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Looking Under Fracking's Surface: Part 1

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Pre-drill water quality testing has emerged as an important issue in the use of hydraulic fracturing in oil and gas operations in the U.S. Pre-drill testing involves the testing of water in landowner water wells or from springs (typically shallow groundwater, but sometimes surface water) near oil and natural gas well pads prior to commencing drilling activities. Data concerning background water quality in the vicinity of a natural gas well either may not exist or could become the subject of competing expert opinions. Pre-drill testing thus establishes baseline water quality conditions for a specific water supply prior to drilling, well completion and production activities. The pre-drill sample then serves as an important reference point to compare to post-drilling water quality in evaluating whether fracking has impacted water quality.

Pre-drill testing regulations vary considerably from state to state. Some states have elaborate notification and sampling requirements, distance specifications, testing methods and legal ramifications for noncompliance or inaction. Other states have no regulations, leaving operators to weigh the merits of undertaking pre-drill testing or determine the appropriate procedures. The wide discrepancy in the regulation of pre-drill testing by different states appears to have less to do with the value of this analytical tool and more to do with public perception and the broader message states wish to convey to the industry and public.

Overview of Pre-Drill Testing Regulations

In response to health and environmental concerns, states have adopted a variety of approaches to regulating fracking. Although these approaches vary, the basic and common elements of pre-drill testing regulations typically address the following:

Provisions for Pre-Drill Testing

Operators may be required to perform pre-drill testing unconditionally, only upon a landowner's request or not at all.

Covered Water Supplies

All or some water supplies (groundwater and/or springs) within a certain radius of the well site (generally 1,500 to 2,500 feet) may be covered by the provisions and presumptions associated with the pre-drill testing regulations.

Presumption of Pollution

In some states, operators are presumed to have caused any pollution identified in water supplies within a certain time frame (generally between six and 30 months) after completion of the drilling, well completion and/or production stages and within a certain distance (generally between 1,500 and 2,500 feet) from drilling activities.

Rebutting the Presumption

Where applicable, operators may rebut a presumption that their activities caused pollution by proving that the pollution pre-existed their drilling activities, was caused by something else, occurred outside of the statutory time frame, was alleged for a water supply outside of the statutory radius or was alleged by a landowner who had refused pre-drilling testing.

Landowner Notification

Operators generally must notify local landowners of planned drilling activities. Some states require operators to inform landowners of their pre-drill testing rights, while others merely direct operators to forward well site related materials, such as permit applications to landowners.

Right of Refusal/Entry

Landowners generally are entitled to refuse testing in states that do not require pre-drill sampling. Doing so, however, waives any applicable presumption of operator liability for pollution of covered water supplies.

Post-Drill Testing Requirement

Some states require operators to perform post-drill testing, generally at all locations that underwent pre-drill testing, while other impose no post-drill testing obligations.

State Regulatory Approaches

The significant growth of fracking in the U.S. has resulted in a spirited debate in the public sphere and, as a result, among government officials. Many agree that pre-drill testing data is useful to prove or disprove that oil and natural gas operations have impacted the environment. But how do regulators determine whether pre-drill testing should be required or how much should be required? How do they decide whether landowners' causation claims should be aided by presumptions, by post-drill testing or neither? And ultimately, what factors drive these decisions?

No Regulation

Approaches to pre-drill testing regulation appear to be influenced, in part, by the extent of past, present and projected fracking within a state. In states where fracking has never taken place and is not anticipated

to occur, pre-drill testing is not regulated because there is no need for such regulation.

Pre-drill testing regulation is also uncommon in states with well-established oil and gas industries, such as Texas, Oklahoma and Louisiana. These states have regulated fracking operations for decades, well before the past few years, when pre-drill testing requirements became popular. In contrast to those states with no need for pre-drill testing regulations, these states may be reluctant to add to or abandon established practices that have proven adequate in the past.

Pragmatic

States with relatively robust, modern-era fracking industries have served as the testing ground for new regulations and consistently adopted more pragmatic approaches to regulation. These states have developed regulations that reflect a real and immediate need to find a balance between industry and economic interests on the one side and public safety and perceptions on the other. Both sets of stakeholders have grown increasingly vocal over the last decade, forcing government officials toward a middle ground that preserves both jobs and public opinion.

Two regulatory models have emerged in these states, both centered on the hot button issue of proving the cause of contamination. Groundwater and surface water flow patterns are incredibly complex and may only be accurately mapped through very technical and data intensive analyses. Even the most comprehensive of studies may not be able to conclusively prove or rule out the sources of contamination. This obviously puts landowners at a disadvantage regarding both cost and evidentiary burdens.

But, causation is not just a question of science — it is also a question of policy. States have taken one of two approaches in an effort to balance the scales. In Pennsylvania and West Virginia, where Marcellus Shale development has dominated the political discourse for the last decade, regulators have sought to work with stakeholders through a presumption of contamination. Under their regulations, operators are not required to do any testing (mitigating costs and red tape for the industry), but bear the burden of refuting the presumption that they caused contamination near their sites (mitigating evidentiary burden to landowners).

By contrast, in Colorado and Wyoming, where oil and gas development has also recently expanded, regulators have approached the issue from the other direction. There, operators are required to perform both pre-drill and post-drill testing (thus increasing cost to the companies), but are not subjected to a rebuttable presumption of contamination (an unnecessary burden given the direct evidence provided by pre-drill and post-drill data). Under either model, these states have addressed a scientific question through a pragmatic mixture of science and political compromise.

Hands-Off

States in the early or anticipatory stages of fracking growth, such as Ohio and California, have taken more of a hands-off approach. While arriving later to the party than its neighbors, Ohio's natural gas production has skyrocketed over the last few years. With a somewhat different perspective, California's fracking activities are well-established but have historically only been used for shallow vertical wells, which do not raise quite the same level of concern regarding withdrawal, hauling, storage, stimulation, processing and disposal of pure and produced water. However, all eyes are on the Monterey Formation, an expansive basin that would implicate the deep horizontal drilling and high-volume fracking seen elsewhere around the country. A favorable regulatory environment will make a difference in both of these states.

Also, perhaps more so than many other states, Ohio and California have much to gain from strong oil and gas production. For Ohio, the state has relied upon its strong manufacturing base, but struggles in this sector over the past few decades have resulted in recognition that the prospect of new wells in place of empty mills is an answered prayer. For California, an end to ongoing crises caused by insufficient energy supply and an expansion of state and local revenue streams associated with increased production could present a political and economic blessing.

Ultimately, neither Ohio nor California has pushed hard on pre-drill testing. Not only do they require pre-drill testing or post-drill testing only under limited circumstances, they also impose no presumption of contamination. For these states, there may be much to gain by creating a reasonable and practical regulatory environment for the oil and gas industry.

Restrictive

By contrast, states with only the potential of future natural gas development have taken a more restrictive approach. States such as North Carolina and Illinois appear to have significant oil and gas deposits that have, thus far, remained almost entirely untapped. At this time, the economic prospects associated with the potential future development of these deposits appear to be overridden by other political sensitivities or public concerns as these states have adopted more stringent pre-drill testing regulations.

North Carolina and Illinois have imposed contamination presumptions on top of several rounds of pre-drilling and post-drilling testing requirements. Presumptions can serve to level the playing field in the absence of sufficient data. The combination of such presumptions with requirements to gather lots of data arguably is unnecessary and unduly burdensome and may be reflective of a lack of meaningful experience with fracking operations in those states.

Federal Approaches

As discussion on this issue continues at the state level, the regulation of pre-drill testing has not escaped the attention of the federal government. On March 19, 2015, Rep. Janice Schakowsky, D-Ill., introduced H.R. 1515, which has further injected pre-drill testing into the national debate on fracking. The bill would require testing before, semiannually during and annually for five years after fracking operations.

The congresswoman's proposal is consistent with, and in fact more demanding than, the approach taken by her state's regulators. That said, given that pre-drill testing regulations can be influenced by local political and economic realities in addition to objective science, it may be difficult to achieve consensus for applying any one state's approach (whether hands-off, stringent or otherwise) to fracking operations nationwide. As we have seen, this issue may not yield itself to a one-size-fits-all approach.

Conclusion

As the state-by-state variability of pre-drill testing regulation demonstrates, fracking regulation can often reflect a pragmatic interplay between scientific considerations and economic and political factors. After all, the technical elements of fracking are largely the same in all states; groundwater dynamics are not materially different, whether you are in Illinois or Ohio, and data is critical wherever you go. As such, pre-drill testing regulations reflect a complex balancing of competing interests, which can vary from state to state.

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