

Local oil industry wary of EPA's push for tighter rules protecting underground aquifers

John Cox, Bakersfield Californian, 9-4-11

For decades Kern County's oil industry thought it knew the difference between a potential source of future drinking water and an underground aquifer so full of salt and other dissolved solids that not even an animal would drink from it.

But over about the past week, that understanding has been turned on its head, leaving the industry to wonder how it will meet what could become a tough new standard in California oil production.

Later this month, state and federal regulators are scheduled to kick off a series of meetings intended, among other things, to reconcile the state's official definition of underground water in need of special protection with the much stricter definition being pushed by the U.S. Environmental Protection Agency.

Whatever they ultimately decide may have important implications for underground injection, a key function in oil field operations across Kern County. The standard applies to steam-based oil production popular locally as well as the disposal of water and gases that come up during the production process.

Since at least 1983, oil producers in Kern County have been told that they need to take certain precautions -- pouring cement around well casings at certain depths, for example -- to protect water that contains 3,000 milligrams per liter of total dissolved solids.

A new federal review of California's underground injection program says that's wrong, and that the proper standard is 10,000 milligrams per liter. (For comparison, seawater measures roughly 35,000 milligrams per liter of total dissolved solids.)

One of Bakersfield's leading oil industry advocates, Les Clark, said water at the far end of the federally protected level "would choke a buzzard." The executive vice president of Bakersfield's Independent Oil Producers Agency cautioned that holding industry to that standard could force the closure of waste water injection projects, which in turn would slow down production significantly.

"If you can't inject some of your waters back down in some of the zones, then what do you do with it?" he asked. "You don't. So what do you do then? You shut wells in."

State Oil and Gas Supervisor Elena Miller seems to agree. She defended the state's approach in a May 2010 memo to her deputies across the state. Even though state rules have not been as stringent as federal standards, she wrote, the way California requires companies to build oil wells is nevertheless adequate to protect underground water covered by either definition.

That's not necessarily so, according to the new EPA-commissioned review. It takes issue with California's method of using heavy mud in the well construction process, as opposed to cement, near underground aquifers the EPA defines as protected water.

The review went on to say that the difference between the state and federal standards has implications for the permitting, construction, operation and abandonment of the state's injection wells, which number in the tens of thousands.

Upcoming talks

It's unclear how Miller and the EPA will attempt to resolve their differences. Also unclear is whether any solution would have to be applied retroactively, which could require going back and making structural changes to thousands of injection wells in operation across the state.

The manager of the EPA's Ground Water Office in San Francisco, David Albright, said he mainly wants Miller to address how her agency, the state Division of Oil, Gas and Geothermal Resources, will address the federal standard going forward.

He said regulatory review of oil producers' applications for underground injection projects will have to be handled on a case by case basis "to see what's reasonable and see what can be done."

Water for the future?

Albright did not deny that the water protected at the EPA level but not the state level is unfit to drink. But he said it could be rendered drinkable with the right technology, and for that reason it must be preserved.

Cal State Bakersfield geology professor Dirk Baron confirmed that processes exist to purify even seawater. He declined to give an opinion on the EPA's standard for protecting drinking water.

The Central Valley Regional Water Quality Control Board did not return calls requesting comment.

Industry representatives and a former state regulator say it may be unfeasible to live up to the federal standard during underground injection work.

Mike Stettner, who until his recent retirement regulated underground injection activity at DOGGR, said he didn't see how companies would be able to switch from heavy mud to cement at the depths where the more polluted water exists.

What's more, he said, it can be hard, and very expensive, to distinguish underground aquifers that qualify as federally protected from aquifers that are just too saturated with contaminants.

"It's a dealbreaker, really," he said.

Trade group executive Rock Zierman favors a practical approach. He said the easiest way to demonstrate to the EPA that potential drinking water sources are adequately protected is to review existing oil well records.

"We need to backfill the paperwork to show that the necessary reviews have been done, and I think there's a way to do that," said Zierman, CEO of the California Independent Petroleum.

A spokesman for DOGGR declined in an email Friday to say how the state plans to meet the EPA's requirements, but that the agency "takes that responsibility seriously."

"DOGGR will continue to closely scrutinize all underground injection projects for compliance with state and federal regulations," spokesman Don Drysdale wrote.