CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

CLEANUP AND ABATEMENT ORDER NO. 6-87-160A1
WDID NO. 6B362031001

AMENDING CLEANUP AND ABATEMENT ORDER NO. 6-87-160 REQUIRING PACIFIC GAS AND ELECTRIC COMPANY TO CLEANUP AND ABATE THE EFFECTS OF PAST WASTE DISCHARGES OF HEXAVALENT CHROMIUM TO GROUND WATERS OF THE MOJAVE HYDROLOGIC UNIT

San Bernardino County

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

1. On December 29, 1987, the Regional Board issued Cleanup and Abatement Order (CAO) No. 6-87-160 to Pacific Gas and Electric Company (PG&E). This CAO was issued because hexavalent chromium discharged by PG&E had contaminated soil at its compressor station facility in Hinkley and polluted ground water beneath and downgradient of the facility. This CAO amends CAO No. 6-87-160. For the purposes of this CAO Amendment, PG&E is referred to as the "Discharger" and the Hinkley compressor station is referred to as the "Facility."

2. Requirements of CAO No. 6-87-160 specified dates for submitting plans addressing site investigation, characterization of hydrogeology, and initiation of cleanup and abatement of hexavalent chromium in the soil and ground water. The original requirements of CAO No. 6-87-160 were met in a timely manner

3. The Discharger has characterized the hydrogeology of the area impacted by discharges of chromium from the Facility and determined the extent of chromium contamination. An upper aquifer was found to contain a chromium contaminated plume which was well defined and characterized. A confined lower aquifer was identified and sampled. No contamination of the confined lower aquifer was discovered directly beneath the Facility nor beneath the contaminated upper aquifer plume area. Recent attempts to conclusively determine that the lower aquifer had not been impacted, revealed that the horizontal ground water flow direction in the lower aquifer could not be readily determined. Although it has been established at distinct times that the lower aquifer has a substantial upward flow gradient, ground water extraction from local agricultural supply wells may be influencing the general ground water gradient in isolated areas.

4. The characteristics of the lower aquifer need to be further identified to ensure that it is not likely to become contaminated by pollutants in the upper aquifer.

5. An additional concern is that there are a number of wells in the vicinity of the chromium plume that were previously used as water supply wells. The wells are screened in both the upper and lower aquifers. Although the lower aquifer appears to be confined and exhibits an upward flow gradient, and testing to date shows no evidence of chromium contamination in the lower aquifer, these wells may pose a potential threat of cross contamination from the upper aquifer to the lower aquifer. This Amendment to CAO No. 6-87-160 requires destruction or modification of any of these wells (which are now under the control of the Discharger) which are found to be a potential path for contamination of the lower aquifer.

6. As required by CAO No. 6-87-160, the Discharger submitted a workplan for the cleanup and abatement of hexavalent chromium in the soil and ground water. The Discharger has successfully completed the soil clean-up portion of the workplan. The workplan contained two phases for cleanup of the contaminated ground water. Phase I, which is currently in progress, is designed to capture and extract ground water that contains the highest chromium concentrations and prevent further spreading of the plume. Phase II consists of incorporating additional extraction wells to remove and treat contaminated ground water containing relatively low concentrations of hexavalent chromium in other locations within the plume area in order to achieve ultimate cleanup over the entire plume area. Specific features of the Phase II efforts will be based on findings obtained from the Phase I efforts. The Discharger had proposed to begin implementation of Phase II three to five years after initiation of Phase I. However, a requirement and process for initiating Phase II was never formalized. This Amendment to CAO No. 6-87-160 requires the Discharger to provide a workplan and a more expedited time schedule for implementation of Phase II.

7. On September 12, 1991, the Regional Board adopted Waste Discharge Requirements (WDRs), Board Order No. 6-91-917 for PG&E. The WDRs regulate waste discharge activities associated with the ground water remediation system. The activities consist of extracting ground water containing hexavalent chromium to irrigate alfalfa on a 40-acre parcel. During the surface irrigation process, hexavalent chromium is converted to nonsoluble trivalent chromium.

8. On August 12, 1993, the Regional Board adopted an Amendment to Board Order No. 6-91-917. The purpose of the Amendment (Board Order No. 6-91-917A1) is to allow irrigation of ground water to an additional 0.91-acre parcel located adjacent to the 40-acre parcel described above.

9. On February 28, 1994, the Discharger provided the Regional Board with a proposal for additional actions and a time schedule to provide further details of past, present, and future activities associated with ground water cleanup. Time schedules proposed in this CAO are necessary to expedite the cleanup of the ground water.

10. This enforcement action is being taken by this regulatory agency to enforce 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.) according to Section 15321, Chapter 3, Title 14, California Code of Regulations.

IT IS HEREBY ORDERED that, pursuant to California Water Code Section 13304, the Discharger shall comply with the following:

1. Forthwith, continue implementation of Phase I cleanup activities.

2. By **July 15, 1994**, the Discharger shall submit to the Regional Board a complete description of the existing ground water treatment system, its capabilities and performance to date including the volume of ground water extracted and treated and the rate of chromium removal.

3. By **July 31, 1994**, the Discharger shall submit to the Regional Board a report that provides the following:

   a. Hydrogeology

      i. A compilation of known hydrogeologic information related to the potential for chromium contamination of the lower aquifer that lies beneath the Hinkley compressor station site.

      ii. A proposal, with a time schedule (indicating completion within 120 days following approval of the proposal by the Executive Officer - see"4.a" below) for any additional work identified as being needed to provide a complete characterization of the upper and lower aquifers and a clear assessment of the potential for cross contamination. The determination of the need for additional information is to be made after reviewing the compilation of known information required in "3.a.i" above.

   b. Wells

      i. Identification of all wells which may be screened in both the upper and lower aquifers and are located within the area of the chromium contaminated ground water plume.

      ii. Evaluation of the potential for downward migration of chromium to the lower aquifer via each of the wells identified in "3.b.i" above.

iii. A description of proposed work activities and a time schedule (indicating completion within 120 days following approval of the proposed work by the Executive Officer - see "4.b" below) to destroy or modify any wells reported in "3.b. ii" above to be a threat to water quality in the lower aquifer.

4. Within **120 days** following Executive Officer approval of the report required under Section No. 3 of this CAO, the Discharger shall complete the following:

a. Any additional work identified in "3.a.ii" above as being needed to complete the characterization of the hydrogeology of the aquifers.

b. Complete the destruction or modification of wells identified in "3.b.iii" above as being a threat to the quality of the water in the lower aquifer.

5. By **February 28, 1995**, the Discharger shall submit to the Regional Board a report that provides the following:

a. Preliminary results of the Phase I work

b. Discussion of any additional information needed for full development of Phase II

c. Summarized the hydrogeologic information and provides written confirmation of the completion of the tasks required in "4. a" and "4. b" above.

6. By **December 30, 1995**, the Discharger shall submit to the Regional Board a report that provides the following:

a. Final evaluation of Phase I

b. Design parameters to be used for Phase II.

7. By **March 30, 1996**, the Discharger shall submit a complete design of Phase II.

8. By **September 30, 1996**, the Discharger shall have constructed and initiated operation of Phase II of the cleanup.

All determinations regarding the need for further work activities, destruction or modifications of wells, and the final designs of cleanup systems required by this CAO are subject to the approval of the Executive Officer.

If, in the opinion of the Executive Officer, the Discharger does not comply with this Order in a reasonable and timely manner, the Executive Officer may recommend additional enforcement action by the Regional Board, which may include the imposition of administrative civil liability or referral to the Attorney General of the State of California for such legal action as he may deem appropriate.

Ordered by: Harold J. Singer Dated: June 3, 1994

HAROLD J. SINGER
EXECUTIVE OFFICER