

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

AMENDED CLEANUP AND ABATEMENT ORDER NO. R6V-2008-0002A2

WDID NO. 6B369107001

**REQUIRING PACIFIC GAS AND ELECTRIC COMPANY
TO CLEAN UP AND ABATE WASTE DISCHARGES OF
TOTAL AND HEXAVALENT CHROMIUM TO THE
GROUNDWATERS OF THE MOJAVE HYDROLOGIC UNIT**

San Bernardino County

The California Regional Water Quality Control Board, Lahontan Region (Water Board), finds:

1. The Pacific Gas and Electric Company owns and operates the Hinkley Compressor Station (hereafter the "Facility"), located at 35863 Fairview Road, Hinkley in San Bernardino County. For the purposes of this Order, the Pacific Gas and Electric Company is referred to as the "Discharger."
2. The purpose of this Amendment is to allow the lateral migration of the 4 micrograms per liter ($\mu\text{g/L}$) hexavalent chromium [Cr(VI)] eastern plume boundary during implementation of cleanup actions to contain chromium expansion on the downgradient boundary in the northwest direction. The requirement for plume containment is listed in Cleanup and Abatement Order (CAO) No. R6V-2008-0002 (attached).
3. The Third Quarter 2008 Groundwater Monitoring Report for the Source Area In-situ Remediation Project contains monitoring data showing up to 6,420 $\mu\text{g/L}$ Cr(VI) and 5,920 $\mu\text{g/L}$ total chromium [Cr(T)] in groundwater at the Facility.
4. On August 6, 2008, the Water Board issued CAO No. R6V-2008-0002 to the Discharger to cleanup and abate the effects of waste discharges and threatened discharges containing hexavalent chromium and total chromium to waters of the State. Among the requirements listed in the Order, is the requirement for the Discharger to take additional corrective actions to contain chromium migrating with groundwater. The Order allows the Discharger to propose that the Water Board allow a quantified migration of the 4 $\mu\text{g/L}$ Cr(VI) plume boundary or the 50 $\mu\text{g/L}$ Cr(T) plume as part of a proposed remedial action project.
5. On September 24, 2008, the Discharger submitted a Notice of Intent (NOI) under General Waste Discharge Requirements (Board Order No. R6V-2008-0014). The Discharger also submitted an NOI Addendum on November 6, 2008 and a revised Figure 3 on November 24, 2008. The project proposes additional remediation activities for hexavalent chromium in groundwater at the site. One of the components of the proposed project includes groundwater extraction from within the northwestern portion of the chromium plume and injection of extracted water

dosed with reductant within the plume to the area south of the Central Area In-situ Remediation Project. The location of the dosed water discharge is referred to as the South Central Area. Up to 110 gallons per minute of groundwater may be injected into wells in the South Central Area. Modeling shows that such injections may result in groundwater mounding causing up to 1,000 feet of lateral migration of the 4 µg/L Cr(VI) eastern plume boundary. Some of the lateral spreading of the plume boundary may extend beyond PG&E-owned property onto private property to the east. PG&E has an agreement in place with the private party to not operate water wells that could cause further plume spreading. Modeling also predicts that any potential migration of the 4 µg/L Cr(VI) plume boundary as a result of project implementation will return to pre-project conditions approximately ten years or less after injections cease.

6. On November 12, 2008, the Water Board issued CAO No. R6V-2008-0002A1 (attached) to the Discharger establishing background chromium concentrations to be considered when defining plume boundaries and final cleanup actions.
7. Chromium in groundwater in and downgradient of the source area at the Facility continues to adversely affect groundwater quality. This Amended Cleanup and Abatement Order allows the lateral migration of the 4 µg/L Cr(VI) eastern plume boundary during implementation of the project described in Finding No. 4 above. Technical reports required pursuant to Board Order No. R6V-2008-0014 are necessary to verify corrective action implementation, cleanup of water quality, and progress towards restoring the beneficial uses of the aquifer.
8. Corrective actions proposed by the Discharger are necessary to maintain compliance with the CAO R6V-2008-0002 for containing plume migration. The proposed corrective action is the only feasible method readily available to the Discharger as it can be implemented almost immediately and still prevent adverse impacts to active users of groundwater in the area.
9. This enforcement action is being taken by this regulatory agency to enforce the provisions of the California Water Code, and as such is exempt from the provisions of the California Environmental Quality Act (Public Resources Code section 21000 et seq.) in accordance with California Code of Regulations, title 14, section 15321.

IT IS HEREBY ORDERED that, pursuant to the Water Code sections 13267 and 13304, the Discharger must clean up and abate the effects of the discharge and threatened discharge of chromium to waters of the State, and must comply with the provisions of this Order:

1. Cleanup and Abatement Order No. R6V-2008-0002A1 is amended to allow lateral spreading of the 4 µg/L Cr(VI) eastern plume boundary to no more than 1,000 feet, as shown on the attached map, and shall not extend to areas of existing groundwater use. Lateral spreading of the plume must be monitored and described in monitoring reports required pursuant to Board Order No. R6V-2008-0014.

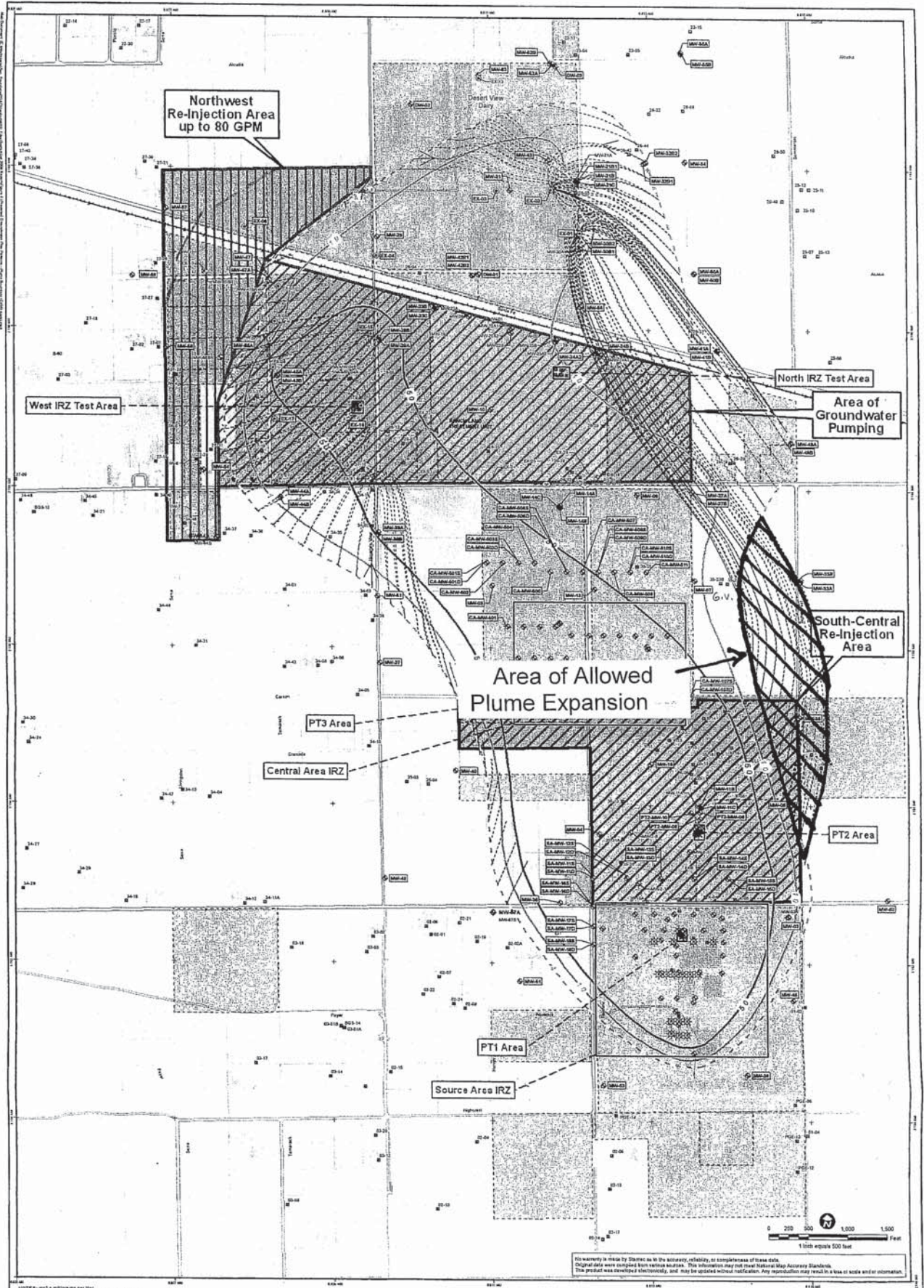
Failure to comply with the terms or conditions of this Order will result in additional enforcement action that may include the imposition of administrative civil liability pursuant to Water Code sections 13268 and 13350 or referral to the Attorney General of the State of California for such legal action as he may deem appropriate.

Any person aggrieved by this action of the Lahontan Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 and following. The State Water Board must receive the petition by 5:00pm., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

Ordered by: *Harold J. Singer*
HAROLD J. SINGER
EXECUTIVE OFFICER

Dated: April 7, 2009

Attachments: Cleanup and Abatement Order No. R6V-2008-0002
Cleanup and Abatement Order No. R6V-2008-0002A1
Area of Allowed Plume Expansion



NOTES: mg/l = milligrams per liter
 gpd = gallons per day
 ft = feet
 PG&E Data Sources: Aerials and CIGM/GIS, December 2007 - July 2008

<p>Proposed Injection and Extraction Areas</p> <ul style="list-style-type: none"> Area for Re-injection of Clean Water Area for Re-injection of Groundwater Pumped from Outside the Plume Area of Groundwater Pumping 	<p>Wells by Well Type</p> <ul style="list-style-type: none"> Monitoring Wells Bedrock Aquifer Test Wells Extractor Wells Existing Re-injection Wells Other Wells 	<p>Predicted Groundwater Flow</p> <ul style="list-style-type: none"> Predicted Groundwater Flow Direction Predicted Paths for Groundwater Flow 	<p>Chromium Plume (June 2008)</p> <ul style="list-style-type: none"> Concentration of Hexavalent Chromium (µg/l) 50 µg/l 10 µg/l 4 µg/l 	<p>PG&E Property Boundaries</p>	<p>FOR: Pacific Gas & Electric NOI for Coverage Under a General Permit Groundwater Remediation Project Hinkley, California</p> <p>Stantec 57 Lafayette Circle, 2nd Floor Lafayette, California PHONE: (925) 291-3300/291-3322 (FAX)</p>	<p>Predicted Groundwater Flow Patterns - Plume Boundary Cr(VI) = 4 µg/l</p>	<p>FIGURE 2</p>
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JOB NUMBER: 0007-0000-00
 DRAWN BY: R. Edwards
 CHECKED BY: G. Green
 APPROVED BY: C. Maxwell
 DATE: 05/05/08