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January 15, 2021

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**Subject:** *Combined Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report, Interim Measures No. 3, PG&E Topock Compressor Station, Needles, California (Document ID: PGE20210115A)*

Dear Ms. Innis and Mr. Yue:

Enclosed is the Combined Compliance Monitoring Program (CMP) 2020 Annual Groundwater Monitoring Report and Performance Assessment Report (PAR) for Interim Measures No. 3 (IM-3) at the Pacific Gas and Electric Company (PG&E) Topock Compressor Station site near Needles, California. This combined report presents results of the biennial (2019-2020) assessment of IM-3 injection well field performance and documents the results of compliance monitoring activities conducted during the 2020 annual period (from January 1, 2020 through December 31, 2020).

The first PAR for the IM-3 injection well field was submitted on November 30, 2006 in accordance with the California Environmental Protection Agency, Department of Toxic Substances Control's (DTSC's) conditional authorization (Condition 18) to begin operating the IM-3 facilities, dated July 15, 2005. Based on data presented in this first biennial PAR, DTSC approved the continued operation of the IM-3 injection wells in a letter dated January 5, 2007. As part of this approval, DTSC required PG&E to continue to submit a PAR every 2 years to evaluate the injection well operations and the influence of treated water on aquifer quality. This combined report includes the eighth (2019-2020) biennial PAR and fulfills the DTSC requirement.

Ms. Pamela Innis and Mr. Aaron Yue

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Additionally, the enclosed report presents CMP results for the 2020 annual period and has been prepared in accordance with the United States Department of the Interior's August 18, 2011 letter stating that the IM-3 Waste Discharge Requirements are applicable or relevant and appropriate requirements.

The current contingency plan specifies the water quality objectives/action levels for hexavalent chromium (Cr(VI)), chromium, total dissolved solids (TDS), and pH, which are used to determine whether contingency plan actions are necessary based on sample results. These threshold concentrations, which are used to trigger the contingency plan, are as follows: Cr(VI) greater than 32 micrograms per liter ( $\mu\text{g/L}$ ), chromium greater than 28  $\mu\text{g/L}$ , TDS greater than 10,800 milligrams per liter, and pH outside of the range of 6.2 to 9.2. No samples exceeded the water quality objectives for Cr(VI), chromium, pH, or TDS during the 2020 annual period. The next annual CMP monitoring event is scheduled for the fourth quarter of 2021.

Please contact me at (760) 791-5884 if you have any questions regarding the PAR or CMP.

Sincerely,

A handwritten signature in black ink, appearing to read "Curt Russell", written in a cursive style.

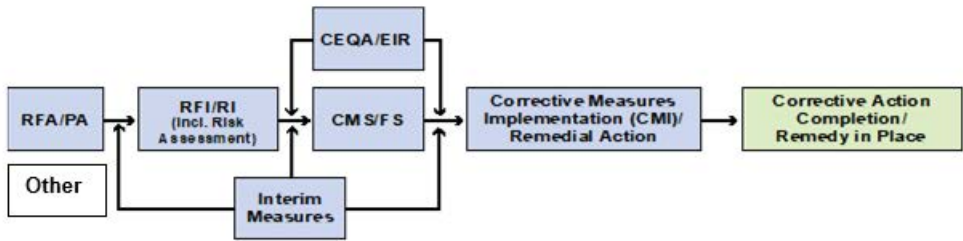
Curt Russell

Topock Remediation Project Manager

cc: Scot Stormo, California Regional Water Quality Control Board, Colorado River Basin Region  
Christopher Guerre, DTSC

## Topock Project Executive Abstract

<b>Document Title:</b>	Combined Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report, Interim Measures No. 3, PG&E Topock Compressor Station, Needles, California (PGE20210115A)
<b>Submitting Agency:</b>	DOI
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<b>Date of Document:</b>	January 15, 2021
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<b>Action Required:</b>	<input checked="" type="checkbox"/> Information Only <input type="checkbox"/> Review & Comment Return to: _____ By Date: _____ <input type="checkbox"/> Other / Explain:
<b>What does this information pertain to?</b>	<input type="checkbox"/> Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA) <input type="checkbox"/> RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment) <input type="checkbox"/> Corrective Measures Study (CMS)/Feasibility Study (FS) <input type="checkbox"/> Corrective Measures Implementation (CMI)/Remedial Action <input type="checkbox"/> California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR) <input checked="" type="checkbox"/> Interim Measures <input type="checkbox"/> Other / Explain:
<b>Is this a regulatory requirement?</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  If no, why is the document needed?
<b>What is the consequence of NOT doing this item? What is the consequence of DOING this item?</b>	Submittal of this report is a compliance requirement under United States Department of the Interior (DOI) Applicable or Relevant and Appropriate Requirements (ARARs).
<b>Other Justification/s:</b>	<input type="checkbox"/> Permit <input type="checkbox"/> Other / Explain:

<b>Brief Summary of Attached Document:</b>	<p><u>Interim Measures No. 3 (IM-3) Injection Well Field Performance Assessment Report (PAR)</u>: The objective of the PAR is to document IM-3 injection system operational performance and evaluate groundwater quality and hydraulic changes associated with the injection system. Based on data obtained through December 2020, hydraulic response of the aquifer to injection activity is consistent with expectations, and there are no indications of adverse effects to aquifer water quality due to injections. In addition, sufficient injection capacity has been maintained with no significant injection well performance issues. The IM-3 injection well field continues to be an effective strategy for managing treated groundwater from IM-3.</p> <p><u>Compliance Monitoring Program (CMP), 2020 Annual Report</u>: The purposes of the Topock CMP are twofold: 1) to monitor changes in groundwater hydraulics and/or water quality of the aquifer in the injection well area, and 2) to ensure that the quality of the aquifer is not adversely affected by the injected water. The monitoring network consists of multiple observation wells (OW series) and compliance wells (CW series) screened in the shallow, middle, and/or deep zones of the Alluvial Aquifer. The injection of treated groundwater in the area began in 2005. As of 2020, a majority of the compliance and observation wells demonstrate a treated/injected water signature.</p> <p>This report presents groundwater analytical results and water level data collected during the 2020 annual period. During the 2020 annual period, no samples exceeded the water quality objectives for hexavalent chromium, chromium, pH, or total dissolved solids. The next CMP event is scheduled to be conducted in the fourth quarter of 2021.</p> <p>Written by: PG&amp;E</p>
<b>Recommendations:</b>	None.
<b>How is this information related to the Final Remedy or Regulatory Requirements?:</b>	This report is required by DTSC as part of the Interim Measures Performance Monitoring Program.
<b>Other requirements of this information?:</b>	None.
<b>Related Reports and Documents:</b>	<p>Click any boxes in the Regulatory Road Map to be linked to the Documents Library on the DTSC Topock Web Site (<a href="http://www.dtsc-topock.com">www.dtsc-topock.com</a>).</p>  <pre> graph LR     RFA[<b>RFA/PA</b>] --&gt; RFI[<b>RFI/RI</b> (incl. Risk Assessment)]     Other[<b>Other</b>] --&gt; RFI     RFI --&gt; IM[<b>Interim Measures</b>]     IM --&gt; CMS[<b>CMS/F/S</b>]     CEQA[<b>CEQA/EIR</b>] --&gt; CMS     CMS --&gt; CMI[<b>Corrective Measures Implementation (CMI)/ Remedial Action</b>]     CMI --&gt; CAP[<b>Corrective Action Completion/ Remedy in Place</b>]   </pre> <p><b>Legend</b>  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</p>



Pacific Gas and Electric Company

**COMBINED COMPLIANCE  
MONITORING PROGRAM  
2020 ANNUAL GROUNDWATER  
MONITORING REPORT AND  
PERFORMANCE ASSESSMENT  
REPORT**

Interim Measures No. 3  
PG&E Topock Compressor Station  
Needles, California  
Document ID: PGE20210115A

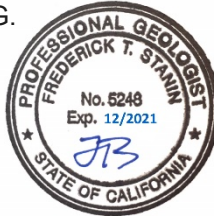
January 15, 2021

COMBINED CMP 2020 ANNUAL GROUNDWATER MONITORING REPORT AND PERFORMANCE  
ASSESSMENT REPORT

**COMBINED CMP  
2020 ANNUAL  
GROUNDWATER  
MONITORING REPORT  
AND PERFORMANCE  
ASSESSMENT  
REPORT**



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Interim Measures No. 3  
PG&E Topock Compressor Station  
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January 15, 2021

COMBINED CMP 2020 ANNUAL GROUNDWATER MONITORING REPORT AND PERFORMANCE  
ASSESSMENT REPORT

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- Appendix B      Field Data Collection Sheets (provided on CD-ROM only)
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## ACRONYMS AND ABBREVIATIONS

µg/L	microgram per liter
ARAR	applicable or relevant and appropriate requirement
Arcadis	Arcadis U.S., Inc.
chromium-6	hexavalent chromium
CMP	Compliance Monitoring Program
CW	compliance well
DOI	United States Department of the Interior
DTSC	Department of Toxic Substances Control
IM-3	Interim Measures No. 3
IW	injection well
mg/L	milligram per liter
MRP	Monitoring and Reporting Program
MS	matrix spike
MSD	matrix spike duplicate
OW	observation well
PAR	Performance Assessment Report
PDS	post-digestion spike
PG&E	Pacific Gas and Electric Company
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RPD	relative percent difference
SD	serial dilution
TDS	total dissolved solids
Water Board	California Regional Water Quality Control Board, Colorado River Basin Region
WDR	Waste Discharge Requirement
WQO	water quality objective

# 1 INTRODUCTION

This Combined Compliance Monitoring Program (CMP) 2020 Annual Groundwater Monitoring Report and Performance Assessment Report (PAR) has been prepared on behalf of Pacific Gas and Electric Company (PG&E) for the Interim Measures No. 3 (IM-3) injection well field area at the Topock Compressor Station site (the Site) near Needles, California. PG&E is currently implementing IM-3 to mitigate elevated chromium and hexavalent chromium (chromium-6) concentrations in groundwater at the Site. The components of IM-3 include groundwater extraction in the Colorado River floodplain, ex-situ treatment of the extracted groundwater, and discharge of the treated groundwater via an onsite injection well field located in the East Mesa Injection Area. Figure 1 shows the locations of the groundwater extraction, conveyance, treatment, and injection facilities associated with the IM-3 system.

The objectives of this report are to:

- Present the results of the biennial assessment of injection well field performance, and
- Document the results of CMP activities conducted during the 2020 annual period (from January 1, 2020 through December 31, 2020).

## 1.1 Description of Groundwater Injection Well Field

Treated water from the IM-3 system is pumped through an aboveground pipeline to the injection well field, which is located nearly 1,500 feet west of the treatment plant on what is known as the East Mesa (CH2M HILL 2015a). The injection well field comprises two injection wells (IW-02 and IW-03), which are constructed of 6-inch-diameter stainless-steel louvered screen connected to mild steel risers (CH2M HILL 2015a). The two injection wells are 340 and 330 feet deep, respectively, with a 160-foot screened interval and design injection capacity of 200 gallons per minute.

Three observation well (OW) clusters (OW-01, OW-02, and OW-05) are located between 50 and 100 feet from the injection wells on the East Mesa. Each OW cluster includes wells screened in the shallow, mid-depth, and deep monitoring zones. Four additional monitoring well clusters, known as the compliance well (CW) clusters (CW-01, CW-02, CW-03, and CW-04) surround the East Mesa and are located between 300 and 550 feet from the injection wells. Each CW cluster includes wells screened in the mid-depth and deep monitoring zones. The locations of the injection wells, OW clusters, and CW clusters are shown on Figure 2.

## 1.1 PAR Background and Objectives

On July 15, 2005, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) conditionally authorized PG&E to begin operating the IM-3 facilities (DTSC 2005). This authorization allowed the injection of treated water from the IM-3 system as a limited-duration pilot study lasting through January 31, 2007. DTSC further directed PG&E to assess the performance of the injection well field and submit a report by November 30, 2006 (DTSC 2005).

As directed, PG&E submitted the first biennial PAR for the IM-3 Injection Well Field, PG&E Topock Compressor Station, Needles, California (CH2M HILL 2006) on November 30, 2006. This report

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documented performance of the IM-3 injection well field during the DTSC-mandated temporary operation period. Based on data presented in the first biennial PAR, DTSC approved the continued operation of the IM-3 injection wells in a letter dated January 5, 2007 (DTSC 2007). As part of this approval, DTSC required PG&E to continue to submit a PAR every 2 years to evaluate the injection well operations and the influence of treated water on aquifer quality (DTSC 2007).

On November 29, 2012, DTSC concurred with PG&E's proposal to combine the biennial PAR with the annual CMP report for the IM-3 injection well field (DTSC 2012). Accordingly, submittal of this document, which includes the eighth biennial PAR, meets the requirement of Condition 18 in DTSC's July 15, 2005 and January 5, 2007 letters to assess the performance of the injection well field as a means for management of treated water from the IM-3 system beyond the pilot study period. This report documents injection system operational performance and evaluates groundwater quality and hydraulic changes associated with the injection system based on data obtained through December 2020.

### 1.2 CMP Background and Objectives

In addition to fulfilling the biennial PAR requirement, this document satisfies IM-3 injection well field compliance reporting requirements under the CMP. The objectives, proposed sampling plan and data evaluation methods, and reporting requirements for monitoring of the IM-3 injection well field were documented in the Groundwater Compliance Monitoring Plan for Interim Measures No. 3 Injection Area, Topock Compressor Station, Needles, California (Compliance Monitoring Plan; CH2M HILL 2005a), which was submitted to the California Regional Water Quality Control Board, Colorado River Basin Region (Water Board) and DTSC on June 17, 2005. An addendum to the Compliance Monitoring Plan was subsequently submitted on December 13, 2005 (Compliance Monitoring Plan Addendum; CH2M HILL 2005b). Several modifications to the CMP monitoring and reporting requirements have since been approved as summarized in Exhibit 1.

#### Exhibit 1. Historical Modifications to the CMP

Modification	Approval Date
Modification of reporting requirements	DTSC: June 9, 2006
Reduction of constituents analyzed during quarterly sampling of CMP observation wells	Water Board: January 23, 2007 DTSC: January 22, 2007
Change from laboratory pH to field collected pH for reporting	Water Board: October 16, 2007 DTSC: January 22, 2008
Modification of Chromium-6 analytical methods to extend hold time to 28 days	Water Board: November 13, 2007 DTSC: January 22, 2008
Modification of sampling and reporting frequency and the field pH trigger range for the CMP contingency plan	Water Board: August 28, 2008 DTSC: December 12, 2008 (pH), September 3, 2009



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Modification	Approval Date
United States Department of the Interior (DOI) adopts waste discharge requirements (WDRs) as applicable or relevant and appropriate requirements (ARARs)	DOI: August 18, 2011 Water Board: July 26, 2011
Modification of sampling and reporting frequency to eliminate the first half semiannual monitoring event and report (DOI 2015)	DOI: March 20, 2015 Water Board: March 16, 2015
Modification of sampling methodology from three-well-volume purge to low-flow for shorter screen length wells (OW-01S, OW-01M, OW-01D, OW-02S, OW-02M, OW-02D, and OW-05D)	DTSC: April 6, 2017
Modification of sampling methodology from three-well-volume purge to low-flow for longer screen length wells (CW-01M, CW-01D, CW-02M, CW-02D, CW-03M, CW-03D, CW-04M, CW-04D, OW-05S, and OW-05M)	DTSC: January 30, 2020

**Note:** Information presented here is taken from the Combined Compliance Monitoring Program, Semiannual Groundwater Monitoring Report, Second Half 2014, and Performance Assessment Report, Interim Measures No. 3, Injection Well Field, PG&E Topock Compressor Station, Needles, California (CH2M HILL 2015a).

Before September 2011, PG&E operated the IM-3 injection system under Water Board WDR Order No. R7-2004-0103 (adopted on October 13, 2004), Order No. R7-2006-0060 (issued on September 20, 2006), and the revised Monitoring and Reporting Program (MRP; issued on August 28, 2008 under Order No. R7-2006-0060). After Order No. R7-2006-0060 expired on September 20, 2011, discharge compliance oversight and enforcement were transferred from the Water Board to the DOI. As documented in the August 18, 2011 letter from the DOI to the Water Board, the DOI confirmed the following (DOI 2011):

- WDRs are ARARs under the Comprehensive Environmental Response, Compensation, and Liability Act response action ongoing at the Site.
- DOI will enforce the WDRs pursuant to the Administrative Consent Agreement entered into by DOI and PG&E in 2005 (DOI 2005), in lieu of the Water Board's adoption of a new Order to replace the expiring Order (Order No. R7-2006-0060) that originally established the WDRs.
- DOI concurred with the division of roles and responsibilities between DOI and the Water Board for monitoring and enforcing compliance with the WDRs.

Currently, PG&E operates the IM-3 injection system under the DOI waste discharge ARARs, which specify effluent limitations, prohibitions, specifications, and provisions for subsurface injection. The MRP set forth in the ARARs specifies the requirements for monitoring the area around the IM-3 injection well field (East Mesa Injection Area) to ensure that the injection of treated groundwater does not adversely impact aquifer water quality.

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The IM-3 injection system comprises IW-02 and IW-03 (Figure 2). Operation of the treatment system was conditionally approved on July 15, 2005 (DTSC 2005), and injection into IW-02 began on July 31, 2005 (CH2M HILL 2015a). Table 1 provides a chronological summary of injection activities implemented for IM-3 through 2020.

Currently, samples are collected from OWs and CWs according to the following schedule:

- Nine OWs (OW-01S, OW-01M, OW-01D, OW-02S, OW-02M, OW-02D, OW-05S, OW-05M, and OW-05D) in the East Mesa Injection Area are sampled annually during the fourth quarter for a limited suite of constituents.
- In addition, six of the OWs (OW-01M, OW-01D, OW-02M, OW-02D, OW-05M, and OW-05D) are sampled for a full suite of constituents, one cluster at a time, on a triennial (once every 3 years) schedule. By the end of each 3-year period, all middle- and deep-zone OWs are sampled for a full suite of constituents. The triennial sampling occurs during the fourth quarter with the annual sampling.
- Eight CWs (CW-01M, CW-01D, CW-02M, CW-02D, CW-03M, CW-03D, CW-04M, and CW-04D) are sampled annually during the fourth quarter for a full suite of constituents.

Table 2 summarizes the well construction and sampling method information for the wells in the CMP network. The full suite of constituents includes Chromium-6, chromium, metals, specific conductance, total dissolved solids (TDS), turbidity, alkalinity, ammonia, and major inorganic cations and anions. The limited suite of constituents is similar to the full suite except that several metals/cations, total alkalinity, and ammonia are omitted.

Groundwater elevation data and field water quality data—including specific conductance, temperature, pH, oxidation-reduction potential, dissolved oxygen, and turbidity—are also measured during each monitoring event.

## 2 SUMMARY OF 2020 ACTIVITIES

This section provides an overview of activities completed for the 2020 annual monitoring event, which was conducted on October 2, 2020 and on October 7 and 8, 2020. Field activities included the following:

- Manual water level measurements and field water quality parameter data were collected before sampling.
- Water quality samples were collected from nine OWs and eight CWs.
- Field duplicate samples were collected at wells CW-01M, CW-03M, and OW-01D to assess field sampling and analytical quality control (QC).

In addition, groundwater elevation data were collected continuously using pressure transducers installed in five of the 17 CMP wells: OW-01S, OW-02S, OW-05S, OW-05M, and OW-05D. Data from the transducers were downloaded approximately monthly during the 2020 annual period. Manual water level measurements were also collected quarterly from the 17 CMP wells.

Field activities were performed in accordance with existing standard operating procedures for the Site, which are available in the Basis of Design Report/Final (100%) Design Submittal for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California (CH2M HILL 2015b). On April 6, 2017, DTSC approved the use of the minimal drawdown (low-flow) method for groundwater sample collection from seven of the 17 CMP wells with shorter (20-foot or 30-foot) screen lengths; i.e., wells OW-01S, OW-01M, OW-01D, OW-02S, OW-02M, OW-02D, and OW-05D (DTSC 2017). This change was implemented starting in 2018. In 2017 and 2018, the remaining 10 CMP wells (OW-05S, OW-05M, CW-01M, CW-01D, CW-02M, CW-02D, CW-03M, CW-03D, CW-04M, and CW-04D) continued to be sampled using both the three-well-volume purge and low-flow methods as part of a follow-up sampling method trial with sample collection events in December 2017, June 2018, and December 2018. Results of the follow-up sampling method trials were documented in the technical memorandum titled Compliance Monitoring Program Sampling Method Trial Evaluation, which was submitted to DTSC and DOI on December 16, 2019 (Arcadis U.S., Inc. [Arcadis] 2019b). This technical memorandum concluded that the three-well-volume purge and low-flow methods provided comparable analytical results for the 10 CMP wells evaluated; therefore, it was recommended that the sampling method be changed to low-flow for these wells (Arcadis 2019b). In accordance with this recommendation, wells OW-05S, OW-05M, CW-01M, CW-01D, CW-02M, CW-02D, CW-03M, CW-03D, CW-04M, and CW-04D were also sampled using low-flow methodology during the annual monitoring event conducted in October 2020.

CMP groundwater samples were analyzed by Asset Laboratories in Las Vegas, Nevada, or BC Laboratories, Inc., in Bakersfield, California, both California-certified analytical laboratories. Analytical methods, sample volumes and containers, sample preservation, and QC sample requirements were in accordance with the PG&E Program Quality Assurance Project Plan, Revision 3 (QAPP; CH2M HILL 2014a) and QAPP Addenda (CH2M HILL 2014b; Critigen 2018). Moreover, data validation and management were conducted in accordance with the quality assurance (QA) and QC requirements set forth in the QAPP and QAPP Addenda.

### 3 SUMMARY OF 2020 SAMPLING RESULTS

This section summarizes the results of the CMP groundwater sampling activities conducted in 2020. Nine OWs and eight CWs were sampled during the 2020 annual monitoring event. Figure 2 shows the locations of the CMP groundwater monitoring well clusters. Groundwater samples collected from these wells were analyzed for chromium-6, chromium, specific conductance, metals, TDS, turbidity, alkalinity, ammonia, and/or major inorganic cations and anions.

The analytical results are presented in Section 3.1, and Section 3.2 summarizes the findings from the laboratory data quality review. Water level measurement and field water quality parameter data collected as part of sampling are presented in Section 3.3. Section 3.4 provides an assessment of the influence of injection operations on aquifer water quality in the East Mesa Injection Area and vicinity based on comparison of groundwater chemistry measured in the OWs and CWs to chemistry of the injected water. Appendices A and B, respectively, contain the laboratory analytical reports and field data collection sheets for the 2020 annual monitoring event.

#### 3.1 Analytical Results

Analytical results for chromium-6 and chromium, other metals, and general chemistry parameters are presented in Tables 3, 4, and 5, respectively, and are discussed in this section. Where applicable, these results have been compared to the water quality objectives (WQOs) or action levels set forth in the Compliance Monitoring Plan Addendum (CH2M HILL 2005b) and updated in the revised contingency plan flowchart submitted by PG&E on August 8, 2006 (PG&E 2006). The contingency plan and associated flowchart address groundwater quality changes potentially associated with the IM-3 injection system and specify threshold concentrations for chromium-6, chromium, TDS, and pH that would trigger contingency actions. The target pH range for the CMP contingency plan was updated again in 2008 with the approval of the Water Board and DTSC (Water Board 2008; DTSC 2008).

##### 3.1.1 Hexavalent Chromium and Chromium

Table 3 summarizes the chromium-6 and chromium analytical results for groundwater in the shallow, middle, and deep wells sampled during the 2020 annual monitoring event. These results are discussed in this section.

- For shallow wells:
  - Chromium-6 was reported at concentrations ranging up to 16 micrograms per liter (µg/L). The maximum chromium-6 concentration was detected in OW-02S.
  - Chromium was reported at concentrations ranging up to 16 µg/L. The maximum chromium concentration was detected in OW-02S.
- For middle depth wells:
  - Chromium-6 was reported at concentrations ranging up to 2.8 µg/L. The maximum chromium-6 concentration was detected in CW-03M.

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- Chromium was reported at concentrations ranging up to 16 µg/L. The maximum chromium concentration was detected in OW-05M.
- For deep wells:
  - Chromium-6 was reported at concentrations ranging up to 1.0 µg/L. The maximum chromium-6 concentration was detected in CW-03D.
  - Chromium was reported at concentrations ranging up to 3.9 µg/L. The maximum chromium concentration was detected in CW-04D.

Chromium-6 and chromium concentrations in samples collected during the 2020 annual monitoring event did not exceed the WQO trigger levels of 32 and 28 µg/L, respectively. Thus, the contingency plan was not triggered for these constituents.

### 3.1.2 Other Metals and General Chemistry

Other metals results for groundwater samples collected during the 2020 annual monitoring event are summarized in Table 4. Detected metals were antimony, arsenic, barium, cobalt, manganese, molybdenum, selenium, vanadium, boron, calcium, total iron, dissolved iron, potassium, magnesium, and sodium. In general, concentrations of these metals observed during the 2020 annual monitoring event were similar to those observed historically.

General chemistry results—including specific conductance, field pH, TDS, turbidity, alkalinity, ammonia, and major anions—for groundwater samples collected during the 2020 annual monitoring event are summarized in Table 5. TDS concentrations ranged from 2,600 milligrams per liter (mg/L; OW-02S) to 4,700 mg/L (CW-01M), while field pH measurements ranged from 7.1 (OW-01S and OW-05D) to 7.9 (OW-02S). During the 2020 annual monitoring event, analytical results for the sampled wells met the WQOs for TDS (i.e., less than 10,800 mg/L) and field pH (i.e., between 6.2 and 9.2). Thus, the contingency plan was not triggered for these parameters.

## 3.2 Analytical Data Quality Review

Project chemists independently reviewed the laboratory analytical data generated from the 2020 annual monitoring event to assess data quality and identify deviations from analytical requirements. The QA and QC requirements are outlined in the QAPP (CH2M HILL 2014a) and QAPP Addenda (CH2M HILL 2014b; Critigen 2018). A detailed discussion of data quality for CMP sampling data is presented in the data validation reports, which are maintained in the project file and available upon request.

### 3.2.1 Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS) and matrix spike duplicate (MSD) samples, post-digestion spikes (PDS), and serial dilutions (SD) were performed as required. Analyte recoveries and precision requirements were within QC criteria with the following exceptions:

- Five dissolved boron results (for samples CW-02D-LF-Q420, CW-02M-LF-Q420, CW-03D-LF-Q420, CW-03M-LF-Q420, and MW-902-Q420) were qualified as estimated detects (“J” flagged) because the associated SD did not meet QC criteria.

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- Two dissolved calcium results (for samples CW-04D-LF-Q420 and CW-04M-LF-Q420) were qualified as estimated detects (“J” flagged) because the associated SD did not meet QC criteria.
- Total iron was recovered at concentrations less than the QC limits in the MS and the MSD affecting five samples (CW-01D-LF-Q420, CW-01M-LF-Q420, MW-901-Q420, OW-05D-Q420, and OW-05M-LF-Q420). The associated total iron results were qualified as estimated detects (“J” flagged).
- Dissolved iron was recovered at concentrations less than or greater than the QC limits in the MS, MSD, and/or PDS in one or more of the QC samples in the preparation batches. Additionally, the relative percent different (RPD) did not meet criteria in one of the MS and MSD pairs. The associated dissolved iron results in eight samples included in the various preparation batches (CW-01M-LF-Q420, MW-901-Q420, CW-01D-LF-Q420, CW-03D-LF-Q420, CW-04M-LF-Q420, CW-04D-LF-Q420, OW-05M-LF-Q420, and OW-05D-Q420) were qualified as estimated detects (“J” flagged).
- Dissolved magnesium was recovered at concentrations greater than the QC limits in the MS and less than the QC limits in the PDS in a preparation batch with five samples (CW-02D-LF-Q420, CW-02M-LF-Q420, CW-03D-LF-Q420, CW-03M-LF-Q420, and MW-902-Q420). Additionally, two samples (CW-04D-LF-Q420 and CW-04M-LF-Q420) were associated with an SD pair that exceeded criteria. The associated dissolved magnesium results were qualified as estimated detects (“J” flagged).
- Five dissolved potassium results (for samples CW-02D-LF-Q420, CW-02M-LF-Q420, CW-03D-LF-Q420, CW-03M-LF-Q420, and MW-902-Q420) were qualified as estimated detects (“J” flagged) because the associated SD did not meet QC criteria.
- Five dissolved arsenic results (for samples CW-02D-LF-Q420, CW-02M-LF-Q420, CW-03D-LF-Q420, CW-03M-LF-Q420, and MW-902-Q420) were qualified as estimated detects (“J” flagged) because the associated SD did not meet QC criteria.
- Dissolved beryllium was recovered at concentrations less than the QC limits in the MS, MSD, and/or PDS in the spikes associated with 12 samples (CW-01D-LF-Q420, CW-01M-LF-Q420, MW-901-Q420, CW-02D-LF-Q420, CW-02M-LF-Q420, CW-03D-LF-Q420, CW-03M-LF-Q420, MW-902-Q420, CW-04D-LF-Q420, CW-04M-LF-Q420, OW-05D-Q420, and OW-05M-LF-Q420). The associated dissolved beryllium results were qualified as estimated non-detects (“UJ” flagged).
- Dissolved molybdenum was recovered at concentrations less than the QC limits in the PDS of a preparation batch associated with nine samples (CW-02D-LF-Q420, CW-02M-LF-Q420, CW-03D-LF-Q420, CW-03M-LF-Q420, MW-902-Q420, OW-01D-Q420, MW-903-Q420, OW-1M-Q420, and OW-01S-Q420). The associated dissolved molybdenum results were qualified as estimated detects (“J” flagged).
- Dissolved nickel was not recovered in the 1-fold dilution of the MS, MSD, or PDS in the spikes associated with seven samples (CW-02D-LF-Q420, CW-02M-LF-Q420, CW-03D-LF-Q420, CW-03M-LF-Q420, MW-902-Q420, CW-04D-LF-Q420, and CW-04M-LF-Q420). The native sample, MS, and MSD were re-prepared using additional dilution and analyzed, and the 25-fold dilution demonstrated acceptable recoveries and PDS analyses. The reporting limits for dissolved nickel were elevated 25 times to reflect the acceptable recoveries in the MS/MSD, and the associated dissolved nickel results were “U” flagged.

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- Dissolved nickel was recovered at concentrations less than the QC limits in the MS associated with five samples (CW-01D-LF-Q420, CW-01M-LF-Q420, MW-901-Q420, OW-05D-Q420, and OW-05M-LF-Q420). The associated dissolved nickel results were qualified as estimated non-detects (“UJ” flagged).
- Dissolved zinc was recovered at concentrations less than QC limits in the MS, MSD, or PDS in the spikes associated with seven samples (CW-02D-LF-Q420, CW-02M-LF-Q420, CW-03D-LF-Q420, CW-03M-LF-Q420, MW-902-Q420, CW-04D-LF-Q420, and CW-04M-LF-Q420). The associated dissolved zinc results were qualified as estimated non-detects (“UJ” flagged).

### 3.2.2 Quantitation and Sensitivity

All method and analyte combinations met the project decision-making requirements. Several samples were diluted for the analysis due to the sample matrix effects, thus lowering the sensitivity and raising the quantitation limits.

### 3.2.3 Holding Time

All samples were analyzed within the QAPP-recommended holding times.

### 3.2.4 Field Duplicates

Field duplicate samples (MW-901-Q420, MW-902-Q420, and MW-903-Q420) were collected and analyzed and met QC criteria with the following exceptions:

- Nitrate/nitrite as nitrogen and turbidity demonstrated RPDs greater than QC criteria for the field duplicate pair of samples CW-01M-LF-Q420 and MW-901-Q420. The associated results were qualified as estimated (“J” flagged).
- Total iron and dissolved manganese demonstrated RPDs greater than QC criteria for the field duplicate pair of samples CW-03M-LF-Q420 and MW-902-Q420. The associated results were qualified as estimated (“J” flagged).

### 3.2.5 Method Blanks

Method blanks were analyzed at the required frequency and were free of contamination levels that would require data qualification.

### 3.2.6 Equipment Blanks

Equipment blanks were collected at the frequency required by the QAPP and were free of contamination levels that would require data qualification.

### 3.2.7 Laboratory Duplicates

Laboratory duplicate acceptance criteria for the analytical methods were met.

### **3.2.8 Laboratory Control Samples**

Laboratory control samples were analyzed as required, and accuracy and precision criteria were met or did not require data qualification.

### **3.2.9 Calibration**

Initial calibration curves, blanks, and verification analyses were performed at the required frequency and met QC criteria or did not require data qualification.

### **3.2.10 Conclusion**

Except as noted earlier, the analyses and data quality met the QAPP and laboratory method QC criteria. The data are considered usable, as qualified during the data validation process, and are of adequate quantity and quality for the purpose of the CMP.

## **3.3 Field Parameter Data**

Water level was measured in each well before purging and sampling. In addition, water quality parameters, including specific conductance, temperature, pH, oxidation-reduction potential, dissolved oxygen, and turbidity, were measured during purging using a field water quality instrument and flow-through cell to determine sufficient stabilization for sampling. Field water quality data collected during the 2020 annual monitoring event are summarized in Table 6. Field data collection sheets for the 2020 annual monitoring event are provided in Appendix B.

## **3.4 Influence of Treated Water on Aquifer Water Quality**

The influence of injection operations on aquifer water quality in the East Mesa Injection Area and vicinity is assessed through the comparison of groundwater chemistry measured in the OWs and CWs, both pre-injection (baseline) and post-injection, to chemistry of the injected water.

The subsurface injection of effluent water (treated groundwater) from the IM-3 groundwater treatment system was initiated on July 31, 2005. Since that time, PG&E has conducted routine sampling, including effluent sampling, of the IM-3 treatment system in compliance with the WDRs for IM-3, previously enforced under WDR Order No. R7-2006-0060 and currently enforced under the ARARs. Analytical results from the effluent sampling are used to establish the baseline chemistry for treated water injected into the IM-3 injection well field.

Table 7 provides selected treated water analytical results from system sampling events conducted on August 29, 2005; April 7, 2010; October 6, 2015; and October 5, 2020. As discussed in previous CMP reports, while concentrations of some parameters vary in the effluent samples, a number of constituents have exhibited relatively consistent concentrations over the duration of injection operations (e.g., chromium-6, chromium, fluoride, dissolved molybdenum, nitrate/nitrite as nitrogen, sulfate, and TDS [CH2M HILL 2015a]). These seven constituents are used to characterize the injected water and serve as a basis for determining whether a given groundwater monitoring well is being affected by injection operations. Based on review of the August 2005 through October 2020 effluent sampling results, the injected water exhibits the following general characteristics:



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- Chromium-6: typically non-detect (or less than 1.0 µg/L)
- Chromium: typically non-detect (or less than 1.0 µg/L)
- Fluoride: approximately 2 mg/L
- Dissolved molybdenum: approximately 20 µg/L
- Nitrate/nitrite as nitrogen: approximately 3 mg/L
- Sulfate: approximately 500 mg/L
- TDS: approximately 4,000 mg/L.

These chemistry characteristics serve as a general basis for comparison but should not be considered statistically representative of the effluent water quality over time.

Pre-injection conditions in the East Mesa Injection Area and vicinity were established based on the results of baseline sampling conducted for the OWs (July 27 and 28, 2005) and CWs (September 15, 2005). Analytical results for the baseline samples are presented in Table 7 and are considered representative of groundwater unaffected by injection operations. Comparison of pre-injection groundwater quality to the injected water profile shows that there are some similarities in constituent concentrations. For example, most of the baseline samples collected from deep wells (OW-01D, OW-02D, OW-05D, CW-03D, and CW-04D) contained no detectable chromium-6 or chromium, similar to the injected water (CH2M HILL 2015a). However, other constituents are present at significantly different concentrations in the injected water versus pre-injection groundwater. Thus, when considering the entire suite of seven constituents, as shown in Table 7, it is evident that the injected water and pre-injection groundwater have distinct chemistries.

In contrast, Table 8 compares constituent concentrations in the injected water (treated groundwater) to those measured in the OWs and CWs during the most recent (2020 annual) monitoring event (i.e., more than 15 years following the initiation of injection operations). Unlike the pre-injection (July through September 2005) well monitoring results, the 2020 annual monitoring results demonstrate that water chemistry measured in a majority of the OWs and CWs either has shifted toward or been replaced by the chemistry of the injected treated water. This conclusion is supported by the concentration versus time plots presented on Figures 3A through 3E for the OWs and CWs. These plots, which include data from baseline through the 2020 annual period, illustrate shifts from baseline concentrations toward the injected treated water chemistry that indicate arrival of the injected water front.

In general, the following 15 wells currently display the characteristics of injected water and are considered to be representative of locations and depths where this water has largely displaced ambient groundwater: OW-01S, OW-01M, OW-01D, OW-02M, OW-02D, OW-05M, OW-05D, CW-01M, CW-01D, CW-02M, CW-02D, CW-03M, CW-03D, CW-04M, and CW-04D. Two additional wells (OW-02S and OW-05S) exhibit gradually increasing trends in groundwater concentrations of sulfate and TDS, approaching the levels observed in the injected water (Figure 3A). This is indicative of potential injected water influence.

### **3.5 ARAR Monitoring Requirements**

Appendix C identifies the laboratory that performed each analysis and lists the following information for the 2020 annual monitoring event, as required by the ARARs:

- Sample location
- Sample identification number
- Sampler name
- Sample date
- Sample time
- Laboratory performing analysis
- Analysis method
- Parameter
- Analysis date
- Laboratory technician
- Result unit
- Sample result
- Reporting limit
- Method detection limit.

## 4 INJECTION WELL OPERATIONAL ASSESSMENT

### 4.1 Injection Well Performance

The primary performance metric for the IM-3 injection well field is sufficient capacity to accept treated water from the IM-3 treatment plant. Table 9 lists the average injection rate, monthly and cumulative total volumes of water injected, and the primary injection well in service from August 2005 through December 2020. In addition, Table 1 summarizes the operational status of the IM-3 injection wells from July 2005 through December 2020.

Injection well performance has been monitored since the wells were put into service and is tracked using specific injectivity as the metric. Specific injectivity is defined as the rate of injection (measured in gallons per minute) per unit of draw-up/water level rise in the well (measured in feet). The performance of injection wells typically declines over time due to a variety of factors (such as plugging of the well screen, sand pack, and/or surrounding formation by sediments, mineral precipitates, or biological deposits; or air entrapment in the formation).

Manganese oxide precipitation is believed to be the primary cause of performance decline in the IM-3 injection wells (CH2M HILL 2015a). Since 2010, the IM-3 treatment plant has been operated to reduce manganese concentrations in the effluent (treated) water (i.e., generally to less than 10 µg/L) and to decrease pH of the effluent water to 7.0 via acidification (CH2M HILL 2015a). If a significant decrease in specific injectivity is observed, the injection wells are backwashed at a higher frequency or rehabilitated using Aqua Gard™ or other methods (CH2M HILL 2015a). Figure 4 shows the history of IM-3 well performance trends and well maintenance events. Aqua Gard™ treatments were conducted in July to August 2019, January 2020, May 2020, and September 2020 during the 2019 to 2020 biennial period.

Currently, each injection well (IW-02 and IW-03) has sufficient capacity to individually manage 100 percent of the effluent water flow from the IM-3 treatment plant. Furthermore, the system has adequate spare capacity, and the maintenance program has been effective in maintaining sufficient injection capacity for operation.

### 4.2 Summary of 2020 Water Level Data

Table 10 summarizes the manual water level measurements and calculated groundwater elevations from the quarterly well gauging events conducted in 2020. In compliance with Condition No. 2 of DTSC's 2009 conditional approval letter (DTSC 2009), the IM-3 Plant Manager confirmed that the IM-3 system was operating normally both the day before and the day of manual water level collection, with no injection well backwashing events or unplanned shutdowns.

In addition to the manual water level measurements, water level data were collected continuously (with readings recorded every 30 minutes) using pressure transducers deployed in select wells: OW-1S, OW-2S, OW-5S, OW-5M, and OW-5D. Hydrographs produced using the transducer data are presented on Figures 5A through 5C and illustrate groundwater elevation trends and vertical hydraulic gradients observed over the 2020 annual period for specific OWs.

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Figure 6A shows groundwater elevations for the three shallow wells based on the fourth quarter (October 6, 2020) manual water level measurements. The shallow-zone water level elevations are not contoured due to an insufficient number of wells to satisfactorily illustrate a groundwater potentiometric surface under injection conditions. Groundwater elevation maps for the middle and deep wells are provided on Figures 6B and 6C, respectively. The data that were plotted and/or used for contouring were the October 6, 2020 (fourth quarter) manual water level measurements collected within an approximately 1-hour period.

As shown on Figure 2, the IM-3 injection well field is located in the uplands (East Mesa) area of the Site. Based on site-wide groundwater elevation data, regional groundwater flow in the uplands portion of the Site is generally to the east/northeast (CH2M HILL 2015b). On a local scale, as shown on Figures 6B and 6C, injections of treated water have resulted in a potentiometric mound in the middle and deep zones centered on the IM-3 injections wells. Consistent with previous observations, the potentiometric mound is generally elliptical in shape, with the major axis running from approximately southwest to northeast (CH2M HILL 2015a; Arcadis 2016, 2017, 2018, 2019a, 2020). The potentiometric mound appears to be stable at a height of approximately 1 foot or less above the surrounding water level (based on the October 6, 2020 manual water level measurements [see Figures 5B and 5C]), which is consistent with information reported previously (CH2M HILL 2015a; Arcadis 2016, 2017, 2018, 2019a, 2020). Groundwater elevation contour maps generated using fourth quarter 2018 (December 3, 2018) and fourth quarter 2016 (December 6, 2016) data are provided in Appendix D for comparison. As shown by these figures, the hydraulic response of middle- and deep-zone monitoring wells to injection activity has been relatively predictable over the past 4 years, and significant change is not anticipated with ongoing injections at the current rate.

Table 11 summarizes the vertical gradients calculated using the October 6, 2020 manual water level measurement data. In general, average vertical gradients have been upward at the OW and CW clusters since injection began (CH2M HILL 2015a). As shown in Table 11, upward vertical gradients were generally observed between depth intervals (i.e., deep to middle and middle to shallow) in a given well cluster, consistent with historical data. The exception was the slightly downward vertical gradient observed at the OW-05M and OW-05D well pair. This is consistent with the lower degree of mounding observed in the deep zone at the OW-5 cluster area versus at other OW clusters during the October 6, 2020 manual water level measurement event (Figure 6C).

Calculated upward vertical gradients were generally of the same order of magnitude between well clusters or between the different depth intervals (Table 11) with the exception of that observed between CW-01D and CW-01M. The vertical gradient calculated for the CW-01D and CW-01M well pair was only slightly upward, which is consistent with the relatively little head increase observed in CW-01D during the October 6, 2020 manual water level measurement. Because the injection wells are screened in the deeper portions of the aquifer, the head increase resulting from the injection of treated groundwater is typically greater in the deep and middle zones compared to the shallow zone (CH2M HILL 2015a).

## 5 SUMMARY AND RECOMMENDATIONS

The injection well field has operated successfully since July 31, 2005 and has proven to be an effective strategy for managing treated groundwater generated through implementation of IM-3 at the Site. The following summarizes the performance highlights of the injection system:

- **Predicted aquifer response:** Hydraulic response of the aquifer to injection activity is consistent with expectations. Potentiometric mounding with a magnitude of approximately 1 foot or less occurs primarily in the middle and deep aquifer zones in the immediate vicinity of the injection wells, dissipating with distance from the injection wells. Outside of the injection area, gradients indicate groundwater flow generally to the east/northeast, consistent with regional groundwater flow in the uplands portion of the Site.
- **No adverse effect to aquifer water quality:** There are no indications of adverse effects to aquifer water quality as a result of injections. In general, water quality in the shallow, middle, and deep zones has improved (i.e., decreasing chromium-6 and chromium concentrations) where the injected water has displaced native groundwater.
- **Successful injection well operation and maintenance:** During the eighth biennial period, sufficient injection capacity was maintained with no significant injection well performance issues. Well maintenance using backwashing and Aqua Gard™ treatment continues to be effective.
- **Improved environment and safer operations:** Operating the injection wells reduces the adverse environmental and safety impacts associated with the trucking of treated groundwater to a permitted offsite facility. Reduced truck traffic results in lower vehicle emissions and reduces the chance of accidents.
- **Water quality objectives achieved:** During the 2020 annual period, no sample results exceeded the WQOs for chromium-6, chromium, pH, or TDS.

Based on these bullets, PG&E plans to continue operation of the IM-3 injection well field for the management of treated water under DTSC and DOI oversight. The next annual CMP monitoring event is planned to be conducted in October 2021 with submittal of the associated groundwater monitoring report by January 15, 2022. The next PAR is anticipated to cover the 2021 to 2022 biennial period and is planned to be combined with the 2022 annual CMP report, which is expected to be submitted by January 15, 2023. Both the 2021 CMP sampling program and report and the 2022 combined CMP and PAR sampling program and report may need to be adjusted and/or waived pending initiation of the final groundwater remedy (currently under construction and planned for initiation in 2021) and subsequent shutdown of the IM-3 system.

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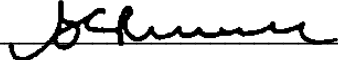
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## 7 CERTIFICATION

PG&E submitted a signature delegation letter to the DOI and the Water Board on February 27, 2013 (PG&E 2013). The letter delegated PG&E signature authority to Mr. Curt Russell for correspondence regarding required ARARs.

Certification Statement:

I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

**Signature:** 

**Name:** Curt Russell

**Company:** Pacific Gas and Electric Company

**Title:** Topock Environmental Remediation Project Manager

**Date:** January 15, 2021



# TABLES

**Table 1****Operational Status of Interim Measures No. 3 Injection Wells from July 2005 through December 2020**

*Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report  
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

<b>Time Period</b>	<b>Injection Status</b>
July 31, 2005 to Fourth Quarter 2005	Injection occurred at IW-02.
First Quarter 2006	Injection occurred primarily at IW-02, except during intervals of operational testing, when injection was divided equally between IW-02 and IW-03.
Second Quarter 2006	Injection occurred at IW-02.
Third Quarter 2006	In August 2006, IW-02 went offline for routine maintenance, and injection commenced at IW-03.
Fourth Quarter 2006	Injection occurred at IW-03, except during routine maintenance.
First Quarter 2007	Injection occurred at IW-03 and transitioned over to IW-02 on March 8.
Second Quarter 2007	Injection occurred at IW-03 from April 3 through June 20. Injection switched to IW-02 on June 20 and continued through July 20, 2007.
Third Quarter 2007	Injection occurred at IW-03 after July 20. Injection occurred at IW-02 on August 30 for an injection test and then returned to IW-03 after August 31.
Fourth Quarter 2007	Injection occurred at IW-03 and then switched to IW-02 on September 25 for routine maintenance. Injection returned to IW-03 after October 9.
First Quarter 2008	Injection occurred at IW-03 only. From February 5 through February 13, well maintenance activities were conducted at IW-02.
Second Quarter 2008	Injection occurred at IW-03 only. IM-3 system offline from April 21 through April 28 due to routine maintenance. Backwashing was performed at IW-03 on April 9, May 7, May 15, May 22, June 3, and June 4, 2008.
Third Quarter 2008	Injection occurred primarily at IW-03. Injection also occurred at IW-02 for short interval on July 25 and from August 12 through August 31, 2008. Backwashing was performed at IW-03 on June 17, June 27, July 9, July 15, July 17, July 18, August 12, August 13, September 2, and September 3, 2008. Backwashing was performed at IW-02 on September 9 - September 11, 2008.
Fourth Quarter 2008	Injection occurred at IW-03 and then switched to IW-02 on September 23. Injection returned to IW-03 on October 7 and switched back to IW-02 on October 21. Injection primarily occurred at IW-02 until November 11 when it switched to IW-03 until December 3, 2008. Injection continued at IW-02 until December 16, 2008 and occurred concurrently and continued at IW-03 on December 11, 2008.
First Quarter 2009	Injection switched to IW-02 on December 30, 2008. On January 13, 2009 injection transitioned to IW-03. Backwashing events were performed periodically during the intervals when each injection well was offline. Routine and scheduled maintenance occurred December 18, 2008 and January 21, 2009 at which time both wells were offline.
Second Quarter 2009	Injection continued at IW-03 until April 20, 2009. Injection ceased from April 20, 2009 to April 27, 2009 due to routine maintenance after which injection continued at IW-03 until May 26, 2009 when it transitioned to IW-02. Injection continued at IW-02 until June 9, 2009 when it switched to IW-03. Injection returned to IW-02 on June 24, 2009.

**Table 1****Operational Status of Interim Measures No. 3 Injection Wells from July 2005 through December 2020**

*Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report  
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

<b>Time Period</b>	<b>Injection Status</b>
Third Quarter 2009	IM-3 injection alternates between the two wells approximately every two weeks. Injection continued at IW-02 until July 8, when it transitioned to IW-03. Injection ceased from July 23 to 27, 2009 when it continued at IW-03 until September 9, 2009. Unplanned downtime occurred from September 9 - 14, 2009. On September 16, 2009 injection continued at IW-02, except during times of routine maintenance or otherwise mentioned.
Fourth Quarter 2009	Injection occurred at IW-02 until November 25, 2009 when it switched to IW-03. Injection continued at IW-03, except during times of routine maintenance.
First Half 2010	Injection occurred mainly at IW-03 until March 3, 2010. Beginning March 3, 2010, IM-3 injection alternated between the two wells approximately every two weeks until April 20, 2010 for a planned shutdown. On April 22, 2010, injection resumed at IW-03 and alternated between the two wells approximately every two weeks. Backwashing was performed periodically during the intervals when each injection well was offline.
Second Half 2010	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: July 22 through August 25, August 30 through September 7, September 16 through October 15, November 5 through 18, and December 17 through 31, 2010.
First Half 2011	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: January 27 through February 10, February 23 through March 7, March 30 through April 20, May 6 through June 7, and June 22 through 28, 2011. Backwashing was performed periodically during the intervals when each injection well was offline. A planned shutdown occurred April 25 through 29 and June 28 through 30.
Second Half 2011	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: July 14 through August 3, August 10 through 13, September 11 through 22, October 6 through 10; and October 27 through December 31. Backwashing was performed periodically during the intervals when each injection well was offline.
First Half 2012	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: January 1 through January 6, 2012; February 2 through February 16, 2012; March 2 through April 5, 2012; May 10 through May 21, 2012; May 29 through June 1, 2012; June 14, 2012; and June 21 through June 27, 2012.
Second Half 2012	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: July 18 through July 25, 2012; August 1 through August 13, 2012; August 17 through August 22, 2012; August 31 through September 26, 2012; and September 29 through October 9, 2012.
First Half 2013	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: March 5 through March 14, 2013; April 8 through May 22, 2013; June 24 through June 25, 2013; and June 29 through June 30, 2013.

**Table 1****Operational Status of Interim Measures No. 3 Injection Wells from July 2005 through December 2020**

*Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report  
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

<b>Time Period</b>	<b>Injection Status</b>
Second Half 2013	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: July 1 through 9, 2013; July 31 through August 12, 2013; October 22 through November 6, 2013; November 26 through December 12, 2013; and December 28 through 31, 2013.
First Half 2014	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: January 6, 2014; January 16 through January 29, 2014; April 17 through 23, 2014; and May 10 through June 22, 2014, and June 25, 2014.
Second Half 2014	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: July 21 through 30, 2014; September 23 through 25, 2014; and November 19 through 24, 2014.
First Half 2015	Injection occurred primarily at IW-03 with the exception of the following periods when it occurred primarily at IW-02: January 1 through 14, 2015; March 5 through 31, 2015; April 7 and 8, 2015; June 11, 2015; and June 26, 2015. The system was shut down from April 28, 2015 to May 4, 2015 for scheduled semiannual facility maintenance.
Second Half 2015	Injection occurred primarily at IW-02 with the exception of the following periods when it occurred primarily at IW-03: July 1 through 19, 2015; August 31 through September 1, 2015; and September 26 through October 13, 2015.
First Half 2016	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: January 1 through 31, 2016; February 1 through 25, 2016; and March 1 through 4, 2016.
Second Half 2016	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: July 1 through 31, 2016; August 1, 2016; November 12, 2016; and December 1 through 11, 2016.
First Half 2017	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: January 28, 2017; April 7 through 27, 2017; and April 29 through June 30, 2017.
Second Half 2017	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: July 1 through August 14, 2017; August 26 through 27, 2017; and November 18 through December 31, 2017.
First Half 2018	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: March 16, 2018; March 18 through April 2, 2018; and April 6 through May 6, 2018.
Second Half 2018	Injection occurred primarily at IW-03 with the exception of the following period when it primarily occurred at IW-02: December 14 through December 28, 2018.
First Half 2019	Injection occurred primarily at IW-03 with the exception of the following period when it primarily occurred at IW-02: June 30, 2019.
Second Half 2019	Injection occurred primarily at IW-03 with the exception of the following period when it primarily occurred at IW-02: July 1 through July 15, 2019.

**Table 1****Operational Status of Interim Measures No. 3 Injection Wells from July 2005 through December 2020**

*Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report  
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

<b>Time Period</b>	<b>Injection Status</b>
First Half 2020	Injection occurred primarily at IW-03 with the exception of the following period when it primarily occurred at IW-02: May 5, 2020 through June 30, 2020.
Second Half 2020	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: August 1 through September 10, 2020; November 23 and 24, 2020; and December 28 and 29, 2020.

**Acronyms and Abbreviations:**

IM-3 = Interim Measures No. 3

IW = injection well

**Table 2****Well Construction and Sampling Summary for Groundwater Samples, 2020***Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

Well ID	Site Area	Measuring Point Elevation (feet amsl)	Screen Interval (feet bgs)	Well Casing (inches)	Depth to Water (feet btoc)	Sampling System	Typical Purge Rate	Typical Purge Volume (gallons)	Pump Depth (feet btoc)	Transducer Status
CW-01M	East Mesa	566.07	140 - 190	2 (PVC)	108.83	Grundfos RF2	500 mL/min	low-flow	165	
CW-01D	East Mesa	566.46	250 - 300	2 (PVC)	109.16	Grundfos RF2	500 mL/min	low-flow	275	
CW-02M	East Mesa	549.45	152 - 202	2 (PVC)	92.24	Grundfos RF2	500 mL/min	low-flow	177	
CW-02D	East Mesa	549.43	285 - 335	2 (PVC)	91.93	Grundfos RF2	500 mL/min	low-flow	310	
CW-03M	East Mesa	534.10	172 - 222	2 (PVC)	76.96	Grundfos RF2	500 mL/min	low-flow	197	
CW-03D	East Mesa	534.14	270 - 320	2 (PVC)	76.50	Grundfos RF2	500 mL/min	low-flow	295	
CW-04M	East Mesa	518.55	119.5 - 169.5	2 (PVC)	61.26	Grundfos RF2	500 mL/min	low-flow	144.5	
CW-04D	East Mesa	518.55	233 - 283	2 (PVC)	61.10	Grundfos RF2	500 mL/min	low-flow	258	
OW-01S	East Mesa	550.21	83.5 - 113.5	2 (PVC)	93.25	Grundfos RF2	500 mL/min	low-flow	98.5	Active
OW-01M	East Mesa	550.36	165 - 185	2 (PVC)	92.91	Grundfos RF2	500 mL/min	low-flow	175	
OW-01D	East Mesa	550.36	257 - 277	2 (PVC)	92.28	Grundfos RF2	500 mL/min	low-flow	267	
OW-02S	East Mesa	548.88	71 - 101	2 (PVC)	91.83	Grundfos RF2	500 mL/min	low-flow	NA/C	Active
OW-02M	East Mesa	548.52	190 - 210	2 (PVC)	91.00	Grundfos RF2	500 mL/min	low-flow	200	
OW-02D	East Mesa	549.01	310 - 330	2 (PVC)	90.54	Grundfos RF2	500 mL/min	low-flow	320	
OW-05S	East Mesa	551.83	70 - 110	2 (PVC)	94.71	Grundfos RF2	500 mL/min	low-flow	NA/C	Active
OW-05M	East Mesa	551.81	210 - 250	2 (PVC)	94.06	Grundfos RF2	500 mL/min	low-flow	230	Active
OW-05D	East Mesa	552.41	300 - 320	2 (PVC)	94.61	Grundfos RF2	500 mL/min	low-flow	310	Active

**Note:**

Depth to water in each well was measured on October 6, 2020.

**Acronyms and Abbreviations:**

amsl = above mean sea level

bgs = below ground surface

btoc = below top of casing

CW = compliance well

ID = identification

mL/min = milliliters per minute

NA/C = data not collected or available

OW = observation well

PVC = polyvinyl chloride

**Table 3****Chromium Results for Groundwater Samples, 2020 (Ordered by Monitoring Zone)**

*Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report  
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

Location ID	Sample Date	Hexavalent Chromium, USEPA 218.6 (µg/L)	Chromium, USEPA 200.8 (µg/L)
OW-01S	10/07/2020	2.6	5.2
OW-02S	10/08/2020	16	16
OW-05S	10/08/2020	10	10
CW-01M	10/08/2020	0.60	ND (1.0)
CW-01M	10/08/2020 (FD)	0.58	ND (1.0)
CW-02M	10/07/2020	1.1	2.1
CW-03M	10/07/2020	2.8	6.7
CW-03M	10/07/2020 (FD)	2.8	6.0
CW-04M	10/02/2020	1.0	4.8
OW-01M	10/07/2020	2.3	5.1
OW-02M	10/08/2020	2.0	3.2
OW-05M	10/08/2020	0.49	16
CW-01D	10/08/2020	0.59	2.0
CW-02D	10/07/2020	0.47	1.3
CW-03D	10/07/2020	1.0	2.5
CW-04D	10/02/2020	0.53	3.9
OW-01D	10/07/2020	0.60	ND (1.0)
OW-01D	10/07/2020 (FD)	0.59	ND (1.0)
OW-02D	10/08/2020	0.50	1.4
OW-05D	10/08/2020	0.63	1.8

**Notes:**

Hexavalent chromium and chromium samples are field filtered.

**Acronyms and Abbreviations:**

µg/L = micrograms per liter

CW = compliance well

FD = field duplicate

ID = identification

ND = parameter not detected at the listed reporting limit

OW = observation well

USEPA = United States Environmental Protection Agency

**Table 4**  
**Metals Results for Groundwater Samples, 2020**  
*Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report*  
*Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

Location ID	Sample Date	Aluminum, dissolved (µg/L)	Antimony, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Mercury, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Thallium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)	Boron, dissolved (mg/L)	Calcium, dissolved (mg/L)	Iron, total (mg/L)	Iron, dissolved (mg/L)	Potassium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)
CW-01M	10/08/2020	ND (50)	ND (0.5)	1.3	82	ND (0.5 J)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	ND (0.5)	ND (0.2)	17	ND (1.0 J)	4.6	ND (0.5)	ND (0.5)	2.5	ND (10)	1.2	110	0.17 J	0.099 J	9.7	14	1,500
CW-01M	10/08/2020 (FD)	ND (50)	ND (0.5)	1.3	81	ND (0.5 J)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	ND (0.5)	ND (0.2)	17	ND (1.0 J)	4.7	ND (0.5)	ND (0.5)	2.5	ND (10)	1.2	120	0.19 J	0.12 J	8.9	14	1,700
CW-01D	10/08/2020	ND (50)	ND (0.5)	1.4	22	ND (0.5 J)	ND (0.5)	3.4	ND (1.0)	ND (1.0)	7.5	ND (0.2)	20	ND (1.0 J)	4.8	ND (0.5)	ND (0.5)	2.4	ND (10)	1.1	100	0.93 J	0.19 J	10	21	1,400
CW-02M	10/07/2020	ND (250)	ND (0.5)	2.1 J	63	ND (0.5 J)	ND (0.5)	2.5	ND (1.0)	ND (1.0)	1.9	ND (0.2)	15 J	ND (25)	4.2	ND (0.5)	ND (0.5)	3.7	ND (10 J)	1.7 J	130	1.0	ND (0.1)	6.1 J	12 J	1,500
CW-02D	10/07/2020	ND (250)	ND (0.5)	2.2 J	21	ND (0.5 J)	ND (0.5)	4.7	ND (1.0)	ND (1.0)	0.74	ND (0.2)	14 J	ND (25)	4.3	ND (0.5)	ND (0.5)	3.2	ND (10 J)	3.7 J	150	ND (0.02)	ND (0.1)	8.2 J	12 J	1,500
CW-03M	10/07/2020	ND (250)	ND (0.5)	1.5 J	40	ND (0.5 J)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	2.5 J	ND (0.2)	33 J	ND (25)	3.1	ND (0.5)	ND (0.5)	2.9	ND (10 J)	3.4 J	170	0.59 J	ND (0.1)	8.0 J	17 J	1,500
CW-03M	10/07/2020 (FD)	ND (250)	ND (0.5)	1.5 J	38	ND (0.5 J)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	1.4 J	ND (0.2)	34 J	ND (25)	3.1	ND (0.5)	ND (0.5)	3.0	ND (10 J)	2.9 J	150	0.44 J	ND (0.1)	8.1 J	15 J	1,500
CW-03D	10/07/2020	ND (250)	ND (0.5)	1.8 J	19	ND (0.5 J)	ND (0.5)	0.84	ND (1.0)	ND (1.0)	14	ND (0.2)	16 J	ND (25)	4.4	ND (0.5)	ND (0.5)	2.7	ND (10 J)	2.6 J	79	3.4	0.13 J	8.7 J	7.3 J	1,600
CW-04M	10/02/2020	ND (50)	ND (0.5)	ND (0.1)	100	ND (0.5 J)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	2.2	ND (0.2)	12	ND (25)	5.9	ND (0.5)	ND (0.5)	3.6	ND (10 J)	1.2	150 J	0.29	0.060 J	13	16 J	1,400
CW-04D	10/02/2020	ND (50)	ND (0.5)	ND (0.1)	23	ND (0.5 J)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	1.6	ND (0.2)	21	ND (25)	3.6	ND (0.5)	ND (0.5)	3.0	ND (10 J)	1.2	100 J	0.099	0.058 J	11	11 J	1,500
OW-01S	10/07/2020	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	2.1 J	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	1,400
OW-01M	10/07/2020	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	18 J	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	1,400
OW-01D	10/07/2020	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	18 J	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	1,400
OW-01D	10/07/2020 (FD)	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	18 J	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	1,400
OW-02S	10/08/2020	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	22	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	670
OW-02M	10/08/2020	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	20	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	1,600
OW-02D	10/08/2020	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	23	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	1,600
OW-05S	10/08/2020	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	10	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	NA/C	660
OW-05M	10/08/2020	ND (50)	ND (0.5)	1.0	33	ND (0.5 J)	ND (0.5)	3.3	ND (1.0)	ND (1.0)	16	ND (0.2)	23	ND (1.0 J)	4.6	ND (0.5)	ND (0.5)	2.0	ND (10)	1.1	97	2.9 J	0.23 J	11	26	1,500
OW-05D	10/08/2020	ND (50)	0.69	3.0	25	ND (0.5 J)	ND (0.5)	5.3	ND (1.0)	ND (1.0)	0.58	ND (0.2)	26	ND (1.0 J)	4.3	ND (0.5)	ND (0.5)	2.3	ND (10)	1.2	110	0.085 J	0.096 J	14	30	1,600

**Notes:**  
Metals were analyzed using USEPA Methods 200.7, 200.8, 245.1, or 6010B/6020.

**Acronyms and Abbreviations:**  
µg/L = micrograms per liter  
CW = compliance well  
FD = field duplicate  
ID = identification  
J = concentration or reporting limit estimated by laboratory or data validation  
mg/L = milligrams per liter  
NA/C = data not collected or available  
ND = parameter not detected at the listed reporting limit  
OW = observation well  
USEPA = United States Environmental Protection Agency



**Table 5****Other Inorganics Results for Groundwater Samples, 2020***Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

Location ID	Sample Date	Specific Conductance, USEPA 120.1 (µmhos/cm)	pH, field (pH units)	Total Dissolved Solids, SM2540C (mg/L)	Turbidity, SM2130B (NTU)	Chloride, USEPA 300.0 (mg/L)	Fluoride, USEPA 300.0 (mg/L)	Sulfate, USEPA 300.0 (mg/L)	Nitrate/Nitrite as Nitrogen, SM4500-NO3F (mg/L)	Alkalinity, total as CaCO <sub>3</sub> , SM2320B (mg/L)	Ammonia as Nitrogen, SM4500-NH3C (mg/L)
CW-01M	10/08/2020	7,300	7.6	4,700	1.7 J	2,200	2.2	510	3.0 J	89	ND (0.2)
CW-01M	10/08/2020 (FD)	7,300	NA/C	4,600	0.62 J	2,200	2.2	510	5.4 J	90	ND (0.2)
CW-01D	10/08/2020	7,200	7.2	4,600	8.6	2,200	2.5	500	2.6	90	ND (0.2)
CW-02M	10/07/2020	7,200	7.8	4,300	6.7	2,200	3.1	500	2.6	59	ND (0.2)
CW-02D	10/07/2020	7,400	7.8	4,300	0.45	2,300	2.0	510	2.8	66	ND (0.2)
CW-03M	10/07/2020	7,300	7.8	4,500	4.0	2,300	3.7	510	2.6	53	ND (0.2)
CW-03M	10/07/2020 (FD)	7,400	NA/C	4,400	4.2	2,300	3.8	510	2.6	53	ND (0.2)
CW-03D	10/07/2020	7,200	7.8	4,300	68	2,200	2.5	490	2.9	68	ND (0.2)
CW-04M	10/02/2020	6,700	7.5	4,500	11	2,100	2.1	480	2.7	60	ND (0.2)
CW-04D	10/02/2020	6,900	7.6	4,400	7.2	2,100	4.2	470	2.9	59	0.21
OW-01S	10/07/2020	6,800	7.1	4,500	1.8	2,100	1.3	470	2.9	NA/C	NA/C
OW-01M	10/07/2020	7,300	7.4	4,300	7.0	2,200	2.2	490	2.7	NA/C	NA/C
OW-01D	10/07/2020	7,100	7.5	4,300	0.33	2,200	2.2	480	2.5	NA/C	NA/C
OW-01D	10/07/2020 (FD)	7,200	NA/C	4,300	0.31	2,200	2.0	480	2.5	NA/C	NA/C
OW-02S	10/08/2020	3,700	7.9	2,600	1.2	1,100	3.2	180	3.2	NA/C	NA/C
OW-02M	10/08/2020	7,100	7.5	4,400	0.52	2,200	2.1	490	2.8	NA/C	NA/C
OW-02D	10/08/2020	7,100	7.6	4,400	3.4	2,200	2.7	490	3.1	NA/C	NA/C
OW-05S	10/08/2020	5,100	7.5	4,600	0.13	1,700	1.7	350	3.2	NA/C	NA/C
OW-05M	10/08/2020	7,000	7.4	4,400	26	2,100	2.6	490	3.1	86	ND (0.2)
OW-05D	10/08/2020	6,900	7.1	4,500	0.84	2,100	3.0	470	2.4	71	ND (0.2)

**Acronyms and Abbreviations:**

µmhos/cm = micro-mhos per centimeter

CaCO<sub>3</sub> = calcium carbonate

CW = compliance well

FD = field duplicate

ID = identification

J = concentration estimated by laboratory or data validation

mg/L = milligrams per liter

NA/C = data not collected or available

ND = parameter not detected at the listed reporting limit

NTU = Nephelometric Turbidity Unit

OW = observation well

SM = Standard Method

USEPA = United States Environmental Protection Agency

**Table 6****Field Parameters and Manual Water Level Measurements for Groundwater Samples, 2020***Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

Location ID	Sample Date	Specific Conductance (µS/cm)	Temperature (°C)	pH (pH units)	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Salinity (%)	Depth to Water (feet btoc)
CW-01M	10/08/2020	9,020	31.3	7.6	3.3	6.02	2	0.58	105.68
CW-01D	10/08/2020	7,590	29.2	7.2	110	10.77	6	0.49	105.49
CW-02M	10/07/2020	7,090	29.2	7.8	150	5.86	7	0.46	92.20
CW-02D	10/07/2020	7,600	28.6	7.8	130	7.46	3	0.49	92.14
CW-03M	10/07/2020	8,910	30.0	7.8	16	4.45	8	0.58	77.10
CW-03D	10/07/2020	7,480	29.9	7.8	130	4.54	4	0.48	76.66
CW-04M	10/02/2020	8,410	31.5	7.5	-110	0.39	8	0.54	61.29
CW-04D	10/02/2020	10,300	30.5	7.6	-140	0.33	7	0.67	60.99
OW-01S	10/07/2020	7,280	30.1	7.1	130	5.78	3	0.47	92.83
OW-01M	10/07/2020	8,560	29.8	7.4	18	5.28	9	0.55	92.79
OW-01D	10/07/2020	7,520	29.4	7.5	160	8.31	3	0.49	92.64
OW-02S	10/08/2020	4,450	29.5	7.9	9.0	5.38	4	0.29	91.69
OW-02M	10/08/2020	8,410	29.0	7.5	21	6.21	3	0.54	90.92
OW-02D	10/08/2020	7,230	28.0	7.6	91	4.50	7	0.47	90.67
OW-05S	10/08/2020	6,570	30.4	7.5	0.1	4.40	2	0.42	94.52
OW-05M	10/08/2020	7,540	29.1	7.4	120	10.20	7	0.49	93.88
OW-05D	10/08/2020	7,390	29.4	7.1	130	8.54	4	0.48	94.09

**Notes:**

Salinity is calculated using the specific conductance field measurement.

**Acronyms and Abbreviations:**

°C = degrees Celsius

µS/cm = micro-Siemens per centimeter

btoc = below top of casing

CW = compliance well

ID = identification

mg/L = milligrams per liter

mV = millivolt

NTU = Nephelometric Turbidity Unit

ORP = oxidation reduction potential

OW = observation well

**Table 7****Treated Water Quality Compared to OW and CW Pre-injection Water Quality***Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

Location ID	Sample Date	Hexavalent Chromium (µg/L)	Chromium (µg/L)	Fluoride (mg/L)	Dissolved Molybdenum (µg/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Treated Water	08/29/2005	ND (1.0)	ND (2.1)	1.95	8.3	3.70	450	3,620
Treated Water	04/07/2010	0.29	ND (1.0)	1.82	18.6	2.87	512	4,270
Treated Water	10/06/2015	0.24	ND (1.0)	2.1	21	2.60	480	4,200
Treated Water	10/05/2020	ND (0.2)	ND (1.0)	2.3	21	2.5	490	4,500
CW-01M	09/15/2005	18.1	17.8	2.34	21.6	1.11	318	2,990
CW-01D	09/15/2005	ND (1.0)	1.6	0.951	32.1	0.972	379	6,230
CW-02M	09/15/2005	15.6	15.5	2.30	23.1	0.908	342	3,500
CW-02M	09/15/2005 (FD)	15.8	14.7	2.30	21.1	0.96	341	3,440
CW-02D	09/15/2005	ND (1.0)	1.6	0.982	41.6	0.28	601	8,770
CW-03M	09/16/2005	8.8	8.1	2.57	24.2	0.642	464	4,740
CW-03D	09/16/2005	ND (1.0)	ND (1.0)	1.40	29.2	0.304	672	9,550
CW-04M	09/13/2005	19.2	19	1.50	12.3	1.18	240	3,310
CW-04D	09/13/2005	ND (1.0)	ND (1.0)	1.01	26	0.188	534	7,470
OW-01S	07/28/2005	18.7	18.8 J	2.45	15.7	3.20	114	1,320
OW-01S	07/28/2005 (FD)	19.4	23.5 J	2.44	17.2	3.15	114	1,260
OW-01M	07/27/2005	16.3	18.9	2.31	27	1.01	311	3,450 J
OW-01D	07/27/2005	ND (1.0)	ND (1.3)	1.14	46.1	0.321	441	6,170 J
OW-02S	07/28/2005	15.3	14.8	3.79	35.6	3.81	126	1,090
OW-02M	07/28/2005	5.4	5.7	2.19	32.4	0.735	342	4,380
OW-02D	07/28/2005	ND (1.0)	ND (1.2)	0.966	51.2	ND (0.1)	616	9,550

**Table 7****Treated Water Quality Compared to OW and CW Pre-injection Water Quality***Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report**Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

Location ID	Sample Date	Hexavalent Chromium (µg/L)	Chromium (µg/L)	Fluoride (mg/L)	Dissolved Molybdenum (µg/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
OW-05S	07/28/2005	23.4	25.6	2.3	17.1	3.55	105	1,060
OW-05M	07/28/2005	8.6 J	8.8	2.74	35.4	0.621	417	5,550
OW-05D	07/28/2005	ND (1.0)	ND (1.2)	1.11	57	0.151	480	8,970

**Acronyms and Abbreviations:**

µg/L = micrograms per liter

CW = compliance well

FD = field duplicate

ID = identification

J = concentration estimated by laboratory or data validation

mg/L = milligrams per liter

ND = parameter not detected at the listed reporting limit

OW = observation well

**Table 8****Treated Water Quality Compared to 2020 Annual Monitoring Event Water Quality**

Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report

Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Location ID	Sample Date	Hexavalent Chromium (µg/L)	Chromium (µg/L)	Fluoride (mg/L)	Dissolved Molybdenum (µg/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Treated Water	09/30/2018	ND (0.2)	ND (1.0)	2.2	21	2.8	490	4,200
Treated Water	09/29/2019	ND (0.2)	ND (1.0)	3.0	24	3.1	460	4,000
Treated Water	10/05/2020	ND (0.2)	ND (1.0)	2.3	21	2.5	490	4,500
CW-01M	10/08/2020	0.60	ND (1.0)	2.2	17	3.0 J	510	4,700
CW-01M	10/08/2020 (FD)	0.58	ND (1.0)	2.2	17	5.4 J	510	4,600
CW-01D	10/08/2020	0.59	2.0	2.5	20	2.6	500	4,600
CW-02M	10/07/2020	1.1	2.1	3.1	15 J	2.6	500	4,300
CW-02D	10/07/2020	0.47	1.3	2.0	14 J	2.8	510	4,300
CW-03M	10/07/2020	2.8	6.7	3.7	33 J	2.6	510	4,500
CW-03M	10/07/2020 (FD)	2.8	6.0	3.8	34 J	2.6	510	4,400
CW-03D	10/07/2020	1.0	2.5	2.5	16 J	2.9	490	4,300
CW-04M	10/02/2020	1.0	4.8	2.1	12	2.7	480	4,500
CW-04D	10/02/2020	0.53	3.9	4.2	21	2.9	470	4,400
OW-01S	10/07/2020	2.6	5.2	1.3	2.1 J	2.9	470	4,500
OW-01M	10/07/2020	2.3	5.1	2.2	18 J	2.7	490	4,300
OW-01D	10/07/2020	0.60	ND (1.0)	2.2	18 J	2.5	480	4,300
OW-01D	10/07/2020 (FD)	0.59	ND (1.0)	2.0	18 J	3.0	480	4,300
OW-02S	10/08/2020	16	16	3.2	22	3.2	180	2,600
OW-02M	10/08/2020	2.0	3.2	2.1	20	2.8	490	4,400
OW-02D	10/08/2020	0.50	1.4	2.7	23	3.1	490	4,400
OW-05S	10/08/2020	10	10	1.7	10	3.2	350	4,600
OW-05M	10/08/2020	0.49	16	2.6	23	3.1	490	4,400
OW-05D	10/08/2020	0.63	1.8	3.0	26	2.4	470	4,500

**Acronyms and Abbreviations:**

µg/L = micrograms per liter

CW = compliance well

FD = field duplicate

ID = identification

J = concentration estimated by laboratory or data validation

mg/L = milligrams per liter

ND = parameter not detected at the listed reporting limit

OW = observation well

**Table 9****Injection Rates and Volumes**

*Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and  
Performance Assessment Report  
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

<b>Month and Year</b>	<b>Average Injection Rate (gpm)</b>	<b>Monthly Total (gallons)</b>	<b>Cumulative Total (gallons)</b>	<b>Primary Injection Well in Service</b>
August-05	58.8	2,626,360	2,626,360	IW-02
September-05	67.2	2,904,094	5,530,454	IW-02
October-05	80.6	3,597,275	9,127,729	IW-02
November-05	74.5	3,216,979	12,344,708	IW-02
December-05	103.5	4,622,252	16,966,960	IW-02
January-06	113.5	5,067,560	22,034,520	IW-02
February-06	121.4	4,896,522	26,931,042	IW-02
March-06	121.1	5,405,223	32,336,265	IW-02
April-06	116.7	5,039,655	37,375,920	IW-02
May-06	118.9	5,305,831	42,681,751	IW-02
June-06	116.9	5,050,593	47,732,344	IW-02
July-06	119.2	5,322,857	53,055,201	IW-02
August-06	121.6	5,429,628	58,484,829	IW-03
September-06	121	5,229,047	63,713,876	IW-03
October-06	122.6	5,473,384	69,187,260	IW-03
November-06	122.1	5,275,516	74,462,776	IW-03
December-06	124.1	5,542,012	80,004,788	IW-03
January-07	123.5	5,510,915	85,515,703	IW-03
February-07	126	5,079,402	90,595,105	IW-03
March-07	123.8	5,525,669	96,120,774	IW-02
April-07	96.5	4,169,396	100,290,170	IW-03
May-07	126.8	5,658,656	105,948,826	IW-03
June-07	127.3	5,499,332	111,448,158	IW-03
July-07	122.1	5,448,764	116,896,922	IW-02
August-07	125.8	5,614,418	122,511,340	IW-03
September-07	128.1	5,531,784	128,043,124	IW-03
October-07	128.1	5,717,776	133,760,900	IW-03
November-07	124.1	5,361,317	139,122,217	IW-03
December-07	124.6	5,560,689	144,682,906	IW-03

**Table 9****Injection Rates and Volumes**

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<b>Month and Year</b>	<b>Average Injection Rate (gpm)</b>	<b>Monthly Total (gallons)</b>	<b>Cumulative Total (gallons)</b>	<b>Primary Injection Well in Service</b>
January-08	123.1	5,492,958	150,175,864	IW-03
February-08	126.5	5,283,674	155,459,538	IW-03
March-08	124.3	5,550,583	161,010,121	IW-03
April-08	93.5	4,040,973	165,051,094	IW-03
May-08	124.2	5,542,847	170,593,941	IW-03
June-08	128.6	5,553,857	176,147,798	IW-03
July-08	127.4	5,685,501	181,833,299	IW-03
August-08	127.7	5,702,022	187,535,321	IW-02
September-08	120.2	5,193,691	192,729,012	IW-03
October-08	125.7	5,613,447	198,342,459	IW-02
November-08	128.4	5,548,109	203,890,568	IW-03
December-08	124.2	5,542,252	209,432,820	IW-03
January-09	123.6	5,517,257	214,950,079	IW-03
February-09	131.5	5,303,429	220,253,508	IW-03
March-09	125.9	5,618,103	225,871,612	IW-03
April-09	101.2	4,372,758	230,244,370	IW-03
May-09	122.8	5,482,349	235,726,719	IW-03
June-09	125.5	5,420,397	241,147,116	IW-02
July-09	83.4	3,725,059	244,872,175	IW-03
August-09	127.3	5,680,943	250,553,118	IW-03
September-09	93.7	4,046,699	254,599,817	IW-02
October-09	131.1	5,853,536	260,453,352	IW-02
November-09	130.5	5,639,433	266,092,786	IW-02
December-09	120.5	5,377,155	271,469,941	IW-03
January-10	126.3	5,637,472	277,107,412	IW-03
February-10	124.8	5,031,840	282,139,252	IW-03
March-10	126.0	5,625,524	287,764,777	IW-03
April-10	112.0	4,839,690	292,604,467	IW-03
May-10	131.8	5,882,290	298,486,757	IW-03
June-10	123.9	5,354,115	303,840,872	IW-03

**Table 9****Injection Rates and Volumes**

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<b>Month and Year</b>	<b>Average Injection Rate (gpm)</b>	<b>Monthly Total (gallons)</b>	<b>Cumulative Total (gallons)</b>	<b>Primary Injection Well in Service</b>
July-10	120.8	5,390,898	309,231,770	IW-02
August-10	118.8	5,302,122	314,533,892	IW-03
September-10	131.2	5,667,255	320,201,147	IW-03
October-10	126.8	5,658,794	325,859,940	IW-02
November-10	130.3	5,629,913	331,489,853	IW-02
December-10	129.4	5,774,967	337,264,820	IW-03
January-11	126.5	5,647,947	342,912,767	IW-03
February-11	129.2	5,208,707	348,121,474	IW-02
March-11	128.8	5,747,411	353,868,885	IW-03
April-11	113.5	4,903,434	358,772,319	IW-02
May-11	130.5	5,825,578	364,597,897	IW-02
June-11	121.2	5,236,904	369,834,802	IW-02
July-11	125.0	5,580,178	375,414,979	IW-02
August-11	114.7	5,120,270	380,535,249	IW-03
September-11	130.0	5,614,683	386,149,933	IW-03
October-11	128.8	5,748,120	391,898,052	IW-03
November-11	129.7	5,603,492	397,501,544	IW-02
December-11	129.6	5,784,322	403,285,866	IW-02
January-12	130.8	5,837,548	409,123,414	IW-03
February-12	130.1	5,432,832	414,556,246	IW-02
March-12	128.8	5,747,601	420,303,847	IW-02
April-12	115.2	4,975,734	425,279,582	IW-03
May-12	133.3	5,951,440	431,231,022	IW-03
June-12	134.2	5,795,380	437,026,402	IW-03
July-12	133.4	5,954,462	442,980,863	IW-03
August-12	114.0	5,091,104	448,071,968	IW-02
September-12	130.9	5,654,269	453,726,237	IW-02
October-12	132.1	5,896,425	459,622,662	IW-03
November-12	131.6	5,686,609	465,309,270	IW-03
December-12	130.9	5,841,981	471,151,251	IW-03



**Table 9****Injection Rates and Volumes**

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January-13	131.2	5,855,164	477,006,415	IW-03
February-13	130.9	5,279,234	482,285,649	IW-03
March-13	134.5	6,005,382	488,291,032	IW-03
April-13	117.4	5,073,222	493,364,254	IW-02
May-13	134.2	5,989,613	499,353,867	IW-02
June-13	128.0	5,528,925	504,882,792	IW-03
July-13	128.9	5,755,955	510,638,747	IW-03
August-13	114.3	5,101,661	515,740,408	IW-03
September-13	131.9	5,697,317	521,437,725	IW-03
October-13	135.1	6,031,939	527,469,664	IW-03
November-13	129.6	5,597,036	533,066,700	IW-03
December-13	133.9	5,977,834	539,044,534	IW-02
January-14	133.1	5,943,725	544,988,259	IW-02
February-14	132.1	5,327,968	550,316,227	IW-02
March-14	130.6	5,828,858	556,145,086	IW-02
April-14	115.7	4,997,542	561,142,628	IW-02
May-14	133.9	5,978,013	567,120,640	IW-03
June-14	122.3	5,282,957	572,403,598	IW-03
July-14	129.1	5,765,249	578,168,847	IW-02
August-14	116.0	5,177,316	583,346,163	IW-02
September-14	131.8	5,693,165	589,039,328	IW-02
October-14	133.9	5,978,467	595,017,795	IW-02
November-14	131.0	5,659,761	600,677,556	IW-02
December-14	132.2	5,902,346	606,579,902	IW-02
January-15	129.6	5,787,130	612,367,032	IW-03
February-15	128.2	5,351,970	617,719,002	IW-03
March-15	129.4	5,778,510	623,497,512	IW-02
April-15	116.4	5,029,977	628,527,489	IW-02
May-15	118.7	5,296,731	633,824,220	IW-03
June-15	132.9	5,740,117	639,564,338	IW-03

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<b>Month and Year</b>	<b>Average Injection Rate (gpm)</b>	<b>Monthly Total (gallons)</b>	<b>Cumulative Total (gallons)</b>	<b>Primary Injection Well in Service</b>
July-15	128.7	5,746,980	645,311,317	IW-03
August-15	112.5	5,021,214	650,332,532	IW-02
September-15	133.1	5,751,891	656,084,423	IW-02
October-15	133.7	5,967,913	662,052,336	IW-02
November-15	134.0	5,790,514	667,842,850	IW-02
December-15	133.6	5,963,422	673,806,272	IW-02
January-16	134.7	6,013,515	679,819,786	IW-02
February-16	126.9	5,482,797	685,302,583	IW-02
March-16	126.3	5,638,278	690,940,861	IW-03
April-16	96.7	4,177,595	695,118,456	IW-03
May-16	133.6	5,962,540	701,080,996	IW-03
June-16	131.7	5,688,462	706,769,458	IW-03
July-16	133.7	5,967,525	712,736,983	IW-03
August-16	114.9	5,127,532	717,864,515	IW-02
September-16	134.9	5,827,182	723,691,697	IW-02
October-16	133.3	5,948,951	729,640,648	IW-02
November-16	131.8	5,693,070	735,333,719	IW-02
December-16	137.1	6,119,549	741,453,268	IW-02
January-17	135.1	6,031,081	747,484,349	IW-02
February-17	136.5	5,504,323	752,988,672	IW-02
March-17	136.6	6,096,222	759,084,893	IW-02
April-17	115.0	4,969,552	764,054,445	IW-03
May-17	132.1	5,897,639	769,952,084	IW-03
June-17	128.9	5,569,430	775,521,515	IW-03
July-17	131.4	5,864,163	781,385,677	IW-03
August-17	118.8	5,303,296	786,688,973	IW-03
September-17	128.6	5,553,687	792,242,660	IW-02
October-17	127.5	5,692,934	797,935,595	IW-02
November-17	130.6	5,643,963	803,579,558	IW-02
December-17	131.5	5,871,334	809,450,892	IW-03

**Table 9****Injection Rates and Volumes**

*Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and  
Performance Assessment Report  
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

<b>Month and Year</b>	<b>Average Injection Rate (gpm)</b>	<b>Monthly Total (gallons)</b>	<b>Cumulative Total (gallons)</b>	<b>Primary Injection Well in Service</b>
January-18	133.8	5,972,906	815,423,798	IW-03
February-18	131.1	5,286,197	820,709,995	IW-03
March-18	129.9	5,796,824	826,506,819	IW-02
April-18	110.9	4,792,588	831,299,407	IW-02
May-18	130.0	5,801,344	837,100,751	IW-03
June-18	119.5	5,163,189	842,263,940	IW-03
July-18	117.6	5,250,583	847,514,523	IW-03
August-18	108.9	4,861,644	852,376,167	IW-03
September-18	134.1	5,792,419	858,168,586	IW-03
October-18	132.0	5,893,070	864,061,655	IW-03
November-18	133.0	5,744,825	869,806,481	IW-03
December-18	132.9	5,932,553	875,739,033	IW-03
January-19	135.6	6,052,568	881,791,601	IW-03
February-19	133.3	5,376,014	887,167,615	IW-03
March-19	135.4	6,046,477	893,214,092	IW-03
April-19	110.4	4,769,156	897,983,248	IW-03
May-19	131.0	5,847,379	903,830,627	IW-03
June-19	131.9	5,696,850	909,527,477	IW-03
July-19	123.0	5,492,615	915,020,093	IW-03
August-19	112.6	5,025,473	920,045,566	IW-03
September-19	128.9	5,568,247	925,613,813	IW-03
October-19	132.2	5,900,208	931,514,021	IW-03
November-19	129.9	5,610,337	937,124,357	IW-03
December-19	127.4	5,687,462	942,811,819	IW-03
January-20	129.9	5,798,793	948,610,612	IW-03
February-20	127.9	5,341,203	953,951,815	IW-03
March-20	124.7	5,566,608	959,518,423	IW-03
April-20	127.6	5,512,955	965,031,378	IW-03
May-20	94.8	4,233,908	969,265,285	IW-02
June-20	93.2	4,024,689	973,289,975	IW-02

**Table 9****Injection Rates and Volumes**

*Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and  
Performance Assessment Report*

*Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

<b>Month and Year</b>	<b>Average Injection Rate (gpm)</b>	<b>Monthly Total (gallons)</b>	<b>Cumulative Total (gallons)</b>	<b>Primary Injection Well in Service</b>
July-20	129.6	5,786,166	979,076,141	IW-02
August-20	110.1	4,913,938	983,990,079	IW-03
September-20	122.3	5,282,403	989,272,481	IW-02
October-20	129.3	5,769,771	995,042,252	IW-02
November-20	123.8	5,346,325	1,000,388,577	IW-02
December-20	124.9	5,576,665	1,005,965,242	IW-02

**Note:**

The injection flow rate is measured by flow meters mounted in the piping leading into IW-02 and IW-03. Data are logged in the Interim Measures No. 3 control system, from which this information is reported.

**Acronym and Abbreviation:**

gpm = gallons per minute

**Table 10****Manual Water Level Measurements and Elevations, 2020**

*Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report  
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

Location ID	Well Depth (feet btoc)	Measuring Point Elevation (feet amsl)	Date	Time	Water Level Measurement (feet btoc)	Salinity (%)	Groundwater/Water Elevation Adjusted for Salinity and Temperature (feet amsl)
CW-01M	190.0	566.07	01/28/2020	13:25	110.89	0.54	455.12
CW-01M	190.0	566.07	04/07/2020	11:19	110.27	0.54	455.74
CW-01M	190.0	566.07	08/04/2020	8:15	108.72	0.54	457.29
CW-01M	190.0	566.07	10/06/2020	10:42	108.83	0.58	457.20
CW-01D	300.2	566.46	01/28/2020	13:22	110.95	0.52	455.45
CW-01D	300.2	566.46	04/07/2020	11:17	110.41	0.52	455.99
CW-01D	300.2	566.46	08/04/2020	8:13	108.65	0.52	457.75
CW-01D	300.2	566.46	10/06/2020	10:46	109.16	0.49	457.21
CW-02M	208.3	549.45	01/28/2020	13:33	94.60	0.52	454.81
CW-02M	208.3	549.45	04/07/2020	11:25	93.69	0.52	455.72
CW-02M	208.3	549.45	08/04/2020	8:21	92.20	0.52	457.21
CW-02M	208.3	549.45	10/06/2020	10:51	92.24	0.46	457.13
CW-02D	355.0	549.43	01/28/2020	13:29	94.00	0.52	455.39
CW-02D	355.0	549.43	04/07/2020	11:23	93.22	0.52	456.17
CW-02D	355.0	549.43	08/04/2020	8:19	91.77	0.52	457.62
CW-02D	355.0	549.43	10/06/2020	10:49	91.93	0.49	457.42
CW-03M	222.0	534.10	01/28/2020	13:40	79.44	0.55	454.72
CW-03M	222.0	534.10	04/07/2020	11:30	78.47	0.55	455.69
CW-03M	222.0	534.10	08/04/2020	8:29	77.04	0.55	457.12
CW-03M	222.0	534.10	10/06/2020	10:56	76.96	0.58	457.12
CW-03D	340.0	534.14	01/28/2020	13:37	78.71	0.52	455.54
CW-03D	340.0	534.14	04/07/2020	11:28	78.10	0.52	456.15
CW-03D	340.0	534.14	08/04/2020	8:27	76.40	0.52	457.85
CW-03D	340.0	534.14	10/06/2020	10:54	76.50	0.48	457.44
CW-04M	169.8	518.55	01/28/2020	14:23	63.25	0.51	455.25
CW-04M	169.8	518.55	04/07/2020	10:57	62.58	0.51	455.92
CW-04M	169.8	518.55	08/04/2020	8:13	61.10	0.51	457.40
CW-04M	169.8	518.55	10/06/2020	11:19	61.26	0.54	457.20
CW-04D	303.0	518.55	01/28/2020	14:19	63.02	0.52	455.44
CW-04D	303.0	518.55	04/07/2020	10:55	62.34	0.52	456.12
CW-04D	303.0	518.55	08/04/2020	8:10	60.82	0.52	457.64
CW-04D	303.0	518.55	10/06/2020	11:17	61.10	0.67	457.54
OW-01S	113.5	550.21	01/28/2020	13:37	95.51	0.46	454.68
OW-01S	113.5	550.21	04/06/2020	18:29	94.51	0.48	455.68
OW-01S	113.5	550.21	08/04/2020	7:43	93.12	0.45	457.07
OW-01S	113.5	550.21	10/06/2020	10:30	93.25	0.48	456.94

**Table 10****Manual Water Level Measurements and Elevations, 2020**

*Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report  
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

Location ID	Well Depth (feet btoc)	Measuring Point Elevation (feet amsl)	Date	Time	Water Level Measurement (feet btoc)	Salinity (%)	Groundwater/Water Elevation Adjusted for Salinity and Temperature (feet amsl)
OW-01M	185.8	550.36	01/28/2020	13:34	95.22	0.54	455.14
OW-01M	185.8	550.36	04/07/2020	11:06	94.17	0.54	456.19
OW-01M	185.8	550.36	08/04/2020	7:47	92.99	0.54	457.37
OW-01M	185.8	550.36	10/06/2020	10:38	92.91	0.55	457.43
OW-01D	277.3	550.36	01/28/2020	13:31	94.82	0.53	455.55
OW-01D	277.3	550.36	04/07/2020	11:04	94.05	0.53	456.32
OW-01D	277.3	550.36	08/04/2020	7:51	92.44	0.53	457.93
OW-01D	277.3	550.36	10/06/2020	10:36	92.28	0.49	457.97
OW-02S	103.6	548.88	01/28/2020	13:50	94.16	0.25	454.69
OW-02S	103.6	548.88	04/06/2020	18:25	93.28	0.25	455.57
OW-02S	103.6	548.88	08/04/2020	7:31	91.76	0.27	457.09
OW-02S	103.6	548.88	10/06/2020	10:22	91.83	0.26	457.02
OW-02M	210.3	548.52	01/28/2020	13:47	93.35	0.53	455.10
OW-02M	210.3	548.52	04/07/2020	11:14	92.54	0.53	455.91
OW-02M	210.3	548.52	08/04/2020	7:34	91.11	0.53	457.34
OW-02M	210.3	548.52	10/06/2020	10:20	91.00	0.54	457.51
OW-02D	340.0	549.01	01/28/2020	13:44	93.25	0.52	455.76
OW-02D	340.0	549.01	04/07/2020	11:12	92.42	0.52	456.59
OW-02D	340.0	549.01	08/04/2020	7:37	90.86	0.52	458.15
OW-02D	340.0	549.01	10/06/2020	10:18	90.54	0.47	458.39
OW-05S	110.3	551.83	01/28/2020	14:01	96.91	0.35	454.90
OW-05S	110.3	551.83	04/06/2020	18:10	96.07	0.39	455.74
OW-05S	110.3	551.83	08/04/2020	8:02	94.58	0.40	457.23
OW-05S	110.3	551.83	10/06/2020	9:59	94.71	0.41	457.10
OW-05M	250.3	551.81	01/28/2020	13:58	95.56	0.51	456.19
OW-05M	250.3	551.81	04/06/2020	18:15	95.12	0.51	456.63
OW-05M	250.3	551.81	08/04/2020	8:00	93.30	0.51	458.45
OW-05M	250.3	551.81	10/06/2020	9:57	94.06	0.49	457.68
OW-05D	350.0	552.41	01/28/2020	13:55	96.32	0.51	455.93
OW-05D	350.0	552.41	04/06/2020	18:20	95.52	0.50	456.70
OW-05D	350.0	552.41	08/04/2020	7:57	94.05	0.51	458.19
OW-05D	350.0	552.41	10/06/2020	9:55	94.61	0.49	457.65

**Note:**

Salinity and temperature data were used to adjust water levels to freshwater equivalents.

**Acronyms and Abbreviations:**

amsl = above mean sea level

btoc = below top of casing

CW = compliance well

ID = identification

OW = observation well

**Table 11****Vertical Gradients within the OW and CW Clusters, 2020**

*Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report  
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

<b>Well Pairs</b>	<b>Vertical Gradient<sup>(a)</sup> (foot/foot)</b>
CW-01D to CW-01M	0.0001
CW-02D to CW-02M	0.0022
CW-03D to CW-03M	0.0032
CW-04D to CW-04M	0.0030
OW-01M to OW-01S	0.0064
OW-01D to OW-01M	0.0058
OW-02M to OW-02S	0.0043
OW-02D to OW-02M	0.0073
OW-05M to OW-05S	0.0041
OW-05D to OW-05M	-0.0004

**Notes:**

Gradients were calculated using October 6, 2020 groundwater elevation data.

<sup>(a)</sup> Positive value signifies an upward gradient.

**Acronyms and Abbreviations:**

CW = compliance well

OW = observation well

# **FIGURES**

**For additional assistance with the information provided on the figures, please contact Emily Sheu with Arcadis ([emily.sheu@arcadis.com](mailto:emily.sheu@arcadis.com)).**



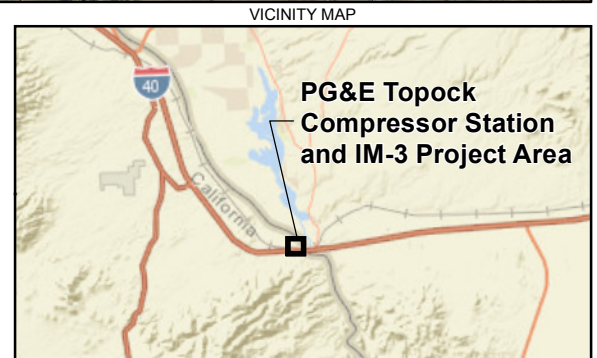
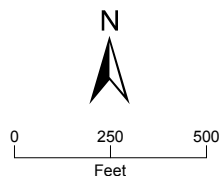


**LEGEND**

- Existing IM-3 Extraction Well
- ▲ Existing IM-3 Injection Well
- Influent Treatment Facility Pipeline (below ground)
- - - Effluent Treatment Facility Pipeline (above ground)
- Property Line

**Notes:**  
Location map shows IM-3 facilities as of January 2006.  
Aerial photography taken November 2011.

BLM = Bureau of Land Management  
IM-3 = Interim Measures No. 3  
PG&E = Pacific Gas and Electric Company



**FIGURE 1  
SITE LOCATION AND INTERIM MEASURES NO. 3  
TREATMENT SYSTEM**

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

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IM-3 COMPLIANCE MONITORING PROGRAM  
PG&E TOPOCK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA

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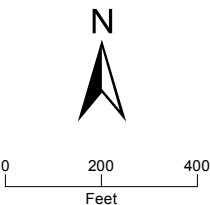
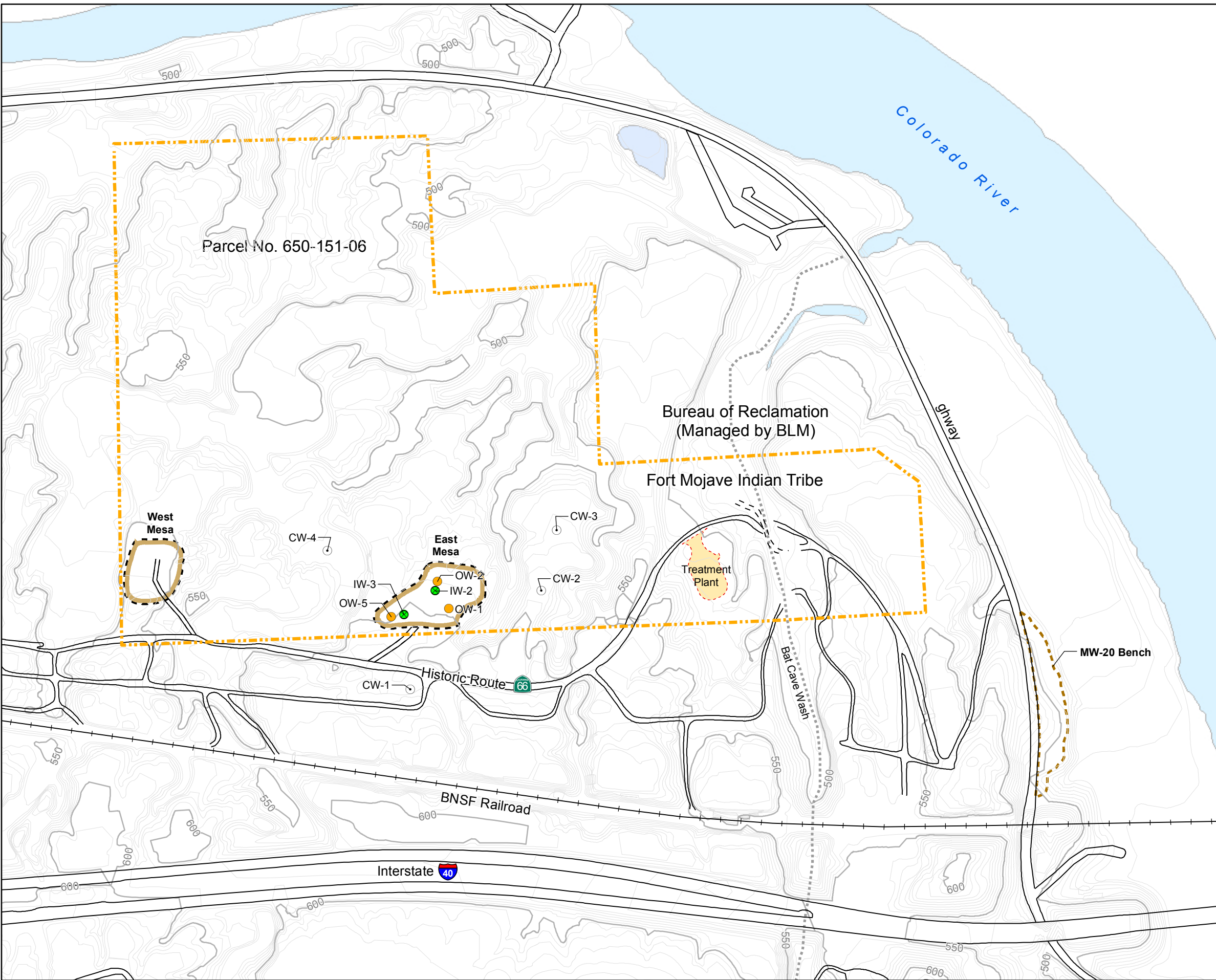


**LEGEND**

- IM-3 Injection Well
- Observation Well Cluster
- Compliance Well Cluster
- Property Line
- Contingency Area

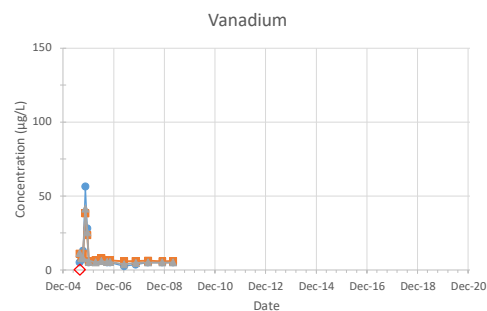
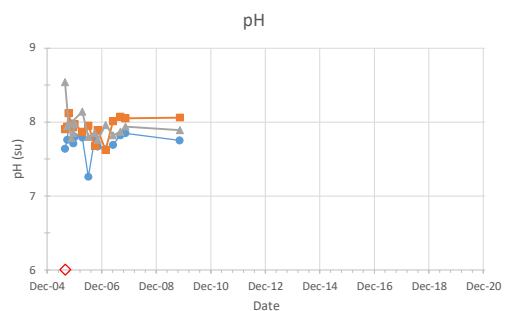
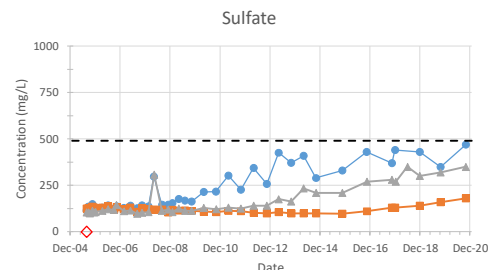
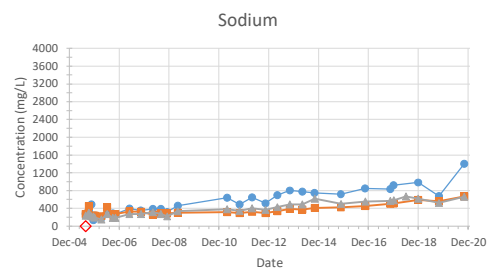
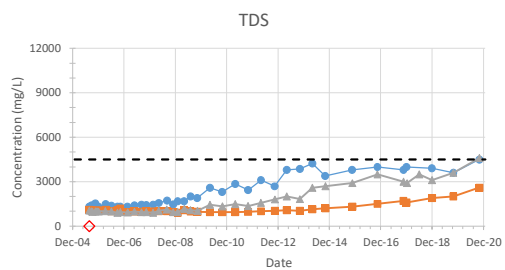
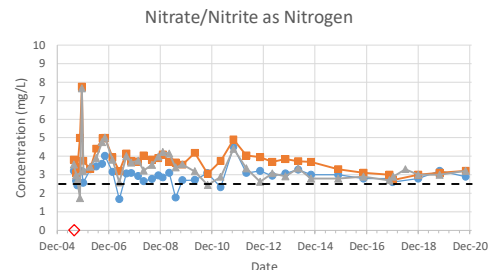
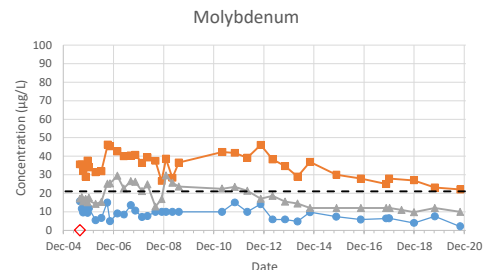
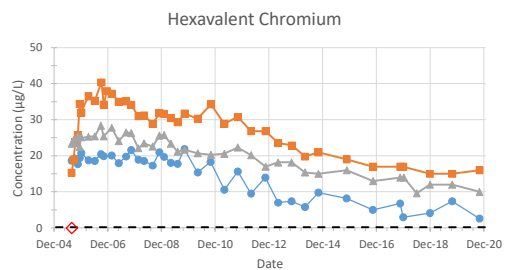
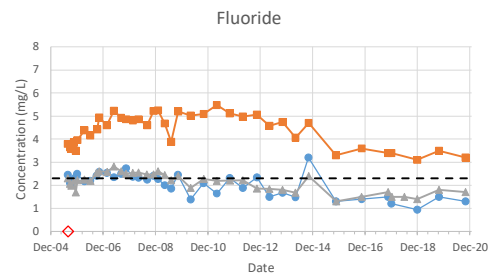
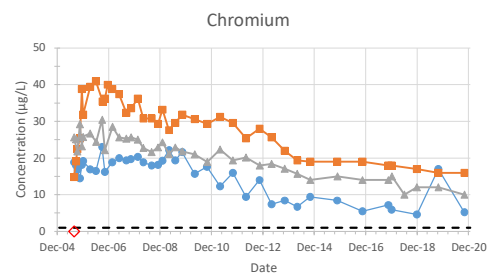
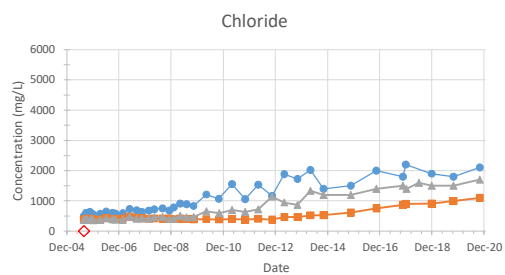
**Notes:**

IM-3 = Interim Measures No. 3  
BLM = Bureau of Land Management  
PG&E = Pacific Gas and Electric Company



**FIGURE 2  
MONITORING LOCATIONS FOR CMP AND  
INJECTION WELL FIELD**

IM-3 COMPLIANCE MONITORING PROGRAM  
PG&E TOPEAK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA



## LEGEND

- OW-1S
- OW-2S
- ▲— OW-5S
- ◇ System Start-up
- - - Treated Water

## Notes:

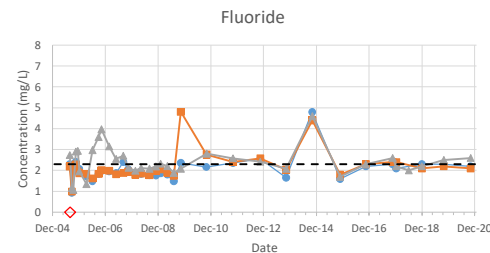
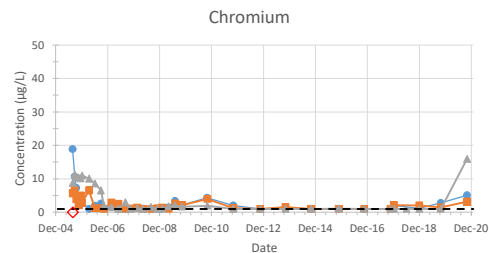
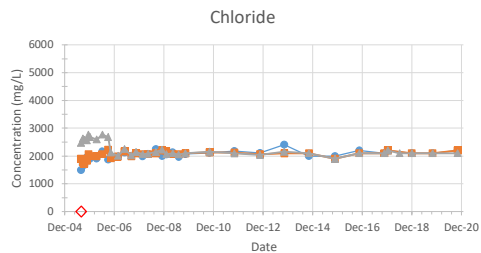
µg/L = micrograms per liter  
mg/L = milligrams per liter  
TDS = total dissolved solids

Treated water only on select analytes.

**FIGURE 3A**  
**OW-1S, OW-2S, OW-5S CONCENTRATION**  
**VERSUS TIME PLOTS**

IM-3 COMPLIANCE MONITORING PROGRAM  
PG&E TOPOCK COMPRESSION STATION,  
NEEDLES, CALIFORNIA



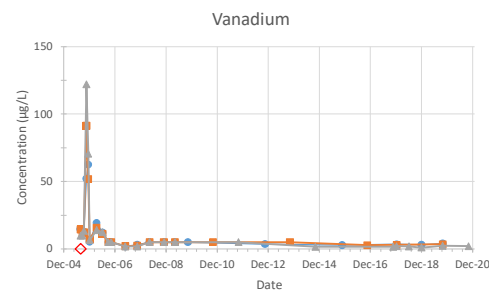
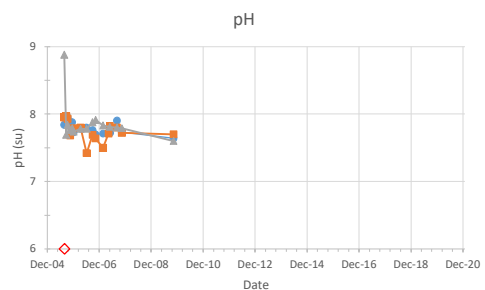
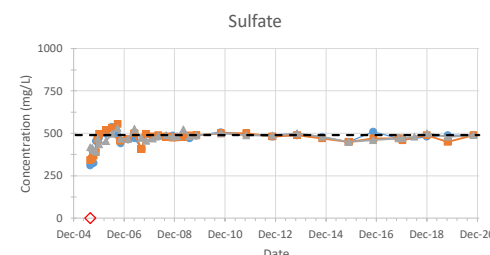
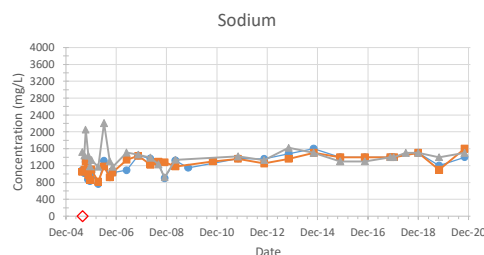
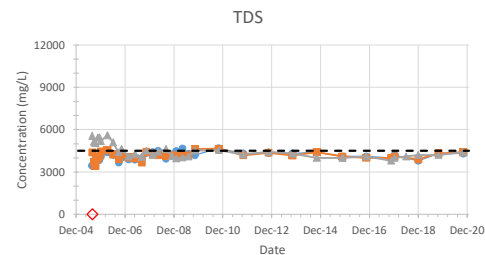
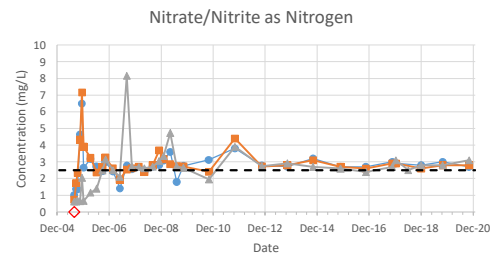
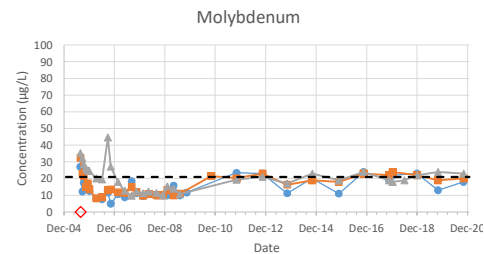
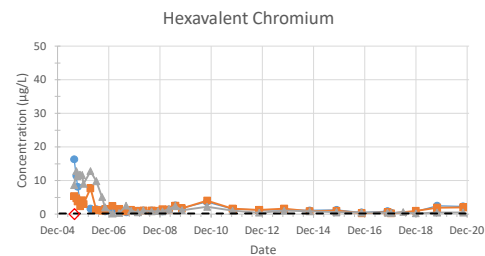


#### LEGEND

- OW-1M
- OW-2M
- OW-5M
- System Start-up
- Treated Water

**Notes:**  
 µg/L = micrograms per liter  
 mg/L = milligrams per liter  
 TDS = total dissolved solids

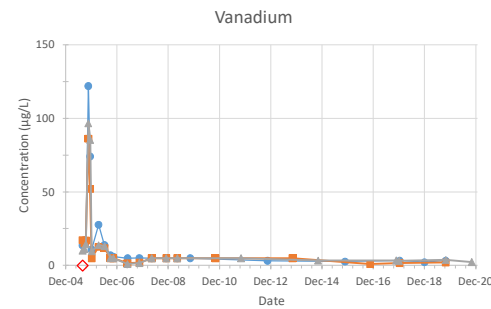
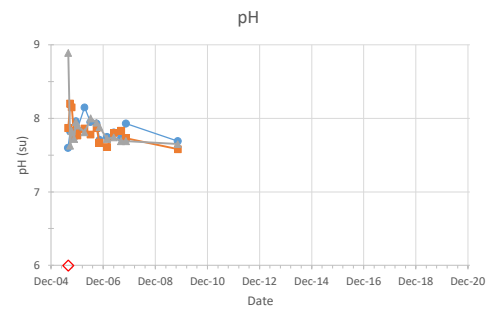
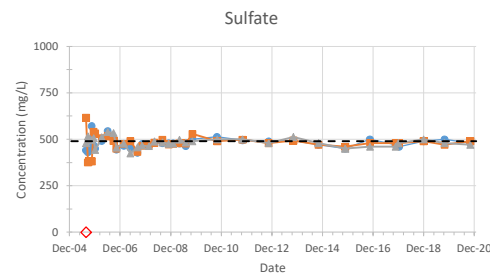
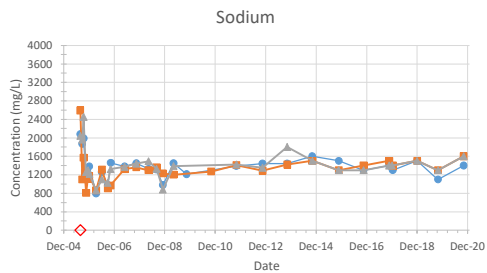
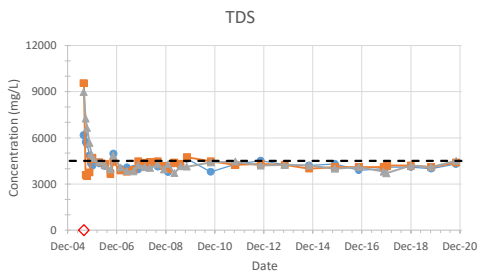
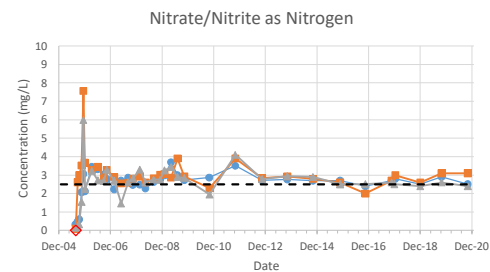
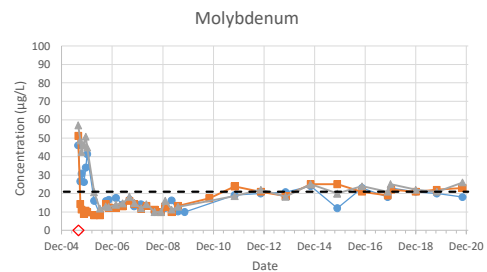
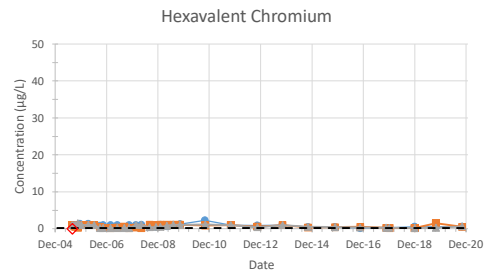
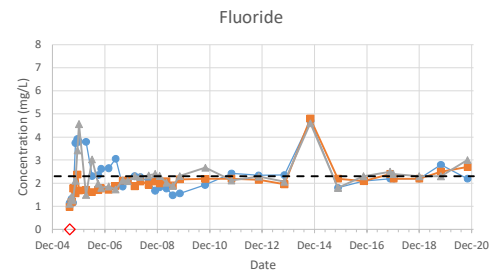
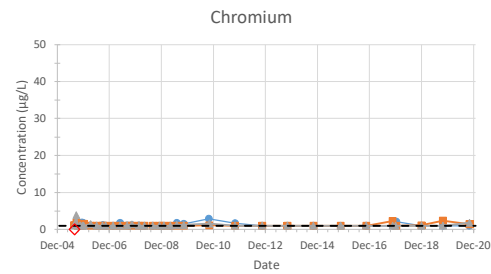
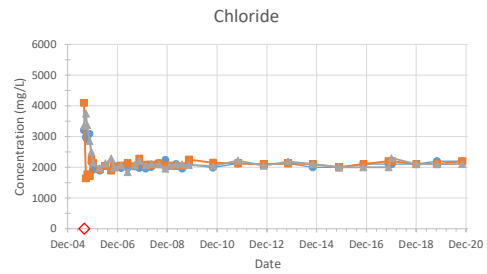
Treated water only on select analytes.



**FIGURE 3B**  
**OW-1M, OW-2M, OW-5M CONCENTRATION**  
**VERSUS TIME PLOTS**

IM-3 COMPLIANCE MONITORING PROGRAM  
 PG&E TOPOCK COMPRESSION STATION,  
 NEEDLES, CALIFORNIA





#### LEGEND

- OW-1D
- OW-2D
- OW-5D
- System Start-up
- Treated Water

#### Notes:

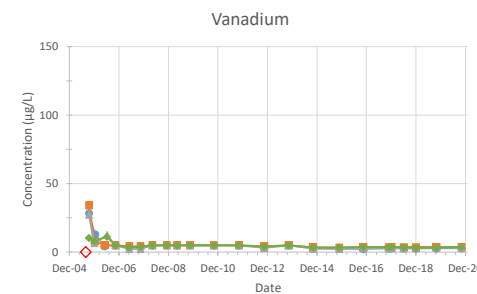
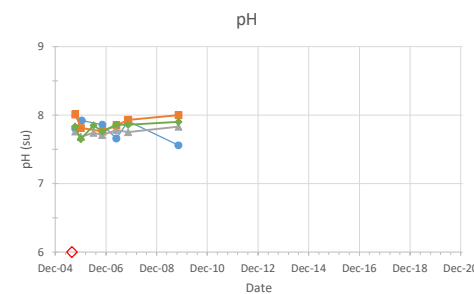
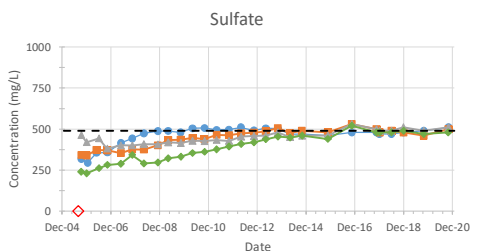
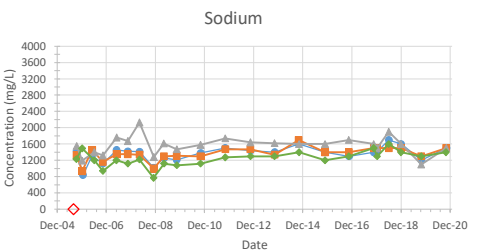
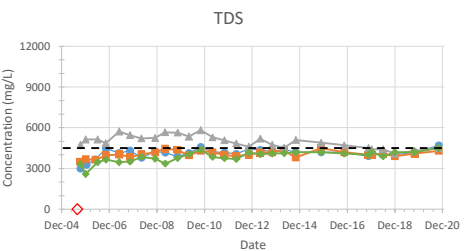
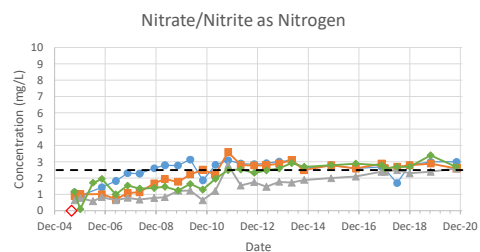
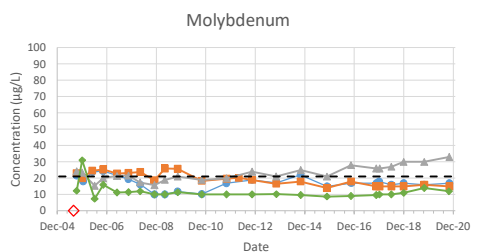
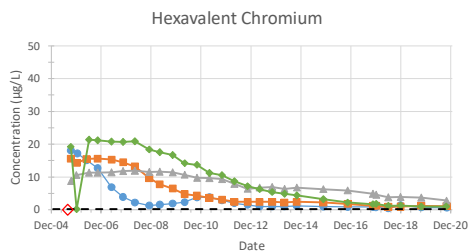
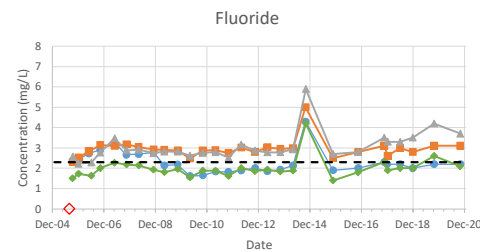
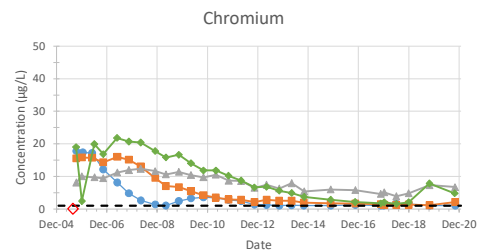
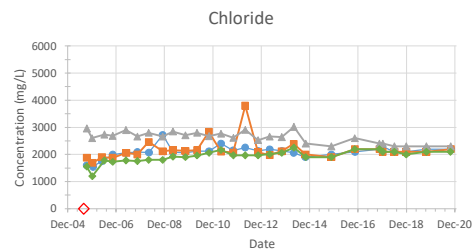
µg/L = micrograms per liter  
mg/L = milligrams per liter  
TDS = total dissolved solids

Treated water only on select analytes.

**FIGURE 3C**  
**OW-1D, OW-2D, OW-5D CONCENTRATION**  
**VERSUS TIME PLOTS**

IM-3 COMPLIANCE MONITORING PROGRAM  
PG&E TOPOCK COMPRESSION STATION,  
NEEDLES, CALIFORNIA





## LEGEND

- CW-1M
- CW-2M
- ▲— CW-3M
- ◆— CW-4M
- ◇ System Start-up
- - - Treated Water

## Notes:

µg/L = micrograms per liter  
mg/L = milligrams per liter  
TDS = total dissolved solids

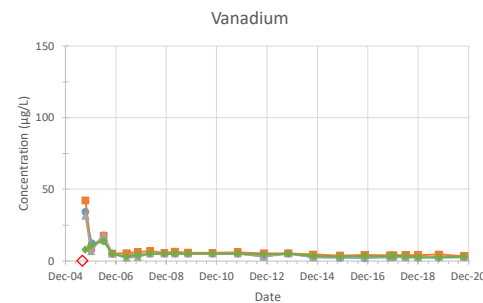
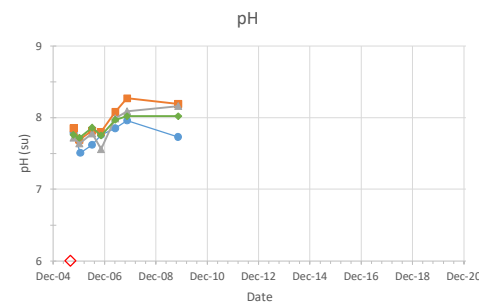
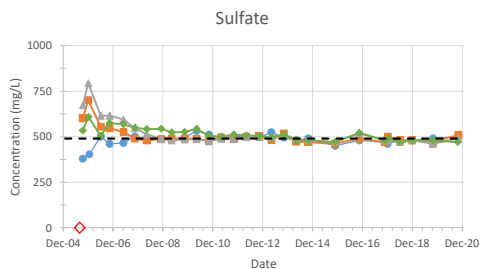
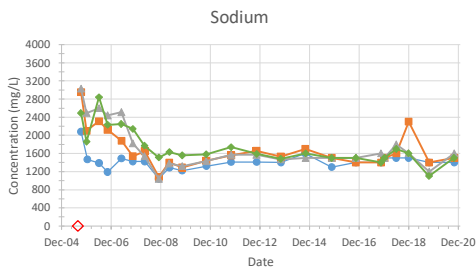
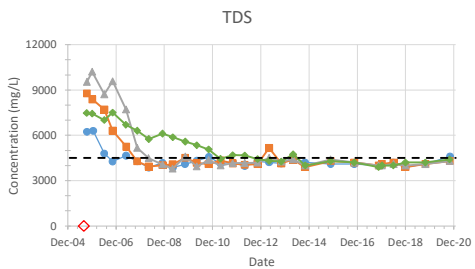
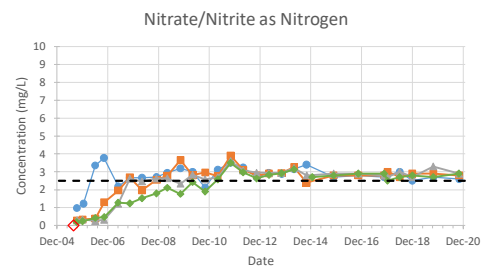
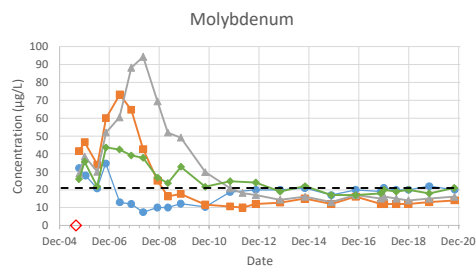
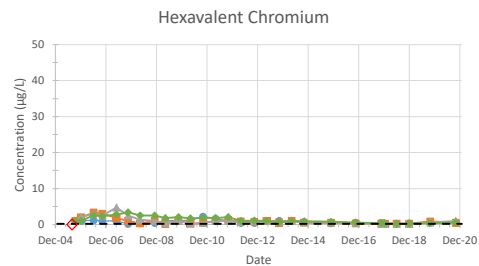
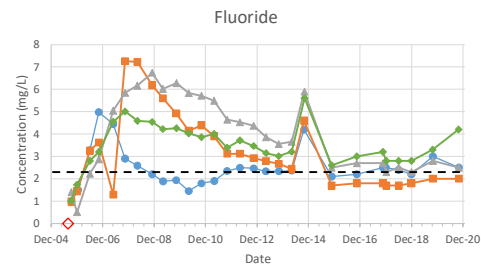
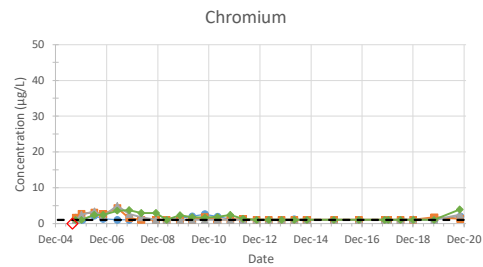
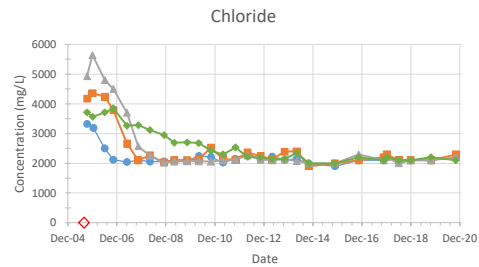
Treated water only on select analytes.

**FIGURE 3D**  
**CW-1M, CW-2M, CW-3M, CW-4M**  
**CONCENTRATION VERSUS TIME PLOTS**

IM-3 COMPLIANCE MONITORING PROGRAM  
PG&E TOPOCK COMPRESSION STATION,  
NEEDLES, CALIFORNIA







#### LEGEND

- CW-1D
- CW-2D
- ▲— CW-3D
- ◆— CW-4D
- ◇ System Start-up
- Treated Water

#### Notes:

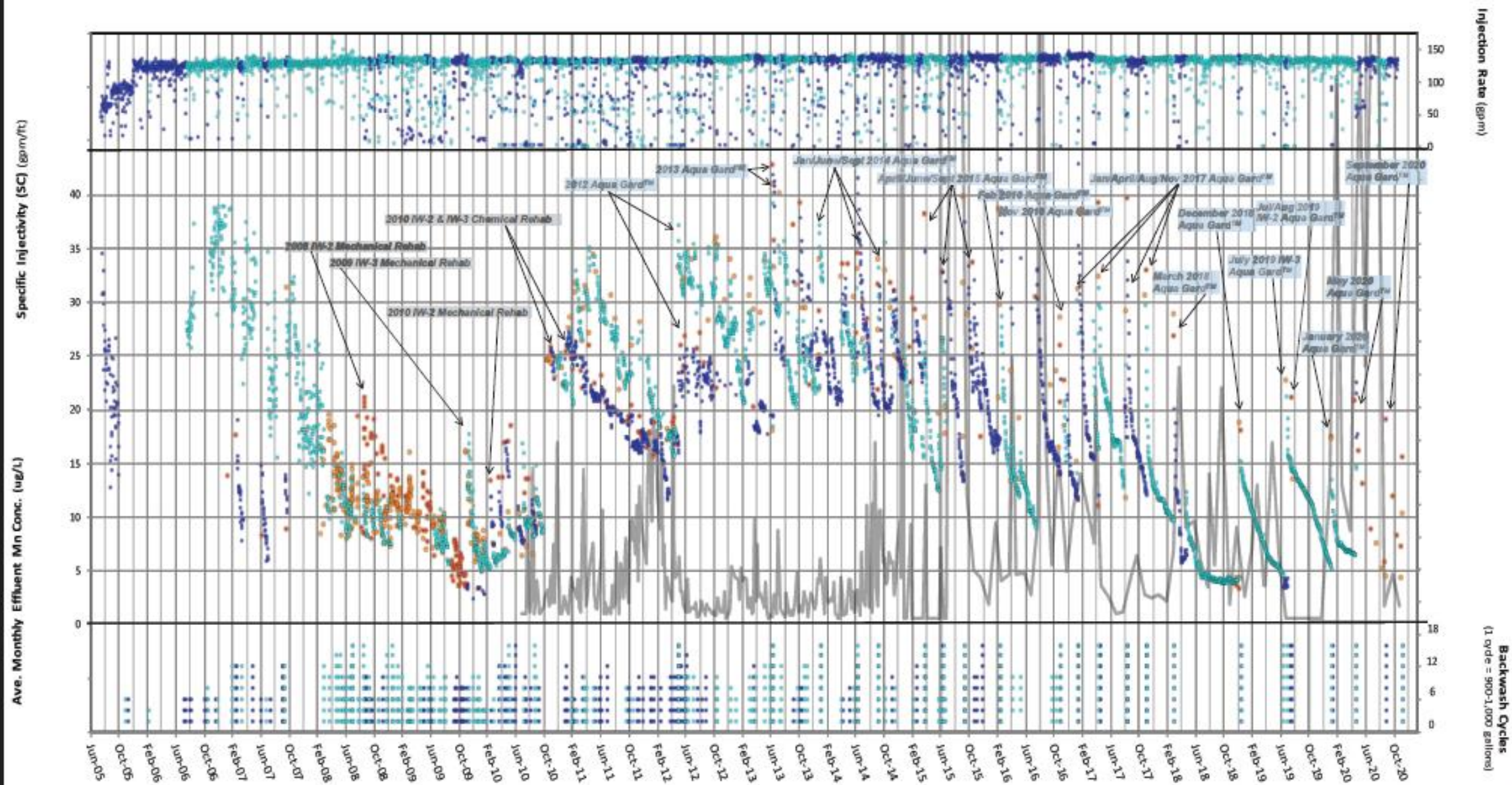
µg/L = micrograms per liter  
mg/L = milligrams per liter  
TDS = total dissolved solids

Treated water only on select analytes.

**FIGURE 3E**  
**CW-1D, CW-2D, CW-3D, CW-4D**  
**CONCENTRATION VERSUS TIME PLOTS**

IM-3 COMPLIANCE MONITORING PROGRAM  
PG&E TOPOCK COMPRESSION STATION,  
NEEDLES, CALIFORNIA



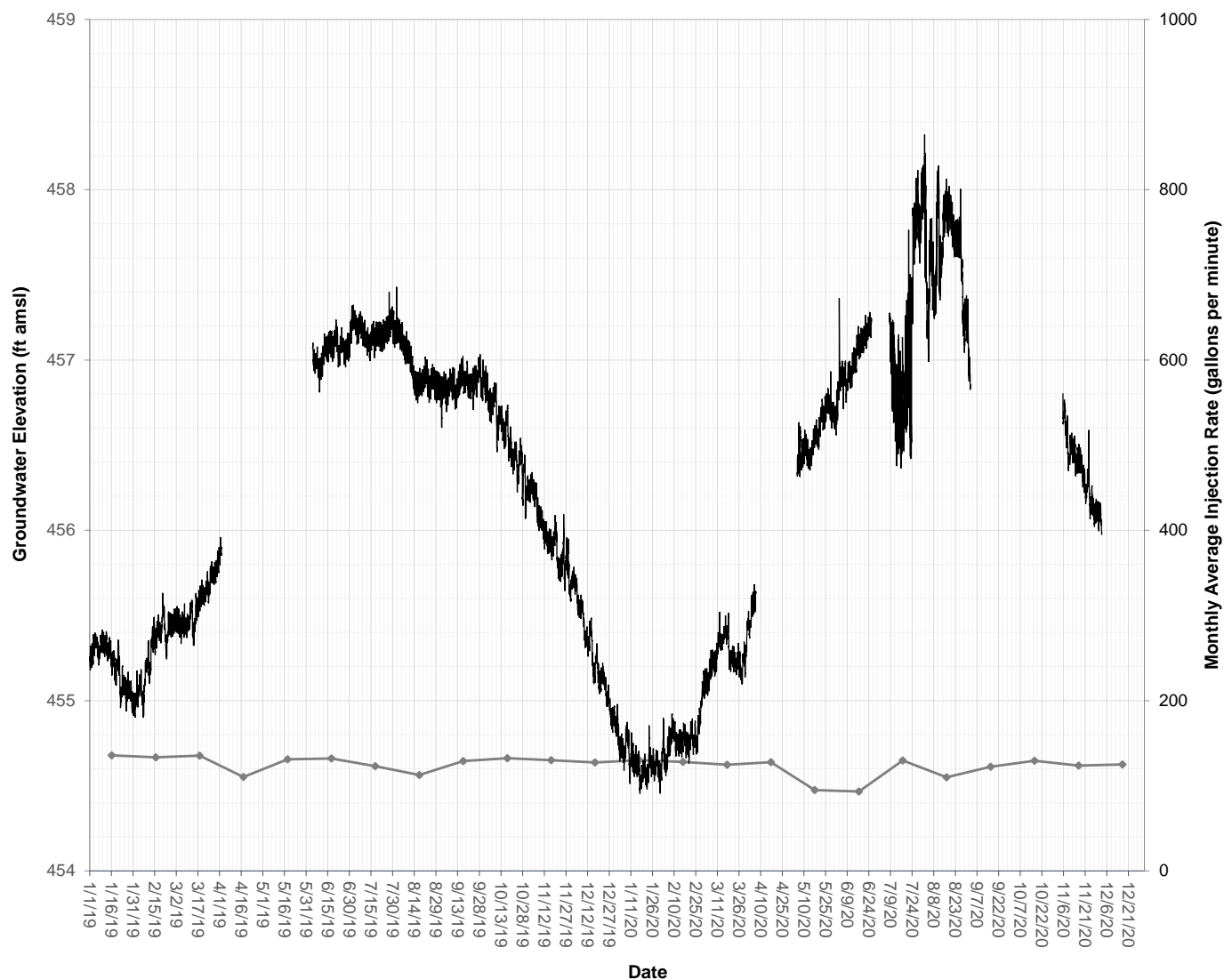


**FIGURE 4**  
**IM-3 OPERATION DATA INJECTION WELL**  
**PERFORMANCE - AUGUST 2005 TO**  
**DECEMBER 2020**

IM-3 COMPLIANCE MONITORING PROGRAM  
 PG&E TOPOCK COMPRESSOR STATION  
 NEEDLES, CALIFORNIA







#### LEGEND

—OW-01S

—◆—Monthly Average Injection Rate

#### Notes:

ft amsl = feet above mean sea level  
IW = injection well

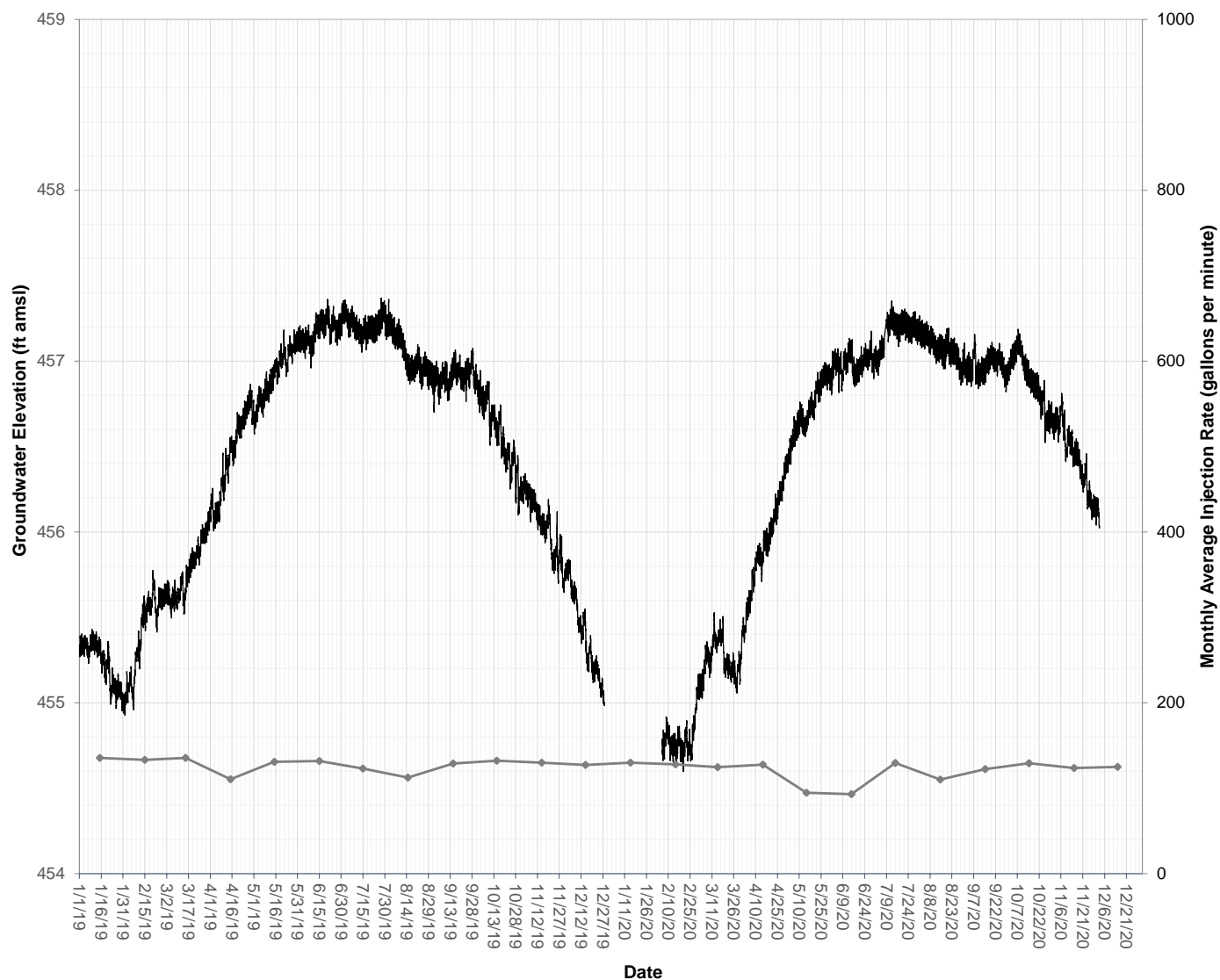
See Tables 1 and 9 for primary injection well in service during the biennial reporting period.

Data are unavailable between April 3 and June 3, 2019, between April 7 and May 4, 2020, between June 26 and July 7, 2020, and between September 3 and November 4, 2020 due to transducer malfunction or failure.

**FIGURE 5A**  
**OW-1S GROUNDWATER ELEVATION**  
**HYDROGRAPH AND IW INJECTION RATE**

IM-3 COMPLIANCE MONITORING PROGRAM  
PG&E TOPOCK COMPRESSION STATION,  
NEEDLES, CALIFORNIA





#### LEGEND

- OW-02S
- Monthly Average Injection Rate

#### Notes:

ft amsl = feet above mean sea level  
IW = injection well

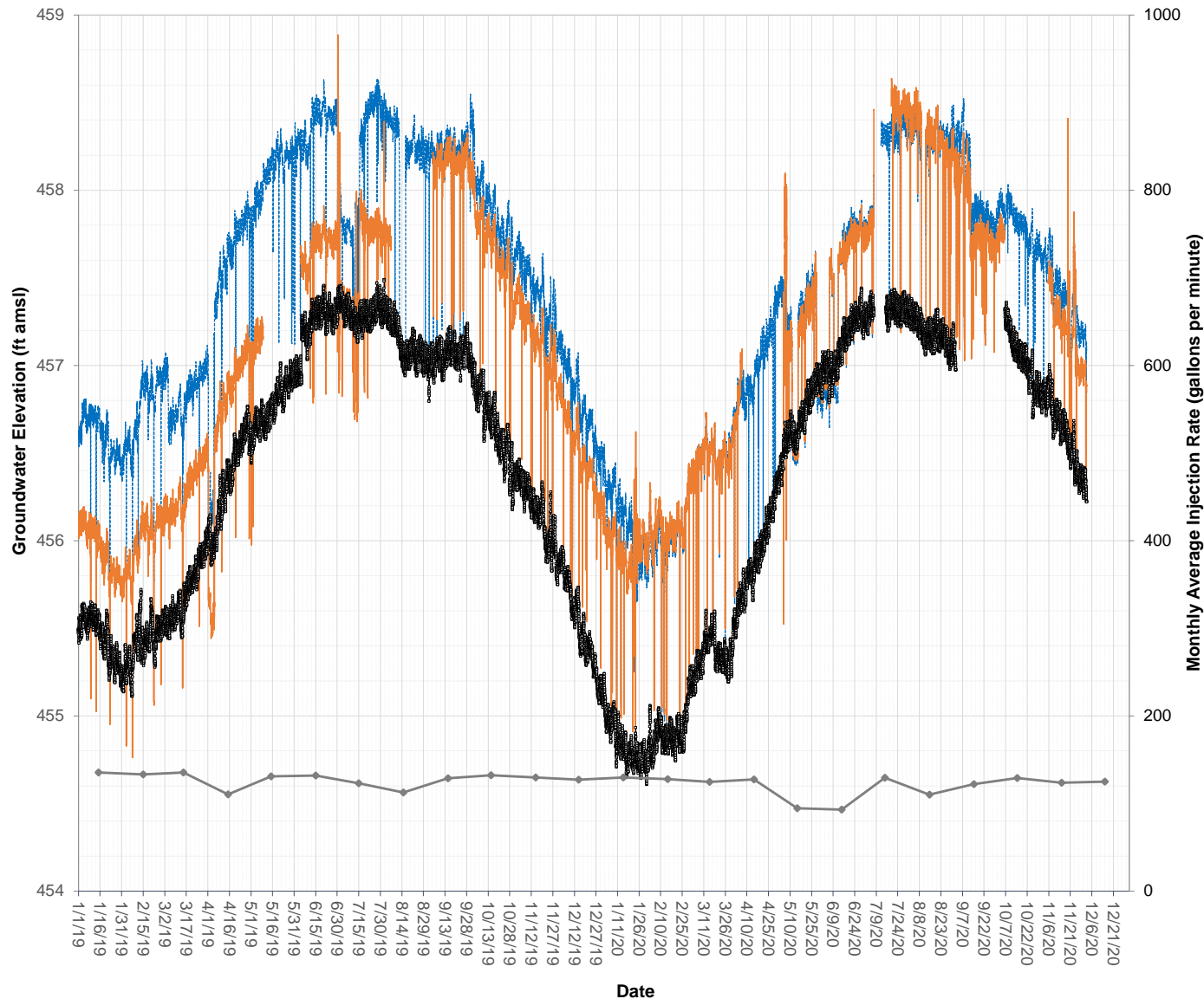
See Tables 1 and 9 for primary injection well in service during the biennial reporting period.

Data are unavailable between December 28, 2019 and February 4, 2020 due to transducer malfunction or failure.

**FIGURE 5B**  
**OW-2S GROUNDWATER ELEVATION**  
**HYDROGRAPH AND IW INJECTION RATE**

IM-3 COMPLIANCE MONITORING PROGRAM  
PG&E TOPOCK COMPRESSION STATION,  
NEEDLES, CALIFORNIA





#### LEGEND

- OW-05D
- OW-05M
- OW-05S
- Monthly Average Injection Rate

#### Notes:

ft amsl = feet above mean sea level  
IW = injection well

See Tables 1 and 9 for primary injection well in service during the biennial reporting period.

Data are unavailable for OW-05S between July 8 and 14, 2020 and between September 3 and October 5, 2020 due to transducer malfunction or failure.

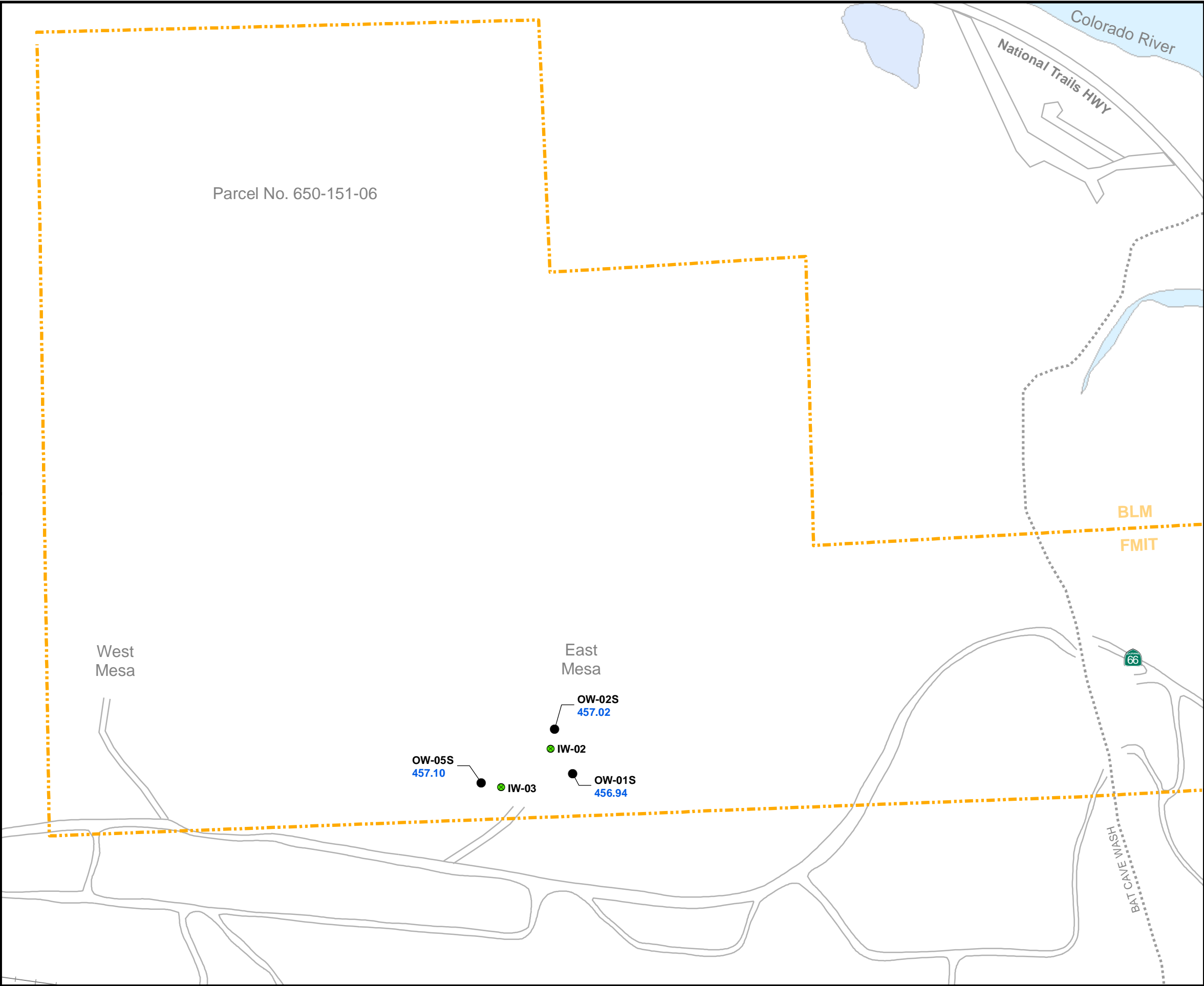
Data are unavailable for OW-05M between May 10 and June 3, 2019, between August 7 and September 3, 2019, between April 7 and May 4, 2020, between July 8 and 18, 2020, and between October 7 and November 4, 2020 due to transducer malfunction or failure.

Data are unavailable for OW-05D between July 8 and 11, 2020 due to transducer malfunction or failure.

**FIGURE 5C**  
**OW-5 GROUNDWATER ELEVATION**  
**HYDROGRAPH AND IW INJECTION RATE**

IM-3 COMPLIANCE MONITORING PROGRAM  
PG&E TOPOCK COMPRESSION STATION,  
NEEDLES, CALIFORNIA



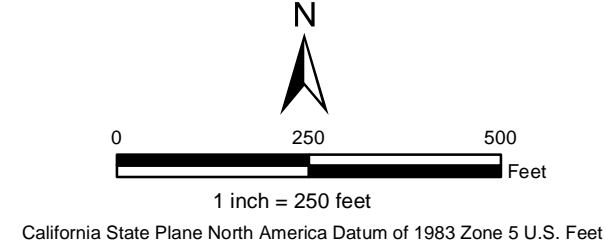


**LEGEND**

- Groundwater Monitoring, Compliance, and Observation Well
- IM-3 Injection Well
- Property Line

**OW-05S** Salinity- and temperature- adjusted groundwater head elevation in feet above mean sea level.  
● **457.10**

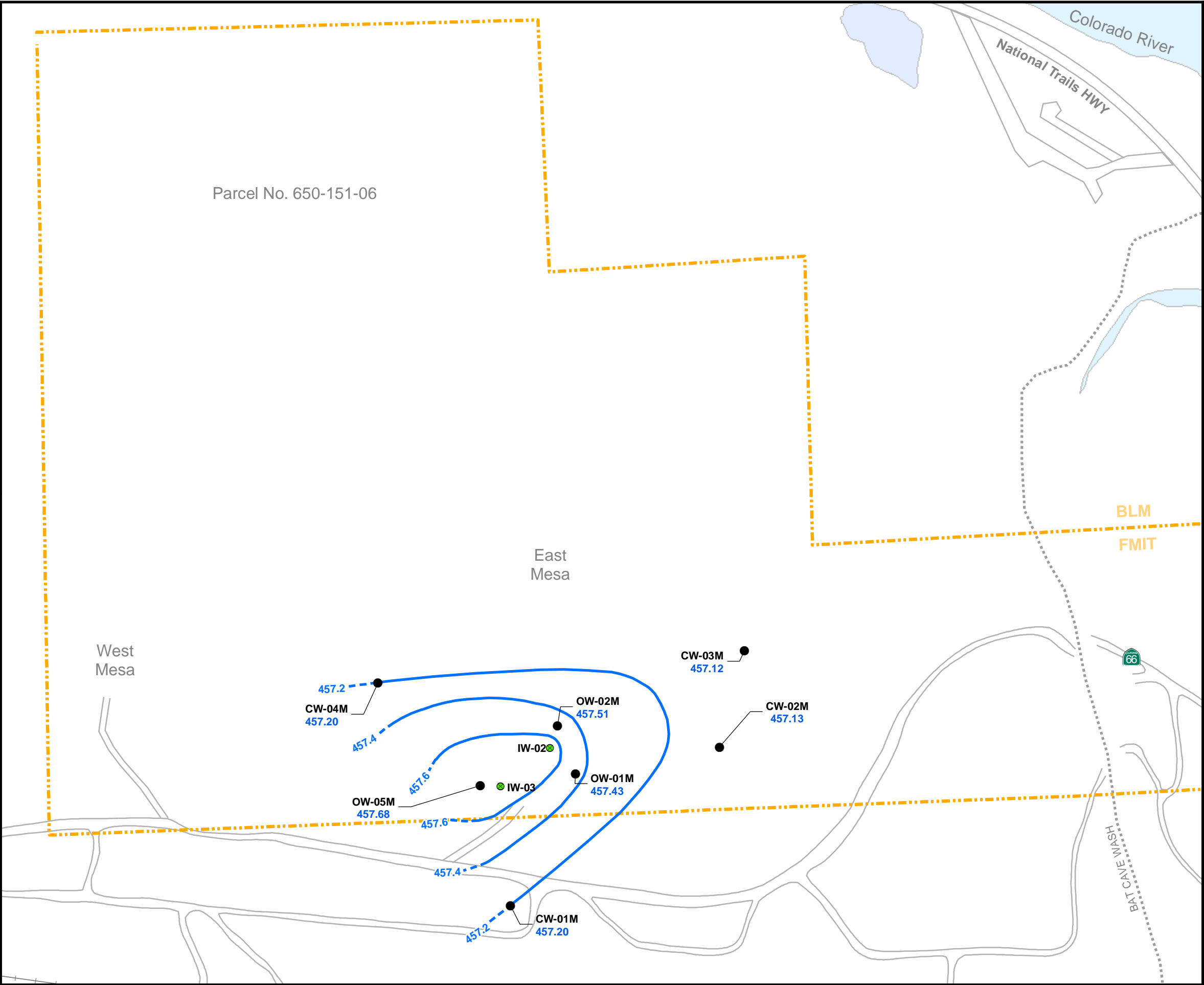
**Notes:**  
BLM = Bureau of Land Management  
FMIT = Fort Mojave Indian Tribe  
Data posted from October 6, 2020 manual water level measurement.



**FIGURE 6A**  
**GROUNDWATER ELEVATIONS FOR SHALLOW WELLS, OCTOBER 6, 2020**

IM-3 COMPLIANCE MONITORING PROGRAM  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA

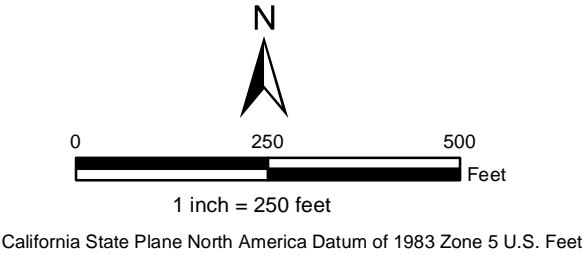




**LEGEND**

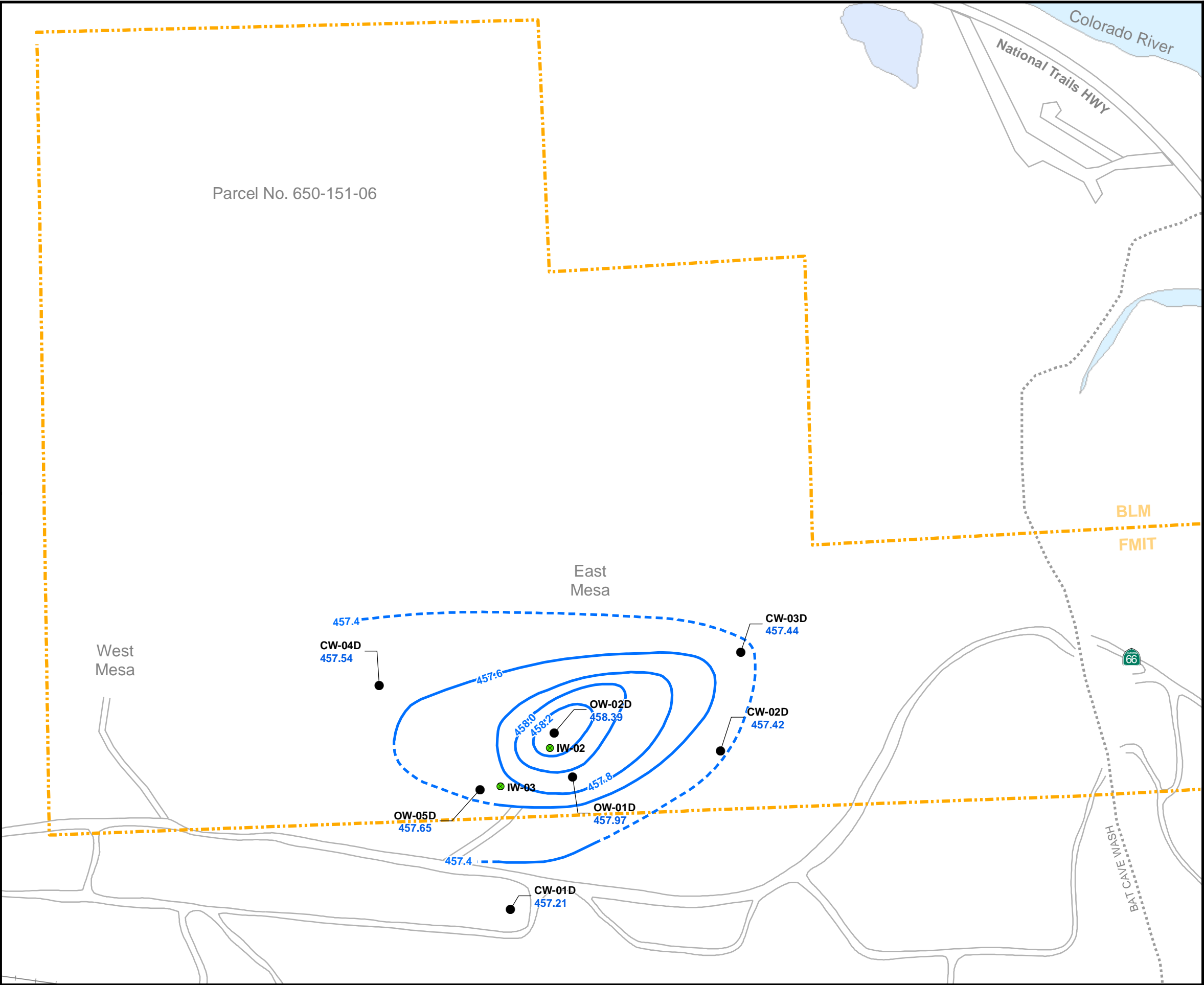
- Groundwater Monitoring, Compliance, and Observation Well
- IM-3 Injection Well
- Property Line
- **OW-05M** Salinity- and temperature- adjusted groundwater head elevation in feet above mean sea level (AMSL).  
● **457.68**
- Groudwater elevation contour in feet above AMSL (0.2 foot interval). Dashed where inferred.

**Notes:**  
BLM = Bureau of Land Management  
FMIT = Fort Mojave Indian Tribe  
Data posted and contoured from October 6, 2020 manual water level measurement.



**FIGURE 6B**  
**GROUNDWATER ELEVATION**  
**CONTOURS FOR MID-DEPTH WELLS,**  
**OCTOBER 6, 2020**  
*IM-3 COMPLIANCE MONITORING PROGRAM*  
*PG&E TOPOCK COMPRESSOR STATION*  
*NEEDLES, CALIFORNIA*





**LEGEND**

- Groundwater Monitoring, Compliance, and Observation Well
- IM-3 Injection Well
- Property Line
- **OW-05D** Salinity- and temperature- adjusted groundwater head elevation in feet above mean sea level (AMSL).  
● **457.65**
- Groudwater elevation contour in feet above AMSL (0.2 foot interval). Dashed where inferred.

**Notes:**  
BLM = Bureau of Land Management  
FMIT = Fort Mojave Indian Tribe  
Data posted and contoured from October 6, 2020 manual water level measurement.

N

0 250 500 Feet

1 inch = 250 feet

California State Plane North America Datum of 1983 Zone 5 U.S. Feet

**FIGURE 6C**  
**GROUNDWATER ELEVATION**  
**CONTOURS FOR DEEP WELLS,**  
**OCTOBER 6, 2020**  
*IM-3 COMPLIANCE MONITORING PROGRAM*  
*PG&E TOPOCK COMPRESSOR STATION*  
*NEEDLES, CALIFORNIA*



# **APPENDIX A**

**Laboratory Reports, 2020 (provided on CD-ROM only)**

**For additional assistance with the information provided in the appendix, please contact Emily Sheu with Arcadis ([emily.sheu@arcadis.com](mailto:emily.sheu@arcadis.com)).**

# **APPENDIX B**

**Field Data Collection Sheets (provided on CD-ROM only)**

**For additional assistance with the information provided in the appendix, please contact Emily Sheu with Arcadis ([emily.sheu@arcadis.com](mailto:emily.sheu@arcadis.com)).**



# **APPENDIX C**

**ARAR Monitoring Information for Groundwater Samples, 2020**

## Appendix C

### ARAR Monitoring Information for Groundwater Samples, 2020

Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report

Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	BCLabs	A4500NH3G	NH3N	JMH	mg/L	ND (0.2)	0.2	0.067
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 120.1	SC	QBM	µS/cm	7,300	0.1	0.1
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.7	KD	DJ	mg/L	9.7	5	0.85
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.7	NAD	DJ	mg/L	1,500	50	9.6
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.7	ALD	DJ	µg/L	ND (50)	50	40
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.7	BD	DJ	mg/L	1.2	0.1	0.074
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.7	CAD	DJ	mg/L	110	0.5	0.085
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.7	FETD	DJ	µg/L	99 J	20	18
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.7	MGD	DJ	mg/L	14	0.1	0.048
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	AGD	CEI	µg/L	ND (0.5)	0.5	0.23
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	BAD	CEI	µg/L	82	1	0.15
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	BED	CEI	µg/L	ND (0.5 J)	0.5	0.042
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	CDD	CEI	µg/L	ND (0.5)	0.5	0.053
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	COBD	CEI	µg/L	ND (0.5)	0.5	0.042
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	CRTD	CEI	µg/L	ND (1.0)	1	0.13
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	CUD	CEI	µg/L	ND (1.0)	1	0.55
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	MND	CEI	µg/L	ND (0.5)	0.5	0.26
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	MOD	CEI	µg/L	17	0.5	0.21
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	NID	CEI	µg/L	ND (1.0 J)	1	0.26
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	PBD	CEI	µg/L	ND (1.0)	1	0.13
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	SBD	CEI	µg/L	ND (0.5)	0.5	0.16
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	VD	CEI	µg/L	2.5	1	0.28
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	ZND	CEI	µg/L	ND (10)	10	2.3
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	ASD	CEI	µg/L	1.3	0.1	0.081
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	SED	CEI	µg/L	4.6	0.5	0.36
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 200.8	TLD	CEI	µg/L	ND (0.5)	0.5	0.19
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 218.6	CR6	RAB	µg/L	0.6	0.2	0.033
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 245.1	HGD	DJ	µg/L	ND (0.2)	0.2	0.13
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 300.0	FL	RAB	mg/L	2.2	0.5	0.048
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 300.0	SO4	RAB	mg/L	510	25	2

## Appendix C

### ARAR Monitoring Information for Groundwater Samples, 2020

Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report

Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	EPA 300.0	CL	RAB	mg/L	2,200	250	17
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	SM 2130 B	TRB	QBM	NTU	1.7 J	0.1	0.1
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	SM 2320 B	ALKT	QBM	mg/L	89	5	1.2
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	SM 2540 C	TDS	QBM	mg/L	4,700	50	50
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	3.0 J	0.25	0.16
CW-01M	CW-01M-LF-Q420	Jecte Boyd	10/8/2020	14:11	ASSET	SW 6010B	FE	DJ	µg/L	170 J	20	18
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	BCLabs	A4500NH3G	NH3N	JMH	mg/L	ND (0.2)	0.2	0.067
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 120.1	SC	QBM	µS/cm	7,300	0.1	0.1
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.7	KD	DJ	mg/L	8.9	5	0.85
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.7	NAD	DJ	mg/L	1,700	50	9.6
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.7	ALD	DJ	µg/L	ND (50)	50	40
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.7	BD	DJ	mg/L	1.2	0.1	0.074
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.7	CAD	DJ	mg/L	120	0.5	0.085
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.7	FETD	DJ	µg/L	120 J	20	18
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.7	MGD	DJ	mg/L	14	0.1	0.048
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	AGD	CEI	µg/L	ND (0.5)	0.5	0.23
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	BAD	CEI	µg/L	81	1	0.15
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	BED	CEI	µg/L	ND (0.5 J)	0.5	0.042
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	CDD	CEI	µg/L	ND (0.5)	0.5	0.053
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	COBD	CEI	µg/L	ND (0.5)	0.5	0.042
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	CRTD	CEI	µg/L	ND (1.0)	1	0.13
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	CUD	CEI	µg/L	ND (1.0)	1	0.55
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	MND	CEI	µg/L	ND (0.5)	0.5	0.26
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	MOD	CEI	µg/L	17	0.5	0.21
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	NID	CEI	µg/L	ND (1.0 J)	1	0.26
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	PBD	CEI	µg/L	ND (1.0)	1	0.13
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	SBD	CEI	µg/L	ND (0.5)	0.5	0.16
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	VD	CEI	µg/L	2.5	1	0.28
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	ZND	CEI	µg/L	ND (10)	10	2.3
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	ASD	CEI	µg/L	1.3	0.1	0.081

## Appendix C

### ARAR Monitoring Information for Groundwater Samples, 2020

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Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	SED	CEI	µg/L	4.7	0.5	0.36
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 200.8	TLD	CEI	µg/L	ND (0.5)	0.5	0.19
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 218.6	CR6	RAB	µg/L	0.58	0.2	0.033
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 245.1	HGD	DJ	µg/L	ND (0.2)	0.2	0.13
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 300.0	FL	RAB	mg/L	2.2	0.5	0.048
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 300.0	SO4	RAB	mg/L	510	25	2
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	EPA 300.0	CL	RAB	mg/L	2,200	250	17
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	SM 2130 B	TRB	QBM	NTU	0.62 J	0.1	0.1
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	SM 2320 B	ALKT	QBM	mg/L	90	5	1.2
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	SM 2540 C	TDS	QBM	mg/L	4,600	50	50
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	5.4 J	0.25	0.16
CW-01M	MW-901-Q420	Jecte Boyd	10/8/2020	14:21	ASSET	SW 6010B	FE	DJ	µg/L	190 J	20	18
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	BCLabs	A4500NH3G	NH3N	JMH	mg/L	ND (0.2)	0.2	0.067
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 120.1	SC	QBM	µS/cm	7,200	0.1	0.1
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.7	KD	DJ	mg/L	10	5	0.85
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.7	NAD	DJ	mg/L	1,400	50	9.6
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.7	ALD	DJ	µg/L	ND (50)	50	40
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.7	BD	DJ	mg/L	1.1	0.1	0.074
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.7	CAD	DJ	mg/L	100	0.5	0.085
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.7	FETD	DJ	µg/L	190 J	20	18
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.7	MGD	DJ	mg/L	21	0.1	0.048
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	AGD	CEI	µg/L	ND (0.5)	0.5	0.23
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	BAD	CEI	µg/L	22	1	0.15
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	BED	CEI	µg/L	ND (0.5 J)	0.5	0.042
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	CDD	CEI	µg/L	ND (0.5)	0.5	0.053
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	COBD	CEI	µg/L	3.4	0.5	0.042
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	CRTD	CEI	µg/L	2.0	1	0.13
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	CUD	CEI	µg/L	ND (1.0)	1	0.55
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	MND	CEI	µg/L	7.5	0.5	0.26
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	MOD	CEI	µg/L	20	0.5	0.21

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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	NID	CEI	µg/L	ND (1.0 J)	1	0.26
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	PBD	CEI	µg/L	ND (1.0)	1	0.13
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	SBD	CEI	µg/L	ND (0.5)	0.5	0.16
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	VD	CEI	µg/L	2.4	1	0.28
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	ZND	CEI	µg/L	ND (10)	10	2.3
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	ASD	CEI	µg/L	1.4	0.1	0.081
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	SED	CEI	µg/L	4.8	0.5	0.36
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 200.8	TLD	CEI	µg/L	ND (0.5)	0.5	0.19
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 218.6	CR6	RAB	µg/L	0.59	0.2	0.033
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 245.1	HGD	DJ	µg/L	ND (0.2)	0.2	0.13
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 300.0	FL	RAB	mg/L	2.5	0.5	0.048
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 300.0	SO4	RAB	mg/L	500	25	2
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	EPA 300.0	CL	RAB	mg/L	2,200	250	17
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	SM 2130 B	TRB	QBM	NTU	8.6	0.1	0.1
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	SM 2320 B	ALKT	QBM	mg/L	90	5	1.2
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	SM 2540 C	TDS	QBM	mg/L	4,600	50	50
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	2.6	0.25	0.16
CW-01D	CW-01D-LF-Q420	Matt Trainotti	10/8/2020	14:10	ASSET	SW 6010B	FE	DJ	µg/L	930 J	20	18
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	BCLabs	A4500NH3G	NH3N	JMH	mg/L	ND (0.2)	0.2	0.067
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 120.1	SC	QBM	µS/cm	7,200	0.1	0.1
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.7	ALD	DJ	µg/L	ND (250)	250	200
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.7	BD	DJ	mg/L	1.7 J	0.5	0.37
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.7	CAD	DJ	mg/L	130	2.5	0.42
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.7	FETD	DJ	µg/L	ND (100)	100	89
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.7	MGD	DJ	mg/L	12 J	0.5	0.24
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.7	KD	DJ	mg/L	6.1 J	5	0.85
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.7	NAD	DJ	mg/L	1,500	50	9.6
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	AGD	CEI	µg/L	ND (0.5)	0.5	0.23
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	BAD	CEI	µg/L	63	1	0.15
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	BED	CEI	µg/L	ND (0.5 J)	0.5	0.042

## Appendix C

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Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	CDD	CEI	µg/L	ND (0.5)	0.5	0.053
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	COBD	CEI	µg/L	2.5	0.5	0.042
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	CRTD	CEI	µg/L	2.1	1	0.13
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	CUD	CEI	µg/L	ND (1.0)	1	0.55
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	MND	CEI	µg/L	1.9	0.5	0.26
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	MOD	CEI	µg/L	15 J	0.5	0.21
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	NID	CEI	µg/L	ND (25)	1	0.26
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	PBD	CEI	µg/L	ND (1.0)	1	0.13
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	SBD	CEI	µg/L	ND (0.5)	0.5	0.16
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	VD	CEI	µg/L	3.7	1	0.28
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	ZND	CEI	µg/L	ND (10 J)	10	2.3
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	ASD	CEI	µg/L	2.1 J	0.1	0.081
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	SED	CEI	µg/L	4.2	0.5	0.36
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 200.8	TLD	CEI	µg/L	ND (0.5)	0.5	0.19
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 218.6	CR6	RAB	µg/L	1.1	0.2	0.033
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 245.1	HGD	DJ	µg/L	ND (0.2)	0.2	0.13
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 300.0	FL	RAB	mg/L	3.1	0.5	0.048
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 300.0	SO4	RAB	mg/L	500	25	2
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	EPA 300.0	CL	RAB	mg/L	2,200	250	17
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	SM 2130 B	TRB	QBM	NTU	6.7	0.1	0.1
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	SM 2320 B	ALKT	QBM	mg/L	59	5	1.2
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	SM 2540 C	TDS	QBM	mg/L	4,300	50	50
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	2.6	0.25	0.16
CW-02M	CW-02M-LF-Q420	Matt Trainotti	10/7/2020	09:50	ASSET	SW 6010B	FE	DBJ	µg/L	1,000	20	18
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	BCLabs	A4500NH3G	NH3N	JMH	mg/L	ND (0.2)	0.2	0.067
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 120.1	SC	QBM	µS/cm	7,400	0.1	0.1
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.7	ALD	DJ	µg/L	ND (250)	250	200
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.7	BD	DJ	mg/L	3.7 J	0.5	0.37
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.7	CAD	DJ	mg/L	150	2.5	0.42
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.7	FETD	DJ	µg/L	ND (100)	100	89

**Appendix C****ARAR Monitoring Information for Groundwater Samples, 2020**

*Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report*

*Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.7	MGD	DJ	mg/L	12 J	0.5	0.24
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.7	KD	DJ	mg/L	8.2 J	5	0.85
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.7	NAD	DJ	mg/L	1,500	50	9.6
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	AGD	CEI	µg/L	ND (0.5)	0.5	0.23
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	BAD	CEI	µg/L	21	1	0.15
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	BED	CEI	µg/L	ND (0.5 J)	0.5	0.042
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	CDD	CEI	µg/L	ND (0.5)	0.5	0.053
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	COBD	CEI	µg/L	4.7	0.5	0.042
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	CRTD	CEI	µg/L	1.3	1	0.13
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	CUD	CEI	µg/L	ND (1.0)	1	0.55
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	MND	CEI	µg/L	0.74	0.5	0.26
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	MOD	CEI	µg/L	14 J	0.5	0.21
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	NID	CEI	µg/L	ND (25)	1	0.26
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	PBD	CEI	µg/L	ND (1.0)	1	0.13
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	SBD	CEI	µg/L	ND (0.5)	0.5	0.16
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	VD	CEI	µg/L	3.2	1	0.28
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	ZND	CEI	µg/L	ND (10 J)	10	2.3
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	ASD	CEI	µg/L	2.2 J	0.1	0.081
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	SED	CEI	µg/L	4.3	0.5	0.36
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 200.8	TLD	CEI	µg/L	ND (0.5)	0.5	0.19
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 218.6	CR6	RAB	µg/L	0.47	0.2	0.033
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 245.1	HGD	DJ	µg/L	ND (0.2)	0.2	0.13
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 300.0	FL	RAB	mg/L	2.0	0.5	0.048
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 300.0	SO4	RAB	mg/L	510	25	2
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	EPA 300.0	CL	RAB	mg/L	2,300	250	17
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	SM 2130 B	TRB	QBM	NTU	0.45	0.1	0.1
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	SM 2320 B	ALKT	QBM	mg/L	66	5	1.2
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	SM 2540 C	TDS	QBM	mg/L	4,300	50	50
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	2.8	0.25	0.16
CW-02D	CW-02D-LF-Q420	Matt Trainotti	10/7/2020	10:52	ASSET	SW 6010B	FE	DBJ	µg/L	ND (20)	20	18

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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	BCLabs	A4500NH3G	NH3N	JMH	mg/L	ND (0.2)	0.2	0.067
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 120.1	SC	QBM	µS/cm	7,300	0.1	0.1
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.7	ALD	DJ	µg/L	ND (250)	250	200
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.7	BD	DJ	mg/L	3.4 J	0.5	0.37
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.7	CAD	DJ	mg/L	170	2.5	0.42
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.7	FETD	DJ	µg/L	ND (100)	100	89
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.7	MGD	DJ	mg/L	17 J	0.5	0.24
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.7	KD	DJ	mg/L	8.0 J	5	0.85
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.7	NAD	DJ	mg/L	1,500	50	9.6
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	AGD	CEI	µg/L	ND (0.5)	0.5	0.23
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	BAD	CEI	µg/L	40	1	0.15
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	BED	CEI	µg/L	ND (0.5 J)	0.5	0.042
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	CDD	CEI	µg/L	ND (0.5)	0.5	0.053
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	COBD	CEI	µg/L	ND (0.5)	0.5	0.042
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	CRTD	CEI	µg/L	6.7	1	0.13
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	CUD	CEI	µg/L	ND (1.0)	1	0.55
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	MND	CEI	µg/L	2.5 J	0.5	0.26
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	MOD	CEI	µg/L	33 J	0.5	0.21
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	NID	CEI	µg/L	ND (25)	1	0.26
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	PBD	CEI	µg/L	ND (1.0)	1	0.13
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	SBD	CEI	µg/L	ND (0.5)	0.5	0.16
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	VD	CEI	µg/L	2.9	1	0.28
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	ZND	CEI	µg/L	ND (10 J)	10	2.3
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	ASD	CEI	µg/L	1.5 J	0.1	0.081
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	SED	CEI	µg/L	3.1	0.5	0.36
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 200.8	TLD	CEI	µg/L	ND (0.5)	0.5	0.19
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 218.6	CR6	RAB	µg/L	2.8	0.2	0.033
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 245.1	HGD	DJ	µg/L	ND (0.2)	0.2	0.13
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 300.0	FL	RAB	mg/L	3.7	0.5	0.048
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 300.0	SO4	RAB	mg/L	510	25	2



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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	EPA 300.0	CL	RAB	mg/L	2,300	250	17
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	SM 2130 B	TRB	QBM	NTU	4.0	0.1	0.1
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	SM 2320 B	ALKT	QBM	mg/L	53	5	1.2
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	SM 2540 C	TDS	QBM	mg/L	4,500	50	50
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	2.6	0.25	0.16
CW-03M	CW-03M-LF-Q420	Jecte Boyd	10/7/2020	12:16	ASSET	SW 6010B	FE	DBJ	µg/L	590 J	20	18
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	BCLabs	A4500NH3G	NH3N	JMH	mg/L	ND (0.2)	0.2	0.067
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 120.1	SC	QBM	µS/cm	7,400	0.1	0.1
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.7	ALD	DJ	µg/L	ND (250)	250	200
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.7	BD	DJ	mg/L	2.9 J	0.5	0.37
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.7	CAD	DJ	mg/L	150	2.5	0.42
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.7	FETD	DJ	µg/L	ND (100)	100	89
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.7	MGD	DJ	mg/L	15 J	0.5	0.24
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.7	KD	DJ	mg/L	8.1 J	5	0.85
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.7	NAD	EGS	mg/L	1,500	50	9.6
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	AGD	CEI	µg/L	ND (0.5)	0.5	0.23
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	BAD	CEI	µg/L	38	1	0.15
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	BED	CEI	µg/L	ND (0.5 J)	0.5	0.042
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	CDD	CEI	µg/L	ND (0.5)	0.5	0.053
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	COBD	CEI	µg/L	ND (0.5)	0.5	0.042
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	CRTD	CEI	µg/L	6.0	1	0.13
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	CUD	CEI	µg/L	ND (1.0)	1	0.55
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	MND	CEI	µg/L	1.4 J	0.5	0.26
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	MOD	CEI	µg/L	34 J	0.5	0.21
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	NID	CEI	µg/L	ND (25)	1	0.26
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	PBD	CEI	µg/L	ND (1.0)	1	0.13
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	SBD	CEI	µg/L	ND (0.5)	0.5	0.16
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	VD	CEI	µg/L	3.0	1	0.28
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	ZND	CEI	µg/L	ND (10 J)	10	2.3
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	ASD	CEI	µg/L	1.5 J	0.1	0.081

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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	SED	CEI	µg/L	3.1	0.5	0.36
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 200.8	TLD	CEI	µg/L	ND (0.5)	0.5	0.19
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 218.6	CR6	RAB	µg/L	2.8	0.2	0.033
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 245.1	HGD	DJ	µg/L	ND (0.2)	0.2	0.13
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 300.0	FL	RAB	mg/L	3.8	0.5	0.048
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 300.0	SO4	RAB	mg/L	510	25	2
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	EPA 300.0	CL	RAB	mg/L	2,300	250	17
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	SM 2130 B	TRB	QBM	NTU	4.2	0.1	0.1
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	SM 2320 B	ALKT	QBM	mg/L	53	5	1.2
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	SM 2540 C	TDS	QBM	mg/L	4,400	50	50
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	2.6	0.25	0.16
CW-03M	MW-902-Q420	Matt Trainotti	10/7/2020	12:26	ASSET	SW 6010B	FE	DBJ	µg/L	440 J	100	89
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	BCLabs	A4500NH3G	NH3N	JMH	mg/L	ND (0.2)	0.2	0.067
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 120.1	SC	QBM	µS/cm	7,200	0.1	0.1
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.7	ALD	DJ	µg/L	ND (250)	250	200
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.7	BD	DJ	mg/L	2.6 J	0.5	0.37
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.7	CAD	DJ	mg/L	79	2.5	0.42
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.7	FETD	DJ	µg/L	130 J	100	89
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.7	MGD	DJ	mg/L	7.3 J	0.5	0.24
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.7	KD	DJ	mg/L	8.7 J	5	0.85
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.7	NAD	DJ	mg/L	1,600	50	9.6
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	AGD	CEI	µg/L	ND (0.5)	0.5	0.23
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	BAD	CEI	µg/L	19	1	0.15
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	BED	CEI	µg/L	ND (0.5 J)	0.5	0.042
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	CDD	CEI	µg/L	ND (0.5)	0.5	0.053
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	COBD	CEI	µg/L	0.84	0.5	0.042
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	CRTD	CEI	µg/L	2.5	1	0.13
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	CUD	CEI	µg/L	ND (1.0)	1	0.55
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	MND	CEI	µg/L	14	0.5	0.26
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	MOD	CEI	µg/L	16 J	0.5	0.21

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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	NID	CEI	µg/L	ND (25)	1	0.26
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	PBD	CEI	µg/L	ND (1.0)	1	0.13
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	SBD	CEI	µg/L	ND (0.5)	0.5	0.16
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	VD	CEI	µg/L	2.7	1	0.28
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	ZND	CEI	µg/L	ND (10 J)	10	2.3
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	ASD	CEI	µg/L	1.8 J	0.1	0.081
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	SED	CEI	µg/L	4.4	0.5	0.36
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 200.8	TLD	CEI	µg/L	ND (0.5)	0.5	0.19
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 218.6	CR6	RAB	µg/L	1.0	0.2	0.033
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 245.1	HGD	DJ	µg/L	ND (0.2)	0.2	0.13
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 300.0	FL	RAB	mg/L	2.5	0.5	0.048
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 300.0	SO4	RAB	mg/L	490	25	2
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	EPA 300.0	CL	RAB	mg/L	2,200	250	17
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	SM 2130 B	TRB	QBM	NTU	68	0.1	0.1
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	SM 2320 B	ALKT	QBM	mg/L	68	5	1.2
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	SM 2540 C	TDS	QBM	mg/L	4,300	50	50
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	2.9	0.25	0.16
CW-03D	CW-03D-LF-Q420	Matt Trainotti	10/7/2020	12:15	ASSET	SW 6010B	FE	DBJ	µg/L	3,400	20	18
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	BCLabs	A4500NH3G	NH3N	JMH	mg/L	ND (0.2)	0.2	0.067
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 120.1	SC	LR	µS/cm	6,700	0.1	0.1
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.7	ALD	DJ	µg/L	ND (50)	50	40
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.7	BD	DJ	mg/L	1.2	0.1	0.074
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.7	CAD	DJ	mg/L	150 J	0.5	0.085
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.7	FETD	DJ	µg/L	60 J	20	18
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.7	MGD	DJ	mg/L	16 J	0.1	0.048
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.7	KD	DJ	mg/L	13	5	0.85
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.7	NAD	DJ	mg/L	1,400	50	9.6
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	AGD	CEI	µg/L	ND (0.5)	0.5	0.23
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	BAD	CEI	µg/L	100	1	0.15
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	BED	CEI	µg/L	ND (0.5 J)	0.5	0.042

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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	CDD	CEI	µg/L	ND (0.5)	0.5	0.053
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	COBD	CEI	µg/L	ND (0.5)	0.5	0.042
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	CRTD	CEI	µg/L	4.8	1	0.13
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	MND	CEI	µg/L	2.2	0.5	0.26
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	NID	CEI	µg/L	ND (25)	1	0.26
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	PBD	CEI	µg/L	ND (1.0)	1	0.13
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	SBD	CEI	µg/L	ND (0.5)	0.5	0.16
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	TLD	CEI	µg/L	ND (0.5)	0.5	0.19
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	VD	CEI	µg/L	3.6	1	0.28
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	ZND	CEI	µg/L	ND (10 J)	10	2.3
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	ASD	CEI	µg/L	ND (0.1)	0.1	0.081
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	MOD	CEI	µg/L	12	0.5	0.21
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	SED	CEI	µg/L	5.9	0.5	0.36
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 200.8	CUD	CEI	µg/L	ND (1.0)	1	0.55
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 218.6	CR6	RAB	µg/L	1.0	0.2	0.033
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 245.1	HGD	DJ	µg/L	ND (0.2)	0.2	0.13
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 300.0	FL	RAB	mg/L	2.1	0.5	0.048
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 300.0	SO4	RAB	mg/L	480	25	2
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	EPA 300.0	CL	RAB	mg/L	2,100	250	17
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	SM 2130 B	TRB	LR	NTU	11	0.1	0.1
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	SM 2320 B	ALKT	LR	mg/L	60	5	1.2
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	SM 2540 C	TDS	LR	mg/L	4,500	50	50
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	2.7	0.25	0.16
CW-04M	CW-04M-LF-Q420	Reggie Tep	10/2/2020	09:27	ASSET	SW 6010B	FE	DBJ	µg/L	290	20	18
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	BCLabs	A4500NH3G	NH3N	JMH	mg/L	0.21	0.2	0.067
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 120.1	SC	LR	µS/cm	6,900	0.1	0.1
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.7	ALD	DJ	µg/L	ND (50)	50	40
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.7	BD	DJ	mg/L	1.2	0.1	0.074
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.7	CAD	DJ	mg/L	100 J	0.5	0.085
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.7	FETD	DJ	µg/L	58 J	20	18

**Appendix C****ARAR Monitoring Information for Groundwater Samples, 2020**

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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.7	MGD	DJ	mg/L	11 J	0.1	0.048
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.7	KD	DJ	mg/L	11	5	0.85
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.7	NAD	DJ	mg/L	1,500	50	9.6
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	AGD	CEI	µg/L	ND (0.5)	0.5	0.23
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	BAD	CEI	µg/L	23	1	0.15
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	BED	CEI	µg/L	ND (0.5 J)	0.5	0.042
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	CDD	CEI	µg/L	ND (0.5)	0.5	0.053
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	COBD	CEI	µg/L	ND (0.5)	0.5	0.042
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	CRTD	CEI	µg/L	3.9	1	0.13
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	MND	CEI	µg/L	1.6	0.5	0.26
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	NID	CEI	µg/L	ND (25)	1	0.26
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	PBD	CEI	µg/L	ND (1.0)	1	0.13
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	SBD	CEI	µg/L	ND (0.5)	0.5	0.16
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	TLD	CEI	µg/L	ND (0.5)	0.5	0.19
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	VD	CEI	µg/L	3.0	1	0.28
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	ZND	CEI	µg/L	ND (10 J)	10	2.3
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	ASD	CEI	µg/L	ND (0.1)	0.1	0.081
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	MOD	CEI	µg/L	21	0.5	0.21
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	SED	CEI	µg/L	3.6	0.5	0.36
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 200.8	CUD	CEI	µg/L	ND (1.0)	1	0.55
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 218.6	CR6	RAB	µg/L	0.53	0.2	0.033
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 245.1	HGD	DJ	µg/L	ND (0.2)	0.2	0.13
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 300.0	FL	RAB	mg/L	4.2	0.5	0.048
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 300.0	SO4	RAB	mg/L	470	25	2
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	EPA 300.0	CL	RAB	mg/L	2,100	250	17
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	SM 2130 B	TRB	LR	NTU	7.2	0.1	0.1
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	SM 2320 B	ALKT	LR	mg/L	59	5	1.2
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	SM 2540 C	TDS	LR	mg/L	4,400	50	50
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	2.9	0.25	0.16
CW-04D	CW-04D-LF-Q420	Reggie Tep	10/2/2020	08:36	ASSET	SW 6010B	FE	DBJ	µg/L	99	20	18

## Appendix C

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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
OW-01S	OW-01S-Q420	Matt Trainotti	10/7/2020	13:35	ASSET	EPA 120.1	SC	QBM	µS/cm	6,800	0.1	0.1
OW-01S	OW-01S-Q420	Matt Trainotti	10/7/2020	13:35	ASSET	EPA 200.7	NAD	DJ	mg/L	1,400	25	4.8
OW-01S	OW-01S-Q420	Matt Trainotti	10/7/2020	13:35	ASSET	EPA 200.8	CRTD	CEI	µg/L	5.2	1	0.13
OW-01S	OW-01S-Q420	Matt Trainotti	10/7/2020	13:35	ASSET	EPA 200.8	MOD	CEI	µg/L	2.1 J	0.5	0.21
OW-01S	OW-01S-Q420	Matt Trainotti	10/7/2020	13:35	ASSET	EPA 218.6	CR6	RAB	µg/L	2.6	0.2	0.033
OW-01S	OW-01S-Q420	Matt Trainotti	10/7/2020	13:35	ASSET	EPA 300.0	FL	RAB	mg/L	1.3	0.5	0.048
OW-01S	OW-01S-Q420	Matt Trainotti	10/7/2020	13:35	ASSET	EPA 300.0	SO4	RAB	mg/L	470	25	2
OW-01S	OW-01S-Q420	Matt Trainotti	10/7/2020	13:35	ASSET	EPA 300.0	CL	RAB	mg/L	2,100	250	17
OW-01S	OW-01S-Q420	Matt Trainotti	10/7/2020	13:35	ASSET	SM 2130 B	TRB	QBM	NTU	1.8	0.1	0.1
OW-01S	OW-01S-Q420	Matt Trainotti	10/7/2020	13:35	ASSET	SM 2540 C	TDS	QBM	mg/L	4,500	50	50
OW-01S	OW-01S-Q420	Matt Trainotti	10/7/2020	13:35	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	2.9	0.25	0.16
OW-01M	OW-01M-Q420	Jecte Boyd	10/7/2020	13:41	ASSET	EPA 120.1	SC	QBM	µS/cm	7,300	0.1	0.1
OW-01M	OW-01M-Q420	Jecte Boyd	10/7/2020	13:41	ASSET	EPA 200.7	NAD	DJ	mg/L	1,400	50	9.6
OW-01M	OW-01M-Q420	Jecte Boyd	10/7/2020	13:41	ASSET	EPA 200.8	CRTD	CEI	µg/L	5.1	1	0.13
OW-01M	OW-01M-Q420	Jecte Boyd	10/7/2020	13:41	ASSET	EPA 200.8	MOD	CEI	µg/L	18 J	0.5	0.21
OW-01M	OW-01M-Q420	Jecte Boyd	10/7/2020	13:41	ASSET	EPA 218.6	CR6	RAB	µg/L	2.3	0.2	0.033
OW-01M	OW-01M-Q420	Jecte Boyd	10/7/2020	13:41	ASSET	EPA 300.0	FL	RAB	mg/L	2.2	0.5	0.048
OW-01M	OW-01M-Q420	Jecte Boyd	10/7/2020	13:41	ASSET	EPA 300.0	SO4	RAB	mg/L	490	25	2
OW-01M	OW-01M-Q420	Jecte Boyd	10/7/2020	13:41	ASSET	EPA 300.0	CL	RAB	mg/L	2,200	250	17
OW-01M	OW-01M-Q420	Jecte Boyd	10/7/2020	13:41	ASSET	SM 2130 B	TRB	QBM	NTU	7.0	0.1	0.1
OW-01M	OW-01M-Q420	Jecte Boyd	10/7/2020	13:41	ASSET	SM 2540 C	TDS	QBM	mg/L	4,300	50	50
OW-01M	OW-01M-Q420	Jecte Boyd	10/7/2020	13:41	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	2.7	0.25	0.16
OW-01D	OW-01D-Q420	Matt Trainotti	10/7/2020	14:26	ASSET	EPA 120.1	SC	QBM	µS/cm	7,100	0.1	0.1
OW-01D	OW-01D-Q420	Matt Trainotti	10/7/2020	14:26	ASSET	EPA 200.7	NAD	DJ	mg/L	1,400	50	9.6
OW-01D	OW-01D-Q420	Matt Trainotti	10/7/2020	14:26	ASSET	EPA 200.8	CRTD	CEI	µg/L	ND (1.0)	1	0.13
OW-01D	OW-01D-Q420	Matt Trainotti	10/7/2020	14:26	ASSET	EPA 200.8	MOD	CEI	µg/L	18 J	0.5	0.21
OW-01D	OW-01D-Q420	Matt Trainotti	10/7/2020	14:26	ASSET	EPA 218.6	CR6	RAB	µg/L	0.6	0.2	0.033
OW-01D	OW-01D-Q420	Matt Trainotti	10/7/2020	14:26	ASSET	EPA 300.0	FL	RAB	mg/L	2.2	0.5	0.048
OW-01D	OW-01D-Q420	Matt Trainotti	10/7/2020	14:26	ASSET	EPA 300.0	SO4	RAB	mg/L	480	25	2
OW-01D	OW-01D-Q420	Matt Trainotti	10/7/2020	14:26	ASSET	EPA 300.0	CL	RAB	mg/L	2,200	250	17

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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
OW-01D	OW-01D-Q420	Matt Trainotti	10/7/2020	14:26	ASSET	SM 2130 B	TRB	QBM	NTU	0.33	0.1	0.1
OW-01D	OW-01D-Q420	Matt Trainotti	10/7/2020	14:26	ASSET	SM 2540 C	TDS	QBM	mg/L	4,300	50	50
OW-01D	OW-01D-Q420	Matt Trainotti	10/7/2020	14:26	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	2.5	0.25	0.16
OW-01D	MW-903-Q420	Matt Trainotti	10/7/2020	14:36	ASSET	EPA 120.1	SC	QBM	µS/cm	7,200	0.1	0.1
OW-01D	MW-903-Q420	Matt Trainotti	10/7/2020	14:36	ASSET	EPA 200.7	NAD	DJ	mg/L	1,400	50	9.6
OW-01D	MW-903-Q420	Matt Trainotti	10/7/2020	14:36	ASSET	EPA 200.8	CRTD	CEI	µg/L	ND (1.0)	1	0.13
OW-01D	MW-903-Q420	Matt Trainotti	10/7/2020	14:36	ASSET	EPA 200.8	MOD	CEI	µg/L	18 J	0.5	0.21
OW-01D	MW-903-Q420	Matt Trainotti	10/7/2020	14:36	ASSET	EPA 218.6	CR6	RAB	µg/L	0.59	0.2	0.033
OW-01D	MW-903-Q420	Matt Trainotti	10/7/2020	14:36	ASSET	EPA 300.0	FL	RAB	mg/L	2.0	0.5	0.048
OW-01D	MW-903-Q420	Matt Trainotti	10/7/2020	14:36	ASSET	EPA 300.0	SO4	RAB	mg/L	480	25	2
OW-01D	MW-903-Q420	Matt Trainotti	10/7/2020	14:36	ASSET	EPA 300.0	CL	RAB	mg/L	2,200	250	17
OW-01D	MW-903-Q420	Matt Trainotti	10/7/2020	14:36	ASSET	SM 2130 B	TRB	EGS	NTU	0.31	0.1	0.1
OW-01D	MW-903-Q420	Matt Trainotti	10/7/2020	14:36	ASSET	SM 2540 C	TDS	QBM	mg/L	4,300	50	50
OW-01D	MW-903-Q420	Matt Trainotti	10/7/2020	14:36	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	2.5	0.25	0.16
OW-02S	OW-02S-Q420	Jecte Boyd	10/8/2020	10:57	ASSET	EPA 120.1	SC	QBM	µS/cm	3,700	0.1	0.1
OW-02S	OW-02S-Q420	Jecte Boyd	10/8/2020	10:57	ASSET	EPA 200.7	NAD	DJ	mg/L	670	25	4.8
OW-02S	OW-02S-Q420	Jecte Boyd	10/8/2020	10:57	ASSET	EPA 200.8	CRTD	CEI	µg/L	16	1	0.13
OW-02S	OW-02S-Q420	Jecte Boyd	10/8/2020	10:57	ASSET	EPA 200.8	MOD	CEI	µg/L	22	0.5	0.21
OW-02S	OW-02S-Q420	Jecte Boyd	10/8/2020	10:57	ASSET	EPA 218.6	CR6	RAB	µg/L	16	1	0.17
OW-02S	OW-02S-Q420	Jecte Boyd	10/8/2020	10:57	ASSET	EPA 300.0	FL	RAB	mg/L	3.2	0.5	0.048
OW-02S	OW-02S-Q420	Jecte Boyd	10/8/2020	10:57	ASSET	EPA 300.0	SO4	RAB	mg/L	180	10	0.8
OW-02S	OW-02S-Q420	Jecte Boyd	10/8/2020	10:57	ASSET	EPA 300.0	CL	RAB	mg/L	1,100	100	7
OW-02S	OW-02S-Q420	Jecte Boyd	10/8/2020	10:57	ASSET	SM 2130 B	TRB	QBM	NTU	1.2	0.1	0.1
OW-02S	OW-02S-Q420	Jecte Boyd	10/8/2020	10:57	ASSET	SM 2540 C	TDS	QBM	mg/L	2,600	25	25
OW-02S	OW-02S-Q420	Jecte Boyd	10/8/2020	10:57	ASSET	SM 4500-NO3 F	NO3NO2N	EGS	mg/L	3.2	0.25	0.16
OW-02M	OW-02M-Q420	Jecte Boyd	10/8/2020	09:11	ASSET	EPA 120.1	SC	QBM	µS/cm	7,100	0.1	0.1
OW-02M	OW-02M-Q420	Jecte Boyd	10/8/2020	09:11	ASSET	EPA 200.7	NAD	DJ	mg/L	1,600	50	9.6
OW-02M	OW-02M-Q420	Jecte Boyd	10/8/2020	09:11	ASSET	EPA 200.8	CRTD	CEI	µg/L	3.2	1	0.13
OW-02M	OW-02M-Q420	Jecte Boyd	10/8/2020	09:11	ASSET	EPA 200.8	MOD	CEI	µg/L	20	0.5	0.21
OW-02M	OW-02M-Q420	Jecte Boyd	10/8/2020	09:11	ASSET	EPA 218.6	CR6	RAB	µg/L	2.0	0.2	0.033

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Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
OW-02M	OW-02M-Q420	Jecte Boyd	10/8/2020	09:11	ASSET	EPA 300.0	FL	RAB	mg/L	2.1	0.5	0.048
OW-02M	OW-02M-Q420	Jecte Boyd	10/8/2020	09:11	ASSET	EPA 300.0	SO4	RAB	mg/L	490	25	2
OW-02M	OW-02M-Q420	Jecte Boyd	10/8/2020	09:11	ASSET	EPA 300.0	CL	RAB	mg/L	2,200	250	17
OW-02M	OW-02M-Q420	Jecte Boyd	10/8/2020	09:11	ASSET	SM 2130 B	TRB	QBM	NTU	0.52	0.1	0.1
OW-02M	OW-02M-Q420	Jecte Boyd	10/8/2020	09:11	ASSET	SM 2540 C	TDS	QBM	mg/L	4,400	50	50
OW-02M	OW-02M-Q420	Jecte Boyd	10/8/2020	09:11	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	2.8	0.25	0.16
OW-02D	OW-02D-Q420	Matt Trainotti	10/8/2020	10:19	ASSET	EPA 120.1	SC	QBM	µS/cm	7,100	0.1	0.1
OW-02D	OW-02D-Q420	Matt Trainotti	10/8/2020	10:19	ASSET	EPA 200.7	NAD	DJ	mg/L	1,600	50	9.6
OW-02D	OW-02D-Q420	Matt Trainotti	10/8/2020	10:19	ASSET	EPA 200.8	CRTD	CEI	µg/L	1.4	1	0.13
OW-02D	OW-02D-Q420	Matt Trainotti	10/8/2020	10:19	ASSET	EPA 200.8	MOD	CEI	µg/L	23	0.5	0.21
OW-02D	OW-02D-Q420	Matt Trainotti	10/8/2020	10:19	ASSET	EPA 218.6	CR6	RAB	µg/L	0.5	0.2	0.033
OW-02D	OW-02D-Q420	Matt Trainotti	10/8/2020	10:19	ASSET	EPA 300.0	FL	RAB	mg/L	2.7	0.5	0.048
OW-02D	OW-02D-Q420	Matt Trainotti	10/8/2020	10:19	ASSET	EPA 300.0	SO4	RAB	mg/L	490	25	2
OW-02D	OW-02D-Q420	Matt Trainotti	10/8/2020	10:19	ASSET	EPA 300.0	CL	RAB	mg/L	2,200	250	17
OW-02D	OW-02D-Q420	Matt Trainotti	10/8/2020	10:19	ASSET	SM 2130 B	TRB	QBM	NTU	3.4	0.1	0.1
OW-02D	OW-02D-Q420	Matt Trainotti	10/8/2020	10:19	ASSET	SM 2540 C	TDS	QBM	mg/L	4,400	50	50
OW-02D	OW-02D-Q420	Matt Trainotti	10/8/2020	10:19	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	3.1	0.25	0.16
OW-05S	OW-05S-LF-Q420	Jecte Boyd	10/8/2020	11:51	ASSET	EPA 120.1	SC	QBM	µS/cm	5,100	0.1	0.1
OW-05S	OW-05S-LF-Q420	Jecte Boyd	10/8/2020	11:51	ASSET	EPA 200.7	NAD	DJ	mg/L	660	25	4.8
OW-05S	OW-05S-LF-Q420	Jecte Boyd	10/8/2020	11:51	ASSET	EPA 200.8	CRTD	CEI	µg/L	10	1	0.13
OW-05S	OW-05S-LF-Q420	Jecte Boyd	10/8/2020	11:51	ASSET	EPA 200.8	MOD	CEI	µg/L	10	0.5	0.21
OW-05S	OW-05S-LF-Q420	Jecte Boyd	10/8/2020	11:51	ASSET	EPA 218.6	CR6	RAB	µg/L	10	0.2	0.033
OW-05S	OW-05S-LF-Q420	Jecte Boyd	10/8/2020	11:51	ASSET	EPA 300.0	FL	RAB	mg/L	1.7	0.5	0.048
OW-05S	OW-05S-LF-Q420	Jecte Boyd	10/8/2020	11:51	ASSET	EPA 300.0	SO4	RAB	mg/L	350	25	2
OW-05S	OW-05S-LF-Q420	Jecte Boyd	10/8/2020	11:51	ASSET	EPA 300.0	CL	RAB	mg/L	1,700	250	17
OW-05S	OW-05S-LF-Q420	Jecte Boyd	10/8/2020	11:51	ASSET	SM 2130 B	TRB	QBM	NTU	0.13	0.1	0.1
OW-05S	OW-05S-LF-Q420	Jecte Boyd	10/8/2020	11:51	ASSET	SM 2540 C	TDS	QBM	mg/L	4,600	50	50
OW-05S	OW-05S-LF-Q420	Jecte Boyd	10/8/2020	11:51	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	3.2	0.25	0.16
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	BCLabs	A4500NH3G	NH3N	JMH	mg/L	ND (0.2)	0.2	0.067
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 120.1	SC	QBM	µS/cm	7,000	0.1	0.1



**Appendix C****ARAR Monitoring Information for Groundwater Samples, 2020**

Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report

Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.7	KD	DJ	mg/L	11	5	0.85
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.7	NAD	DJ	mg/L	1,500	50	9.6
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.7	ALD	DJ	µg/L	ND (50)	50	40
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.7	BD	DJ	mg/L	1.1	0.1	0.074
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.7	CAD	DJ	mg/L	97	0.5	0.085
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.7	FETD	DJ	µg/L	230 J	20	18
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.7	MGD	DJ	mg/L	26	0.1	0.048
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	AGD	CEI	µg/L	ND (0.5)	0.5	0.23
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	BAD	CEI	µg/L	33	1	0.15
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	BED	CEI	µg/L	ND (0.5 J)	0.5	0.042
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	CDD	CEI	µg/L	ND (0.5)	0.5	0.053
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	COBD	CEI	µg/L	3.3	0.5	0.042
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	CRTD	CEI	µg/L	16	1	0.13
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	CUD	CEI	µg/L	ND (1.0)	1	0.55
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	MND	CEI	µg/L	16	0.5	0.26
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	MOD	CEI	µg/L	23	0.5	0.21
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	NID	CEI	µg/L	ND (1.0 J)	1	0.26
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	PBD	EGS	µg/L	ND (1.0)	1	0.13
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	SBD	CEI	µg/L	ND (0.5)	0.5	0.16
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	VD	CEI	µg/L	2.0	1	0.28
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	ZND	CEI	µg/L	ND (10)	10	2.3
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	ASD	CEI	µg/L	1.0	0.1	0.081
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	SED	CEI	µg/L	4.6	0.5	0.36
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 200.8	TLD	CEI	µg/L	ND (0.5)	0.5	0.19
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 218.6	CR6	RAB	µg/L	0.49	0.2	0.033
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 245.1	HGD	DJ	µg/L	ND (0.2)	0.2	0.13
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 300.0	FL	RAB	mg/L	2.6	0.5	0.048
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 300.0	SO4	RAB	mg/L	490	25	2
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	EPA 300.0	CL	RAB	mg/L	2,100	250	17
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	SM 2130 B	TRB	QBM	NTU	26	0.1	0.1

## Appendix C

### ARAR Monitoring Information for Groundwater Samples, 2020

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Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	SM 2320 B	ALKT	QBM	mg/L	86	5	1.2
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	SM 2540 C	TDS	QBM	mg/L	4,400	50	50
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	3.1	0.25	0.16
OW-05M	OW-05M-LF-Q420	Matt Trainotti	10/8/2020	13:03	ASSET	SW 6010B	FE	DJ	µg/L	2,900 J	20	18
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	BCLabs	A4500NH3G	NH3N	JMH	mg/L	ND (0.2)	0.2	0.067
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 120.1	SC	QBM	µS/cm	6,900	0.1	0.1
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.7	KD	DJ	mg/L	14	5	0.85
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.7	NAD	DJ	mg/L	1,600	50	9.6
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.7	ALD	DJ	µg/L	ND (50)	50	40
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.7	BD	DJ	mg/L	1.2	0.1	0.074
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.7	CAD	DJ	mg/L	110	0.5	0.085
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.7	FETD	DJ	µg/L	96 J	20	18
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.7	MGD	DJ	mg/L	30	0.1	0.048
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	AGD	CEI	µg/L	ND (0.5)	0.5	0.23
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	BAD	CEI	µg/L	25	1	0.15
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	BED	CEI	µg/L	ND (0.5 J)	0.5	0.042
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	CDD	CEI	µg/L	ND (0.5)	0.5	0.053
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	COBD	CEI	µg/L	5.3	0.5	0.042
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	CRTD	CEI	µg/L	1.8	1	0.13
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	CUD	CEI	µg/L	ND (1.0)	1	0.55
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	MND	CEI	µg/L	0.58	0.5	0.26
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	MOD	CEI	µg/L	26	0.5	0.21
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	NID	CEI	µg/L	ND (1.0 J)	1	0.26
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	PBD	CEI	µg/L	ND (1.0)	1	0.13
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	SBD	CEI	µg/L	0.69	0.5	0.16
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	VD	CEI	µg/L	2.3	1	0.28
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	ZND	CEI	µg/L	ND (10)	10	2.3
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	ASD	CEI	µg/L	3.0	0.1	0.081
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	SED	CEI	µg/L	4.3	0.5	0.36
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 200.8	TLD	CEI	µg/L	ND (0.5)	0.5	0.19

## Appendix C

### ARAR Monitoring Information for Groundwater Samples, 2020

Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report

Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Lab Technician	Units	Result	RL	MDL
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 218.6	CR6	RAB	µg/L	0.63	0.2	0.033
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 245.1	HGD	DJ	µg/L	ND (0.2)	0.2	0.13
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 300.0	FL	RAB	mg/L	3.0	0.5	0.048
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 300.0	SO4	RAB	mg/L	470	25	2
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	EPA 300.0	CL	RAB	mg/L	2,100	250	17
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	SM 2130 B	TRB	QBM	NTU	0.84	0.1	0.1
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	SM 2320 B	ALKT	QBM	mg/L	71	5	1.2
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	SM 2540 C	TDS	QBM	mg/L	4,500	50	50
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	SM 4500-NO3 F	NO3NO2N	JBB	mg/L	2.4	0.25	0.16
OW-05D	OW-05D-Q420	Matt Trainotti	10/8/2020	12:00	ASSET	SW 6010B	FE	DJ	µg/L	85 J	20	18

#### Acronyms and Abbreviations:

µg/L = micrograms per liter

µS/cm = microSiemens per centimeter

AGD = silver, dissolved

ALD = aluminum, dissolved

ALKT = alkalinity, total as CaCO<sub>3</sub>

ARAR = applicable or relevant and appropriate requirement

ASD = arsenic, dissolved

ASSET = Asset Laboratories

BAD = barium, dissolved

BCLabs = BC Laboratories, Inc.

BD = boron, dissolved

BED = beryllium, dissolved

CAD = calcium, dissolved

CDD = cadmium, dissolved

CL = chloride

COBD = cobalt, dissolved

CR6 = hexavalent chromium

CRTD = chromium, dissolved

CUD = copper, dissolved

EPA = United States Environmental Protection Agency

FE = iron

FETD = iron, dissolved

FL = fluoride

HGD = mercury, dissolved

J = concentration estimated by laboratory or data validation

KD = potassium, dissolved

## **Appendix C**

### **ARAR Monitoring Information for Groundwater Samples, 2020**

*Compliance Monitoring Program 2020 Annual Groundwater Monitoring Report and Performance Assessment Report  
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*

#### **Acronyms and Abbreviations, continued:**

MDL = method detection limit corrected for sample dilution

mg/L = milligrams per liter

MGD = magnesium, dissolved

MND = manganese, dissolved

MOD = molybdenum, dissolved

NAD = sodium, dissolved

ND = parameter not detected at the listed reporting limit

NH3N = ammonia (as nitrogen)

NID = nickel, dissolved

NO3NO2N = nitrate/nitrite (as nitrogen)

NTU = Nephelometric Turbidity Unit

PBD = lead, dissolved

RL = reporting limit corrected for sample dilution

SBD = antimony, dissolved

SC = specific conductance

SED = selenium, dissolved

SM = Standard Method

SO4 = sulfate

TDS = total dissolved solids

TLD = thallium, dissolved

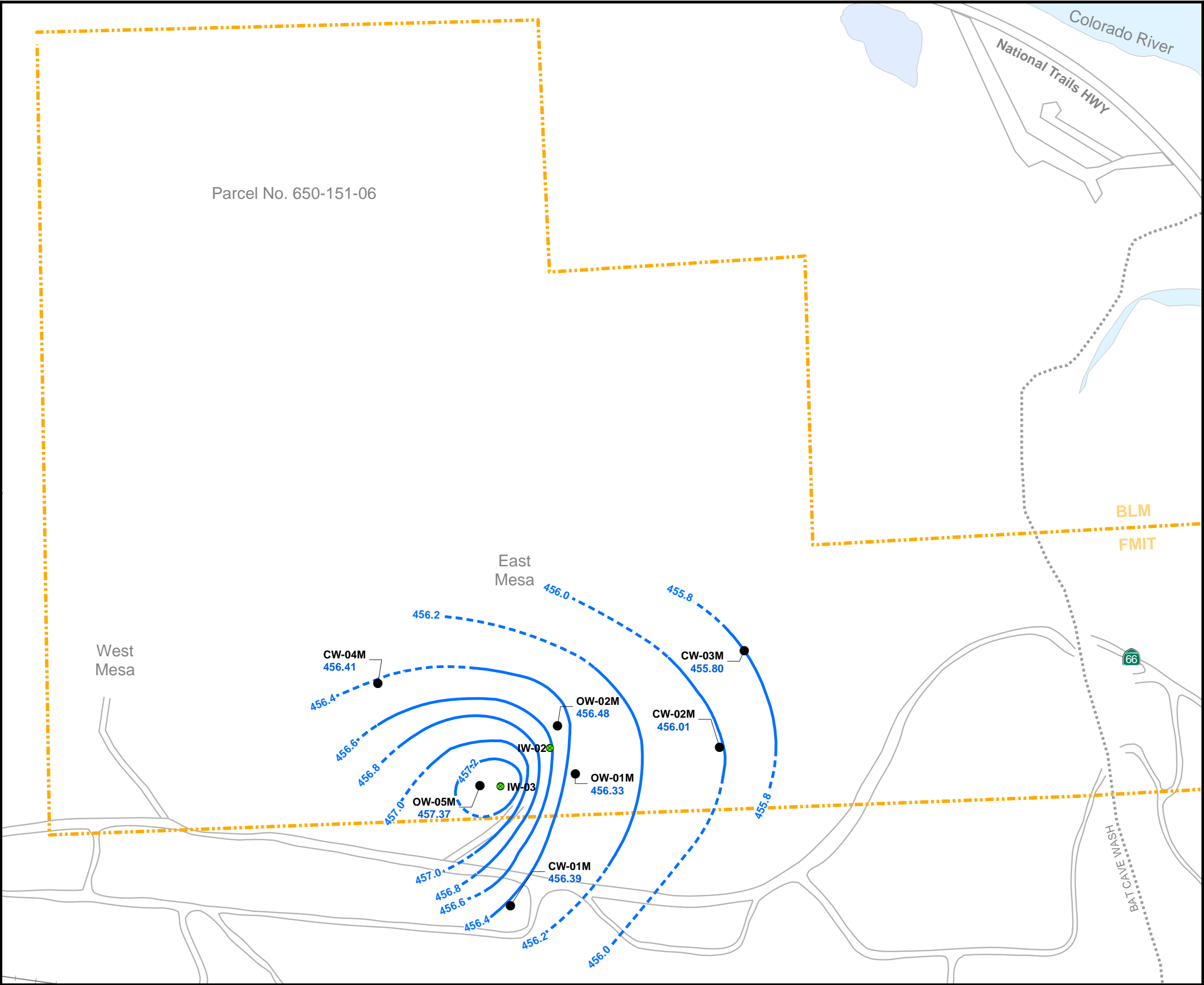
TRB = turbidity

VD = vanadium, dissolved

ZND = zinc, dissolved

# **APPENDIX D**

## **Historical Groundwater Elevation Contour Maps**



**LEGEND**

- Groundwater Monitoring, Compliance, and Observation Well
- IM-3 Injection Well

--- Property Line

**Groundwater Elevations for Mid-Depth Wells in IM-3 Injection Area**

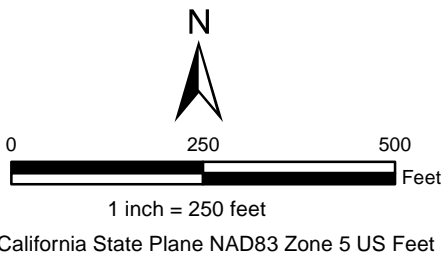
- OW-05M** Salinity and temperature adjusted groundwater head elevation in feet above mean sea level (MSL).
- 457.37**

--- Groudwater elevation contour in feet above MSL (0.2 foot interval). Dashed where inferred.

**Notes:**

BLM = Bureau of Land Management  
FMIT = Fort Mojave Indian Tribe

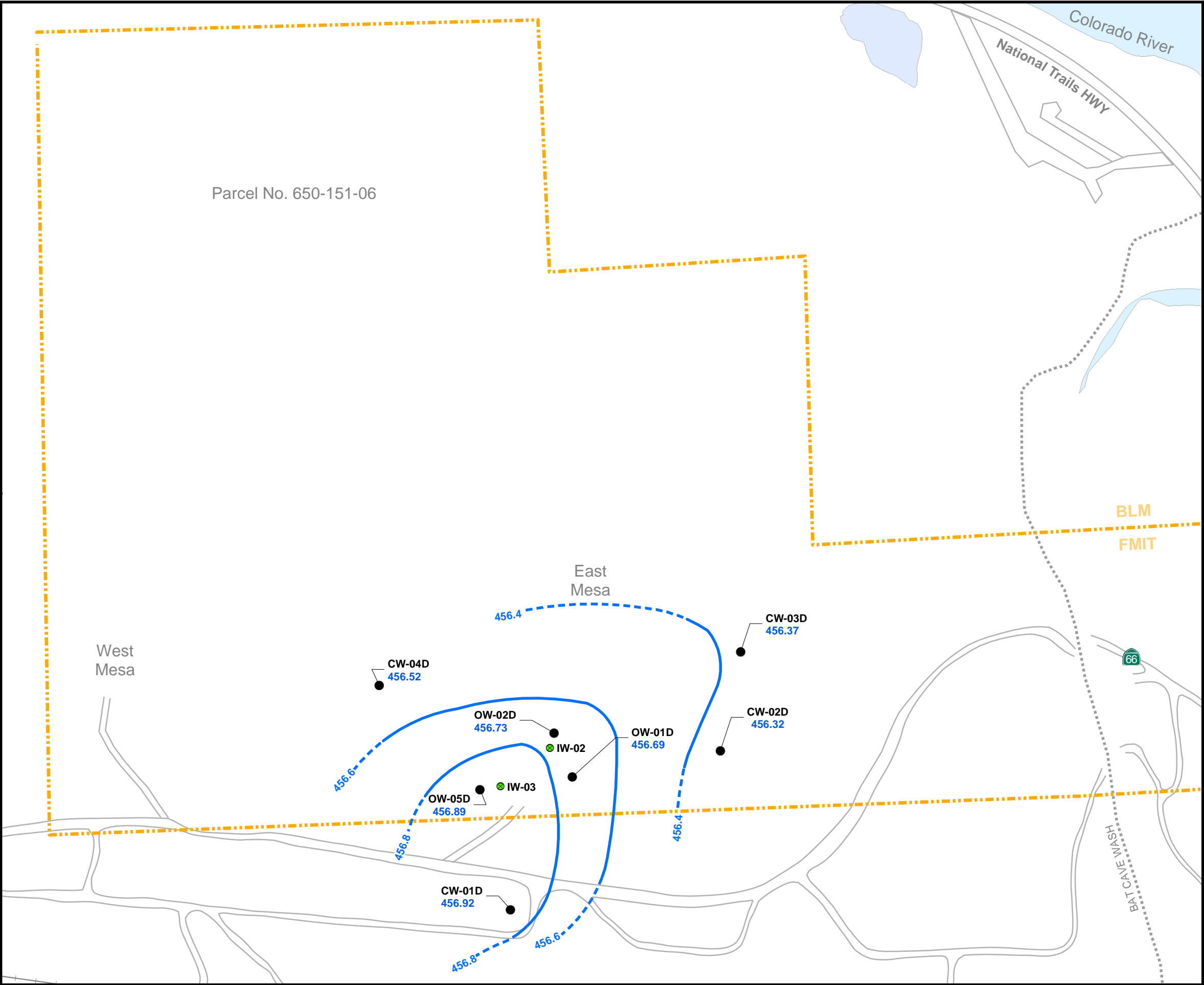
Data posted and contoured from December 6, 2016 manual water level snapshot.



**FIGURE 7B  
GROUNDWATER ELEVATION  
CONTOURS FOR MID-DEPTH WELLS,  
DECEMBER 6, 2016**

IM-3 COMPLIANCE MONITORING PROGRAM  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA





**LEGEND**

- Groundwater Monitoring, Compliance, and Observation Well
- IM-3 Injection Well
- Property Line

**Groundwater Elevations for Deep Wells in IM-3 Injection Area**

- **OW-05D** Salinity and temperature adjusted groundwater head elevation in feet above mean sea level (MSL).  
● **456.89**

--- Groudwater elevation contour in feet above MSL (0.2 foot interval). Dashed where inferred.

**Notes:**  
BLM = Bureau of Land Management  
FMIT = Fort Mojave Indian Tribe

Data posted and contoured from December 6, 2016 manual water level snapshot.

N

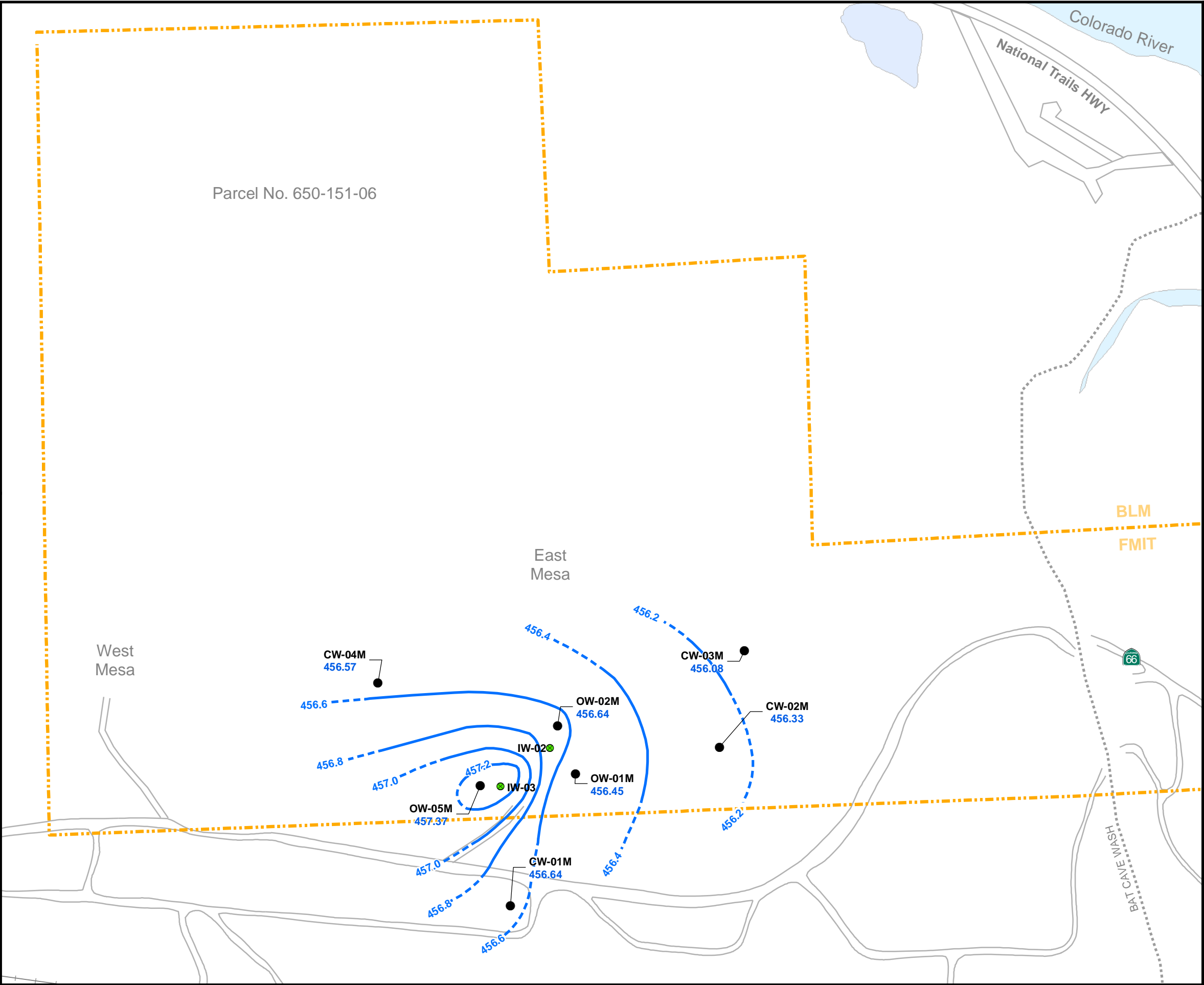
0 250 500 Feet

1 inch = 250 feet

California State Plane NAD83 Zone 5 US Feet

**FIGURE 7C**  
**GROUNDWATER ELEVATION**  
**CONTOURS FOR DEEP WELLS,**  
**DECEMBER 6, 2016**  
IM-3 COMPLIANCE MONITORING PROGRAM  
PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA





**LEGEND**

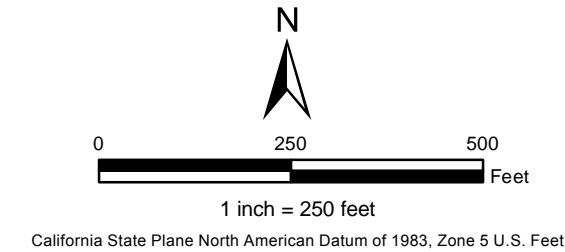
- Groundwater Monitoring, Compliance, and Observation Well
- IM-3 Injection Well
- Property Line

- OW-05M** Salinity- and temperature-adjusted groundwater head elevation in feet above mean sea level (amsl).  
● **457.37**
- Groudwater elevation contour in feet amsl (0.2 foot interval). Dashed where inferred.

**Notes:**

BLM = Bureau of Land Management  
FMIT = Fort Mojave Indian Tribe

Data posted and contoured from December 3, 2018 manual water level measurement.

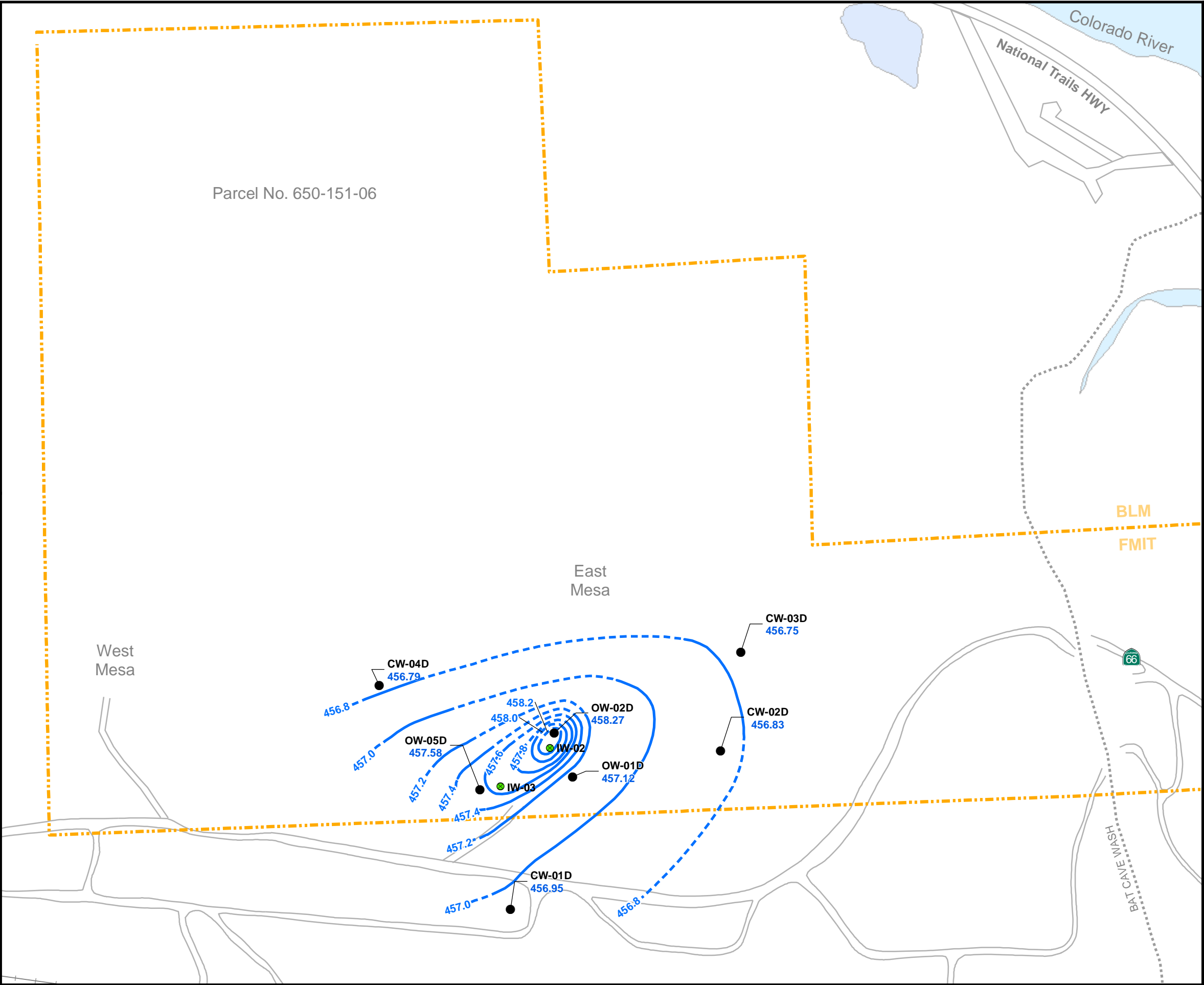


**FIGURE 6B  
GROUNDWATER ELEVATION  
CONTOURS FOR MID-DEPTH WELLS,  
DECEMBER 3, 2018**

IM-3 COMPLIANCE MONITORING PROGRAM  
PG&E TOPOCK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA







**LEGEND**

- Groundwater Monitoring, Compliance, and Observation Well
- IM-3 Injection Well
- Property Line

**OW-05D** Salinity- and temperature-adjusted groundwater head elevation in feet above mean sea level (amsl).  
● **457.58**

--- Groudwater elevation contour in feet amsl (0.2 foot interval). Dashed where inferred.

**Notes:**  
BLM = Bureau of Land Management  
FMIT = Fort Mojave Indian Tribe

Data posted and contoured from December 3, 2018 manual water level measurement.

**Scale:**  
0 250 500 Feet  
1 inch = 250 feet  
California State Plane North American Datum of 1983, Zone 5 U.S. Feet

**FIGURE 6C**  
**GROUNDWATER ELEVATION**  
**CONTOURS FOR DEEP WELLS,**  
**DECEMBER 3, 2018**  
IM-3 COMPLIANCE MONITORING PROGRAM  
PG&E TOPOCK COMPRESSOR STATION,  
NEEDLES, CALIFORNIA

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