

USGS Groundwater Study Near Oxnard Oil Field Shows No Evidence of Water Mixing from Hydrocarbon-bearing Formations

A U.S. Geological Survey (USGS) groundwater study near the Oxnard Oil Field has found no evidence of hydrocarbon-bearing formation water mixing into overlying groundwater aquifers. The study "[Groundwater Quality of Aquifers Overlying the Oxnard Oil Field, Ventura County, California](#)" was conducted as part of a State Water Resources Control Board (State Water Board) regional groundwater monitoring program in areas of oil and gas production released in the journal *Science of the Total Environment*.

Other findings included natural thermogenic gases (methane, propane, ethane, and butane) from oil and gas formations detected at low concentrations in the overlying groundwater aquifer. These light hydrocarbon gases have no known health risks and as such do not have a drinking water regulatory threshold.

The thermogenic gases were detected near areas with many oil wells, where large volumes of oilfield fluids have been injected, in relatively shallow oil-bearing formations, and in aquifer zones located above producing oil sands. However, the limited sampling density of the study did not provide enough information to conclusively identify any specific source (natural or man-made) or pathway of migration.

The USGS is conducting this research under an agreement with the State Water Board, in accordance with Senate Bill 4 (Pavley, statutes of 2013), which required the State Water Board to develop and implement a regional groundwater monitoring program.

Visit the State Water Board [Oil and Gas Regional Groundwater Monitoring Program](#) and [USGS California Oil, Gas, and Groundwater websites](#) for more information.