

Fracking on BLM Colorado Well Sites

WHAT IS IT?

Fracturing (known as “fracking” in the oil and gas industry) is a process that uses high pressure pumps to develop pressure at the bottom of a well to crack the hydrocarbon formation. This aids extraction of oil and gas deposits that might be left behind by conventional oil and gas drilling and pumping technology.

Hydraulic fracturing is a 60-year-old process that is now being used more commonly as a result of advanced technology. About 95 percent of new wells in Colorado are fractured.

BACKGROUND

Wells are often treated during completion to improve the recovery of hydrocarbons by increasing the rate and volume of hydrocarbons moving from the natural oil and gas reservoir into the wellbore. These processes are known as well-stimulation treatments, which create new fluid passageways in the producing formation or remove blockages within existing passageways. They include fracturing, acidizing, and other mechanical and chemical treatments often used in combination. The results from different treatments are additive and complement each other.

This makes it possible to introduce fluids carrying sand, walnut hulls, or other small particles of material into the newly created crevices to keep the fractures open when the pressure is relieved. This process increases the flow rate and volume of reservoir fluids that move from the producing formation into the wellbore. The fracking fluid is typically more than 99 percent water and sand, with small amounts of readily available chemical additives used to control the chemical and mechanical properties of the water and sand mixture.

Procedures for individual wells vary according to reservoir characteristics and the economics of the cost of a specific procedure weighed against the results achieved. BLM Colorado tracks these procedures on Federal wells under its overview.

COLORADO FRACKING CONCERNS

In Colorado, concerns about the potential effects of hydraulic fracturing on water quality were raised by the public and local officials in the South Park, Denver/Julesburg Basin and Rifle areas. Concerns are centered on the chemical composition of fracturing fluids, the location of drilling in or near underground sources of drinking water, and the potential health impacts resulting from these activities.

To date, no lawsuits related to hydraulic fracturing have been filed regarding BLM Colorado lands.

The State of Colorado, through the Colorado Oil and Gas Conservation Commission (COGCC), establishes prudent regulations to ensure that all resources including groundwater are protected. COGCC regulations establish casing and cementing standards to ensure that gas being produced from 8,000 feet down does not leak into the shallower aquifers. These regulations require wells to be cased



with steel pipe and the casing to be surrounded by cement to create a hydraulic seal within the annular space between the wall of the well bore and the steel pipe. In addition, in response to the recent concerns raised about hydraulic fracturing, the COGCC has amended the COGCC regulations to include requirements that address these concerns and will serve to further mitigate any potential impact from hydraulic fracturing.

In Colorado, the majority of fluids used in the fracturing process are recycled and no fluids are sent to wastewater treatment plants, which has caused water quality concerns in the eastern United States. For the small percentage of fluids disposed of, 60 percent goes into deep and closely-regulated waste injection wells, 20 percent evaporates from lined pits and 20 percent is discharged as usable surface water under permits from the Colorado Water Quality Control Commission.

ENVIRONMENTAL OVERSIGHT AND SAFEGUARDS

To ensure that hydraulic fracturing is conducted in a safe and environmentally sound manner, the BLM approves and regulates all drilling and completion operations, and related surface disturbance on Federal public lands. Operators must submit Applications for Permit to Drill (APDs) to the agency. Prior to approving an APD, a BLM Colorado geologist identifies all potential subsurface formations that will be penetrated by the wellbore. This includes all groundwater aquifers and any zones that would present potential safety or health risks that may need special protection measures during drilling, or that may require specific protective well construction measures.

Once the geologic analysis is completed, the BLM reviews the company's proposed casing and cementing programs to ensure the well construction design is adequate to protect the surface and subsurface environment, including the potential risks identified by the geologist and all known or anticipated zones with potential risks.

During drilling, the BLM is on location during the casing and cementing of the groundwater-protective surface casing and other critical casing and cementing intervals. Before hydraulic fracturing takes place, all surface casing and some deeper, intermediate zones are required to be cemented from the bottom of the cased hole to the surface. The cemented well is pressure tested to ensure there are no leaks and a cement bond log is run to ensure the cement has bonded to the casing and the formation. If the fracturing of the well is considered to be a "non-routine" fracture for the area, the BLM will always be onsite during those operations as well as when abnormal conditions develop during the drilling or completion of a well.