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Lahontan Regional Water Quality Control Board

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Sheryl Bilbrey
Director, Remediation Program Office
Pacific Gas and Electric Company
77 Beale Street, B28A
San Francisco, CA 94105

COMMENTS ON ACTION PLAN FOR AREA WEST OF THE NORTHWEST FRESHWATER INJECTION SYSTEM, PACIFIC GAS AND ELECTRIC (PG&E), HINKLEY COMPRESSOR STATION, SAN BERNARDINO COUNTY (CLEANUP AND ABATEMENT ORDER NO. R6V-2008-0002-A4)

This letter provides the Lahontan Regional Water Quality Control Board (Water Board) comments to PG&E's Implementation of Action Plan West of the Northwest Freshwater Injection System (Action Plan), dated January 10, 2014. The Action Plan was submitted to comply with directives in Board Order No. R6V-2013-0087 for implementing corrective actions west of the Northwest Freshwater Injection System (NFIS). In addition, this letter requires PG&E to submit technical information and a status report for implementing additional corrective actions.

Background

Water Board staff has reviewed PG&E's January 17, 2014 Action Plan, prepared by Arcadis. The Action Plan summarizes initial corrective actions implemented west of the NFIS for reducing chromium concentrations in groundwater. Water sampling was conducted on the agricultural well 27-03 at the former Heifer Ranch (Ranch). Results show chromium concentrations ranging from 1.6 ppb to 2.0 ppb Cr6/CrT, which are slightly less than chromium concentrations when the well operated for the active ranch. Various pumping tests were completed in December 2013 to evaluate hydrogeologic properties of the shallow aquifer. The pumping tests at well 27-03 revealed that detectable drawdown was measured out to the NFIS, approximately 1,500 feet to the east, in the deep zone of the upper aquifer during pumping rates of 11 and 31 gallons per minute (gpm). A total of 188,000 gallons of water from the pumping test was stored onsite in Baker containers. Stored water from the pumping tests was discharged to the ground at the Ranch following confirmation water samples showed chromium concentrations less than 3.1 ppb Cr6 and 3.2 ppb CrT.

To reduce chromium concentrations in groundwater, the Action Plan discusses two projects: a short-term one to be implemented during the first half of 2014 and a longer-term one, if needed, to be implemented during the second half of 2014. For the short-term project, the Action Plan recommends pumping water from a new extraction well to be installed near MW-153. Extracted water will either be used for dust control at PG&E off-site projects or on the Ranch property or applied to ground at the Ranch. If chromium concentrations in stored water exceed 3.1 ppb Cr6 and 3.2 ppb CrT, the water would be treated using an ion exchange modular unit prior to discharge. For the longer-term project, the Action Plan discusses piping extracted water east and applying it to existing, new or expanded agricultural treatment units. Lastly, the Action Plan states PG&E is moving forward with installing two new injection wells within the NFIS to improve the freshwater barrier.

Comments

The Fourth Quarter 2013 Groundwater Monitoring Report shows that chromium concentrations increased from 2.9 ppb to 7.6 ppb Cr6 in monitoring well MW-153, located just west of well 27-03 and close to Hinkley Road. This information confirms the Water Board's position in Board Order No. R6V-2013-0087 for the need to reduce chromium concentrations in the western area and prevent potential impact to nearby domestic wells.

Maps in Figures 1-1, 4-1, 4-2, and 4-3 show the chromium plume lines drawn from the NFIS to MW-153, towards Hinkley Road. However, the geologic cross section shown in Figure 5-1 shows chromium plume lines that are inconsistent with the other figures in the Action Plan. Water Board staff does not concur with the site conceptual model displayed in Figure 5-1, which shows the chromium plume in the western area drawn as isolated (not connected) circles at each monitoring well cluster and none at well 27-03. As stated in previous Water Board letters, PG&E has not demonstrated conclusively that chromium detected in the west is not from background conditions instead of from the plume on the east side of the NFIS. We therefore believe that the two separated chromium plumes drawn west of the NFIS need to be drawn as one continuous plume from monitoring well MW-169S2 and MW-121D to MW-153. Water samples showing chromium less than 3.1 ppb Cr6 and 3.2 ppb CrT at well 27-03 likely represents the diluted chromium plume due to pumping from the long-screen agricultural well drilled 40 feet into bedrock. Since water samples at well 27-03 are not from a monitoring well, that point should be ignored when drawing chromium plume boundaries in future technical reports.

Action Plan Recommendations

As was discussed at our February 21, 2014 meeting in South Lake Tahoe, the Water Board concurs with the Action Plan short-term recommendation to extract water from the western area during the first half of 2014 and either dispose to land at the Ranch or use for dust control off site. During first quarter 2014, these activities will account for approximately 9,000 gallons per day (gpd) or 6 gpm and during second quarter 2014 will increase up to possibly 17,000 gpd, or 12 gpm. If chromium concentrations exceed 3.1 ppb Cr6 or 3.2 ppb CrT, water will be treated using ion exchange before being applied to land or used for dust control.

From reading the Action Plan, it appeared to the Water Board that PG&E was proposing to implement the remedial action in first half 2014 by pumping from well 27-03 and installing a new extraction well if remedial actions were necessary in the second half of 2014. However, at our February 21, 2014 meeting, PG&E clarified that it is prepared to immediately install the new extraction well for remedial actions during the first half of 2014 and not use well 27-03. This proposal is acceptable to the Water Board with the comment that the new extraction well be located closer to well 27-03, which is nearer to the center of the chromium plume in the western area and where the upper aquifer is thicker compared to that where MW-153 is located. PG&E stated at the February 21, 2014 meeting that this change in location is acceptable. Furthermore, the Water Board recommends that pumping at the new extraction well be at a rate of no more than 11 gpm in the shallow zone so as to not potentially act on chromium on the east side of the NFIS.

If reduced chromium concentrations to background levels are not achieved in the western area by June 30, 2014, PG&E will need to implement one of the longer-term actions discussed in the Action Plan. Doing so should be effective enough to adequately protect nearby domestic wells.

Reporting

PG&E shall fully discuss and describe all corrective actions implemented in the western area to reduce chromium concentrations in groundwater.

1. As required in Board Order No. R6V-2013-0087, corrective actions implemented in the western area shall be fully discussed and described in quarterly monitoring reports for the NFIS and In-situ Remediation Zone (IRZ). Water samples for verifying chromium concentrations shall be collected prior to disposal to land for every Baker tank capacity of 20,000 gallons when the average daily pumping rate is 6 gpm or less. When the average daily pumping rate is greater than 6 gpm, water samples shall be collected for every 40,000 gallons. The location and volume of water disposal must also be described and shown on maps. Maps must depict chromium plume boundaries out to 3.1 ppb, 10 ppb, 50 ppb, and 1,000 ppb Cr6/CrT, based upon monitoring well data.

2. If chromium concentrations in western monitoring wells continue to exceed 3.1 ppb Cr6/3.2 ppb CrT through June 30, 2014, PG&E must submit a status report by **July 25, 2014** for implementing long-term continuous corrective actions. The status report shall describe in detail all tasks completed, ongoing, and planned for the project. All site maps in the report must draw the chromium plume boundaries out to 3.1 ppb, 10 ppb, 50 ppb, and 1,000 ppb Cr6/CrT, based upon monitoring well data.

If you should have any questions about this conditional approval of the Action Plan or the required technical report, please contact Lisa Dernbach at (530) 542-5424 or ldernbach@waterboards.ca.gov.

Lauri Kemper

LAURI KEMPER
ASSISTANT EXECUTIVE OFFICER

cc: PG&E Hinkley Lyris List (and web posting)
PG&E Technical Mail List
Kevin Sullivan, PG&E

LSD/adw/T: PG&E Hinkley PG&E 13267 Cr invest comments 2-14
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