
THE TRANSFORMATION OF THE ENERGY SECTOR

1. HYDRAULIC FRACTURING:

Small fortune is lost when oil giant's well collides with family business

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Naomi Parker and her ex-husband, the proprietors of Parko Oil LLC, own 10 oil wells in the San Juan Basin of Sandoval County, N.M. It may seem an unusual retirement investment, but with the price of oil hovering around \$100 a barrel, the wells have provided the couple with a cushy income.

That was the case until Sept. 30, when the Parkers found themselves with a mess on their hands. On that day, a hydraulic fracturing job by Encana Oil & Gas (USA) Inc. at a nearby well pad affected a Parko Oil well, causing a spill of 200 barrels of oil and fracking fluid. Of the contaminants, just 75 barrels was recovered.

The Parkers are now spending more in cleanup than they are earning.

"Encana seems to think this is a very minuscule problem, but when you are retired, a few small wells makes a pretty good retirement income," Parker said.

The spill was caused by a "frack hit," where the fractures of two adjacent wells communicate. An *EnergyWire* investigation this year found that frack hits are common but unregulated by both federal and state agencies. The hits are unrecorded by regulators until there is an oil spill, at which point the agencies ask for remediation and the companies jostle to figure out who pays the bills (*EnergyWire*, Aug. 5).

The threat is to groundwater, where well bores can rupture and allow fracking fluids to directly contaminate aquifers.

In the case of the Parko wells, the Parkers noticed and reported five frack hits to the New Mexico Oil Conservation Division (OCD) before the sixth caused a spill. The Bureau of Land Management and the OCD recorded only the sixth event in their databases. As such, five warning signs of a future spill were ignored by the authorities.

The Parko Oil and Encana wells are on federal land, but they are administered jointly by BLM and the OCD.

The problems for the Parkers began when Encana moved into the area and bought up leases encircling Parko Oil's wells and began fracking in July. Encana was using a fracking fluid mixture containing millions of gallons of water, nitrogen gas and chemicals to blast apart shale rock and release trapped oil and gas.

In theory, energy companies have a good grasp on fracks and can control where the fractures go underground. In practice, this is not always the case. Depending on the geology, some fractures can travel more than a mile, creating a channel of communication between adjacent wells drilled into the same formations.

The fracking fluid, pumped in at high pressures of up to 10,000 pounds per square inch, crosses underground and goes up the well bore of the older well, usually constructed to withstand just 250 psi of pressure. Like a thin-walled balloon filled with too much gas, the pressure differential could, in the worst-case scenario, find an explosive exit by cracking the drill casing and contaminating groundwater aquifers.

Every time Encana fracked its wells, it would inform the Parkers. And initially, the oil major would dispatch a rig to the Parko wells to shut them in, an expensive process that would protect the older wells from frack hits, Parker said. Encana did not confirm whether it had dispatched rigs to shut down its neighbor's wells.

Once Encana finished fracking, the Parkers would resume operating their wells.

Then on Sept. 10, BLM assembled the oil and gas operators and discussed the issue of frack hits. There, "it was agreed upon and understood" that the operators of at-risk wells would be responsible for any damage, said Douglas Hock, a spokesman for Encana. The implication is that Parko Oil is responsible for dealing with any unintended consequences of Encana's fracking operation. Parko Oil was not present at the meeting, Hock said.

"The issue of well communication is one that Encana takes seriously and has engaged with both the BLM and other operators to address it," Hock said.

The New Mexico OCD said, however, that "in some cases the well operator that caused the spill on another operator's well may help with the release and remediation activities."

Water contamination?

On Sept. 13, Encana informed Parko Oil by letter that it would be fracking, but this time it did not shut in the Parko wells.

On Sept. 29, the Parkers noticed the pressure was increasing at two of their wells. And at 2:30 a.m., Naomi Parker got a call from a neighboring driller. One wellhead had ruptured and was spewing oil, nitrogen gas and wastewater.

BLM's New Mexico office was closed due to budget battles in Washington, D.C., so federal inspectors were not on site to monitor the cleanup. State inspectors took their place and oversaw remediation of the soil. The well has been nonfunctional since Sept. 30.

The Parkers trucked off the contaminated soil and wastewater, and they don't yet know the damage to their well bore, said Ernest Padilla, the attorney representing Parko Oil. The well was constructed in 1956 and reaches 5,600 feet into the ground. It is cased in steel and cemented, but cement has a shelf life, usually of about 30 years. The well was past its prime.

The OCD said it is "highly unlikely that this incident caused an impact to groundwater."

The division's reasoning is that groundwater is 100 feet below the surface, which makes it unlikely that a spill on the surface would contaminate the supplies. The OCD did not comment on the possibility of the casing being ruptured, which would allow Encana's fracking fluid to directly contaminate groundwater.

Lost income

Parko Oil is considering suing Encana for its lost production, Padilla said.

The 10 Parko Oil wells were producing an average of seven barrels of oil a day, which provided about \$200,000 in monthly income to the Parkers. For a tiny company, they were operating at a profit.

But since the frack hits, some of their wells have had to be shut down, and they are paying for well remediation, Padilla said.

"They are not making any oil, and they are hauling water," he added.

Encana has offered the Parkers \$3,000 to \$5,000 per well, he said, a value that Encana declined to confirm. Encana believes the affected operators must protect their own wells.

"We provide prior notification of our well stimulation operations, and it is incumbent upon nearby operators to take responsibility for monitoring pressure on their wells," Hock of Encana said.

Warnings ignored

Because the OCD and BLM do not regulate frack hits, companies often must reach an agreement among themselves. The fight can assume a David vs. Goliath character when bigger players like Encana tussle with smaller, local companies such as Parko Oil.

When the affected companies do report frack hits -- often witnessed as an increase in pressure in their well bores -- to the OCD, their complaints are ignored unless there is a spill of wastewater or oil.

Scott Dawson, deputy director of the OCD, told *EnergyWire* that his agency will step up its monitoring of frack hits and take the reports of communication seriously.

"We are putting notice on our website and asking operators to immediately report the communication if and when it occurs," he said. "We are reviewing our policies and guidelines regarding reporting of these issues and are planning to meet with the operators to discuss our plans forward."

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