

# Calif. benzene contamination mostly comes from natural sources -- USGS

**Jeremy P. Jacobs, Environment & Energy Publishing, 8-30-12**

Benzene groundwater contamination in California occurs only infrequently, and it generally comes from natural sources, the U.S. Geological Survey said yesterday in a new study.

Contamination from the petrochemical, a carcinogen typically found in a flammable liquid form, most often occurs in old, brackish water near naturally occurring underground oil and gas deposits, the agency said.

Typically, concerns surrounding benzene contamination have focused on underground fuel storage spills and aboveground distribution systems.

The findings provide insight on how to approach remediation, the agency said.

"This study illustrates the value of letting scientific facts speak for themselves when dealing with critical issues such as the frequency and potential sources of groundwater contamination," said USGS Director Marcia McNutt in a statement. "Mitigation for contamination can be costly, especially if the source is not properly identified, confirming the importance of putting science first."

The statewide study, funded by U.S. EPA, focused on groundwater quality. Researchers sampled untreated groundwater wells, not tap water, which is typically treated to make sure it meets quality standards.

Benzene is used to make gasoline and insecticides, and as a solvent in other processes.

Researchers found the chemical in 1.7 percent of more than 14,000 untreated public wells, but generally at levels below federal standards. Nearly half of the detections were due to natural sources, while just more than a quarter were related to human activity.

Matt Landon, a USGS hydrologist and the study's lead author, called the results surprising.

"In general, the unexpected results indicate that hydrocarbons are detected most often in deep aquifers near naturally occurring subsurface petroleum reservoirs, less often in shallow layers subject to fuel spills and leaks on the land surface and least frequently in the middle layers of aquifer systems," he said.

And Ken Belitz, one of the lead scientists on the project, said that while human activity wasn't the main cause of contamination, the study underscores the ability of naturally occurring benzene to make its way into groundwater.

"This study indicates that naturally occurring, deep hydrocarbons can affect the quality of groundwater used for drinking supply," Belitz said.