	1.28
MW-35-060	12/7/2015	7,101	27.5	7.02	49	1.08
MW-35-135	5/7/2015	11,040	26.91	7.33	--	0.26
MW-35-135	12/7/2015	11,487	26.3	7.33	57	0.36
MW-36-020	12/8/2015	11,586	22.1	7.2	-139.6	0.34
MW-36-040	12/8/2015	1,136	20.4	7.62	-146.7	0.33
MW-36-050	12/8/2015	1,113	20	7.46	-80.6	0.41
MW-36-070	12/8/2015	985	20.7	7.61	11.6	0.32

Table D-3

Field Water Quality Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Specific Conductance (uS/cm)	Temperature (deg C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
MW-36-090	4/23/2015	1,020	21.28	7.8	-357	0.08
MW-36-090	12/8/2015	10.35	20.1	7.99	-49.1	0.25
MW-36-100	4/23/2015	7,147	21.37	7.26	--	0.08
MW-36-100	12/8/2015	7,765	20.4	7.18	-24	0.68
MW-37D	4/27/2015	17,480	29.83	7.63	-221	0.14
MW-37D	12/7/2015	13,989	29.1	7.64	19	0.18
MW-37S	12/8/2015	6,028	28.6	7.6	31.3	0.75
MW-38D	4/30/2015	21,320	31.59	7.86	-276	0.12
MW-38D	12/1/2015	26,048	30.4	8.03	-73.4	0.18
MW-38S	2/9/2015	1,752	29.95	7.52	-195	0.08
MW-38S	4/30/2015	1,878	29.77	7.58	-240	0.53
MW-38S	9/28/2015	1,800	30	7.72	--	--
MW-38S	12/1/2015	1,889	31.1	7.85	-140.99	0.11
MW-39-040	12/4/2015	1,297	21.4	7.85	-123.3	0.2
MW-39-050	12/4/2015	1,235	20.6	7.49	-120.5	0.73
MW-39-060	12/4/2015	1,352	21.4	7.8	66.4	0.23
MW-39-070	12/4/2015	1,970	21	7.6	-12.6	0.31
MW-39-080	12/4/2015	2,298	20.5	7.65	-121.9	0.45
MW-39-100	4/21/2015	13,030	22.55	7.57	-216	1.5
MW-39-100	12/4/2015	13,396	19.7	6.8	-224.4	0.22
MW-40D	5/12/2015	17,870	32.44	7	-310	0.25
MW-40D	12/7/2015	16,019	31.4	7.42	37.8	0.2
MW-40S	12/7/2015	2,625	31.3	7.47	60.8	5.58
MW-41D	5/6/2015	22,282	28.81	6.92	-269	0.3
MW-41D	12/7/2015	21,002	28.4	7.2	57	0.21
MW-41M	12/7/2015	15,360	27.6	7.23	19	0.45
MW-42-030	12/3/2015	3,315	23.1	7.82	-159.6	0.17
MW-42-055	4/20/2015	1,227	21.68	8.29	-309	0
MW-42-055	12/3/2015	1,233	21.3	8.17	-76.9	0.23
MW-42-065	4/20/2015	5,615	22.61	7.52	-346	0.07
MW-42-065	12/3/2015	5,984	21.3	7.36	42.1	0.26
MW-43-025	12/8/2015	1,446	21.7	7.21	-114.8	0.2
MW-43-075	12/2/2015	10,215	21.1	7.02	-59	0.34
MW-43-090	12/2/2015	16,806	21.3	7.12	-37.7	0.48
MW-44-070	4/23/2015	1,910	19.55	7.05	-336	--
MW-44-070	12/4/2015	1,732	19.6	7.68	38.5	0.24
MW-44-115	2/17/2015	10,500	20.5	7.11	-204	0.01
MW-44-115	4/23/2015	10,330	20.84	6.9	-296	0.06
MW-44-115	10/6/2015	11,518	20.6	7.91	55	0.06
MW-44-115	12/4/2015	11,965	19.9	7.88	39.2	0.21
MW-44-125	4/23/2015	7,001	20.47	7.13	-340	0.04
MW-44-125	12/4/2015	6,612	19.8	7.4	-39.6	0.43
MW-46-175	2/16/2015	16,740	21.63	8.15	-271	0.03
MW-46-175	4/21/2015	17,400	21.82	8.18	-307	0.04
MW-46-175	10/6/2015	18,842	21.6	8.3	46	0.11
MW-46-175	12/2/2015	19,193	19.6	8.22	131.8	0.34
MW-46-205	4/21/2015	19,920	22.08	8.21	-278	0.12
MW-46-205	12/2/2015	21,085	20.5	8.06	95.8	0.48
MW-47-055	5/7/2015	5,246	28.33	7.75	-167	2.15
MW-47-055	12/2/2015	4,923	25.3	7.43	-121.7	1.93
MW-47-115	5/7/2015	13,920	28.56	7.15	--	0.14
MW-47-115	12/2/2015	14,750	26.8	7.34	16.9	0.29

Table D-3

Field Water Quality Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Specific Conductance (uS/cm)	Temperature (deg C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
MW-48	5/7/2015	18,400	28.97	6.4	-37	2.42
MW-48	12/4/2015	17,187	25.8	7.32	125.7	2.08
MW-49-135	12/1/2015	14,214	24.1	7.66	-188.3	0.16
MW-49-275	12/1/2015	25,605	24.4	8.11	-48.9	0.42
MW-49-365	12/1/2015	38,105	24.8	7.96	-179.6	0.34
MW-50-095	5/6/2015	5,886	28.91	7.59	-200	1.62
MW-50-095	12/8/2015	5,364	28.8	7.77	35	0.94
MW-50-200	5/20/2015	21,300	28.9	6.86	-235	2.04
MW-50-200	12/7/2015	17,611	28.5	7.63	33.8	1.3
MW-51	5/20/2015	13,020	29.77	7.5	-271	1.6
MW-51	12/8/2015	12,818	29.4	7.28	83	1.8
MW-52D	4/22/2015	19,770	21.06	8	--	--
MW-52D	12/2/2015	22,169	20.4	7.56	-81	0.25
MW-52M	4/22/2015	14,990	21.53	7.68	--	0.05
MW-52M	12/2/2015	17,970	20.1	7.32	-68	0.25
MW-52S	4/22/2015	8,670	21.2	6.85	--	--
MW-52S	12/2/2015	10,045	19.6	6.87	-71.8	0.26
MW-53D	4/22/2015	23,180	19.95	8.14	-320	0.1
MW-53D	12/2/2015	27,065	20.8	7.91	-127.8	0.2
MW-53M	4/22/2015	17,440	19.97	7.75	-396	--
MW-53M	12/2/2015	17,623	20.4	7.81	-185.5	0.21
MW-54-085	4/28/2015	8,986	29.26	7.46	-236	1.19
MW-54-085	12/9/2015	10,695	26.3	7.33	-49.9	0.2
MW-54-140	4/28/2015	13,220	28.09	7.5	-260	0.1
MW-54-140	12/9/2015	13,096	25.5	7.64	-55	0.25
MW-54-195	4/28/2015	19,720	27.38	8	-271	0.02
MW-54-195	12/9/2015	19,499	25.7	7.87	-183.6	0.32
MW-55-045	4/29/2015	1,481	27.91	7.7	-182	0.08
MW-55-045	12/7/2015	1,450	27.5	7.58	-112.8	0.16
MW-55-120	4/29/2015	7,982	28.12	7.7	-150	0.83
MW-55-120	10/21/2015	9,461	28.6	7.93	60	0.95
MW-55-120	12/7/2015	8,450	28	7.88	-26	1.27
MW-56D	4/28/2015	19,880	22.98	7.67	-284	0
MW-56D	12/9/2015	20,870	23.3	6.88	-116	1.31
MW-56M	4/28/2015	14,020	21.52	7.23	-240	0
MW-56M	12/9/2015	14,997	21	6.89	-147	0.16
MW-56S	4/28/2015	5,982	21.43	6.99	-256	0
MW-56S	12/9/2015	6,538	22	6.68	-137	0.14
MW-57-070	5/21/2015	2,963	29.59	7.18	-236	4.63
MW-57-070	12/4/2015	2,916	28.7	7.13	-23.3	4.33
MW-57-185	5/11/2015	19,360	30.09	9.06	-302	0.15
MW-57-185	12/4/2015	18,677	29.8	8.34	-44.5	0.13
MW-58BR	2/10/2015	9,617	28.46	7.62	-220	0.02
MW-58BR	5/18/2015	9,500	28.38	7.17	-221	0.12
MW-58BR	9/30/2015	8,262	29.67	7.51	--	--
MW-58BR	12/7/2015	9,295	27.8	7.5	-14.6	0.15
MW-59-100	5/19/2015	12,870	31.3	7	-120	6.59
MW-59-100	12/3/2015	11,728	31.1	6.89	61.8	3.63
MW-60-125	5/14/2015	10,120	28.85	7.03	-174	3.5
MW-60-125	12/4/2015	8,363	31.1	7.42	60.3	4.17
MW-60BR-245	2/10/2015	18,210	29.7	7.93	-236	--
MW-60BR-245	5/14/2015	19,290	29.38	7.42	--	0.05

Table D-3

Field Water Quality Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Specific Conductance (uS/cm)	Temperature (deg C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
MW-60BR-245	9/29/2015	18,435	30	8.15	--	--
MW-60BR-245	12/4/2015	16,720	29.1	7.94	-251.2	0.1
MW-61-110	5/13/2015	17,340	28.87	7.31	-136	0.22
MW-61-110	12/4/2015	15,709	30.3	7.58	-33.8	0.35
MW-62-065	2/16/2015	6,854	28.2	7.09	-30	3
MW-62-065	5/13/2015	7,126	29	7.38	-98	3.37
MW-62-065	10/7/2015	6,522	30	7.33	70	3.2
MW-62-065	12/3/2015	6,709	28.9	7.29	63	1.63
MW-62-110	2/11/2015	9,233	27.52	7.02	72	0.02
MW-62-110	5/19/2015	9,826	27.75	6.5	-115	0.07
MW-62-110	10/1/2015	14,326	26.83	6.57	--	--
MW-62-110	12/4/2015	8,853	23.6	7.71	-144.8	1.29
MW-62-190	5/19/2015	19,200	27.43	6.4	-278	0.08
MW-62-190	12/4/2015	18,041	19	7.7	-222.7	0.99
MW-63-065	2/10/2015	7,308	25.86	7.22	-70	2.22
MW-63-065	4/29/2015	7,424	26.15	7.05	-158	1.7
MW-63-065	9/28/2015	8,239	26	7.08	68	1.61
MW-63-065	12/4/2015	6,793	26.8	7.27	29	2.65
MW-64BR	2/18/2015	14,630	25.4	7.28	-194	0.22
MW-64BR	5/18/2015	15,400	29.78	7.39	-172	0.15
MW-64BR	10/1/2015	15,540	29.15	7.35	--	0.05
MW-64BR	12/7/2015	14,651	24.1	7.27	-101.8	0.74
MW-65-160	3/24/2015	4,159	28.12	7.04	-130	1
MW-65-160	5/11/2015	4,082	28.74	7.95	-236	0.84
MW-65-160	9/30/2015	4,028	29.34	7.17	56	1.06
MW-65-160	12/2/2015	3,485	28.2	7.04	28.2	1.22
MW-65-225	2/17/2015	18,410	30.9	7.34	-143	0.3
MW-65-225	5/11/2015	17,680	31.79	7.14	-140	0.16
MW-65-225	9/30/2015	16,405	32	7.38	29	0.08
MW-65-225	12/2/2015	14,606	29.9	7.3	98.5	0.24
MW-66-165	5/13/2015	5,010	30.64	7.43	-179	4.38
MW-66-165	12/2/2015	5,054	31.3	7.35	80.6	3.28
MW-66-230	5/21/2015	20,440	31.39	7.03	--	0.42
MW-66-230	12/3/2015	18,647	32	7.78	37.7	0.63
MW-66BR-270	5/18/2015	19,780	30.82	8.4	--	0
MW-66BR-270	12/9/2015	6,081	30.5	9.25	-314.7	0.07
MW-67-185	5/20/2015	8,364	34.84	7.69	-145	4.73
MW-67-185	12/2/2015	8,417	34.1	7.22	67	2.17
MW-67-225	5/20/2015	8,722	33.31	7.35	-275	2.38
MW-67-225	12/2/2015	8,610	32.3	7.57	39.8	1.33
MW-67-260	5/20/2015	20,330	32.66	8.59	--	0.2
MW-67-260	12/2/2015	21,437	32.3	8.4	-25.9	0.14
MW-68-180	2/18/2015	4,673	28.81	7.54	-54	6.62
MW-68-180	5/18/2015	3,905	29.64	7.7	-140	6.95
MW-68-180	9/30/2015	5,048	29.84	7.33	70	6.66
MW-68-180	12/2/2015	4,489	26.2	7.2	126.7	5.28
MW-68-240	5/21/2015	19,560	33.72	7.1	--	0.11
MW-68-240	12/2/2015	15,799	33.1	7.13	118.7	0.11
MW-68BR-280	5/27/2015	21,920	34	8.21	-369	1.81
MW-68BR-280	12/3/2015	20,108	25.7	8.71	-166.5	1.4
MW-69-195	2/17/2015	4,097	31.1	7.59	-75	4.2
MW-69-195	5/14/2015	4,120	31.43	7	-112	4.07

Table D-3

Field Water Quality Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Specific Conductance (uS/cm)	Temperature (deg C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
MW-69-195	10/1/2015	4,189	31.7	7.27	79	3.99
MW-69-195	12/4/2015	3,608	31.6	7.37	-30.3	2.36
MW-70-105	5/7/2015	4,236	30.6	7.68	-246	1.17
MW-70-105	12/7/2015	3,209	30.3	7.69	52.4	1.08
MW-70BR-225	5/27/2015	14,820	30.1	7.46	--	0.04
MW-70BR-225	12/7/2015	11,756	30.2	7.32	82.7	0.16
MW-71-035	5/6/2015	13,050	28.82	6.91	-173	2.54
MW-71-035	12/4/2015	17,985	21	6.85	137.8	2.38
MW-72-080	2/11/2015	17,110	27.08	7.91	-151	0.84
MW-72-080	5/11/2015	16,500	27.8	7.54	-206	0.5
MW-72-080	9/29/2015	17,343	28	7.66	48	0.68
MW-72-080	12/7/2015	16,991	28.3	7.4	50	1.09
MW-72BR-200	2/11/2015	16,400	27.83	8.29	-284	--
MW-72BR-200	5/4/2015	15,570	27.64	8.06	-305	0
MW-72BR-200	9/29/2015	15,034	28	8.23	25	--
MW-72BR-200	12/8/2015	16,348	27.8	8.01	-111	0.07
MW-73-080	2/10/2015	963	27.32	8.16	-86	6.63
MW-73-080	5/6/2015	7,954	27.31	7.64	-158	5.47
MW-73-080	9/29/2015	11,915	28	7.35	47	5.83
MW-73-080	12/8/2015	11,070	26.4	7.32	85	5.28
MW-74-240	5/14/2015	986.8	28.95	8.4	-394	0.2
MW-74-240	12/7/2015	768	27.8	8.64	-148.6	0.28
OW-03D	12/7/2015	10,964	28.6	7.62	-95.1	0.96
OW-03M	12/7/2015	6,494	29.2	7.85	-135.5	0.86
OW-03S	12/7/2015	1,513	29.2	7.75	44.4	7.55
PE-01	10/27/2015	4,422	20.2	7.84	31.3	2.12
PE-01	11/10/2015	4,418	20.49	7.58	173.5	1.91
PE-01	12/7/2015	4,437	19.1	7.96	2.1	2.18
PGE-07BR	12/2/2015	19,948	30.9	6.85	-298.7	--
PGE-08	1/7/2015	21,410	31.32	8.2	-418	-0.06
PGE-08	12/10/2015	20,490	30.4	8.09	-120.8	0.49
PM-03	3/17/2015	1,451	29.4	7.31	-42	7.02
PM-03	12/8/2015	1,209	23.6	7.41	-36.6	3.79
PM-04	3/17/2015	2,110	29.2	7.38	-46	7.15
PM-04	12/8/2015	2,093	24.6	7.36	-25.9	6.35
R-19	1/15/2015	766.8	12.26	8.6	-99	11.22
R-19	2/25/2015	1,024	13.87	8.07	-86	10.8
R-19	6/9/2015	917	22.49	8.13	-137	9.08
R-19	9/16/2015	1,091	24	8.12	192	7.5
R-19	12/9/2015	1,104	13.68	8.27	95.3	10.07
R-28	1/15/2015	766.1	12.26	7.61	-47	11.22
R-28	2/25/2015	1,023	13.84	7.9	-71	10.82
R-28	6/9/2015	910	22.28	8.09	-135	8.9
R-28	9/16/2015	1,095	23.79	8.09	182	7.22
R-28	12/9/2015	1,093	13.71	8.19	94.6	10.26
R63	1/14/2015	1,593	12.7	7.92	-158	11.06
R63	2/24/2015	796.9	13.88	8.36	-60	10.71
R63	6/9/2015	919	22.63	7.84	-120	9.04
R63	9/16/2015	1,137	23.79	7.33	167.6	6.51
R63	12/8/2015	1,087	15.16	7.85	209.9	9.47
RRB	1/15/2015	768	12.27	8.03	-94	11.13
RRB	2/25/2015	1,024	13.82	7.38	-44	10.8

Table D-3

Field Water Quality Measurements, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Specific Conductance (uS/cm)	Temperature (deg C)	pH	ORP (mV)	Dissolved Oxygen (mg/L)
RRB	6/10/2015	1,106	23.61	7.52	-193	7.72
RRB	9/17/2015	1,000	22.46	8	140	7.88
RRB	12/9/2015	1,100	13.9	7.87	107.4	10.18
SW1	1/14/2015	2,214	14.37	7.09	-104	9.13
SW1	2/24/2015	1,140	11.8	7.41	234	10.6
SW1	6/10/2015	1,108	21.02	7.11	-170	7.84
SW1	9/17/2015	1,033	21.77	6.83	156	5.5
SW1	12/10/2015	1,055	12.26	7.05	98.3	9.48
SW2	1/14/2015	1,658	12.29	7.18	-121	9.51
SW2	2/24/2015	819	14.59	7.63	-31	10.05
SW2	6/10/2015	990	21.5	7.24	-191	7.49
SW2	9/17/2015	1,018	21.77	7.5	137	6.06
SW2	12/10/2015	1,072	8.45	7.26	100.6	5.75
TW-01	5/27/2015	8,058	29.97	7.07	--	0.86
TW-01	12/1/2015	8,807	29.8	7.56	63.9	0.6
TW-02D	12/9/2015	6,810	24.8	7.78	99	6.89
TW-02S	1/13/2015	5,082	28.73	7.45	-42	7.49
TW-02S	12/9/2015	2,256	21.6	7.49	186	6.86
TW-03D	6/2/2015	--	--	7.64	--	--
TW-03D	10/27/2015	8,224	26	7.43	51.1	4.69
TW-03D	11/10/2015	8,242	24.9	7.31	219.4	1.64
TW-03D	12/7/2015	8,042	24.4	7.53	-4.4	2.52
TW-04	12/8/2015	22,796	28.8	7.68	73.2	0.12
TW-05	12/8/2015	16,290	29.1	7.67	109.1	0.36

Notes:

--- = data was either not collected, not available or was rejected
°C = degree Celsius.
ORP = oxidation reduction potential, results rounded off to whole point.
mV = millivolts.
mg/L = milligrams per liter.
ORP = oxidation reduction potential, results rounded off to whole point.
uS/cm = microSiemens per centimeter.

All field measurements were collected during groundwater and surface water sampling using a YSI multi-parameter water quality meter, or an in situ multi-parameter water quality meter.

Table D-4

Additional Water Quality Characterization, December 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

									Dissolved Metals				
Location ID	Sample Date		Oxygen-18 (00/00)	Deuterium (00/00)	Chloride (mg/L)	Bromide (mg/L)	Sulfate (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Boron (mg/L)
MW-09	12/2/2014		--	--	670	ND (0.5)	240	140	1,700	120	27	--	380	0.62
MW-09	10/7/2015		--	--	650	ND (1 J)	240	130	1,700	110	28	--	440	0.65
MW-09	12/1/2015		--	--	640	ND (1)	220	130	1,700	120	28	--	400	0.59
MW-10	12/2/2014		--	--	560	0.65	270	110	1,500	120	16	--	390	0.71
MW-10	10/7/2015		--	--	500	ND (1)	260	110	1,500	100	15	--	380	0.64
MW-10	12/1/2015		--	--	510	ND (1)	260	110	1,400	71	11	5.4	430	0.35
MW-11	12/2/2014	FD	--	--	520	0.58	190	82	1,300	120	17	--	290	0.44
MW-11	12/2/2014		--	--	510	0.54	190	85	1,400	120	17	--	280	0.42
MW-11	10/7/2015		--	--	520	ND (1)	200	73	1,400	120	19	--	300	0.41
MW-11	12/2/2015	FD	--	--	520	ND (1)	180	86	1,300	100	18	--	310	0.35
MW-11	12/2/2015		--	--	530	ND (1)	190	87	1,400	110	18	--	310	0.35
MW-12	12/15/2014		--	--	1,700	0.64	440	130	4,100	33	6	--	1,100	0.95
MW-12	12/2/2015		--	--	1,700	ND (2.5)	450	110	3,900	42	7.4	6	1,500	1
MW-13	12/7/2015		--	--	490	ND (0.5)	140	75	1,200	97	12	--	310	0.39
MW-14	12/7/2015		--	--	480	ND (0.5)	100	74	1,100	100	13	--	290	0.38
MW-15	12/9/2015		--	--	420	ND (0.5)	130	76	1,000	97	24	--	240	0.3
MW-16	12/8/2015		--	--	170	ND (0.5 J)	130	98	640	25	4.4	--	190	0.32
MW-17	12/9/2015		--	--	140	ND (0.5)	360	59	860	61	8.2	--	190	0.26
MW-18	12/7/2015		--	--	290	ND (0.5)	91	82	810	82	12	--	180	0.23
MW-19	12/10/2014		--	--	500	ND (0.5)	170	95	1,300	92	14	--	310	0.34
MW-19	12/7/2015		--	--	500	ND (0.5)	170	96	1,300	100	15	--	340	0.42
MW-20-070	12/15/2014		-8.070	-63.100	330	ND (0.5)	230	100	1,100	49	12	4.4	310	0.43
MW-20-070	12/8/2015		-7.980	-61.782	320	ND (1)	220	100	1,000	54	13	4.8	300	0.52
MW-20-100	12/15/2014		-7.620	-60.200	530	ND (0.5)	260	120	1,500	120	18	6.4	340	0.76
MW-20-100	12/8/2015		-7.604	-60.117	510	ND (1)	240	110	1,300	120	20	7	340	0.92
MW-20-130	12/15/2014	FD	-6.760	-59.600	2,900	ND (2.5)	1,100	85	6,800	290	20	21	1,700	1.8
MW-20-130	12/15/2014		-6.700	-59.600	2,800	ND (2.5)	1,100	85	6,900	310	21	24	1,800	1.9
MW-20-130	12/8/2015	FD	-6.628	-58.223	3,100	ND (2.5)	1,100	80	6,600	320	19	25	2,400	2.6
MW-20-130	12/8/2015		-6.417	-58.035	3,300	ND (2.5)	1,000	76	7,100	320	19	25	2,400	2.5
MW-21	12/9/2015		--	--	2,300	ND (2.5)	1,900	940	7,500	210	55	--	2,700	4.2
MW-22	12/18/2014		-10.190	-84.100	9,100	ND (5)	2,200	640	20,000	920	180	--	4,800	2.1
MW-22	12/3/2015		-10.760	-85.840	7,400	ND (5)	2,100	800	15,000	850	260	29	3,600	4
MW-23-060	12/3/2015		--	--	5,800	ND (5)	650	53	10,000	1,000	4.6	--	3,100	0.96
MW-23-080	12/3/2015		--	--	5,600	ND (5)	910	39	11,000	930	0.94	--	3,400	0.97
MW-24BR	12/2/2015		--	--	4,700	ND (2.5)	470	24	8,300	150	4.2	--	3,100	2.6
MW-25	12/2/2014		-9.210	-67.900	350	ND (0.5)	140	150	970	100	19	7.7	210	0.39
MW-25	12/7/2015		-8.992	-67.061	340	ND (0.5)	150	140	1,000	110	21	7.9	230	0.42
MW-26	12/15/2014	FD	-8.310	-66.900	910	1	530	110	2,700	150	34	--	450	0.82
MW-26	12/15/2014		-8.330	-67.300	910	1.1	530	110	2,700	150	33	--	470	0.79
MW-26	12/8/2015	FD	-7.932	-65.031	870	ND (1)	520	110	2,500	140	30	14	640	0.81
MW-26	12/8/2015		-8.199	-65.494	890	ND (1)	500	110	2,400	140	32	13	640	0.86
MW-27-020	12/3/2015		--	--	92	ND (0.5)	250	150	680	74	22	--	100	0.13
MW-27-060	12/3/2015	FD	--	--	75	ND (0.5)	150	250	600	88	21	--	92	0.17
MW-27-060	12/3/2015		--	--	74	ND (0.5)	150	250	600	86	21	--	92	0.17
MW-27-085	12/3/2015		--	--	2,700	ND (2.5)	910	270	6,300	320	56	--	2,000	1.3
MW-28-025	12/2/2015		--	--	96	ND (0.5)	260	190	750	92	26	--	110	0.13

Table D-4

Additional Water Quality Characterization, December 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

										Dissolved Metals				
Location ID	Sample Date		Oxygen-18 (00/00)	Deuterium (00/00)	Chloride (mg/L)	Bromide (mg/L)	Sulfate (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Boron (mg/L)
MW-28-090	12/2/2015		--	--	1,700	ND (2.5 J)	520	270	4,100	200	33	--	1,100	0.67
MW-29	12/1/2015		--	--	300	ND (0.5)	210	520	1,400	90	44	--	460	0.69
MW-30-030	12/3/2015		--	--	2,700	ND (2.5)	2,600	1,600	9,300	220	160	--	3,300	3.3
MW-30-050	12/3/2015	FD	-12.790	-102.790	94	ND (0.5)	190	190	660	77	18	--	120	0.19
MW-30-050	12/3/2015		-13.310	-103.400	95	ND (0.5)	190	180	660	77	18	--	170	0.19
MW-31-060	12/3/2014		-8.830	-68.500	790	ND (0.5)	210	140	1,700	120	19	5.2	430	0.4
MW-31-060	12/7/2015		-8.295	-64.577	620	ND (0.5)	200	92	1,600	100	17	5.4	470	0.5
MW-31-135	12/7/2015		-9.870	-75.909	3,500	ND (2.5)	450	35	6,900	370	21	--	2,500	1.5
MW-32-020	12/3/2015	FD	--	--	10,000	ND (10)	6,700	2,300	27,000	560	390	--	8,700	7.1
MW-32-020	12/3/2015		--	--	10,000	ND (10)	6,500	2,300	26,000	620	430	--	8,100	6.8
MW-32-035	12/3/2015		-11.180	-87.490	2,800	ND (2.5)	1,200	610	7,400	450	220	18	1,900	1.2
MW-33-040	12/1/2015		--	--	4,200	ND (2.5)	1,600	460	10,000	90	120	--	4,000	3
MW-33-090	12/1/2015		-10.180	-76.100	2,700	ND (2.5 J)	690	110	5,800	330	25	--	2,000	1.1
MW-33-150	12/1/2015		-10.790	-77.950	4,500	ND (2.5 J)	740	55	8,100	430	48	--	3,200	1.2
MW-33-210	12/1/2015		-11.660	-83.370	6,400	ND (2.5)	1,100	55	11,000	650	69	--	4,100	1.6
MW-34-055	12/3/2015		-13.020	-102.020	83	ND (0.5)	230	150	630	80	25	4.7	86	0.19
MW-34-080	12/3/2015		-11.530	-92.070	1,500	ND (2.5)	510	300	3,600	220	48	--	1,000	0.83
MW-34-100	12/1/2014	FD	-10.100	-77.200	5,500	ND (1)	1,100	100	9,900	140	5.6	32	4,000	2
MW-34-100	12/1/2014		-9.970	-76.950	5,400	ND (1)	1,100	95	9,900	140	5.6	30	3,900	2.2
MW-34-100	12/3/2015	FD	-10.160	-78.930	5,200	ND (5)	1,000	94	9,600	160	7.1	31	3,800	2.8
MW-34-100	12/3/2015		-10.100	-79.040	5,100	ND (5)	980	100	9,900	150	6.7	30	3,700	2.7
MW-35-060	12/7/2015		-9.413	-71.653	2,000	ND (2.5)	320	72	4,200	280	29	--	1,300	0.84
MW-35-135	12/7/2015		-10.308	-80.021	3,100	ND (2.5)	700	48	6,700	300	29	--	2,200	0.84
MW-36-020	12/15/2014		--	--	1,700	0.54	2,400	1,300	7,700	120	150	--	2,100	1.6
MW-36-020	12/8/2015		--	--	1,600	ND (2.5)	2,500	1,500	7,800	210	210	--	2,500	2.3
MW-36-040	12/8/2015		--	--	99	ND (0.5)	140	300	710	51	11	--	180	0.41
MW-36-050	12/15/2014		--	--	130	ND (0.5)	190	200	720	82	17	--	100	0.18
MW-36-050	12/8/2015		--	--	99	ND (0.5)	190	190	680	90	19	--	98	0.32
MW-36-070	12/8/2015		--	--	80	ND (0.5)	190	170	600	58	12	--	130	0.26
MW-36-090	12/8/2015		-12.749	-102.546	79	ND (0.5)	180	190	650	5.7	0.67	--	230	0.31
MW-36-100	12/8/2015		-11.897	-93.466	1,900	ND (2.5)	620	260	4,600	170	25	--	1,600	1.2
MW-37D	12/2/2014		--	--	5,000	ND (2.5)	650	36	7,400	420	18	--	2,900	1.4
MW-37D	12/7/2015		--	--	4,700	ND (5)	640	31	8,400	440	20	--	3,300	1.9
MW-37S	12/8/2015		--	--	1,700	ND (2.5)	290	50	3,500	210	24	--	1,200	0.92
MW-38D	12/1/2015		--	--	7,200	ND (5)	700	29	13,000	440	8.2	--	5,100	2.7
MW-38S	12/1/2015		--	--	260	ND (0.5)	160	180	880	27	5.3	--	330	0.99
MW-39-050	12/4/2015		--	--	120	ND (0.5)	200	190	710	58	18	--	170	0.2
MW-39-060	12/4/2015	FD	--	--	160	ND (0.5)	200	200	780	36	10	--	260	0.32
MW-39-060	12/4/2015		--	--	160	ND (0.5)	210	200	780	36	10	--	260	0.34
MW-39-070	12/16/2014		-12.410	-99.400	320	ND (0.5)	250	260	1,200	27	5.4	--	440	0.33
MW-39-070	12/4/2015		-12.450	-99.490	290	ND (0.5)	250	240	1,200	32	6.7	--	390	0.34
MW-39-080	12/4/2015		-12.960	-98.420	690	ND (1)	340	270	1,900	43	8.7	--	550	0.47
MW-39-100	12/1/2014		-10.360	-81.160	4,800	ND (2.5)	1,400	270	9,500	500	65	--	3,200	1.8
MW-39-100	12/4/2015		-12.960	-99.670	4,600	ND (2.5)	1,300	270	9,300	330	51	--	2,100	1.5
MW-40D	12/4/2014		--	--	5,500	ND (2.5)	690	53	10,000	410	32	--	3,300	1.8
MW-40D	12/7/2015	FD	--	--	4,800	ND (5)	640	56	8,900	450	39	--	3,300	2.1

Table D-4

Additional Water Quality Characterization, December 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

										Dissolved Metals				
Location ID	Sample Date		Oxygen-18 (00/00)	Deuterium (00/00)	Chloride (mg/L)	Bromide (mg/L)	Sulfate (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Boron (mg/L)
MW-40D	12/7/2015		--	--	5,000	ND (5)	670	61	9,000	420	40	--	3,300	2.1
MW-40S	12/7/2015		--	--	--	--	--	--	--	--	--	--	--	--
MW-41D	12/17/2014		--	--	7,400	ND (2.5)	750	39	14,000	400	22	--	3,700	1.5
MW-41D	12/7/2015		--	--	6,900	ND (5)	730	45	13,000	490	34	--	4,400	1.9
MW-41M	12/7/2015	FD	--	--	4,800	ND (5)	540	37	8,800	430	31	--	3,000	1.6
MW-41M	12/7/2015		--	--	4,700	ND (5)	530	35	9,400	470	32	--	3,200	1.6
MW-41S	12/7/2015		--	--	1,600	ND (2.5)	280	56	3,300	140	16	--	1,200	0.89
MW-42-030	12/3/2015		-12.370	-95.760	--	--	--	--	--	--	--	--	--	--
MW-42-055	12/3/2015		-12.390	-100.030	95	ND (0.5)	190	240	720	7.3	1.8	--	290	0.27
MW-42-065	12/3/2015		-12.550	-98.170	1,400	ND (2.5)	490	400	3,600	140	31	--	1,200	0.93
MW-43-025	12/8/2015		--	--	110	ND (0.5)	290	260	880	100	43	--	120	0.2
MW-43-075	12/2/2015		--	--	2,600	ND (2.5)	1,200	550	6,700	420	140	--	2,000	0.85
MW-43-090	12/2/2015		--	--	4,800	ND (2.5)	920	180	8,800	360	74	--	3,300	2.1
MW-44-070	12/4/2015		-13.340	-104.010	120	ND (0.5)	200	180	710	24	4	--	240	0.28
MW-44-115	12/4/2015		-11.100	-82.460	3,300	ND (2.5)	810	75	6,700	120	6	19	2,700	1.9
MW-44-125	12/4/2015	FD	-11.360	-91.780	2,000	ND (2.5)	410	150	4,000	74	6	--	1,700	1.2
MW-44-125	12/4/2015		-11.900	-88.300	2,700	ND (2.5)	520	130	5,300	59	5.4	--	1,200	0.89
MW-46-175	12/2/2015		-10.500	-10.500	5,700	ND (5)	800	44	11,000	140	3.1	--	4,300	2.5
MW-46-205	12/2/2015		--	--	7,400	ND (5)	830	45	13,000 J	140	3	--	4,800	3.7
MW-47-055	12/2/2015		-9.060	-9.060	1,200	ND (1)	220	68	2,600	170	23 J	--	700	0.49
MW-47-115	12/2/2015		-10.220	-10.220	4,300	ND (2.5)	730	53	8,200	230	19	--	1,800	0.66
MW-48	12/4/2015		--	--	6,100	ND (5)	560	26	10,000	450	38	--	3,500	1.3
MW-49-135	12/22/2014		-10.430	-81.300	4,200	ND (2.5)	700	59	7,100	310	25	--	2,500	0.66
MW-49-135	12/1/2015		-11.000	-80.290	4,000	ND (2.5)	750	58	7,700	370	36	--	2,800	0.9
MW-49-275	12/17/2014		-10.630	-82.800	8,800	ND (2.5)	1,400	37	16,000	230	4.6	--	4,900	2.1
MW-49-275	12/1/2015		-10.970	-80.930	8,100	ND (5)	1,300	35	15,000	260	6.6	--	5,900	2.6
MW-49-365	12/1/2015	FD	-11.370	-81.100	13,000	ND (10)	1,100	33	22,000	440	10	--	9,300	4.4
MW-49-365	12/1/2015		-11.000	-81.140	13,000	ND (10)	1,100	33	22,000	26	5.2	--	9,300	0.93
MW-50-095	12/8/2015		--	--	1,400	ND (1)	270	56	3,000	120	12	--	1,000	0.93
MW-50-200	12/16/2014		--	--	6,800	ND (2.5)	870	36	13,000	510	25	--	3,400	1.5
MW-50-200	12/7/2015		--	--	6,400	ND (5)	850	37	13,000	580	29	39	4,600	2.1
MW-51	12/15/2014		--	--	3,400	ND (1)	660	94	7,200	240	14	--	2,100	1.3
MW-51	12/8/2015		--	--	3,400	ND (2.5)	660	92	6,500	280	16	27	2,400	1.7
MW-52D	12/2/2015		--	--	7,100	ND (5)	900	56	11,000	350	20	--	4,800	2.8
MW-52M	12/2/2015		--	--	5,000	ND (2.5)	630	85	9,800	430	39	--	3,200	2.1
MW-52S	12/2/2015		--	--	2,300	ND (2.5)	940	810	5,900	360	4.2	--	1,600	3.1
MW-53D	12/2/2015		--	--	8,600	ND (5)	1,200	37	16,000	370	17	--	5,700	3.4
MW-53M	12/2/2015		--	--	6,200	ND (5)	760	49	12,000	440	32	--	4,100	2.1
MW-54-085	12/9/2015	FD	--	--	3,100	ND (2.5)	540	150	6,000	170	77	--	2,000	1.1
MW-54-085	12/9/2015		--	--	3,270 J	5.0 J	598 J	140 J	6,280 J	179 J	94 J	--	1930	1.2
MW-54-140	12/9/2015		--	--	3,800 J	5.0 J	586 J	88.2 J	7,590 J	140 J	14.6 J	--	2600	1.8
MW-54-195	12/9/2015		--	--	6,040 J	10 J	947 J	50.4 J	11,600 J	134 J	4.2 J	--	4550	2.8
MW-55-045	12/7/2015		--	--	280	ND (0.5)	72	160	800	39	8.5	--	260	0.6
MW-55-120	12/7/2015		--	--	2,400	ND (2.5)	260	66	4,600	87	1.5	--	1,800	1.7
MW-56D	12/9/2015		--	--	7,100	ND (5)	1,300	120	15,000 J	440	73	--	5,000	2.8
MW-56M	12/9/2015		--	--	4,600	ND (2.5)	930	460	8,600	450	88	--	3,100	1.9

Table D-4

Additional Water Quality Characterization, December 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

									Dissolved Metals				
Location ID	Sample Date	Oxygen-18 (00/00)	Deuterium (00/00)	Chloride (mg/L)	Bromide (mg/L)	Sulfate (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Boron (mg/L)
MW-56S	12/9/2015	--	--	1,200	ND (2.5)	1,000	700	4,100	240	77	--	1,300	2.2
MW-57-070	12/4/2015	--	--	450	ND (1)	91	100	1,200	260	17	--	84	0.25
MW-57-185	12/4/2015	--	--	6,500	ND (5)	720	19	11,000	390	3	--	4,100	2.8
MW-58BR	12/9/2014	--	--	2,900	ND (2.5)	540	39	6,000	550	26	--	1,400	0.94
MW-58BR	12/7/2015	--	--	2,600	ND (2.5)	490	43	5,200	540	26	--	1,500	1.1
MW-59-100	12/15/2014 FD	--	--	3,100	ND (5)	650	120	6,800	720	19	--	1,400	1.1
MW-59-100	12/15/2014	--	--	3,100	ND (5)	650	120	6,900	680	18	--	1,400	1.1
MW-59-100	12/3/2015 FD	--	--	3,400	ND (5)	650	100	6,900	920	21	--	1,800	1.3
MW-59-100	12/3/2015	--	--	3,500	ND (5)	640	100	6,900	900	20	--	1,700	1.3
MW-60-125	12/4/2015	--	--	2,700	ND (2.5)	460	53	5,600	570	27	26	1,400	1
MW-60BR-245	12/4/2015	--	--	5,900	ND (5)	780	22	11,000	470	6.3	--	3,900	2.5
MW-61-110	12/4/2015	--	--	5,700	ND (5)	690	41	11,000	760	20	--	3,300	2.1
MW-62-065	12/3/2015	--	--	1,800	ND (2.5)	410	110	3,500	230	21	--	1,100	0.66
MW-62-110	12/4/2015	--	--	2,600	ND (2.5)	480	96	5,100	160	5.8	--	2,000	1.5
MW-62-190	12/4/2015	--	--	6,200	ND (5)	740	50	10,000	410	13	--	4,400	2.5
MW-63-065	12/4/2015	--	--	2,400	ND (2.5)	600	190	4,300	240	23	--	1,500	0.92
MW-64BR	12/8/2014	--	--	4,700	ND (2.5)	610	57	9,100	430	16	--	2,700	1.7
MW-64BR	12/7/2015	--	--	4,300	ND (2.5)	580	57	9,100	440	17	--	3,000	2
MW-65-160	12/3/2014	--	--	900	ND (1)	430	130	2,400	230	25	--	510	0.85
MW-65-160	12/2/2015	--	--	840	ND (1)	380	130	2,200	220	26	--	520	0.86
MW-65-225	12/3/2014	--	--	5,200	ND (2.5)	870	56	10,000	480	17	--	3,400	2.1
MW-65-225	12/2/2015	--	--	4,600	ND (2.5)	820	61	9,100	520	22	--	3,000	2.9
MW-66-165	12/10/2014	--	--	1,000	ND (2.5)	490	91	2,800	290	48	--	530	0.6
MW-66-165	12/2/2015	--	--	960	ND (2.5)	450	88	2,600	310	51	--	550	0.61
MW-66-230	12/22/2014	--	--	6,200	ND (2.5)	1,100	32	12,000	430	4.6	--	3,900	1.7
MW-66-230	12/3/2015	--	--	6,000	ND (5)	1,100	33	11,000	480	7.1	--	3,900	2.4
MW-66BR-270	12/9/2015	--	--	5,200	ND (5)	220	ND (5)	8,000	300	18	--	3,900	1.6
MW-67-185	12/11/2014	--	--	1,600	3.7	570	100	4,000	350	60	--	870	0.75
MW-67-185	12/2/2015	--	--	1,800	4.5	490	93	4,700	470	77	--	990	0.77
MW-67-225	12/11/2014	--	--	1,500	1.3	1,100	150	4,500	140	6.8	--	1,400	1.3
MW-67-225	12/2/2015	--	--	1,500	ND (2.5)	1,100	140	4,600	95	4.5	--	1,800	0.73
MW-67-260	12/11/2014	--	--	6,000	ND (2.5)	790	30	11,000	320	3.6	--	3,500	2.6
MW-67-260	12/2/2015	--	--	5,600	ND (5)	760	29	10,000	360	4.6	--	4,000	3.1
MW-68-180	12/9/2014	--	--	820	ND (2.5)	1,100	84	3,400	420	40	--	530	0.45
MW-68-180	12/2/2015	--	--	790	ND (2.5)	1,100	83	3,300	430	43	--	570	0.45
MW-68-240	12/18/2014	--	--	5,200	ND (2.5)	850	67	11,000	530	17	--	3,100 J	1.7
MW-68-240	12/2/2015	--	--	5,100	ND (5)	850	58	9,900	650	23	--	3,300	2.5
MW-68BR-280	12/3/2015	--	--	7,400	ND (5)	700	16	13,000	480	5.3	--	4,600	2.7
MW-69-195	12/4/2015	--	--	630	ND (1)	590	220	2,200	130	11	--	650	1.7
MW-70-105	12/7/2015	--	--	950	ND (1)	260	87	2,100	110	10	--	690	0.71
MW-70BR-225	12/7/2015	--	--	4,300	ND (2.5)	760	41	8,400	750	29	--	2,600	1.7
MW-71-035	12/4/2015	--	--	5,500	ND (5)	1,200	300	11,000	1,100	110	--	3,100	3.1
MW-72-080	12/7/2015	--	--	5,200	ND (5)	690	38	10,000 J	430	8.4	--	3,500	2.4
MW-72BR-200	12/8/2015	--	--	5,200	ND (5)	660	22	9,000	300	2.3	--	3,300	2
MW-73-080	12/8/2015	--	--	3,500	ND (2.5)	440	90	6,500	540	31	--	2,100	1.1
MW-74-240	12/7/2015	--	--	120	ND (0.5)	71	170	550	5.3	1	--	75	0.15

Table D-4

Additional Water Quality Characterization, December 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

									Dissolved Metals				
Location ID	Sample Date	Oxygen-18 (00/00)	Deuterium (00/00)	Chloride (mg/L)	Bromide (mg/L)	Sulfate (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Boron (mg/L)
OW-03D	12/7/2015	--	--	2,900	ND (2.5)	420	33	5,600	220	15	--	2,000	1.4
OW-03M	12/7/2015	--	--	1,600	ND (2.5)	310	51	3,500	120	9.6	--	1,300	1.2
OW-03S	12/7/2015 FD	--	--	330	ND (0.5)	74	72	830	69	10	--	190	0.21
OW-03S	12/7/2015	--	--	320	ND (0.5)	77	74	790	71	11	--	190	0.22
PE-01	12/2/2014	--	--	1,040	--	385	227	2,560	108	24.7	--	794	--
PE-01	1/6/2015	--	--	1,000	--	360	220	2,400	110	21	--	810	--
PE-01	2/3/2015	--	--	1,000	--	370	220	2,500	98	24	--	810	--
PE-01	3/17/2015	--	--	970	--	360	220	2,500	100	23	--	750	--
PE-01	4/7/2015	--	--	1,000	--	360	220	2,500	110	23	--	790	--
PE-01	5/5/2015	--	--	1,000	--	350	210 J	2,500	120	24	--	850	--
PE-01	6/2/2015	--	--	980	--	340	200	2,400	120	23	--	780	--
PE-01	7/7/2015	--	--	960	--	350	210	2,500	120	23	--	810	--
PE-01	8/4/2015	--	--	960	--	350	210	2,500	110	22	--	780	--
PE-01	9/1/2015	--	--	970	--	370	200	2,500	110	23	--	760	--
PE-01	10/6/2015	--	--	1,100	--	380	220	2,500	100	22	--	710	--
PE-01	10/27/2015	--	--	1,000	--	370	200	2,300	110	20 J	--	780	--
PE-01	11/3/2015	--	--	990	--	370	220	2,500	120	26	--	770	--
PE-01	11/10/2015	--	--	970	--	360	210	2,400	120	24	--	750	--
PE-01	12/1/2015	--	--	970	--	350	210	2,400	120 J	23 J	--	830	--
PE-01	12/7/2015	--	--	990	ND (1)	360	--	2,500	--	--	--	--	--
PGE-07BR	12/2/2015	--	--	7,600	ND (25)	420	ND (5)	12,000	660	16	--	4,300	2.3
PGE-08	12/10/2015	--	--	6,700	ND (5)	1,800	44	13,000 J	780	13	--	4,600	2.7
PM-03	3/17/2015	--	--	340	--	67	85	--	95	19	--	180	--
PM-03	12/8/2015	--	--	360	ND (0.5)	64	82	870	84	15	--	150	0.21
PM-04	3/17/2015	--	--	590	--	180	65	--	120	26	--	320	--
PM-04	12/8/2015	--	--	570	ND (1)	130	60	1,300	97	18	--	260	0.24
TW-01	12/1/2015	--	--	1,900	ND (2.5)	700	110	4,600	310	20	--	1,400	1.4
TW-02D	12/9/2015 FD	--	--	2,300	ND (2.5)	490	150	4,800	240	31	--	1,700	0.97
TW-02D	12/9/2015	--	--	2,400	ND (2.5)	490	150	4,800	220	29	--	1,500	0.93
TW-02S	9/1/2015	--	--	560	--	170	84	1,400	82	20	--	370	--
TW-02S	12/9/2015	--	--	560	ND (0.5)	160	85	1,300	84	18	--	340	0.4
TW-03D	12/2/2014	--	--	2,440	--	547	143	4,810	212	34.6	--	1,580	--
TW-03D	1/6/2015	--	--	2,400	--	510	140	4,800	240	29	--	1,500	--
TW-03D	2/3/2015	--	--	2,300	--	510	140	4,800	210	37	--	1,600	--
TW-03D	3/17/2015	--	--	2,200	--	520	140	4,900	230	34	--	1,500	--
TW-03D	4/7/2015	--	--	2,400	--	530	140	4,700	230	31	--	1,600	--
TW-03D	5/5/2015	--	--	2,100	--	470	170 J	4,400	250	29	--	1,500	--
TW-03D	6/2/2015	--	--	2,000	--	470	140	4,400	230	28	--	1,400	--
TW-03D	7/7/2015	--	--	2,100	--	470	140	4,600	230	27	--	1,600	--
TW-03D	8/4/2015	--	--	2,200	--	470	130	4,600	210	25	--	1,400	--
TW-03D	9/1/2015	--	--	2,200	--	510	140	4,400	200	27	--	1,400	--
TW-03D	10/6/2015	--	--	2,200	--	520	140	4,600	190	27	--	1,300	--
TW-03D	10/27/2015	--	--	2,200	--	490	130	4,600	230	25	--	1,500	--
TW-03D	11/3/2015	--	--	2,100	--	480	140	4,600	250	29	--	1,500	--
TW-03D	11/10/2015	--	--	2,200	--	480	140	4,600	260	29	--	1,500	--
TW-03D	12/1/2015	--	--	2,100	--	490	130	4,500	250 J	29	--	1,600	--

Table D-4

Additional Water Quality Characterization, December 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

									Dissolved Metals				
Location ID	**Sample Date**	**Oxygen-18 (00/00)**	**Deuterium (00/00)**	**Chloride (mg/L)**	**Bromide (mg/L)**	**Sulfate (mg/L)**	**Alkalinity (total) (mg/L)**	**Total Dissolved Solids**	**Calcium (mg/L)**	**Magnesium (mg/L)**	**Potassium (mg/L)**	**Sodium (mg/L)**	**Boron (mg/L)**
TW-03D	12/7/2015	--	--	2,200 J	ND (2.5 J)	490 J	--	4,800 J	--	--	--	--	--
TW-04	12/8/2015	--	--	7,500	ND (5)	1,000	51	12,000	--	--	--	--	--
TW-05	12/8/2015	--	--	5,000	ND (5)	590	35	8,600	420	21	--	3,000	1.3

Notes:

--- = data was either not collected, not available or was rejected
0/00 = differences from global standards in parts per thousand.
FD = field duplicate sample.
J = concentration or reporting limit estimated by laboratory or data validation.
mg/L = milligrams per liter
ND = not detected at the listed reporting limit.

Alkalinity (total) reported as calcium carbonate.

The values that are shaded in the table are from an ADEQ approved laboratory.

Table D-5

Additional Results from Trial Wells for June 2014 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

			General Chemistry							Dissolved Metals (ug/L)							Dissolved Metals (mg/L)			
Location ID	Sample Date	Sample Method	Total Dissolved Solids	Specific Conductance	Chloride	Sulfate	Nitrate/Nitrite as Nitrogen	Bromide	Alkalinity (total)	Hexavalent Chromium	Chromium, Total	Arsenic	Iron	Manganese	Molybdenum	Selenium	Boron	Calcium	Magnesium	Sodium
MW-38D	11/5/2014	3V	12,000	20,000	7,600	690	0.068	ND (2.5)	30	17	15	7.4	22	88	86	ND (12)	2.2	400	6.8	2,400
MW-38D	11/5/2014	LF	13,000	20,000	7,700	690	ND (0.05)	ND (2.5)	31	18	17	7	ND (20)	73	90	ND (2.5)	2.3	440	5.9	2,300
MW-38D	4/30/2015	3V	--	--	--	--	ND (0.066)	--	--	16	14	6.3	--	ND (0.5 J)	90	ND (2.5)	--	--	--	--
MW-38D	4/30/2015	LF	--	--	--	--	ND (0.05)	--	--	20	20	6.8	--	ND (0.5)	90	ND (1)	--	--	--	--
MW-38D	12/1/2015	3V	13,000	22,000	7,200	700	0.054	ND (5)	29	20	23	7.7	ND (100)	59	95	ND (2.5)	2.7	440	8.2	5,100
MW-38D	12/1/2015	LF	12,000	22,000	7,200	690	0.05	ND (5)	29	19	19	7.3	ND (100)	43	92	ND (2.5)	2.7	440	8.1	5,100
MW-38S	9/22/2014	3V	--	--	--	--	ND (0.05)	--	--	ND (0.2)	ND (1)	14	--	220	47	ND (0.5)	--	--	--	--
MW-38S	11/5/2014	3V	950	1,500	280	160	ND (0.05)	0.58	180	ND (0.2)	ND (1)	13	84	210	46	ND (0.5)	0.92	26	4.3	300
MW-38S	11/5/2014	LF	940	1,600	270	170	ND (0.05)	0.58	180	ND (0.2)	ND (1)	16	82	220	49	ND (0.5)	0.99	28	4.6	300
MW-38S	2/9/2015	3V	--	--	--	--	ND (0.05)	--	--	ND (0.2)	ND (1)	14	--	230	43	ND (0.5)	--	--	--	--
MW-38S	2/9/2015	LF	--	--	--	--	ND (0.05)	--	--	0.22	ND (1)	15	--	220	44	ND (0.5)	--	--	--	--
MW-38S	4/30/2015	3V	--	--	--	--	ND (0.05)	--	--	ND (0.2)	ND (1)	13	--	240	38	ND (0.5)	--	--	--	--
MW-38S	4/30/2015	LF	--	--	--	--	ND (0.071)	--	--	ND (0.2)	ND (1)	13	--	240	37	ND (0.5)	--	--	--	--
MW-38S	9/28/2015	3V	--	--	--	--	ND (0.05)	--	--	ND (0.2)	ND (1)	14	--	250	37	ND (0.5)	--	--	--	--
MW-38S	9/28/2015	LF	--	--	--	--	ND (0.05)	--	--	ND (0.2)	ND (1)	14	--	240	37	ND (0.5)	--	--	--	--
MW-38S	12/1/2015	3V	880	1,500	250	160	ND (0.05)	ND (0.5)	170	ND (0.2)	ND (1)	13	91	230	41	ND (0.5)	0.99	27	5.3	300
MW-38S	12/1/2015	LF	880	1,500	260	160	ND (0.05)	ND (0.5)	180	ND (0.2)	ND (1)	14	76	230	40	ND (0.5)	0.97	27	5.3	330
MW-40D	12/4/2014	H	10,000	13,000	5,500	640	3.1	ND (2.5)	53	73	67	6	ND (20)	7.4	66	ND (2.5)	1.8	410	23	3,300
MW-40D	12/4/2014	LF	10,000	13,000	5,200	690	3.3	ND (2.5)	47	160	140	4.5	ND (20)	ND (0.5)	59	1.7	1.6	400	32	3,100
MW-40D	5/12/2015	H	--	--	--	--	0.88	--	--	ND (1)	ND (1)	17	--	1,500	64	ND (2.5)	--	--	--	--
MW-40D	5/12/2015	LF	--	--	--	--	2.9	--	--	120	110	4.3	--	ND (0.5 J)	53	ND (2.5)	--	--	--	--
MW-40D	12/7/2015	H	8,700	16,000	5,000	670	0.067	ND (5)	61	82	78	4.2	23	54	48	ND (2.5)	2.1	420	40	3,200
MW-40D	12/7/2015 FD	H	8,900	16,000	4,800	640	0.23	ND (5)	56	97	88	3.9	ND (20)	47	48	ND (2.5)	2.1	450	39	3,300
MW-40D	12/7/2015	LF	9,000	16,000	4,900	670	0.26	ND (5)	55	98	87	3.9	46	47	49	ND (2.5)	2	420	40	3,300
MW-40S	12/4/2014	H	--	2,100	--	--	3.8	--	--	7	6.7	1.2	--	ND (0.5)	7.6	1.7	--	--	--	--
MW-40S	12/4/2014	LF	--	2,100	--	--	3.8	--	--	7.6	7.1	1.2	--	ND (0.5)	8.5	2	--	--	--	--
MW-40S	12/7/2015	H	--	2,500	--	--	4.3	--	--	10	9.1	1.7	--	ND (0.5)	12	2.8	--	--	--	--
MW-40S	12/7/2015	LF	--	2,500	--	--	3.7	--	--	8.1	11	1.3	--	ND (0.5)	9.2	2	--	--	--	--

Notes:

ND =parameter not detected at the listed reporting limit.
--- = data was either not collected, not available or was rejected
3V = three volume.
H = HYDRASleeve™
LF = Low Flow (minimal drawdown)
ug/L = micrograms per liter.
mg/L = miligrams per liter.

General chemistry results in milligrams per liter (mg/L), except Specific conductance which is in uS/cm.

Nitrate and Nitrate/Nitrite reported as Nitrogen.

Alkalinity bicarbonate result equals Alkalinity (total) result. Alkalinity (total) shown on table. Alkanlity carbonate result and hydroxide result are ND at 5 mg/L.

APPENDIX E

Hydraulic Data for Interim Measures Reporting Period

Table E-1

Average Monthly and Quarterly Groundwater Elevations, Fourth Quarter 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	November 2015	December 2015	Quarter Average	Days in Quarter Average
I-3	River Station	453.87	453.48	453.67	87
MW-20-070	Shallow Zone	453.38	452.85	453.11	91
MW-20-100	Middle Zone	451.74	452.08	451.91	91
MW-20-130	Deep Zone	452.36	451.85	452.10	86
MW-22	Shallow Zone	454.34	453.90	454.12	89
MW-25	Shallow Zone	453.62	INC	INC	84
MW-26	Shallow Zone	454.78	454.32	454.54	91
MW-27-020	Shallow Zone	454.11	453.52	453.81	90
MW-27-060	Middle Zone	454.13	453.43	453.77	90
MW-27-085	Deep Zone	454.09	453.49	453.79	91
MW-28-025	Shallow Zone	454.07	453.44	453.75	83
MW-28-090	Deep Zone	454.19	453.57	453.92	89
MW-30-050	Middle Zone	453.84	453.24	453.53	91
MW-31-060	Shallow Zone	454.19	453.65	453.92	91
MW-31-135	Deep Zone	453.49	453.01	453.25	91
MW-32-035	Shallow Zone	454.00	453.44	453.74	90
MW-33-040	Shallow Zone	454.23	453.69	453.96	91
MW-33-090	Middle Zone	454.88	453.98	454.42	76
MW-33-150	Deep Zone	454.60	454.03	454.31	91
MW-34-055	Middle Zone	453.77	453.39	453.57	91
MW-34-080	Deep Zone	454.11	453.53	453.81	91
MW-34-100	Deep Zone	453.87	453.24	453.55	91
MW-35-060	Shallow Zone	454.69	454.15	454.42	91
MW-35-135	Deep Zone	455.25	454.76	455.00	82
MW-36-020	Shallow Zone	454.03	453.46	453.74	91
MW-36-040	Shallow Zone	453.91	453.28	453.59	91
MW-36-050	Middle Zone	453.85	453.20	453.50	84
MW-36-070	Middle Zone	453.84	453.23	453.53	91
MW-36-090	Deep Zone	453.08	452.50	452.78	84
MW-36-100	Deep Zone	453.26	452.69	452.97	91
MW-39-040	Shallow Zone	453.76	453.18	453.46	91
MW-39-050	Middle Zone	453.66	453.09	453.37	91
MW-39-060	Middle Zone	453.43	452.91	453.17	91
MW-39-070	Middle Zone	453.17	452.58	452.87	80
MW-39-080	Deep Zone	453.34	452.73	453.03	91

Table E-1

Average Monthly and Quarterly Groundwater Elevations, Fourth Quarter 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	November 2015	December 2015	Quarter Average	Days in Quarter Average
MW-39-100	Deep Zone	453.71	453.14	453.42	91
MW-42-030	Shallow Zone	453.79	453.23	453.51	88
MW-42-065	Middle Zone	453.80	453.24	453.52	91
MW-43-025	Shallow Zone	454.08	453.44	453.75	91
MW-43-090	Deep Zone	454.32	453.64	453.98	91
MW-44-070	Middle Zone	454.03	453.37	453.69	91
MW-44-115	Deep Zone	453.66	453.05	453.35	91
MW-44-125	Deep Zone	454.11	453.53	453.82	91
MW-45-095a	Deep Zone	452.74	452.16	452.44	91
MW-46-175	Deep Zone	454.16	453.59	453.91	89
MW-47-055	Shallow Zone	INC	453.79	INC	81
MW-47-115	Deep Zone	454.79	454.27	454.53	91
MW-49-135	Deep Zone	454.75	454.16	454.50	78
MW-50-095	Middle Zone	454.52	453.97	454.24	88
MW-51	Middle Zone	454.72	454.26	454.48	79
MW-54-085	Deep Zone	454.51	453.91	454.20	82
MW-54-140	Deep Zone	INC	454.31	INC	80
MW-54-195	Deep Zone	455.23	454.72	454.97	90
MW-55-045	Middle Zone	INC	INC	INC	75
MW-55-120	Deep Zone	455.45	455.21	455.33	90
PT2D	Deep Zone	452.77	452.40	452.58	76
PT5D	Deep Zone	453.52	452.98	453.24	85
PT6D	Deep Zone	453.44	452.89	453.16	91
RRB	River Station	454.11	453.77	453.94	84

Notes:

Averages reported in ft amsl (feet above mean sea level).
Quarterly Average = average of daily averages over reporting period.
INC = Data incomplete, less than 75% of data available over reporting period due to rejection or field equipment ma

Table E-2

Average, Minimum and Maximum Groundwater Elevations, January 2015 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Minimum (ft amsl)	Maximum (ft amsl)	Average (ft amsl)	Number of Days Reporting Data
I-3	River Station	453.48	456.84	455.24	347
MW-20-070	Shallow Zone	452.85	455.19	454.05	365
MW-20-100	Middle Zone	451.74	454.79	453.45	365
MW-20-130	Deep Zone	451.85	454.50	453.23	344
MW-22	Shallow Zone	453.90	455.87	454.97	354
MW-25	Shallow Zone	453.62	456.29	455.42	334
MW-26	Shallow Zone	454.10	455.97	455.16	365
MW-27-020	Shallow Zone	453.52	456.78	455.17	360
MW-27-060	Middle Zone	453.43	456.69	455.14	361
MW-27-085	Deep Zone	453.49	456.71	455.12	365
MW-28-025	Shallow Zone	453.44	456.70	455.21	331
MW-28-090	Deep Zone	453.57	456.68	455.23	357
MW-30-050	Middle Zone	453.24	456.39	454.83	365
MW-31-060	Shallow Zone	453.65	456.03	454.89	365
MW-31-135	Deep Zone	453.01	455.52	454.24	365
MW-32-035	Shallow Zone	453.44	456.42	454.99	360
MW-33-040	Shallow Zone	453.69	456.35	455.08	365
MW-33-090	Middle Zone	453.98	456.60	455.39	305
MW-33-150	Deep Zone	454.03	456.48	455.27	365
MW-34-055	Middle Zone	453.39	456.69	455.10	364
MW-34-080	Deep Zone	453.53	456.71	455.19	364
MW-34-100	Deep Zone	453.24	456.32	454.91	365
MW-35-060	Shallow Zone	454.15	457.07	455.60	365
MW-35-135	Deep Zone	454.76	457.01	455.80	329
MW-36-020	Shallow Zone	453.46	456.36	454.95	365
MW-36-040	Shallow Zone	453.28	456.42	454.91	365
MW-36-050	Middle Zone	453.20	456.38	454.86	336
MW-36-070	Middle Zone	453.23	456.37	454.87	365
MW-36-090	Deep Zone	452.50	455.45	454.01	336
MW-36-100	Deep Zone	452.69	455.68	454.25	365
MW-39-040	Shallow Zone	453.18	456.23	454.74	365
MW-39-050	Middle Zone	453.09	456.07	454.61	365
MW-39-060	Middle Zone	452.91	455.87	454.42	365
MW-39-070	Middle Zone	452.27	455.40	454.13	321
MW-39-080	Deep Zone	452.73	455.52	454.12	365
MW-39-100	Deep Zone	453.14	456.00	454.57	365
MW-42-030	Shallow Zone	453.23	456.11	454.74	351

Table E-2

Average, Minimum and Maximum Groundwater Elevations, January 2015 through December 2015

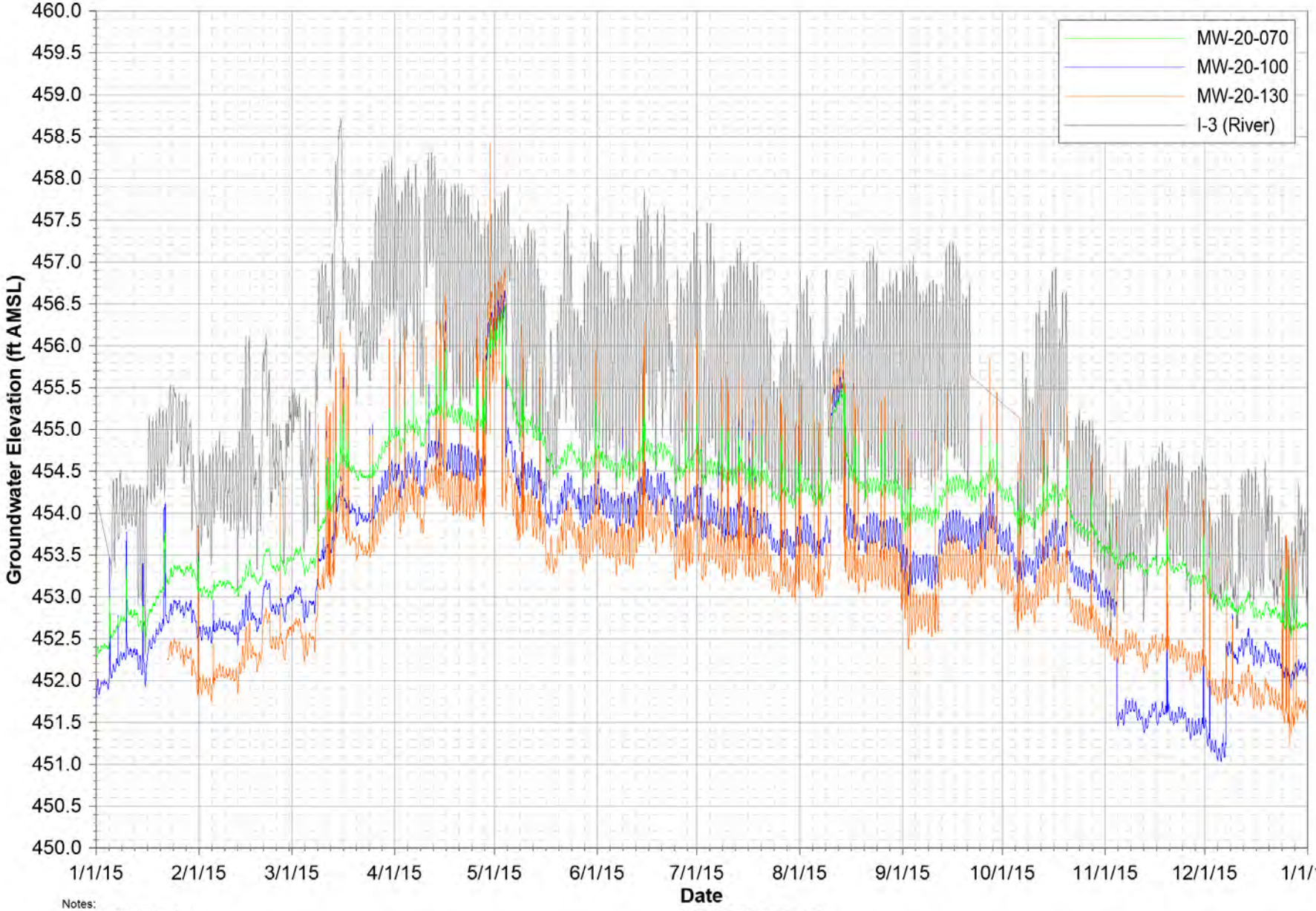
Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Well ID	Aquifer Zone	Minimum (ft amsl)	Maximum (ft amsl)	Average (ft amsl)	Number of Days Reporting Data
MW-42-065	Middle Zone	453.24	456.24	454.79	364
MW-43-025	Shallow Zone	453.44	456.79	455.19	362
MW-43-090	Deep Zone	453.64	457.11	455.51	362
MW-44-070	Middle Zone	453.37	456.53	455.01	365
MW-44-115	Deep Zone	453.05	455.89	454.58	365
MW-44-125	Deep Zone	453.53	456.51	455.05	365
MW-45-095a	Deep Zone	452.16	455.27	453.89	365
MW-46-175	Deep Zone	453.59	456.32	455.15	357
MW-47-055	Shallow Zone	453.79	456.72	455.55	325
MW-47-115	Deep Zone	454.27	456.65	455.50	365
MW-49-135	Deep Zone	454.16	457.19	455.47	310
MW-50-095	Middle Zone	453.97	456.15	455.14	352
MW-51	Middle Zone	454.08	456.02	455.06	316
MW-54-085	Deep Zone	453.91	457.07	455.55	328
MW-54-140	Deep Zone	454.31	457.14	455.90	318
MW-54-195	Deep Zone	454.72	457.29	455.98	359
MW-55-045	Middle Zone	455.47	457.18	456.26	298
MW-55-120	Deep Zone	455.21	457.06	456.07	359
PT2D	Deep Zone	452.48	455.17	453.81	304
PT5D	Deep Zone	452.98	455.71	454.39	340
PT6D	Deep Zone	452.89	455.76	454.33	365
RRB	River Station	453.77	457.18	455.47	337

Notes:

Averages include data collected from 1/1/2015 through 12/31/2015.
ft amsl = feet above mean sea level.

INC = Data incomplete, less than 75% of data available over reporting period due to rejection or field equipment malfunction.

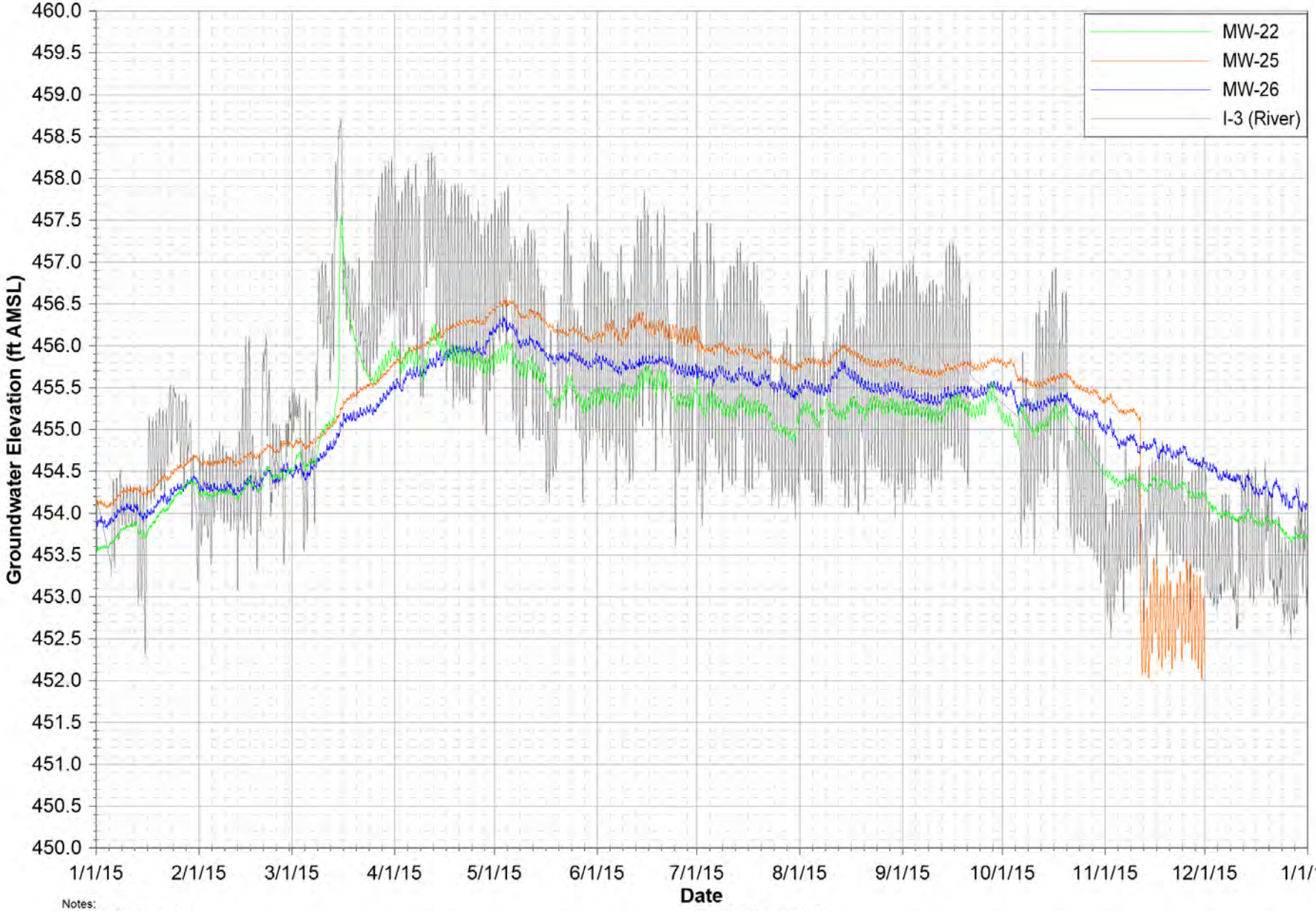


Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-20-130 data unavailable from January 1, 2015 through January 22, 2015 due to transducer malfunction.
4. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1A
MW-20 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

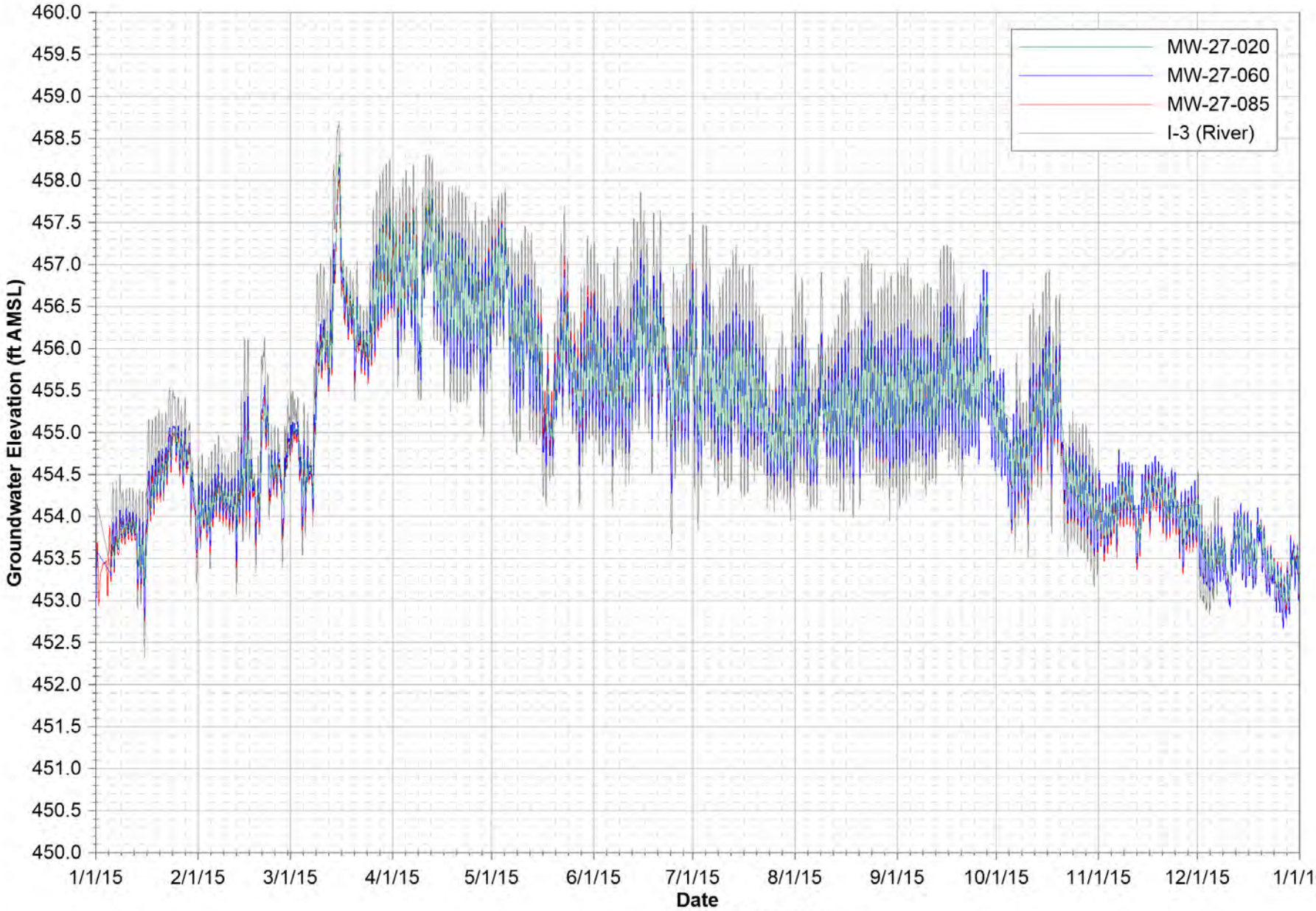
\\arcadis-us.com\officedata\Denver-CO-Technical\Aproject\PG&E - Groundwater Monitoring\Topock_Reporting Team\00_Reports\02_PMP-GMP_Reports\00_Q4_2015\Draft Reports\03_Appendices\Appendix E



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1B
MW-22, MW-25, AND MW-26 HYDROGRAPHS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



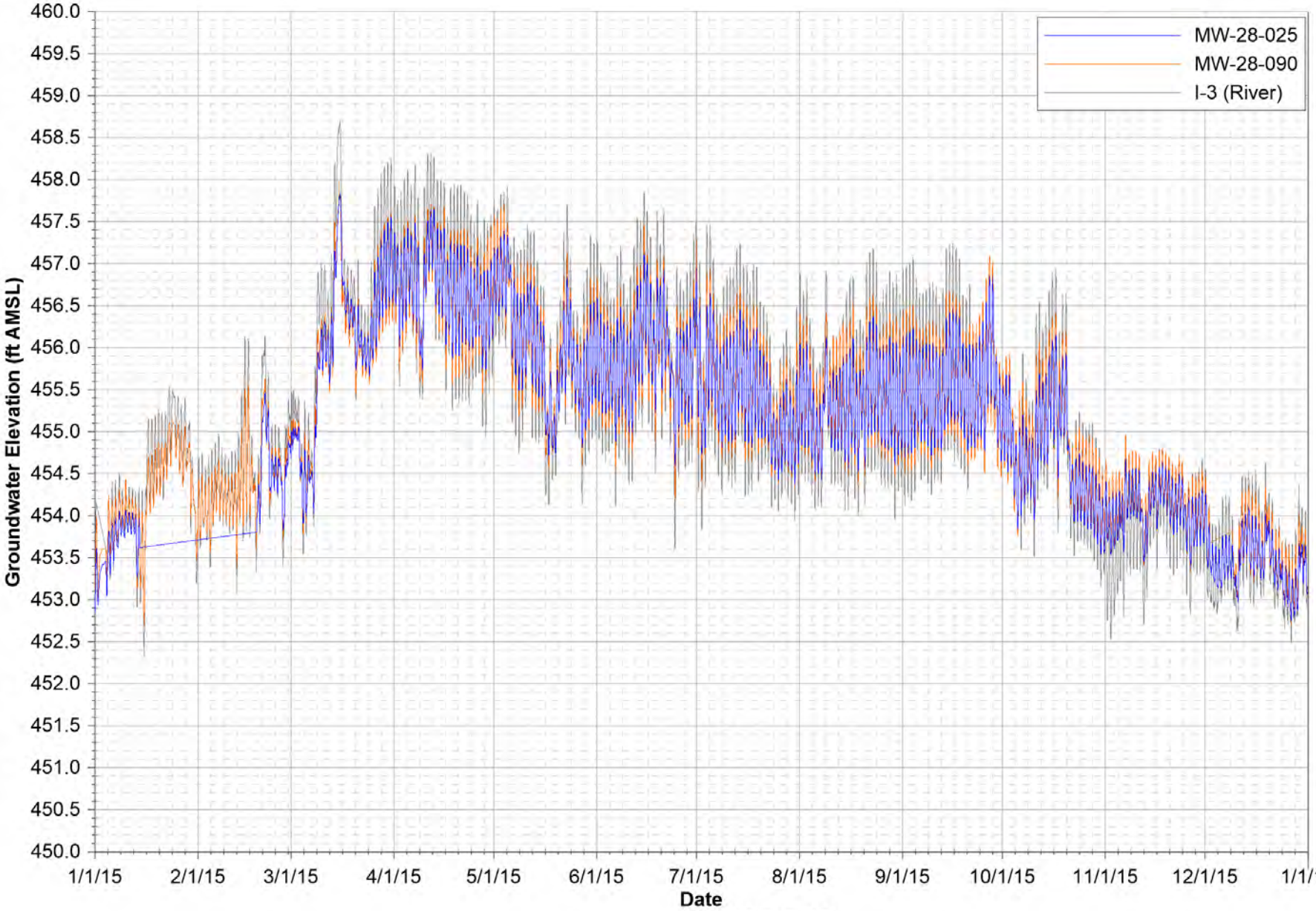
Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-27-020 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.
4. MW-27-060 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.
5. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1C

MW-27 CLUSTER HYDROGRAPHS

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

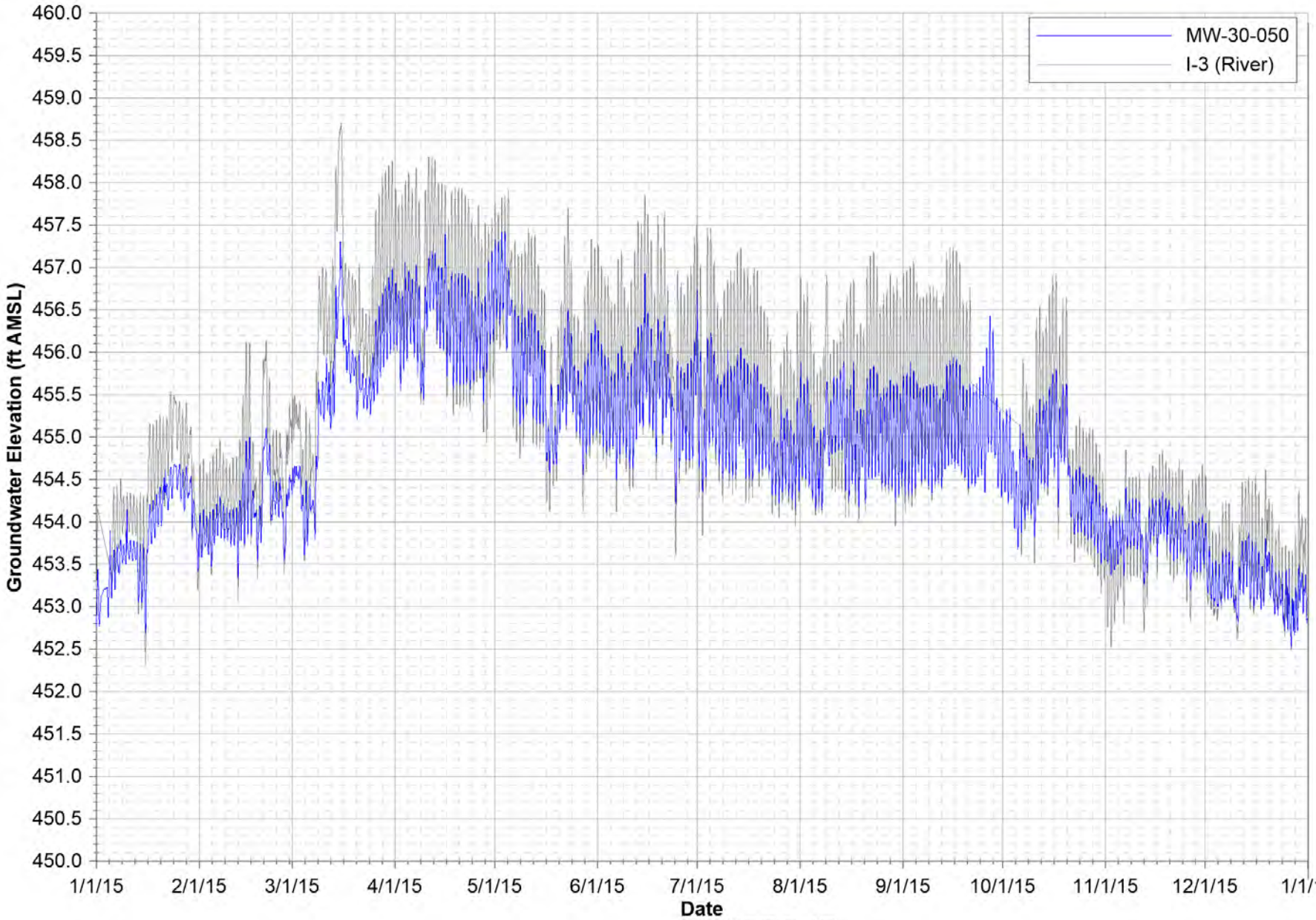


Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-28-025 data unavailable from January 14, 2015 through February 18, 2015 due to transducer malfunction.
4. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1D
MW-28 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

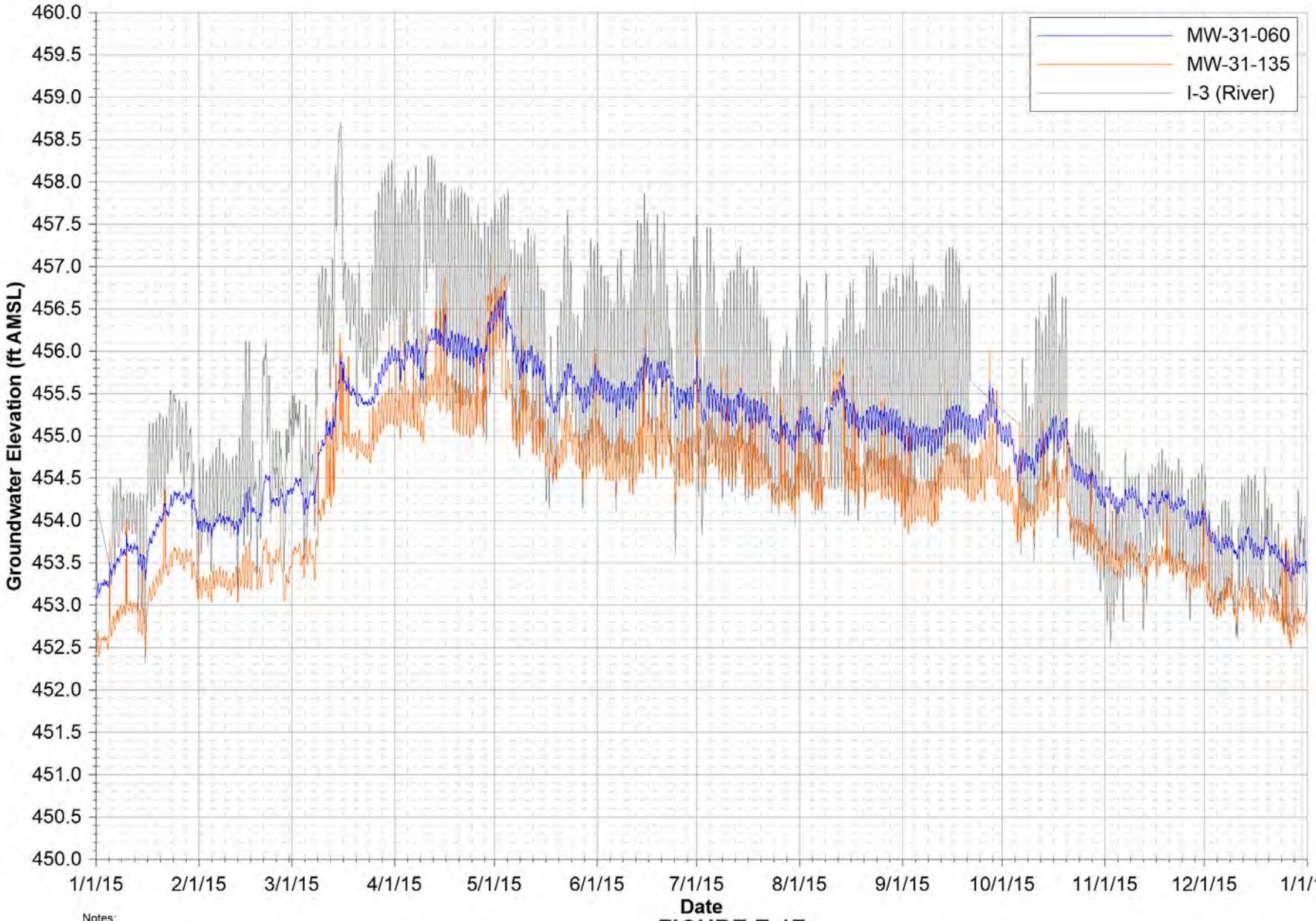
\\arcadis-us.com\officedata\Denver-CO-Technical\Aproject\PG&E - Groundwater Monitoring\Topock_Reporting Team\00_Reports\02_PMP-GMP_Reports\00_Q4_2015\Draft Reports\03_Appendices\Appendix E



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1E
MW-30-50 HYDROGRAPH
FOURTH QUARTER 2015 AND ANNUAL INTERIMMEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



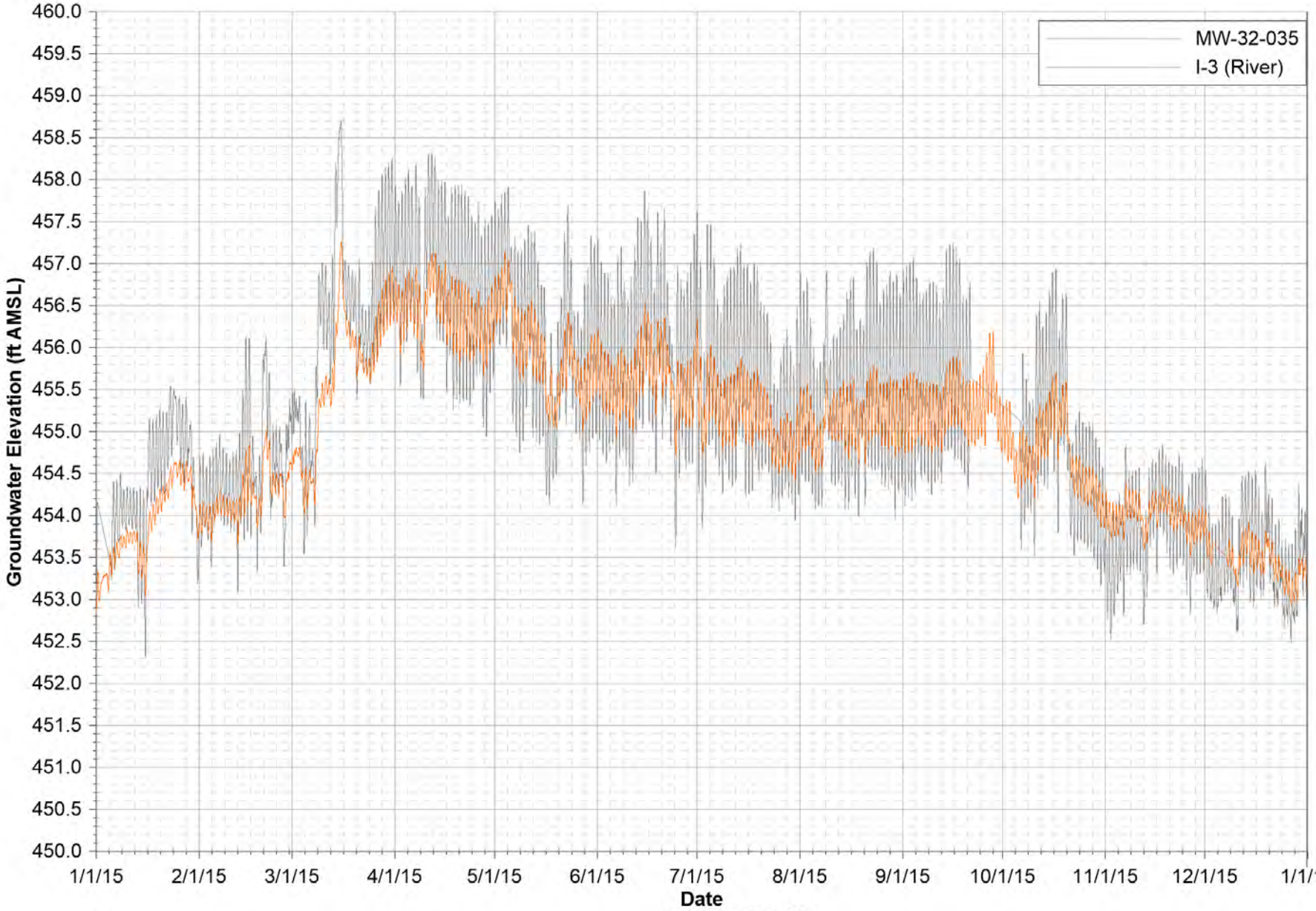
Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1F

MW-31 CLUSTER HYDROGRAPHS

FOURTH QUARTER 2015 AND ANNUAL INTERIMMEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

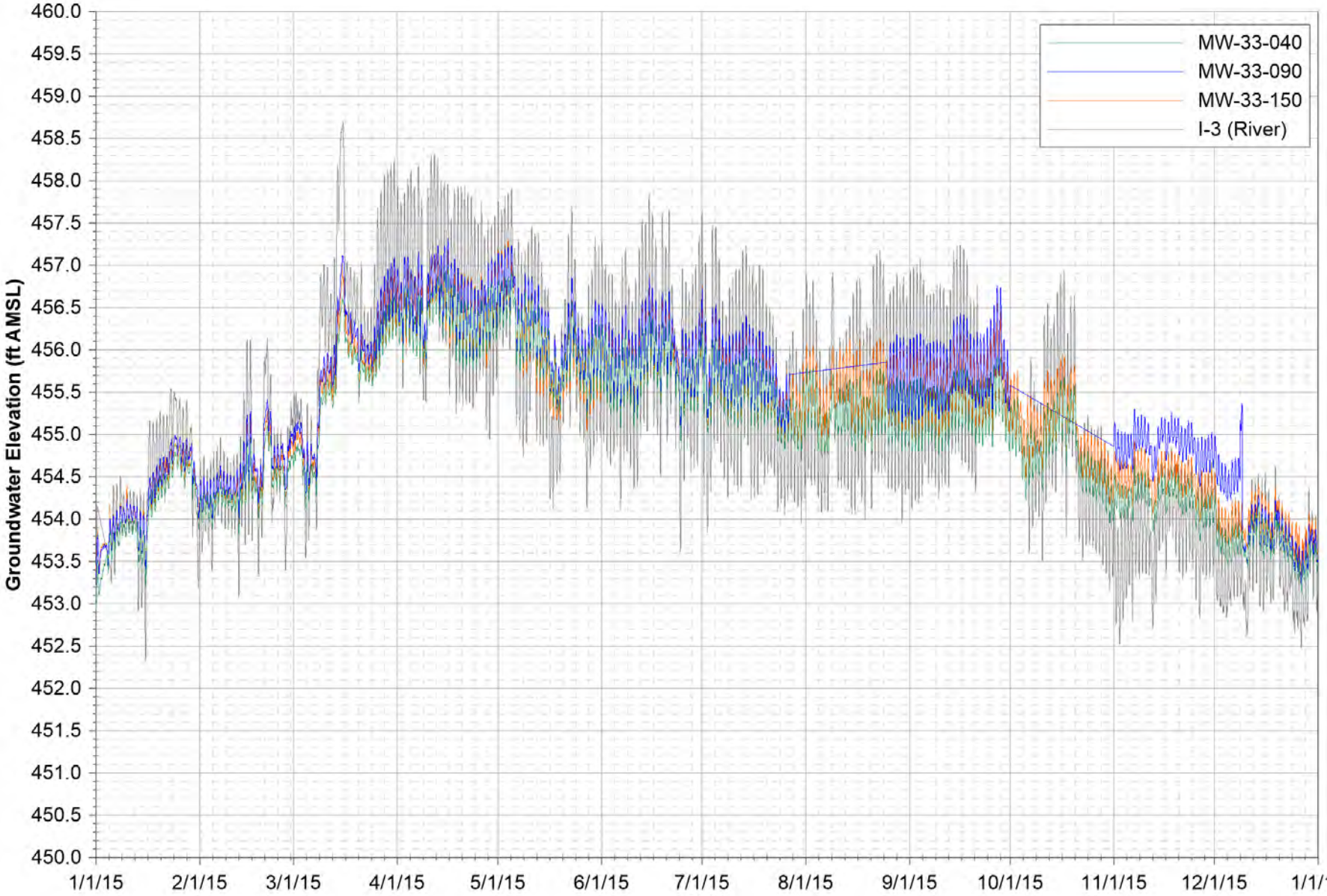
ARCADIS



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1G
MW-32 HYDROGRAPH
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



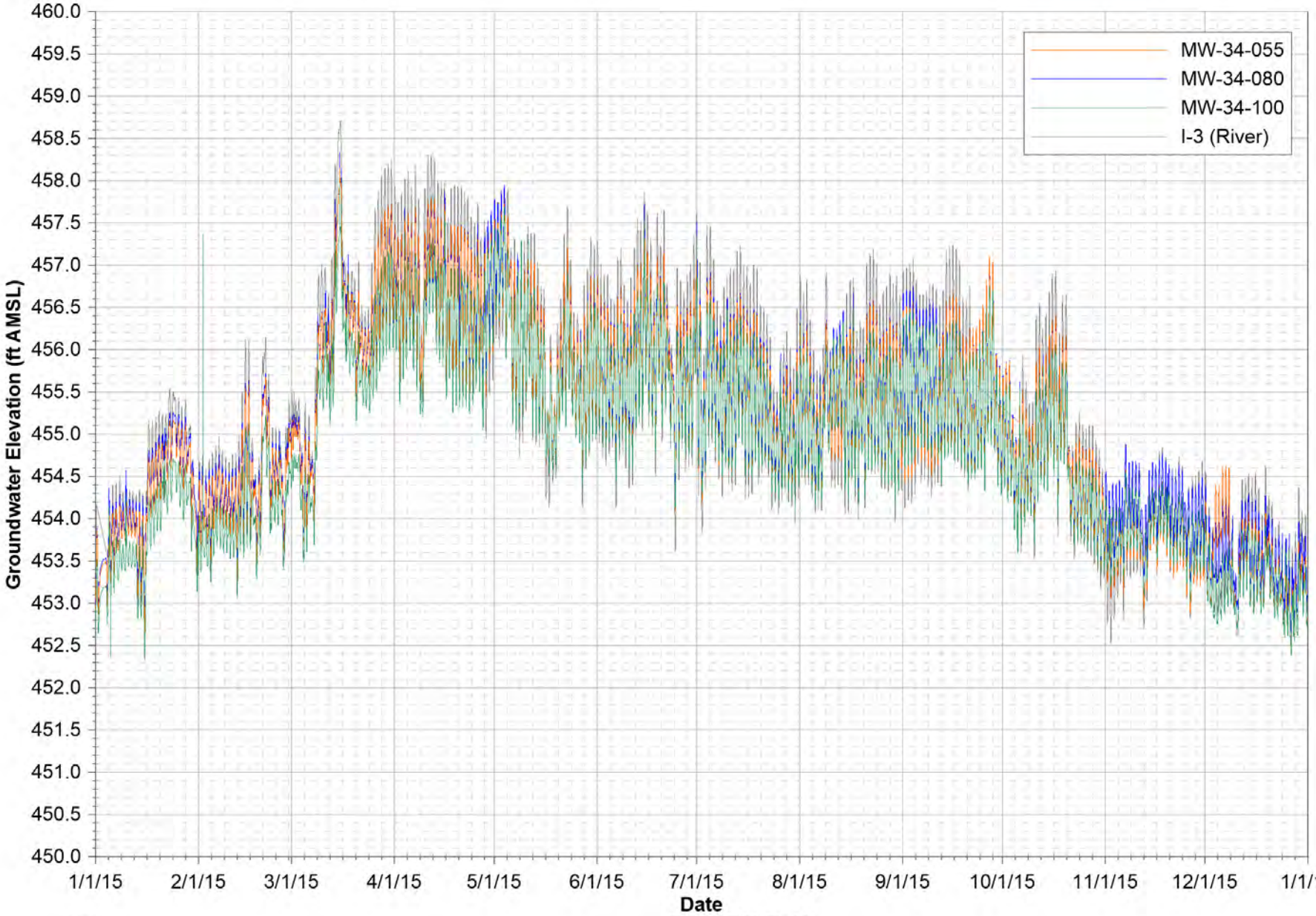
Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-33-090 data unavailable from July 27, 2015 through August 25, 2015 and from October 1, 2015 through October 21, 2015 due to transducer malfunction.
4. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1H

MW-33 CLUSTER HYDROGRAPHS

FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

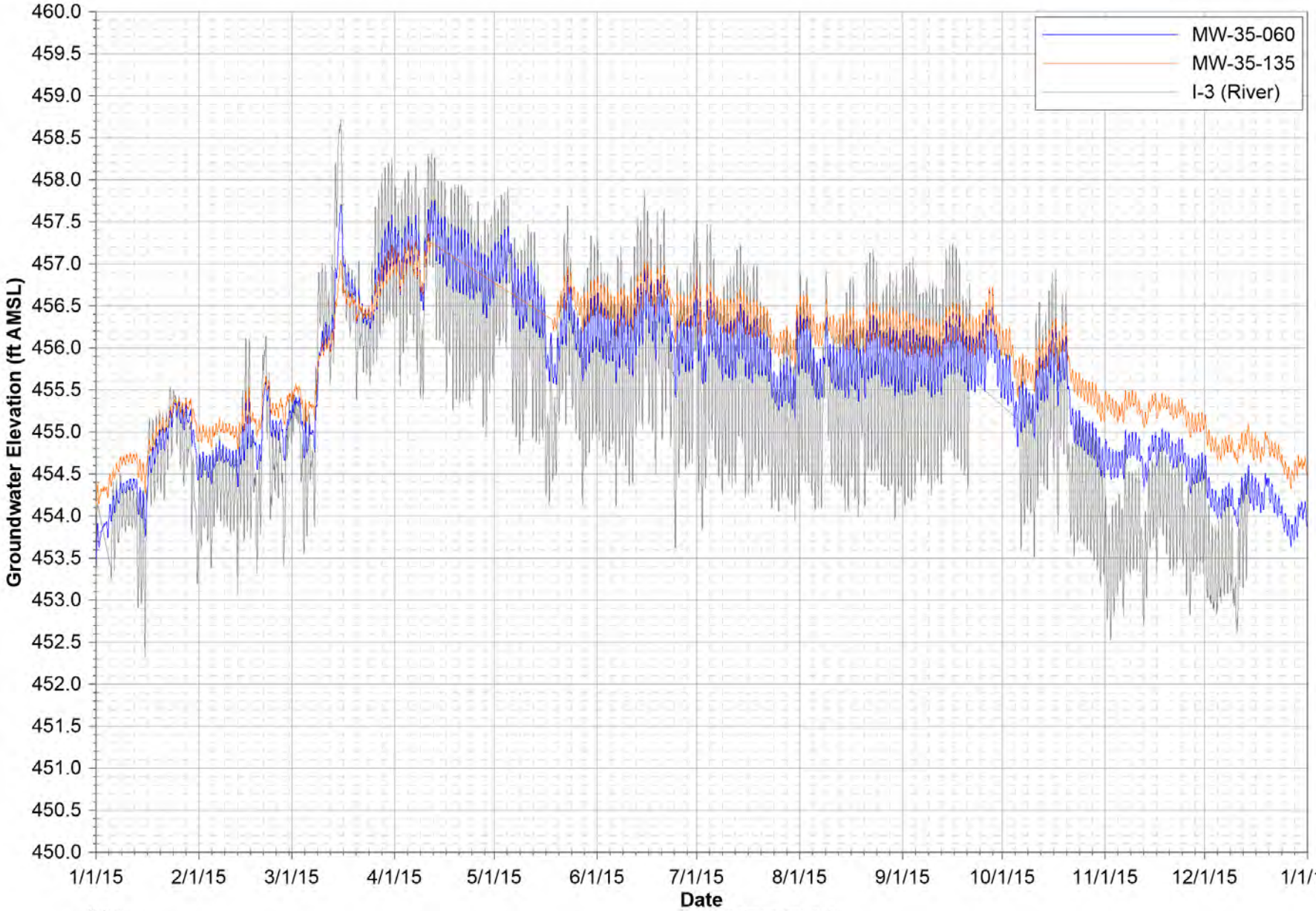
ARCADIS



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1I
MW-34 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

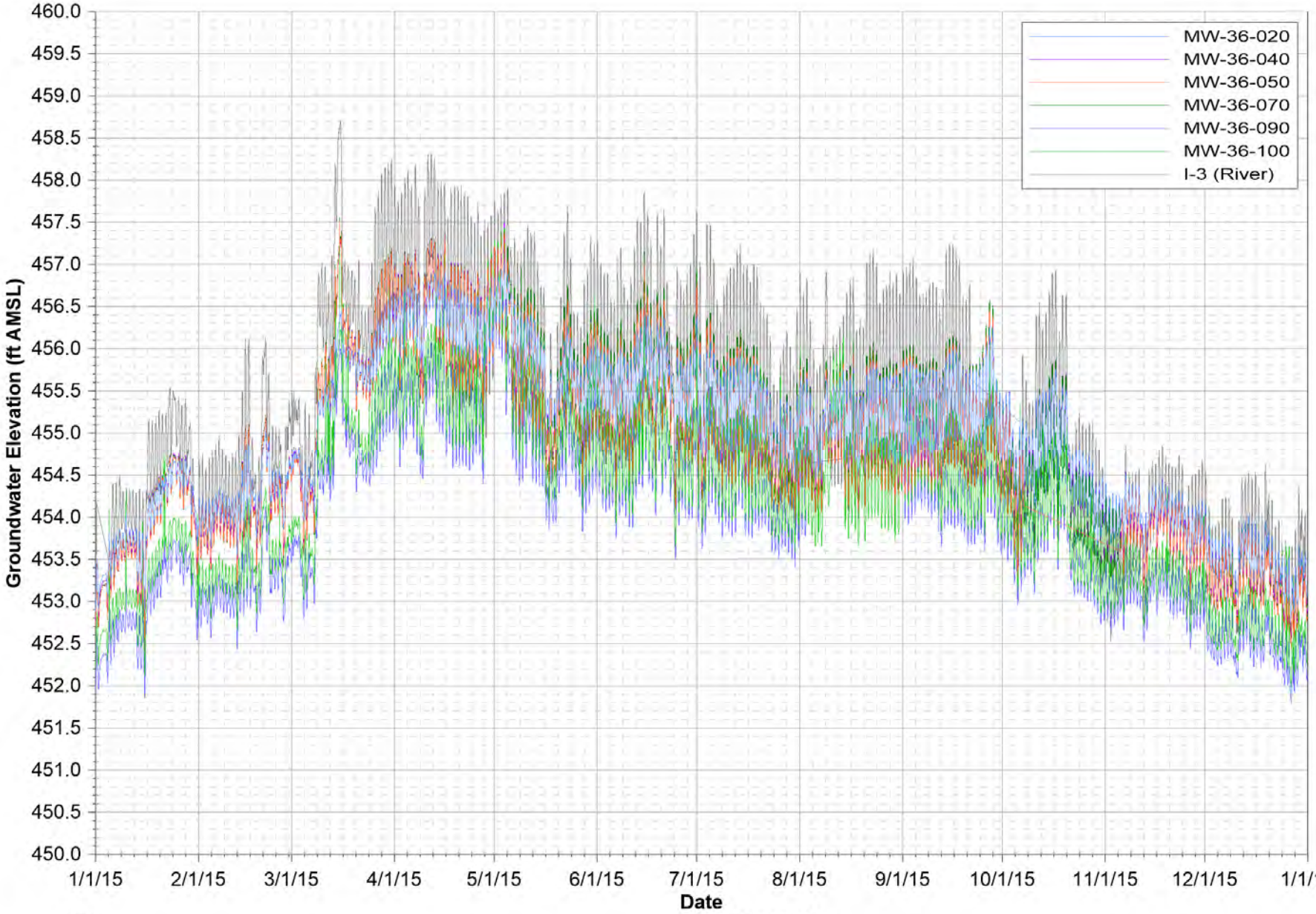


Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-35-135 data unavailable from April 11, 2015 through May 18, 2015 due to transducer malfunction.
4. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1J
MW-35 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

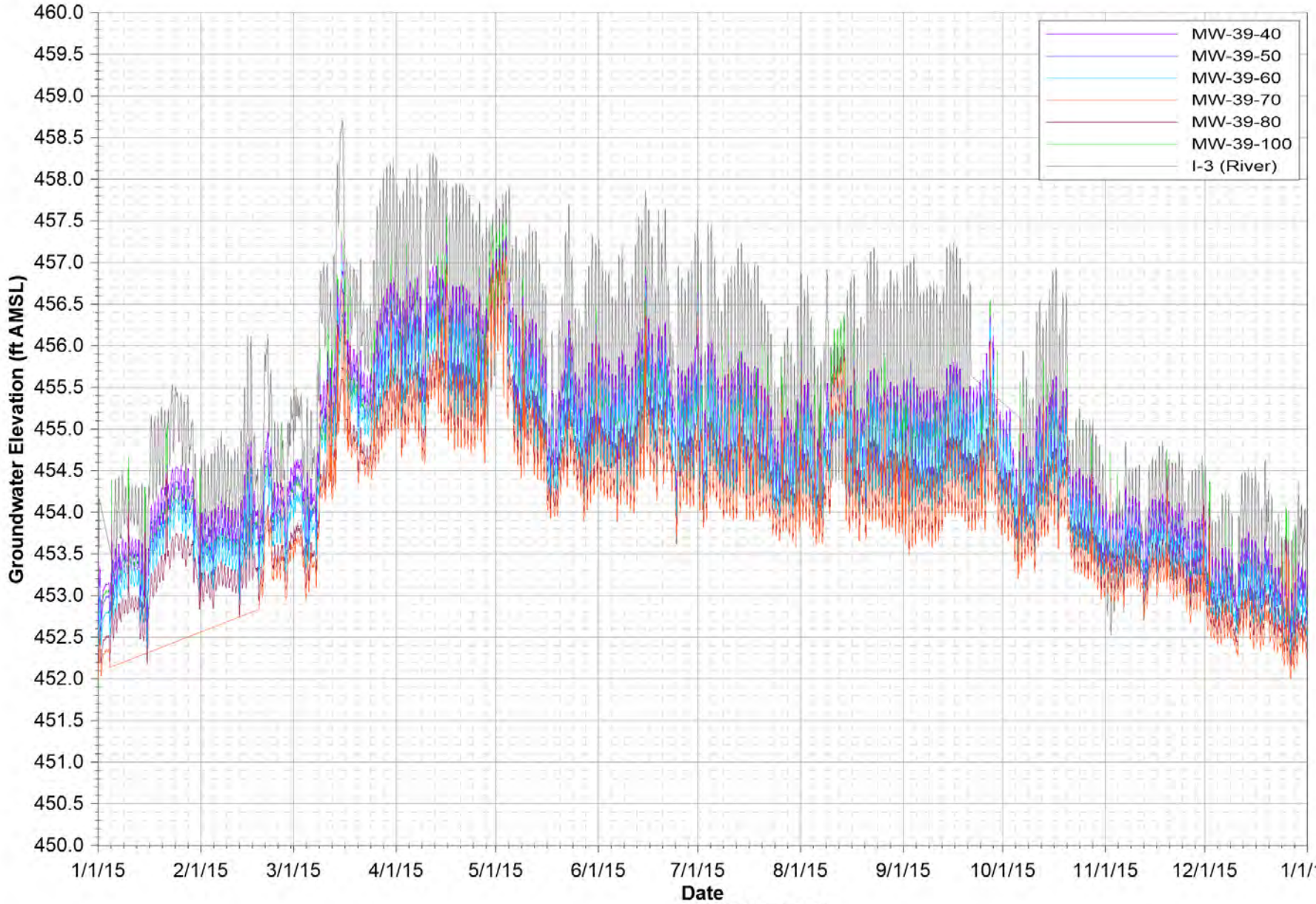
\\arcadis-us.com\officedata\Denver-CO-Technical\Aproject\PG&E - Groundwater Monitoring\Topock_Reporting Team\00_Reports\02_PMP-GMP_Reports\00_Q4_2015\Draft Reports\03_Appendices\Appendix E



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-36-050 data unavailable from October 7, 2015 through October 31, 2015 due to transducer malfunction.
4. MW-36-090 data unavailable from August 3, 2015 through September 1, 2015 due to transducer malfunction.
5. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1K
MW-36 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

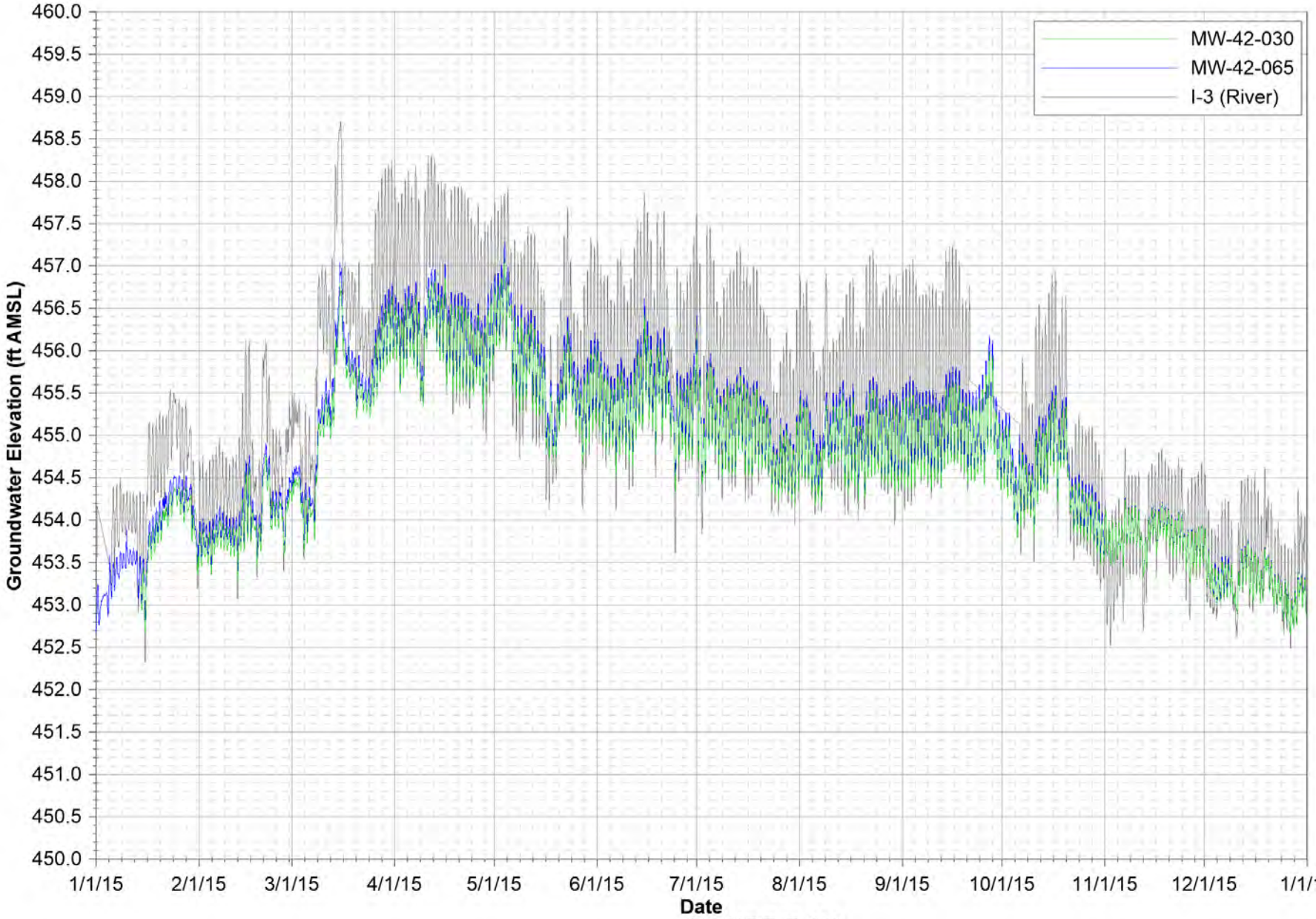
ARCADIS



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-39-070 data unavailable from January 4, 2015 through February 18, 2015 due to transducer malfunction.
4. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1L
MW-39 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

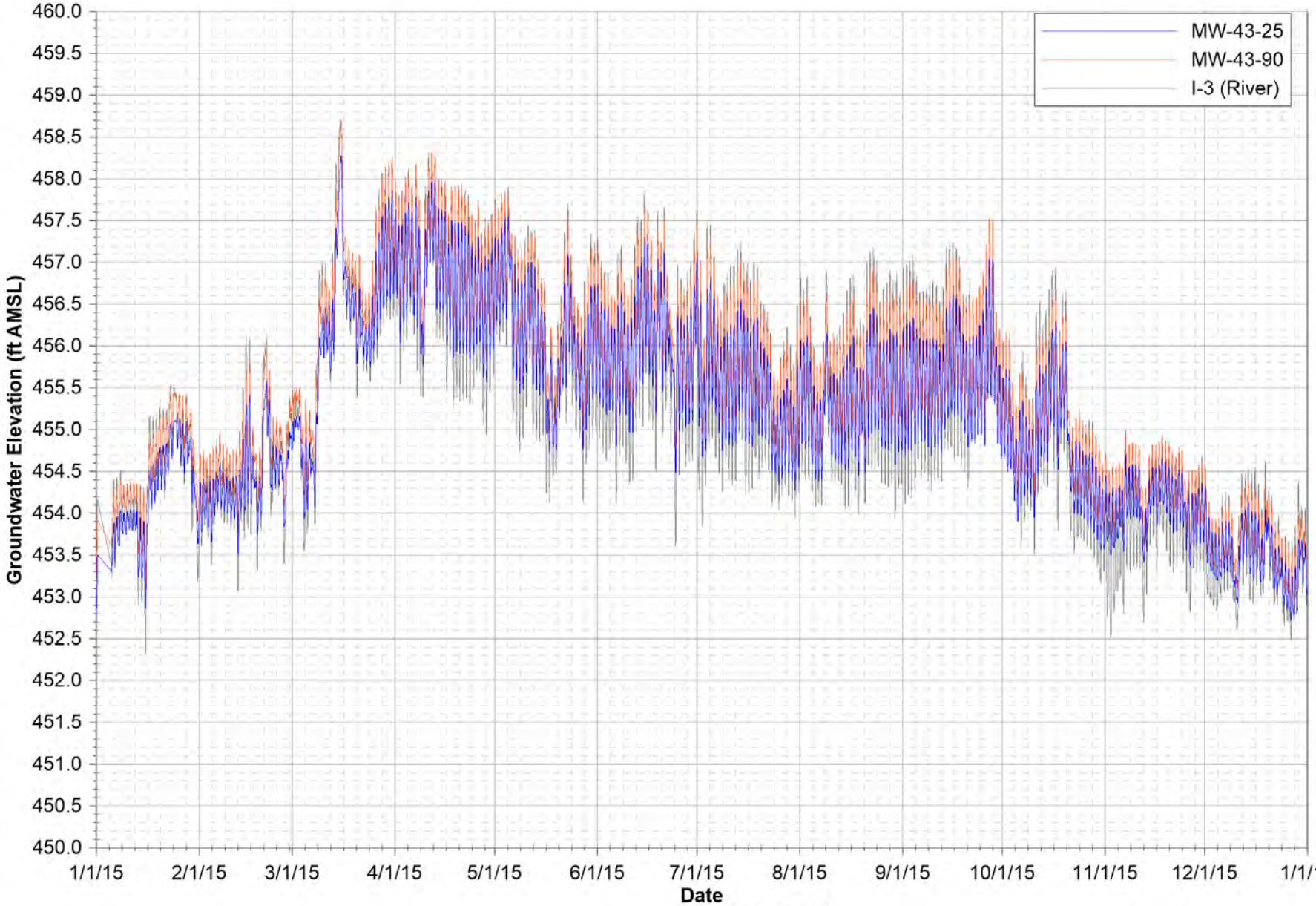


Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-42-030 data unavailable from January 1, 2015 through January 13, 2015.
4. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1M
MW-42 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

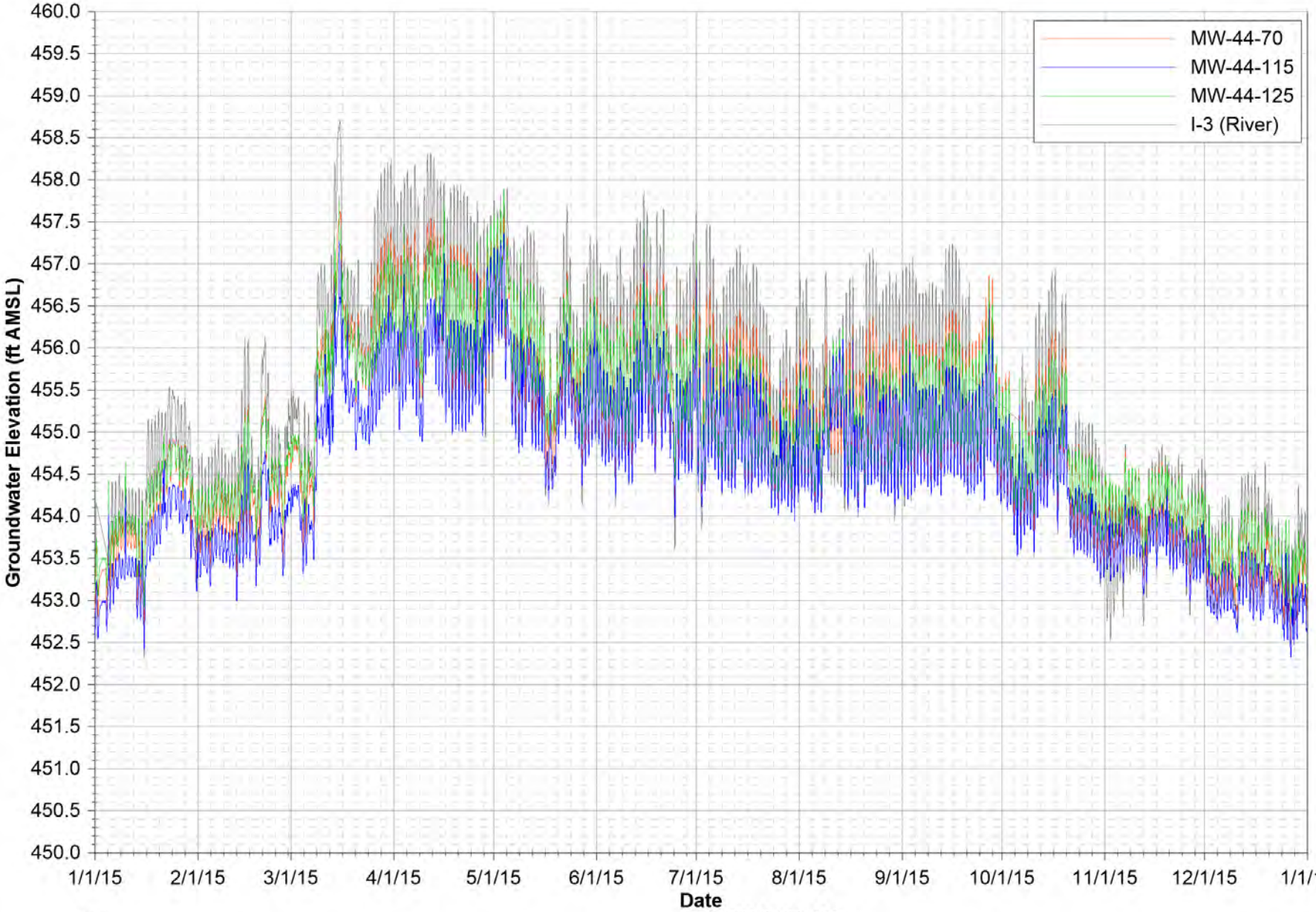
\\arcadis-us.com\officedata\Denver-CO-Technical\Aproject\PG&E - Groundwater Monitoring\Topock_Reporting Team\00_Reports\02_PMP-GMP_Reports\00_Q4_2015\Draft Reports\03_Appendices\Appendix E



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-43-25 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.
4. MW-43-90 data unavailable from January 1, 2015 through January 5, 2015 due to transducer malfunction.
5. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1N
MW-43 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

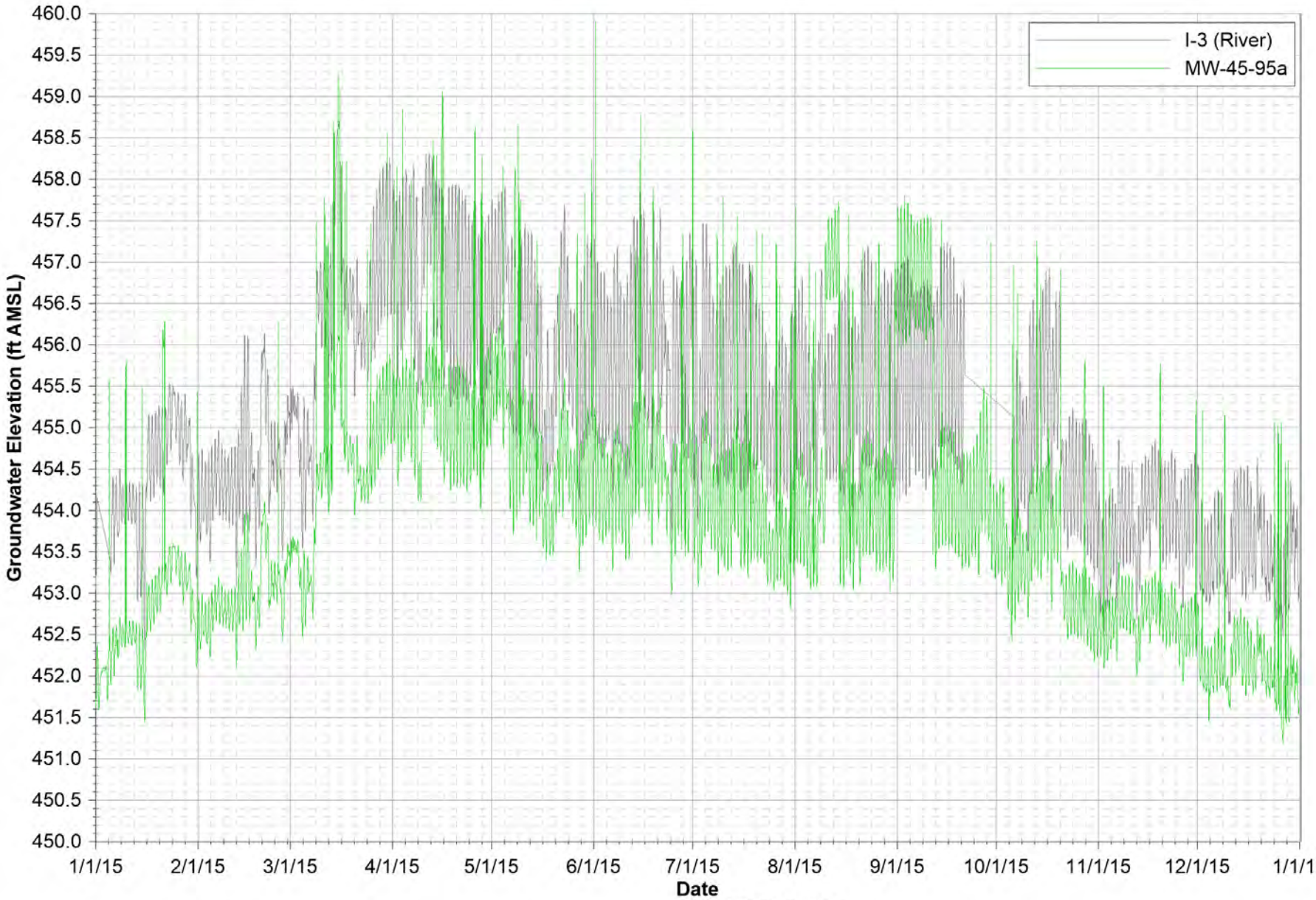


Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1O
MW-44 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

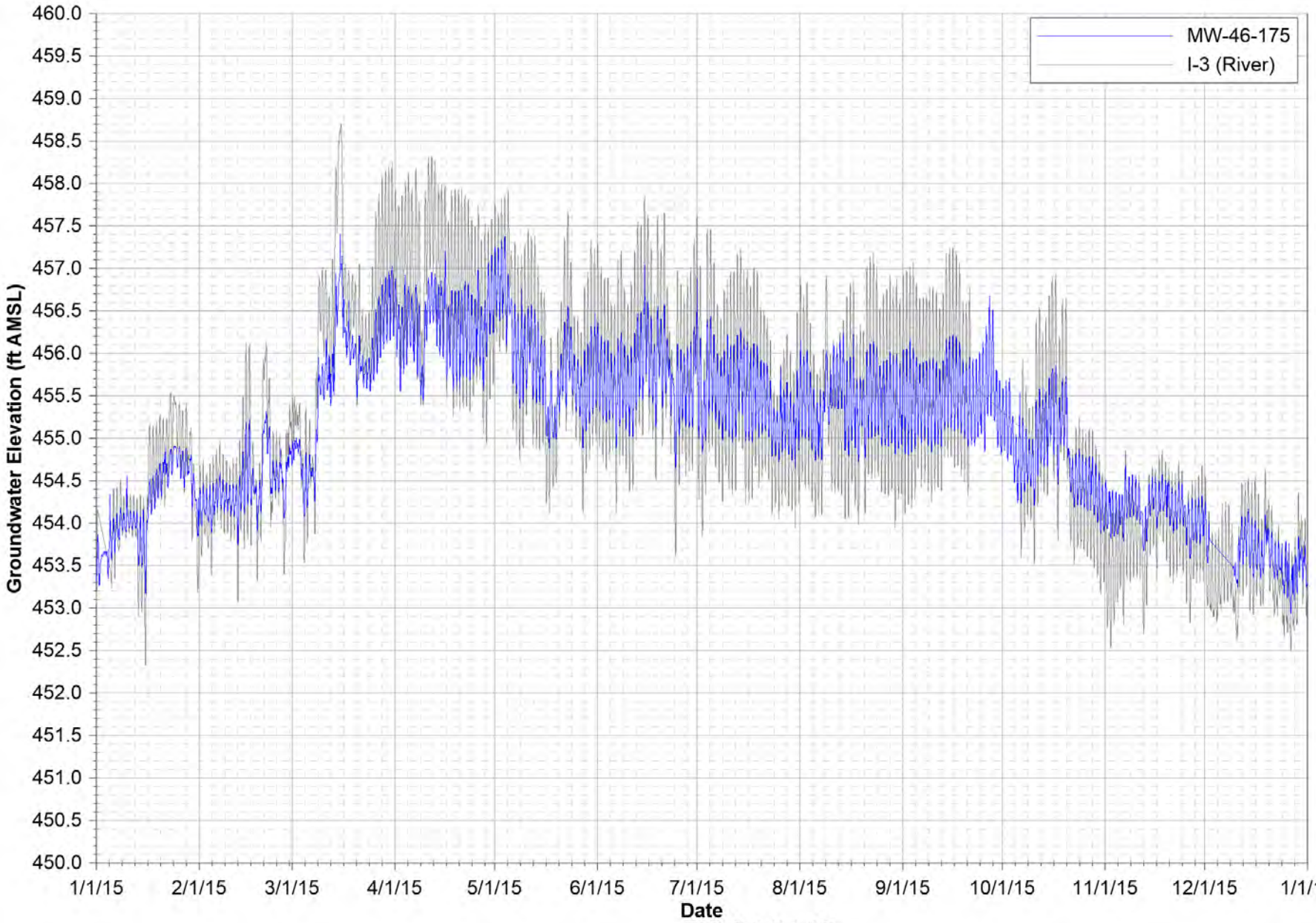
\\arcadis-us.com\officedata\Denver-CO-Technical\Aproject\PG&E - Groundwater Monitoring\Topock_Reporting Team\00_Reports\02_PMP-GMP_Reports\00_Q4_2015\Draft Reports\03_Appendices\Appendix E



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1P
MW-45-95a HYDROGRAPH
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

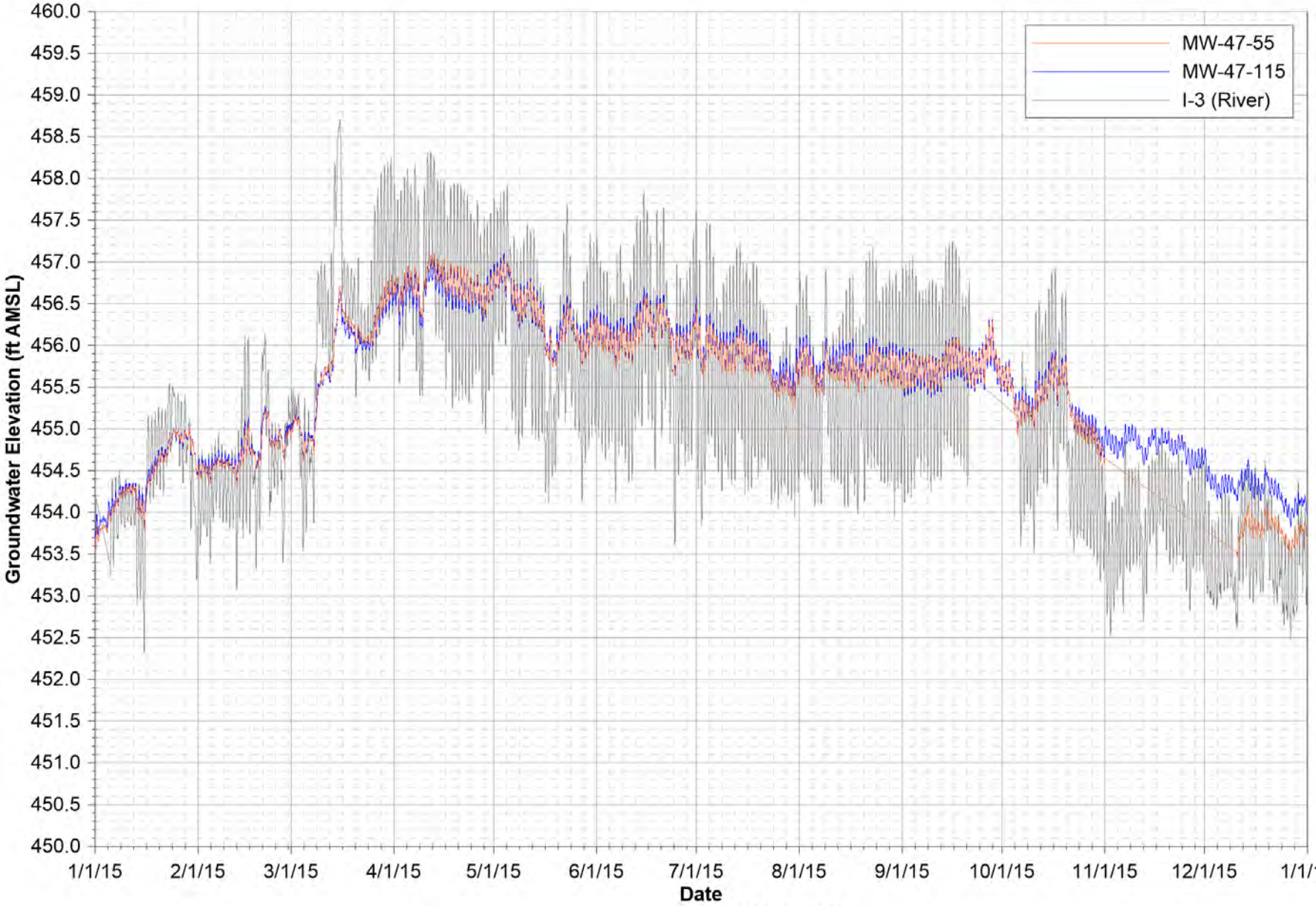
ARCADIS



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-46-175 data unavailable from December 2, 2015 through December 9, 2015 due to transducer malfunction.
4. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1Q
MW-46 HYDROGRAPH
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-47-055 data unavailable from November 1, 2015 through December 10, 2015 due to transducer malfunction.
4. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

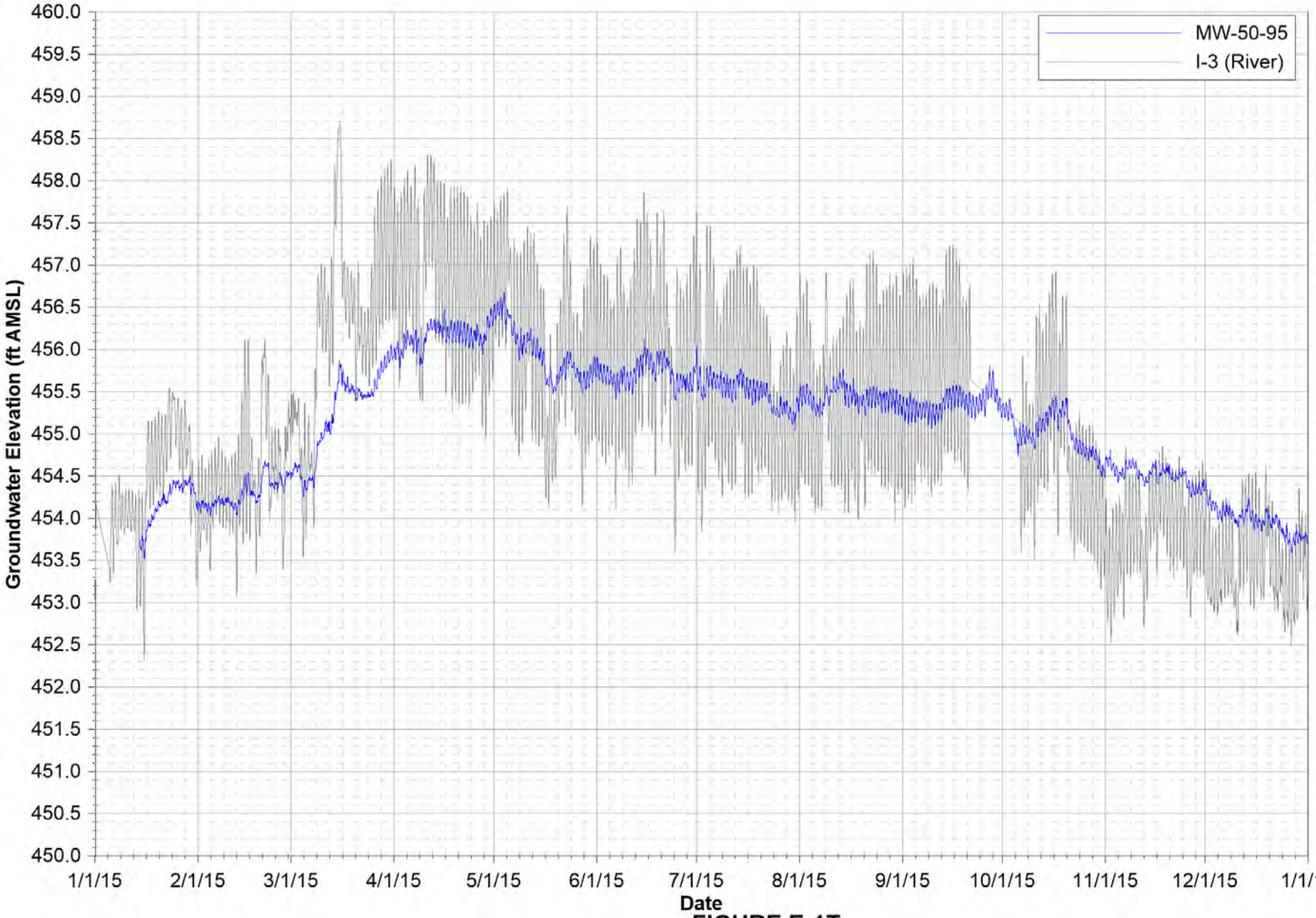
FIGURE E-1R
MW-47 CLUSTER HYDROGRAPHS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-49-135 data unavailable from April 1, 2015 through May 18, 2015 due to transducer malfunction.
4. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1S
MW-49 HYDROGRAPH
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

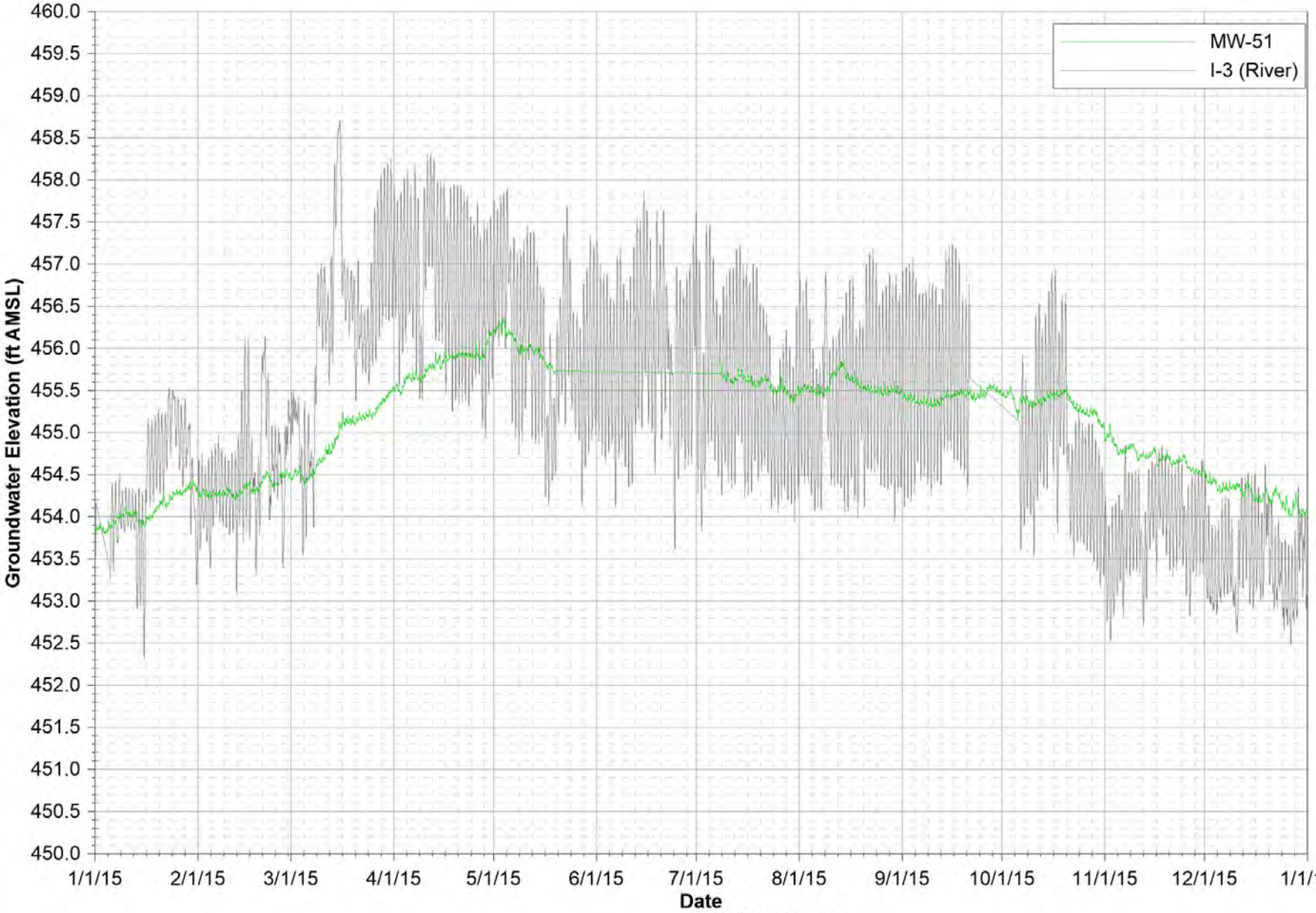
ARCADIS



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-50-95 data unavailable from January 1, 2015 through January 13, 2015.
4. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1T
MW-50 HYDROGRAPH
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

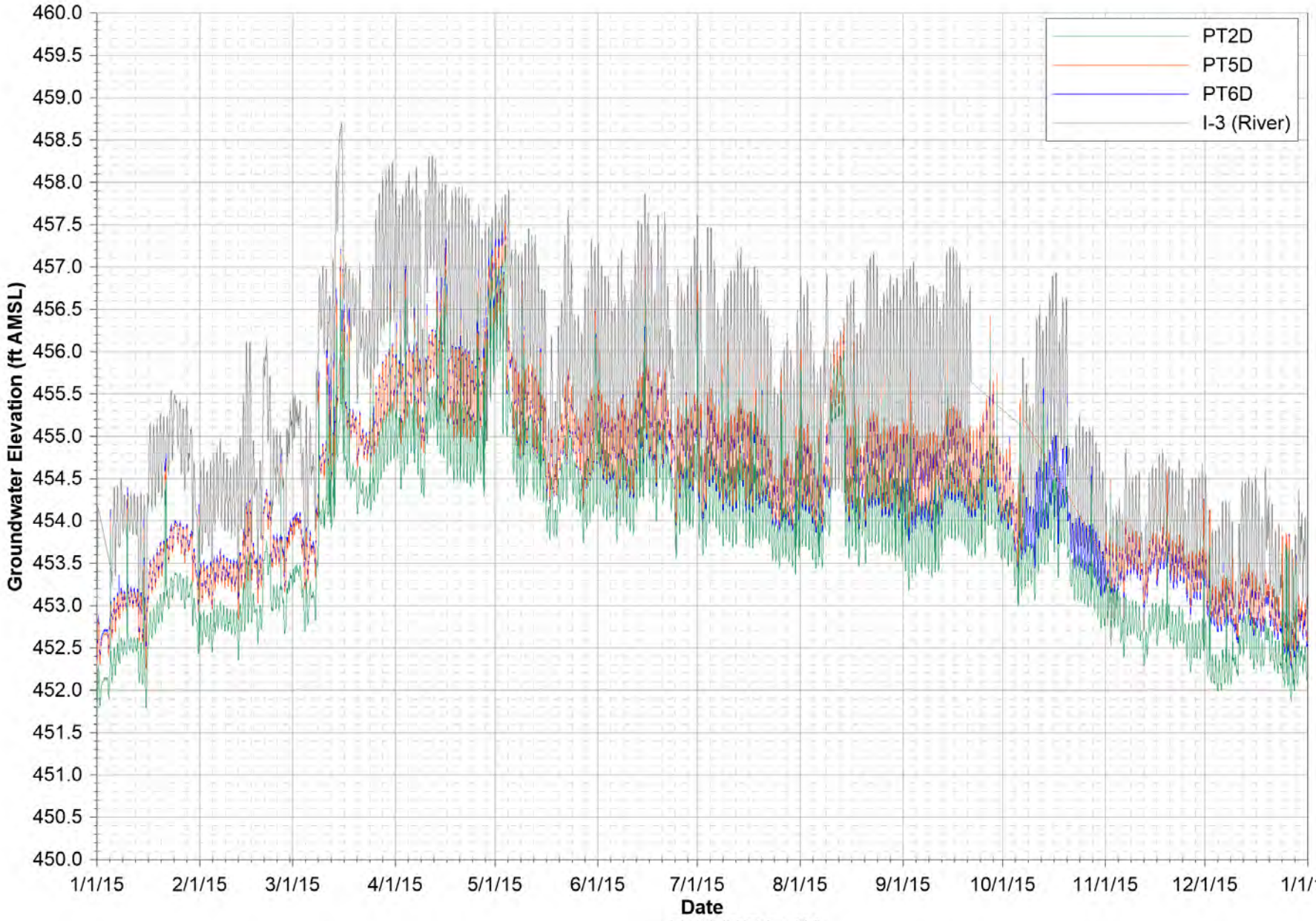
ARCADIS



Notes:
1. Data subject to review.
2. ft amsl = feet above mean sea level.
3. MW-51 data unavailable from May 19, 2015 through June 30, 2015 due to transducer malfunction.
4. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1U
MW-51 HYDROGRAPHS
FOURTH QUARTER 2015 AND ANNUAL 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.
3. PT5D data unavailable from October 7, 2015 through October 31, 2015 due to transducer malfunction.
4. I-3 data unavailable from September 21, 2015 through October 6, 2015 due to transducer malfunction.

FIGURE E-1V
INSITU PILOT STUDY WELL HYDROGRAPHS
FOURTH QUARTER 2015 AND ANNUAL INTERIM MEASURES PERFORMANCE MONITORING AND SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING REPORT, PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

ARCADIS

\\arcadis-us.com\officedata\Denver-CO-Technical\Aproject\PG&E - Groundwater Monitoring\Topock_Reporting Team\00_Reports\02_PMP-GMP_Reports\00_Q4_2015\Draft Reports\03_Appendices\Appendix E

APPENDIX F

Groundwater Monitoring Data for Groundwater Monitoring Program and Performance Monitoring Program

Table F-1

Chemical Performance Monitoring Analytical Results, March 2005 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date		Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (00/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Boron (mg/L)
MW-20-070	3/10/2005		1,940	-7.1	-59	740	378	--	ND (1)	81.7	ND (1)	198	55.4	9.89	431	0.412
MW-20-070	6/15/2005	FD	2,050	-8.3	-57	760	392	--	ND (1)	71.3	ND (1)	204	60.7	11.4	468	0.445
MW-20-070	6/15/2005		1,980	-7	-60	749	388	--	ND (1)	73.8	ND (1)	189	55.4	10.5	433	0.414
MW-20-070	10/11/2005		1,950	-7.2	-57	737	359	--	0.641	69.9	0.641	198	49.9	14.6	323	0.402
MW-20-070	12/15/2005		1,830	-7.1	-49	645	326	--	ND (1)	77.8	ND (1)	138	42.3	14.5	267	0.441
MW-20-070	3/10/2006		1,940	-7.2	-54	679	358	--	ND (0.5)	82.2	ND (0.5)	161	48.6	9.22	424	0.427
MW-20-070	5/5/2006		1,750	-8.2	-55.9	696	376	--	0.574	74.5	0.574	162	49.2	9.55	461	0.476
MW-20-070	10/3/2006	FD	1,840	-8.1	-60.5	669	352	--	ND (5)	80	ND (5)	154	45.9	9.51	466	0.515
MW-20-070	10/3/2006		1,890	-8.1	-60.4	677	357	--	ND (5)	85	ND (5)	158	47.6	9.82	472	0.535
MW-20-070	12/13/2006		1,910	-7.6	-61.2	678	352	--	0.699	77.5	0.699	149	44.3	9.09	458	0.459
MW-20-070	3/14/2007		1,740	-8.5	-64.3	689	358	--	0.641	80	0.641	139	42.2	8.83	451	0.503
MW-20-070	5/3/2007		1,750	-8.4	-66.7	697	344	--	ND (1)	77.5	ND (1)	139	41.2	8.65	390	0.477
MW-20-070	10/11/2007		1,820	-8.2	-63.9	699	367	--	ND (1)	80	ND (1)	130	39.1	11	600	0.54
MW-20-070	3/12/2008		1,790	-7.6	-65.2	695	360	--	ND (1)	77	ND (1)	139	41.2	10.7	403	0.51
MW-20-070	10/7/2008		1,900	-8.5	-64.4	650	360	--	0.61	83	0.61	136	37.9	10.5	400	0.608
MW-20-070	3/12/2009		1,900	-7.74	-60.82	670	330	--	ND (1)	79	ND (1)	128	40.2	9.95	496	0.549
MW-20-070	9/25/2009		1,700	-8.7	-66.43	700	310	--	ND (2.5)	74	ND (2.5)	130	33	9.7	390	0.42
MW-20-070	12/16/2010		1,700	-7.5	-62.3	680	320	--	0.51	79	0.51	130	33	12	400	0.51
MW-20-070	12/7/2011		1,400	-7.9	-61.9	540	330	--	ND (0.5)	71	ND (0.5)	100	25	--	380	--
MW-20-070	10/4/2012		--	--	--	430	290	--	--	--	--	76.2	22.9	--	346	--
MW-20-070	11/27/2012		1,400	-7.8	-62.6	450	300	10.6	ND (0.5)	94	ND (0.5)	79.2	22.2	8.07	350	0.484
MW-20-070	3/12/2013		--	--	--	440	290	8.6	--	100	--	82.8	22.3	--	358	--
MW-20-070	5/9/2013		--	--	--	--	--	10.1 J	--	--	--	--	--	--	--	--
MW-20-070	12/11/2013		1,200	-8.12	-63.88	390	260	8.05	ND (0.5)	91	ND (0.5)	70	17	15	580	0.51
MW-20-070	5/7/2014		--	--	--	--	--	7.15	--	--	--	--	--	--	--	--
MW-20-070	12/15/2014		1,100	-8.07	-63.1	330	230	7.7	ND (0.5)	100	ND (0.5)	49	12	4.4	310	0.43
MW-20-070	5/19/2015	FD	--	--	--	--	--	7.6	--	--	--	--	--	--	--	--
MW-20-070	5/19/2015		--	--	--	--	--	7.9	--	--	--	--	--	--	--	--
MW-20-070	12/8/2015		1,000	-7.98	-61.78	320	220	7	ND (1)	100	ND (1)	54	13	4.8	300	0.52
MW-20-100	3/10/2005		2,490	-5.2	-49	466	511	--	ND (1)	84.2	ND (1)	133	19.8	8.98	712	0.859
MW-20-100	6/15/2005		2,500	-4.7	-46	921	506	--	ND (1)	84	ND (1)	137	21.3	9.06	592	0.713
MW-20-100	10/11/2005		2,400	-5.3	-48	887	484	--	0.731	82.3	0.731	170	23.7	15.2	500	0.718
MW-20-100	12/15/2005		2,340	-5.4	-40	813	404	--	ND (1)	82.7	ND (1)	136	21.4	14.8	406	0.709
MW-20-100	3/10/2006		2,500	-5.6	-50.3	861	475	--	ND (0.5)	92.5	ND (0.5)	171	27	7.75	597	0.803
MW-20-100	5/5/2006		2,260	-5.1	-46.4	927	522	--	ND (1)	82.5	ND (1)	193	32	10.8	577	0.716
MW-20-100	10/3/2006		2,320	-5.8	-51.5	863	456	--	ND (5)	90	ND (5)	202	34.4	10.9 J	568	0.874
MW-20-100	12/13/2006	FD	2,200	-6.2	-54.5	874	457	--	0.851	92.5	0.851	205	32.2	9.55	575	0.881
MW-20-100	12/13/2006		1,960	-6.2	-54.4	861	459	--	0.83	97.5	0.83	205	32.2	11.4	579	0.889
MW-20-100	3/14/2007		2,180	-6.8	-57.8	847	477	--	0.785	87.5	0.785	194	31.7	9.9	521	0.715
MW-20-100	5/3/2007	FD	2,330	-6.7	-59.3	888	484	--	ND (1)	87.5	ND (1)	208	34.6	9.63 J	532	0.686
MW-20-100	5/3/2007		2,300	-7.3	-59.2	879	493	--	ND (1)	87.5	ND (1)	209	36	12 J	559	0.699
MW-20-100	10/10/2007		2,160	-7.2	-57.2	858	468	--	ND (1)	92	ND (1)	190	32	15	560	0.81
MW-20-100	3/12/2008		2,470	-6.9	-58.3	827	442	--	ND (1)	870	ND (1)	218	35.4	11.9	469	0.702
MW-20-100	10/8/2008		2,200	-7.9	-60.2	760	420	--	ND (1)	90	ND (1)	215	36.8	10.3	453	0.669
MW-20-100	3/13/2009		2,200	-7.08	-58.2	770	420	--	ND (1)	97	ND (1)	213	36.4	11.6	543	0.89
MW-20-100	9/25/2009		2,000	-7.67	-62.84	750	400	--	ND (2.5)	89	ND (2.5)	200	30	12	430	0.7
MW-20-100	2/10/2011		1,800	-7	-58.8	610	380	--	0.57	120	0.57	180	28	14	400	0.81
MW-20-100	12/8/2011		1,700	-6.7	-55.6	580	380	--	ND (0.5)	120	ND (0.5)	170	25	--	390	--
MW-20-100	10/4/2012		--	--	--	570	390	--	--	--	--	157	27.8	--	400	--
MW-20-100	11/29/2012		1,700	-7	-56.6	570	360	14.2	ND (0.5)	110	ND (0.5)	149	30.6	9.64	376	0.952

Table F-1

Chemical Performance Monitoring Analytical Results, March 2005 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date		Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (00/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Boron (mg/L)
MW-20-100	3/13/2013		--	--	--	560	370	6.5	--	120	--	164	27.8	--	388	--
MW-20-100	5/9/2013		--	--	--	--	--	14 J	--	--	--	--	--	--	--	--
MW-20-100	12/11/2013		1,600	-7.46	-55.86	550	290	9.5	ND (0.5)	110	ND (0.5)	140	23	8.2	400	1
MW-20-100	5/7/2014		--	--	--	--	--	11.1	--	--	--	--	--	--	--	--
MW-20-100	12/15/2014		1,500	-7.62	-60.2	530	260	8.9	ND (0.5)	120	ND (0.5)	120	18	6.4	340	0.76
MW-20-100	5/19/2015		--	--	--	--	--	9.6	--	--	--	--	--	--	--	--
MW-20-100	12/8/2015		1,300	-7.60	-60.12	510	240	7.3	ND (1)	110	ND (1)	120	20	7	340	0.92
MW-20-130	3/2/2005		5,270 J	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-20-130	3/9/2005	FD	6,200	-5.4	-51	3,080	1,080	--	ND (1)	68.9	ND (1)	231	12.8	25.4	2,390	1.99
MW-20-130	3/9/2005		5,520	-5.8	-56	3,120	1,080	--	ND (1)	68.9	ND (1)	219	12.1	24.7	2,250	1.9
MW-20-130	6/15/2005		7,790	-5	-48	3,410	1,230	--	ND (1)	68.7	ND (1)	352	23.2	31.3	2,980	2.75
MW-20-130	10/7/2005		7,330	-5	-47	3,010	1,210	--	1.04 J	72.4	1.04 J	349	13.9	38.4	2,070	2.41
MW-20-130	12/16/2005		7,860	-5.8	-43	3,260	1,000	--	ND (2.5)	63.2	ND (2.5)	324	16.3	44.4	1,780	1.98
MW-20-130	3/10/2006		8,610	-5.5	-48.8	3,370	1,250	--	ND (0.5)	74.5	ND (0.5)	312	18.9	27.7	2,730	2.03
MW-20-130	5/5/2006		7,700	-5.3	-47.2	3,900	1,280	--	ND (1)	69.2	ND (1)	349	20.3	27.7	2,810	2.4
MW-20-130	10/18/2006		8,450	-6.3	-51.4	3,680	1,100	--	ND (5)	70	ND (5)	358	20.9	28	2,870	2.28
MW-20-130	12/13/2006	FD	8,250	-5.9	-54.4	3,950	1,260	--	1.09	72.5	1.09	328	19.1	27.3	2,830	2.24
MW-20-130	12/13/2006		7,890	-6	-54.9	3,970	1,250	--	0.896	72.5	0.896	335	19.7	27.6	2,900	2.31
MW-20-130	3/8/2007	FD	8,510	-6.6	-57.4	3,900	1,210	--	1.06	72.5	1.06	351	21.3	26.8	2,750	2.19
MW-20-130	3/8/2007		8,450	-6.5	-57.7	3,930	1,240	--	1.08	70	1.08	353	21.3	27	2,760	2.24
MW-20-130	5/3/2007	FD	8,100	-6.9	-60.1	3,950	1,290	--	ND (1)	72.5	ND (1)	338	21.9	27.3	2,550	2.47
MW-20-130	5/3/2007		8,150	-7.7	-60	4,020	1,310	--	ND (1)	75	ND (1)	338	22.5	27.8	2,550	2.49
MW-20-130	10/5/2007		7,980	-7	-57.5	3,670	1,070	--	ND (1)	77	ND (1)	310	19	31	2,900	2.4
MW-20-130	3/12/2008		8,460	-6.2	-58.7	3,690	1,220	--	ND (1)	75	ND (1)	342	23.4	47	2,260	2.07
MW-20-130	10/8/2008		7,800	-7.3	-59.6	3,500	1,200	--	ND (2.5)	81	ND (2.5)	329	22	40.1	1,990	2.23
MW-20-130	3/13/2009		8,100	-6.58	-56.41	3,600	1,100	--	ND (2.5)	79	ND (2.5)	350	22.7	41.4	2,550	2.16
MW-20-130	9/25/2009		6,500	-7.59	-61.74	3,500	1,100	--	ND (2.5)	76	ND (2.5)	280	17	33	2,400	2
MW-20-130	2/10/2011		5,900	-6.6	-59	3,100	1,100	--	1	80	1	310	18	50	2,100	2.2
MW-20-130	12/9/2011		6,200	-6.6	-57.2	3,300	1,200	--	ND (2.5)	74	ND (2.5)	340	22	33	2,400	2.4
MW-20-130	10/9/2012		--	--	--	3,200	1,100	--	--	92	--	294	25.8	--	2,140	--
MW-20-130	11/29/2012	FD	7,400	-6.6	-60.4	3,400	1,100	18.6	ND (2.5)	96	ND (2.5)	315	29.2	32.9	2,410	2.06
MW-20-130	11/29/2012		7,400	-6.6	-59.5	3,300	1,100	19.4	ND (2.5)	98	ND (2.5)	286	28.7	32.7	2,310	2.13
MW-20-130	12/12/2012	FD	--	--	--	3,000	1,100	--	--	81	--	--	--	--	--	--
MW-20-130	12/12/2012		--	--	--	3,000	1,100	--	--	83	--	--	--	--	--	--
MW-20-130	3/14/2013		--	--	--	3,400	1,100	7.91	--	100	--	331	30.9	--	2,260	--
MW-20-130	5/14/2013		--	--	--	--	--	13	--	--	--	--	--	--	--	--
MW-20-130	12/17/2013	FD	7,300	-6.52	-59.15	3,200	1,100	12.9	ND (1)	78	ND (1)	330	21	27	2,400	2.7
MW-20-130	12/17/2013		7,400	-6.4	-57.69	3,200	1,100	12.4	ND (1)	80	ND (1)	330	22	26	2,300	2.3
MW-20-130	5/12/2014		--	--	--	--	--	12.9	--	--	--	--	--	--	--	--
MW-20-130	12/15/2014	FD	6,800	-6.76	-59.6	2,900	1,100	15	ND (2.5)	85	ND (2.5)	290	20	21	1,700	1.8
MW-20-130	12/15/2014		6,900	-6.7	-59.6	2,800	1,100	14	ND (2.5)	85	ND (2.5)	310	21	24	1,800	1.9
MW-20-130	5/19/2015		--	--	--	--	--	14	--	--	--	--	--	--	--	--
MW-20-130	12/8/2015	FD	6,600	-6.63	-58.22	3,100	1,100	13	ND (2.5)	80	ND (2.5)	320	19	25	2,400	2.6
MW-20-130	12/8/2015		7,100	-6.42	-58.04	3,300	1,000	12	ND (2.5)	76	ND (2.5)	320	19	25	2,400	2.5
MW-25	3/9/2005		877	-8.4	-62	247	169	--	ND (0.5)	158	ND (0.5)	77.6	16.1	6.24	211	0.441
MW-25	6/14/2005	FD	980	-7.2	-59	294	185	--	ND (0.5)	137	ND (0.5)	100	20.9	9.06	268	0.475
MW-25	6/14/2005		942	-8.6	-61	289	183	--	ND (0.5)	137	ND (0.5)	93.5	20	8.91	253	0.464
MW-25	10/4/2005	FD	910	-8.3	-60	251	171	--	ND (0.5)	146	ND (0.5)	94.6	15.3	10.2	185	0.371
MW-25	10/4/2005		950	-8.2	-68	252	171	--	ND (0.5)	141	ND (0.5)	83.3	14.9	9.93	164	0.362
MW-25	12/14/2005	FD	896	-8.4	-50	219	155	--	ND (0.5)	156	ND (0.5)	73	14.1	9.71	151	0.382

Table F-1

Chemical Performance Monitoring Analytical Results, March 2005 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date		Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (00/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Boron (mg/L)
MW-25	12/14/2005		838	-8.4	-55	224	158	--	ND (0.5)	153	ND (0.5)	75.5	14.5	9.8	143	0.396
MW-25	3/9/2006		910	-8.4	-64.1	245	164	--	ND (0.5)	170	ND (0.5)	76.4	15.6	6.97	210	0.39
MW-25	5/3/2006	FD	924	-9	-61	274	173	--	ND (0.5)	155	ND (0.5)	79.7	17.8	7.53	245	0.431
MW-25	5/3/2006		907	-9	-59.4	272	172	--	ND (0.5)	150	ND (0.5)	78	17.3	7.38	222	0.418
MW-25	10/3/2006		892	-8.9	-62.7	222	158	--	ND (0.5)	163	ND (0.5)	73.3	15	7.25	206	0.466
MW-25	3/6/2007		843	-9	-66.9	221	164	--	ND (0.5)	160	ND (0.5)	72.9	14.4	6.85	203	0.459
MW-25	10/2/2007	FD	758	-9	-65.7	195	157	--	ND (1)	190	ND (1)	63	13	7.7	220	0.46
MW-25	10/2/2007		796	-9	-65.8	189	155	--	ND (1)	180	ND (1)	66	14	7.9	200	0.49
MW-25	10/7/2008	FD	730	-10.1	-69.1	170	150	--	ND (0.5)	210	ND (0.5)	58.4	12.9	10.2	144	0.559
MW-25	10/7/2008		740	-9.9	-68.5	170	150	--	ND (0.5)	200	ND (0.5)	59.2	12.9	9.89	143	0.559
MW-25	9/21/2009	FD	650	-8.87	-69.45	180	130	--	ND (0.5)	200	ND (0.5)	64	12	7.9	190	0.47
MW-25	9/21/2009		660	-8.91	-69.89	180	130	--	ND (0.5)	200	ND (0.5)	64	12	7.2	180	0.46
MW-25	12/7/2010		780	-9.4	-68.9	220	120	--	ND (1)	180	ND (1)	74	15	10	180	0.43
MW-25	12/15/2011	FD	890	-8.9	-66.7	280	120	--	ND (0.5)	170	ND (0.5)	91	19	8	220	0.5
MW-25	12/15/2011		860	-9.2	-68.6	270	120	--	ND (1)	170	ND (1)	89	19	8.5	210	0.49
MW-25	12/11/2012		970	-9.1	-67.6	340	140	7.25	ND (0.5)	160	ND (0.5)	90	19	7.9	200	0.38
MW-25	12/9/2013		980	-9.02	-68.72	310	140	6.99	ND (0.5)	160	ND (0.5)	98	20	8.2	220	0.43
MW-25	12/2/2014		970	-9.21	-67.9	350	140	8.9	ND (0.5)	150	ND (0.5)	100	19	7.7	210	0.39
MW-25	5/11/2015		--	--	--	--	--	9.2	--	--	--	--	--	--	--	--
MW-25	12/7/2015		1,000	-8.99	-67.06	340	150	10	ND (0.5)	140	ND (0.5)	110	21	7.9	230	0.42
MW-26	3/8/2005	FD	1,800	-8.7	-70	708	338	--	ND (0.5)	96.1	ND (0.5)	166	40.9	11.4	438	0.559
MW-26	3/8/2005		1,840	-8.8	-70	756	370	--	ND (0.5)	98.7	ND (0.5)	166	41.6	10.7	439	0.557
MW-26	6/13/2005		2,130	-8.2	-65	847	371	--	ND (0.5)	103	ND (0.5)	178	44.6	14	511	0.663
MW-26	10/4/2005		2,120	-7.8	-68	779	372	--	0.601	109	0.601	166	40.4	19.8	352	0.526
MW-26	12/12/2005		2,610	-8.5	-55	788	372	--	0.546	99.7	0.546	162	39.9	20.3	349	0.613
MW-26	3/8/2006		2,070	-8.6	-60.4	772	324	--	ND (0.5)	121	ND (0.5)	155	38.1	11.7	434 J	0.621
MW-26	5/1/2006		2,130	-8.9	-62.7	927	382	--	ND (0.5)	121	ND (0.5)	165	42	12.8	555	0.723
MW-26	10/3/2006		2,220	-8.8	-63	894	370	--	ND (2.5)	105	ND (2.5)	170	43.9	12.8	510	0.692
MW-26	3/12/2007		2,280	-9	-67	917	387	--	0.646	90	0.646	163	41.6	12.9	621	0.622
MW-26	10/2/2007		2,180	-8.6	-66.3	945	391	--	ND (1)	100	ND (1)	170	42	15	620	0.66
MW-26	3/12/2008	FD	2,420	-8.9	-68.2	905	398	--	ND (1)	102	ND (1)	160	32.8 J	12.7 J	462	0.601
MW-26	3/12/2008		2,500	-8.1	-67.2	908	398	--	ND (1)	103	ND (1)	176	44.1 J	16.2 J	498	0.589
MW-26	10/8/2008		2,400	-8.7	-66.5	930	440	--	ND (1)	110	ND (1)	183	45.8	14.6	555	0.591
MW-26	3/10/2009	FD	2,300	-8.68	-65.76	860	440 J	--	1.5	100	1.5	174	46.2	15.6	631	0.65
MW-26	3/10/2009		2,300	-8.41	-65.3	870	440 J	--	1.4	100	1.4	172	47.9	14.8	585	0.604
MW-26	9/22/2009		2,200	-9.04	-68.25	870	450	--	ND (1)	100	ND (1)	170	39	14	550	0.59
MW-26	12/15/2010		--	--	--	900	480	--	--	100	--	180	40	--	560	--
MW-26	12/9/2011		2,300	-8.1	-65.2	930	530	--	1.2	94	1.2	210	47	15	690	0.89
MW-26	10/4/2012		--	--	--	960	550	--	--	--	--	178	46.2	--	702	--
MW-26	11/27/2012		--	--	--	960	570	18.1	--	110	--	168	45	--	671	--
MW-26	3/12/2013		--	--	--	950	560	19.5	--	100	--	186	48.7	--	705	--
MW-26	5/7/2013		--	--	--	--	--	17.7 J	--	--	--	--	--	--	--	--
MW-26	12/4/2013		2,600	-8.41	-64.08	890	520	18	1	110	1	160	41	12	670	0.93
MW-26	5/5/2014		--	--	--	--	--	20.4	--	--	--	--	--	--	--	--
MW-26	12/15/2014	FD	2,700	-8.31	-66.9	910	530	22	1	110	1	150	34	--	450	0.82
MW-26	12/15/2014		2,700	-8.33	-67.3	910	530	21	1.1	110	1.1	150	33	--	470	0.79
MW-26	5/19/2015		--	--	--	--	--	23	--	--	--	--	--	--	--	--
MW-26	12/8/2015	FD	2,500	-7.93	-65.03	870	520	20	ND (1)	110	ND (1)	140	30	14	640	0.81
MW-26	12/8/2015		2,400	-8.20	-65.49	890	500	20	ND (1)	110	ND (1)	140	32	13	640	0.86
MW-27-020	3/8/2005		1,250	-12	-102	190	432	--	ND (0.5)	215	ND (0.5)	137	56.6	4.89	195	ND (0.2)

Table F-1

Chemical Performance Monitoring Analytical Results, March 2005 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date		Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (00/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Boron (mg/L)
MW-27-020	7/18/2005		--	-11.9	-98	81.9	228	--	ND (0.5)	160	ND (0.5)	96.1	30.1	4.27	94.8	ND (0.2)
MW-27-020	10/5/2005		742	-11.8	-102	91.1	252	--	ND (0.5)	175	ND (0.5)	88.6	31.4	5.48	81	ND (0.2)
MW-27-020	12/14/2005		1,020	-11.7	-91	118	347	--	ND (0.5)	216	ND (0.5)	116	41.8	6.96	116	ND (0.2)
MW-27-020	3/6/2006		664	-12.1	-90.9	89.7	231	--	ND (0.2)	385	ND (0.2)	89.1	28.8	4.9	103	ND (0.2)
MW-27-020	6/14/2006		730	-12	-89.8	98.3	272	--	ND (0.5)	195	ND (0.5)	91.1	28.5	2.79 J	96.9	ND (0.2)
MW-27-020	10/3/2006		600	-13.1	-96.6	90.8	261	--	ND (0.5)	160	ND (0.5)	102	34.5	6.45	113	ND (0.2)
MW-27-020	10/2/2007		802	-12.5	-96.3	102	320	--	ND (1)	170	ND (1)	97	34	5.3	150	0.22
MW-27-020	10/3/2008		--	--	--	94	240	--	--	--	--	87.9	29.5	--	110	--
MW-27-020	10/1/2009		--	--	--	88	230	--	--	130	--	84	25	--	87	--
MW-27-020	12/7/2010		--	--	--	86	220	--	--	200	--	87	29	--	93	--
MW-27-020	12/5/2011		--	--	--	83	220	--	--	150	--	83	25	--	83	--
MW-27-020	12/3/2012		--	--	--	76	210	ND (0.01)	--	150	--	76	24	--	76	--
MW-27-020	4/15/2013		--	--	--	--	--	ND (0.5)	--	--	--	--	--	--	--	--
MW-27-020	11/4/2013		--	--	--	76	210	ND (0.01)	--	150	--	73 J	23	--	80	--
MW-27-020	4/14/2014		--	--	--	--	--	0.265	--	--	--	--	--	--	--	--
MW-27-020	11/4/2014		650	--	--	84	220	ND (0.05)	ND (0.5)	150	ND (0.5)	78	23	--	89	0.1
MW-27-020	12/3/2015		680	--	--	92	250	ND (0.05)	ND (0.5)	150	ND (0.5)	74	22	--	100	0.13
MW-28-025	3/10/2005		880	-12.2	-95	112	302	--	ND (0.5)	204	ND (0.5)	129	36.3	3.5	122	ND (0.2)
MW-28-025	6/15/2005		974	-11.6	-91	108	359	--	ND (0.5)	221	ND (0.5)	133	38.9	6.54	117	ND (0.2)
MW-28-025	10/6/2005		884	-11.7	-95	99.8	300	--	ND (0.5)	197	ND (0.5)	123	37	6.61	88.7	ND (0.2)
MW-28-025	12/16/2005		1,010	-11.4	-90	128	348	--	ND (0.5)	212	ND (0.5)	134	41.5	6.46	107	ND (0.2)
MW-28-025	3/9/2006		746	-11.5	-93.9	84.4	225	--	ND (0.5)	244	ND (0.5)	98.5	27.5	4.15 J	88.5	ND (0.2)
MW-28-025	5/5/2006		741	-11.4	-90.3	110	302	--	ND (0.5)	216	ND (0.5)	117	35.7	5.77	118	ND (0.2)
MW-28-025	10/11/2006		1,050	-12.2	-95	86.3	247	--	ND (0.5)	225	ND (0.5)	133	40.8	5.47	132	ND (0.2)
MW-28-025	10/4/2007		812	-12.1	-98.7	110	307	--	ND (1)	230	ND (1)	120	37 J	4.8	150	0.26 J
MW-28-025	10/8/2008		--	--	--	100	280	--	--	220	--	109	34.7	--	102	--
MW-28-025	9/24/2009		--	--	--	94	240	--	--	200	--	100	27	--	100 J	--
MW-28-025	12/8/2010		--	--	--	90	230	--	--	190	--	110	31	--	95	--
MW-28-025	12/12/2011		--	--	--	97	260	--	--	200	--	110	33	--	96	--
MW-28-025	12/5/2012		--	--	--	87	240	0.0128	--	200	--	93	29	--	86	--
MW-28-025	4/18/2013		--	--	--	--	--	ND (0.5)	--	--	--	--	--	--	--	--
MW-28-025	11/5/2013		--	--	--	1,900	580	ND (0.01)	--	250	--	100	29	--	83	--
MW-28-025	4/15/2014		--	--	--	--	--	ND (0.01)	--	--	--	--	--	--	--	--
MW-28-025	11/11/2014		730	--	--	91	250	ND (0.05)	ND (0.5)	200	ND (0.5)	100	27	--	86	0.14
MW-28-025	4/21/2015		--	--	--	--	--	ND (0.05)	--	--	--	--	--	--	--	--
MW-28-025	12/2/2015		750	--	--	96	260	ND (0.05)	ND (0.5)	190	ND (0.5)	92	26	--	110	0.13
MW-30-030	3/10/2005		38,800	-9.8	-79	16,000	4,270	--	7.91	421	7.91	1,590	1,600	95.4	13,600	4.97
MW-30-030	10/7/2005		36,400	-8.5	-75	17,600	4,000	--	ND (10)	521	ND (10)	1,020	842	93.6	7,650	5.2
MW-30-030	12/15/2005		35,700	-8.7	-59	19,700	4,070	--	3.13	504	3.13	1,060	894	110	8,540	6.14
MW-30-030	3/13/2006		39,700 J	-8.8	-70.5	18,600	4,530	--	ND (50)	650	ND (50)	1,050	892	77.2	11,300	4.62
MW-30-030	5/2/2006		32,400	-10.3	-70.7	15,400	3,300	--	ND (5)	756	ND (5)	882	828	59.4	10,280	3.95
MW-30-030	10/10/2006		29,400	-9.4	-68.7	17,800	4,400	--	ND (2.5)	550	ND (2.5)	729	653	55	10,200	4.32
MW-30-030	10/8/2007		27,400	-9	-73.9	13,700	3,370	--	3.88	800	3.88	650	540	56	9,600	4.5
MW-30-030	9/24/2009		--	--	--	5,800	1,700	--	--	550	--	280	220	--	3,800	--
MW-30-030	12/7/2010		--	--	--	7,200	1,900	--	--	790	--	390	290	--	4,800	--
MW-30-030	12/7/2011		--	--	--	10,000	3,200	--	--	910	--	340	290	--	6,300	--
MW-30-030	12/3/2012		--	--	--	8,700	3,400	0.0269	--	1,500	--	300	260	--	7,000	--
MW-30-030	4/15/2013	FD	--	--	--	--	--	ND (0.5)	--	--	--	--	--	--	--	--
MW-30-030	4/15/2013		--	--	--	--	--	ND (0.5)	--	--	--	--	--	--	--	--
MW-30-030	11/4/2013		--	--	--	1,200	600	0.0174	--	470	--	52	37	--	1,100	--

Table F-1

Chemical Performance Monitoring Analytical Results, March 2005 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date		Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (00/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Boron (mg/L)
MW-30-030	4/14/2014		--	--	--	--	--	0.0153	--	--	--	--	--	--	--	--
MW-30-030	11/10/2014		5,800	--	--	2,200	1,700	ND (0.05)	0.7	970	0.7	130	85	--	2,300	2.2
MW-30-030	12/3/2015		9,300	--	--	2,700	2,600	0.06	ND (2.5)	1,600	ND (2.5)	220	160	--	3,300	3.3
MW-30-050	3/10/2005		6,470 J	-8.3	-68	4,660	672	--	1.03	324	1.03	335	107	16.5	2,040	1.15
MW-30-050	10/7/2005		6,860	-9.4	-79	3,060	857	--	0.899 J	252	0.899 J	438	101	37	1,780	1.27
MW-30-050	12/16/2005		5,850	-10.5	-65	2,360	578	--	0.645	212	0.645	265	77.9	32.9	1,260	1.19
MW-30-050	3/9/2006		5,380	-9.8	-83.5	2,420	651	--	ND (0.5)	275	ND (0.5)	226	66.2	14.6	1,640	1.18
MW-30-050	5/2/2006		5,420	-10.4	-73.6	2,380	612	--	3.41	261	3.41	243	70.3	16.4	1,750	1.22
MW-30-050	10/11/2006	FD	3,930	-11	-82.6	1,810	462	--	ND (0.5)	298	ND (0.5)	163	46.1	14.1	1,340	1.08
MW-30-050	10/11/2006		4,170	-10.7	-82.2	1,980	468	--	ND (0.5)	290	ND (0.5)	171	48.5	14	1,370	1.11
MW-30-050	9/24/2009		--	--	--	--	--	--	--	220	--	19	4.8	--	270	--
MW-30-050	12/7/2010		--	-12.2	-97.5	140	220	--	--	200	--	15	4.2	--	260	--
MW-30-050	12/8/2011		--	-12.3	-98.2	130	210	--	--	200	--	34	9.4	--	240	--
MW-30-050	12/3/2012		--	-12.5	-103.2	110	200	ND (0.01)	--	190	--	46	13	--	170	--
MW-30-050	11/4/2013		--	-12.63	-100.98	110	200	ND (0.01)	--	200	--	57	15	--	160	--
MW-30-050	11/10/2014	FD	700	-12.51	-102.5	120	200	ND (0.05)	ND (0.5)	160	ND (0.5)	64	15	--	140	0.18
MW-30-050	11/10/2014		700	-12.42	-104.02	120	200	ND (0.05)	ND (0.5)	190	ND (0.5)	64	15	--	140	0.16
MW-30-050	12/3/2015	FD	660	-12.79	-102.79	94	190	ND (0.05)	ND (0.5)	190	ND (0.5)	77	18	--	120	0.19
MW-30-050	12/3/2015		660	-13.31	-103.4	95	190	ND (0.05)	ND (0.5)	180	ND (0.5)	77	18	--	170	0.19
MW-31-060	3/9/2005		1,540	-8.6	-63	649	210	--	ND (0.5)	76.6	ND (0.5)	108	17.3	5.97	424	0.401
MW-31-060	6/13/2005		1,660	-8.2	-65	745	207	--	ND (0.5)	70	ND (0.5)	121	18.9	6.57	403	0.388
MW-31-060	10/6/2005		1,660	-8.6	-65	691	206	--	ND (0.5)	77.3	ND (0.5)	109	16.5	9.75	308	0.462
MW-31-060	12/13/2005		1,620	-8.7	-54	669	199	--	ND (0.5)	73	ND (0.5)	87	15.4	9.32	275	0.359
MW-31-060	3/15/2006	FD	1,640 J	-8.6	-64.9	662	192	--	ND (0.5)	81.9	ND (0.5)	101	16.8	6.94	391	0.383
MW-31-060	3/15/2006		1,560 J	-8.6	-65.6	661	191	--	ND (0.5)	89.3	ND (0.5)	106	17.5	7.3	403	0.393
MW-31-060	5/1/2006		1,630	-9.6	-63.2	691	209	--	ND (0.5)	79.6	ND (0.5)	118	20.1	7.78	467	0.449
MW-31-060	10/5/2006		1,620	-9.4	-66.3	687	205	--	ND (0.5)	80	ND (0.5)	113	20.6	9.6 J	325	0.464
MW-31-060	3/12/2007		1,750	-9.3	-69	757	222	--	ND (0.5)	72.5	ND (0.5)	116	20.3	6.05	454	0.402 J
MW-31-060	10/4/2007		1,720	-9.4	-69.6	799	208	--	ND (1)	80	ND (1)	150	26	7.3	580	0.64
MW-31-060	10/6/2008		2,000	-10.2	-72.2	810	240	--	ND (1)	81	ND (1)	150	26	9.39	460	0.399
MW-31-060	9/21/2009		1,800	-9.23	-72.11	870	220	--	ND (1)	75	ND (1)	160	26	9.6	480	0.43
MW-31-060	12/15/2010		2,000	-9	-69.3	840	210	--	ND (0.5)	78	ND (0.5)	170	27	12	440	0.43
MW-31-060	12/6/2011		1,800	-8.8	-67.9	790	200	--	ND (1)	76	ND (1)	150	24	7.6	450	0.54
MW-31-060	11/13/2012		1,900	-9.2	-71.8	890	200	3.3	ND (0.5)	78	ND (0.5)	150	24	7.1	470	0.44
MW-31-060	12/3/2013		1,900	-8.56	-66.39	870	220	3.53	ND (0.5)	78	ND (0.5)	140	24	6.4	520	0.48
MW-31-060	12/3/2014		1,700	-8.83	-68.5	790	210	3.9	ND (0.5)	140	ND (0.5)	120	19	5.2	430	0.4
MW-31-060	12/7/2015		1,600	-8.29	-64.58	620	200	4.7	ND (0.5)	92	ND (0.5)	100	17	5.4	470	0.5
MW-32-020	3/9/2005		12,500	-7.2	-65	6,930	1,660	--	3.51	123	3.51	838	302	36.9	4,000	2.76
MW-32-020	6/17/2005		10,200	-9	-67	4,810	690	--	ND (2.5)	676	ND (2.5)	566	231	23.3	2,620	1.75
MW-32-020	10/4/2005		28,800	-7.8	-65	14,200	2,420	--	6.19	733	6.19	1,380 J	613 J	91.1 J	5,400 J	4.75 J
MW-32-020	12/16/2005		24,600	-7.8	-61	12,200	2,140	--	3.48	861	3.48	1,470	552	90.4	4,950	4.16
MW-32-020	3/10/2006		20,900	-8.3	-65.5	10,600	1,970	--	ND (0.5)	432	ND (0.5)	1,350	530	56.1	6,440	3.54
MW-32-020	5/4/2006		16,900	-8.1	-64.9	9,430	1,380	--	2.35	218	2.35	937	445	46	4,780	2.87
MW-32-020	10/2/2006		46,200 J	-8.6	-67.1	20,200	3,190	--	7.3	660	7.3	1,870	1,070	87	11,300	6.34
MW-32-020	12/11/2006		37,900	-8	-67	17,900	3,020	--	7.67	825	7.67	1,530	785	81.7	8,420	4.98
MW-32-020	3/6/2007		27,600	-8.7	-72.7	16,200	2,210	--	5.93	765	5.93	1,460	635	64.4	7,110	3.92
MW-32-020	4/30/2007		17,700	-9.6	-78.1	9,820	1,310	--	3.78	770	3.78	965	484	51.4	5,520	3.02
MW-32-020	10/1/2007		37,200	-8.3	-70.1	20,600	3,160	--	6.44	700	6.44	1,800	1,100	93	9,900	5.7
MW-32-020	3/10/2008		26,000	-9.4	-72.6	15,800	2,280	--	5.66	800	5.66	1,190	710	67.4	11,600	2.31
MW-32-020	10/3/2008		--	--	--	21,000	3,500	--	--	640	--	1,700	1,080	--	9,550	--

Table F-1

Chemical Performance Monitoring Analytical Results, March 2005 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date		Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (00/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Boron (mg/L)
MW-32-020	3/10/2009		29,000	-8.91	-70.47	15,000	2,100 J	--	15	750	15	1,620	970	96.6	7,020	3.53
MW-32-020	9/22/2009		--	--	--	20,000	3,600	--	--	730	--	1,800	740	--	9,300	--
MW-32-020	12/8/2010		--	--	--	17,000	4,100	--	--	830	--	1,600	720	--	11,000	--
MW-32-020	12/8/2011		--	--	--	17,000	4,400	--	--	1,000	--	1,400	670	--	11,000	--
MW-32-020	12/5/2012		--	--	--	15,000	6,000	1.16	--	--	--	900	500	--	9,800	--
MW-32-020	12/16/2013		--	--	--	13,000	5,400	0.0427	--	1,500	--	970	530	--	11,000	--
MW-32-020	12/3/2015	FD	27,000	--	--	10,000	6,700	--	ND (10)	2,300	ND (10)	560	390	--	8,700	7.1
MW-32-020	12/3/2015		26,000	--	--	10,000	6,500	--	ND (10)	2,300	ND (10)	620	430	--	8,100	6.8
MW-32-035	3/9/2005		3,560	-8.2	-68	1,770	465	--	0.845	260	0.845	312	85.5	13	944	1.07
MW-32-035	6/17/2005		7,550	-9.5	-72	3,520	787	--	ND (2.5)	223	ND (2.5)	506	120	14.8	2,110	1.18
MW-32-035	10/4/2005		8,340	-8.3	-70	3,840	765	--	ND (5)	208	ND (5)	567	134	29.3	1,530	1.26
MW-32-035	12/16/2005		7,660	-8.8	-63	3,510	710	--	1.02	219	1.02	606	128	30	1,580	1.25
MW-32-035	3/10/2006		9,230	-8.6	-74	4,210	1,010	--	ND (0.5)	234	ND (0.5)	654	129	19.2	2,360	1.13
MW-32-035	5/4/2006		9,840	-9.1	-67.8	4,960	1,130	--	ND (0.5)	218	ND (0.5)	693	148	19.5	2,800	1.38
MW-32-035	10/2/2006		11,200	-9.4	-71.4	5,430	1,050	--	ND (2.5)	290	ND (2.5)	839	165	23.9	3,260	1.48
MW-32-035	12/11/2006		10,400	-9	-70.4	5,090	1,000	--	1.9	338	1.9	845	173	22.5	2,620	1.43
MW-32-035	3/6/2007		12,600	-10.2	-75.4	6,070	1,200	--	2.65	360	2.65	1,080	209	23.5	2,910	1.35
MW-32-035	4/30/2007		12,100	-9.9	-78.7	6,610	1,280	--	2.6	475	2.6	1,250	273	26.2	3,280	1.35
MW-32-035	10/1/2007		13,700	-8.9	-72.7	6,830	1,120	--	2.62	490	2.62	1,000	390	29	4,000	1.7
MW-32-035	10/3/2008		15,000	-9.8	-73.1	7,600	1,300	--	3.1	550	3.1	829	150	52.3	3,490	1.49
MW-32-035	9/22/2009		13,000	-9.32	-75.2	6,900	1,400	--	2.8	530	2.8	880	400	53	3,100	1.7
MW-32-035	12/9/2010		11,000	-10.2	-84.2	5,500	1,600	--	ND (2.5)	590	ND (2.5)	750	390 J	51 J	3,000	1.7 J
MW-32-035	12/9/2011		8,500	-10.8	-84.2	5,000	1,700	--	ND (2.5)	640	ND (2.5)	680	310	34	3,100	1.7
MW-32-035	12/5/2012		10,000	-11	-89	4,300	1,700	0.0274	ND (5)	630	ND (5)	460	240	31	2,700	1.3
MW-32-035	11/6/2013		8,300	-10.97	-87.16	3,500	1,600	0.0482	ND (2.5)	580	ND (2.5)	450	210	23	2,500	1.2
MW-32-035	11/11/2014		5,800	-10.39	-87.84	3,100	1,500	--	ND (0.5)	550	ND (0.5)	450	170	18	2,000	1.1
MW-32-035	12/1/2014		--	--	--	--	--	0.093	--	--	--	--	--	--	--	--
MW-32-035	4/20/2015		--	--	--	--	--	2.3	--	--	--	--	--	--	--	--
MW-32-035	12/3/2015		7,400	-11.18	-87.49	2,800	1,200	0.058	ND (2.5)	610	ND (2.5)	450	220	18	1,900	1.2
MW-34-055	3/10/2005		6,230	-10.8	-82	2,620	739	--	0.654	240	0.654	366	71.3	29.1	1,900	1.19
MW-34-055	7/15/2005		--	-10.3	-84	2,250	607	--	ND (0.5)	242	ND (0.5)	247	52	16.5	1,420	1.02
MW-34-055	10/5/2005		5,150	-10.6	-88	2,170	619	--	ND (0.5)	232	ND (0.5)	272	59.1	25.8	1,230	1.2
MW-34-055	12/14/2005		5,100	-10.8	-74	2,150	552	--	0.588	236	0.588	217	45	27.2	965	0.937
MW-34-055	3/8/2006		4,850	-10.8	-86.8	2,080	593	--	ND (0.5)	272	ND (0.5)	256	54.2	13.5	1,640	0.956
MW-34-055	5/3/2006		4,320	-11.5	-84.3	2,070	500	--	ND (0.5)	302	ND (0.5)	198	44.8	11.1	1,360	0.846
MW-34-055	10/4/2006		1,680 J	-12.2	-94.8	443	230	--	ND (0.5)	368	ND (0.5)	37.6	8.08	4.59	536	0.54
MW-34-055	10/3/2007		730	-11.3	-96.6	109	266	--	ND (1)	190	ND (1)	15	3.3	3.3	290	0.26
MW-34-055	10/7/2008		700	-13	-100	100	250	--	--	170	--	72.4	16.9	5.26	192	0.248
MW-34-055	9/30/2009		700	-12.26	-100.79	--	--	--	--	160	--	77	17	4.4	120	0.15
MW-34-055	11/17/2009		--	--	--	93	240	--	ND (0.5)	--	ND (0.5)	--	--	--	--	--
MW-34-055	12/7/2010		590	-12.1	-98.8	87	230	--	ND (0.5)	140	ND (0.5)	81	19	5.1	100	0.1
MW-34-055	12/6/2011		630	-12.3	-100.5	83	220	--	ND (0.5)	160	ND (0.5)	81	19	4.6	100	0.19
MW-34-055	12/12/2012		630	-12.7	-105	78	210	ND (0.01)	ND (0.5)	140	ND (0.5)	75	20	3.7	100	0.15
MW-34-055	11/20/2013		600	-13.09	-103.32	72	210	ND (0.01)	ND (0.5)	150	ND (0.5)	69	19	4.3	88	0.13
MW-34-055	11/6/2014		640	-12.43	-101.86	76	200	ND (0.05)	ND (0.5)	140	ND (0.5)	72	20	4	85	ND (0.1)
MW-34-055	12/3/2015		630	-13.02	-102.02	83	230	ND (0.05)	ND (0.5)	150	ND (0.5)	80	25	4.7	86	0.19
MW-34-080	3/8/2005		6,940	-10.4	-83	4,180	1,040	--	1.01	304	1.01	439	68.1	28	2,750	1.65
MW-34-080	3/15/2005		8,980	--	--	3,920	ND (5)	--	--	288	--	445	65.7	29.7	2,990	--
MW-34-080	6/30/2005		7,840	-8.4	-82	3,910	979	--	ND (0.5)	302	ND (0.5)	497	76.5	27.7	2,670	1.66
MW-34-080	10/5/2005		10,200	-10.1	-85	3,880	1,060	--	ND (0.5)	302	ND (0.5)	429	72.5	47.4	1,660	1.57

Table F-1

Chemical Performance Monitoring Analytical Results, March 2005 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date		Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (00/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Boron (mg/L)
MW-34-080	12/14/2005		8,800	-10.2	-71	3,700	880	--	0.854	297	0.854	432	68.3	54.9	1,710	1.54
MW-34-080	3/9/2006		7,830	-9.9	-86.8	3,520	986	--	ND (0.5)	313	ND (0.5)	383	65.8	24	2,420	1.49
MW-34-080	5/3/2006		7,950	-11.7	-77.6	3,700	921	--	ND (0.5)	297	ND (0.5)	425	70.3	23.9	2,480	1.38
MW-34-080	10/4/2006		7,080	-11.3	-81.8	3,210	786	--	0.737	268	0.737	341	65.4	21.1	2,170	1.31
MW-34-080	12/12/2006		6,510	-10.5	-80.9	3,190	789	--	0.742	288	0.742	298	62.9	18.9	2,040	1.26
MW-34-080	3/5/2007		6,360 J	-11.5	-85.8	3,300	783	--	0.72	205	0.72	315	68.3	19.4	2,020	1.29
MW-34-080	4/30/2007		6,390	-11.5	-88.9	3,320 J	889 J	--	ND (1)	245	ND (1)	282	57	18.6	2,080	1.33
MW-34-080	10/3/2007		5,490	-11.3	-87.8	2,630	696	--	ND (1)	240	ND (1)	220	53	21	2,000	1.2
MW-34-080	12/13/2007		5,420	-10.9	-88.6	2,380	698	--	ND (1)	264	ND (1)	193	49.1	25.4	1,450	1.09
MW-34-080	3/12/2008		5,500	-11.4	-87.3	2,510	739	--	ND (1)	238	ND (1)	237	52.6	19.2	2,030	1.14
MW-34-080	5/6/2008		5,820	-11.4	-87.3	2,460	753	--	0.525	216	0.525	230	49	30	1,600	1.2
MW-34-080	10/7/2008		5,300	-11.8	-87.6	2,400	720	--	ND (2)	250	ND (2)	223	46.3	22	1,220	0.765
MW-34-080	12/10/2008		5,300	-10.97	-93.1	2,190	698	--	ND (1)	253	ND (1)	147	45.2	20.6	3,880	1.11
MW-34-080	3/10/2009		5,100	-10.85	-84.77	2,300	700 J	--	ND (2.5)	240	ND (2.5)	219	46.3	22.2	1,480	1.08
MW-34-080	4/30/2009		5,830	-11.45	-85.79	2,340	768	--	ND (1)	237	ND (1)	219	50	24.6	1,510	1.11
MW-34-080	9/30/2009		4,000	-10.79	-88.93	2,300	710	--	ND (1)	230	ND (1)	240	46	22	1,500	0.98
MW-34-080	12/9/2009		4,580	-11.88	-89.1	2,200	690	--	ND (1)	230	ND (1)	--	--	--	--	--
MW-34-080	3/10/2010		4,900	-12.13	-91.56	2,100	660	--	ND (1)	240	ND (1)	220 J	41	28	1,400 J	0.93
MW-34-080	12/7/2010		4,600	-11.1	-87.3	2,300	700	--	ND (1)	220	ND (1)	240	47	24	1,300	1
MW-34-080	12/6/2011		3,900	-11.1	-88.1	1,900	640	--	ND (1)	230	ND (1)	220	43	16	1,300	1.1
MW-34-080	12/12/2012	FD	--	-11.1	-89.3	1,800	630	ND (0.01)	--	250	--	210	48	--	1,300	--
MW-34-080	12/12/2012		4,300	-11.2	-90.2	1,800	630	ND (0.01)	ND (1)	250	ND (1)	220	51	17	1,300	1
MW-34-080	11/20/2013	FD	4,600	-11.18	-88.36	1,900	620	ND (0.01)	ND (1)	260	ND (1)	210	56	14	1,200	1
MW-34-080	11/20/2013		4,500	-11.43	-87.99	1,900	620	ND (0.01)	ND (1)	260	ND (1)	210	52	14	1,300	0.96
MW-34-080	11/6/2014		--	-11.6	-90.9	--	--	--	--	280 J	--	240	50	12	1,200	0.84
MW-34-080	12/1/2014		--	--	--	--	--	ND (0.05)	--	--	--	--	--	--	--	--
MW-34-080	4/20/2015		--	--	--	--	--	ND (0.05)	--	--	--	--	--	--	--	--
MW-34-080	12/3/2015		3,600	-11.53	-92.07	1,500	510	ND (0.05)	ND (2.5)	300	ND (2.5)	220	48	--	1,000	0.83
MW-34-100	3/14/2005		10,800	--	--	5,010	1,210	--	--	175	--	221	17.4	34.1	3,600	--
MW-34-100	6/21/2005	FD	10,900 J	-9.5	-77	4,920	1,180	--	ND (0.5)	179	ND (0.5)	243	18.2	32.1	3,740	2.36
MW-34-100	6/21/2005		11,300	-9.7	-75	5,350	1,270	--	ND (0.5)	179	ND (0.5)	229	17.4	27.1	3,510	2.22
MW-34-100	10/5/2005	FD	10,400	-9.9	-83	4,680	1,200	--	ND (0.5)	172	ND (0.5)	228	14.1	50.9	2,730	2.57
MW-34-100	10/5/2005		10,400	-9.9	-83	4,530	1,150	--	ND (0.5)	172	ND (0.5)	171	13.8	55.2	2,450	2.57
MW-34-100	12/14/2005	FD	--	--	--	--	--	--	--	--	--	220	15.1	64.2	2,530	2.4
MW-34-100	12/14/2005		--	--	--	--	--	--	--	--	--	226	14.9	62.9	2,530	2.32
MW-34-100	3/8/2006	FD	10,100	-10.1	-101.9 J	4,920	1,220	--	--	159	--	182	11.9	36.5	3,530	2.46
MW-34-100	3/8/2006		10,000	-11.4	-75.5 J	4,720	1,180	--	--	152	--	179	12.1	32.5	3,580	2.41
MW-34-100	5/3/2006	FD	9,990	-10.6	-71.9	5,170	1,230	--	--	136	--	166	12.2	31.3	3,900	2.77
MW-34-100	5/3/2006		9,940	-10.5	-74.5	5,060	1,200	--	--	133	--	162	12	31.1	3,890	2.73
MW-34-100	4/30/2007	FD	11,900	-11.2	-82.1	5,880	1,050	--	--	123	--	189	12	32.1	3,920	2.4
MW-34-100	4/30/2007		10,600	-10.9	-80.7	5,920	1,040	--	--	123	--	186	12	31.5	3,840	2.39
MW-34-100	10/3/2007	FD	10,500	-10.6	-78.4	5,360	953	--	ND (1)	120	ND (1)	160	10	43	4,300	2.4
MW-34-100	10/3/2007		10,700	-10.2	-78.2	5,350	970	--	ND (1)	120	ND (1)	170	11	44	4,300	2.5
MW-34-100	10/7/2008	FD	11,000	-11	-81.3	5,600	1,200	--	ND (2.5)	140	ND (2.5)	184	11.5	56.7	3,880 J	2.59
MW-34-100	10/7/2008		11,000	-10.9	-80.8	5,400	1,200	--	ND (2.5)	140	ND (2.5)	158	10.6	54.5	2,970 J	2.35
MW-34-100	9/30/2009	FD	--	--	--	5,600	1,300	--	--	170	--	--	--	--	--	--
MW-34-100	9/30/2009		--	--	--	5,500	1,300	--	--	170	--	200	11	73	3,800	2.3
MW-34-100	11/17/2009		11,000	-10.47	-82.38	--	--	--	ND (1)	--	ND (1)	--	--	--	--	--
MW-34-100	12/8/2010	FD	9,900	-10	-80.4	5,700	1,200	--	ND (1)	89 J	ND (1)	180	9.8	60 J	4,000	2.5
MW-34-100	12/8/2010		10,000	-9.8	-79.5	5,800	1,300	--	ND (2.5)	140 J	ND (2.5)	190	9.6	52 J	4,100	2.6

Table F-1

Chemical Performance Monitoring Analytical Results, March 2005 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,

PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date		Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (00/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Boron (mg/L)
MW-34-100	12/6/2011	FD	9,400	-10	-79.5	5,600	1,200	--	ND (2.5)	120	ND (2.5)	160	7.4	43 J	3,900	2.7
MW-34-100	12/6/2011		10,000	-10.1	-79.2	5,700	1,300	--	ND (2.5)	120	ND (2.5)	170	7.6	43	4,000	2.7
MW-34-100	11/26/2012	FD	11,000	-10.2	-80.9	5,900	1,200	0.421	ND (2.5)	130	ND (2.5)	150	8.2	47	3,200	2.6
MW-34-100	11/26/2012		11,000	-10.1	-80.5	5,900	1,200	0.444	ND (2.5)	120	ND (2.5)	150	8.6	47	3,100	2.6
MW-34-100	4/16/2013	FD	--	--	--	--	--	ND (0.5)	--	--	--	--	--	--	--	--
MW-34-100	4/16/2013		--	--	--	--	--	ND (0.5)	--	--	--	--	--	--	--	--
MW-34-100	11/20/2013	FD	10,000	-9.81	-79.33	5,300	1,100	0.419	ND (2.5)	120	ND (2.5)	150	8.5	35	3,900	2.7
MW-34-100	11/20/2013		10,000	-10.18	-78.9	5,300	1,200	0.422	ND (2.5)	120	ND (2.5)	140	8	35	3,900	2.6
MW-34-100	10/2/2014		--	--	--	--	--	0.64	--	--	--	--	--	--	--	--
MW-34-100	12/1/2014	FD	9,900	-10.1	-77.2	5,500	1,100	0.61 J	ND (1)	100	ND (1)	140	5.6	32	4,000	2
MW-34-100	12/1/2014		9,900	-9.97	-76.95	5,400	1,100	0.58 J	ND (1)	95	ND (1)	140	5.6	30	3,900	2.2
MW-34-100	2/16/2015		--	--	--	--	--	0.61	--	--	--	--	--	--	--	--
MW-34-100	4/20/2015	FD	--	--	--	--	--	ND (0.056)	--	--	--	--	--	--	--	--
MW-34-100	4/20/2015		--	--	--	--	--	ND (0.05)	--	--	--	--	--	--	--	--
MW-34-100	10/6/2015		--	--	--	--	--	0.29	--	--	--	--	--	--	--	--
MW-34-100	12/3/2015	FD	9,600	-10.16	-78.93	5,200	1,000	0.73	ND (5)	94	ND (5)	160	7.1	31	3,800	2.8
MW-34-100	12/3/2015		9,900	-10.1	-79.04	5,100	980	0.74	ND (5)	100	ND (5)	150	6.7	30	3,700	2.7
R-27	3/7/2005		669	-12.3	-102	92.7	244	--	ND (0.5)	136	ND (0.5)	82.8	31.3	4.72	108	ND (0.2)
R-27	6/14/2005		686	-11.4	-92	90.9	266	--	ND (0.5)	127	ND (0.5)	81.9	29.8	6.04	98.9	ND (0.2)
R-27	10/5/2005		678	-11.6	-94	85.1	255	--	ND (0.5)	130	ND (0.5)	101	36.2	6.56	91.2	ND (0.2)
R-27	12/16/2005		718	-11.7	-87	87.9	253	--	ND (0.5)	126	ND (0.5)	85.5	29.5	5.99	75.6	ND (0.2)
R-27	3/6/2006		656	-11.8	-92.1	90.6	268	--	ND (0.5)	144	ND (0.5)	83.5	29.4	5.44 J	101	ND (0.2)
R-27	5/3/2006		567	-12.8	-93.9	93.1	267	--	ND (0.5)	139	ND (0.5)	87	31.1	3.12 J	106	ND (0.2)
R-27	10/4/2006		752 J	-12.2	-94.9	91.5	261	--	ND (0.5)	128	ND (0.5)	82.9	31.5	6.24 J	98.1	ND (0.2)
R-27	12/20/2006		680	-12.7	-98.1	94.5	266	--	ND (0.5)	138	ND (0.5)	83.2	30.9	3.64	106	ND (0.2)
R-27	3/13/2007		750 J	-13	-99.5	96.5	267	--	ND (0.5)	130	ND (0.5)	86.9	31.3	4.73	106	ND (0.2)
R-27	5/8/2007		715 J	-12.9	-103.6	92.6	269	--	ND (0.5)	143	ND (0.5)	84.3	29.8	5.55	100	ND (0.2)
R-27	9/11/2007		650	-12.5	-100.5	89.4	253	--	ND (0.2)	132	ND (0.2)	74.2	28.9	5.47	86.5	ND (0.2)
R-27	12/5/2007		--	-11.7	-99	94.7	256	--	ND (0.2)	137	ND (0.2)	89.8	31.7	6.6	93.4	0.157
R-27	4/2/2008		--	--	--	93	267	--	ND (1)	136	ND (1)	80.2	30.7	5.5	106	0.432
R-27	6/17/2008		682	-13	-101.4	91.6	254	--	ND (1)	134	ND (1)	76.2	31.8	6.69	89.7	ND (0.2)
R-28	3/8/2005		651	-12.5	-102	90.4	231	--	ND (0.5)	132	ND (0.5)	83.7	31.4	5.02	107	ND (0.2)
R-28	6/14/2005		680	-11.6	-95	91.2	268	--	ND (0.5)	127	ND (0.5)	78.5	28.5	5.08	94.5	ND (0.2)
R-28	10/5/2005		672	-11.6	-94	85.5	255	--	ND (0.5)	122	ND (0.5)	85.7	30.4	6.3	77	ND (0.2)
R-28	12/16/2005		710	-11.5	-83	88.1	254	--	ND (0.5)	126	ND (0.5)	87.2	29.8	6.11	76.8	ND (0.2)
R-28	3/6/2006		675	-12.3	-93.4	91	270	--	ND (0.5)	146	ND (0.5)	76.6	26.6	5.22 J	91.5	ND (0.2)
R-28	5/3/2006		586	-13	-92.1	93.4	270	--	ND (0.5)	136	ND (0.5)	88.1	31.4	4.04 J	107	ND (0.2)
R-28	10/4/2006		644 J	-12.6	-95.3	90.9	259	--	ND (0.5)	133	ND (0.5)	84.2	32.1	6.17 J	96.5	ND (0.2)
R-28	12/20/2006		615	-12.4	-99.6	93.3	262	--	ND (0.5)	143	ND (0.5)	85.7	32	4.66	108	ND (0.2)
R-28	3/14/2007		710	-12.8	-100.4	96.7	268	--	ND (0.5)	133	ND (0.5)	87.9	31	5.71	105	ND (0.2)
R-28	5/9/2007		690	-13	-102.3	95.8	271	--	ND (0.5)	143	ND (0.5)	86.1	30.5	5.92	103	ND (0.2)
R-28	9/12/2007		682	-12.4	-99.4	106	296	--	ND (0.2)	122	ND (0.2)	73.8	29.9	6.36	89.2	ND (0.2)
R-28	12/6/2007		--	-11.7	-98.6	96.5	258	--	ND (0.2)	139	ND (0.2)	75.7	30.4	6.62	79.4	ND (0.2)
R-28	4/2/2008		--	--	--	92.5	309	--	ND (1)	137	ND (1)	84.7	31.4	5.58	108	0.467
R-28	6/18/2008		672	-13.2	-101.7	89.4	248	--	ND (1)	132	ND (1)	43.3	31.1	6.95	93.9	ND (0.2)
R-28	9/17/2008		640	--	--	91.4	256	--	ND (0.5)	132	ND (0.5)	83.4	31.2	6.48	78	ND (0.2)
R-28	12/4/2008		649	-11.89	-97	97.4	260	--	ND (1)	135	ND (1)	81.7	30	5.95	114	0.262
R-28	1/21/2009		652	-11.97	-96.7	91.5	253	--	ND (0.5)	134	ND (0.5)	79.2	27.8	6.01	91.7	ND (0.2)
R-28	4/9/2009		643	-12.43	-97.81	92.7	250	--	ND (0.5)	138	ND (0.5)	79.6	28.8	5.44	97	ND (0.2)
R-28	7/8/2009		632	-12.78	-98.62	84.5	239	--	ND (0.5)	131	ND (0.5)	79.6	27.3	6.17	86.9	ND (0.2)

Table F-1

Chemical Performance Monitoring Analytical Results, March 2005 through December 2015

Fourth Quarter 2015 and Annual Interim Measures Performance Monitoring and Site-wide Groundwater and Surface Water Monitoring Report,
PG&E Topock Compressor Station, Needles, California

Location ID	Sample Date	Total Dissolved Solids (mg/L)	Oxygen-18 (0/00)	Deuterium (00/00)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Bromide (mg/L)	Alkalinity (total) (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Boron (mg/L)
R-28	9/9/2009	640	-12.47	-99.06	86	236	--	ND (1)	131	ND (1)	74.8	26.2	6.01	78.7	ND (0.2)
R-28	12/14/2009	612	-13.03	-98.33	89.7	244	--	ND (1)	131	ND (1)	73.5	26.7	4.98	88.2	ND (0.2)
R-28	12/21/2010	602	-12.1	-101.8	91	223	--	ND (0.5)	133	ND (0.5)	69.1	24.8	4.75	87.8	ND (0.2)
R-28	6/8/2011	--	--	--	--	--	--	--	116	--	--	--	--	--	--
R-28	8/23/2011	--	--	--	--	--	--	--	115	--	--	--	--	--	--
R-28	11/30/2011	--	--	--	--	--	--	--	119	--	--	--	--	--	--
R-28	1/11/2012	--	--	--	80.5	218	--	ND (0.5)	127	ND (0.5)	70.2	27.4	4.76	83.7	ND (0.2)
R-28	2/29/2012	--	--	--	--	--	--	--	123	--	--	--	--	--	--
R-28	5/22/2012	--	--	--	--	--	--	--	124	--	--	--	--	--	--
R-28	8/22/2012	--	--	--	--	--	--	--	126	--	--	--	--	--	--
R-28	11/1/2012	499	-12.6	-102.2	75.4	212	--	ND (0.5)	132	ND (0.5)	71.3	27.5	4.12	79.3	ND (0.2)
R-28	1/9/2013	--	--	--	--	--	--	--	130	--	--	--	--	--	--
R-28	3/5/2013	--	--	--	--	--	--	--	122	--	--	--	--	--	--
R-28	5/21/2013	--	--	--	--	--	ND (0.5)	--	127	--	--	--	--	--	--
R-28	7/16/2013	--	--	--	--	--	ND (0.5)	--	124	--	--	--	--	--	--
R-28	11/21/2013	564	-12.79	-103.05	80.4	220	0.293	ND (0.5)	131	ND (0.5)	73.2	26.2	4.44	84.7	0.121
R-28	1/14/2014	--	--	--	--	--	0.315	--	--	--	--	--	--	--	--
R-28	3/13/2014	--	--	--	--	--	0.41	--	--	--	--	--	--	--	--
R-28	5/22/2014	--	--	--	--	--	0.27	--	--	--	--	--	--	--	--
R-28	7/16/2014	--	--	--	--	--	0.37	--	--	--	--	--	--	--	--
R-28	11/20/2014	620	-12.26	-99.96	85	230	0.29	ND (0.5)	130	ND (0.5)	68	23	4.5	88	0.13
R-28	1/15/2015	--	--	--	--	--	0.33	--	--	--	--	--	--	--	--
R-28	2/25/2015	--	--	--	--	--	0.44	--	--	--	--	--	--	--	--
R-28	6/9/2015	--	--	--	--	--	0.37	--	--	--	--	--	--	--	--
R-28	9/16/2015	--	--	--	--	--	0.34	--	--	--	--	--	--	--	--
R-28	12/9/2015	640	-11.88	-97.49	94	250	0.38	ND (1)	120	ND (1)	61	20	4.7 J	100	0.13

Notes:

--- = data was either not collected, not available or was rejected
0/00 = differences from global standards in parts per thousand.
FD = field duplicate sample.
J = concentration or reporting limit estimated by laboratory or data validation.
mg/L = milligrams per liter
ND = not detected at the listed reporting limit.

Alkalinity (total) reported as calcium carbonate.

Nitrate as nitrogen was not requested. Nitrate/nitrite as nitrogen is shown.

APPENDIX G

Interim Measures Extraction System Operations Log, Fourth Quarter 2015

APPENDIX G

Interim Measures Extraction System Operations Log, Fourth Quarter 2015, PG&E Topock Performance Monitoring Program

During Fourth Quarter 2015 (November and December), extraction wells TW-3D and PE-1 operated at a target pump rate of at 135 gallons per minute, excluding periods of planned and unplanned downtime. Extraction wells TW-2S and TW-2D were operated for a brief time on December 9, 2015 for sample collection during the fourth quarter groundwater monitoring program sampling event. The operational run time for the Interim Measure groundwater extraction system (combined or individual pumping) was approximately 98.7 percent during Fourth Quarter 2015. The operational run time for the Interim Measure groundwater extraction system (combined or individual pumping) was approximately 95.1 percent during the 2015 annual reporting period.

The Interim Measure Number 3 (IM-3) facility treated approximately 11,748,448 gallons of extracted groundwater during Fourth Quarter 2015. The IM-3 facility also treated approximately 3,090 gallons of water generated from the groundwater monitoring program and 14,400 gallons of water from IM-3 well backwashing.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 1.3 percent of downtime during Fourth Quarter 2015) 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.

G.1 November 2015

- **November 2, 2015 (unplanned):** The extraction well system was offline from 12:02 p.m. to 1:14 p.m. to change out the microfilter modules. Extraction system downtime was 1 hour, 12 minutes.
- **November 4, 2015 (planned):** The extraction well system was offline from 1:10 p.m. to 1:22 p.m., from 1:24 p.m. to 1:26 p.m., 1:30 p.m. to 1:36 p.m., and 1:44 p.m. to 1:50 p.m. due to testing of critical alarms and the leak detection system. Extraction system downtime was 26 minutes.
- **November 19, 2015 (unplanned):** The extraction well system was offline from 2:10 p.m. to 3:20 p.m. to change out the microfilter modules. Extraction system downtime was 1 hour, 10 minutes.
- **November 19, 2015 (unplanned):** The extraction well system was offline from 5:36 p.m. to 6:04 p.m. due to a high level alarm in the Raw Water Storage Tank (T-100). Extraction system downtime was 28 minutes.
- **November 30, 2015 (unplanned):** The extraction well system was offline from 1:24 p.m. to 3:30 p.m. to repair a seal in the (microfilter) recirculation pump (P-501). Extraction system downtime was 2 hours, 6 minutes.

G.2 December 2015

- **December 2, 2015 (planned):** The extraction well system was offline from 7:54 a.m. to 7:56 a.m., from 8:02 a.m. to 8:04 a.m., from 8:22 a.m. to 8:26 a.m., from 8:28 a.m. to 8:30 a.m., and from 8:32 a.m. to 8:36 a.m. due to testing of critical alarms and the leak detection system. Extraction system downtime was 14 minutes.
- **December 2, 2015 (unplanned):** The extraction well system was offline from 11:54 a.m. to 1:16 p.m. to change out the microfilter modules. Extraction system downtime was 1 hour, 22 minutes.

- **December 6, 2015 (unplanned):** The extraction well system was offline from 11:48 a.m. to 11:56 a.m. due to loss of power from the City of Needles. Extraction system downtime was 8 minutes.
- **December 6, 2015 (unplanned):** The extraction well system was offline from 11:44 p.m. to 11:46 p.m. due to loss of power from the City of Needles. Extraction system downtime was 2 minutes.
- **December 7, 2015 (unplanned):** The extraction well system was offline from 12:30 p.m. to 12:44 p.m. due to failure of the air compressor. Extraction system downtime was 14 minutes.
- **December 9, 2015 (unplanned):** The extraction well system was offline 8:06 a.m. to 8:08 a.m. and from 9:10 a.m. to 9:18 a.m. to switch extraction wells for annual sampling of TW-2S and TW-2D. Extraction system downtime was 10 minutes.
- **December 24, 2015 (unplanned):** The extraction well system was offline from 8:16 a.m. to 8:34 a.m. due to a high level alarm in the Raw Water Storage Tank (T-100). Extraction system downtime was 18 minutes.
- **December 24, 2015 (unplanned):** The extraction well system was offline from 3:00 p.m. to 3:12 p.m. due to a high level alarm in the Raw Water Storage Tank (T-100). Extraction system downtime was 12 minutes.
- **December 25, 2015 (unplanned):** The extraction well system was offline from 10:06 a.m. to 3:14 p.m. to clean the microfilter flow meter. Extraction system downtime was 5 hours, 8 minutes.
- **December 25, 2015 (unplanned):** The extraction well system was offline from 4:10 p.m. to 7:22 p.m. clean and repair the clarifier feed pump (P-400). Extraction system downtime was 3 hours, 12 minutes.
- **December 26, 2015 (unplanned):** The extraction well system was offline from 09:10 a.m. to 10:02 a.m. and from 10:12 a.m. to 10:34 a.m. for tank level management. Extraction system downtime was 1 hour, 14 minutes.
- **December 27, 2015 (unplanned):** The extraction well system was offline from 4:36 a.m. to 4:42 a.m. to return the plant to power from the City of Needles after a time on generator power. Extraction system downtime was 6 minutes.
- **December 27, 2015 (unplanned):** The extraction well system was offline from 3:36 p.m. to 4:34 p.m. due to a high level alarm in the Raw Water Storage Tank (T-100). Extraction system downtime was 58 minutes.
- **December 30, 2015 (unplanned):** The extraction well system was offline from 11:06 a.m. to 11:18 a.m. and from 12:56 p.m. to 1:24 p.m. to repair a flow issue at the clarifier feed pump (P-400). Extraction system downtime was 40 minutes.

Arcadis U.S., Inc.

101 Creekside Ridge Court

Suite 200

Roseville, California 95678

Tel 916 786 0320

Fax 916 786 0366

www.arcadis.com