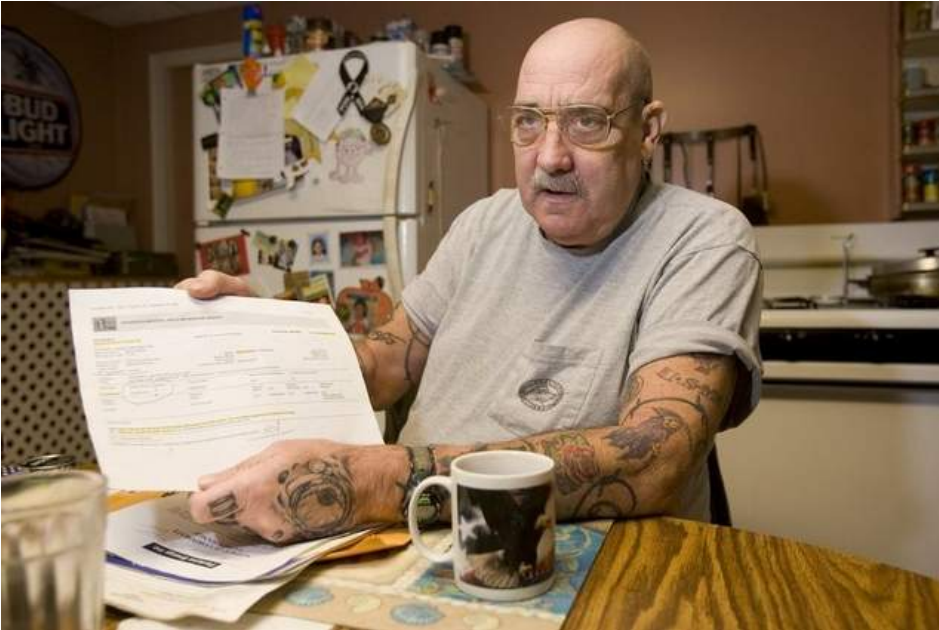


Residents fault DEC over water wells

State says drilling not to blame, but assemblywoman doubts probe's thoroughness

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Frederick Mayer, who lives in the Town of Candor, talks about a report generated by **Toxics Targeting** showing the New York State Department of Environmental Conservation's record of gas found in his water well.

SIMON WHEELER / STAFF PHOTO



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Ithaca – Landowners who believe their drinking water has been affected by drilling activity in central and western New York said they have had trouble getting the state Department of Environmental Conservation to thoroughly investigate their cases.

David and Kelly Ferrugia, a couple in Chautauqua County in the far western tip of the state, have been unable to get their questions answered about why their water quality changed six years ago.

Fred Mayer of Candor is also without an explanation as to why his well began producing methane three years ago, after a gas exploration company dynamited a hill on his 96-acre property.

The DEC investigated the two cases and determined there was no contamination caused by natural gas drilling, and drilling has been the cause in only a small fraction of reported contamination cases across the state, an agency spokeswoman said.

Still, Assemblywoman Barbara Lifton said the problems Mayer and the Ferrugias' have had illustrate a wider problem with the DEC's responsiveness to potential drilling issues.

"Clearly there are very significant cases," said Lifton, D-Ithaca. "The DEC has walked away from its responsibilities. They did not do a full investigation there."

Though suspected to be linked to conventional vertical drilling rather than horizontal hydraulic fracturing, Lifton said these cases indicate that the state is not prepared to regulate the drilling industry.

"It belies the statement that the DEC keeps making that there aren't problems, that the process is safe," she said. "(The Ferrugias) have been on bottled water since 2005. Imagine what that does for your property value."

The DEC responded to questions from this newspaper about how the agency responds to claims of drinking water contamination due to natural gas drilling.

"DEC takes claims of possible drinking water contamination very seriously," said Emily DeSantis, assistant director of public information. DeSantis said the DEC staff reviews files and well records, performs site inspections, speaks with landowners and reviews water well testing information when it is available, as well as contact water well drillers. Additional tests may be performed as needed.

However, the incidence of that kind of contamination is rare, according to DEC records. Of 14,642 total spills reported in 2009, eight were determined to be related to oil and gas activities, or 0.05 percent. Of 13,486 in 2010, six were related to oil and gas activities, and of 12,297 in 2011, five were related to oil and gas activities, or 0.04 percent in each year.

Ignitable water

Fred Mayer, a long-time resident of Back West Creek Road in Candor, said his well was drilled in 1962, the same year he moved onto the property.

Three years ago, a gas exploration company dynamited a hill on his property searching for gas. He had signed a lease on the land for drilling, he said, though right now the nearest gas well is several miles away.

Around the same time as the dynamiting, Mayer noticed air would be forced out of faucets in the house. His father suspected it was a faulty pump, but one day Mayer tried to light it. The gas burned.

"I suspect it's from drilling, because we never had the gas in our water," he said.

Mayer spoke with a representative of the state attorney general's office in early 2010. But Mayer said he has been unable to elicit an investigation, acknowledgement of responsibility, or other plausible explanation for the contamination from the company, the DEC, or the Tioga County Department of Health.

DEC disputes connection

DeSantis said DEC staff did not visit Mayer's home due to the distance of his property from adjacent gas wells, which are five and seven miles away from his home, and both of which are dry. There is also a record of naturally occurring methane in his area, she said. The DEC determined this was the cause of the contamination of his water well.

"Mayer's reference to dynamite is most likely related to seismic data acquisition," DeSantis said. "Seismic data acquisition is not associated with any drilling or production method ... The timing and location of seismic

surveys is independent of drilling activity. Surveys may be conducted years and sometimes longer in advance of any drilling. It is also not a DEC-regulated activity."

Without a baseline water analysis of Mayer's well, it cannot be determined if seismic data acquisition caused methane to appear in his well, DeSantis said.

Water and gas wells

The Ferrugias built a house in Kiantone, Chautauqua County in 2000. The couple collects royalty checks from 10 vertical wells around the property, two of them within 1,000 feet of the Ferrugias' water well. The closest well was completed in September 2005, 330 feet from the water well, according to the Chautauqua County Department of Health.

Nornew Inc. sampled the Ferrugias' water before drilling the well. David Ferrugia said the water was very soft.

Within a few weeks of the gas well's completion, David Ferrugia said the couple began noticing a difference in their water. Changes included pitting in glasses in the dishwasher, brown mineral staining of water fixtures and tubs, a salty taste, and an intermittent sulfur smell.

"It wasn't an abrupt change," Ferrugia said. "It was a gradual change. We started noticing a slight smell. In the following weeks it started getting worse and worse."

Tests show increases

Nornew Inc. tested the water again in April 2007.

According to the results from Microbac Labs independent of Nornew Inc., chloride, barium, sodium, magnesium, potassium, and calcium levels all increased, some of them by factors close to 10. Total dissolved solids increased from 250 parts per million to 600 parts per million. Barium increased from 0.181 ppm to 1.12 ppm, while sodium increased from 76.4 ppm to 111 ppm. Chloride went from 3.8 ppm to 223 ppm.

The Ferrugias filed their complaint with the Chautauqua County Department of Health in May 2007. David Ferrugia said they went to the Health Department after approaching Nornew Inc., but the company representative they spoke to attributed the problem either to the Ferrugias' septic system or road de-icing material. The change in water quality was not due to drilling, he told them.

Other causes suggested

Chautauqua County Water Resource Specialist William Boria wrote to DEC Director of the Bureau of Oil and Gas Regulation Jack Dahl in June 2009, stating he doubted other causes for the contamination.

"In the Ferrugias' case, the evidence strongly indicates the contamination is from brine," he said in the letter.

"This is a well-documented case showing drinking water impacts that are seemingly related to gas well development. Based on our (memorandum of understanding) with NYS DEC, the Chautauqua County Department of Health requests that your Division thoroughly investigate to identify the cause of contamination and assist the Ferrugias in correcting their water quality problems."

Last week, Boria said he is not totally convinced the cause of the contamination was the well drilling, but that there is enough evidence that the case bears further investigation.

"I pushed for more investigation," he said. "It's very difficult to conclude that the gas well did cause the problem with the information at hand. I wanted a little bit more invasive investigation at the well head."

Boria said he suspects mud from the drilling process seeped along via cracks in the surface of the bedrock. He said there are some ways the DEC could investigate that possibility.

But Dahl suggested in a letter in response to Chautauqua County that several issues could have caused the Ferrugias' well contamination. Possible causes included hydraulic fracturing of the water well, leading to a pathway for contaminants to come from greater distances to the well, from the Ferrugias' septic system, or from neighboring water wells.

DEC doubts drilling impact

DeSantis said DEC records indicate site inspections following the Ferrugias' complaint showed no evidence of a spill or violation. The DEC also spoke to adjacent landowners and examined baseline water well testing data. Interviews with landowners revealed that "mineralized 'bad water'" was present in wells in the area before the nearby gas well was drilled. Testing did reveal coliform bacteria in the Ferrugia's well, and two of their neighbors' water supply wells. Recent testing shows the chloride level in the Ferrugias' well has dropped 45 percent, DeSantis noted.

DeSantis said the investigation ended with a determination that the contamination was due to the way the water well was drilled -- using hydrofracking in shale.

"DEC concluded the well water has the characteristics of mineralized shale waters, because the water well was drilled and fractured in shale," DeSantis said. The well was not contaminated with brine, she said.

DeSantis also noted that the DEC does not propose to permit drilling where the shale target layer is in the drinking water aquifer or less than 1,000 feet below it.

Nornew responds

Nornew Inc. Executive Vice President Dennis Holbrook said any claims about contaminated wells not supported by the DEC should be viewed with skepticism.

He said, "Our experience has been -- and I know it seems the industry is always saying, 'Oh don't worry about it' -- people have problems with their wells that have nothing to do with oil and gas drilling."

Holbrook said the company's policy is to test an area within 1,000 feet of a drinking water well, using a third-party company such as Microbac Labs to do the testing. In addition, he said the DEC did spend some time investigating the matter.

Holbrook said in his experience the DEC is "pretty conscientious in going out and investigating these things. They have the technology to base these decisions on science, not on emotions." He said the investigation concluded there may have been an issue with the way the couple's water well was completed.

"But typically, if there was a problem, we would take responsibility, no different than we take responsibility to restore the surface after drilling," he said.

Close to 500 wells were drilled by Nornew in the region around Chautauqua County, Holbrook said. He questioned why the Ferrugias' neighbors wouldn't have had the same problems they reported, and why it took so long for the problems to develop after the well was drilled -- about 18 months.

A red flag?

However, contamination expert Walter Hang, president of Toxics Targeting in Ithaca, said he is convinced the contamination should be attributed to the vertical gas well just 110 yards from the water well. Most importantly, he said, the record of water well contaminations possibly caused by drilling in Chautauqua County, most of them dating to the 1980s, "directly refutes the DEC's assertions that we have just never had problems."

Boria notes that the county had no water well complaints during the 1990s, when there was no drilling activity in the county. In 2000, when drilling started again, so did complaints, about one to two a year, he said.

Hang said, "I think the key thing is that the local health department, which has investigated this matter, essentially said this is a well-documented case showing drinking water impacts that are seemingly related to gas well development, but the DEC simply refuses to acknowledge the concern, investigate the concern, or provide clean water to the family."

Liz Thomas, a member of the Tompkins County Council of Governments' Gas Drilling Task Force, said one of the great frustrations of those working on gas drilling issues in the county is that it's very difficult to know where problems exist.

The DEC keeps records of drilling violations in paper form rather than electronically, and older, abandoned wells aren't mapped, Thomas said.

"It's hard for homeowners to know even to test because they can't find records of violations," she said.

Health Departments' role

The Ferrugias and Mayer are stuck – despite having their well tested by the company before and after drilling, and despite having their county health department's support in approaching the DEC for help, they have received no acknowledgement from either Nornew, Inc. or the DEC that the degradation of their water may have been caused by drilling.

Tompkins County Health Director Frank Kruppa said the authority of county health departments in cases of potential water well contamination due to drilling will depend on the state's draft Supplemental Generic Environmental Impact Statement.

"The well drilling issue is still very much up in the air," he said. "The main message is we are here to take any complaints ... but specific to well drilling, we are still trying to get through our review of the impact statement and regulations to be sure there are authority and resources available to local health departments."

Kruppa said a funding mechanism to help in clean-up efforts is another priority. As for whether testing water before and after drilling can be considered a dependable protection, considering the Ferrugias' situation, Kruppa said he could not comment on their specific situation. Documents related to the Ferrugias' case and water well contamination reports in Chautauqua County can be found at www.toxicstargeting.com/node/7084.