

Lahontan Regional Water Quality Control Board

December 22, 2014

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CONDITIONAL ACCEPTANCE OF PLAN TO IMPROVE LOWER AQUIFER CHROMIUM REMEDIATION AND MODIFICATION TO AGRICULTURAL TREATMENT UNIT PERMIT MONITORING AND REPORTING PROGRAM (BOARD ORDER NO. R6V-2014-0023) AND CLEANUP AND ABATEMENT ORDER NO. R6V-2008-002, PG&E HINKLEY COMPRESSOR STATION, SAN BERNARDINO COUNTY

The California Regional Water Quality Control Board, Lahontan Region (Water Board) is conditionally accepting the plan to install a new extraction well to improve the effectiveness of chromium remediation in groundwater in the lower aquifer of Hinkley. The Monitoring and Reporting Program under the Agricultural Treatment Unit (ATU) Waste Discharge Requirements (WDRs) (Board Order No. R6V-2014-0023) is modified to require description and discussion of remedial actions implemented to reduce chromium concentrations in groundwater of the lower aquifer. Also, this letter amends the requirements for semiannual remediation status reports under Cleanup and Abatement Order (CAO) No. R6V-2008-002 to include a description of remedial actions conducted for the lower aquifer and a discussion of the effectiveness of such actions.

Background

Chromium from PG&E's historical releases at the Hinkley Compressor Station has migrated from the upper aquifer to the lower aquifer causing hexavalent chromium concentrations in the lower aquifer to exceed drinking water standards. Chromium sampling results for lower aquifer monitoring wells are included in quarterly groundwater monitoring reports pursuant to Investigative Order No. R6V-2011-0079. Groundwater pumping rates for extraction wells EX-29 and EX-30 and discharge location at the Ranch ATU are described in ATU quarterly monitoring reports (Board Order R6V-2014-0023) and semiannual site-wide remediation status reports (CAO R6V-2008-002).

From July 2011 to July 2014, hexavalent chromium concentrations steadily increased from 9 to 19 parts per billion (ppb, in monitoring well MW-100C (in lower aquifer) on Acacia Street east of Mountain View Road. In addition, hexavalent chromium concentrations increased between 2013 and 2014 from 7.8 to 24 ppb, in monitoring well MW-92C (in lower aquifer) located southeast of Santa Fe Avenue and Mountain View Road.

In technical meetings with PG&E, Water Board staff requested a plan to address increasing chromium concentrations in the lower aquifer. The November 7, 2014, document, *Plan for Enhancement of Lower Aquifer Remedy (Plan)*, by Arcadis and CH2MHill, proposes to remedy the situation by (1) reducing extraction at EX-26 and (2) installing a new extraction well near MW-92C (see enclosed Figure 1). The Plan states that new extraction well EX-37 will pump groundwater from both the upper and lower aquifer as it will be screened through the thin blue clay layer at that location. Extracted groundwater from EX-37 may be applied to Agricultural Treatment Units (ATUs), such as the Ranch or Desert View Dairy (DVD) ATUs, or sent south to the South Central Re-injection Area In-Situ Reactive Zone. Plans for piping to connect EX-37 with the piping network that extends to these remedial systems are in progress and will be submitted to the Water Board for review.

Conditional Acceptance of Proposed Plan

The Water Board accepts the proposed plan as an initial effort to reduce chromium concentrations at MW-100C. Decreasing pumping at EX-26 should cease the chromium migration from the upper aquifer to the lower aquifer ensuring chromium concentrations in the lower aquifer to not increase. This action may not result in reducing the existing chromium concentrations remaining in the lower aquifer at MW-100C. Also, it is not clear how effective the new extraction well EX-37 will be in improving groundwater quality at MW-100C because of the distance between the two wells and the low pumping rates anticipated.

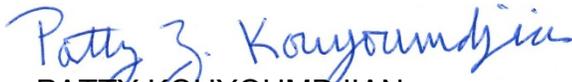
I accept PG&E's plan to improve lower aquifer water quality conditions with a requirement for monitoring to verify effectiveness. If less than 20 percent reduction of total and hexavalent chromium concentrations in MW-92C and MW-100C occurs by the end of 2015, I am requiring submittal of a supplemental strategy.

In addition, I am requesting that chromium sampling results for lower aquifer monitoring wells continue to be reported in quarterly groundwater monitoring reports, pursuant to Investigative Order No. R6V-2011-0079. I am modifying the ATU Monitoring and Reporting Program (Board Order No. R6V-2014-0023) to require that pumping rates and all remedial actions implemented for the lower aquifer be described and reported in quarterly monitoring reports. Semiannual remediation status reports required under CAO No. R6V-2008-0002 must also include a description of remedial actions conducted

for the lower aquifer and discuss the effectiveness of such actions to reduce chromium concentrations in groundwater to background levels.

Based on your schedule to install EX-37 before the end of 2014 and complete piping in first quarter 2015, PG&E will likely begin implementing the lower aquifer remedial strategy starting second quarter 2015. Doing so provides approximately nine months of operation to the end of 2015. If total and hexavalent chromium concentrations have not reduced by at least 20 percent in both MW-92C and MW-100C, the semi-annual remediation status report, with supplemental strategy, is due March 31, 2016.

If you have any questions, you may contact Lisa Dernbach at (530) 542-5424 or ldernbach@waterboards.ca.gov.

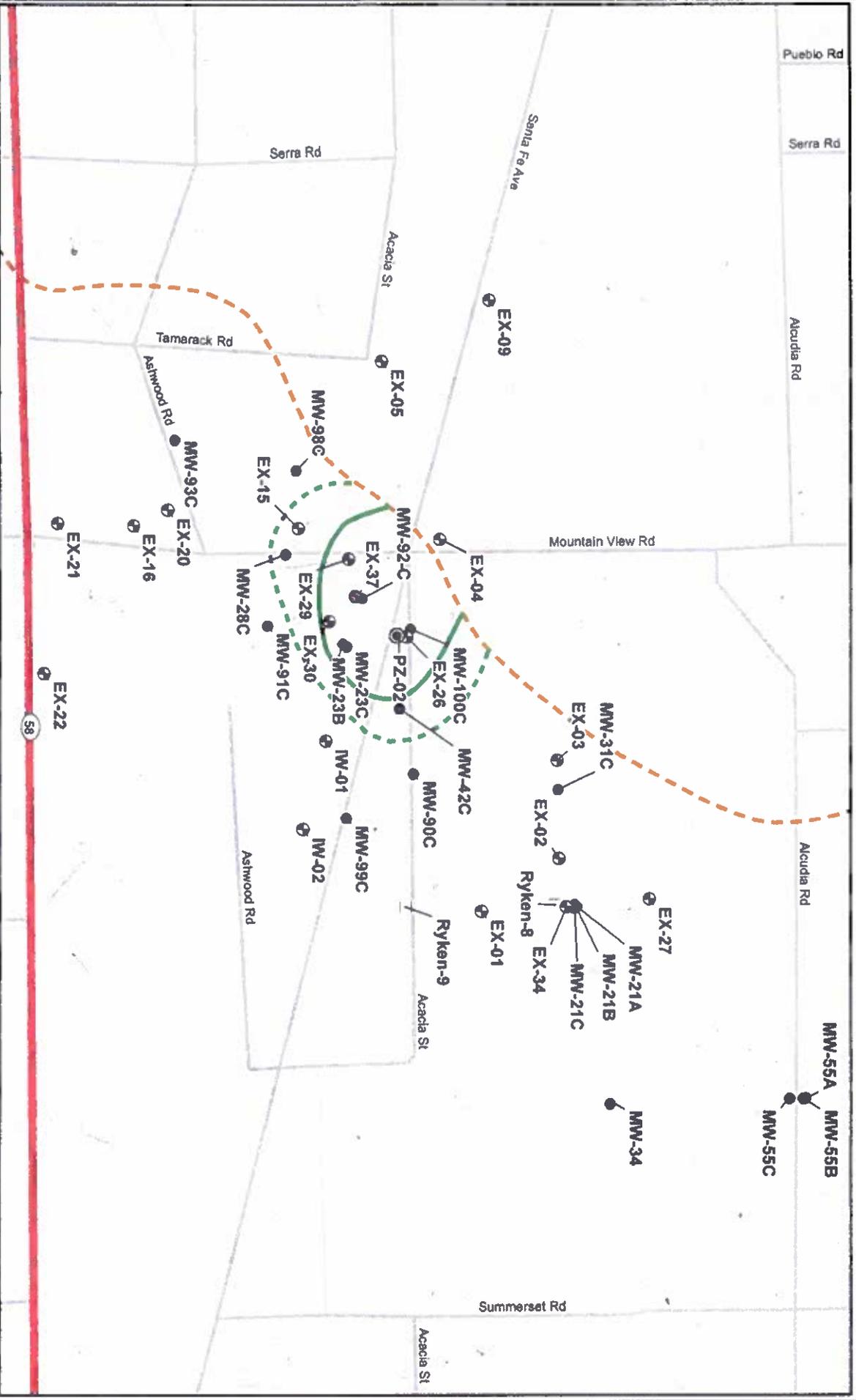


PATTY KOUYOUMDJIAN
EXECUTIVE OFFICER

Enclosed: Figure 1

cc: PG&E Technical Mailing List

LSD/dk/T: PGE Lower aquifer plan acceptance
File under: VVL WDID 6B369107001



- Legend**
- Monitoring Well
 - ⊕ Extraction Well
 - ⊕ Proposed Extraction Well
 - ⊕ Inactive Supply Wells Ryken-8 and 9
 - ⊕ Piezometer
-
- - - Approximate outline of Cr(VI) and Cr(T) in Lower Aquifer exceeding 3.1 and 3.2 µg/L
 - - - Approximate 10 µg/L outline of Cr(VI) or Cr(T) concentrations in Lower Aquifer, Third Quarter 2014
 - - - Approximate extent of blue clay layer forming lower aquifer. The blue clay layer is thin and leaky in portions of the western extent

Note:
 µg/L = micrograms per liter
 Cr(VI) = hexavalent chromium
 Cr(T) = total dissolved chromium



PACIFIC GAS AND ELECTRIC COMPANY HINKLEY, CALIFORNIA
EXTENT OF CHROMIUM IN LOWER AQUIFER AND PROPOSED LOCATION OF EX-37
ARCADIS
FIGURE 1