White Paper

Hydraulic Fracturing: Associated Risks & the Related Coverage Implications

While the continued use of high volume hydraulic fracturing, or "fracking" as the process is now known, to extract oil and natural gas resources from low permeability shale formations remains a contentious issue among environmental rights advocates and the oil and natural gas industry, there are a few identifiable certainties surrounding the burgeoning practice: (1) the continued expansion of its already widespread utilization as a result of increased global energy demands and the potential for substantial economic gain and (2) the unavoidable presence of inherent risks associated with the fracking process. In addition to mitigating risks through operational best practices, the procurement of appropriate forms of insurance to cover any anticipated losses or legal claims that may arise out of fracking operations is of particular importance.

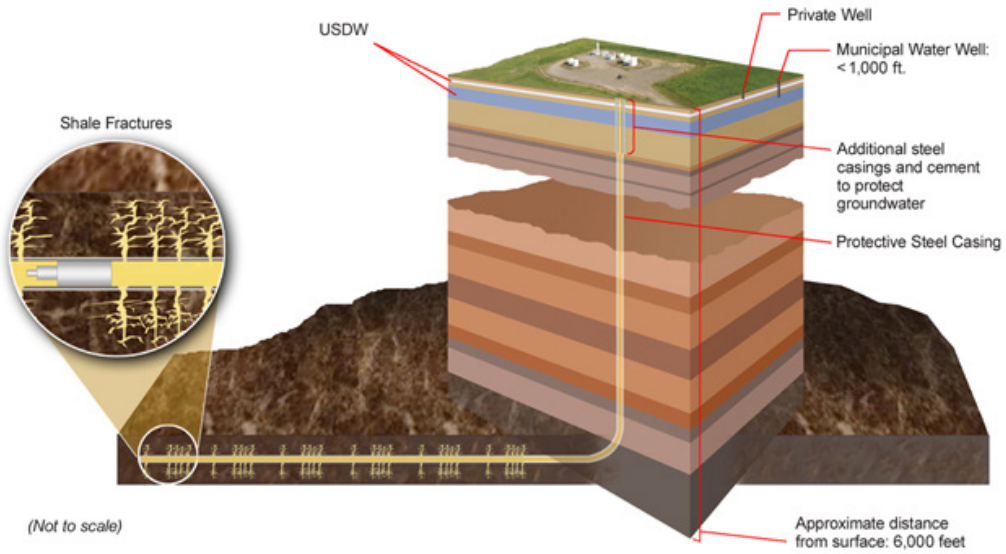
Background

Although fracking may have only entered the public's collective conscious in recent years due in part to widespread media attention and increased regulatory scrutiny by state and federal agencies, the resource recovery method is far from novel. The use of hydraulic fracturing has been employed to stimulate the production and recovery of oil and natural gas in the United States since the 1950s. Many attribute the growth of hydraulic fracturing to a partnership between what is now the United States Department of Energy and a group called the Gas Research Institute during the 1970s, which sought to develop technologies for the commercial production of natural gas from the Devonian Shale formation located in the eastern United States. The success of this partnership is further evidenced by the resulting technologies that are still used today, including horizontal wells, multi-stage fracturing and slick-water fracturing. It was not until the 1990s, however, when the critical advancement of deep shale extraction was successfully achieved, that the commercial viability of fracking was truly realized within the oil and natural gas industry.[1]

In 2005, a convergence of these developments, as well as an increase in global energy demand and the pursuit of energy independence by the United States, led to a boom in fracking operations within the oil and natural gas industry. It is estimated that dry shale gas production in the United States increased from 1 trillion cubic feet in 2006 to 4.8 trillion cubic feet in 2010.[2] Further estimates indicate that there is approximately 862 trillion cubic feet of recoverable oil and natural gas resources contained within 20 shale formations located throughout the United States, including the Marcellus Shale formation in the Northeast United States, which is believed to be the second largest gas field in the world.[3] With fracking considered to be the most effective means of oil and natural gas recovery available to access these vast and highly demanded resources, it is unlikely that the process will be abandoned any time soon.

The "Fracking" Process

In its most basic form hydraulic fracturing involves the pumping of "fracking fluids" comprised of water (upwards of 10 million gallons), sand, and other chemical additives into wells drilled deep into shale and other geologic formations. The wells are drilled vertically thousands of feet below the surface, where they then extend horizontally another several thousand feet from the location of the initial well head. The use of horizontal wells in the fracking process allows for a greater amount of oil and natural gas to be accessed and extracted from a single well. The pumping of fracking fluids through the well under extreme pressure, as high as 12,000 pounds per square inch,



creates fractures in the shale formation which in turn facilitate the release of any oil or natural gas trapped within the formation. The sand and other chemical additives contained within the fracking fluids, commonly referred to as "propping agents", are used to prolong the fracturing of the shale in order to encourage the further release of any oil or natural gas. Pressure from the shale formation eventually causes the fracking fluids to return to the surface where they are usually held in large nearby ponds or "frack tanks" before being recycled or treated, and ultimately disposed of.[4]

Operational Risks

The potential benefits and financial gains that are promised by hydraulic fracturing are unfortunately accompanied by an abundance of risk, particularly with respect to environmental damage and pollution. The proliferation of lawsuits in states such as Arkansas, Kansas, Colorado, Pennsylvania, New York, Texas and West Virginia, claiming bodily injuries and property damage arising out of fracking operations, serve as further evidence of the ever present risks associated with hydraulic fracturing. Additional claims asserted include negligence in the improper construction of faulty unsealed wells, breach of contract through failing to adhere to agreed upon safety measures and fraudulent misrepresentation in misleading the public regarding the potential effects of hydraulic fracturing.

Indeed, the difficulties presented in identifying and quantifying the risks associated with fracking are highlighted in a statement released by Nationwide Insurance in July 2012. In response to the posting of an internal memorandum on an anti-fracking website which detailed Nationwide's underwriting guidelines, the insurer surprisingly announced that it would no longer cover the risks involved with the hydraulic fracturing process. The internal memorandum further stated that "After months of research and discussion, we have determined that the exposures presented by hydraulic fracturing are too great to ignore. Risks involved with hydraulic fracturing are now prohibited for General Liability, Commercial Auto, Motor Truck Cargo, Auto Physical Damage and Public Auto coverage." Whether other insurers will follow Nationwide's lead and proclaim their voluntary withdrawal from this prosperous area of energy exploration is yet to be seen.[5]

A few of the more common risks associated with hydraulic fracturing are further discussed below.

Fracking Fluids

Opponents of hydraulic fracturing fear that the fluids utilized in the process often include toxic chemicals, which can result in the contamination of nearby surface water and underground aquifers. These concerns have been exacerbated by the refusal of many fracking companies to disclose the chemical components of the fracking fluids being used on the basis that the formulas are proprietary trade secrets and therefore protected from public disclosure. The New York Department of Environmental Conservation ("NYDEC") has however required operators to disclose the chemical components of fracking fluids as part of the application process required to obtain a permit to under-

take hydraulic fracturing operations within New York. Based on these submissions the NYDEC published a list of chemicals commonly used in fracking, including known carcinogens and chemicals identified as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act, aiding opponents of the practice.

While most of the fluids used in the hydraulic fracturing process are returned to the surface of a well as a result of the immense pressure from settling of the shale formation, some fluids remain underground which can result in the potential contamination of nearby land and water. Furthermore, as mentioned previously, the fracking fluids which do return to the surface are generally stored at the well-site in frack tanks or manufactured ponds for further use. This practice of segregating and storing the fluids at the well-site creates the additional risk of both immediate and long-term contamination to nearby water and land as a result of unintentional releases.

The release of fracking fluids through faulty or damaged well casings during the drilling process can also occur, resulting in further risk of contamination to nearby water and land. Wells used in the fracking process generally consist of numerous casings which are used to stabilize the well and seal off surrounding areas from fracking fluids as well as any liquids that are produced as a result of the fracturing process. Due to the complexities involved in the construction of a well, seal casings may be ineffective or can fail as a result of the significant pressure involved in hydraulic fracturing. Like frack ponds, the failure of well casings can present both immediate and long-term contamination risks to nearby water and land.

Well "Blowouts"

As with any oil or natural gas drilling operation there is a potential for well loss, or "blowouts" as they are commonly referred to, during the fracking process. Blowouts can be the result of numerous causes, including faulty well construction or an event occurring at a nearby dormant well. The pressure repeatedly exerted upon well casings during the fracking process can also result in the gradual deterioration and eventual failure of the well if not properly monitored and maintained. While a blowout can cause significant losses for a well operator in terms of operational delays and damage to costly equipment, other risks such as damage or contamination to neighboring property and waterways can prove to be of even greater consequence.

Orphaned Wells

The use of hydraulic fracturing has been proven to increase productivity in drilling areas where production has decreased or ceased altogether. Often times these areas will contain older wells, referred to as "orphan wells," that are no longer in use and have been capped off or otherwise plugged. If an orphan well has not been properly capped, or the cap has deteriorated over time, the commencement of fracking operations in a nearby location can result in the dormant well becoming charged causing an explosion and further damage to the well and overall site.

Insurance Coverage Issues

The risks identified above as well as others associated with hydraulic fracturing, and the potential legal claims that can result from such risks are substantial. Unfortunately, obtaining adequate insurance coverage for hydraulic fracturing operations can also prove to be a risky endeavor.

Commercial General Liability Insurance

Although it is likely that all entities involved in the hydraulic fracturing process maintain commercial general liability ("CGL") insurance that covers third-party claims made against an insured for bodily injury or property damage, such policies, particularly those issued in more recent years, include some form of pollution exclusion. Pollution exclusions were initially incorporated into CGL policies in the late 1970s, due in large part to an increase in the number of pollution related claims being made. The initial form of the pollution exclusion allowed for coverage under a CGL policy where damage was caused by pollution that was sudden and accidental. This, so-called, "sudden and accidental" exclusion was then succeeded by the "absolute" or "total" pollution exclusions introduced in the late 1980s and 1990s.

A pollution exclusion that has more recently become commonplace in general liability policies is the "time element" pollution exclusion, which explicitly provides coverage for bodily injury or property dam-

age arising from "sudden and accidental" releases of pollutants. In order for coverage to be provided, the pollution condition must be discovered and reported within a specified, and limited, period of time. A typical "time element" pollution exclusion would include requirements such as the discharge of pollutants being known by an insured within 30 days of the commencement of the discharge, as well as the discharge of pollutants being reported to the insurer within 60 days of the commencement of the discharge of pollutants. Consequently, CGL policies which include a "time element" exclusion provide some level of coverage for fracking-related risks, specifically abrupt risks such as a Blowout or any immediately discovered and unexpected occurrence. However the risk of undiscovered contamination of land or water is significant and risk managers should be looking to other coverages to supplement this limited "time element" coverage provided under a CGL policy.[6]

Even though some risks involved in the hydraulic fracturing process would likely be excluded from coverage under a CGL policy as a result of the pollution exclusions previously discussed, policyholders can still however take advantage of the broad coverage provided by CGL policies in such cases. As a result of the myriad of claims typically asserted in fracking-related suits, an insurer's duty to defend its policyholder for the entire complaint, including the otherwise excluded pollution claim, would likely be triggered. Under a typical CGL policy an insured is entitled to a defense by an insurer where the allegations of a claim present the mere possibility that the insurer will be required under the terms of the policy to indemnify the policyholder for any part of the claim. As stated above, claims arising out of the hydraulic fracturing process have come in all forms, (breach of contract, negligence, fraudulent misrepresentation, etc.) therefore any one count of a suit (or any part of any count) which asserts a claim not excluded by the pollution exclusion would trigger a complete defense by the CGL insurer of the entire suit. This basic concept has strategic importance even where other policies (some of which are discussed below) also provide coverage for the same suit, but include high deductibles or self-insured retentions. Most often the defense being provided by the CGL policy may be used to exhaust such a deductible or self-insured retention and the non-CGL policy would then be immediately accessible to pay any settlement or judgment.

A complete understanding of the policy coverage should affect the strategy undertaken in defense of the underlying claim as well as how such a claim is characterized to the insurer. More importantly, an independent analysis should always be undertaken when such a claim is being defended by the CGL insurer under a reservation of rights.

Operators Extra Expense Insurance

While not as prevalent as CGL policies, most companies in the oil and natural gas exploration industry typically carry Operators Extra Expense ("OEE") coverage. The coverage provided under an Operators Extra Expense ("OEE") Policy typically only applies to named perils identified within the policy terms, which will often specify Blowouts or "Loss of Well". The intent of OEE coverage is to offset any business interruption losses by covering additional costs incurred by an insured to remediate damage from a Blowout or other covered peril. In the event of damage resulting from a named peril under an OEE policy, covered expenses may include re-drilling expense, cleanup costs resulting from contamination due to a Blowout or similar event, temporary facility costs and other related liabilities. In addition, OEE policies generally provide pollution coverage for third-party exposures as well as cleanup costs.

Although the coverage provided under OEE policies is broader than that of a CGL policy, with respect to pollution related injuries or property damage, there are still coverage limitations that can limit an operators ability to offset any losses or the cost of claims that can arise out of hydraulic fracturing operations. As mentioned previously, OEE coverage only applies if damage arises out of a "named peril". Often OEE policies will also contain a "time element" restriction, such as the discovery and reporting of a pollution event occurring within 10 and 20 days of the event, respectively. Consequently, any losses or claims arising out of the gradual long-term release of chemicals that result in the contamination of water or land would not be covered under an OEE policy.

Environmental Site Liability

As a result of the pollution exclusions typically contained within CGL policies and the limitations of

OEE coverage, some form of pollution specific insurance, such as Environmental Site Liability ("ESL"), should be further considered for any company associated with hydraulic fracturing operations. ESL policies generally provide coverage for claims of bodily injury or property damage caused by pollution conditions at or emanating from a covered location. ESL policies are offered on a claims-made basis, which allows coverage to be provided for the insured where a pollution event or condition may have originated prior to the policy period. In comparison, coverage under a CGL policy is typically "occurrence" based, meaning that the occurrence or event must have taken place within the specified policy period in order for coverage to be available. Furthermore, the coverage grant provided under an ESL policy is not limited to specifically identified or "named perils", as OEE coverage generally is. These characteristics of an ESL policy are essential in eliminating any gaps in coverage from a CGL or OEE policy resulting from the gradual release of pollutants overtime or a peril not specified within the policy terms. Additional coverage offered under an ESL policy can include coverage for offsite cleanup, civil fines and other governmental penalties, investigation costs, defense costs and business interruption arising out of pollution events or conditions.

Conclusion

As global energy demands continue to increase and the use of hydraulic fracturing continues to grow, drilling operators must not only be aware of the potential risks associated with the fracking process but also how to insure against their exposure to those risks. Although the limited coverage available under a CGL policy must always be examined, this policy alone may be insufficient to mitigate or offset all the risks of pollution or environmental contamination that can arise out of the hydraulic fracturing process. Companies that currently have hydraulic fracturing operations, or plan to do so in the future, should review their current portfolio of insurance in light of the potential pollution events that can occur, and identify the specific risks they are exposed to as well as the potential gaps in coverage that can result.

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1. U.S. Energy Information Administration, "Review of Emerging Resources: U.S. Shale Gas and Shale Oil Plays, (July 8, 2011), www.eia.gov/analysis/studies/usshalegas/; U.S. Department of Energy, "DOE's Early Investment in Shale Gas Technology Producing Results Today" ("February 2, 2011), www.netl.doe.gov/pub/oil_gas/natural_gas/analysis_publications/drilling_sideways_well_technology/pdf/tr0565.pdf
2. U.S. Energy Information Administration, "U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves", (November 30, 2010), ftp.//tonto.eia.doe.gov/oil_gas/natural_gas/data_publications/crude_oil_natrual_gas_reserves.cr.html.
3. U.S. Energy Information Administration, "Annual Energy Outlook 2011", DOE/EIA-0383(2011) (Washington, DC, April, 2011)
4. U.S. Department of Energy & National Energy Technology Laboratory, "Shale Gas: Applying Technology to Solve America's Energy Challenges", (March 2011).
5. The statement released by Nationwide states that it will no longer cover the risks associated with the hydraulic fracturing process under its personal and commercial policies; however it is unclear whether the insurer will offer some alternative form of specialized pollution coverage or remove itself completely from insuring against such risks.
6. While reported court decisions related to application of the pollution exclusion contained within a general liability policy to claims arising out of the hydraulic fracturing process are still relatively rare, a recent case brought in Ohio state court illustrates the response anticipated of most insurers regarding claims made under policies containing such exclusions. In Warren Drilling Co., Inc. v. ACE American Insurance Company and Equitable Production Company, (Court of Common Pleas – Noble County, OH – Case No. 212-0085), a claim was brought by a homeowner against the driller of a hydraulic fracturing well for contamination to nearby drinking water and other resulting physical damages. The well driller then tendered the claim to ACE American Insurance, its general liability carrier, for defense and indemnity as to any damages awarded. ACE denied coverage based on a pollution exclusion which limited coverage to only sudden and accidental incidents of pollution. The well driller subsequently filed suit against ACE alleging bad faith in its denial of the claim. A Notice of Removal was filed in May 2012 however the matter was ultimately settled prior to trial in December 2012.