THE AMERICAN PROSPECT

Why It's so Hard to Regulate Fracking

In this March 25, 2014 photo, a worker oils a pump during a hydraulic fracturing operation at an Encana Corp. well pad near Mead, Colorado.

JUSTIN MILLER
June 24th, 2015

A long-awaited EPA study illustrates how industry can sidestep meaningful reform.

In early June, the Environmental Protection Agency released a long-awaited study on the impact of hydraulic fracturing on drinking water. A press release for the report said that there was no evidence of widespread contamination from fracking. However, there were "potential vulnerabilities in the water lifecycle that could impact drinking water." Observers quickly came to wildly different conclusions. Environmental groups say it's concrete evidence that fracking can contaminate groundwater. The oil and gas industry says the report validates its stance that fracking is largely safe.

Hydraulic fracturing, better known as fracking, is the process of drilling into shale formations and injecting a cocktail of water, sand, and chemicals to create tiny fractures that access pockets of oil and natural gas. The process has helped fuel a boom of natural gas extraction in the United States and made the country the largest natural gas producer in the world. In 2007, the U.S. extracted about 2 million cubic feet of natural gas from shale gas wells; by 2014, yields had grown to 12 million cubic feet.

The Obama administration, along with some environmental groups, believe natural gas—and thus, fracking—serves as a pivotal bridge in the transition from reliance on dirty fossil fuels like coal and oil to a future of clean energy production from solar, wind, and water power. Other environmental advocates say dependence on natural gas from fracking is merely a lesser evil, not a long-term environmental solution.

The report's takeaway in media reports was so muddled and often inaccurate that the deputy administrator of the EPA, Thomas A. Burke, was forced to

clarify what the report actually meant almost two weeks later: “The message of this report is that we have identified vulnerabilities in the water system that are really important to know about and address to keep risks as low as possible,” Burke said in a press interview.

That fracking poses potential risk to groundwater supplies is not new information. This study was meant to explore what the risks are, how they occur, and how widespread they can be. The initial study was launched five years ago after significant pressure from the public and legislators to address the safety of this burgeoning drilling technique—and at first the study had ambitious goals to examine the full scope of the fracking process. However, the scope and authority of the report was systematically limited as the industry impeded the process, leaving many environmental advocates unsatisfied.

Representative Raúl Grijalva, co-chair of the Congressional Progressive Caucus, said in a statement that the “announcement will be spun by industry lobbyists as a clean bill of health for oil and gas developers around the country. Nothing could be further from the truth, as EPA’s own findings have shown. Irresponsible oil and gas development puts water quality at risk for millions of Americans, and no amount of spin can change that.”

“It wasn’t as rigorous as we hoped it would be,” says Amy Mall, a senior policy analyst for the National Resources Defense Council. “But it shines important light on the research on how fracking can contaminate drinking water.”

Before the release of the report, the oil and gas industry’s boilerplate talking point on fracking was that there hadn’t been a single instance of groundwater contamination in the United States; fracking is safe, there’s nothing to see here. However, the report has forced the industry to change its tune in a slight, yet significant way: they now say that there’s not widespread water contamination.

“It’s maybe not a 180 degree change, but it’s a 90 degree change—it’s a significant change,” Mall says.

A Fractious Struggle for Regulation

Since the fracking boom began, there’s been a never-ending tug of war between industry and environmentalists over how strongly the practice needs to be regulated—and industry is winning by a long shot. Thanks mostly to the Bush administration’s energy policies the federal government has next to no authority over fracking operations.

In 2004, George W. Bush’s EPA released a report on the impact of hydraulic fracturing on groundwater supply. The verdict? No connection between the drilling technique and groundwater contamination. However, scientists within the EPA admitted that the integrity of the report was questionable and that more research needed to be conducted.

The energy company Halliburton had been on the forefront of new fracking technology since the beginning, pulling in $1.5 billion a year during the fracking boom. And former Halliburton CEO Dick Cheney, who left his post when he was tapped for vice president by Bush, was instrumental in crafting energy legislation rife with industry loopholes. When Congress passed the Energy Policy Act of 2005, there was a loophole that exempted fracking from safety regulations stemming from the Safe Drinking Water Act.

With federal hands tied, it's therefore up to the states to decide how they want to regulate fracking. New York State recently upheld a ban on fracking operations. However, conflicts have arisen between state and local governments as to who has authority to ban or allow fracking. A number of municipalities have outlawed the practice in their towns; others see it as a welcome opportunity for an economic boom. In May, Texas Governor Greg Abbott signed legislation stripping localities of their right to institute local bans on fracking. Next door in Oklahoma, the state is considering a ban on fracking after increasing evidence that the practice is linked to a huge uptick in earthquakes.

In 2009, Democrats introduced the FRAC Act in the House, which would give the federal government a certain level of regulatory authority over fracking. The oil and gas lobby went on the offensive early, releasing an onslaught of hyperbolic reports asserting that any legislation that gave the EPA authority over fracking would "hamper exploration, raise fuel prices and cost American jobs and energy," according to a ProPublica report.

As an alternative, supporters of the bill were pressured to contract a study rather than pass legislation. In front of a room full of oil and gas industry trade people for the second most fracked state in the U.S., former Democratic governor of Colorado Bill Ritter called for U.S. Representative Diana DeGette from Colorado, who was sponsoring the bill, to back off legislation: "I encouraged Congresswoman DeGette to consider authorizing a comprehensive study of this issue instead of going directly to a new and potentially intrusive regulatory program."

"The oil and gas guys came out of the barn storming. I think that opposition has been throwing out scare tactics and mischaracterizations of what [Congresswoman DeGette] is trying to do," a spokesman for the House Representative sponsor of the bill said in the report.

That EPA study, now at the center of a contentious debate over fracking, took more than five years to complete. The study's initial aim was to find conclusive answers as to fracking's impact on water supplies, which has become important as fracking operations rapidly expand in concentrated pockets of the country—mainly Texas, Colorado, Pennsylvania, and North Dakota. Between 2000 and 2013, about 9.4 million people lived within a mile of a fracking well; roughly 6,800 drinking water sources for public water systems—serving more than 8.6 million people a year—were within a mile, according to the EPA study.

Fracking operations in 2011 and 2012 consumed on average 44 billion gallons of water a year.

From the very beginning of the study, industry officials wanted access. Environmental groups were given an opportunity to offer input as well. But fracking companies have a near monopoly on insider information, giving them more leverage with the EPA than environmentalists. "We don't know exactly what kind of influence the industry did or did not have," Mall says. "What did they provide, and what did they withhold? They have a lot of information that we don't have, and if they did have influence that did affect the science that would be of great concern to us."

An Uncooperative Industry

While politicians call for sound research on the impact of fracking before jumping the regulatory gun, the industry has not made comprehensive study of the process an easy feat.

While politicians call for sound research on the impact of fracking before jumping the regulatory gun, the industry has not made comprehensive study of the process an easy feat.

As the environmental website DeSmogBlog reports, FOIA-requested documents obtained by the environmental group Greenpeace show the oil and gas industry had open access during the drafting of the study. In October 2013, an EPA representative wrote to Chesapeake Energy in the comments of the study draft, which they were both editing: "you guys are part of the team—please write things in as you see fit."

Chesapeake Energy is on the forefront of what could be likened to a fracking Wild West—it operates more than 800 wells in the lucrative Marcellus Shale formation that stretches across Pennsylvania (Read more on how activists fought the fracking boom in Pennsylvania in The Prospect's interactive feature "The Shale Rebellion").

The initial scope of the EPA fracking study was ambitious, though certainly not unachievable. The inherent problem, however, with technical studies of complex industry practices is that the EPA relies heavily on the willingness of the industry to give the agency access. What the final result of this study shows is that despite the industry's intimate access during the crafting of the report companies like Chesapeake rebuffed a number of the EPA's requests for site access.

Therefore, the EPA was forced to significantly limit the scope (and ultimate impact) of its study.

"We're disappointed with the narrow scope and what we understand was limited cooperation from industry on things that could have led to new and unique analysis," says Lena Moffitt, director of the Sierra Club's Dirty Fuels Campaign.

"This study and the fact that the EPA was hamstrung is just one example of why we need to change the exemptions," Moffitt says.

After five years, the report was rather inconclusive, finding that fracking activities "have the potential to impact drinking water resources" including "water withdrawals in times of, or in areas with, low water availability; spills of hydraulic fracturing fluids and produced water; fracturing directly into underground drinking water resources; below ground migration of liquids and gases; and inadequate treatment and discharge of wastewater."

Those risks are already well documented.

Yet the report states that "We did not find evidence that these mechanisms have led to widespread, systemic impacts on drinking water resources in the United States…we found specific instances where one or more mechanisms led to impacts on drinking water resources, including contamination of drinking water wells. The number of identified cases, however, was small compared to the number of hydraulically fractured wells."
On the Contrary?

Coming on the heels of the EPA's release of its fracking study, evidence that may be contrary to the "no widespread contamination" assertion has already emerged.

Sprawling beneath 17 counties, including the city of Forth Worth, encompassing 5,000 square miles of north-central Texas, lies the vastly profitable Barnett Shale formation. Oil and gas was first discovered in the 1980s, and first drilled in 1999. The area has since attracted a bonanza of nearly 20,000 wells operated by the most prominent industry companies—Chesapeake, Range Resources, ConocoPhillips.

A team of researchers from the University of Texas, Arlington sampled groundwater from 550 public and private wells throughout the Barnett Shale. The results were stark.

The researchers found elevated levels of 10 different (some carcinogenic) heavy metals like arsenic in groundwater. But what was more damning, in regards to fracking's impact on groundwater, is the discovery of elevated levels volatile organic compounds such as BTEX that are known to be used in the fracking process in about two-thirds of the sampled wells. More than 60 percent of the sampled water wells were within one kilometer a fracking (or otherwise unconventional drilling) operation.

"What we're not able to do at this point is source the contaminants. There has been an extreme lack of comprehensive analysis of water quality in proximity to water sources; we were really trying to fill in that gap," explains Dr. Kevin Schug, who headed up the study.

Chemical combinations are generally proprietary and thus highly guarded secrets—therefore it's hard to know all chemicals that are linked to the fracking process. Schug and his team were able to compile a bulk list of fracking chemicals based on databases like the FracFocus Chemical Disclosure Registry.

But focusing on fracking chemicals alone is just one part of the broader operation. There are some chemicals not associated with hydrofracturing directly—degreasers from well heads, for instance—that were found in groundwater samples. "We've been trying to understand the whole process and look at how to lower the risk of adverse effects," Schug says.

Schug says it's the biggest fracking study done yet: "There simply haven't been very large scale efforts. If you're trying to piece together all the things that people have found, it's hard to get a clear picture from smaller studies."

Given that the EPA report was largely a summary of the previous work conducted in the field by other researchers, Shug says, "[The EPA] have to be extremely diplomatic in what they say. They list many instances in which there could be groundwater contamination...they are forced to make such wide sweeping statements because of the lack of a comprehensive study."

The Barnett Shale study still may not mean much, regulations-wise. As noted, the Lone Star State passed a ban on local fracking bans—not a promising sign of the government's willingness to use a new study as an impetus for broad new regulations on a highly profitable, and politically influential, industry in the state.

"I would doubt that it has immediate impact," Schug says. "This state is more pro-industry than others, which makes it more of an uphill battle."

Elusive Enforcement

Without a clear mandate from the EPA, regulations at the federal level may well remain limited, though the Obama administration has made some moves to regulate fracking. This March the president announced new safety regulations for fracking, a first at the national level. However, given the limits of unilateral federal authority the restrictions can only apply to federal and tribal land and have no impact on the vast spectrum of state and local laws. Despite the relatively small scope of the rules, that didn't stop two oil industry groups from immediately suing to challenge the regulations. Nor did it stop 27 Republicans, including Republican Senator James Inhofe, chairman of the Environment and Public Works Committee, from swiftly introducing legislation that would kill the policy.

Many green groups thought the policy was merely a placation and not nearly a strong enough step. About a month later, two Democratic House members introduced what they called "the strongest anti-fracking bill" ever: a total ban on fracking on all land with federal jurisdiction. The bill, which has been referred to the Subcommittee on Energy and Mineral Resources, has been introduced before with no success.

Every year there's some type of anti-fracking legislation introduced in the Senate and House, and every year more and more legislators support it. But in lieu of changing the political culture of Washington, the primary regulators are state and municipal agencies. State laws run the gamut from outright bans like the one recently passed in New York State to far more lax regulations.

Indeed, some are using the report as evidence against anti-fracking regulations. The Joint Landowners Coalition of New York has said that Cuomo's decision to ban fracking in the state was "based on politics, not science." The group's president said, "The EPA confirms what we have always known, that New York can safely regulate hydraulic fracturing while enjoying the economic benefits that are rejuvenating the nation."

And the strength of regulations on the books isn't even the most important aspect—it's how well the laws are actually enforced.

Effective enforcement is crucial, says the NRDC's Mall, but that's just not happening. "You have many oil and gas companies that violate the law frequently for practices that may be quite serious. The industry doesn't have a strong culture of compliance because there are no strong penalties."

"Oil and gas companies in particular, especially those using fracking, are given an unbelievable amount of leeway even when there are instances of problems," says the Sierra Club's Moffitt. "It's a result of the absolutely unbelievable situation that these companies are exempt from almost all of our [environmental] protections."

Strong regulations that are meaningfully enforced are essential to reining in the fracking industry. "Industry has been marching along and ignoring the reality on the ground for a long time. They're not going to change that unless they're forced to," says Moffitt.

But again, this is all to say that there is more funding for comprehensive fracking studies, greater pressure on industry to comply with these studies, and that the respective political landscape is open to passing legislation in response to growing scientific evidence.