

Study say PFAS in Frack Fluid; Industry Pushes Back

- By Scott Wyland swyland@sfnewmexican.com

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New Mexico fossil fuel companies are using cancer-causing chemicals to aid in their fracking operations, increasing the risk of a highly toxic byproduct contaminating groundwater, according to a report by a medical watchdog group.

State records indicate companies injected thousands of pounds of PFAS into about 260 sites in the past decade during hydraulic fracturing, known as fracking, and possibly far more because the state's trade secrets law allows operators to conceal many of the chemicals they use, according to Physicians for Social Responsibility's [55-page report](#).

Industry advocates dismiss the report as biased toward anti-fossil fuel groups, arguing it made unfounded assertions about a process shown to be safe for people and the environment.

PFAS — short for perfluoroalkyl and polyfluoroalkyl substances — are known as “forever chemicals” because they take thousands of years to break down and last indefinitely in the bloodstream.

Exposure to high levels of certain PFAS can lead to high blood pressure in pregnant women, low birth weight in infants, increased risk of kidney or testicular cancer and increased cholesterol levels.

Given the health hazards of PFAS, the state law allowing gaps in transparency raises concerns, the report said.

“By shielding from public view the chemicals injected into oil and gas wells, weak disclosure rules raise the potential that New Mexicans may be directly exposed, or their groundwater and well water may be exposed, to PFAS ... from hundreds or even thousands of oil and gas wells and waste disposal sites,” the report said.

As with other oilfield pollutants, PFAS-tainted wastewater from fracking poses the greatest health risk to nearby front-line communities in the San Juan and Permian basins, the state’s hubs for fossil fuel activity, it said.

Officials at the state Energy, Minerals and Natural Resources Department, which regulates fossil fuel activities, declined to comment on the study or the trade secrets law.

In an email, Joe Vigil, a New Mexico Oil & Gas Association spokesman, wrote his group agrees PFAS should not be used in fracking, and the report “wrongly insinuates” these chemicals are part of such operations in the state.

“Fracking is a safe, scientifically engineered process that has been used in New Mexico for more than 50 years without a single case of groundwater contamination,” Vigil wrote. “Fracking occurs thousands of feet below the ground and well below freshwater supplies, with government-required layers of steel casing and cement protecting groundwater.”

Dusty Horwitt, the report’s lead author, said claiming no contamination has occurred during fracking is misleading.

It’s possible the fluids injected through underground steel and cement casings at a super high pressure to break up rock formations don’t escape into groundwater during the fracturing, Horwitt said.

But after the fracturing is done, and some of the wastewater — which the industry calls produced water — returns to the surface in a backflow, the polluted liquid can escape through cracks in the casing, he said.

It also has contaminated soil and groundwater after it has leaked from waste pits, spilled from a faulty line or gone astray while being reinjected into the earth, he said.

The state has logged several hundred incidents in which waste pits have leaked contaminants into groundwater, Horwitt said.

At the same time, fossil fuel companies are required by law to disclose certain fracking information to the state and the nonprofit [FracFocus](#), Horwitt said. The data reveals two, possibly three, PFAS used in New Mexico operations, while pointing to a slew of chemicals shrouded by the trade secrets clause, he said.

“I would say the evidence speaks for itself,” Horwitt said. “Scientists have reviewed our findings on PFAS. We stand behind our findings.”

Shrouded in secrecy

One community activist talked of a fracking spill that sent pollution into a wash that flows into Chaco Culture National Historical Park.

“There’s a huge impact, not just on human health but on the cultural resources, the spirituality of the people — the land, the air, the water has all been deeply impacted,” said Mario Atencio, Greater Chaco energy organizer.

The PFAS, as outlined in the report, pose a grave risk to the Indigenous people in the San Juan region, Atencio said.

Federal agencies who deal with tribes might discuss with them the oil leases being approved and the money they can make from oil extraction on their land, but they never mention pollutants such as PFAS that could be used in fracking, he said.

Between 2013 and 2022, operators claimed at least one fracking chemical as a trade secret in 8,293 oil and gas wells across the state, adding up to 243 million pounds, the report said.

“If even a small fraction of this weight were PFAS, that fraction could pose significant risks to health and the environment,” it said.

The law allows chemical manufacturers, well operators and other companies in the supply chain to withhold an exact fracking ingredient they deem a trade secret and instead give the chemical’s generic name, it said. In many cases, the broad category makes it impossible to determine the specific toxins, including PFAS, that were employed.

Oil operations also are exempt from New Mexico’s hazardous waste law, making it even more difficult for agencies to regulate how fracking is done, the report said.

The report’s co-author decried the trade secrets law.

“New Mexicans have a right to know where forever chemicals are being used and what other types of chemicals they might be exposed to through oil and gas operations,” Barbara Gottlieb, the group’s health and environment program director, wrote in an email.

In a 2016 study of fracking and drinking water, the EPA identified a total of 1,606 chemicals found in various fracking fluids and the produced water, many of them toxic, the report said.

The use of these chemicals is of particular concern with New Mexico’s oil production escalating, from about 65.5 million barrels in 2010 to more than 457 million barrels in 2021, the report said.

Meanwhile, the state’s natural gas production has roughly doubled from about a trillion cubic feet in 2013 to more than two trillion cubic feet in 2021. Both giant increases mean operators could use more PFAS and other toxic chemicals in drilling and fracking, it said.

Are concerns justified?

In fracking, the first step is to drill a vertical pathway a mile or so deep — generally far below an aquifer — before going horizontal for the distance required to reach an oil deposit. A series of steel pipes, commonly called the casing, are installed in the L-shaped well bore.

The horizontal portion is perforated to allow the fracking fluid to spurt out into the rocky layer.

Crews pump a mixture of water, sand and chemicals through a series of steel pipes — commonly called a casing — at pressures up to 15,000 pounds per square inch to cut through the rocks.

Chemicals serve several purposes, the report said, including killing bacteria inside the wellbore, reducing friction for the fluid's high-pressure flow, and thickening the liquid to better suspend the sand, so it can travel farther into the underground rock formations.

PFAS's function in fracking is described in a [2020 Royal Society of Chemistry paper](#). It suggests PFAS can extend the fluid into the rocks and, afterward, help thin it so it's easier to remove from the oil and gas reservoir.

In an email, a fossil fuel advocate insisted the industry has continued to develop strict well construction standards in line with state and federal regulations to protect water resources during fracking.

“There is simply no evidence that fluids used in hydraulic fracturing have had an adverse impact on groundwater or public health in New Mexico,” wrote Jim Winchester, president of the Independent Petroleum Association of New Mexico. “The report offers speculative insinuations designed to perpetuate unfounded fears and spread misinformation to New Mexicans.”

Winchester contends the report was written by environmental activists who are not physicians and is supported by local groups whose motivation is to ban all fracking and drilling.

The [group's website](#) describes its mission as mobilizing physicians and health professionals to advocate for climate solutions and a nuclear-weapons-free world at the local, federal and international levels.

“PSR’s reports and studies are based on data and science, and sources are fully documented in citations,” Gottlieb wrote.

New Mexico has conducted few tests on the health impacts of fracking, though other states have done research showing the effects of living near fracking sites, Gottlieb wrote.

In its 2016 report, the EPA found fracking pollution could follow a number of pathways that could affect surface and groundwater.

Those include:

- Fracking fluid spills seeping into groundwater.
- Cracks in the casing or cement that allow the fluid to leak into aquifers.
- Fluids flowing through fractured rock or natural fissures.
- Fracking fluid intersecting with nearby oil and gas wells, which funnel it into groundwater.
- Inadequate treatment of wastewater before it’s discharged into a waterway.

The report recommends expanding public disclosure, making the state hazardous waste law apply to fossil fuel companies, increasing tests for fracking chemicals and stop putting underground disposal sites for fracking wastewater near homes, schools and businesses.

Ultimately, operators should quit using PFAS for drilling and fracking, and renewable energy should replace fossil fuels, the report said.

Atencio said he's especially concerned about undisclosed chemicals used in the initial drilling that punches through an aquifer. It would seem those chemicals could pollute the groundwater, he said.

Improved fracking oversight is needed to protect the aquifers, a precious resource in a region growing more arid, he said.

"Those are incredibly valuable," he said, "in a state that, even though it's raining lately, is still in the throes of a megadrought."