

# Amid quake swarm, Okla. officials shutter a well that was too deep

Mike Soraghan, Energy Wire, 10-30-2014

Oklahoma oil and gas officials temporarily shut down a disposal well near the pipeline hub of Cushing this month, hours after it was hit by a second significant earthquake.

But Oklahoma Corporation Commission officials say they're not pinning the blame for the quakes on the well. When they scrutinized the wells near the quakes, they found it was drilled too deep.

"There shouldn't be any conclusions drawn," said commission spokesman Matt Skinner. "Things that used to be considered minor aren't minor anymore."

Oklahoma has been beset for several years by swarms of earthquakes that many scientists have said were caused by deep disposal wells for oil and gas waste.

Last year, the commission, which oversees oil and gas in the state, adopted what it calls the "traffic light" approach. Disposal wells in a swarm area within 6 miles of the center of a quake of magnitude 4.0 or greater are put in "yellow light" status. They get special scrutiny.

Skinner said wells have never been given permits to inject into the granite bedrock zone known as the "basement," but some did. The issue never got much attention. Drilling too deep is not a threat to groundwater, which is what the rules governing disposal wells are meant to protect. But now, Oklahoma is having more earthquakes than California.

"It's pretty well accepted among the people looking at earthquakes that going into the granite is a bad idea," Skinner said.

The Wildhorse disposal well, owned by Petro Warrior out of Broken Arrow, Okla., was ordered shut down Oct. 10 so it could be "plugged back," making its injections shallower. It resumed operations Oct. 17.

The commission has temporarily shut down about five other wells and ordered them plugged back, Skinner said. He said other companies, learning of the scrutiny, have notified the commission that they voluntarily shut in and plugged back their wells.

Cushing was rocked by a series of earthquakes this month, starting Oct. 7 with two earthquakes of magnitude 3.2 and 4.0. Then, on Oct. 10, there was a magnitude-4.3 quake.

Cushing is a town of about 8,000 people, and officials said there were no reports of major damage. But Cushing is also a pipeline crossroads with an expanse of oil storage called the "tank farm."

Dozens of companies store about 50 million barrels of U.S. and Canadian oil in the area. The hundreds of tanks and confluence of underground pipelines serve as the trading point for oil futures and options contracts under the U.S. price benchmark West Texas Intermediate.

Seismologists were worried that the earthquakes were large enough to cause damage and were getting bigger. But that hasn't happened so far. In the past week, there's been one earthquake near Cushing. It was magnitude 2.7 and was centered about 2½ miles southwest of the city.