



Curt Russell
Topock Project Manager
Environmental Remediation

Topock Compressor Station
145453 National Trails Hwy
Needles, CA 92363

Mailing Address
P.O. Box 337
Needles, CA 92363

760.791.5884
Fax: 760.326.5542
Email: gcr4@pge.com

August 10, 2020

Ms. Pamela Innis
U.S. Department of the Interior
CHF Remedial Project Manager
One North Central Avenue, Suite 800
Phoenix, AZ 85004-4427

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

Subject: July 2020 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup, PG&E Topock Compressor Station, Needles, California
(Document ID: TPK_Monthly_Progress_Rpt_July_2020_20200810)

Dear Ms. Innis and Mr. Yue:

In compliance with the *1996 Corrective Action Consent Agreement (CACA)* (Attachment 6, Part E, Section 9a and Attachment 7) and the *2013 Remedial Design/Remedial Action Consent Decree (CD)* (Paragraph 32 and Appendix C, Section 5), and pursuant to the *Construction/ Remedial Action Work Plan (C/RAWP)* (Section 2.6.3.1), this monthly report describes activities taken at Pacific Gas and Electric Company's (PG&E's) Topock Compressor Station in July 2020, as well as activities planned for the next six weeks (August 9 to September 19, 2020), and presents available results from sampling and testing performed in the reporting period.

This report also discusses material deviations from the approved design documents and/or the C/RAWP, if any, that PG&E has proposed to DTSC and DOI, or that have been approved by DTSC and DOI. This report highlights key personnel changes, if any, and summarizes activities performed and activities planned in support of DOI's 2012 Community Involvement Plan and DTSC's 2019 Community Outreach Plan, as well as contacts with the local community, representatives of the press, and/or public interest groups, if any. This report also includes data from samples collected as part of the sitewide groundwater monitoring program within 60 days of sample collection, as required by the Condition of Approval # xi in DTSC's approval letter dated August 24, 2018.

Please note that since activities conducted to comply with the project's Applicable or Relevant and Appropriate Requirement (ARARs) and the Subsequent Environmental Impact Report (SEIR) mitigation measures are currently reported in separate compliance reports, this information is not repeated in the monthly reports. Monthly progress reports will be submitted to DTSC and DOI by the 10th day of the following month during construction and start-up of the groundwater remedy at the Topock Compressor Station which officially began on October 2, 2018. This is the 22nd monthly progress report. Please contact me at (760) 791-5884 if you have any questions or comments regarding this submittal.

Sincerely,

A handwritten signature in cursive script that reads 'Curt Russell'.

Curt Russell
Topock Project Manager

Topock Project Executive Abstract

<p>Document Title: <i>July 2020 Monthly Progress Report for the Groundwater Remedy Construction and Startup, PG&E Topock Compressor Station, Needles, California</i></p> <p>Submitting Agency: DOI, DTSC</p> <p>Final Document? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Date of Document: 08/10/2020</p> <p>Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) PG&E</p>
<p>Priority Status: <input type="checkbox"/> HIGH <input type="checkbox"/> MED <input checked="" type="checkbox"/> LOW</p>	<p>Is this time critical? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>Type of Document:</p> <p><input type="checkbox"/> Draft <input checked="" type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Memo</p> <p><input type="checkbox"/> Other / Explain:</p>	<p>Action Required:</p> <p><input checked="" type="checkbox"/> Information Only <input type="checkbox"/> Review and Input</p> <p><input type="checkbox"/> Other / Explain:</p>
<p>What does this information pertain to?</p> <p><input type="checkbox"/> Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA)</p> <p><input type="checkbox"/> RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment)</p> <p><input type="checkbox"/> Corrective Measures Study (CMS)/Feasibility Study (FS)</p> <p><input checked="" type="checkbox"/> Corrective Measures Implementation (CMI)/Remedial Action (RA)</p> <p><input type="checkbox"/> California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR)</p> <p><input type="checkbox"/> Interim Measures</p> <p><input type="checkbox"/> Other / Explain:</p>	<p>Is this a Regulatory Requirement?</p> <p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>If no, why is the document needed?</p>
<p>What is the consequence of NOT doing this item? What is the consequence of DOING this item?</p> <p>The consequence for not doing this item is PG&E will be out of compliance with the 1996 Corrective Action Consent Agreement (CACA) and the 2013 Remedial Design/Remedial Action Consent Decree (CD), as well as the Construction/Remedial Action Work Plan (C/RAWP).</p>	<p>Other Justification/s:</p> <p><input type="checkbox"/> Permit <input type="checkbox"/> Other / Explain:</p>
<p>Brief Summary of attached document:</p> <p>This monthly report describes activities taken in July 2020 as well as activities planned for the next six weeks (August 9 to September 19, 2020) and presents available results from sampling and testing in the reporting period. In addition, this report discusses material deviations from the approved design documents and/or the <i>Construction/ Remedial Action Work Plan</i> (C/RAWP), if any, that PG&E has proposed to the California Department of Toxic Substances Control (DTSC) and the U.S. Department of the Interior (DOI) or that have been approved by DTSC and DOI. This report also highlights key personnel changes, if any, and summarizes activities performed and activities planned at the Topock Compressor Station in support of DOI's 2012 Community Involvement Plan and DTSC's 2019 Community Outreach Plan, as well as contacts with local community, representatives of the press, and/or public interest groups, if any.</p> <p>Written by: Pacific Gas and Electric Company</p>	
<p>Recommendations:</p> <p>Provide input to PG&E.</p>	
<p>How is this information related to the Final Remedy or Regulatory Requirements:</p> <p>This submittal is required in compliance with the CACA, CD, and pursuant to the C/RAWP.</p>	
<p>Other requirements of this information?</p> <p>None.</p>	



July 2020
Monthly Progress Report for the
Final Groundwater Remedy Construction and Startup

PG&E Topock Compressor Station
Needles, California

Document ID: TPK_Monthly_Progress_Rpt_July_20200810

August 2020

Prepared for
U.S. Department of the Interior and California Department of Toxic Substances Control

On Behalf of
Pacific Gas and Electric Company



Contents

Topock Project Executive Abstract	iii
Acronyms and Abbreviations	ix
1. Introduction	1
2. Monthly Update	2
2.1 Work Completed	2
2.2 Work Already Underway and During Implementation.....	Error! Bookmark not defined.
2.3 Freshwater Usage, Waste Generation and Management	4
2.3.1 Freshwater and Wastewater	4
2.3.2 Displaced Materials/Soils/Clay.....	5
2.3.3 General Construction Waste, Sanitary Waste, and Recyclables.....	5
2.4 Worker Training and Education	5
2.5 Status of Work Variance Requests (WVRs)	6
2.6 Use of Future Activity Allowance	6
2.7 Issues Encountered and Actions Taken to Rectify Issues/Problems	6
2.8 Key Personnel Changes	7
2.9 Communication with the Public.....	7
2.10 Planned Activities for Next Six Weeks	7
2.11 Construction Schedule Review	7
2.12 Available Sitewide Groundwater Monitoring Data (DTSC Condition of Approval xi)	7
3. References	8

Tables

Table 2-1a. Summary of Non-Well Environmental Release-To-Constructions (ERTCs)	1
Table 2-1b. Summary of Well Environmental Release-To-Constructions (ERTCs)	3
Table 2-2. Monitoring Wells Nomenclature Changes	5
Table 2-3. Summary of Work Variance Requests (WVRs)	7
Table 2-4. Summary of Percent Completeness of Key Construction Activities	9

Figures

- 2-1 Construction Site Plan and Access Routes
- 2-2 Well and Pipeline Locations

Attachments

- A Photographs
- B Available Boring and Well Construction Logs, Groundwater Sample Results from Well Drilling, and Well Testing Activities (Logs, Well Testing Plans/Results are Presented in Separate PDFs)
- C Soil Sampling Locations and Available Soil Analytical Results (Soil Data Presented in Excel File)
- D Perimeter Air Sampling Analytical Results
- E Noise Monitoring Data Summary (SEIR NOISE-2 requirement)
- F Discharge Monitoring Record in Compliance with Monitoring and Reporting Program for Order No. 2013-003-WQO (Table 2)
- G Six-Week Look-Ahead Schedule
- H Validated Groundwater Monitoring Data (DTSC Condition of Approval xi)

Acronyms and Abbreviations

µg/m ³	micrograms per cubic meter
AOC	Area of Concern
ARAR	applicable or relevant and appropriate requirement
BLM	U.S. Bureau of Land Management
BMP	best management practice
CACA	Corrective Action Consent Agreement
C/RAWP	Construction/Remedial Action Work Plan
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CH2M	CH2M HILL, Inc.
CHQ	Construction Headquarters
CRWQCB	California Regional Water Quality Control Board, Colorado River Basin Region
DOI	United States Department of the Interior
DTSC	California Department of Toxic Substances Control
ERTC	Environmental Release to Construct
FCR	field contact representative
IM-3	Interim Measure No. 3
IRZ	in-situ reactive zone
LOC	level of concern
NTH	National Trails Highway
PG&E	Pacific Gas and Electric Company
RCRA	Resource Conservation and Recovery Act
RPWC	Remedy-Produced Water Conditioning
SEIR	Subsequent Environmental Impact Report
SMP	Soil Management Plan
SPY	Soil Processing Yard
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCS	Topock Compressor Station
TRC	Technical Review Committee
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WEAT	Worker Environmental Awareness Training
WVR	Work Variance Request

1. Introduction

Pacific Gas and Electric Company (PG&E) is implementing the final groundwater remedy to address chromium in groundwater near the PG&E Topock Compressor Station (TCS), located in eastern San Bernardino County 15 miles southeast of the city of Needles, California.

The U.S. Department of the Interior (DOI) is the lead federal agency overseeing remedial actions at the TCS. PG&E and the United States executed a Remedial Design/Remedial Action Consent Decree (CD), on behalf of the DOI, under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in 2012, which was approved by the U.S. District Court for the Central District of California in November 2013 (DOI, 2013). Paragraph 32 and Appendix C (Section 5) of the CD requires PG&E to submit to DOI monthly electronic progress reports during construction of the remedial action, and to submit progress reports on a quarterly basis after the selected remedy has been implemented and demonstrated to be operating as intended.

The California Department of Toxic Substances Control (DTSC) is the lead state agency overseeing corrective actions at the TCS. Remedial activities are being performed in conformance with the requirements of the Resource Conservation and Recovery Act (RCRA) Corrective Action pursuant to a Corrective Action Consent Agreement (CACA) entered into by PG&E and the DTSC in February 1996 (DTSC, 1996). Attachment 6, Part E, Section 9a and Attachment 7 of the CACA require PG&E to provide certain information in monthly progress reports during construction of the corrective action.

In compliance with the CACA and CD requirements, PG&E proposed a template for the monthly progress reports in Exhibit 2.6-2 of the Construction/Remedial Action Work Plan (C/RAWP) (CH2M HILL, Inc. [CH2M], 2015b). The C/RAWP was approved by DOI on April 3, 2018 (DOI, 2018) and DTSC on April 24, 2018 (DTSC, 2018a).

This is the 22nd of the monthly progress reports that will be submitted to DOI and DTSC for the duration of the remedy construction and startup. This monthly progress report documents activities during July 2020, and follows the content and format described in Exhibit 2.6-2 of the approved C/RAWP. The report is organized as follows:

- Sections 2.1 through 2.7 describe completed construction activities; data collected, generated or received; nature and volume of waste generated; waste handling/disposal; issues encountered; actions taken to rectify problems/issues; personnel changes; and Work Variance Requests (WVRs; i.e., material deviations from the design documents, the C/RAWP, or other approved work plans), if any, as well as agencies' actions on those requests, and potential schedule impacts.
- Sections 2.8 through 2.10 summarize key project personnel changes, if any, contacts with representatives of the press, local community, or public interest groups during the reporting period, other activities provided to assist DTSC and/or DOI in support of the Community Outreach Plan (DTSC, 2019) and/or Community Involvement Plan (DOI, 2012), respectively, and anticipated near-term (approximately next six weeks) activities in support of the Community Outreach and Community Involvement Plans.
- Section 2.11 provides information relating to the construction schedule progress, sequencing of activities, information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule, and a description of efforts made to mitigate those delays or anticipated delays, if any.
- Section 2.12 presents validated data from samples collected as part of the sitewide groundwater monitoring program within 60 days of sample collection, as required by the Condition of Approval # xi in DTSC's approval letter dated August 24, 2018 (DTSC, 2018a).
- Section 3 lists the references cited in this report.

Please note that since activities conducted to comply with the project's Applicable or Relevant and Appropriate Requirement (ARARs) and the Subsequent Environmental Impact Report (SEIR) (DTSC,

2018b) mitigation measures are currently reported in separate compliance reports, the same information is not repeated in the monthly reports.

2. Monthly Update

2.1 Work Completed

Highlights of key activities related to the construction of the groundwater remedy completed during the reporting period include the following (in chronological order):

- On July 13, 2018, PG&E sent via email the first weekly six-week look-ahead schedule for the remedy construction field work. The weekly emails provide highlights of field activities in the previous week, field activities scheduled for the next week, and planned activities for the next six weeks. Recipients of the weekly emails are DOI, DTSC, the U.S. Fish and Wildlife Service (USFWS), the California Regional Water Quality Control Board, Colorado River Basin Region (CRWQCB), the Metropolitan Water District of Southern California, Tribes, and the Technical Review Committee (TRC). PG&E continues to send these weekly emails to date. As of July 31, 2020, a total of 113 six-week look-ahead schedule emails have been sent. Of those, four six-week look-ahead schedule emails were sent in June 2020 (on July 5, 13, 19, and 26).
- On August 10, 2018, PG&E issued the first Environmental Release to Construct (ERTC) to contractors. As of July 31, 2020, a total of 65 ERTCs were issued for mobilization and construction activities. One new ERTC was issued in July 2020 for the installation of Pipeline C Segments C13, C15, C16, C19, and C20. The ERTCs are listed in Tables 2-1a and 2-1b. In addition, one ERTC was extended to allow for completion of the scoped work for installation of IRZ-18.
- Starting on October 4, 2018, PG&E has published a daily construction activities list and discussed the list at the morning tailboards with Tribes and agency representatives. This daily list is intended to inform and facilitate observation by Tribes and agency representatives on site on that day. PG&E continues to publish these daily lists and discuss the list at the daily morning tailboards to date. In July 2020, a total of 26 daily construction activities lists were published and discussed at the morning tailboards.
- In July 2020, PG&E performed the following construction activities (note that Figures 2-1 and 2-2 show the locations of key areas and wells, and Table 2-2 presents the changes in well nomenclature):

July 5-11, 2020

- Conducted pipeline construction at F1, J3, and J4.
- Continued TCS tank farm excavation.
- Continued excavation and shoring of southern jack and bore pit.
- Completed construction of well at IRZ-13D. Moved rig to IRZ-11S location.
- Commenced drilling the monitoring MW-97 at the IRZ-11 site to 173 feet.
- Conducted well development at IRZ-33.
- Conducted well testing at IRZ-15.
- Conducted spinner testing at RB-2 and RB-3.
- Conducted video surveys at IRZ-27, IRZ-29, and IRZ-31.
- Removed mats from RB-4 and RB-5 area.

July 12-18, 2020

- Conducted pipeline construction at F1, J3, and J4.
- Continued TCS tank farm excavation, shoring, and slurry placement.
- Completed shoring of southern boring pit. Mobilized and set up of rig for jack and bore. Prepared for hand mining operation.
- Commenced and completed drilling at IRZ-13S to 103 feet.
- Continued drilling the monitoring MW-97 at the IRZ-11 site to 207 feet.
- Conducted well development at MW-F, MW-70BR, and IRZ-33.
- Conducted well testing at IRZ-15 and IRZ-33.

- Conducted wellhead maintenance activities at PGE 9N and PGE 9S.
- Removed mats from RB-4 area and placed mats at MW-96 (relocated MW-A) site.

July 19-25, 2020

- Conducted pipeline construction at F1, J2, J3, and J4.
- Continued TCS tank farm excavation, forming, and rebar installation.
- Commenced hand mining and casing installation operations to 6.5 feet.
- Replaced a power pole for TW Bench.
- Constructed well at IRZ-13S.
- Mobilized dual rotary rig to IRZ-18 site.
- Completed pilot boring and reaming the monitoring well MW-97 at the IRZ-11 site to 210 feet.
- Conducted well development at MW-70BR and IRZ-35.
- Placed mats at MW-96 (relocated MW-A) site.

July 26-August 1, 2020

- Conducted pipeline construction at F1 and J3.
- Continued TCS tank farm excavation, concrete placement, forming, and rebar installation.
- Fresh water tank relocation in TCS.
- Continued hand mining and casing installation operations to 13.5 feet.
- Stripped forms at MW-20 Bench.
- Commenced drilling with dual rotary rig of IRZ-18 to 118 feet.
- Completed building MW-97 at the IRZ-11 site.
- Conducted well development at MW-70BR, MW-F, and IRZ-13.
- Conducted well testing at IRZ-35 and IRZ-37.
- Prepared MW-96 (relocated MW-A) site for drilling.

- **Attachment A** includes select photos of activities during this reporting period.
- **Attachment B** presents water analytical results from well drilling that are available to date. Two separate PDFs containing available boring and well construction logs, and information about well testing activities are also included in Attachment B.
- Baseline/opportunistic soil sampling activities in July 2020:
 - a) Pursuant to the Baseline Soil Sampling and Analysis Plan (Appendix A of the Soil Management Plan [SMP] [which is Appendix L of the C/RAWP]), two baseline soil samples were collected on July 8, 2020 at MW-96 (repurposed IRZ-11) and MW-97 (relocated MW-A'), and one baseline soil sample was collected on July 11, 2020 at 1 foot below the bottom of the Remedy-produced water conditioning (RPWC) system tank pad inside TCS.
 - b) In addition, the following opportunistic soil samples were collected:
 - On July 6, 2020, one sample was collected of the black discolored material encountered along Pipeline J, just prior to the TCS entrance road.
 - On July 20, 2020, one sample was collected of the white discolored material encountered during excavation south of the RPWC system tank pad.
 - On July 31, 2020, one sample was collected of the black discolored material encountered during excavation of a remedy trench in the vicinity of AOC 23. In addition, a sample was also collected below the black stain layer.
 - c) **Attachment C** includes a figure showing soil sampling locations and an excel spreadsheet with soil analytical results available to date.
- Perimeter Air Sampling Activities in July 2020:

In July 2020, 50 real time dust observation/monitoring events were conducted at the perimeter of the work areas (outside of the exclusion zone). On July 10, there was a temporary exceedance of the action level for fugitive dust monitoring (100 µg/m³) while the soil piles at the SPY were

moved and consolidated. Contractor was advised of the exceedance, and water was applied to control dust.

One perimeter air sampling event for hexavalent chromium occurred during the excavation of Pipeline J segment at the East Ravine on July 6, 2020. **Tables D-1a and D-1b of Attachment D** present all analytical results from air sampling events that are available at this time. All results are below the project level of concern (LOC) for hexavalent chromium which is 0.00094 µg/m³.

- Noise Monitoring Activities in July 2020 (below are highlights, details are in **Attachment E**):

In July 2020, the following attended monitoring events were conducted:

- Twenty-three events at a location west of the mobile home park at Moabi Regional Park. Construction activities closest to this monitoring location include activities at the SPY and CHQ, as well as construction traffic on NTH. The sound level typically varied between 39 and 54 dBA, with an average and median of 46-47 dBA.
- Twenty-two events at a location in the Upland just off the IM-3 access road, and near the top of the hill closest to the NTH and MW-20 Bench, as well as two events at the alternate location off IM-3 access road. Construction activities closest to this monitoring location include activities at the MW-20 Bench and construction traffic on the IM-3 access road. The sound level varied between 42 and 58 dBA, with an average and median of 51 dBA.
- Twenty-four events at the old restaurant location west of NTH. Construction activities closest to this monitoring location include construction traffic on NTH and construction traffic in the north floodplain. The sound level varied between 42 and 63 dBA, with an average and median of 51 dBA.
- Twenty-two events at a location on a bluff below TCS, just south of I-40 and east of the Topock Maze. Construction activities closest to this monitoring location are associated with work at Pipeline F, Pipeline J, excavation of the RPWC system tank pad (inside TCS), as well as activities associated with the jack and bore work. The sound level typically varied between 44 and 57.3 dBA, with an average and median of 54 dBA.

2.2 Freshwater Usage, Waste Generation and Management

As of July 31, 2020, the volumes of freshwater used for remedy construction and waste streams generated from remedy construction (starting on October 2, 2018) are as follows:

2.2.1 Freshwater and Wastewater

- As of July 31, 2020, an approximate total of 5,946,772 gallons (18.25 acre-feet) of freshwater have been used, of which approximately 25.9 percent was for pilot boring/well installation and general construction, 1.4 percent was for hydrostatic testing of pipeline, and 72.7 percent was for fugitive dust suppression. Of this amount, approximately 178,000 gallons of freshwater was used in July 2020.
- As of July 31, 2020, an approximate total of 91,740 gallons of hydrostatic testing water has been discharged to land. Of which 4,610 gallons was discharged in March from testing of Pipeline M and K, 4,400 gallons was discharged in May from testing of Pipeline C6, 210 gallons was discharged in June from testing of Pipeline C6 laterals on the MW-20 Bench, and 11,950 gallons was discharged in July from testing of Pipeline F and J. All discharges to land comply with the substantive requirements of State Water Resources Control Board (SWRCB) Water Quality Order 2003-0003-DWQ. Attachment F presents the approximate volume at each approved discharge location and date of each discharge.
- As of July 31, 2020, approximately 123,566 gallons of injectivity testing water has been discharged to land. Of which, 18,122 gallons of freshwater were injected at IRZ-17 in January; 18,062 gallons at IRZ-16 in February 2020; 23,567 gallons at IRZ-27 in March 2020; and 8,786 gallons at IRZ-29 in May 2020. Information related to this discharge is included in Attachment B, as required by the substantive requirements of SWRCB Water Quality Order 2003-0003-DWQ.

- As of July 31, 2020, IM-3 has received an approximate total of 223,175 gallons of remedy wastewater (generated from drilling operations). Of this amount, approximately 37,532 gallons of remedy wastewater was sent to IM-3 in July 2020.
- As of July 31, 2020, an approximate total of 1,115,451 gallons of wastewater generated from drilling operations were discharged to Compressor Station evaporation pond #4. Of this amount, 75,188 gallons of remedy-produced wastewater was discharged to pond #4 in July 2020. The discharge complies with the Waste Discharge Requirements (WDRs) of the CRWQCB Order No. R7-2018-0022.

At each sonic drilling location, the wastewater is initially stored in a holding tank in the primary work zone, and is transferred from the primary work zone, as needed, to 20,000-gallon frac tanks located at the MW-20 Bench or the CHQ. Each transfer load is tracked. At each dual rotary drilling location, freshwater and wastewater are conveyed between the frac tanks and the drilling location via pipes. Once a frac tank is full, its contents are characterized and managed in accordance with the approved Waste Management Plan (Appendix R of the C/RAWP).

2.2.2 Displaced Materials/Soils/Clay

- As of July 31, 2020, approximately 6,915 cubic yards of displaced materials/excess soils were generated from remedy construction activities. The displaced materials/soils were tested, processed (if needed), and managed in accordance with the Soil Management Plan (which is Appendix L of the C/RAWP). Approximately 88.3% of the materials were classified as clean, suitable for reuse onsite. The remaining 11.7% of the materials (total weight of 980.44 tons) were deemed not suitable for reuse onsite and were disposed of at US Ecology in Beatty, Nevada.
- Clean materials are often processed to remove rocks/boulders and plastics prior to reuse. Approximately 80% was fine materials and 20% was rocks/boulders.

2.2.3 General Construction Waste, Sanitary Waste, and Recyclables

- As of July 31, 2020, approximately 1,493 cubic yards of general construction waste, 85.65 tons of construction debris, 504 tons of green waste, and 276 cubic yards of recyclables were generated from remedy construction activities. Of those, approximately 72 cubic yards of trash was generated in the reporting period.
- A total of nine tires were recovered during construction along Pipeline B/J and disposed of at Mohave Valley landfill in Fort Mohave, Arizona for disposal. No additional tires were encountered since February 2020.
- Sanitary waste from construction trailers/portable toilets is hauled offsite as needed.
- Starting in September 2019, recycling at the site was ceased due to the high costs of local recycling.

2.3 Worker Training and Education

- In July 2020, PG&E continues to implement health-protective practices at the site in response to the emergent broader public health threat posed by the COVID-19 virus, in accordance with guidance received from federal and state public health departments, and included, for example, implementation of social distancing protocols and increasing the frequency of cleaning of the common work areas. In addition, during the morning tailboards, on-site workers were provided with updated guidance relating to the mitigation of the risks of viral exposure and transmission. All new or returning workers or visitors are required to take a mandatory COVID-19 protocol briefing and complete a daily self-declaration form. As of July 31, 2020, a total of 216 personnel (including employees, contractors, and visitors) received the mandatory briefing.
- PG&E continues to provide the mandatory Site Health and Safety Training for its employees and contractors on a daily basis. As of July 31, 2020, a total of 165 health and safety training sessions were held and 540 employees and contractors received the training. Of those, in July 2020, nine

sessions were conducted and 33 employees/contractors were trained. After the training, the attendees signed the training roster.

- PG&E continues to provide the mandatory Worker Environmental Awareness Training (WEAT) to its employees and contractors that will be involved in the remedy construction project. The training is offered regularly on Mondays and Thursdays, and more frequently as needed. As of July 31, 2020, a total of 166 WEAT sessions were conducted and 600 employees and contractors received the training. Of those, in July 2020, six sessions were conducted and 15 employees/contractors were trained or retrained. Educational brochures are made available to attendees of the training; they are designed to reinforce the key topics and highlight the take-aways discussed during the classroom training. After the training, the attendees signed the WEAT Completion Form.
- PG&E's onsite biologist also trained Field Contact Representatives (FCRs), who will be responsible for compliance with biological avoidance and mitigation measures. As of July 31, 2020, a total of 15 FCR training sessions were conducted. Of those, in July 2020, two FCR sessions were conducted and three employees/contractors were trained.
- Training records are kept electronically and at the temporary construction trailers at the SPY. The records are available upon request.

2.4 Status of Work Variance Requests (WVRs)

There were no proposed WVRs in July 2020. For reference, Table 2-3 includes information regarding activities related to approved and proposed WVRs (i.e., material deviations from the design documents, the C/RAWP, or other approved work plans), and agencies' actions on those requests.

2.5 Use of Future Activity Allowance

There has been no proposed use of Future Activity Allowance (FAA) to date.

2.6 Issues Encountered and Actions Taken to Rectify Issues/Problems

- On July 22, 2020, DTSC personnel (Chris Guerre) noticed some oil spots near the driller's area inside the CHQ. DTSC informed PG&E and compliance personnel. The driller and compliance personnel removed the impacted rock/soil the next day.
- During the weekend of July 11–12, 2020, when the daytime temperature highs were above 120 degrees, the black steel knuckle of a backhoe, located at the staging area for jack and bore activities, reached a temperature over 180 degrees resulting in the grease to melt out of the arm knuckle. Compliance personnel removed the oily soil and took to the IM-3 treatment plant for pick up during the next milk run.
- On July 1, 2020, a biological monitor noticed the breach from a concrete washout containment located at the top of Pipeline J and contacted onsite compliance personnel. The containment was used to clean out of a construction truck in their repair of Pipeline J. The water spilled onto the aggregate base that was part of Pipeline J. The release was contained within the authorized work area for Pipeline J per the ERTC and did not extend into the ravine below. The contractor removed the wet material and transported to the SPY for classification per the Remedy Soil Management Plan.
 - **Root Cause** – New plastic was not used for cleanout liner during the construction of the slurry cleanout containment pad. A small hole was noticed in the plastic during the cleanup, that resulted in a minor release below the liner and onto the soil.
 - **Corrective Action** – Use new plastic.

2.7 Key Personnel Changes

The contractor for the MW-20 Bench remedy facilities was changed from ARB to Arcadis. Onboarding of the new MW-20 Bench contractor continues in July 2020.

2.8 Communication with the Public

There was no communication with the public on remedy construction activities in July 2020.

2.9 Planned Activities for Next Six Weeks (August 9 to September 19, 2020)

The planned activities for next six weeks (August 9 to September 19, 2020) include the following:

- Complete well installation at IRZ-9, IRZ-18, and MW-96 (relocated MW-A).
- Complete well development and testing at IRZ-18.
- Complete well development at IRZ-13.
- Continue the installation of Pipeline C along NTH.
- Continue jack and bore casing installation at Pipeline C9.
- Continue the installation at the RPWC system tank pad and associated piping/conduit.
- Complete mobilization of the new contractor for remedy facilities at the MW-20 Bench.
- Resumed construction of remedy facilities at the MW-20 Bench.
- Continue to conduct noise and dust monitoring and inspection of SWPPP BMPs.
- Continue to log and manage waste generated.
- Continue to manage displaced soil per the approved SMP.

Attachment G contains the six-week look-ahead schedule available at this time. Any adjustments to the schedule will occur as needed via the weekly emails (sent at the end of each week) and/or the daily list of construction activities (published daily and discussed with agency and Tribal representatives on site on that day).

2.10 Construction Schedule Review

Phase 1 of the groundwater remedy construction started on October 2, 2018. Table 2-4 presents a summary of the percent completeness for key construction activities as of July 31, 2020. In addition, the latest project schedule including Phase 1 construction can be downloaded from the [project website](#).

2.11 Available Sitewide Groundwater Monitoring Data (DTSC Condition of Approval xi)

Pursuant to Condition of Approval # xi in DTSC's approval letter dated August 24, 2018 (DTSC, 2018a), PG&E is required to report data from samples collected as part of the sitewide groundwater monitoring program within 60 days of sample collection. In compliance with this requirement, PG&E submitted validated data to DTSC via monthly emails. For ease of recordkeeping and to minimize the number of ad-hoc compliance reports/emails, PG&E has included validated data in each monthly progress report starting with the November 2018 monthly report. The validated data are included in Attachment H of this report.

3. References

California Department of Toxic Substances Control (DTSC). 1996. *Corrective Action Consent Agreement (Revised), Pacific Gas and Electric Company's Topock Compressor Station, Needles, California*. EPA ID No. CAT080011729. February 2.

California Department of Toxic Substances Control (DTSC). 2018a. *Acceptance and Conditional Approval of Groundwater Remedy Design and Corrective Measures Implementation Workplan at Pacific Gas and Electric Company, Topock Compressor Station, Needles, California*. April 24.

California Department of Toxic Substances Control (DTSC). 2018b. *Final Subsequent Environmental Impact Report for the Pacific Gas and Electric Company Topock Compressor Station Final Groundwater Remediation Project*. April 24.

California Department of Toxic Substances Control (DTSC). 2019. [Community Outreach Plan, Pacific Gas and Electric Company's Topock Compressor Station, Needles, California](#). May.

CH2M HILL, Inc. (CH2M). 2014. *Final Programmatic Biological Assessment for Pacific Gas and Electric Topock Compressor Station Final Groundwater Remedy*. April 28.

CH2M HILL, Inc. (CH2M). 2015a. *Basis of Design Report/Final (100%) Design Submittal for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California*. November 18.

CH2M HILL, Inc. (CH2M). 2015b. *Construction/Remedial Action Work Plan for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California*. November 18.

United States Department of the Interior (DOI). 2012. [Community Involvement Plan, Pacific Gas and Electric Topock Compressor Station, Needles, California](#). September.

United States Department of the Interior (DOI). 2013. *Remedial Action/Remedial Design Consent Decree (CD) between the United States of America and Pacific Gas & Electric Company*. Case 5:13-cv-00074-BRO-OP, Document 23. Entered November 21.

United States Department of the Interior (DOI). 2018. *Approval of PG&E Topock Compressor Station Remediation Site – Basis of Design Report/Final (100%) Design Submittal and Construction/Remedial Action Work Plan for the Final Groundwater Remedy and the Supplemental and Errata Information for the Final (100%) Design for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California*. Letter from Pamela Innis/DOI to Curt Russell/PG&E. April 3.

Tables

Table 2-1a. Summary of Non-Well Environmental Release-To-Constructions (ERTCs)

July 2020 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup
PG&E Topock Compressor Station, Needles, California

ERTC No.	Brief Description of Covered Areas and Scope of Authorized Activities	Original Issue Date*
1	Initial mobilization activities at the Construction Headquarters (CHQ), Soil Processing Yard (SPY), and three staging areas (#9 Parking area off I-40, #18 MW-20 Bench, and #23 Transwestern Bench). Scope included installation of temporary construction trailers, portable generators, SWPPP BMPs, construction signages, and temporary construction fencing, as well as equipment staging and truck inspections.	August 10, 2018
Addendum 1 to ERTC #1	Scope included setup of wastewater and freshwater storage tanks at MW-20 Bench, improvement of the access road at the CHQ, installation of perimeter fence at the SPY, and grading at SPY.	September 21, 2018
Addendum 2 to ERTC #1	Scope included grading for drill rig setup at IRZ-20.	October 4, 2018
Addendum 3 to ERTC #1	Scope included geotechnical investigation in the footprint of the future Carbon Amendment building at the MW-20 Bench.	October 9, 2018
Addendum 4 to ERTC #1	Scope included the installation of a temporary handrail along the walkway from the MW-20 Bench to the floodplain.	December 28, 2018
2	Scope included the installation of the temporary construction water system and construction water tanks at Area #25 Route 66 Welcome Sign.	September 28, 2018
3	Scope included the installation of the Public Information Trailer, a fugitive dust sign, an information kiosk, and a construction delivery sign at the northwest corner of Park Moabi Road and National Trails Highway (NTH).	September 4, 2018
4	Scope included the installation of a truck containment pad at the Topock Compressor Station (TCS) evaporation ponds and maintenance of the access road to the ponds.	September 24, 2018
6	Scope included the geotechnical investigation along Pipeline F alignment (on the Compressor Station entrance road).	October 3, 2018
7	Scope included the installation of traffic control along the southern end of NTH per the Traffic Control Plan.	September 17, 2018
9	Scope included the transplantation and planting of sensitive plants.	November 9, 2018
10	Scope included potholing activities along approved pipeline alignments and in building footprints, that are also in AOCs/SMWUs. The purpose is to pre-characterize soil in preparation for construction.	March 29, 2019
11	Scope included preparation of temporary staging areas, vegetation clearance, placement of stabilization mats, potholing in select locations, and installation of Pipeline C segments C1 through C6 in the floodplain.	January 3, 2019
11a	Scope included preparation of temporary staging areas, vegetation clearance, placement of stabilization mats, potholing in select locations, and installation of Pipeline C segments C7-C10, and C17 in the floodplain.	February 11, 2019
Addendum 1 to ERTC #11a	Scope included installation of Pipeline C Segment C14 along the southern access road to the floodplain (between BNSF railroad and I-40 bridges).	October 3, 2019
11b	Scope included installation of Pipelines B, F, and J.	May 31, 2019
Addendum 1 to ERTC #11b	Scope included details for installation of Pipeline B/F/J inside TCS.	July 25, 2019
Addendum 1 to ERTC #11c	Scope included details for installation of Pipeline C Segments C13, C15, C16, C19, and C20, along NTH.	July 27, 2020
12	Scope included non-intrusive site preparation work for the brine tanks containment upgrade on the MW-20 Bench (per Work Variance Request #1, refer to Table 2-3). A	January 10, 2019

ERTC No.	Brief Description of Covered Areas and Scope of Authorized Activities	Original Issue Date*
	forthcoming addendum to this ERTC will be issued to include the actual upgrade activities.	
12a	Scope included the actual brine tanks containment upgrade activities which include intrusive work on the MW-20 Bench (per Work Variance Request #1, refer to Table 2-3).	February 6, 2019
13	Scope included the installation of remedy facilities on MW-20 Bench.	November 21, 2019
14	Scope included site preparation for the installation of Pipeline M inside TCS.	December 11, 2019
Addendum 1 to ERTC #14	Scope included site preparation for the Phase 1 Remedy-produced Water Conditioning System and associated piping.	February 27, 2020
Addendum 2 to ERTC #14	Scope included the installation of the Phase 1 Remedy-produced Water Conditioning System and associated piping, as well as the secondary containment pad for the water conditioning system.	June 17, 2020
15	Scope included the installation of Pipeline M2-M6 and X Installation Inside TCS	December 13, 2019
16	Scope included soil resistivity survey and the installation of pipeline C9 (Jack and Bore) and pipeline C8b.	December 29, 2019

* Original date that the ERTC was issued. A forecast of the work duration is typically included in the ERTC. As work progresses, the contractor tracks performance against schedule. If there is a schedule delay and work would be performed past the original forecast duration, an extension to the ERTC is issued. ERTC extensions are discussed in the monthly progress reports.

Table 2-1b. Summary of Well Environmental Release-To-Constructions (ERTCs)

July 2020 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup
PG&E Topock Compressor Station, Needles, California

ERTC No.	Brief Description of Covered Areas and Scope of Authorized Activities	Issue Date
5a	Scope included the site setup, drilling, testing, and demobilization at MW-L.	September 27, 2018
5b	Scope included the placement of soil stabilization mats in the floodplain, setup of a temporary staging area near the north end of the access route in the floodplain, rig setup, installation of snow fence to protect plants, drilling, testing, and demobilization at IRZ-15.	October 12, 2018
5c	Scope included the site setup, drilling, testing, and demobilization at IRZ-20 on the MW-20 Bench.	October 15, 2018
5d	Scope included the site setup, drilling, testing, and demobilization at MW-E on the MW-20 Bench.	October 29, 2018
5e	Scope included the site setup, drilling, testing, and demobilization at MW-N in the upland.	November 15, 2018
5f	Scope included the site setup, drilling, testing, and demobilization at IRZ-13 in the floodplain.	November 7, 2018
5g	Scope included the site setup, drilling, testing, and demobilization at IRZ-23 on the MW-20 Bench.	November 8, 2018
5h	Scope included the site setup, drilling, testing, and demobilization at MW-M in the upland.	January 15, 2019
5i	Scope included the site setup, drilling, testing, and demobilization at IRZ-9 in the floodplain.	November 28, 2018
5j	Scope included the site setup, drilling, testing, and demobilization at IRZ-25 on the MW-20 Bench.	December 3, 2018
5k	Scope included the site setup, drilling, testing, and demobilization at IRZ-21 on the MW-20 Bench.	December 9, 2018
5l	Scope included the site setup, drilling, testing, and demobilization at MW-B in the floodplain.	December 10, 2018
Addendum to ERTC #5l	Scope included the setup of an additional temporary equipment and material staging area in the floodplain.	December 13, 2018
5m	Scope included the site setup, drilling, testing, and demobilization at MW-F along NTH.	December 17, 2018
5n	Scope included the site setup, drilling, testing, and demobilization at IRZ-11 in the floodplain.	December 17, 2018
5o	Scope included the site setup, drilling, testing, and demobilization at MW-X and MW-Y' in Arizona.	April 23, 2019
5p	Scope included the site setup, drilling, testing, and demobilization at MW-G along NTH.	January 14, 2019
5q	Scope included the site setup, drilling, testing, and demobilization at IRZ-16 and IRZ-17 in the floodplain.	February 14, 2019
5r	Scope included the site setup, drilling, testing, and demobilization at IRZ-27 and IRZ-29 along NTH. Also included in the scope are potholing activities along Pipeline C Segments C13, C15, and C16 and on the MW-20 Bench.	March 9, 2019
Addendum #1 to ERTC #5r	Scope included the potholing to locate Transwestern Gas Pipeline within NTH (in support of Pipeline C installation).	April 24, 2019
Addendum #2 to ERTC #5r	Scope included the installation of NTH IRZ-27/29/31/33/35 and the temporary Frontier bypass.	November 19, 2019
5s	Scope included the site setup, drilling, testing, and demobilization at IRZ-39 in the low area, north of the Transwestern Bench.	March 12, 2019

ERTC No.	Brief Description of Covered Areas and Scope of Authorized Activities	Issue Date
5t	Scope included the site setup, drilling, testing, and demobilization at IRZ-27 along NTH.	March 19, 2019
5u	Scope included the site setup, drilling, testing, and demobilization at MW-U in I-40 median.	March 22, 2019
5v	Scope included the site setup, drilling, testing, and demobilization at MW-10D in Bat Cave Wash.	March 27, 2019
5w	Scope included the site setup, drilling, testing, and demobilization at MW-W in the floodplain.	March 22, 2019
5x	Scope included the site setup, drilling, testing, and demobilization at RB-1 through 5 wells and MW-O in the floodplain.	March 30, 2019
5y	Scope included the site setup, drilling, testing, and demobilization at MW-S on the access road to Bat Cave Wash.	April 12, 2019
5z	Scope included the site setup, drilling, testing, and demobilization at MW-R in the Upland.	May 8, 2019
5aa	Scope included the site setup, drilling, testing, and demobilization at MW-C, MW-D, and MW-H in the floodplain	June 6, 2019
5ab	Scope included the site setup, drilling, testing, and demobilization at IRZ-19 (sonic drilling) in the floodplain	July 22, 2019
5ac	Scope included the site setup, drilling, testing, and demobilization at MW-11D (sonic drilling) in Bat Cave Wash	September 25, 2019
5ad	Scope included the site setup, drilling, testing, and demobilization at Hydro-6a monitoring well in Arizona	October 16, 2019
5ae	Scope included the site setup, drilling, testing, and demobilization at MW-70BRd in East Ravine	October 4, 2019
5af	Scope included the site setup, drilling, testing, and demobilization at MW-Z	January 22, 2020
5ag*	Scope included the site setup, drilling, testing, and demobilization at IRZ-18 on MW-20 Bench	November 15, 2019
5ah	Scope included the site setup, drilling, testing, and demobilization at MW-V	February 10, 2020
5ai	Scope included vegetation removal at PGE-9S, 9N, and HNWR-1A	February 14, 2020
5aj	Scope included the site setup, drilling, testing, and demobilization at MW-96 (former MW-A, relocated) and MW-97 (former IRZ-11, repurposed) in the floodplain	June 29, 2020
5ak	Scope included activities related to the 72-Hour aquifer test at TW-3D	May 22, 2020

* A time extension for ERTC 5ag was issued on 7/27/2020 for contractors to complete work at well IRZ-18.

Table 2-2. Monitoring Wells Nomenclature Changes

*July 2020 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup
PG&E Topock Compressor Station, Needles, California*

Previous Well Name	New Monitoring Well Name
MW-70BR-D	MW-70BR-289
MW-B-033	MW-75-033
MW-B-117	MW-75-117
MW-B-202	MW-75-202
MW-B-267R	MW-75-267
MW-B-337	MW-75-337
MW-C-039	MW-76-039
MW-C-156	MW-76-156
MW-C-181	MW-76-181
MW-C-218	MW-76-218
MW-D-046R	MW-77-046
MW-D-102	MW-77-102
MW-D-158	MW-77-158
MW-D-187	MW-77-187
MW-E-072	MW-78-072
MW-E-142	MW-78-142
MW-F-060	MW-79-060
MW-F-104	MW-79-104
MW-G-057	MW-80-057
MW-G-082	MW-80-082
Former IRZ-19	MW-81-43
Former IRZ-19	MW-81-98
MW-H-046	MW-82-046
MW-H-112	MW-82-112
MW-H-168	MW-82-168
MW-H-198	MW-82-198
MW-L-090	MW-83-090
MW-L-180	MW-83-180
MW-L-225	MW-83-225
MW-L-245	MW-83-245
MW-M-057	MW-84-057
MW-M-095	MW-84-095
MW-M-132	MW-84-132
MW-M-193	MW-84-193

Previous Well Name	New Monitoring Well Name
MW-N-129	MW-85-129
MW-N-217	MW-85-217
MW-N-237	MW-85-237
MW-O-030	MW-86-030
MW-O-066	MW-86-066
MW-O-120	MW-86-120
MW-O-140	MW-86-140
MW-R-109	MW-87-109
MW-R-139	MW-87-139
MW-R-192	MW-87-192
MW-R-275	MW-87-275
MW-S-109	MW-88-109
MW-U-183	MW-89-183
MW-U-273	MW-89-273
MW-W-031	MW-90-031
MW-X-045	MW-91-045
MW-X-120	MW-91-120
MW-X-170	MW-91-170
MW-X-320	MW-91-320
MW-Y-037	MW-92-037
MW-Y-072	MW-92-072
MW-Y-102	MW-92-102
MW-Y-122	MW-92-122
MW-Z	MW-93
HYDRO-6 (deep)	MW-94-30
HYDRO-6 (mid)	MW-94-100
HYDRO-6 (shallow)	MW-94-175
MW-V	MW-95-TBD
MW-A	MW-96-TBD
Former IRZ-11	MW-97-TBD

Table 2-3. Summary of Work Variance Requests (WVRs)

July 2020 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup
PG&E Topock Compressor Station, Needles, California

WVR No.	Brief Description of Work Variance Request	Approval Dates
1	<p>This WVR addressed PG&E's proposed modification to the brine tanks containment for use by the remedy, specifically:</p> <ul style="list-style-type: none"> • Upgrade the existing lined containment to concrete - The original synthetic liner material has degraded from exposure to UV light, heat, and abrasion and must be replaced. PG&E proposed to replace the synthetic-lined containment (including K-rails) with a concrete containment to support the groundwater remedy. The concrete color will be desert tan, and information on this proposed concrete color will be submitted to the agencies for review. The proposed concrete material will be similar to the material of the truck lane in the final remedy design (refer to Appendix E of the Final Basis of Design Report (CH2M, 2015a),* Section 033 00, Cast-In-Place Concrete). • Shorten the length of the containment - This containment will have the same height as the existing containment, but with a slightly smaller footprint (the length is 5 feet shorter). This smaller footprint still meets the required volume for a secondary containment and allows for more space for remedy construction at the tight MW-20 bench. 	<p>DOI approved WVR #1 on June 22, 2018 DTSC approved WVR #1 on July 5, 2018</p>
2	<p>PG&E proposed to relocate the tie-in point for remedy construction water to an aboveground location inside Topock Compressor Station (TCS) and below the TCS Water Storage Tanks. This is to eliminate the risk of damaging the existing pressurized 6-inch water line and to avoid any interference with PG&E Gas Operations control of the Station's water supply. The WVR addressed this relocation, specifically:</p> <ul style="list-style-type: none"> • Relocate the construction water tie-in point to an aboveground location below the TCS Water Storage Tanks, inside TCS – The final design calls for the temporary construction water line to hot-tap into the existing 6-inch steel water line just as the line turns southwest to continue to TCS. PG&E proposed to move the tie-in point to an aboveground valve manifold, located below the TCS Water Storage Tanks in the boneyard area. • Extend the temporary construction water line to the new tie-in point, along Pipeline 300A access road – The planned 4-inch high-density polyethylene (HDPE) temporary construction water line will be extended, following the route of the Pipeline 300A access road, to the new tie-in point inside TCS. This pipeline extension is approximately 1,950 feet and is also made of 4-inch HDPE. The pipe will be laid on ground surface and to the south of the 6-inch water line where possible. At the crossing with the SoCal Gas pipeline access road, the pipeline will be at grade with fill to allow for vehicle crossing. 	<p>DOI/DTSC approved WVR #2 on August 29, 2018</p>
3	<p>PG&E proposed changes within the CHQ fence line to avoid/minimize the overall amount of soil disturbance during construction, reduce the number of truck trips to haul wastewater, and allow for additional working space within the yard. There are no proposed changes to the CHQ footprint nor its fence line. The specifics are described below:</p> <ul style="list-style-type: none"> • Relocate the decontamination pad from the western fence to the northern fence (near the western corner). Based on recent survey data collected during construction, the difference in ground elevation between northern and southern end of the pad is about 4 feet. Moving the pad to the northern fence would eliminate the difference in ground elevation and reduce the amount of soil disturbance by at least 80 cubic yards. • Bring the remedy-produced wastewater tank from belowground to aboveground, increase the tank volume from 1,000 to 2,500 gallons, and place the aboveground, double-walled tank adjacent to the decontamination pad. The change from belowground to aboveground reduces the amount of soil disturbance by at least 50 cubic yards. The change to a bigger tank will reduce the amount of truck trips needed to haul wastewater. The placement of the tank adjacent to the decontamination pad allows for the pad to function as a secondary containment for the haul truck during off-loading of the wastewater. • Defer construction of the underground sewage tanks. Deferral of the underground tanks reduces the overall amount of soil disturbance by at least 800 cubic yards. All sanitary wastes will be managed in aboveground sewage tanks (similar to the ones currently used for the SPY trailers) or portable toilets. • Swap the location of the construction trailers and the sunshade and change the configuration of the sunshade from a rectangle to a square. This change will allow for more working space within the CHQ. All functions that would occur in the Workshop/Sampling Processing building will be conducted in the construction trailers. 	<p>DOI/DTSC approved WVR #3 on January 4, 2019</p>

WVR No.	Brief Description of Work Variance Request	Approval Dates
4	PG&E proposed to revise a segment of Pipeline C near the I-40 bridge, to meet the permit requirement in Caltrans Encroachment Permit No. 08-18-6-MW-0533. The revision involves relocating a small segment of Pipeline C to within National Trails Highway to meet a minimum distance of 10 feet from current and future I-40 bridge footings. The treatment measure specified for Segment X of National Trails Highway in the Cultural and Historic Property Management Plan will be implemented during installation of this pipeline segment.	DOI/DTSC approved WVR #4 on May 14, 2019
5	PG&E proposed to phase the remedy produced water conditioning system within the approved footprint inside TCS.	DOI and DTSC approved WVR #5 on July 19 and July 22, 2019, respectively.
6	<p>In early October 2018, PG&E conducted a geotechnical investigation along the Pipeline F alignment on the entrance road to the TCS and the adjacent hill side. Based on the geotechnical results, the construction contractor (PIVOX) indicated that soldier piles and lagging would be required for temporary shoring. Over 40 soldier piles would be installed by drilling using a 330-sized excavator or larger. A 330-sized excavator has a general width of 11 feet, and counter weight clearance of approximately 4 feet. During operation, this rig would occupy a minimum 15 to 16 feet width of the TCS entrance road for about 12 days. The paved width of the road is between 22 to 24 feet in the area of shoring (per review of the location via Google Earth).</p> <p>Assuming a minimum clearance of 1 foot (which is still less than the recommended clearance) from any operating equipment, there will be approximately 5 to 8 feet of available lane width for access by TCS traffic. Large vehicles (tractor-trailers, delivery trucks, construction equipment) will likely not be able to pass by the active operation, and passenger vehicles may also not be able to pass the active operation in locations where the road narrows. Also, the excavator cannot be repositioned while soldier piles are being drilled. In sum, access to TCS will be severely restricted for about 12 days. This is not acceptable for Compressor Station operations.</p> <p>Therefore, PG&E proposed to realign Pipeline F (starting from segment F3) along the approved alignment of Pipelines B and J. Construction of Pipelines F, B, and J would occur in the same alignment and at the same time.</p>	DOI and DTSC approved WVR #6 on May 21 and May 22, 2019, respectively.
7	<p>This WVR proposed the following changes to remedy infrastructure at the CHQ and SPY.</p> <ul style="list-style-type: none"> a) Locate all temporary office and break trailers at the SPY. PG&E proposed to keep the three existing office trailers at their current locations in the SPY and add two additional office trailers and one break trailer for workers. The additional trailers will be equipped with aboveground sewage tanks, similar to the existing trailers. They will also be powered by Needles Electric. This will require the original SPY fence line to be extended south/southwest to encompass these trailers and the original truck entrance from National Trails Highway to the access road east of SPY. Neither changes reduce the overall area available for soil storage. b) Eliminate the workshop/sample processing building at the CHQ. The function planned for this building will be moved to the Carbon Amendment building at the MW-20 Bench. Removal of this building reduces the amount of soil disturbance by approximately 334 cubic yards. c) Eliminate the sunshade at the CHQ. The function for the sunshade will be replaced by the break trailer for the workers. Removal of the sunshade reduces the amount of soil distance (i.e., installation of the footings) by approximately 14 cubic yards. d) Convert the utility pad at the CHQ to a smaller transformer/electrical panel pad. With the relocation of the six trailers to SPY and elimination of the workshop/sample processing building, PG&E proposed to convert the utility pad to smaller pad for a smaller transformer/electrical panel to serve the remaining trailers at the CHQ. This reduces the amount of soil disturbance by approximately 61 cubic yards. 	DOI and DTSC approved WVR #7 on June 14, 2019.
8	On September 12, 2019, PG&E proposed a WVR to change the alignment of pipeline segment C6 on the eastern slope of the MW-20 Bench. The purpose of the WVR is to reduce the amount of soil disturbance, reduce the number of plants to be removed, reduce the safety risks associated with construction atop the MW-20 bench, and reduce the hazards associated with operation at the MW-20 bench during construction.	DTSC and DOI approved WVR #8 on October 4 and 8, 2019, respectively.
9	On March 20, 2020 and at DTSC's direction, PG&E submitted a WVR to relocate MW-A and convert IRZ-11 to a monitoring well.	DTSC and DOI approved WVR #9 on April 24, 2020.

Note:

* CH2M HILL, Inc. (CH2M). 2015a. *Basis of Design Report/Final (100%) Design Submittal for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California*. November 18.

Table 2-4. Summary of Cumulative Percent Completeness of Key Construction Activities

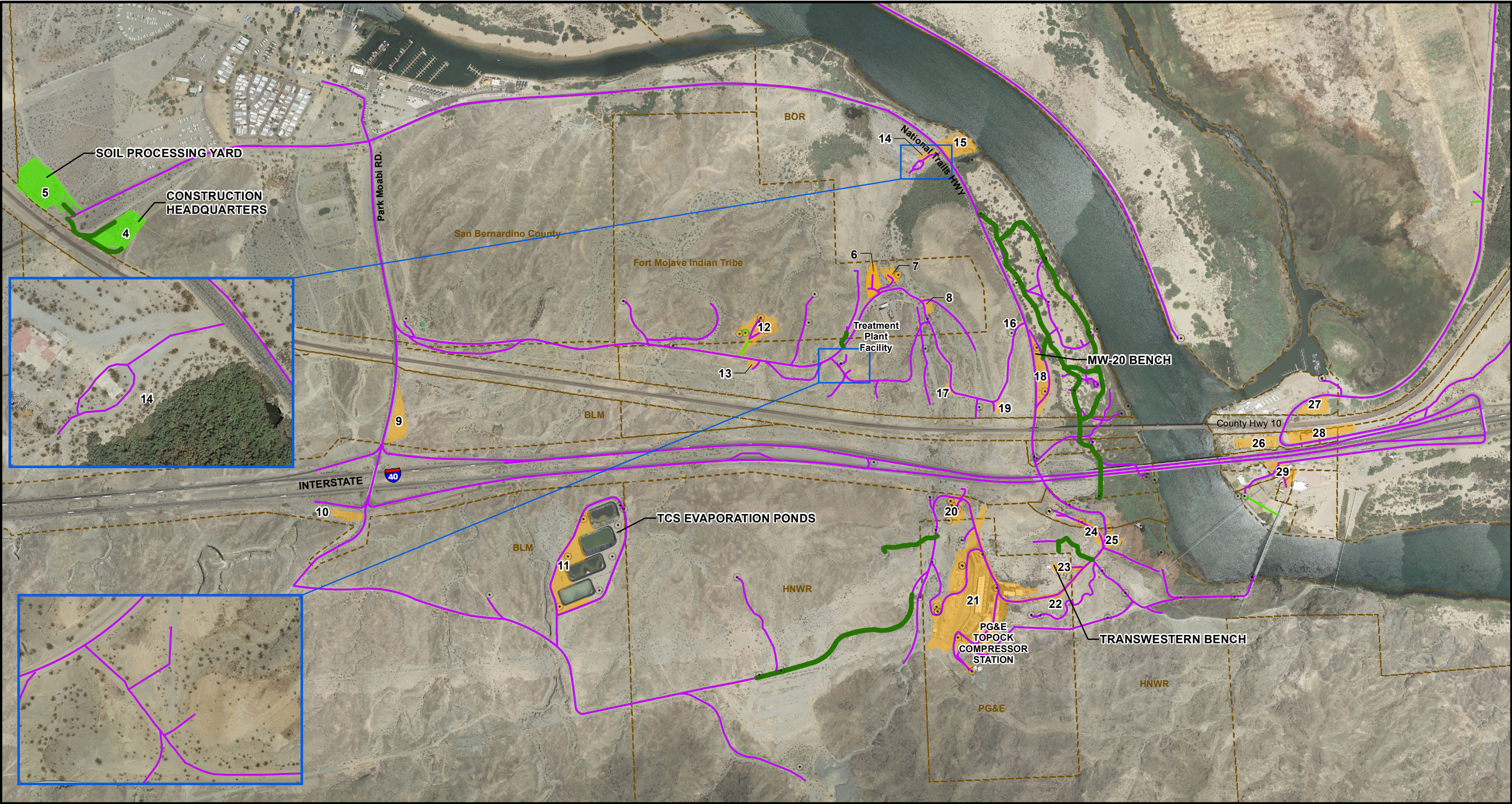
July 2020 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup

PG&E Topock Compressor Station, Needles, California

Activity	% Complete	Cumulative Status of Construction Activities (as of July 31, 2020)
Project signage & Public Information Office	100%	Complete.
Staging Areas 9, 18, and 23 set-up	100%	Complete.
Temporary construction offices at Soil Processing Yard	100%	Complete.
Soil Processing Yard including security fence	100%	Complete.
National Trails Highway lane closure and traffic control installation	100%	Complete.
Temporary construction water line	100%	Complete.
TCS Ponds concrete containment pad	100%	Complete.
Construction Headquarters (CHQ) access road and security fence	100%	Complete.
Brine Tanks containment upgrade	100%	Complete.
MW-L, N, E, W, O, R, M, U, 10D, 11D, B, C, D, H, S, Hydro-6, X, Y', G, F, V, and Z.	100%	Complete.
MW-B-267 (damaged)	100%	Completed well abandonment. Installation of replacement well complete.
MW-C (shallow, sand entered well casing)	100%	Video log complete. A plug was installed below well screen. Subsequent development was successful.
MW-S (damaged)	100%	Over drill effort unsuccessful. Installation of replacement well complete.
MW-70BR (damaged)	90%	Bentonite grout had entered the well casing. The conductor casing was damaged and the well was repaired in June 2020. The repair consisted of cleaning out the borehole to approximately 246 feet bgs, set a 4-inch PVC sleeve to approximately 240 feet, and cement to approximately 230 feet. Well development was completed in July 2020. Addition of well head risers is scheduled for August 2020.
MW-97 (former IRZ-11 MW)	80%	Well construction complete. Awaiting development and surface completion.
MW-96 (relocated MW-A)	Not available	Work to start in August.
Pilot borings for wells RB-5, RB-4, RB-3, RB-2, IRZ-9, 13, 15, 16, 17, 18, 21, 23, 25, 27, 29, 31, 35, 37, and 39.	100%	Complete.
RB-2, RB-3, RB-4, and RB-5	100%	Complete.
IRZ-15, IRZ-33, IRZ-35, IRZ-37, and IRZ-39	80-95%	Well construction complete. Surface completion for select wells along NTH pending pipeline corridor construction.
IRZ-13D	90%	Well construction and development complete. Awaiting surface completion.
IRZ-13S	80%	Well construction complete. Awaiting development and surface completion
IRZ-9	20%	Well construction in progress.
IRZ-18	50% est.	Well construction started in July. As of July 31, 2020, drilled 100 feet of the target depth of 192 feet.

Activity	% Complete	Cumulative Status of Construction Activities (as of July 31, 2020)
IRZ-16, IRZ-17, IRZ-21, IRZ-23, IRZ-25, IRZ-27, IRZ-29, and IRZ-31	99%	Awaiting surface completion.
Evaluation of RB-3 performance (sand production observed during development)	100%	Video log complete. Options for path forward were discussed with agencies on 12/19/19. A path forward was selected and is being implemented. Bottom portion of screen backfilled with pea gravel. Subsequent development and testing showed that the well is functioning properly.
Pipeline B	100%	Substantially complete. Temporary erosion control measures in place.
Pipeline C Floodplain Segments C3, C4, C5, C6, C7, C8, C8-Alt, C14 including aggregate-based access road in floodplain	100%	Substantially complete.
Pipeline C NTH Segments C13, C15, C16, C19, C20	0%	Started on August 3, 2020. Work in progress.
Pipeline C9, C10, C17	12%	C9 casing (hand mine and jack-and-bore) installation started in June 2020.
Pipeline F	90%	Started mid-March. Work re-started in May 2020. Work in progress.
Pipeline J Segments J1 and J2	95%	Damaged by rainstorm. Repair work started in June 2020 and is in progress. To prevent future rainstorm damage, the surface on top of this segment will be covered by asphalt.
Pipeline J Segments J3 and J4	90%	Started in June 2020. Work in progress.
Pipeline M2-M6 (inside TCS)	100%	Substantially complete.
Pipeline X (inside TCS)	0%	To be started September 2020.
Pipeline F8, M1, Phase 1 Remedy-produced water conditioning system and associated piping (TCS)	10%	Started on June 22, 2020. Work in progress.
MW-20 Bench carbon amendment facility and associated piping	60%	Contractor remobilization September 2020

Figures



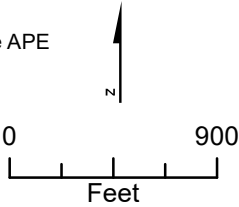
LEGEND

- Existing Access Route (will continue to be used for remedial activities)
- Existing Route (to be used as is for access to remedial activities)
- Roads to be improved or constructed for groundwater remedy
- Soil Processing (Area #5) and Construction Headquarters (Area #4) for Remediation Project
- Staging Areas for Remediation Project
- 5 Area # referenced in the Notes

Notes:

- Decontamination pads will be located in Area #21 (Topock Compressor Station), and Area #23 (Transwestern Bench).
- Areas #15, 16, 17, 19, and 20 will not be used as staging areas. Areas #16, 17, and 19 may be part of the primary work zones for remedy infrastructure along the access road.
- Area #20 may be part of the primary work zone for installation of future provisional well IRL-6 (if determined to be needed in the future) and associated piping/concrete/vault.

- Public roadways outside of the EIR project area and the APE can also be used for remedy implementation.



**FIGURE 2-1
CONSTRUCTION SITE PLAN
AND ACCESS ROUTES**
GROUNDWATER REMEDY PHASE 1 CONSTRUCTION
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA



- LEGEND
- Injection Well
 - Groundwater Monitoring Well
 - Water Supply Well
 - Remediation Well

Figure 2-2
Well Locations
Groundwater Remedy Phase 1 Construction
PG&E Topock Compressor Station Needles,
California

Attachment A

Photographs



**Photo showing
excavation of
station side
jack and bore
pit**



**Photo showing
placement of
shoring box at C9
jack and bore**



Photo showing
setting of
plastic and
tracking boards
at C9 jack and
bore

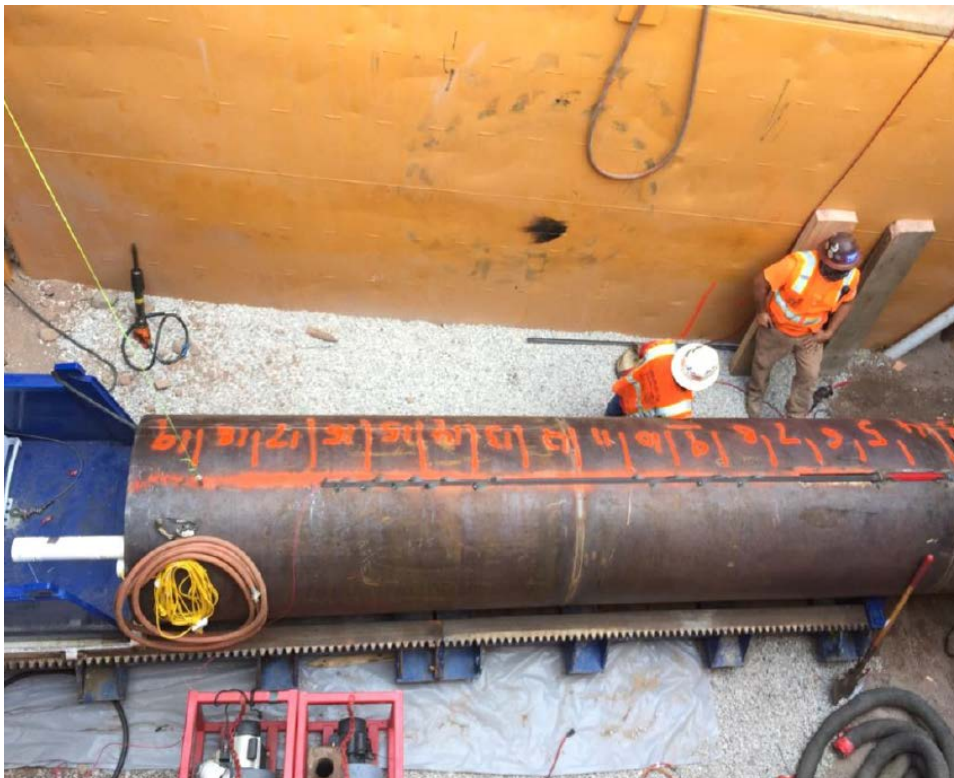


Photo showing
steel casing at
C9 jack and
bore



Photo showing hand mining operation at C9 jack and bore.



Photo showing pipe installation at Pipeline F Segment F1.



Photo showing compaction of AB material inside shore box.



Photo showing formwork inside shore box.



Photo showing hand dug of remedy pipe/conduit trenches inside TCS.



Photo showing continued excavation south of the Remedy-produced water tank pad inside TCS.



Photo showing trenches for firewater and raw water pipelines.



Photo showing driller cutting down PVC casing at MW-70BR.



Photo showing well MW-97 (at IRZ-11 location) secured.



Photo showing excavation and shoring at Pipeline J Segment J4.



Photo showing repair of Pipeline J Segment J2 (removal of eroded fill material).



Photo showing installation of detectable marking tape at Pipeline J Segment J3.



Photo showing pull box installation at Pipeline J Segment J3 South.



Photo showing concrete washout after a pour at Pipeline F/J.

Attachment B
Available Boring and Well Construction
Logs, Groundwater Sample Results from
Well Drilling, and Well Testing Activities

**(Logs and Well Testing Plans/Results are Presented in
Separate PDFs)**

Table B-1. Groundwater Sampling Results

July 2020 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup
PG&E Topock Compressor Station, Needles, California

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
MW-10D	MW-10D-041119	04/11/19	Vertical aquifer sample collected at 108 – 123 feet	160	160
MW-10D	MW-10D-VAS-107-112	04/01/19	Vertical aquifer sample collected at 107 – 112 feet	95	96
MW-10D	MW-10D-VAS-118-123	04/02/19	Vertical aquifer sample collected at 118 - 123 feet	200	190
MW-11D	MW-11D-VAS-122-127	10/07/19	Vertical aquifer sample collected at 122 - 127 feet	120	92
MW-11D	MW-11D-VAS-152-157	10/07/19	Vertical aquifer sample collected at 152 - 157 feet	1.1	10
MW-11D	MW-11D-VAS-177-182	10/08/19	Vertical aquifer sample collected at 177 - 182 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-11D	MW-11D-VAS-67-72	10/06/19	Vertical aquifer sample collected at 67 - 72 feet	370	370
MW-11D	MW-11D-VAS-92-97	10/06/19	Vertical aquifer sample collected at 92 - 97 feet	99	72
MW-11D	MW-11D-110219	11/02/19	Sample collected from well development	26	17
MW-94 (formerly Hydro-6)	MW-94-175-120419	12/04/19	Sample collected from well development	5.2	5.7
MW-75 (former MW-B)	MW-B-VAS-27-32	01/06/19	Vertical aquifer sample collected at 27 - 32 feet	Estimated concentration of 5.9 micrograms per liter	Estimated concentration of 7.7 micrograms per liter
MW-75 (former MW-B)	MW-B-VAS-47-52	01/09/19	Vertical aquifer sample collected at 47 - 52 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-75 (former MW-B)	MW-B-VAS-67-72	01/09/19	Vertical aquifer sample collected at 67 – 72 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-75 (former MW-B)	MW-B-VAS-102-107	01/10/19	Vertical aquifer sample collected at 102 – 107 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-75 (former MW-B)	MW-B-VAS-142-147	01/15/19	Vertical aquifer sample collected at 142 – 147 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-75 (former MW-B)	MW-B-VAS-182-187	02/13/19	Vertical aquifer sample collected at 182 - 187 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
MW-75 (former MW-B)	MW-B-VAS-207-212	02/14/19	Vertical aquifer sample collected at 207 - 212 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-75 (former MW-B)	MW-B-VAS-247-252	02/17/19	Vertical aquifer sample collected at 247 - 252 feet	Estimated concentration of 11 micrograms per liter	Not detected below reporting limit of 0.83 microgram per liter
MW-75 (former MW-B)	MW-B-VAS-264-269	02/18/19	Vertical aquifer sample collected at 264 - 269 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.33 microgram per liter
MW-75 (former MW-B)	MW-B-VAS-287-292	02/20/19	Vertical aquifer sample collected at 287 - 292 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-75 (former MW-B)	MW-B-VAS-317-322	02/21/19	Vertical aquifer sample collected at 317 - 322 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-75 (former MW-B)	MW-B-VAS-339-344	02/27/19	Vertical aquifer sample collected at 339 - 344 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.33 microgram per liter
MW-75 (former MW-B)	MW-B-VAS-352-357	02/28/19	Vertical aquifer sample collected at 352 - 357 feet	Estimated concentration of 0.603 micrograms per liter	Not detected below reporting limit of 0.33 microgram per liter
MW-75 (former MW-B)	MW-B-117-033019	03/30/19	Sample collected from well development at 117 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-75 (former MW-B)	MW-B-33-033119	03/31/19	Sample collected from well development at 33 feet	3.7	2.3
MW-75 (former MW-B)	MW-B-337-062619-INTERIM	6/26/19	Sample collected from well development	Estimated concentration of 0.255 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-75 (former MW-B)	MW-B-337-090719	9/7/2019	Sample collected from well development	Estimated concentration of 0.251 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-75 (former MW-B)	MW-B-267R-101619	10/16/19	Sample collected from well development	Estimated concentration of 0.147 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-75 (former MW-B)	MW-B-202-101819	10/18/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-76 (former MW-C)	MW-C-VAS-26-31	6/19/19	Vertical aquifer sample collected at 26-31 feet	360	380
MW-76 (former MW-C)	MW-C-VAS-51-56	6/25/19	Vertical aquifer sample collected at 51-56 feet	Estimated concentration of 0.13 micrograms per liter	Estimated concentration of 0.146 microgram per liter
MW-76 (former MW-C)	DUP-01-062519	6/25/19	Vertical aquifer sample collected at 51-56 feet	Not detected below reporting limit of 0.13 microgram per liter	Estimated concentration of 0.0931 microgram per liter

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
MW-76 (former MW-C)	MW-C-VAS-66-71	6/26/19	Vertical aquifer sample collected at 66-71 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-76 (former MW-C)	MW-C-VAS-81-86	6/27/19	Vertical aquifer sample collected at 81-86 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-76 (former MW-C)	MW-C-VAS-117-122	6/28/19	Vertical aquifer sample collected at 117-122 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-76 (former MW-C)	MW-C-VAS-147-152	6/29/19	Vertical aquifer sample collected at 147-152 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-76 (former MW-C)	MW-C-VAS-165-170	6/30/19	Vertical aquifer sample collected at 165-170 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-76 (former MW-C)	MW-C-VAS-176-181	7/1/19	Vertical aquifer sample collected at 176-181 feet	380	410
MW-76 (former MW-C)	MW-C-VAS-186-191	7/1/19	Vertical aquifer sample collected at 186-191 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-76 (former MW-C)	MW-C-VAS-200-205	7/2/19	Vertical aquifer sample collected at 200-205 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-76 (former MW-C)	MW-C-VAS-216-221	7/3/19	Vertical aquifer sample collected at 216-221 feet	Estimated concentration of 0.448 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-76 (former MW-C)	MW-C-156-081519	8/15/2019	Sample collected from well development	Data not available	Not detected below reporting limit of 0.17 microgram per liter
MW-76 (former MW-C)	MW-C-181-082019	8/20/2019	Sample collected from well development	280	280
MW-76 (former MW-C)	MW-C-218-082219	8/22/2019	Sample collected from well development	39	40
MW-76 (former MW-C)	MW-C-39-090519	9/5/2019	Sample collected from well development	14	16
MW-77 (former MW-D)	MW-D-VAS-30-35	08/10/19	Vertical aquifer sample collected at 30-35	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-77 (former MW-D)	MW-D-VAS-46-51	08/11/19	Vertical aquifer sample collected at 46-51 feet	Estimated concentration of 0.558 micrograms per liter	0.47
MW-77 (former MW-D)	MW-D-VAS-91-96	08/12/19	Vertical aquifer sample collected at 91-96 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
MW-77 (former MW-D)	MW-D-VAS-131-136	08/21/19	Vertical aquifer sample collected at 131-136 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.066 microgram per liter
MW-77 (former MW-D)	MW-D-VAS-141-146	08/22/19	Vertical aquifer sample collected at 141-146 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-77 (former MW-D)	MW-D-VAS-151-156	08/22/19	Vertical aquifer sample collected at 151 - 156 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-77 (former MW-D)	MW-D-VAS-161-166	08/23/19	Vertical aquifer sample collected at 161 - 166 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-77 (former MW-D)	MW-D-VAS-171-176	08/23/19	Vertical aquifer sample collected at 171 - 176 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-77 (former MW-D)	MW-D-VAS-181-186	08/24/19	Vertical aquifer sample collected at 181 - 186 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-77 (former MW-D)	MW-D-VAS-191-196	08/25/19	Vertical aquifer sample collected at 191 - 196 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-77 (former MW-D)	MW-D-158-092419	09/24/19	Sample collected from well development	Estimated concentration of 0.203 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-77 (former MW-D)	MW-D-187-092519	09/25/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-77 (former MW-D)	MW-D-102-100219	10/02/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-77 (former MW-D)	MW-D-46R-103119	10/31/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-79 (former MW-F)	MW-E-VAS-52-57	11/05/18	Vertical aquifer sample collected at 52 - 57 feet	7800	7000
MW-79 (former MW-F)	MW-E-VAS-82-87	11/06/18	Vertical aquifer sample collected at 82 - 87 feet	190	200
MW-79 (former MW-F)	MW-E-VAS-112-117	11/06/18	Vertical aquifer sample collected at 112 - 117 feet	3000	3100
MW-79 (former MW-F)	MW-E-VAS-137-142	11/07/18	Vertical aquifer sample collected at 137 - 142 feet	7900	7300
MW-79 (former MW-F)	MW-E-70-121418	12/14/18	Sample collected from well development at a depth of 70 feet	Data not available	3000

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
MW-78 (former MW-E)	MW-E-142-121418	12/14/18	Sample collected from well development at a depth of 142 feet	4500	4200
MW-79 (former MW-F)	MW-F-VAS-52-57	01/06/19	Vertical aquifer sample collected at 52 - 57 feet	2700	2500
MW-79 (former MW-F)	MW-F-VAS-82-87	01/07/19	Vertical aquifer sample collected at 82 - 87 feet	120	110
MW-79 (former MW-F)	MW-F-VAS-97-102	01/07/19	Vertical aquifer sample collected at 97 - 102 feet	1900	1800
MW-79 (former MW-F)	MW-F-VAS-112-117	01/08/19	Vertical aquifer sample collected at 112 - 117 feet	790	740
MW-79 (former MW-F)	MW-F-104-022719	02/27/19	Sample collected from well development at a depth of 104 feet	1800	1700
MW-79 (former MW-F)	MW-F-60-022819	02/28/19	Sample collected from well development at a depth of 60 feet	2300	2200
MW-80 (former MW-G)	MW-G-VAS-52-57	02/13/19	Vertical aquifer sample collected at 52 - 57 feet	790	680
MW-80 (former MW-G)	MW-G-VAS-67-72	02/14/19	Vertical aquifer sample collected at 67 - 72 feet	1000	920
MW-80 (former MW-G)	MW-G-VAS-77-82	02/15/19	Vertical aquifer sample collected at 77 - 82 feet	710	600
MW-80 (former MW-G)	MW-G-82-030219	03/02/19	Sample collected from well development at a depth of 82 feet	1500	1500
MW-80 (former MW-G)	MW-G-57-030219	03/02/19	Sample collected from well development at a depth of 57 feet	510	560
MW-81 (former IRZ-19)	MW-81-98-121919	12/19/19	Sample collected from well development	Estimated concentration of 0.145 micrograms per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-81 (former IRZ-19)	MW-81-43-010820	01/08/20	Sample collected from well development	Estimated concentration of 0.202 micrograms per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-82 (former MW-H)	MW-H-VAS-32-37	8/7/2019	Vertical aquifer sample collected at 32 - 37 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
MW-82 (former MW-H)	MW-H-VAS-47-52	8/7/2019	Vertical aquifer sample collected at 47-52 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-82 (former MW-H)	MW-H-VAS-82-87	08/08/19	Vertical aquifer sample collected at 82-87 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-82 (former MW-H)	MW-H-VAS-112-117	08/09/19	Vertical aquifer sample collected at 112-117 feet	8.1	Not detected below reporting limit of 0.17 microgram per liter
MW-82 (former MW-H)	MW-H-VAS-142-147	08/10/19	Vertical aquifer sample collected at 142-147 feet	Estimated concentration of 18 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-82 (former MW-H)	MW-H-VAS-152-157	08/10/19	Vertical aquifer sample collected at 152-157 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-82 (former MW-H)	MW-H-VAS-162-167	08/11/19	Vertical aquifer sample collected at 162-167 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-82 (former MW-H)	MW-H-VAS-172-177	08/12/19	Vertical aquifer sample collected at 172-177 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-82 (former MW-H)	MW-H-VAS-182-187	08/13/19	Vertical aquifer sample collected at 182-187 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-82 (former MW-H)	MW-H-VAS-192-197	08/14/19	Vertical aquifer sample collected at 192-197 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-82 (former MW-H)	MW-H-112-092019	09/20/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-82 (former MW-H)	MW-H-168-092119	09/21/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-82 (former MW-H)	MW-H-198-092219	09/22/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-82 (former MW-H)	MW-H-46-091919	09/19/19	Sample collected from well development	19	1.4
MW-83 (former MW-L)	MW-L-VAS-76-81	10/06/18	Vertical aquifer sample collected at 76 - 81 feet	8.1	31
MW-83 (former MW-L)	MW-L-VAS-106-111	10/09/18	Vertical aquifer sample collected at 106 - 111 feet	Estimated concentration of 0.697 micrograms per liter	0.84
MW-83 (former MW-L)	MW-L-VAS-141-146	10/10/18	Vertical aquifer sample collected at 141 - 146 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-83 (former MW-L)	MW-L-VAS-181-186	10/20/18	Vertical aquifer sample collected at 181 - 186 feet	3.8	3.3

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
MW-83 (former MW-L)	MW-L-VAS-218-223	10/21/18	Vertical aquifer sample collected at 218 - 223 feet	68	66
MW-83 (former MW-L)	MW-L-VAS-261-266	10/22/18	Vertical aquifer sample collected at 261 - 266 feet	0.284 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-83 (former MW-L)	MW-L-180-032819	03/28/19	Sample collected from well development at a depth of 180 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-83 (former MW-L)	MW-L-245-030319	03/03/19	Sample collected from well development at a depth of 245 feet	14	15
MW-83 (former MW-L)	MW-L-90-032919	03/29/19	Sample collected from well development at a depth of 90 feet	19	18
MW-83 (former MW-L)	MW-L-225-032919	03/29/19	Sample collected from well development at a depth of 225 feet	410	380
MW-84 (former MW-M)	MW-M-VAS-52-57	03/28/19	Vertical aquifer sample collected at 52 - 57 feet	29	28
MW-84 (former MW-M)	MW-M-VAS-72-77	03/29/19	Vertical aquifer sample collected at 72 - 77 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-84 (former MW-M)	MW-M-VAS-107-112	03/30/19	Vertical aquifer sample collected at 107 - 112 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-84 (former MW-M)	MW-M-VAS-147-152	03/31/19	Vertical aquifer sample collected at 147 - 152 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-84 (former MW-M)	MW-M-VAS-172-177	04/02/19	Vertical aquifer sample collected at 172 - 177 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-84 (former MW-M)	MW-M-VAS-190-195	04/10/19	Vertical aquifer sample collected at 190 - 195 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-84 (former MW-M)	MW-M-132-061519	6/16/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-84 (former MW-M)	MW-M-193-061419	6/14/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-84 (former MW-M)	MW-M-57-061719	6/17/19	Sample collected from well development	Estimated concentration of 0.715 micrograms per liter	0.72

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
MW-84 (former MW-M)	MW-M-95-061619	6/16/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-85 (former MW-N)	MW-N-VAS-121-126	02/14/19	Vertical aquifer sample collected at 121 - 126 feet	Estimated concentration of 0.699 micrograms per liter	0.51
MW-85 (former MW-N)	MW-N-VAS-142-147	02/16/19	Vertical aquifer sample collected at 142 - 147 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-85 (former MW-N)	MW-N-VAS-173-178	02/18/19	Vertical aquifer sample collected at 173 - 178 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-85 (former MW-N)	MW-N-VAS-210-215	02/21/19	Vertical aquifer sample collected at 210 - 215 feet	320	290
MW-85 (former MW-N)	MW-N-VAS-228-233	02/26/19	Vertical aquifer sample collected at 228 - 233 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-85 (former MW-N)	MW-N-217-040219	04/02/19	Sample collected from well development at a depth of 217 feet	110	110
MW-85 (former MW-N)	MW-N-237-040119	04/01/19	Sample collected from well development at a depth of 237 feet	1600	1500
MW-85 (former MW-N)	MW-N-129-040319	04/03/19	Sample collected from well development at a depth of 129 feet	45	46
MW-86 (former MW-O)	MW-O-VAS-101-106	05/10/19	Vertical aquifer sample collected at 101 - 106 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-86 (former MW-O)	MW-O-VAS-106-111	05/11/19	Vertical aquifer sample collected at 106 - 111 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-86 (former MW-O)	MW-O-VAS-12.5-17.5	05/08/19	Vertical aquifer sample collected at 12 - 18 feet	Not detected below reporting limit of 0.13 microgram per liter	Estimated concentration of 0.163 J
MW-86 (former MW-O)	MW-O-VAS-136-141	05/11/19	Vertical aquifer sample collected at 136 - 141 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-86 (former MW-O)	MW-O-VAS-51-56	05/09/19	Vertical aquifer sample collected at 51 - 56 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-86 (former MW-O)	MW-O-VAS-66-71	05/09/19	Vertical aquifer sample collected at 66 - 71 feet	Not detected below reporting limit of 0.13 microgram per liter	Estimated concentration of 0.178 J

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
MW-86 (former MW-O)	MW-O-140-071819	7/18/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-86 (former MW-O)	MW-O-30-071719	7/17/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-86 (former MW-O)	MW-O-66-071519	7/15/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-87 (former MW-R)	MW-R-VAS-92-97	05/13/19	Vertical aquifer sample collected at 92 - 97 feet	42	45
MW-87 (former MW-R)	MW-R-VAS-117-122	05/14/19	Vertical aquifer sample collected at 117 - 122 feet	4.6	5.8
MW-87 (former MW-R)	MW-R-VAS-151-156	05/15/19	Vertical aquifer sample collected at 151 - 156 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-87 (former MW-R)	MW-R-VAS-192-197	05/16/19	Vertical aquifer sample collected at 192 - 197 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-87 (former MW-R)	MW-R-VAS-227-232	05/17/19	Vertical aquifer sample collected at 227 - 232 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-87 (former MW-R)	MW-R-VAS-255-260	05/29/19	Vertical aquifer sample collected at 255 - 260 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-87 (former MW-R)	MW-R-VAS-269-274	05/30/19	Vertical aquifer sample collected at 269 - 274 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-87 (former MW-R)	MW-R-109-062819	6/28/19	Sample collected from well development	2.6	2.5
MW-87 (former MW-R)	MW-R-139-071319	7/13/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-87 (former MW-R)	MW-R-192-070219	7/2/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-87 (former MW-R)	MW-R-275-070919	7/9/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-88 (former MW-S)	MW-S-VAS-107-112	09/24/19	Vertical aquifer sample collected at 107 - 112 feet	20	15

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
MW-88 (former MW-S)	MW-S-VAS-92-97	09/22/19	Vertical aquifer sample collected at 92 - 97 feet	25	26
MW-90 (former MW-W)	MW-W-VAS-7-12	03/27/19	Vertical aquifer sample collected at 7 - 12 feet	Estimated concentration of 0.266 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-90 (former MW-W)	MW-W-VAS-22-27	03/28/19	Vertical aquifer sample collected at 22 - 27 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-90 (former MW-W)	MW-W-31-040419	04/04/19	Sample collected from well development at a depth of 31 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-91 (former MW-X)	MW-X-VAS-12-17	06/25/19	Vertical aquifer sample collected at 12-17 feet	1.2	Not detected below reporting limit of 0.033 microgram per liter
MW-91 (former MW-X)	MW-X-VAS-32-37	06/26/19	Vertical aquifer sample collected at 32-37 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-91 (former MW-X)	MW-X-VAS-71-76	6/27/19	Vertical aquifer sample collected at 71 - 76 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-91 (former MW-X)	MW-X-VAS-107-112	6/27/19	Vertical aquifer sample collected at 107-112 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-91 (former MW-X)	MW-X-VAS-112-117	6/28/19	Vertical aquifer sample collected at 112-117 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-91 (former MW-X)	MW-X-VAS-152-157	6/29/19	Vertical aquifer sample collected at 152-157 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-91 (former MW-X)	MW-X-VAS-182-187	6/29/19	Vertical aquifer sample collected at 182-187 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-91 (former MW-X)	MW-X-VAS-207-212	6/30/19	Vertical aquifer sample collected at 207-212 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-91 (former MW-X)	MW-X-VAS-245-250	7/1/19	Vertical aquifer sample collected at 245-250 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-91 (former MW-X)	MW-X-VAS-292-297	7/2/19	Vertical aquifer sample collected at 292-297 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-91 (former MW-X)	MW-X-VAS-337-342	7/11/19	Vertical aquifer sample collected at 337-342 feet	Estimated concentration of 0.564 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
MW-91 (former MW-X)	MW-X-VAS-382-387	7/13/19	Vertical aquifer sample collected at 382-387 feet	Estimated concentration of 0.582 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-91 (former MW-X)	MW-X-VAS-412-417	7/15/19	Vertical aquifer sample collected at 412-417 feet	38	Not detected below reporting limit of 0.17 microgram per liter
MW-91 (former MW-X)	MW-X-120-112019	11/20/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-91 (former MW-X)	MW-X-170-112319	11/23/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-91 (former MW-X)	MW-X-320-112219	11/22/19	Sample collected from well development	Estimated concentration of 0.912 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-91 (former MW-X)	MW-X-45-111819	11/18/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-92 (former MW-Y')	MW-Y-122-103119	10/31/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-92 (former MW-Y')	MW-Y-102-102319	10/23/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-92 (former MW-Y')	MW-Y-72-102219	10/22/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-92 (former MW-Y')	MW-Y-37-102019	10/20/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-92 (former MW-Y')	MW-Y-VAS-92-97	08/22/19	Vertical aquifer sample collected at 92 - 97 feet	Estimated concentration of 0.620 micrograms per liter	0.31
MW-92 (former MW-Y')	MW-Y-VAS-98-103	08/23/19	Vertical aquifer sample collected at 98 - 103 feet	Estimated concentration of 0.521 micrograms per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-92 (former MW-Y')	MW-Y-VAS-112-117	08/23/19	Vertical aquifer sample collected at 112 - 117 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-92 (former MW-Y')	MW-Y-VAS-52-57	08/21/19	Vertical aquifer sample collected at 52-57 feet	Estimated concentration of 0.378 micrograms per liter	Not detected below reporting limit of 0.033 microgram per liter

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
MW-92 (former MW-Y)	MW-Y-VAS-12-17	08/20/19	Vertical aquifer sample collected at 12-17 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-93 (former MW-Z)	MW-93-VAS-57-61.1	02/06/20	Vertical aquifer sample collected at 57 – 61 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-93 (former MW-Z)	MW-93-VAS-42-46.3	02/06/20	Vertical aquifer sample collected at 42 – 46 feet	7.1	8.5
MW-93 (former MW-Z)	MW-93-VAS-32-37	02/06/20	Vertical aquifer sample collected at 32 – 37 feet	4.9	2.5
MW-93 (former MW-Z)	MW-93-VAS-72-77	2/7/2020	Vertical aquifer sample collected at 72 – 77 feet	Estimated concentration of 0.161 micrograms per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-93 (former MW-Z)	MW-93-VAS-112-117	2/8/2020	Vertical aquifer sample collected at 112 – 117 feet	Estimated concentration of 0.452 micrograms per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-93 (former MW-Z)	MW-93-VAS-142-147	2/8/2020	Vertical aquifer sample collected at 142 – 147 feet	Estimated concentration of 0.254 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-93 (former MW-Z)	MW-93-VAS-152-157	2/9/2020	Vertical aquifer sample collected at 152 – 157 feet	Estimated concentration of 0.198 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-93 (former MW-Z)	MW-93-VAS-172-177	2/10/2020	Vertical aquifer sample collected at 172 – 177 feet	Estimated concentration of 0.241 micrograms per	Not detected below reporting limit of 0.17 microgram per liter
MW-93 (former MW-Z)	MW-93-VAS-192-197	2/10/2020	Vertical aquifer sample collected at 192 – 197 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-93 (former MW-Z)	MW-93-VAS-212-217	2/11/2020	Vertical aquifer sample collected at 212 – 217 feet	Estimated concentration of 0.412 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-93 (former MW-Z)	MW-93-213-060420	06/04/20	Sample from well development at 213 feet	Estimated concentration of 0.188 micrograms per	Not detected below reporting limit of 0.17 microgram per liter
MW-93 (former MW-Z)	MW-93-50-060320	06/03/20	Sample from well development at 50 feet	Estimated concentration of 0.554 micrograms per	0.29
MW-94 (former HYDRO-6)	MW-94-175-120419	12/4/19	Sample collected from well development	5.2	5.7
MW-95 (former MW-V)	MW-95-VAS-122-127	03/10/20	Vertical aquifer sample collected at 122 – 127 feet	Estimated concentration of 0.855 micrograms per liter	0.87
MW-95 (former MW-V)	MW-95-VAS-97-102	03/10/20	Vertical aquifer sample collected at 97 – 102 feet	Estimated concentration of 0.44 micrograms per liter	0.79

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
MW-95 (former MW-V)	MW-95-VAS-152-157	03/12/20	Vertical aquifer sample collected at 152 – 157 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-95 (former MW-V)	MW-95-VAS-182-187	03/20/20	Vertical aquifer sample collected at 182 – 187 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-95 (former MW-V)	MW-95-113-061020	06/10/20	Sample collected from well development at a depth of 113 feet	Estimated concentration of 0.29 micrograms per liter	Estimated concentration of 0.0771 micrograms per liter
MW-95 (former MW-V)	MW-95-157-060920	06/09/20	Sample collected from well development at a depth of 157 feet	Estimated concentration of 0.421 micrograms per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-97 (IRZ-11 MW)	MW-97-VAS-27-32	07/09/20	Vertical aquifer sample collected at 27-32 feet	Data not yet available	270
MW-97 (IRZ-11 MW)	MW-97-VAS-82-87	07/10/20	Vertical aquifer sample collected at 82-87 feet	Data not yet available	Not detected below reporting limit of 0.033 microgram per liter
MW-97 (IRZ-11 MW)	MW-97-VAS-132-137	07/12/20	Vertical aquifer sample collected at 132 – 137 feet	Data not yet available	Not detected below reporting limit of 0.17 microgram per liter
MW-97 (IRZ-11 MW)	MW-97-VAS-172-177	07/13/20	Vertical aquifer sample collected at 172-177 feet	Data not yet available	Not detected below reporting limit of 0.17 microgram per liter
MW-97 (IRZ-11 MW)	MW-97-VAS-177-182	07/14/20	Vertical aquifer sample collected at 177-182 feet	Data not yet available	Not detected below reporting limit of 0.17 microgram per liter
MW-97 (IRZ-11 MW)	MW-97-VAS-182-187	07/14/20	Vertical aquifer sample collected at 182-187 feet	Data not yet available	Not detected below reporting limit of 0.17 microgram per liter
MW-97 (IRZ-11 MW)	MW-97-VAS-189-194	07/15/20	Vertical aquifer sample collected at 189-194 feet	Data not yet available	Not detected below reporting limit of 0.17 microgram per liter
MW-97 (IRZ-11 MW)	MW-97-VAS-197-202	07/16/20	Vertical aquifer sample collected at 197-202 feet	Data not yet available	1.1
MW-97 (IRZ-11 MW)	MW-97-VAS-207-212	07/21/20	Vertical aquifer sample collected at 207-212 feet	Data not yet available	Not detected below reporting limit of 0.17 microgram per liter
MW-U	MW-U-VAS-137-142	04/12/19	Vertical aquifer sample collected at 137 - 142 feet	Estimated concentration of 0.818 micrograms per liter	1.4
MW-U	MW-U-VAS-181-186	04/13/19	Vertical aquifer sample collected at 181 - 186 feet	Not detected below reporting limit of 0.13 microgram per liter	Estimated concentration of 0.112 J
MW-U	MW-U-VAS-222-227	04/14/19	Vertical aquifer sample collected at 222 - 227 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-U	MW-U-VAS-257-262	04/16/19	Vertical aquifer sample collected at 257 - 262 feet	Not detected below reporting limit of 0.13 microgram per liter	Estimated concentration of 0.0896 J

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
MW-U	MW-U-VAS-287-292	04/17/19	Vertical aquifer sample collected at 287 - 292 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-U	MW-U-VAS-317-322	04/24/19	Vertical aquifer sample collected at 317 - 322 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
MW-U	MW-U-183-050819	05/08/19	Sample collected from well development at a depth of 183 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
MW-U	MW-U-273-051019	05/10/19	Sample collected from well development at a depth of 273 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
IRZ-9	IRZ-9-VAS-27-32	12/03/18	Vertical aquifer sample collected at 27 -32 feet	120	120
IRZ-9	IRZ-9-VAS-47-52	12/04/18	Vertical aquifer sample collected at 47 -52 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
IRZ-9	IRZ-9-VAS-62-67	12/04/18	Vertical aquifer sample collected at 62 -67 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
IRZ-9	IRZ-9-VAS-182-187	12/11/18	Vertical aquifer sample collected at 182 -187 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-9	IRZ-9-VAS-207-212	12/13/18	Vertical aquifer sample collected at 207 -212 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-9	IRZ-9-VAS-232-237	12/13/18	Vertical aquifer sample collected at 232 -237 feet	Estimated concentration of 0.811 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-9	IRZ-9-VAS-264-269	12/15/18	Vertical aquifer sample collected at 264 -269 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-9	IRZ-9-VAS-276-281	12/16/18	Vertical aquifer sample collected at 276 -281 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-9	IRZ-9-VAS-292-297	12/18/18	Vertical aquifer sample collected at 292 -297 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-13	IRZ-13-VAS-32-37	11/17/18	Vertical aquifer sample collected at 32 - 37 feet	170	220
IRZ-13	IRZ-13-VAS-57-62	11/18/18	Vertical aquifer sample collected at 57 - 62 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-13	IRZ-13-VAS-102-107	11/19/18	Vertical aquifer sample collected at 102 - 107 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
IRZ-13	IRZ-13-VAS-142-147	11/19/18	Vertical aquifer sample collected at 142 - 147 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-13	IRZ-13-VAS-180-185	11/27/18	Vertical aquifer sample collected at 180 - 185 feet	230	190
IRZ-13	IRZ-13-VAS-197-202	11/28/18	Vertical aquifer sample collected at 197 - 202 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.83 microgram per liter
IRZ-13	IRZ-13-VAS-224-229	11/28/18	Vertical aquifer sample collected at 224 - 229 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.83 microgram per liter
IRZ-13	IRZ-13-VAS-237-242	11/29/18	Vertical aquifer sample collected at 237 - 242 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-15	IRZ-15-VAS-32-37	11/01/18	Vertical aquifer sample collected at 32 - 37 feet	13	13
IRZ-15	IRZ-15-VAS-62-67	11/02/18	Vertical aquifer sample collected at 62 - 67 feet	Not detected below reporting limit of 0.65 microgram per liter	Estimated concentration of 0.459 J
IRZ-15	IRZ-15-VAS-102-107	11/03/18	Vertical aquifer sample collected at 102 - 107 feet	Not detected below reporting limit of 0.65 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-15	IRZ-15-VAS-132-137	11/04/18	Vertical aquifer sample collected at 132 - 137 feet	Estimated concentration of 0.228 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-15	IRZ-15-VAS-162-167	11/05/18	Vertical aquifer sample collected at 162 - 167 feet	3400	3200
IRZ-15	IRZ-15-VAS-182-187	11/06/18	Vertical aquifer sample collected at 182 - 187 feet	130	140
IRZ-15	IRZ-15-VAS-222-227	11/07/18	Vertical aquifer sample collected at 222 - 227 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-15	IRZ-15-200-063020	06/30/20	Sample from well development at 200 feet	790	800
IRZ-15	IRZ-15-55-063020	06/30/20	Sample from well development at 55 feet	39	36
IRZ-16	IRZ-16-VAS-27-32	02/20/19	Vertical aquifer sample collected at 27 - 32 feet	480	480
IRZ-16	IRZ-16-VAS-57-62	02/20/19	Vertical aquifer sample collected at 57 - 62 feet	Not detected below reporting limit of 0.033 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
IRZ-16	IRZ-16-VAS-102-107	02/21/19	Vertical aquifer sample collected at 102 - 107 feet	Not detected below reporting limit of 0.033 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
IRZ-16	IRZ-16-VAS-132-137	02/26/19	Vertical aquifer sample collected at 132 - 137 feet	Not detected below reporting limit of 0.17 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-16	IRZ-16-VAS-147-152	02/27/19	Vertical aquifer sample collected at 147 - 152 feet	Not detected below reporting limit of 0.17 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-16	IRZ-16-VAS-172-177	02/27/19	Vertical aquifer sample collected at 172 - 177 feet	110	110
IRZ-16	IRZ-16-VAS-192-197	02/28/19	Vertical aquifer sample collected at 192 - 197 feet	Not detected below reporting limit of 0.17 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-17	IRZ-17-165-012420	1/24/2020	Sample collected from well development	120	130
IRZ-17	IRZ-17-52-011620	1/16/2020	Sample collected from well development	20	20
IRZ-17	IRZ-17-VAS-32-37	03/02/19	Vertical aquifer sample collected at 32 - 37 feet	78	67
IRZ-17	IRZ-17-VAS-62-67	03/02/19	Vertical aquifer sample collected at 62 - 67 feet	Estimated concentration of 0.750 micrograms per liter	Estimated concentration of 0.604 micrograms per liter
IRZ-17	IRZ-17-VAS-102-107	03/03/19	Vertical aquifer sample collected at 102 - 107 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-17	IRZ-17-VAS-132-137	03/13/19	Vertical aquifer sample collected at 132 - 137 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-17	IRZ-17-VAS-137-142	03/12/19	Vertical aquifer sample collected at 137 - 142 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.13 microgram per liter
IRZ-17	IRZ-17-VAS-142-147	03/04/19	Vertical aquifer sample collected at 142 - 147 feet	68	84
IRZ-17	IRZ-17-VAS-147-152	03/12/19	Vertical aquifer sample collected at 147 - 152 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
IRZ-17	IRZ-17-VAS-152-157	03/04/19	Vertical aquifer sample collected at 152 - 157 feet	16	7.0
IRZ-17	IRZ-17-VAS-162-167	03/04/19	Vertical aquifer sample collected at 162 - 167 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-17	IRZ-17-VAS-172-177	03/05/19	Vertical aquifer sample collected at 172 - 177 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-18	IRZ-18-VAS-42-47	11/19/19	Vertical aquifer sample collected at 42 - 47 feet	520	580

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
IRZ-18	IRZ-18-VAS-62-67	11/19/19	Vertical aquifer sample collected at 62 - 67 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
IRZ-18	IRZ-18-VAS-67-72	11/19/19	Vertical aquifer sample collected at 67 - 72 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
IRZ-18	IRZ-18-VAS-102-107	11/20/19	Vertical aquifer sample collected at 102 – 107 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-18	IRZ-18-VAS-112-117	11/20/19	Vertical aquifer sample collected at 112 – 117 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-18	IRZ-18-VAS-137-142	11/21/19	Vertical aquifer sample collected at 137 - 142 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-18	IRZ-18-VAS-147-152	11/21/19	Vertical aquifer sample collected at 147 - 152 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-18	IRZ-18-VAS-152-157	11/22/19	Vertical aquifer sample collected at 152 - 157 feet	Estimated concentration of 0.267 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-18	IRZ-18-VAS-157-162	11/22/19	Vertical aquifer sample collected at 157 - 162 feet	1100	870
IRZ-18	IRZ-18-VAS-162-167	11/22/19	Vertical aquifer sample collected at 162 - 167 feet	3400	3300
IRZ-18	IRZ-18-VAS-167-172	11/23/19	Vertical aquifer sample collected at 167 - 172 feet	4800	4700
IRZ-18	IRZ-18-VAS-172-177	12/03/19	Vertical aquifer sample collected at 172 – 177 feet	740	660
IRZ-18	IRZ-18-VAS-177-182	12/03/19	Vertical aquifer sample collected at 177 – 182 feet	360	390
IRZ-18	IRZ-18-VAS-182-187	12/04/19	Vertical aquifer sample collected at 182 – 187 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-18	IRZ-18-VAS-187-192	12/04/19	Vertical aquifer sample collected at 187 – 192 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-18	IRZ-18-VAS-202-207	12/05/19	Vertical aquifer sample collected at 202 – 207 feet	Estimated concentration of 0.204 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-19	IRZ-19-VAS-122-127	9/8/2019	Vertical aquifer sample collected at 122 - 127 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-19	IRZ-19-131-136	9/9/2019	Vertical aquifer sample collected at 131-136 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
IRZ-19	IRZ-19-142-147	9/9/2019	Vertical aquifer sample collected at 142 - 147 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-19	IRZ-19-VAS-152-157	9/10/2019	Vertical aquifer sample collected at 152 - 157 feet	Estimated concentration of 0.187 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-19	IRZ-19-VAS-162-167	9/11/2019	Vertical aquifer sample collected at 162 - 167 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-19	IRZ-19-VAS-177-182	9/12/2019	Vertical aquifer sample collected at 177 - 182 feet	Estimated concentration of 0.275 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-19	IRZ-19-VAS-27-32	9/6/2019	Vertical aquifer sample collected at 27 - 32 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
IRZ-19	IRZ-19-VAS-37-42	9/6/2019	Vertical aquifer sample collected at 37 - 42 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
IRZ-19	IRZ-19-VAS-82-87	9/7/2019	Vertical aquifer sample collected at 82 - 87 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
IRZ-20	IRZ-17-VAS-197-202	03/06/19	Vertical aquifer sample collected at 197 - 202 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-20	IRZ-17-VAS-217-222	03/06/19	Vertical aquifer sample collected at 217 - 222 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-20	IRZ-20-VAS-112-117	10/22/18	Vertical aquifer sample collected at 112 - 117 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-20	IRZ-20-VAS-131-136	10/23/18	Vertical aquifer sample collected at 131 - 136 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-20	IRZ-20-VAS-173-178	10/24/18	Vertical aquifer sample collected at 173 - 178 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.83 microgram per liter
IRZ-21	IRZ-21-VAS-52-57	12/15/18	Vertical aquifer sample collected at 52 - 57 feet	100	97
IRZ-21	IRZ-21-VAS-77-82	12/16/18	Vertical aquifer sample collected at 77 - 82 feet	1.3	1.1
IRZ-21	IRZ-21-VAS-112-117	12/16/18	Vertical aquifer sample collected at 112 - 117 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-21	IRZ-21-VAS-132-137	12/17/18	Vertical aquifer sample collected at 132 - 137 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
IRZ-21	IRZ-21-VAS-147-152	12/18/18	Vertical aquifer sample collected at 147 - 152 v	4000	3600
IRZ-23	IRZ-23-VAS-67-72	12/01/18	Vertical aquifer sample collected at 67 - 72 feet	86	85
IRZ-23	IRZ-23-VAS-92-97	12/01/18	Vertical aquifer sample collected at 92 - 97 feet	Estimated concentration of 0.453 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
IRZ-23	IRZ-23-VAS-122-127	12/02/18	Vertical aquifer sample collected at 122 - 127 feet	2100	2000
IRZ-23	IRZ-23-VAS-139-144	12/02/18	Vertical aquifer sample collected at 139 - 144 feet	3400	3000
IRZ-25	IRZ-25-VAS-52-57	12/05/18	Vertical aquifer sample collected at 52 - 57 feet	4300	3500
IRZ-25	IRZ-25-VAS-67-72	12/05/18	Vertical aquifer sample collected at 67 - 72 feet	750	620
IRZ-25	IRZ-25-VAS-92-97	12/06/18	Vertical aquifer sample collected at 92 - 97 feet	140	130
IRZ-25	IRZ-25-VAS-112-117	12/11/18	Vertical aquifer sample collected at 112 - 117 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-25	IRZ-25-VAS-147-152	12/11/18	Vertical aquifer sample collected at 147 - 152 feet	3800	3600
IRZ-25	IRZ-25-VAS-162-167	12/13/18	Vertical aquifer sample collected at 162 - 167 feet	3000	3000
IRZ-27	IRZ-27-VAS-52-57	03/15/19	Vertical aquifer sample collected at 52 - 57 feet	4500	4400
IRZ-27	IRZ-27-VAS-72-77	03/17/19	Vertical aquifer sample collected at 72 - 77 feet	Estimated concentration of 0.338 micrograms per liter	Not detected below reporting limit of 0.033 microgram per liter
IRZ-27	IRZ-27-VAS-102-107	03/18/19	Vertical aquifer sample collected at 102 - 107 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
IRZ-27	IRZ-27-VAS-132-137	03/20/19	Vertical aquifer sample collected at 132 - 137 feet	1200	1300
IRZ-27	IRZ-27-67-030720	03/07/20	Sample collected from well development	2300	2300
IRZ-27	IRZ-27-100-030720	03/07/20	Sample collected from well development	490	510

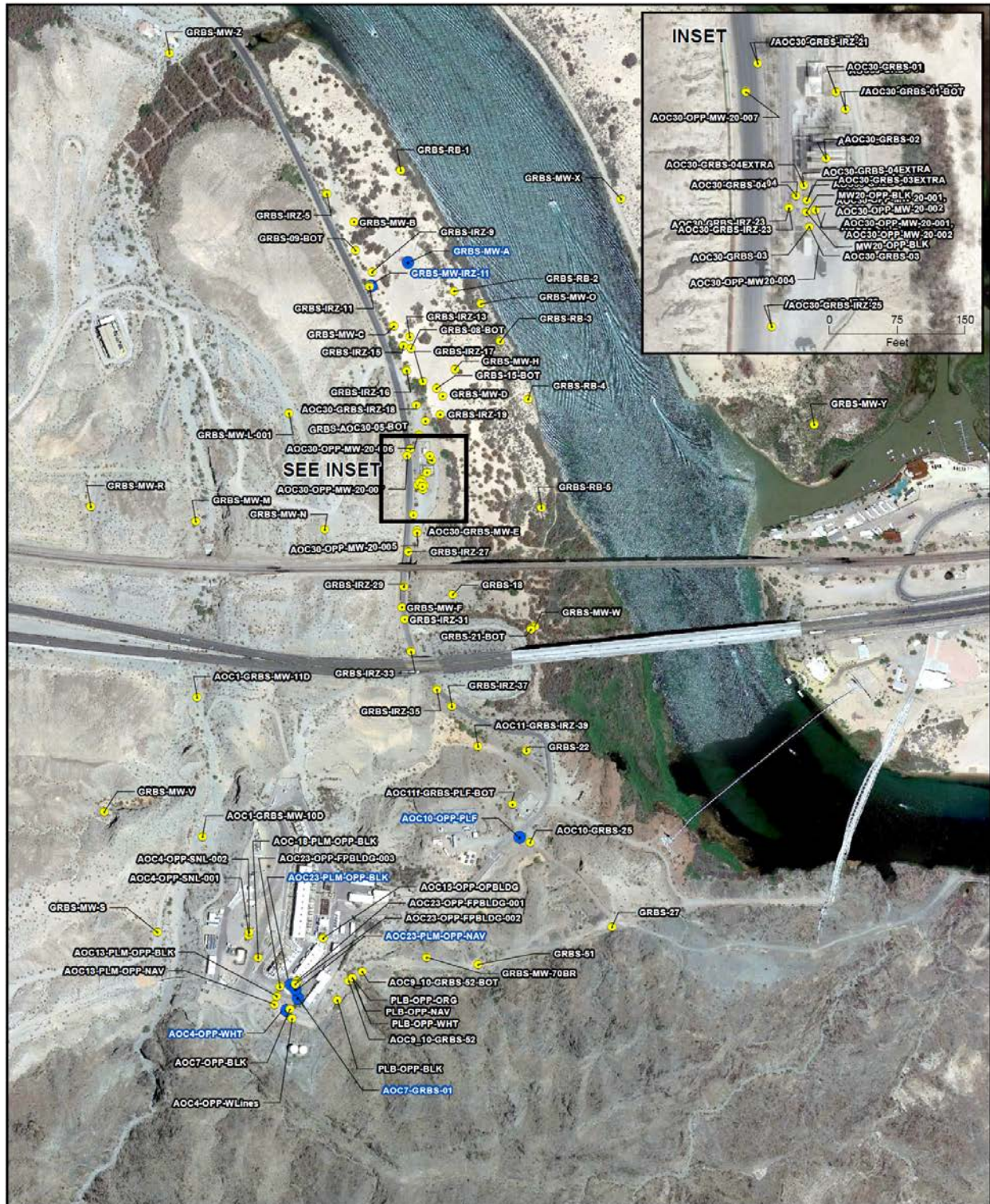
Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
IRZ-27	IRZ-27-134-030320	03/03/20	Sample collected from well development	5500	5400
IRZ-29	IRZ-29-VAS-47-52	12/16/19	Vertical aquifer sample collected at 47 – 52 feet	4400	4500
IRZ-29	IRZ-29-VAS-62-67	12/17/19	Vertical aquifer sample collected at 62 – 67 feet	2500	2400
IRZ-29	IRZ-29-VAS-87-92	12/17/19	Vertical aquifer sample collected at 87 – 92 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
IRZ-29	IRZ-29-VAS-112-117	12/18/19	Vertical aquifer sample collected at 112 – 117 feet	730	760
IRZ-29	IRZ-29-VAS-116-120.5	12/19/19	Vertical aquifer sample collected at 116 - 120 feet	18	23
IRZ-29	IRZ-29-77-032820	03/28/20	Sample collected from well development	1700	1600
IRZ-29	IRZ-29-121-032820	03/28/20	Sample collected from well development	2500	2500
IRZ-31	IRZ-31-VAS-48-53	01/08/20	Vertical aquifer sample collected at 48-53 feet	2000	2000
IRZ-31	IRZ-31-VAS-72-77	01/09/20	Vertical aquifer sample collected at 72-77 feet	570	480
IRZ-31	IRZ-31-VAS-102-107	01/10/20	Vertical aquifer sample collected at 102-107 feet	2300	2300
IRZ-31	IRZ-31-VAS-115-120	01/11/20	Vertical aquifer sample collected at 115-120 feet	2500	2500
IRZ-31	IRZ-31-77-032920	03/29/20	Sample collected from well development	2000	2100
IRZ-31	IRZ-31-121-032920	03/29/20	Sample collected from well development	3100	3100
IRZ-33	IRZ-33-VAS-49-54	01/21/20	Vertical aquifer sample collected at 49-54 feet	1900	2100
IRZ-33	IRZ-33-VAS-72-77	01/22/20	Vertical aquifer sample collected at 72-77 feet	1600	1600
IRZ-33	IRZ-33-VAS-105-110	01/23/20	Vertical aquifer sample collected at 105-110 feet	1400	1300

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
IRZ-35	IRZ-35-VAS-52-57	01/13/20	Vertical aquifer sample collected at 52-57 feet	850	810
IRZ-35	IRZ-35-VAS-67-72	01/13/20	Vertical aquifer sample collected at 67-72 feet	990	920
IRZ-35	IRZ-35-VAS-82-87	01/14/20	Vertical aquifer sample collected at 82-87 feet	2300	2500
IRZ-37	IRZ-37-VAS-52-57	10/06/19	Vertical aquifer sample collected at 52 – 57 feet	1100	1000
IRZ-37	IRZ-37-VAS-57-62	10/07/19	Vertical aquifer sample collected at 57 – 62 feet	1200	1100
IRZ-39	IRZ-39-VAS-27-32	03/30/19	Vertical aquifer sample collected at 27 - 32 feet	31	29
IRZ-39	IRZ-39-110419	11/04/19	Sample collected from well development	38	36
RB-2	RB-2-VAS-102-107	7/1/19	Vertical aquifer sample collected at 102-107 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
RB-2	RB-2-VAS-142-147	7/9/19	Vertical aquifer sample collected at 142-147 feet	Estimated concentration of 0.270 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
RB-2	RB-2-VAS-172-177	7/12/19	Vertical aquifer sample collected at 172-177 feet	Estimated concentration of 0.233 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
RB-2	RB-2-VAS-202-207	7/14/19	Vertical aquifer sample collected at 202-207 feet	Estimated concentration of 0.218 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
RB-2	RB-2-VAS-237-242	7/15/19	Vertical aquifer sample collected at 237-242 feet	Estimated concentration of 0.233 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
RB-2	RB-2-VAS-274-279	7/18/19	Vertical aquifer sample collected at 274-279 feet	Estimated concentration of 0.514 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
RB-2	RB-2-VAS-287-292	7/26/19	Vertical aquifer sample collected at 287-292 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
RB-2	RB-2-VAS-36.5-41.5	6/29/19	Vertical aquifer sample collected at 36 – 42 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
RB-2	RB-2-VAS-72-77	6/30/19	Vertical aquifer sample collected at 72 – 77 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter

Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
RB-3	RB-3-VAS-15-20	04/26/19	Vertical aquifer sample collected at 15 - 20 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
RB-3	RB-3-VAS-50-55	04/27/19	Vertical aquifer sample collected at 50 - 55 feet	Not detected below reporting limit of 0.13 microgram per liter	Estimated concentration of 0.100 micrograms per liter
RB-3	RB-3-VAS-80-85	04/27/19	Vertical aquifer sample collected at 80 - 85 feet	Not detected below reporting limit of 0.13 microgram per liter	Estimated concentration of 0.132 micrograms per liter
RB-3	RB-3-VAS-120-125	04/28/19	Vertical aquifer sample collected at 120 - 125 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
RB-3	RB-3-VAS-150-155	04/29/19	Vertical aquifer sample collected at 150 - 155 feet	Estimated concentration of 0.257 micrograms per liter	Not detected below reporting limit of 0.17 microgram per liter
RB-3	RB-3-VAS-180-185	04/29/19	Vertical aquifer sample collected at 180 - 185 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
RB-3	RB-3-VAS-205-210	04/30/19	Vertical aquifer sample collected at 205 - 210 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
RB-3	RB-3-193.5-061620	06/16/20	Sample collected from well development at 193-194 feet	Estimated concentration of 0.809 microgram per liter	Estimated concentration of 0.156 microgram per liter
RB-3	RB-3-91-061720	06/17/20	Sample collected from well development at 91 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
RB-4	RB-4-VAS-15-20	04/12/19	Vertical aquifer sample collected at 15 - 20 feet	Not detected below reporting limit of 0.13 microgram per liter	Estimated concentration of 0.0556 microgram per liter
RB-4	RB-4-VAS-41-46	04/12/19	Vertical aquifer sample collected at 41 - 46 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
RB-4	RB-4-VAS-81-86	04/12/19	Vertical aquifer sample collected at 81 - 86 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
RB-4	RB-4-VAS-121-126	04/13/19	Vertical aquifer sample collected at 121 - 126	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
RB-4	RB-4-VAS-136-141	04/13/19	Vertical aquifer sample collected at 136 - 141 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter

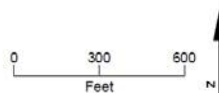
Location	Sample ID	Sample Date	Sample Depth Interval in feet below ground surface	Total Dissolved Chromium Concentration in microgram per liter	Hexavalent Chromium Concentration in microgram per liter
RB-4	RB-4-VAS-155-160	04/17/19	Vertical aquifer sample collected at 155 - 160 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.17 microgram per liter
RB-4	RB-4-138-102019	10/20/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Estimated concentration of 0.135 microgram per liter
RB-4	RB-4-58-102119	10/21/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
RB-5	RB-5-VAS-12-17	04/04/19	Vertical aquifer sample collected at 12 - 17 feet	Estimated concentration of 0.235 microgram per liter	Estimated concentration of 0.125 microgram per liter
RB-5	RB-5-VAS-42-47	04/09/19	Vertical aquifer sample collected at 42 - 47 feet	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
RB-5	RB-5-VAS-82-87	04/09/19	Vertical aquifer sample collected at 82 - 87 feet	Estimated concentration of 0.769 microgram per liter	Estimated concentration of 0.127 microgram per liter
RB-5	RB-5-44-102419	10/24/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter
RB-5	RB-5-89-102319	10/23/19	Sample collected from well development	Not detected below reporting limit of 0.13 microgram per liter	Not detected below reporting limit of 0.033 microgram per liter

Attachment C
Soil Sampling Locations and Available Soil
Analytical Results
(Soil Data Presented in Excel File)



LEGEND

- Soil Sample Location
- Soil Sample Collected from this Location in July 2020



Baseline and Opportunistic Soil Sampling Locations

Monthly Progress Report
Groundwater Remedy Phase 1 Construction
PG&E Topock Compressor Station, Needles, California

JACOBS

\\DC1VS01\GIS\PROJECTS\PG&E\TOPOCK\MAPFILES\2020\CMIS\SOILSAMPLELOCATIONS_ALL_06_JULY2020.MXD ED035443 8/5/2020 12:04:43 PM

Attachment D
Perimeter Air Sampling Analytical Results

Attachment D. Perimeter Air Sampling Analytical Results

In conformance with the approved *Construction/Remedial Action Work Plan for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California* (CH2M, 2015), air monitoring has been conducted during construction to evaluate the ongoing effectiveness of the dust control program, to guide modifications to field activities and engineering control measures, if necessary, and to document that construction activities do not result in the migration of soil contaminants beyond the work area boundaries.

Perimeter air monitoring has been performed if construction activities have the potential to generate visible dust. The air monitoring program consists of both real-time fugitive dust monitoring and perimeter air sampling for select soil contaminants. Locations to be monitored and sampled are as follows:

- Real-time fugitive dust monitoring is performed at the perimeter of the work areas (outside of the exclusion zone) that have the potential to generate visible dust, including the Construction Headquarters (CHQ) and the Soil Processing Yard (SPY).
- Perimeter air sampling for hexavalent chromium is performed at the perimeter of the work areas (outside of the exclusion zone) that are inside Areas of Concern (AOCs) within the construction footprint where hexavalent chromium concentrations in soil have been historically reported. Air sampling for hexavalent chromium in the SPY will be performed when soil from AOCs with reported concentrations of hexavalent chromium is actively being processed. Air sampling may also be performed at other work areas at the site based on hexavalent chromium concentrations reported from new soil data or based on field observations during construction activities.
- Air sampling for asbestos will be limited to work areas where asbestos-containing material (ACM) has been observed in prior field investigations, including two areas in AOC 12 and one area in AOC 4. Perimeter air monitoring may also be performed at other work areas at the site if ACM is discovered during construction activities.

Project-specific levels of concern (LOCs) and action levels were developed as an indicator to determine whether additional dust control measures, as presented in the project's Dust Control Plan required by the Mojave Desert Air Quality Management District (MDAQMD), are necessary.

- The LOCs, which represent conservative concentrations of compounds that receptors outside the work area could be safely exposed to during construction, have been evaluated for all compounds that have been detected in soil samples collected at the site in the prior investigations. The LOCs were developed using standard U.S. Environmental Protection Agency (USEPA) and California Environmental Protection Agency risk assessment methodology, toxicology data, and exposure assumptions (USEPA, 2009, 2017; California Department of Toxic Substances Control [DTSC], 2018). Both cancer and noncancer health effects were considered. For each type of health effect, the LOC was back-calculated from an established target or from acceptable cancer risk or noncancer hazard where USEPA or DTSC toxicity values are available. The LOCs for cancer effects are based on a target excess cancer risk of one in a million (1×10^{-6}). The LOCs for noncancer effects are based on a target hazard quotient of 1. The LOCs were developed using these assumptions:
 - Receptors are present outside the perimeter of the work areas
 - Exposure via inhalation is 10 hours per day for a 10 days on/4 days off schedule
 - Duration of Phase 1 of the final groundwater remedy construction is 20 months
- The action level for fugitive dust monitoring is 100 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) for a net (downwind minus upwind) dust concentration. This action level is based on MDAQMD Rule 403, Part C. A 10-hour time-weighted average of readings collected throughout the work day will be used to document compliance with MDAQMD Rule 403.
- For analytes detected in soil, the following equation was used to calculate maximum allowable airborne particulate concentrations for receptor exposure outside the work area (based on the approach presented by Marlowe (1999):

$$AL = \frac{LOC \times 1,000,000 \text{ mg/kg}}{CS}$$

Where:

AL = action level for airborne particulates ($\mu\text{g}/\text{m}^3$)

LOC = Project specific risk-based level of concern ($\mu\text{g}/\text{m}^3$)

CS = maximum detected concentration of compound in site soil (milligrams per kilogram [mg/kg])

Action levels were determined as follows:

- Soil data from prior investigations were gathered for the entire site.
- Sample locations within the maximum construction footprint were evaluated. Some sample locations were removed from evaluation as they were within the compressor station in locations where no construction activities will actually occur.
- The maximum reported soil concentration for each compound was determined and then used to calculate an airborne particulate action level.
- All compounds had allowable airborne particulate action levels greater than $100 \mu\text{g}/\text{m}^3$ except for hexavalent chromium at a few locations.
- Lead does not have USEPA or DTSC toxicity values; however, an action level was calculated using the DTSC (2011) LeadSpread 8 model. This is based on the maximum reported soil concentration for lead of 1,400 mg/kg from samples collected within the construction footprint and a blood level of concern through inhalation of 1 microgram per deciliter. The resulting action level for lead is $548 \mu\text{g}/\text{m}^3$.
- Therefore, keeping fugitive dust below the action level $100 \mu\text{g}/\text{m}^3$ will result in airborne particulate concentrations of contaminants (other than hexavalent chromium) remaining below their respective LOCs.
- Fugitive dust monitoring will be used to evaluate airborne contaminants in dust for all compounds except for hexavalent chromium.

In July 2020, 50 real time dust observation/monitoring events were conducted at the perimeter of the work areas (outside of the exclusion zone). On July 10, there was a temporary exceedance of the action level for fugitive dust monitoring ($100 \mu\text{g}/\text{m}^3$) while the soil piles at the SPY were moved and consolidated. Contractor was advised of the exceedance, and water was applied to control dust. No visible dust was observed after the contractor applied water.

One perimeter air sampling event for hexavalent chromium occurred during the excavation of Pipeline J segment at the East Ravine on July 6, 2020. Tables D-1a and D-1b present all analytical results from air sampling events that are available at this time. All results are below the project level of concern (LOC) for hexavalent chromium which is $0.00094 \mu\text{g}/\text{m}^3$.

References Cited:

California Department of Toxic Substances Control (DTSC). 2011. [LeadSpread8](#).

California Department of Toxic Substances Control (DTSC). 2018. Human Health Risk Assessment Note 3 – DTSC-Modified Screening Levels (DTSC-SLs), California Department of Toxic Substances Control, Human and Ecological Risk Office (HERO). January.

CH2M HILL, Inc. (CH2M). 2015. *Construction/Remedial Action Work Plan for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California*. November 18.

Marlowe, C. 1999. *Safety Now! Controlling Chemical Exposures at Hazardous Waste Sites with Real-Time Measurements*. Fairfax, Va.: American Industrial Hygiene Association Press.

U.S. Environmental Protection Agency (USEPA). 2009. *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment)*. Final. OSWER 9285.7-82. January.

U.S. Environmental Protection Agency (USEPA). 2017. Regional Screening Levels (RSLs)—Generic Tables. November.

Table D-1a. Perimeter Air Sampling Results – Hexavalent Chromium

July 2020 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup
PG&E Topock Compressor Station, Needles, California

Location ID	Location	Sampling Date	Hexavalent Chromium Concentration in micrograms per cubic meter
AOC11f-D1	AOC11f Downwind 1	6/18/2020	0.0000777 - concentration estimated by laboratory or data validation
AOC11f-D2	AOC11f Downwind 2	6/18/2020	0.0000473 - concentration estimated by laboratory or data validation
AOC11f-U1	AOC11f Upwind	6/18/2020	0.0000373 - concentration estimated by laboratory or data validation
AOC7-D1	AOC7 Downwind 1	6/4/2020	Not detected at a reporting limit of 0.0000325 micrograms per cubic meter
AOC7-D2	AOC7 Downwind 2	6/4/2020	0.00011 - concentration estimated by laboratory or data validation
AOC7-U1	AOC7 Upwind	6/4/2020	0.000088 - concentration estimated by laboratory or data validation
AOC7-D1	AOC7 Downwind 1	3/17/2020	0.0000511 - concentration estimated by laboratory or data validation
AOC7-D2	AOC7 Downwind 2	3/17/2020	0.000121 - concentration estimated by laboratory or data validation
AOC7-U1	AOC7 Upwind	3/17/2020	Not detected at a reporting limit of 0.0000338 micrograms per cubic meter
AOC30-D1	AOC30 Downwind 1	12/16/2019	0.0000871 - concentration estimated by laboratory or data validation
AOC30-D2	AOC30 Downwind 2	12/16/2019	Not detected at a reporting limit of 0.0000271 micrograms per cubic meter
AOC30-U1	AOC30 Upwind 1	12/16/2019	0.0000782 - concentration estimated by laboratory or data validation
AOC08-D1	AOC08 Downwind 1	12/17/2019	0.000106 - concentration estimated by laboratory or data validation
AOC08-D2	AOC08 Downwind 2	12/17/2019	0.000151 – concentration reported by laboratory
AOC08-U1	AOC08 Upwind 1	12/17/2019	0.000063 - concentration estimated by laboratory or data validation
AOC30-D1	AOC30 Downwind 1	12/17/2019	0.0000584 - concentration estimated by laboratory or data validation
AOC30-D2	AOC30 Downwind 2	12/17/2019	0.0000537 - concentration estimated by laboratory or data validation
AOC30-U1	AOC30 Upwind 1	12/17/2019	0.0000644 - concentration estimated by laboratory or data validation
AOC30-D1	AOC30 Downwind 1	12/18/2019	0.0000601 - concentration estimated by laboratory or data validation
AOC30-D2	AOC30 Downwind 2	12/18/2019	0.0000806 - concentration estimated by laboratory or data validation
AOC30-U1	AOC30 Upwind 1	12/18/2019	Not detected at a reporting limit of 0.000031 micrograms per cubic meter
AOC08-D1	AOC08 Downwind 1	12/18/2019	0.000233 – concentration reported by laboratory

Location ID	Location	Sampling Date	Hexavalent Chromium Concentration in micrograms per cubic meter
AOC08-D2	AOC08 Downwind 2	12/18/2019	0.000123 - concentration estimated by laboratory or data validation
AOC08-U1	AOC08 Upwind 1	12/18/2019	Not detected at a reporting limit of 0.000027 micrograms per cubic meter
AOC30-D1	AOC30 Downwind 1	12/19/2019	0.0000648 - concentration estimated by laboratory or data validation
AOC30-D2	AOC30 Downwind 2	12/19/2019	0.0000584 - concentration estimated by laboratory or data validation
AOC30-U1	AOC30 Upwind 1	12/19/2019	0.0000749 - concentration estimated by laboratory or data validation
AOC08-D1	AOC08 Downwind 1	12/19/2019	0.0000806 - concentration estimated by laboratory or data validation
AOC08-D2	AOC08 Downwind 2	12/19/2019	0.0000837 - concentration estimated by laboratory or data validation
AOC08-U1	AOC08 Upwind 1	12/19/2019	Not detected at a reporting limit of 0.00003 micrograms per cubic meter
AOC10-D1	AOC10 Downwind 1	11/04/2019	0.0000696 - concentration estimated by laboratory or data validation
AOC10-D2	AOC10 Downwind 2	11/04/2019	0.0000781 - concentration estimated by laboratory or data validation
AOC10-U1	AOC10 Upwind	11/04/2019	0.0000609 - concentration estimated by laboratory or data validation
AOC10-D1	AOC10 Downwind 1	11/06/2019	0.0000602 - concentration estimated by laboratory or data validation
AOC10-D2	AOC10 Downwind 2	11/06/2019	0.0000582 - concentration estimated by laboratory or data validation
AOC10-U1	AOC10 Upwind	11/06/2019	0.0000401 - concentration estimated by laboratory or data validation
AOC10-D1	AOC10 Downwind 1	10/18/2019	Not detected at a reporting limit of 0.0000347 micrograms per cubic meter
AOC10-D2	AOC10 Downwind 2	10/18/2019	Not detected at a reporting limit of 0.0000375 micrograms per cubic meter
AOC10-U1	AOC10 Upwind	10/18/2019	Not detected at a reporting limit of 0.0000386 micrograms per cubic meter
AOC10-D1	AOC10 Downwind 1	10/17/2019	0.0000321 - concentration estimated by laboratory or data validation
AOC10-D2	AOC10 Downwind 2	10/17/2019	Not detected at a reporting limit of 0.0000321 micrograms per cubic meter
AOC10-U1	AOC10 Upwind	10/17/2019	Not detected at a reporting limit of 0.0000322 micrograms per cubic meter
AOC10-D1	AOC10 Downwind 1	10/15/2019	Not detected at a reporting limit of 0.0000324 micrograms per cubic meter
AOC10-D2	AOC10 Downwind 2	10/15/2019	Not detected at a reporting limit of 0.0000331 micrograms per cubic meter
AOC10-U1	AOC10 Upwind	10/15/2019	Not detected at a reporting limit of 0.0000316 micrograms per cubic meter

Location ID	Location	Sampling Date	Hexavalent Chromium Concentration in micrograms per cubic meter
PIPE B-D1	PIPE B Downwind 1	8/13/2019	Not detected at a reporting limit of 0.0000276 micrograms per cubic meter
PIPE B-D2	PIPE B Downwind 2	8/13/2019	Not detected at a reporting limit of 0.0000276 micrograms per cubic meter
PIPE B-U1	PIPE B Upwind	8/13/2019	Not detected at a reporting limit of 0.0000276 micrograms per cubic meter
PIPE B-D1	PIPE B Downwind 1	8/12/2019	Not detected at a reporting limit of 0.0000278 micrograms per cubic meter
PIPE B-D2	PIPE B Downwind 2	8/12/2019	0.000035 - concentration estimated by laboratory or data validation
PIPE B-U1	PIPE B Upwind	8/12/2019	Not detected at a reporting limit of 0.0000279 micrograms per cubic meter
AOC30-D1	AOC30 Downwind 1	6/18/2019	0.0000407 - concentration estimated by laboratory or data validation
AOC30-D2	AOC30 Downwind 2	6/18/2019	Not detected at a reporting limit of 0.0000313 micrograms per cubic meter
AOC30-U1	AOC30 Upwind	6/18/2019	Not detected at a reporting limit of 0.000031 micrograms per cubic meter
AOC30-D1	AOC30 Downwind 1	6/17/2019	Not detected at a reporting limit of 0.0000633 micrograms per cubic meter
AOC30-D2	AOC30 Downwind 2	6/17/2019	Not detected at a reporting limit of 0.0000636 micrograms per cubic meter
AOC30-U1	AOC30 Upwind	6/17/2019	Not detected at a reporting limit of 0.0000589 micrograms per cubic meter
AOC4-D1	AOC4 Downwind 1	5/16/2019	0.0000423 - concentration estimated by laboratory or data validation
AOC4-D2	AOC4 Downwind 2	5/16/2019	Not detected at a reporting limit of 0.0000385 micrograms per cubic meter
AOC4-U	AOC4 Upwind	5/16/2019	Not detected at a reporting limit of 0.0000378 micrograms per cubic meter
AOC11-D1	AOC11 Downwind 1	5/15/2019	Not detected at a reporting limit of 0.0000392 micrograms per cubic meter
AOC11-D2	AOC11 Downwind 2	5/15/2019	0.0001262 - concentration estimated by laboratory or data validation
AOC11-U	AOC11 Upwind	5/15/2019	Not detected at a reporting limit of 0.0000386 micrograms per cubic meter
AOC4-D1	AOC4 Downwind 1	5/14/2019	Not detected at a reporting limit of 0.000148 micrograms per cubic meter
AOC4-D2	AOC4 Downwind 2	5/14/2019	Not detected at a reporting limit of 0.000155 micrograms per cubic meter
AOC4-U	AOC4 Upwind	5/14/2019	Not detected at a reporting limit of 0.000148 micrograms per cubic meter
AOC30-IRZ-23-D1	AOC30-IRZ-23 Downwind 1	2/20/2019	Not detected at a reporting limit of 0.0000859 micrograms per cubic meter
AOC30-IRZ-23-D2	AOC30-IRZ-23 Downwind 2	2/20/2019	Not detected at a reporting limit of 0.0000862 micrograms per cubic meter

Location ID	Location	Sampling Date	Hexavalent Chromium Concentration in micrograms per cubic meter
AOC30-IRZ-23-U1	AOC30-IRZ-23 Upwind	2/20/2019	0.000104 - concentration estimated by laboratory or data validation
AOC13-D1	AOC13 Downwind 1	10/09/18	0.000732 - concentration estimated by laboratory or data validation
AOC13-D2	AOC13 Downwind 2	10/09/18	0.000709 - concentration estimated by laboratory or data validation
AOC13-U	AOC13 Upwind	10/09/18	Not detected at a reporting limit of 0.000172 micrograms per cubic meter

Table D-1b. Perimeter Air Sampling Results – Asbestos

July 2020 Monthly Progress Report for the Final Groundwater Remedy Construction and Startup

PG&E Topock Compressor Station, Needles, California

Location ID	Location	Sampling Date	Asbestos Concentration in fibers per cubic meter
AOC11f-D1	AOC11f Downwind 1	6/18/2020	Not detected at a reporting limit of 0.0006 fibers per cubic centimeter
AOC11f-D2	AOC11f Downwind 2	6/18/2020	Not detected at a reporting limit of 0.0007 fibers per cubic centimeter
AOC11f-U1	AOC11f Upwind	6/18/2020	Not detected at a reporting limit of 0.0007 fibers per cubic centimeter

Attachment E
Noise Monitoring Results
(SEIR NOISE-2 Requirement)

Attachment E. Noise Monitoring Results

In conformance with the Supplemental Environmental Impact Report (SEIR) Mitigation Measure NOISE-2, noise monitoring has been conducted with ANSI S1.4 Type 1, precision sound level meters when construction activities are within the specified distance (e.g., 1,850 feet from sensitive receptors in California) at approved monitoring locations previously determined in coordination with the Tribes and land owners/managers. The goal of the noise monitoring is to identify if noise levels from project construction activities exceed applicable standards of the San Bernardino and Mohave County codes. Exceedance of standards would require coordination with the Tribes and land owners/managers to evaluate the potential constraints and locations for temporary engineered acoustical barriers. Consistent with the request of the Tribes, monitoring equipment is not left at the approved monitoring locations; rather, it is mounted on a tripod for attended representative measurements and removed when the monitoring event is complete.

When a new construction activity is conducted or a previously monitored construction activity is conducted closer to a noise-sensitive area, monitoring is conducted at more frequent intervals to evaluate the potential need for an acoustical barrier. As the activities continue in the same location and multiple attended measurements indicate that the applicable standard has not been exceeded by the construction activity, periodic attending monitoring events are conducted to confirm continued compliance.

The attended monitoring events document the A-weighted equivalent continuous sound level (L_{eq}) at periodic intervals (e.g., 5, 10, 15, 20, 30, 40, 50 and 60 minutes). The trend of the data at these intervals is evaluated in the field to assess the stability in the sound level to determine the duration of the monitoring event. When the interval data are relatively stable or clearly below the standard, the attended monitoring event will typically be 15 to 30 minutes in duration. As the applicable standards are expressed in terms of the 24-hour average day-night sound level (L_{dn}) which is based on the L_{eq} metric, the measured L_{eq} is compared to the applicable L_{dn} standard for mobile noise sources (i.e., 60 A-weighted decibels [dBA] for Park Moabi, 65 dBA at all other locations). This results in a reasonable and conservative assessment given construction activities are not emitting noise continuously over a 24-hour period, nor are they occurring frequently during the nighttime hours (10 p.m. to 7 a.m.).

In July 2020, the following monitoring events were conducted:

- Twenty-three events at a location west of the mobile home park at Moabi Regional Park. Construction activities closest to this monitoring location include activities at the SPY and CHQ, as well as construction traffic on NTH. The sound level typically varied between 39 and 54 dBA, with an average and median of 46-47 dBA.
- Twenty-two events at a location in the Upland just off the IM-3 access road, and near the top of the hill closest to the NTH and MW-20 Bench, as well as two events at the alternate location off IM-3 access road. Construction activities closest to this monitoring location include activities at the MW-20 Bench and construction traffic on the IM-3 access road. The sound level varied between 42 and 58 dBA, with an average and median of 51 dBA.
- Twenty-four events at the old restaurant location west of NTH. Construction activities closest to this monitoring location include construction traffic on NTH and construction traffic in the north floodplain. The sound level varied between 42 and 63 dBA, with an average and median of 51 dBA.
- Twenty-two events at a location on a bluff below TCS, just south of I-40 and east of the Topock Maze. Construction activities closest to this monitoring location are associated with work at Pipeline F, Pipeline J, excavation of the RPWC system tank pad (inside TCS), as well as activities associated with the jack and bore work. The sound level typically varied between 44 and 57.3 dBA, with an average and median of 54 dBA.

Sound monitoring will continue as work progresses and moves into new areas to identify when an acoustical barrier needs to be considered.

Attachment F
Discharge Monitoring Record in
Compliance with Monitoring and Reporting
Program for Order No. 2003-0003-DWQ
(Table 2)



Project Number: ARC-18-T46

[illegible]

Attachment G
Six-Week Look-Ahead Schedule

Six-Week Look-Ahead Schedule
PG&E Topock Compressor Station Final Groundwater Remedy

Activity	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Primary Planned Activities	8/9/2020	8/10/2020	8/11/2020	8/12/2020	8/13/2020	8/14/2020	8/15/2020
Start Time (PST)	6:30 AM	6:30 AM	6:30 AM	6:30 AM	6:30 AM	6:30 AM	No Work
TCS Approach Pipeline Installation F5*, G5*, G6*	No Work	Pipeline Install @ F1, J3 & J4	No Work	No Work	No Work	No Work	No Work
Pipeline C Jack and Bore F5*	No Work	Handmining & casing installation @ Pipeline C9	Handmining & casing installation @ Pipeline C9, HDPE pipe welding & preparation	Handmining & casing installation @ Pipeline C9, HDPE pipe welding & preparation	Handmine demobilization and auger setup @ Pipeline C9, HDPE pipe welding & preparation	Handmine demobilization and auger setup @ Pipeline C9, HDPE pipe welding & preparation	No Work
NTH Pipeline Installation F5*	No Work	Pipeline Install @ C13	Pipeline Install @ C13	Pipeline Install @ C13	Pipeline Install @ C13	Pipeline Install @ C13	No Work
TCS Facilities Construction G5*	No Work	Excavation for RW and FW lines and containment pad foundation, Formwork & rebar installation	Excavation for RW and FW lines and containment pad foundation, Formwork & rebar installation	Excavation for RW and FW lines and containment pad foundation, Formwork & rebar installation	Excavation for RW and FW lines and containment pad foundation, Formwork & rebar installation	Excavation for RW and FW lines and containment pad foundation, Formwork & rebar installation	No Work
Well Installation	IRZ-18 (E5*), MW-96 (E5*)	IRZ-18 (E5*), MW-96 (E5*)	IRZ-18 (E5*), MW-96 (E5*)	IRZ-9 (E5*), MW-96 (E5*)	IRZ-9 (E5*), MW-96 (E5*)	No Work	No Work
Well Development	IRZ-13S (E5*)	IRZ-13S (E5*)	IRZ-13S (E5*)	IRZ-13S (E5*)	IRZ-13S (E5*)	No Work	No Work
Well Testing	No Work	No Work	No Work	No Work	No Work	No Work	No Work
Primary Planned Activities	8/16/2020	8/17/2020	8/18/2020	8/19/2020	8/20/2020	8/21/2020	8/22/2020
Start Time (PST)	No Work	6:30 AM	6:30 AM	6:30 AM	6:30 AM	6:30 AM	6:30 AM
Pipeline C Jack and Bore F5*	No Work	Auger setup @ Pipeline C9, HDPE pipe welding & preparation	Jack and bore casing Installation @ Pipeline C9, HDPE pipe preparation	Jack and bore casing Installation @ Pipeline C9, HDPE pipe preparation	Jack and bore casing Installation @ Pipeline C9, HDPE pipe preparation	Jack and bore casing Installation @ Pipeline C9, HDPE pipe preparation	No Work
NTH Pipeline Installation F5*	No Work	Pipeline Install @ C13	Pipeline Install @ C13	Pipeline Install @ C13	Pipeline Install @ C13	Pipeline Install @ C13	No Work
TCS Facilities Construction G5*	No Work	RW and FW line installation, Tank farm wall concrete installation	RW and FW line installation, Tank farm wall formwork & rebar installation	RW and FW line installation, Tank farm wall formwork & rebar installation	RW and FW line installation, Tank farm wall formwork & rebar installation	RW and FW line installation, Tank farm wall formwork & rebar installation	No Work
Well Installation	No Work	No Work	IRZ-9 (E5*), MW-96 (E5*)	IRZ-9 (E5*)	IRZ-9 (E5*)	IRZ-9 (E5*)	IRZ-9 (E5*)
Well Development	No Work	No Work	MW-97 (E5*)	MW-97 (E5*)	MW-97 (E5*)	IRZ-18 (E5*)	IRZ-18 (E5*)
Well Testing	No Work	No Work	No Work	No Work	No Work	No Work	No Work
Primary Planned Activities	8/23/2020	8/24/2020	8/25/2020	8/26/2020	8/27/2020	8/28/2020	8/29/2020
Start Time (PST)	6:30 AM	6:30 AM	6:30 AM	6:30 AM	6:30 AM	6:30 AM	No Work
Pipeline C Jack and Bore F5*	No Work	Jack and bore casing Installation @ Pipeline C9, HDPE pipe preparation	Jack and bore casing Installation @ Pipeline C9, HDPE pipe preparation	Jack and bore casing Installation @ Pipeline C9, HDPE pipe preparation	Jack and bore casing Installation @ Pipeline C9	Jack and bore casing Installation @ Pipeline C9	No Work
NTH Pipeline Installation F5*	No Work	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	No Work
TCS Facilities Construction G5*	No Work	RW and FW line installation, Tank farm wall formwork & rebar installation	RW and FW line installation, Tank farm wall formwork & rebar installation	RW and FW line installation, Tank farm wall formwork & rebar installation	RW and FW line installation, Tank farm wall formwork & rebar installation	RW and FW line installation, Tank farm wall concrete installation	No Work
Well Installation	IRZ-9 (E5*)	IRZ-9 (E5*)	IRZ-9 (E5*)	IRZ-9 (E5*)	IRZ-9 (E5*)	No Work	No Work
Well Development	IRZ-18 (E5*)	IRZ-18 (E5*)	IRZ-18 (E5*)	IRZ-18 (E5*)	IRZ-18 (E5*)	No Work	No Work
Well Testing	No Work	No Work	No Work	No Work	No Work	No Work	No Work
Primary Planned Activities	8/30/2020	8/31/2020	9/1/2020	9/2/2020	9/3/2020	9/4/2020	9/5/2020
Start Time (PST)	No Work	6:30 AM	6:30 AM	6:30 AM	6:30 AM	6:30 AM	No Work
Pipeline C Jack and Bore F5*	No Work	Jack and bore casing Installation @ Pipeline C9	Jack and bore casing Installation @ Pipeline C9	Jack and bore casing Installation @ Pipeline C9	Jack and bore casing Installation @ Pipeline C9	Jack and bore casing Installation @ Pipeline C9	No Work
NTH Pipeline Installation F5*	No Work	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	No Work
MW-20 Bench Facility Construction E5*, F5*	No Work	Tentative: Mobilization	Tentative: Mobilization	Tentative: Mobilization	Tentative: Mobilization	Tentative: Mobilization	No Work
TCS Facilities Construction G5*	No Work	Pipelines F8 & M1 installation	Pipelines F8 & M1 installation	Pipelines F8 & M1 installation	Pipelines F8 & M1 installation	Pipelines F8 & M1 installation	No Work

Six-Week Look-Ahead Schedule
PG&E Topock Compressor Station Final Groundwater Remedy

Activity	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Well Installation	No Work	IRZ-9 (E5*)	No Work	No Work	No Work	No Work	No Work
Well Development	No Work	IRZ-18 (E5*)	IRZ-18 (E5*)	IRZ-18 (E5*)	MW-96 (E5*)	MW-96 (E5*)	No Work
Well Testing	No Work	No Work	No Work	No Work	IRZ-18 (E5*)	IRZ-18 (E5*)	No Work
Primary Planned Activities	9/6/2020	9/7/2020	9/8/2020	9/9/2020	9/10/2020	9/11/2020	9/12/2020
Start Time (PST)	No Work	Labor Day Holiday Observed	6:30 AM	6:30 AM	6:30 AM	6:30 AM	No Work
Pipeline C Jack and Bore F5*	No Work	No Work	Jack and bore casing Installation @ Pipeline C9, North receiving pit excavation and dewatering setup	Jack and bore casing Installation @ Pipeline C9, North receiving pit excavation and dewatering setup	Jack and bore casing Installation @ Pipeline C9, North receiving pit excavation and dewatering setup	Jack and bore casing Installation @ Pipeline C9, North receiving pit excavation and dewatering setup	No Work
NTH Pipeline Installation F5*	No Work	No Work	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	No Work
MW-20 Bench Facility Construction E5*, F5*	No Work	No Work	Tentative: Facility construction	Tentative: Facility construction	Tentative: Facility construction	Tentative: Facility construction	No Work
TCS Facilities Construction G5*	No Work	No Work	Pipelines F8 & M1 installation	Pipelines F8 & M1 installation	Pipelines F8 & M1 installation	Pipelines F8 & M1 installation	No Work
Well Installation	No Work	No Work	No Work	MW-96 surface completion (E5*)	MW-97 surface completion (E5*)	No Work	No Work
Well Development	No Work	No Work	MW-96 (E5*)	IRZ-9 (E5*)	IRZ-9 (E5*)	IRZ-9 (E5*)	No Work
Well Testing	No Work	No Work	IRZ-18 (E5*)	IRZ-18 (E5*)	IRZ-18 (E5*)	No Work	No Work
Primary Planned Activities	9/13/2020	9/14/2020	9/15/2020	9/16/2020	9/17/2020	9/18/2020	9/19/2020
Start Time (PST)	No Work	6:30 AM	6:30 AM	6:30 AM	6:30 AM	6:30 AM	No Work
Pipeline C Jack and Bore F5*	No Work	Remove jack & bore rig from work area	Remove jack & bore rig from work area	Contact grout install at Pipeline C9 casing	Carrier Pipe Installation thru Pipeline C9 casing	Carrier Pipe Installation thru Pipeline C9 casing	No Work
NTH Pipeline Installation F5*	No Work	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	Pipeline Install @ C14, C15	No Work
MW-20 Bench Facility Construction E5*, F5*	No Work	Tentative: Facility construction	Tentative: Facility construction	Tentative: Facility construction	Tentative: Facility construction	Tentative: Facility construction	No Work
TCS Facilities Construction G5*	No Work	Pipelines F8 & M1 installation	Pipelines F8 & M1 installation	Pipelines F8 & M1 installation	Pipelines F8 & M1 installation	Pipelines F8 & M1 installation	No Work
Well Installation	No Work	IRZ-9 (E5*)	MW-96 surface completion (E5*)	MW-97 surface completion (E5*)	No Work	No Work	No Work
Well Development	No Work	IRZ-9 (E5*)	IRZ-9 (E5*)	No Work	No Work	No Work	No Work
Well Testing	No Work	No Work	No Work	IRZ-9 (E5*)	IRZ-9 (E5*)	IRZ-9 (E5*)	No Work

Notes:
The timing of field activities is estimated and may change day-to-day based on site conditions, field progress, or other factors.
When planning to visit the site to observe a specific activity or area, please contact Curt Russell (760.791.5884) for the latest schedule information.
* **Bold font** = Intrusive work location as described on the Project Grid Map. See Project Grid Map tab for location of grid positions provided on the Look-Ahead.



Figure showing a grid superimposes on the Topock site map. Each grid position is denoted by an alphabet followed by a number

Attachment H
Validated Groundwater Monitoring Data
(DTSC Condition of Approval xi)
(Groundwater Data Presented in Separate PDF)