

Regulating Hydraulic Fracturing in the States: Trending Issues in 2016 and Beyond

By Liz Edmondson

Due to advances in technology and drilling techniques, most notably hydraulic fracturing, vast reserves of untapped natural gas in shale formations are commercially viable, resulting in a significant increase in natural gas production over the last decade. However, this increase in production has raised concerns over environmental impacts such as water pollution, seismic activity, and air quality. This article provides an overview of some of these concerns and how state legislatures are addressing these issues.

Natural gas production has increased dramatically in the United States in recent years. Advances in hydraulic fracturing and horizontal drilling have resulted in the commercial viability of vast quantities of previously untapped gas reserves in shale formations.¹ In the past 10 years alone, production increased from 23.5 million cubic feet in 2005 to almost 33 million cubic feet in 2015.² However, along with this surge in production has come growing concern regarding the environmental consequences of these techniques, including water pollution, waste disposal, air quality, and seismic activity. In addition, policymakers are also increasingly addressing the interaction between federal, state, and local regulation.

The task of balancing the opportunities inherent in increased domestic natural gas production with environmental and public protection has largely fallen to state policymakers. However, the federal government does regulate some areas related to natural gas production, most notably water and air quality. Under the Clean Water Act, on-shore oil and gas extraction facilities are prohibited from discharging pollutants into surface waters in most instances.³ In addition, the U.S. Environmental Protection Agency, or EPA, issued the first air quality standards for hydraulically fractured natural gas wells in 2012, which require reductions in volatile organic compounds. In May 2016, the EPA finalized rules to reduce methane emissions from new and modified oil and gas sources. These standards are expected to reduce methane emissions from the oil and gas sector 40 to 45 percent below 2012 levels by 2025, while also cutting volatile organic compound and air toxics emissions.⁴ While the federal government is getting more involved in regulating natural gas, fracking operations are at this time still predominantly regulated at the state level.

Given the rapid and increasing development of shale gas, its controversial nature, and the limited oversight on the federal level,⁵ states have taken a variety of approaches in attempting to balance environmental and public safety concerns with shale development. Indeed, states vary significantly in geology, economic conditions, geography, demographics, the extent of shale gas production and other factors, which partially contributes to the variety of regulatory approaches. However, the swift expansion of shale gas development has resulted in a patchwork of regulatory trends that states will continue to address going forward.

Outright Bans on Fracking and the Disposal of Fracking Waste

In light of the potential environmental impacts of fracking, some states have banned the practice altogether. New York and New Jersey were among the first states to act, placing moratoriums on well permitting until the environmental and health risks of the practice could be evaluated. After a seven-year review,⁶ New York Gov. Andrew Cuomo announced in December 2014 that the state would ban fracking and the state issued a Findings Statement on June 29, 2015, to that effect.⁷

In contrast, while the New Jersey legislature passed a bill that would have permanently banned fracking in the state in 2011, Gov. Chris Christie issued a conditional veto that placed a moratorium on the practice for just one year, which has since expired.⁸ While fracking is currently allowed in the state, no fracking operations are currently taking place.

Although Vermont has very limited deep shale deposits, the state—in a largely symbolic gesture—became the first state to ban fracking and the collection, storage, or treatment of wastewater from the practice with the passage of H. 464 in 2012.⁹ In 2015, a Maryland bill banning fracking for two

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and one-half years, until October 2017, became law after Gov. Larry Hogan declined to veto the legislation.¹⁰

In addition, other states have passed legislation prohibiting the disposal of fracking wastes in their states. Fracking requires operators to inject large amounts of water into a wellhead. This process results in the production of significant amounts of wastewater that typically contains chemicals used in the fracking process, as well as salt, radioactive material and heavy metals. This water must be managed and is typically reused, treated and released, or injected underground.¹¹

Some states with limited or more expensive disposal options for this wastewater have opted to transport it to other states for management. In response, both Connecticut and Vermont prohibit the storage or disposal of fracking waste in their states.¹² While New Jersey has attempted such a ban, Gov. Chris Christie has vetoed bills that would have banned the disposal of fracking waste in the state on two occasions.¹³

The District of Columbia and other communities, counties and cities across the country are also acting to regulate or restrict hydraulic fracturing. In 2014, the District of Columbia passed a resolution urging the federal government to prohibit fracking in the George Washington National Forest, a 1.1 million acre forest in West Virginia and Virginia containing the headwaters of the Potomac River, the capital's only source of drinking water.¹⁴ In addition, hundreds of communities, towns and cities across the United States have banned fracking through local initiatives.¹⁵

States Ban Fracking Bans and Courts Weigh in on Localities' Ability to Regulate Fracking

In response to restrictions on fracking by these localities, various actions have been taken to hinder the ability of local governmental entities to ban fracking or the disposal of fracking wastes. At the state level, both Oklahoma and Texas lawmakers voted to limit local governments from prohibiting the practice. Oklahoma's bill, SB 809, signed into law in 2015, prohibits localities from banning fracking, but allows local governments to set reasonable restrictions on noise, traffic and fencing, and to enact reasonable setbacks for surface operations.¹⁶ The Texas law was enacted in response to a fracking ban imposed by the town of Denton, which halted fracking activity in the town until the legislation was signed by Gov. Greg Abbott on

May 18, 2015, approximately six months after the ban became effective.¹⁷

In other states, courts have found fracking bans enacted by local governments illegal. In 2013, Mora County, New Mexico, was the first county in the country to ban hydraulic fracturing. Soon thereafter, various parties filed a lawsuit in federal court against the county, alleging that the ordinance was unconstitutional and infringed on private property rights. The U.S. District Court for the District of New Mexico struck down the ban, finding that it violated the U.S. Constitution's Supremacy Clause because it contained language that stripped oil and gas companies of rights protected by federal case law and the U.S. Constitution.¹⁸ In addition, the court found that the ordinance was further illegal because it prohibited activities that are allowed under state law. Soon after the decision, Mora County rescinded the ban.¹⁹ A similar ordinance banning fracking wastewater disposal and enacted by a Pennsylvania township was also rejected by a federal court.²⁰

Similarly, states and localities continue to clash over to what extent local governments can place restrictions on fracking operations. In 2015, the Ohio Supreme Court considered whether a city could enforce its local zoning ordinances against an oil and gas company, which required local certifications and requirements in addition to the state's permitting scheme. Ohio laws, amended in 2004, give the state "sole and exclusive" authority to regulate the permitting, location, and spacing of oil and gas operations and repealed any portions of the previous law giving local governments authority to adopt regulations concurrent with the state. The city argued that the state's Home Rule Amendment to its constitution, which gives local control to all matters not of statewide interest, allowed it to impose its own permitting requirements on oil and gas operations.

However, in a 4-3 opinion, the court found that Ohio's Home Rule Amendment "does not allow a municipality to discriminate against, unfairly impede, or obstruct oil and gas activities and production operations that the state has permitted" under its oil and gas laws.²¹ Because the legality of restrictions and bans on fracking largely depend on the specific way the ordinance is written, the state's constitutional provisions, and the extent to which the state regulates oil and gas operations, challenges to local attempts at regulation and restriction of fracking will be case-specific and will likely continue.

Seismic Activity: How Will States Respond?

According to the U.S. Geological Survey, the number of earthquakes in the central and eastern United States has increased significantly in recent years. Beginning in 2009, earthquakes in these areas of the country increased to an average of 99 earthquakes of magnitude 3 and above compared to only 21 M3+ quakes between the years 1973–2008. By 2014, there were 659 M3 and larger earthquakes, with rates continuing to rise.²²

A recent article in *Science* magazine notes that many of these earthquakes are thought to be induced by the injection of wastewater into the subsurface from hydraulic fracturing operations or enhanced oil recovery. The study found that in regions prone to seismic activity, the rate of injection was the factor that most affected the probability of an induced earthquake.²³

Oklahoma has thus far taken limited action on this issue. The Oklahoma Corporation Commission, which regulates the oil and gas industry, recently responded to the increase in seismic activity by requesting that producers located in the northwest area of the state reduce by 40 percent the amount of wastewater they dispose. In March, the agency developed a similar plan to reduce the total volume of wastewater disposed in central Oklahoma by 40 percent below 2014 levels over a two month period.²⁴ In addition, Gov. Mary Fallin directed approximately \$1.4 million of emergency funds to addressing triggered earthquakes, which allowed the commission to add additional staff and upgrade technology.

The Kansas Corporation Commission also ordered a reduction of fracking wastewater injections in two counties that border Oklahoma as a result of increased seismic activity reported in the USGS study.²⁵ Ohio now requires that seismic monitors be installed for fracking operations within three miles of a known fault. If seismic activity above a 1.0 magnitude is detected, the operation must cease pending an investigation. Well operations would be suspended if a connection between the well and the seismic activity is uncovered.²⁶ Texas has taken a less restrictive approach and hired a full-time seismologist and requires more information from operators during the permitting process.

As seismic activity continues to increase in the central and eastern parts of the country and more research is conducted on the relationship between fracking and increased seismic activity, policymakers

ers will have to make decisions as to how to regulate disposal wells.

Conclusion

Natural gas production is expected to continue to increase in the immediate future.²⁷ As a result, states will continue to grapple with the economic advantages this production brings and the environmental and regulatory challenges natural gas production presents. In addition to the issues discussed above, states will address other issues such as methane emissions, severance taxes, fluid disclosure requirements and the enforceability of regulatory controls given significant revenue shortfalls in some states. In addition, the federal government is becoming more active, with the EPA engaging in studies and rulemaking that will affect the industry. State policymakers will need to be aware of the challenges in regulating fracking where local, state and federal actors are involved, in addition to being aware of the options for addressing the environmental issues surrounding the production of this booming resource.

Notes

¹ Environmental Protection Agency, “Natural Gas Extraction—Hydraulic Fracturing,” available at: <https://www.epa.gov/hydraulicfracturing>.

² Energy Information Administration, “U.S. Natural Gas Gross Withdrawals,” available at: <http://www.eia.gov/dnav/ng/hist/n9010us2m.htm>.

³ While operators have historically handled their wastewater by injecting it into disposal wells, it has become more common for operators to utilize public owned treatment works (POTW) where disposal wells are unavailable or other wastewater management alternatives exist. At this time, there are no pretreatment standards that apply to indirect discharges from onshore oil and natural gas extraction to POTWs, which can result in wastewater from these operations being discharged to surface waters without treatment. EPA has proposed a rulemaking that would address this issue by establishing pretreatment standards. 80 FR 18557 (April 7, 2015).

⁴ Environmental Protection Agency, “Reducing Methane Emissions from the Oil and Natural Gas Industry” (March 10, 2016), available at: <https://www3.epa.gov/airquality/oilandgas/pdfs/20160310fs.pdf>; Environmental Protection Agency, “EPA Releases First Ever Standards to Cut Methane Emissions from the Oil and Gas Sector” (May 12, 2016), available at: <https://www.epa.gov/newsreleases/epa-releases-first-ever-standards-cut-methane-emissions-oil-and-gas-sector>

⁵ Despite the historically limited federal regulation of oil and gas development and production, the Environmental Protection Agency and the Bureau of Land Management, which governs oil and gas production on federal

lands, have been working to conduct scientific studies and update regulations for shale gas development.

⁶ New York State Department of Public Health, “A Public Health Review of High Volume Hydraulic Fracturing for Shale Gas Development” (December 2014), available at: http://www.health.ny.gov/press/reports/docs/high_volume_hydraulic_fracturing.pdf.

⁷ New York Department of Environmental Conservation, “Final Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program: Findings Statement” (June 2015), available at: http://www.dec.ny.gov/docs/materials_minerals_pdf/finding-statementvhf62015.pdf.

⁸ <http://www.state.nj.us/governor/news/news/552011/approved/20110825c.html>.

⁹ H. 464 (2012), available at: <http://www.leg.state.vt.us/docs/2012/bills/Passed/H-464.pdf>.

¹⁰ SB 409 (2015), available at: http://mgaleg.maryland.gov/2015RS/chapters_noln/Ch_480_sb0409T.pdf.

¹¹ Environmental Protection Agency, “Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources (External Review Draft) (2015), p. 8-1, available at: <https://cfpub.epa.gov/ncea/hfstudy/recordisplay.cfm?deid=244651>.

¹² Public Act No. 14-200 “An Act Prohibiting the Storage or Disposal of Fracking Waste in Connecticut” (2014), available at: <https://www.cga.ct.gov/2014/act/pa/pdf/2014PA-00200-R00SB-00237-PA.pdf>.

¹³ State of New Jersey Senate, No. 1041 (2014), available at: http://www.njleg.state.nj.us/2014/Bills/S1500/1041_R1.HTM; Tran, Andrew Ba, “Where communities have banned fracking” *Boston Globe* (December 18, 2014), available at: <https://www.bostonglobe.com/news/nation/2014/12/18/where-communities-have-banned-fracking/05bzzqiCxBY2L5bE6Ph5iK/story.html>.

¹⁴ http://www.foodandwaterwatch.org/sites/default/files/frack_actions_districtofcolumbia.pdf.

¹⁵ Tran, Andrew Ba, “Where communities have banned fracking” *Boston Globe* (December 18, 2014), available at: <https://www.bostonglobe.com/news/nation/2014/12/18/where-communities-have-banned-fracking/05bzzqiCxBY2L5bE6Ph5iK/story.html>; Food and Water Watch, <http://www.foodandwaterwatch.org/insight/local-resolutions-against-fracking>.

¹⁶ Oklahoma Senate Bill 809 (2015), available at: <http://www.oklegislature.gov/BillInfo.aspx?Bill=SB%20809>.

¹⁷ Stravato, Michael, “To Quiet Calls for Fracking Curbs, Texas Bans Bans” *Newsweek* (June 12, 2015), available at: <http://www.newsweek.com/2015/06/12/quiet-calls-fracking-curbs-texas-bans-bans-339164.html>.

¹⁸ *SWEPI v. Mora County, New Mexico, et al.*, No. 14-35, D. New Mexico (January 19, 2015).

¹⁹ <http://www.scribd.com/doc/260405069/Mora-County-repeal-of-anti-fracking-ordinance>.

²⁰ <http://www.reuters.com/article/usa-energy-ban-idUSL1N12J0KQ20151019>.

²¹ *State ex rel. Morrison v. Beck Energy Corp.*, 143 Ohio St.3d 271 (Ohio S.Ct. 2015), available at: <http://www.supremecourt.ohio.gov/rod/docs/pdf/0/2015/2015-Ohio-485.pdf>.

www.supremecourt.ohio.gov/rod/docs/pdf/0/2015/2015-Ohio-485.pdf.

²² U.S. Geological Survey, “Induced Earthquakes,” available at: <http://earthquake.usgs.gov/research/induced/>.

²³ Weingarten, M., et al. “High-rate injection is associated with the increase in U.S. mid-continent seismicity” *Science*, Vo. 348, Issue 6241 (June 19, 2015), available at: https://profile.usgs.gov/myscience/upload_folder/ci2015Jun1814143055600Weingarten_etal.pdf.

²⁴ Oklahoma Corporation Commission, “Media Advisory—Regional Earthquake Response Plan for Central Oklahoma and Expansion of Area of Interest” (March 7, 2016), available at: <http://www.occeweb.com/News/2016/03-07-16ADVISORY-AOI,%20VOLUME%20REDUCTION.pdf>.

²⁵ Kansas Corporation Commission, “Order Reducing Saltwater Injection Rates” Docket No. 15-CONS-770-CMSC (March 19, 2015), available at: <http://estar.kcc.ks.gov/estar/ViewFile.aspx/15-770%20Order.pdf?Id=05630050-78a3-4800-a08b-85202375305a>.

²⁶ Ohio Department of Natural Resources, “Ohio Announces Tougher Permit Conditions for Drilling Activities Near Faults and Areas of Seismic Activity,” available at: <http://ohiodnr.gov/news/post/ohio-announces-tougher-permit-conditions-for-drilling-activities-near-faults-and-areas-of-seismic-activity>.

²⁷ Energy Information Administration, “Short Term Energy Outlook,” available at: <http://www.eia.gov/forecasts/steo/report/natgas.cfm>.

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