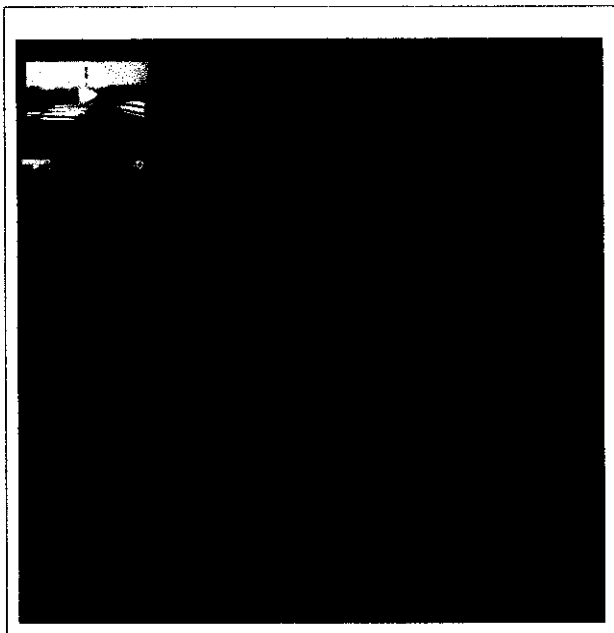


## Did fracking water wells cause quakes in Arkansas?



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Syracuse (WSYR-TV) - An usually high number of earthquakes have temporarily shut down two injection wells that pump fracking waste water back into the ground in Arkansas. Geologists are studying whether there is a connection between the seismic activity and gas-drilling companies' work in the Fayetteville shale formation.

The earthquakes happened at the same time New York State is developing regulations for Marcellus Shale fracking.

The section of central Arkansas in question has seen more than 800 earthquakes during the past six months. It's in the same area where gas companies are disposing of fracking waste water far below ground.

It isn't the fracking of rock, it's what they're doing with the water used in the process once it can no longer be used.

Don Siegel, Syracuse University Professor of Earth Science, said "It's unlikely New York State will allow the deep injection of waste fluids into formations to the extent you'd see in Arkansas or elsewhere."

But no one knows for sure what those regulations would look like here in New York. The Department of Environmental Conservation is still months away from issuing it's regulations, but seismic activity like we're seeing in Arkansas is not something new and has probably already been looked at by the state.

Geologist David Palmerton said, "There was another case in the Dallas/Fort Worth area that's been looked at, I think that was actually occurring at about the time the state was looking at their GEIS draft."

Right now there aren't any underground injection wells in New York State, most of the produced water from the oil and gas industry is shipped out of state to be disposed of."

Palmerton said, "Very deep formations that once produced oil or gas that now have the capacity to take these fluids."

Siegel said, "The technology that is now arising in terms of reusing fracking fluid will eliminate pretty much all of the waste disposal problems to begin with."

But for now, the wells are being used in Arkansas and will get a close review, while New York looks on as it's own handling of fracking is still being developed.

It's expected the state DEC will issue its regulations on horizontal hydrofracking in June. It will then accept public comment on the revisions, and possibly schedule public hearings in the Marcellus Shale region and New York City. No permits to drill will be issued prior to July 1st of this year.

## 2 firms to suspend earthquake zone injection wells

LITTLE ROCK, Ark. (AP) - Two natural gas companies agreed Friday to temporarily cease operations of injection wells in an area of central Arkansas that has seen more than 800 earthquakes during the past six months.

Oklahoma City-based Chesapeake Energy and Clarita Operating of Little Rock said they would comply with the Arkansas Oil and Gas Commission's emergency request to stop all injection activities in Greenbrier- and Guy-area wells used to dispose of wastewater from production. The panel's next regular meeting is March 29.

Geologists are studying a swarm of recent area quakes, most tiny, in an attempt to determine whether there is a connection between the seismic activity and gas-drilling companies' work in the Fayetteville Shale formation. A 4.7-magnitude earthquake, the most powerful reported in the state in 35 years, struck near Greenbrier on Sunday night.

A six-month moratorium on new injection wells in the area took effect in January to allow time to determine what relationship, if any, there is between the wells and the earthquakes.

Shane Khoury, deputy director and general counsel for the commission, said Arkansas Geological Survey researchers had found enough evidence to request an immediate shutdown of the two well locations. He added that the emergency order would not affect the five other injection wells currently operating in that region.

"We believe preliminary data from the moratorium study shows a potential connection between injection operations and earthquakes at one or both of those wells," he said.

The Fayetteville Shale, an organically-rich rock formation underlying the region, is a major source of natural gas in Arkansas. Drillers free up the gas by using hydraulic fracturing, or "fracking," which requires injecting pressurized water to create fractures deep in the ground. The two injection wells at issue dispose of waste "frack" water when it can no longer be re-used, by injecting it into the ground.

Khoury said there has been no evidence to indicate a connection between the earthquakes and production operations, only injection or disposal methods.

Neither company testified at the hearing or offered evidence on its behalf, but will have the opportunity to do so at the next hearing.

Danny Games Sr., director of corporate development for Chesapeake Energy, said the company complied with the emergency request because it needed more time to review the information.

"This is obviously a very involved and very complicated matter," Games said. "There's a lot of science and a lot of facts that should come to bear, and in light of the very short time frame that we had to work with, we simply did not have time to prepare in the manner we felt was proper for this discussion."

Games said, however, that he does not agree with the commission's conclusions and that the earthquakes are a natural occurrence.

"We believe there is a lot of natural seismicity in this area," he said. "This is an area where there's been seismic activity for over 30 years, and we think this is a continuation of that."

Brian Hughes, general manager of Clarita Operating, declined comment. Clarita's parent company is True Energy Services of Ada, Okla.

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