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Tighter Regulations Amid the Fracking Fray

The Bureau of Land Management's proposals could affect production on 700 million acres of land.

BY DENISE A. DRAGOO
AND JAMES P. ALLEN

The federal government is poised to tighten regulation of hydraulic fracturing—the drilling method behind the boom in U.S. natural gas production—by proposing to revise rules affecting 700 million acres of federal and Indian mineral lands.

After its initial proposal in May 2012 brought criticism from all sides, the Bureau of Land Management (BLM) revised its proposal and sought public comment, which ended in August of this year. (The bureau's existing rules were established in 1982, prior to the current boom in hydraulic fracturing.) Opponents, including some state regulators, argue that the new regulations will set up a burdensome dual system for approving drilling operations.

Reacting more clearly to mounting public interest than to instances of state regulatory failures, the federal government turned to the BLM to adopt a regulatory regime covering fracking. The practical effect of this decision, with a few exceptions, was to restrict the new regulations to the 11 Western states (Alaska, Washington, Oregon, California, Nevada,

Idaho, Montana, Colorado, Utah, Arizona and New Mexico) where the United States is the owner of the surface or mineral estate, or both. This land includes the Indian reservations where the United States holds title as trustee for the tribe.

The regulatory system proposed by the federal government largely follows the contours of existing state regulation: The BLM will (1) require proof of wellbore, or drilling hole, integrity; (2) expand its rules governing management of produced and flowback water; and (3) require disclosure of chemicals using the FracFocus system embraced by most producing states. FracFocus is the national hydraulic fracturing chemical registry.

In its revised rulemaking proposal, the BLM acknowledged concerns of a duo, or parallel system duplicating state regulation, but insisted that a lack of uniformity among states justified that action. The bureau promises to coordinate with states and Indian tribes to streamline the obvious duplication.

Although the technique of hydraulic fracturing has been used for decades, its ability to liberate gas from otherwise impermeable shale, when combined with horizontal drilling techniques, has greatly expanded U.S. reserves. Fracking is most effective when the water used is aug-



POWER: A drilling rig works in the eastern plains of Colorado to reach the Niobrara Shale formation.

mented by a variety of additives whose exact concentrations and chemistry are considered trade secrets in the competitive world of hydraulic-fracturing contractors. This aspect of the process has incited concern over groundwater quality, and a

few alarming examples of purported contamination of drinking water by fracking chemicals have been widely reported.

Whether fracking operations are the source of contaminants in water supplies is hotly debated, with studies reaching conclusions on both sides. To fracking's critics, the connection between fracking and groundwater contamination is obvious. Since fracking causes cracks in rock formations, and forces chemical-laced fluid into them, it comes as no surprise when the chemicals appear in nearby water-bearing formations. To fracking's defenders, this connection is unimaginable. The fissures created by fracking extend only a short distance from the wellbore deep underground, while drinking-water aquifers are separated from the fractured interval by thousands of feet of impermeable rock.

Protecting water from oil and gas drilling has historically been the province of states, which do so by regulating wellbore integrity and the disposal of wastewater from drilling to prevent its discharge into existing waterways. States typically require a permit to drill a well and they monitor its construction.

Because virtually all oil and gas production requires drilling through water-bearing aquifers to deeper oil-bearing formations, a driller must provide details of the well's construction, casing and cementing, and the wellbore's integrity must be demonstrated through pressure testing prior to placing the well into production. When drilling on federally owned land, the BLM issues permits in tandem with state authority, requiring virtually the same information, testing and safeguards.

When wastewater is injected into a well for disposal, states must approve a permit under the underground injection control provisions of the federal Safe Drinking Water Act. The permit requires identification of all water-bearing zones that could serve as a source of usable water, and then requires casing and cementing through these zones to prevent water contamination. Under the Energy Policy Act of 2005, however,

injection of fluids for fracking does not usually require a permit.

States also regulate the storage, transfer, treatment or disposal of water from oil and gas production, whether the water originated downhole in the hydrocarbon-bearing formation or is fracking fluid returning to the surface as flowback water. Although threats to groundwater from fracking have received more attention, some commenters consider that inadequate management of flowback water has greater potential for significant environmental harm.

WATER-BEARING ZONES

The BLM's new wellbore-integrity rules duplicate the Safe Drinking Water Act's requirement, administered by states, that usable water-bearing zones should be isolated from the wellbore with casing and cement. In addition to casing and pressure-testing requirements, the new rule mandates significant reporting related to cementing the well casing. Pressure-testing would be required on all wells, while cement-evaluation logs would be required on "type wells," allowing proper cementing of all wells in a basin or field with similar characteristics that penetrate the same usable water zones to be demonstrated on a single well that is typical of the field.

The BLM proposes that operators seeking approval of wells that will be fractured submit details of the fracture design, including topographic maps showing the expected fracture direction and propagation, or length, and the estimated vertical distance to the nearest usable water aquifer above the fracture zone. Although the bureau will accept cementing data for a group of wells using data from a type well, it has not applied the same procedure to reporting of chemicals used in fracking. The re-proposed rules require submitting chemical data for each well to FracFocus.

The BLM's concession to complaints about overlapping regulation is to provide "variances" applicable to all lands within a field, basin or jurisdiction

where it has been shown that a state or tribal regulation will meet or exceed the effectiveness of the federal rule. The bureau has sole authority to approve a variance, and its denial of a variance is not subject to review. The BLM notes in its new preamble that Indian tribes can apply to the U.S. Environmental Protection Agency for "treatment as state" status for water-quality regulation. Since the bureau has determined that it is also necessary to duplicate state regulation, this "treatment as state" opportunity seems a hollow gesture.

Similarly, the BLM gave little consideration to tribal concerns that the public interest in fracking's effects, which justifies the bureau's rulemaking on public land, was insufficient reason to impose regulations on Indian reservations where the general public enjoyed no right of access. Ignoring tribal assertions of sovereignty, the bureau asserted that it was implementing the rules in Indian Country in its role as trustee, in furtherance of the "public" interests of tribal members to control the effects of fracking. This position is a remarkable repudiation of the principles of self-determination that would have Indian tribes determine which regulations were in their members' interests.

Only time will tell whether the critics are correct, and new hydraulic fracturing rules will further slow an already lumbering federal approval process for new oil and gas wells. The BLM's public comment period ended on Aug. 23. It will consider the comments received and either issue the rules substantially as published, or publish a further revision for additional comment.

Denise A. Drago is a partner in the Salt Lake City office of Snell & Wilmer. James P. Allen is an associate in the Salt Lake City and Tucson offices of Snell & Wilmer.