

## Colorado River Basin Regional Water Quality Control Board

July 2, 2019

Mr. Curt Russell  
Pacific Gas and Electric Company  
P.O. Box 337  
Needles, CA 92363

**SUBJECT: APPROVAL OF DISCHARGE TO LAND OF WELL TEST WATER IN ACCORDANCE WITH STATE WATER QUALITY CONTROL ORDER NO. 2003-0003-DWQ**

**FACILITY: TOPOCK COMPRESSOR STATION, SOUTHEAST OF NEEDLES, CALIFORNIA (SITE ID NO. SL-0607-161-506) (FACILITY)**

Dear Mr. Russell:

On May 29, 2019, California Regional Water Quality Control Board, Colorado River Basin Region (Regional Water Board) received a request to discharge-to-land water that will be removed from wells during testing of the hydrologic properties of the aquifer underlying the facility. The discharge procedure was described in the attached Discharge Monitoring Plan (DMP) revised on June 12, 2019, entitled:

- Discharge Monitoring Plan, PG&E Topock – Injection of Well Testing Water into Aquifer

Remedial actions (the Remedy) are underway at the facility under the oversight of the California Department of Toxic Substances Control (DTSC) and the US Department of the Interior (DOI) as part of a Corrective Action/Remedial Action. As part of the Remedy, Pacific Gas & Electric Company (PG&E) is not required to apply for each separate permit that it might otherwise be required to implement provided it follows in substantive part all applicable, relevant and appropriate requirements those permits require.

The DMP indicates PG&E and its contractors are proposing to conduct testing of the injection and extraction properties of the aquifer at each injection and extraction well installed as part of the Remedy, and that the discharge protocols described in the DMP are in accordance with Section 3.2.1.5 (Well Testing) of the approved Construction/ Remedial Action Work Plan (C/RAWP). Relevant facts include:

1. The fluid to be discharge will consist of water removed from the aquifer, or fresh water from the onsite domestic water system if the quantity or quality of the removed water is not satisfactory.

2. Water extracted from the aquifer during well capacity testing will be stored in "frac tanks" until used for injection testing. Water used for injection testing will be pumped through a filter to remove particulate matter, and/or a carbon filter to remove Total Petroleum Hydrocarbons (TPH) if TPH concentrations exceed 0.100 mg/L.
3. No chemical additives will be used during testing activities.
4. Prior to injection, the water in the frac tanks will be tested, including for dissolved hexavalent chromium (Cr-VI), TPH and pH.
5. The water will be injected only into portions of the aquifer with Cr-VI concentrations that are the same or higher than the Cr-VI concentrations of the injected water.
6. Extracted water exceeding 5 mg/L Cr-VI will not be reinjected.
7. The DMP describing the proposed work indicates the location of the proposed work.
8. The proposed work would normally be permitted under the requirements of State Water Resources Control Board Water Quality Order No. 2003-0003-DWQ entitled "State General Waste Discharge Requirements (WDRs) for Discharge to Land with a Low Threat to Water Quality (General WDRs)" (the Order).
9. The Order contains several categories of discharge, and the proposed discharge is consistent with the category entitled "Wells/Boring Waste: Monitoring Well Purge Water Discharge."
10. Provision 3 of the Order states "Monitoring well purge water shall be discharged at the monitoring well facility and shall not degrade underlying groundwater. Monitoring well purge water shall not be discharged in a manner causing ponding or threatening a discharge to surface water."
11. By reinjecting the water into sections of the aquifer from which it was obtained, or into sections with poorer water quality than the injection water, the proposed discharge avoids degradation of the underlying aquifer and prevents the discharge from ponding or threatening surface water. Subsurface discharge of the water into the aquifer from which it was obtained also avoids impacting threatened or endangered plants and animals (if present), or historical sites. Therefore, subsurface injection of the extracted water is consistent with the intent of the Order.
12. The Order requires that the Discharger submit a Notice of Intent (NOI) that includes a DMP with the following information:
  - All pollutants believed to be present and their concentrations;
  - Monitoring Locations and frequencies;
  - Reporting schedules.
13. PG&E's consultant submitted a table indicating the pollutants anticipated to be present and their respective concentrations in the extracted water, the DMP indicated the testing to be performed to verify the concentrations, and the DMP indicated the results of the injection/reinjection operations will be reported in the Construction Monthly Progress Reports submitted by the 10<sup>th</sup> of every month to the DTSC and DOI. (The DMP and table of chemical concentrations is attached to this letter for reference).
14. The Order indicates that the discharge may not be initiated until the Regional Water Board Executive Officer approves of the DMP.

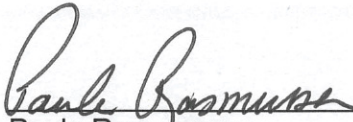


## REGIONAL BOARD COMMENTS

The DMP referenced above meets the requirements of the Order, and the proposed discharge of well test water is hereby approved at the locations indicated.

If you have any questions, please contact Scot Stormo, Engineering Geologist, at (760) 776-8964 or [scot.stormo@waterboards.ca.gov](mailto:scot.stormo@waterboards.ca.gov).

Sincerely,



Paula Rasmussen  
Executive Officer  
Colorado River Basin  
Regional Water Quality Control Board

SAS/tab

cc: Christina Hong, Jacobs Engineering, [Christina.Hong@jacobs.com](mailto:Christina.Hong@jacobs.com)  
Aaron Yue, DTSC, [Aaron.Yue@dtsc.ca.gov](mailto:Aaron.Yue@dtsc.ca.gov)  
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Enclosures: Discharge Monitoring Plan, PG&E Topock – Injection of Well Testing Water Into Aquifer, submitted June 12, 2019

Table of chemicals of concern and the range of concentrations submitted June 21, 2019

File: SL0607161506

## **Discharge Monitoring Plan**

### **PG&E Topock – Injection of Well Testing Water Into Aquifer**

1. As stated in Section 3.2.1.5 (Well Testing) of the Construction/Remedial Action Work Plan (C/RAWP), following well development, well testing will be conducted at extraction and injection wells (see attached figure for well locations). These tests include specific capacity and injectivity tests and constant rate extraction tests.
2. In most cases, well testing will be conducted immediately after well development is complete, using the same equipment. Water that is extracted and stored in frac tanks during well specific capacity testing will be used for injection testing. The water used for injection testing will be pumped through a filter to remove particulate matter (and/or a carbon filter to remove Total Petroleum Hydrocarbon [TPH], if needed) prior to reinjection. Injectivity testing may also include the use of fresh water (supplied by the remedy construction water system).
3. No chemical additives will be used during well testing activities.
4. To ensure the reinjection of well testing water will not cause the spread of groundwater contamination, packers will be used to isolate the well screens and extracted water will only be reinjected into the same screen that it is extracted from or into a nearby screen (same well/well cluster) that has a higher Cr6+ concentration. If the total amount of water cannot be re-injected into the same well/well cluster, it may be injected into a nearby remedy well of similar water quality subject to availability and a screen interval that has a higher Cr6+ concentration to avoid spreading of groundwater contamination outside the expected remedy. In addition, prior to reinjection, extracted water will be tested for:
  - a. Dissolved Cr and Cr6+
  - b. TPH-gasoline, diesel, and motor oil
  - c. pH (between 6.5 and 8.5)
5. If TPH-gasoline is detected above laboratory reporting limit (i.e., RL of 100 micrograms per liter [ug/L]) or TPH-diesel is detected above the current water quality goal (i.e., Taste and Odor threshold of 100 ug/L), purged water will be pumped through a carbon filter prior to reinjection.
6. If Cr6+ is above 5 ppm the water cannot be reinjected.
7. No chemical testing of freshwater is required prior to use for injectivity testing.
8. The Lead Hydrogeologist who oversees the well installation and testing effort will ensure that the water is reinjected into the appropriate well screen and will maintain the following records of monitoring information:
  - a. The date, location, and time of sampling or measurements,
  - b. The individual(s) who performed the sampling or measurements,
  - c. The date(s) analyses were performed,
  - d. The individual(s) who performed the analyses,
  - e. The analytical techniques or method used, and
  - f. The results of such analyses.
9. No injection/reinjection is allowed during non-work days or hours.
10. Injection/reinjection operations will be reported in the Construction Monthly Progress Reports submitted to the California Department of Toxic Substances Control (DTSC) and the US Department of the Interior (DOI) by the 10<sup>th</sup> day of the following month.





Analytes	Range of Concentrations (micrograms per liter)*
<b>Constituents of Concerns (COCs)**</b>	
Hexavalent Chromium	0.4 to 7,000
Total Chromium	3.7 to 7,200
<b>Constituents of Potential Concerns (COPCs)**</b>	
Selenium	3.1 to 22
Molybdenum	18 to 110
Nitrate/Nitrite as Nitrogen	1,200 to 8,800
<b>In-situ By-Products**</b>	
Arsenic	1.2 to 29
Iron	21 to 160
Manganese	1.5 to 310

\* Source: Samples collected from remedy monitoring wells (MW-B, E, F, and G) from January to June 2019.

\*\* Basis of Design Report/Final (100%) Design Report for the Final Groundwater Remedy, PG&E Topock Compressor Station