



IN REPLY REFER TO:

## United States Department of the Interior

### U. S. GEOLOGICAL SURVEY

California Water Science Center

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To: The Hinkley Independent Review Panel (IRP) Manager:

Between January 27 and 31, 2016, the U.S. Geological Survey (USGS) sampled 72 domestic and agricultural wells in the unincorporated community of Hinkley, CA. The data were collected as part of the USGS study of background hexavalent chromium, Cr(VI), concentrations in the Hinkley area <http://ca.water.usgs.gov/pubs/2016/hinkley-chromium-ofr20161004.html>. The wells were largely outside the area of the mapped Cr(VI) plume within Hinkley Valley.

Water from the wells was analyzed for a range of constituents including field parameters (temperature, pH, specific conductance, and dissolved oxygen), selected major and minor ions (chloride, sulfate, fluoride, and bromide), nutrients (nitrate, nitrite, orthophosphate), selected trace elements (iron, manganese, arsenic, total chromium, hexavalent chromium, uranium, and vanadium), and the stable isotopes of oxygen and hydrogen. Samples for major and minor ions, nutrients, and trace elements were filtered and preserved (if required) in the field at the time of collection.

Results of analyses were mailed to well owners in May 2016. Data are available through the U.S. Geological Survey's on-line data base NWIS-Web at <http://waterdata.usgs.gov/nwis>.

Several of the constituents measured, most notably arsenic, chromium (total and hexavalent), uranium, and nitrate have Maximum Contaminant Levels (MCLs) for drinking water. For the samples collected during January 2016, concentrations exceeded the US Environmental Protection Agency (US EPA) MCL for arsenic of 10 micrograms per liter ( $\mu\text{g/L}$ ) in 28 of 72 wells, about 39 percent of sampled wells. The highest arsenic concentration in a sampled well was 300  $\mu\text{g/L}$ , 30 times the MCL. Concentrations exceeded the MCL for uranium of 30  $\mu\text{g/L}$  in 6 of 72 wells, about 8 percent of sampled wells; and concentrations exceeded the MCL for nitrate of 10 mg/L as nitrogen in 7 of 72 wells, about 10 percent of sampled wells. The highest uranium concentration in a sampled well was 62  $\mu\text{g/L}$ , more than twice the MCL. The highest Cr(VI) concentration measured was 4  $\mu\text{g/L}$ —less than half of the recently established California MCL for Cr(VI) of 10  $\mu\text{g/L}$ . Water from 34 of 72 wells had concentrations of arsenic, uranium, and/or nitrate above a drinking water MCL. This represents about 47 percent of the wells sampled in the Hinkley, CA area by the USGS between January 27 and 31, 2016.

Sincerely

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U.S. Geological Survey