

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

MEETING OF MARCH 15, 2012

Barstow

ITEM: 12

SUBJECT: PEER REVIEW OF PACIFIC GAS & ELECTRIC
COMPANY'S 2007 GROUNDWATER CHROMIUM
BACKGROUND STUDY, HINKLEY COMPRESSOR
STATION, SAN BERNARDINO COUNTY

CHRONOLOGY: This chronology lists Water Board actions related to establishing background chromium concentrations in groundwater in the Hinkley area.

August 8,
2008

Cleanup and Abatement Order No. R6V-2008-0002 required PG&E to implement actions to achieve plume containment and propose a feasibility study to clean up groundwater to background water quality.

November 12,
2008

Amended Cleanup and Abatement Order No. R6V-2008-0002A1 established maximum and average background chromium concentrations for total and hexavalent chromium based on results of PG&E's 2007 Groundwater Chromium Background Study Report.

March 9, 2011

Water Board members heard public concerns related to the validity of the 2007 Background Study and its results. Water Board members directed staff to obtain scientific peer review of PG&E's 2007 Chromium Background Study Report.

DISCUSSION: Water Board staff received peer review comments in October 2011. The peer reviewers' comments were primarily critical of the 2007 Background Study Report. The criticisms are grouped into four categories:

- 1) Lack of aquifer-specific sampling
- 2) Statistical methods and assumptions
- 3) Uncertainty regarding historic plume migration
- 4) Sample analysis quality control procedures

Water Board staff has taken several steps to begin addressing the peer reviewers' comments and questions on the 2007 Background Study:

- 1) Requested technical reviews of the peer reviewer's laboratory quality control questions from the Water Board's independent contract laboratory, Excelchem (completed in December 2011).
- 2) Required PG&E to submit information on quality control procedures to determine the nature and extent of any analytical chemistry procedural problems, based on the technical review from the Water Board's laboratory. PG&E submitted its response in January 2012).
- 3) Met with Dr. John Izbicki of the US Geological Survey (expert in chromium sampling in the Mojave Desert area), to discuss techniques and approaches to determine anthropogenic versus naturally occurring chromium in groundwater.
- 4) Through the State Water Board's contract with the University of California – Davis Statistics Lab, are requesting a review of the statistical issues raised in the peer review of the 2007 Background Study, and the feasibility of re-evaluating existing datasets to re-evaluate the adopted background values.

In late February, PG&E submitted a *Proposed Work Plan for Evaluation of Background Chromium in the Upper Aquifer of the Hinkley Valley*. The work plan also contains an appendix with PG&E's responses to all peer review comments.

ISSUE: The Water Board must consider whether the background values established in 2008 are appropriate for setting

cleanup goals. If the Water Board decides they are not appropriate, two basic questions surface:

1. How should appropriate background values be established?
2. What value(s) should be used in the interim?

The enclosed staff report summarizes the peer review comments, and discusses options for the Water Board's consideration of established background values of chromium in groundwater in the Hinkley area. Water Board's staff recommendation is provided in the staff report.

RECOMMENDATION:

The Water Board may provide direction to staff as appropriate.

ENCLOSURES

Enclosure	Item	Bates Number
1	Staff Report, Summary and Discussion: Peer Review of PG&E's 2007 Chromium Background Study.	12-5
	Appendix 1: Copies of peer reviewers' comment letters	12-23
	Appendix 2: Technical reviews of laboratory quality control Issues, and related correspondence	12-65
2	Public comment letter from Hinkley residents, and signature petition, dated February 22, 2012.	12-135
3	Proposed Work Plan for Evaluation of Background Chromium in the Upper Aquifer of the Hinkley Valley. Prepared for PG&E by Stantec, Inc., dated February 22, 2012.	12-143