



Tammy Boorman near her property in Arcadia, Oklahoma, which is surrounded by oil and gas infrastructure Abigail Harrison

Toxic Pressure

Salty, Oily Drinking Water Left Sores in Their Mouths. Oklahoma Refused to Find Out Why.

by Nick Bowlin, The Frontier

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Reporting Highlights

- **Salty Water, Delayed Tests:** When one couple's water turned toxic, state oil regulators delayed key tests that could find a source of contamination.
- **Polluted Plume:** The state didn't tell the couple for over a month that tests showed their drinking water was contaminated with high levels of barium, which can cause heart problems.
- **No Answers:** Despite evidence showing pollution consistent with oil field waste, the state closed the family's complaint and dismissed its own findings.

These highlights were written by the reporters and editors who worked on this story.

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In the summer of 2022, months after Tammy Boarman and her husband, Chris, moved into their newly built “forever home” 30 miles from Oklahoma City, the plants in their yard began to turn yellow. The shrubs wilted, though Tammy watered them often. And the couple began to notice a salty taste in their drinking water.

The water came from a private well, drilled the year before, and they hoped that the bad taste would fade with time and with the help of a water softener. But the problem grew worse. Their ice maker expelled large clumps of wet salt, which, when rubbed, dissolved into an oily, foul-smelling substance.

The couple knew that some oil and gas extraction took place nearby. Down dirt roads and behind stands of oak trees in their neighborhood, pump jacks nodded up and down, pulling up oil. This is a common sight in Oklahoma. Several studies estimate that about half the state’s residents live within a mile of oil and gas wells.

By the following summer, Tammy and Chris Boarman had been in touch with the state agency overseeing private water wells and began to fear these nearby oil operations had tainted their water, which they had largely stopped drinking after developing sores in their mouths. The couple submitted a complaint to the oil division of the Oklahoma Corporation Commission, which regulates the state’s oil and gas industry and is responsible for addressing related pollution.

When Tammy Boarman first contacted oil regulators, she was hopeful state officials would find the source of the pollution and clean it up. For the next two years, the state repeatedly tested the Boarmans’ water for contaminants and found salt concentrations that made the water undrinkable and, at one point, toxic metals at levels high enough to endanger human health — strong signs of oil field wastewater pollution, according to agency testing.

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Despite Boarman's pleas to regulators to do more, the agency would ultimately dismiss its earlier findings pointing to oil and gas pollution and close the couple's case, leaving basic questions about the origins of the problem unanswered.

"For the longest time, we were so naive to everything," Boarman said. "We thought things were going to get better."



Chunks of salt expelled from Tammy and Chris Boarman's ice maker. Courtesy of Tammy Boarman



The Boarmans' water corroded their faucet. Courtesy of Tammy Boarman

State Delayed Testing to Find Pollution Source

The Boarmans' home, a white modern farmhouse, sits in the middle of an aging oil field, one of several that surround Oklahoma City and that helped make Oklahoma one of the country's leaders in petroleum production in the 1940s.

Today, the region is growing quickly, with a sought-after school system and affordable real estate. New subdivisions sprout on undeveloped land, and residents in more remote areas — such as where the Boarmans live — often rely on private water wells dug near newly built homes.

But groundwater in this area contains an untold amount of pollution from previous decades of oil production, according to a [2024 report](#) from the Association of Central Oklahoma Governments, a multicounty planning agency.

"The thing that scares me is that you're going to have a bunch of people buying homes that are on water wells, and then find out two or three years after they bought the homes that they're drinking salt water," said John Harrington, the recently retired director of the regional planning agency's water resources division.

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The Boarmans live in a fast-growing region dotted by new construction, where residents often rely on private water wells. Katie Campbell/ProPublica

Oklahoma has around 130,000 private water wells, essentially straws that drink from shallow groundwater reserves with minimal filtration, increasing the risk of contamination. That's because after pulling huge profits from the earth, Oklahoma oil companies left behind tens of thousands of unplugged wells that belch greenhouse gases and [allow industrial waste to spread belowground](#). The state has some of the nation's [weakest regulations pertaining to industry cleanup of old wells](#).

In 2016, dozens of residents from a subdivision about 20 miles from the Boarmans' home sued oil giant ConocoPhillips, alleging that years of improper oil field waste disposal had poisoned their drinking water. The company settled for an undisclosed sum with more than 30 families.

Shortly after moving into their home in 2022, the Boarmans found themselves in a similar predicament to those families. Their water corroded the bathtub and coated their taps and appliances in rust and salt residue. Trees near their sprinklers withered and died. Tammy Boarman began keeping a jug of bottled water next to the sink for brushing her teeth.

By this time, Tammy, an imaging manager in the radiology department at the University of Oklahoma hospital, and Chris, a sales representative for a sanitation company, had prohibited their adult children from drinking the tap water when they visited. They stopped inviting friends over: It was too embarrassing to have to warn them about the water.

Staff from the oil division of the Oklahoma Corporation Commission began taking samples of the Boarmans' water in August 2023, about a week after Tammy Boarman's first pollution complaint, and continued doing so every few months, following the agency's protocol. Lab analysis of these ongoing samples showed salt levels climbing steadily into the following year, vastly exceeding natural levels in the local groundwater, a sign to regulators of potential oil and gas contamination, according to results reviewed by The Frontier and ProPublica. By January 2024, the chloride levels in their water reached nearly 10 times the Environmental Protection Agency's recommendation for drinking water. State sampling results deemed their water too salty even for agriculture.

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As the state explored the Boarmans' pollution, agency officials found a tangle of potential culprits: 26 oil wells sit within a half-mile radius of the Boarman home, and more than half were improperly plugged, making them threats to drinking water, according to a report about the Boarmans' situation later commissioned by the state.

One that stood out to Everett Plummer, a manager in the oil division at the time and one of several staffers tasked with investigating the Boarman case, was McCoon 3, an injection well that disposes salty oil field wastewater deep below the earth. It is the closest active injection well to the Boarmans' home and it's operated by Callie Oil Co., a small business owned by Rory Jett, who also owns property nearby.

State employees found it hard to evaluate the McCoon well: 12 years of forms that record injection data — which the company is required by state law to submit — were missing from agency records, according to the internal report about the Boarman case. And they could not seem to find a map showing nearby objects, such as the Boarmans' water well, that the injected fluid might impact. Under Oklahoma state rules, injection wells cannot operate without these maps.

Injection wells are supposed to be built in a way that only allows wastewater to be emitted deep in the earth. But a previous owner of the injection well noted in a report to the state that the well was missing a layer of cement that would help prevent the wastewater from escaping at shallow depths, where most drinking water sources exist, Plummer wrote in an email to oil division colleagues. The many poorly plugged wells nearby offer potential pathways for wastewater to travel toward the surface, he said. Other oil division staff argued in response that a layer of cement near the top of the McCoon well was enough protection and made leaks unlikely.

Early in 2024, Plummer requested that the agency run tests to determine whether the McCoon well was leaking. But it would take another 10 months before the agency did the testing — and found a hole.

A Swirling Cloud of Contamination

In the intervening months, the agency decided to run a different type of test — one that would offer Tammy Boarman her first glimpse of the contamination that had turned her plants yellow and her water undrinkable. It involved an electromagnetic survey machine, a complex instrument about the size of a suitcase that shoots electric currents underground to create 3D maps.

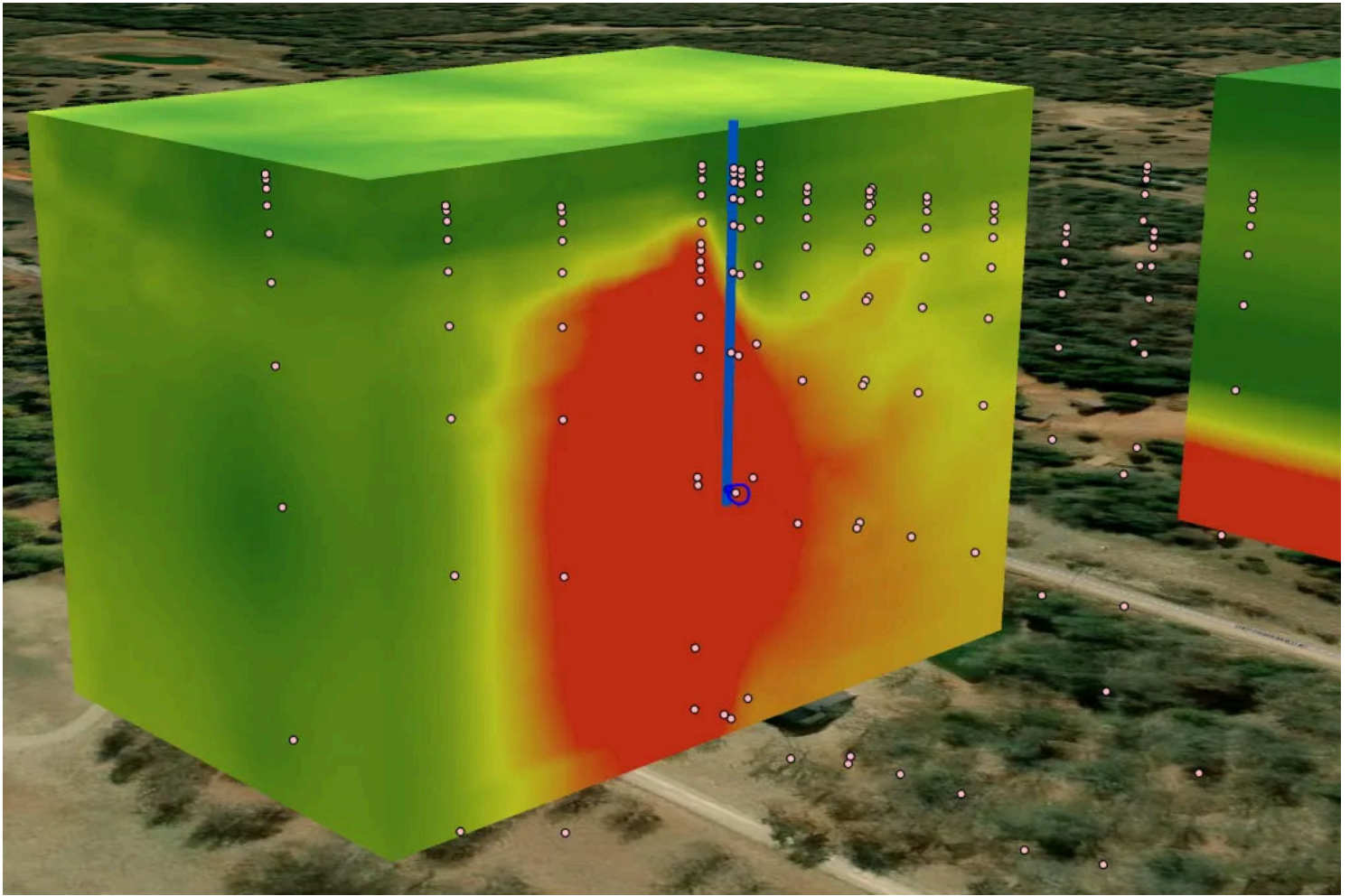
After the test was run in May 2024, Boarman recalled state employees huddled around a laptop in the bed of their truck, scrutinizing the image generated by the machine: a swirling red cloud hanging directly beneath her house, where her well drank from a shallow pocket of fresh water. The field staffers told Boarman that the machine, which measures the concentration of dissolved solids in the water, showed an exceptionally concentrated pollution plume.

Subsequent testing would show her well was sunk into the center of the plume, which was thick with dissolved salts and chemicals, as much as 72 times more concentrated than what the EPA recommends for drinking water.

"I was sick to my stomach," she said.

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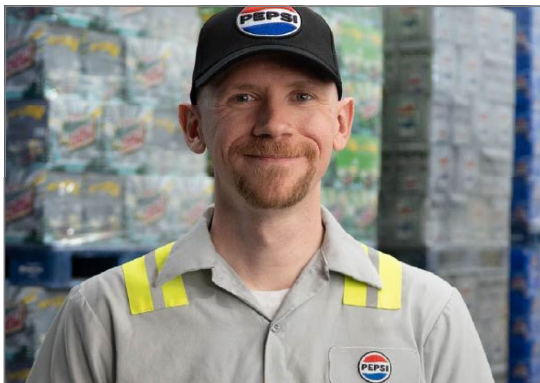
The results of the electromagnetic survey machine revealed a large cloud of contamination below the Boarmans' house and surrounding their well, which is represented by the blue line. Obtained by The Frontier and ProPublica via the State of Oklahoma

The electromagnetic survey showed the degree of contamination surrounding Boarman's water well. But it did not go deep enough to show a source of the pollution.

Boarman said that she and her husband took the images to Jett, owner of the McCoon well. She said Jett, who also runs a company that the state contracts with to plug wells abandoned by oil companies, told them that he was not surprised to hear of the water problems and offered to connect them to a water line on his property.

The Boarmans never took him up on his offer; they learned from agency emails, which Tammy Boarman had obtained through a public records request, that Jett's injection well was one of the possible pollution sources.

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Then, in August 2024, Chris had a heart attack. Tammy blamed the pollution, whether the salty water harmed him directly or only indirectly, through accumulated stress. Their doctor would later tell them that while there could be a link, it would be impossible to prove.

As Chris recovered at home, Tammy frantically searched for a filtration system strong enough to block all potential pollutants. The couple spent more than \$15,000 to put one in.

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Tammy and Chris Boarman stopped inviting friends over because it was too embarrassing to warn them not to use the contaminated water. Abigail Harrison

Regular water sampling showed the Boarmans' water still getting saltier, according to the test results. By this point, agency staff had also found pollution in the water of their neighbors, who live less than a quarter-mile away. (The neighbors declined requests for an interview.)

On Sept. 9, 2024, the Boarmans' state senator, Grant Green, a Republican, requested a meeting with agency leaders to discuss the couple's case, which Chris Boarman had briefed him on. A senior manager for government and regulatory affairs at the Oklahoma Corporation Commission, Travis Weedn, emailed two agency leaders about Green: "He's most likely going to be the Senate Energy Chair this upcoming session ..., so I'd like to be prompt with his office."

Two days later, Trey Davis, the commission's chief public information officer at the time, wrote an email to a number of oil division managers: "We are probably past the point with this complaint that we need to move forward with every measure at our disposal to identify the source of the contamination."

Green recently told The Frontier and ProPublica that the agency failed the Boarmans despite the couple doing "everything right"; he said it did not appear to take their situation seriously until after he got involved.

"It should never take lawmaker intervention to get people to do their jobs," Green said in a written statement. "It's simply unacceptable."

Shortly after Green contacted the agency, Plummer again advocated for running mechanical tests on the McCoon well to evaluate whether wastewater was leaking from it — the same tests he had requested in January. One oil division manager disagreed, writing to colleagues that a test to survey for leaks could cost Callie Oil a "substantial" amount of money because it could require removing and replacing part of the well. Oil companies typically conduct and pay for tests required by the state. Tammy Boarman said agency officials likewise told her in a meeting that these tests would be too expensive for the oil company. The agency would not comment on this interaction.

Boarman spent weeks reviewing agency reports, test results and internal emails that she had obtained through her public records request, often staying up well past midnight immersing herself in technical minutia. That was how she discovered that Plummer had first proposed tests on the McCoon well at the start of the year.

After that discovery, Boarman dropped all niceties in her communications with agency officials.

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"We are convinced that some of you are either inept at your job, just do not care, or you are protecting the operators," she wrote in a Sept. 27, 2024, email to a half dozen agency employees.

A week later, after meeting with Green, the oil division began running mechanical tests on the McCoon well. One test measured the well's structural integrity. It failed the pressure test, suggesting a possible leak.

Further testing discovered a hole in a steel pipe within the well, about 2,700 feet deep, a potential escape hatch for oil field wastewater. Callie Oil promptly patched the hole. An agency report stated that the well had not been operating since June, but other state data indicated that the well had been injecting wastewater into the earth all summer and continued to operate through the rest of the year. Neither the agency nor Callie Oil responded to a question about the contradiction.

The oil division also ran a different test that scans for wastewater leaks. The test found no issues, but it didn't look for leaks at shallower depths. In a subsequent report, an environmental consulting firm recommended running this test again — this time to survey the entire depth of the well.

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The next day, the oil division sent the test results to the Boarmans. The agency did not respond to a question about the delay.

Case Closed

Despite finding evidence of oil and gas contamination in the Boarmans’ water in more than a dozen tests conducted over two years, several agency leaders developed a new theory, according to internal emails from the fall of 2024: They suggested at times that the company that had drilled the Boarmans’ water well had done a bad job and drilled into a pocket of natural salt water, unrelated to oil and gas operations.

Other staff at the Oklahoma Corporation Commission proposed elevating the Boarmans’ case to the agency’s administrative law court to further evaluate the cause of the pollution and pursue potential enforcement. But some commission staff expressed concern internally about how much it could cost to retain a consulting firm to continue investigating the case. The oil division “doesn’t have the funds for this,” wrote Jeff Kline, legal adviser to one of the three elected commissioners, in a digital message to himself in March 2025.

Days later, the agency closed the case. “No responsible party is able to be identified at this time,” the agency wrote to the Boarmans.

Kline told The Frontier and ProPublica that he does not know whether cost influenced the agency’s decision to close the case. The oil division “is solely responsible for such determinations, including any cost-related considerations in this or other cases,” Kline said in a statement. The agency did not respond to questions about the cost concerns or about why some leaders had suggested that the Boarmans’ well was not drilled correctly.

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Undeterred, Tammy Boarman continued to press her case to multiple agency leaders, emailing and calling them over the next month.

In an hourlong call with oil division director Jeremy Hodges last May, Boarman reminded him that his own staff and consultants had recommended more scrutiny of her neighbor’s injection well as a potential threat to her drinking water. In response, Hodges leaned on the same explanation his agency had relied on for months, blaming the company that drilled her water well. Private water well issues fall outside the oil division’s jurisdiction, he told her. “It’s not my deal.”

Hodges did not respond to a list of questions about this call, and the agency declined to make him available for an interview.

Boarman also sought answers from the Oklahoma Water Resources Board, the state agency that oversees private water wells. Charlie O’Malley, manager of the state water board’s well drilling program, told The Frontier and ProPublica the same thing he told the Boarmans: Their water well was drilled correctly and he believed it was contaminated by historic oil field pollution.

In contrast to state regulators, Green, the state senator, found a way to help the Boarmans. Last spring, he was instrumental in securing \$2 million in state funding to connect the Boarmans and their neighbors to a rural water system.

“While this doesn’t change what the Boarmans and their neighbors have endured over the past two years, I hope it gives them a chance to start over,” Green said.

Tammy Boarman said that the fresh water is “a big deal for us,” but that it fails to solve the larger problem of groundwater pollution by the oil and gas industry. “The agency that is supposed to be taking care of this has been given a pass,” she said.

“This place has been ruined for us,” she said. “It’s a nightmare.”

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