

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

MEETING OF MARCH 9, 2011

Barstow

ITEM: 12

SUBJECT: **STATUS REPORT ON CONTAINMENT AND
REMEDIAION ACTIVITIES AT THE PACIFIC GAS AND
ELECTRIC COMPANY'S (PG&E) HINKLEY CHROMIUM
CLEANUP PROGRESS, SAN BERNARDINO COUNTY**

CHRONOLOGY: This is a continuing item before the Water Board

Aug. 6, 2008	Cleanup and Abatement Order (CAO) directed PG&E to achieve containment of the chromium plume by Dec. 31, 2008 and to propose final clean up actions for chromium in groundwater.
Nov. 9, 2008	Amended CAO adopting the maximum background values of 3.1 micrograms per liter ($\mu\text{g/L}$) hexavalent chromium and 3.2 $\mu\text{g/L}$ total chromium.
July 9, 2010	Amended WDRs issued to increase discharges to land up by 175 gallons per minutes (for a total of 520 gpm) at the Desert View Dairy (DVD) for plume containment, based on PG&E's proposed Action Plan.
Jan. 7, 2011	New CAO for PG&E to provide replacement water supply to owners of wells containing chromium concentrations greater than the maximum background value.

ISSUES: This is an information item to provide the Water Board with the compliance status of PG&E for chromium plume definition and pollution cleanup in Hinkley.

DISCUSSION:

Cleanup and Abatement (CAO) Order No. R6V-2008-0002 requires, among other things, for PG&E to contain migration of the chromium plume in groundwater in Hinkley. Specifically, the CAO states, "containment is defined as...no further migration or expansion of the chromium plume to locations where hexavalent chromium is below the background level..." The CAO prohibits further migration of the plume above the 4 ppb interim background value after December 31, 2008 at certain well locations.

The April 29, 2009 Groundwater Monitoring Report containing the February 2009 sampling results showed that hexavalent and total chromium data exceeded the 4 µg/L in groundwater at monitoring well MW-62A. The well is located on the northeastern corner of the Desert View Dairy (DVD) property and had 3.9 µg/L hexavalent chromium in third quarter 2008. Increased chromium concentrations in MW-62A were verified in the May 2009 sampling event, prompting PG&E to install monitoring wells for defining the extent of contamination in groundwater. Groundwater Monitoring Reports for the second half of 2009 and in early 2010 showed continued increases in chromium concentrations in MW-62A and concentrations of chromium above background in newly installed monitoring wells past MW-62A. In March 2010, Water Board staff notified PG&E that it must comply with the CAO requirement to submit a corrective action plan to restore the chromium plume to the boundaries in the Third Quarter 2008 Groundwater Monitoring Report.

In a March 24, 2010 Action Plan, PG&E proposed to enhance hydraulic control of the north and northeastern portion of the chromium plume by increasing pumping rates at the DVD Land Treatment Units. The chromium plume had migrated about 2,700 feet beyond the DVD property due to the influence of an irrigation well located to the northeast. Increased pumping by 30 percent above the permitted rate of 345 gallons per minute (gpm) would be achieved by adding three extraction wells to the existing groundwater system. A May 3, 2010 amendment stated that a revised rate of 50 percent additional pumping would be needed for plume containment. Water Board staff conceptually approved the Action Plan in a letter dated May 5, 2010. At the July 9, 2010 meeting, the Water Board amended waste discharge requirements for increasing discharges by 50 percent above the 345 gpm permitted rate to the Land

Treatment Unit at the DVD. The new permitted discharge rate of 520 gpm needed for plume containment is based on annual average pumping rate.

In August 2010, PG&E increased the pumping rate at the DVD and installed two extraction wells. During September and October 2010, combined pumping from all extraction wells exceeded the 520-gpm rate needed for plume containment. However, extraction rates significantly decreased after October due to the end of the alfalfa-growing season. PG&E expects to increase extraction rates at the DVD land treatment units beginning in March 2011.

Groundwater sampling data for third and fourth quarter 2010 show that the chromium plume continues to expand. The plume is now being mapped to the Board-adopted maximum background values of 3.1 µg/L hexavalent chromium and 3.2 µg/L total chromium (Enclosure 1). The plume currently extends about 3 miles from the Compressor Station property and is about 1.5 miles wide, just north of Highway 58. In addition, ten domestic or agricultural wells have shown increased chromium concentrations to either background or greater than background concentrations. PG&E continues to add new monitoring wells for plume definition but is not always able to get access to private properties. As of February 2011, the plume is undefined on the north and northeastern boundaries. Due to the increased plume size, implementation of the previously approved Action Plan is unlikely to achieve full plume containment.

PG&E has acquired the land northeast of the DVD where the irrigation well pulling the chromium plume was previously in use. PG&E has installed extraction wells in the upper aquifer and plans to operate the former fields as land treatment units beginning spring 2011. PG&E also proposes to operate land treatment units on other properties it owns to the east and south of the DVD. These added land treatment units should better assist in controlling plume migration during the alfalfa-growing season (March to October). Despite these expressed plans, PG&E has not provided the Water Board with a date when the chromium plume will be contained from further migration and be returned to the plume boundaries established using the Third Quarter 2008 Groundwater Monitoring Report data, pursuant to the 2008 CAO.

Lastly, in compliance with a CAO issued in January 2011, PG&E is providing replacement water supply in the form of bottled water to residents whose supply wells contain chromium above the maximum background value for hexavalent and total chromium. The January 2011 CAO also requires quarterly sampling of supply wells and a listing of all residences and businesses being provided replacement water service.

Water Board staff will amend the 2008 CAO by April 2011 to require specific additional actions to contain the plume and clean up the groundwater in the vicinity of the affected supply wells, set timelines for plume containment, and modify monitoring and reporting requirements. Water Board staff is also considering pursuing additional enforcement actions under the California Water Code.

Enclosure: Chromium plume map with November 2010 data

ENCLOSURE 1