Activities Update for Chromium Cleanup at PG&E's Compressor Station

ATTENTION!
PUBLIC MEETING ON SEPTEMBER 11, 2008, 7:00 – 9:00 PM
At the Hinkley Elementary School
See details inside.

ADDITIONAL INFORMATION
If you have questions about the meeting or about the overall status of chromium cleanup at the PG&E's Hinkley Compressor Station, please contact:

Chuck Curtis
Division Manager
Lahontan Water Board
(760) 241-6583
CCurtis@waterboards.ca.gov

Lahontan Water Board
14440 Civic Drive, Suite 200
Victorville, CA 92392

Lahontan Regional Water Quality Control Board
14440 Civic Drive, Suite 200
Victorville, CA 92392
Attn: Chuck Curtis

Address Service Requested

California Regional Water Quality Control Board, Lahontan Region
August 2008

Pacific Gas & Electric Company
Hinkley Chromium Groundwater Cleanup

SITE ACTIVITIES UPDATE

Ensuring that Pacific Gas and Electric Company (PG&E) contains and cleans up chromium contamination from its Hinkley Compressor Station has been a continuing effort of the Lahontan Regional Water Quality Control Board (Water Board). Contaminated soils at the site have been excavated and removed, and several projects have been implemented to stop migration of affected groundwater and to cleanup hexavalent chromium in groundwater. This fact sheet reports on the current status of active cleanup projects and describes a process to establish chromium background levels in groundwater.

Background Chromium in Groundwater
The Water Board will be considering establishing background levels in groundwater for hexavalent and total chromium at its November 12-13, 2008 meeting. Background levels will be based on the results of a background chromium study completed by Pacific Gas and Electric Company (PG&E) in early 2007.

Chromium is a relatively common element, naturally-occurring in rocks, soil, plants, and animals. Trivalent chromium [Cr(III) or chromium 3] is a needed nutrient in very small doses. Hexavalent chromium [Cr(VI) or chromium 6] is toxic and can cause cancer if it is breathed. Total chromium [Cr(T)] contains both trivalent and hexavalent chromium.

Chromium, including hexavalent chromium, is often found in groundwater that flows through sediments formed from dark rocks rich in iron and from granite rocks. Concentrations of chromium in groundwater are normally very low, unless the groundwater is in contact with minerals naturally-high in chromium.

An area with naturally-high chromium in groundwater is in the Sheep Creek fan west of Victorville; concentrations of hexavalent chromium there can be as high 60 micrograms per liter (µg/L). The Maximum Contaminant Level (safe drinking water level) for total c hromium is 50 µg/L; there is no current drinking water standard for hexavalent chromium.

Background Chromium in the Hinkley Area
The background chromium study in the Hinkley area involved sampling water from 48 domestic and agricultural wells in the Hinkley Valley during 2006. These wells were outside of the area affected by the chromium contamination from PG&E's Hinkley Compressor Station. The chromium found in groundwater in background wells is naturally-occurring.

Total chromium in groundwater ranged from less than 1 to 3.15 micrograms per liter (µg/L) with an average of 1.52 µg/L. Hexavalent chromium ranged from less than 0.2 to 2.69 µg/L with an average of 1.19 µg/L. Statistical analysis estimated maximum likely background concentrations of 3.23 µg/L for total chromium and 3.09 µg/L for hexavalent chromium. PG&E proposes the addition of lab uncertainty to the estimated maximum background concentration when defining plume boundaries.

A staff report describing the study is available on the Water Board's web site and can be obtained by calling the Water Board office.

Background Chromium in Groundwater in the Hinkley Area

Maximum Detected Cr(VI) = 2.69 µg/L
Maximum Detected Cr(T) = 3.15 µg/L
Average Cr(VI) = 1.19 µg/L
Average Cr(T) = 1.52 µg/L

(Cr(T) Safe Drinking Water Level = 50 µg/L)

Summary of Remediation Activities
In-situ projects have been in full-scale operation since December 2007. In the central area of the chromium plume, PG&E has been injecting lactate (milk sugar) to groundwater in a line of injection wells that forms a subsurface "curtain." As contaminated groundwater flows through the "curtain," hexavalent chromium is converted to trivalent chromium, which binds to the soil particles and is effectively removed from the water. Beginning in July 2008, PG&E replaced lactate with ethanol. In the source area near the Compressor Station, PG&E recently began full-scale operation to remediate high concentrations of chromium in groundwater there. The in-situ remediation process being implemented at the source area is nearly identical to that at the central plume area.

PG&E has been pumping groundwater to **control plume migration** in the northern and northwestern areas of the plume, near the Desert View Dairy. Groundwater containing hexavalent chromium is applied to fields for growing grass using a below-ground drip irrigation system. In the process, hexavalent chromium is converted to trivalent chromium, which binds to soil particles.

General Permit
In April, the Water Board issued PG&E a General Permit for site-wide containment and cleanup activities. The Permit allows cleanup and plume containment activities using a variety of methods. The Permit requires PG&E to file a formal request that includes a detailed description of the proposed activity. The public will be informed of these requests and may submit comments for Board staff's consideration. If staff find that the proposed project is adequately regulated by the permit, the Water Board's Executive Officer could allow the project to proceed subject to the conditions of the permit. Approved projects will include monitoring and reporting requirements that verify discharges do not unreasonably affect water quality and beneficial uses.

History
The PG&E Hinkley Compressor Station compresses natural gas before transporting it through pipelines to central and northern California. The compressor station began operations in 1952. Between 1952 and 1966, PG&E used hexavalent chromium as an anti-corrosion agent in the cooling tower water. From 1952 to 1964, untreated wastewater from the cooling towers was discharged into unlined ponds at the compressor station. Some of this wastewater percolated to groundwater, about 80 feet below ground surface. Beginning in 1964, the wastewater was treated prior to discharge to the unlined ponds while alternative corrosion inhibitors were evaluated. In 1966, phosphate replaced hexavalent chromium in the cooling tower water. Lined evaporation ponds were constructed in 1972. Nevertheless, hexavalent chromium from the former wastewater ponds has affected the groundwater at and north of the compressor station in an area approximately two miles long and more than mile wide.

PUBLIC INFORMATION REPOSITORY

Documents related to the PG&E Hinkley Chromium Cleanup Project are available for review at the following locations:

Lahontan Regional Water Quality Control Board
Victorville Office
14440 Civic Drive, Suite 200
Victorville, CA 92392
Phone: (760) 241-6583
Fax: (760) 241-7308
Open Monday - Friday 8:00 a.m. - 5:00 p.m.

The Water Board's Internet web site is at: www.waterboards.ca.gov/lahontan. Here, the public can review the schedule of upcoming meetings, agenda items, adopted minutes, and Board orders. Information related to PG&E can be viewed in Projects in the Water Issues tab on the Home Page or can be accessed directly through the following web address: http://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/index.shtml

Barstow Branch
San Bernardino County Library
304 East Buena Vista
Barstow, CA 92311
(760) 256-4850

Library Hours:

Monday	12 noon - 8 p.m.
Tuesday	10 a.m. - 6 p.m.
Wednesday	12 noon - 8 p.m.
Thursday	10 a.m. - 6 p.m.
Friday	10 a.m. - 6 p.m.
Saturday	9 a.m. - 5 p.m.
Sunday	Closed

PUBLIC MEETING
Thursday, September 11, 2008, 7:00 – 9:00 PM
Hinkley Elementary School

Water Board staff will host a meeting to present information about current projects at the site. The meeting will also present the results of PG&E's background chromium study for groundwater. The Water Board will consider the background concentrations when setting cleanup levels. The meeting will be informal and include a series of poster presentations. Water Board staff will be available to provide information and answer questions. A Spanish language interpreter will be available at the meeting. The public is encouraged to attend the meeting to learn about current remediation projects and the results of the background chromium study. Background concentrations of chromium will be considered at a Water Board meeting in November 2008.

REUNIÓN PÚBLICA
Jueves, 11 de Septiembre, 2008, 7:00 – 9:00 PM
Escuela Primaria Hinkley

El personal de la Junta de Control de Calidad de Agua – Region Lahontan (Junta de Agua) patrocinará una reunión para informar sobre proyectos actuales en el lugar de sitio. En la reunión, se presentaran los resultados de PG&E del estudio basico de cromo en el agua subterranea. La Junta de Agua considerará las concentraciones basicas cuando se determinen los niveles de limpieza. La reunión será de carácter informal e incluirá una serie de presentaciones en afiches. El personal de la Junta de Agua estará disponible para entregar información y responder a las preguntas del público. Asimismo, una intérprete en Español estará presente en la reunión. Se le insta al público que asista a la reunión para que se informe respecto a los proyectos en curso y sobre el plan para limpiar la contaminación de cromo. Las concentraciones basicas de cromo se examinará en una reunión de la Junta de Agua en noviembre de 2008. Si desea formular alguna pregunta sobre lo indicado anteriormente, por favor llame al Sr. Chuck Curtis al (530) 542-5460 o por e-mail a: CCurtis@waterboards.ca.gov.

COMMENT AND MAILING LIST FORM FOR INFORMATION ABOUT FUTURE ACTIVITIES AT PG&E'S HINKLEY CHROMIUM CLEANUP
If you would like to be added to the distribution list for mail related to the site, or to submit questions or comments, please either fill out this form, call the Water Board at (760) 241-6583, or send an email to CCurtis@waterboards.ca.gov. If filing out the form below, mail to Chuck Curtis, Lahontan Water Board, 14440 Civic Drive, Suite 200, Victorville, CA 92392.

Name: _____

Address: _____

City/State/Zip: _____

Affiliation (if any): _____

Email Address
(to receive information by email): _____

Comments/Questions: _____

_____

Water Board mailings are solely for the purpose of keeping persons informed of activities. Mailing lists are not routinely released to outside parties. However, they are considered public records, and, if requested, may be subject to release.