Transcript: Overview of a USGS study of hexavalent chromium (Cr VI) in groundwater near Hinkley, CA

[Music]

Dr. John Izbicki, USGS Research Hydrologist: Currently, there is uncertainty as to whether or not the chromium VI -- how much of the chromium VI in the ground is related to PG&E's release and how much of it is naturally occurring.
The purpose of this study is to determine where that background is between what is PG&E's associated with the releases in the '50s and '60s and what is naturally occurring.
The third phase of the study, which we started this March, involves groundwater sampling.
We're measuring a variety of constituents, not only chemical constituents such as chromium VI and chromium total, but also a range of isotopic constituents.
The purpose of this sampling is to identify where the water came from, how rapidly it's moved through the ground, and what the source of the chromium is.
It contains a number of different very specialized things that we're going to measure for.
They include tritium, which is a radioactive isotope of hydrogen, which was released during the period of nuclear weapons testing beginning about 1952.
It includes a range of industrial gases, such as chlorofluorocarbons, which is Freon, which are banned as part of the Montreal Protocol in 1989, and sulfur hexafluoride, another industrial gas.
Using these tools -- these analyses of these constituents, we can date, or determine, when the water entered the ground and if it's in the right time period to contain chromium which was released by PG&E.
Another tool that we'll be working with are the naturally occurring isotopes of chromium.
So with that, we can identify chromium that was released by the compressor station and chromium that is naturally occurring.
The study overall is that the chemical constituents, the physical constituents, and the numerical analyses should all fit together and generate the same answer so that we get the best possible, most complete result for the people of Hinkley by the time this study is completed five years from now.

[Music]

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For more information, please visit
http://ca.water.usgs.gov/projects/hinkley/