Legal Backgrounder

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MISINFORMATION CAMPAIGN TARGETS HYDRAULIC FRACTURING

by
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"What's in a name?" asked Juliet of her dear, sweet Romeo. It was a fitting question, as the eternal conflict between the Montagues and Capulets stemmed not from any real or qualitative differences, but rather from simple family tradition. Tensions borne of simple misperceptions can and often do eventually subside, but traditions have much stronger staying power, and do not typically end with the passage of time or the injection of facts.

Perhaps those of us who are interested in oil and gas development – supportive or opposed – should review our old high school literature exams.

It's all in a name, really: Opponents have latched on to a harsh-sounding name – "fracking," a percussive, abbreviated form of "hydraulic fracturing" – and used it to fuel public opposition to the exploration of American energy resources.

A closer look at the record, though, suggests that impacts from "fracking" are rarely based on scientific findings or even on basic facts. Yet opponents have effectively driven their own un-reality into public discourse, saturating the media with so many falsehoods that reporters mischaracterize the process now as a matter of AP-style. Incentivized by the prospect of a catchy headline, reporters ascribe "fracking" to elements of oil and gas development far removed from the actual process.

The result? Despite clear scientific evidence showing otherwise, a still small (but growing) segment of the American public believes the completion of a well via the fracturing process – something performed safely and successfully since the Truman administration – is all of a sudden a serious threat to the environment. And unfortunately, a deliberate and well-funded misinformation campaign continues to perpetuate such fears – not in an attempt to protect the environment, but rather to feed an opposition campaign driven by ideology.

What Is HF? It is useful to define carefully and accurately what hydraulic fracturing actually is – and, equally important, what it isn't. The process is what's known as a "well stimulation" or "well completion" procedure (contrary to what we've all read from the media, it is not a "drilling technique") used to enhance the flow of hydrocarbons from a well. After a well has been drilled, cased, and undergone numerous tests to ensure its structural and compositional integrity, the drilling equipment leaves the site. Next, trucks, men and equipment arrive to perform the fracturing.

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The process itself involves pumping a fluid mixture into the well bore and down to the "target formation," which is the area from which hydrocarbons will be produced. This fluid consists of about 99.5 percent water and sand, along with a few additives to provide lubrication and prevent bacteria growth. The target formation is typically a mile or two below the surface, separated from groundwater supplies by multiple layers of impermeable rock. The fluid is pumped at a pressure high enough to crack – or "fracture" – the rock. The sand keeps the fractures from closing when the fluid is pumped back to the surface, and the fractures themselves allow for previously trapped oil or natural gas to flow into the well bore and back to the surface.

After completion – for each well, the procedure typically takes between two and five days – trucks and other equipment leave the site, and a valve is installed to manage the rate at which hydrocarbons flow (a "Christmas tree," in industry parlance). In the case of natural gas, the gas is then routed to a processing plant, after which it is connected to pipeline infrastructure and delivered to consumers.

Today, hydraulic fracturing is applied to virtually all onshore wells drilled in the United States – which means the technology is responsible for virtually all onshore natural gas production.

Frac v. Frack. Of course, if you're in the oil and gas industry – or know anything about it – you'll know that hydraulic fracturing is nothing new. First used in southwest Kansas in 1947, fracturing has been safely applied more than 1.2 million times over the past 65 years (its first application in Canada was in the Cardium oil field in the 1950s). In fact, the word "frac" has been a well-known term in the industry for decades, and its history of safety meant that it wasn't considered any more controversial than other common terms, such as annulus, cement bond logs, or production casing.

But then again, none of those terms sound like what Ralphie deemed the "F-dash-dash-dash word" in the movie *A Christmas Story*. Indeed, opponents of oil and gas development have gleefully taken the word "frack" and used it to incite fear in the public's mind. It was an easy, three-step argument: (1) The process takes place below ground and utilizes chemicals. (2) Drinking water is also found below ground. (3) Therefore, "fracking" contaminates drinking water. When your driving purpose in life is to stop oil and gas production, cleverly associating it with a word that sounds profane (starts with "f," ends in "ck") means half of your work is already done for you.

Opponents, however, had a significant dilemma to overcome: Hydraulic fracturing has been studied extensively by regulators, scientists, and engineers, and to date there are no confirmed cases where the process has contaminated water. Why? Because the distance between groundwater supplies and the target formation is as much as two miles, a distance that is filled with multiple layers of solid, impermeable rock.

Colorado's governor John Hickenlooper – a petroleum geologist by training – said it is "almost inconceivable" that hydraulic fracturing would ever contaminate groundwater. A recent University of Texas study found there was "no evidence" that fracturing had contaminated water. On two separate occasions, once in 1995 and again in 2004, the U.S. Environmental Protection Agency has stated publicly that hydraulic fracturing doesn't contaminate groundwater, and current EPA administrator Lisa Jackson has stated four times in the past 12 months that there is no evidence linking fracturing to adverse impacts to water. Texas Railroad Commissioner Elizabeth Ames Jones has said that you have a better chance of hitting the moon with a Roman candle than contaminating water via the fracturing process. Other state regulators have similarly affirmed that they have never seen an instance of fracturing contaminating water.

Other parts of oil and gas development, however, have always carried small but nonetheless real risks. Wells are typically cased and cemented in a manner to prevent anything inside the well from seeping into what's outside the well, but casing failures have occurred. Similarly, there have been spills and other accidents that take place on the surface. These issues, however, are not about hydraulic

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fracturing, as the possibility of these incidents has been a part of so-called "conventional" oil and gas development for over a century. Put differently, these issues do not constitute new or poorly-understood risks, and managing them is essentially part of the textbook of development.

So what's the big fuss, then? A brief history will help set the stage. Thanks to pioneering work by George Mitchell in the Barnett Shale of North Texas, the ability to extract oil and natural gas from shale became much more economical starting in the 1990s. Mitchell invested millions of dollars of his own money to perfect the combination of horizontal drilling – whereby a well is drilled thousands of feet vertically and then turned horizontally for several thousand additional feet – with hydraulic fracturing. Horizontal drilling was a key component of this technological marriage, not only because it allows for much greater access to target formations, but also because it greatly reduces surface impact. Production from one horizontal well, for example, can replace as many as a dozen vertical wells.

Such technological innovation facilitated the growth of shale development across the country, and at a fairly rapid pace. In 2001, natural gas produced from shale constituted about one percent of America's total gas production. By 2010, it was already about 25 percent, a number expected to grow to nearly 50 percent in the coming decades.

But it was also that rapid expansion – especially into areas such as Pennsylvania – that offered an opening to environmental groups. Preying on a population unaccustomed to large-scale oil and gas development, activists were able to make an innovative combination of their own, blending a scary, almost inappropriate-sounding word ("frack") with alleged environmental and social impacts, many of which – like air emissions and certain forms of water contamination – can supposedly be impacting you without you even knowing it. Uncertainty breeds fear, and a fearful public, the opposition found, is much easier to manipulate.

Professional activists, shrewdly political in their talking points, also know that the word "fracking" elicits negative reactions in the public. As the *Pittsburgh Post-Gazette* observed: "Anti-drilling activists love using 'fracking' as a double entendre ('Don't frack with us') because it bears a resemblance to one of George Carlin's seven dirty words."

And recent polling backs them up: A survey by Louisiana State University found that only 34.5 percent of respondents who heard the word "fracking" thought the process was safe, and only 38.6 percent of those who heard the word said there should be more drilling. When the respondents were given a description of the process instead of the word "fracking," however, the percentage who said the process is safe jumped by nearly ten points, and support for more drilling climbed by more than 12 points into a clear majority. Imagine that: a fact-based discussion leads to different results than one based on semantics and talking points.

That gap in public support is also why opponents describe everything happening in oil and gas development – from initial geological surveying to well pad preparation to pipeline construction – as "fracking." Never mind that the impacts they cite are not due to hydraulic fracturing. Since hydraulic fracturing is one part of the process, they claim, all of the impacts can be attributed to "fracking." It's a politically convenient (and intellectually lazy) effort to scapegoat a process that opponents do not really understand, but that they know sounds destructive.

Earthquakes? Nothing illustrates the gap between accuracy and activism quite as well as the claim that hydraulic fracturing causes earthquakes. Recent seismic activity in Ohio, for instance, has been traced to injection wells receiving waste water from oil and gas development. A recent report by the U.S. Geological Survey also suggests injection wells could be triggering seismic activity. In an attempt to clear up any misperceptions, however, lead report author Bill Ellsworth said: "We find no evidence that fracking is related to the occurrence of earthquakes that people are feeling. We think that it's more intimately connected to the wastewater disposal." The Deputy Secretary of the U.S. Department of the Interior reiterated that conclusion on DOI's website. In Ohio, the state's Department

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of Natural Resources Director Jim Zehringer said shortly after the earthquakes in his state occurred: "The seismic events are not a direct result of fracking."

It's also important to note that injection wells are not exclusively used for oil and gas waste water, but also for waste produced from manufacturing, as well as long-term CO2 storage. Additionally, the link between injection wells and seismic activity goes back to at least the 1960s, when a deep disposal well receiving waste fluids from chemical manufacturing operations at a nearby U.S. Army arsenal triggered earthquakes in the area around Denver, Colorado.

Such context has been almost universally ignored by the press. The Christian Science Monitor, three days after Zehringer made his statement declaring the complete opposite, decided to run a story entitled, "How fracking might have led to an Ohio earthquake." Reuters chimed in two weeks later with this headline: "After earthquakes, Ohio city questions future fracking wells." Over at MSNBC, the headline was: "Geologists say Ohio quakes directly tied to fracking." Bloomberg referenced "Fracking-Linked Earthquakes" in its coverage, ironically describing of the difference between disposal wells and hydraulic fracturing in the story itself.

To his credit, Bill Ellsworth from the USGS actually scolded the media for their misrepresentations. "I was greatly surprised," Ellsworth said, "to see how words were being used in the press in ways that were inappropriate." The coverage was so bad that one intrepid journalist actually asked via Twitter, "Why can't the press get it straight on earthquakes and fracking?"

Do Facts Still Matter? Earlier this year, the University of Texas released a report on hydraulic fracturing, which, in part, assessed the tone of media coverage. The results were not pretty. The researchers found that media coverage was "overwhelmingly negative," adding that roughly two-thirds of all stories painted a negative picture of hydraulic fracturing. Only about one-third actually referenced scientific studies, which perhaps explains why "fracking" has become such a dirty word: Facts have been largely absent from the public discussion.

The good news, though, is that geology, engineering, and empirical research almost uniformly support the conclusion that hydraulic fracturing is safe and does not contaminate water supplies. Even in the small town of Dimock, Pa., where activists have contended for years that a local company contaminated water supplies, the U.S. EPA has released four sets of results showing that the water is safe. Opponents, predictably, continue to move the goal posts and claim EPA's testing was inadequate.

And that, perhaps, sums up the reason why fracturing has become so controversial. Opponents will never be convinced that oil and gas development can be and is occurring safely, because their position is based on a long-established belief, not science or facts. It is a tradition for activists to oppose any process that helps bring oil and natural gas to the surface, and the environmental organizations that fund opposition efforts simply have too much at stake to admit the truth.

Which brings us back to Verona, where families clashed simply because it was a tradition to do so, and the desire to create division blinded the families to any facts or reality.

Sound familiar?

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