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FRACKING LAW: From Land Contract Negotiations to Environmental Disputes

ENVIRONMENTAL ISSUES RELATED TO HYDRAULIC FRACTURING

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INTRODUCTION

Natural gas is an ever increasing component of the nation's overall energy portfolio. The combination of unstable energy markets with improved technologies in horizontal drilling and hydraulic fracturing has led to the prevalent application of hydraulic fracturing in natural gas production. In particular, hydraulic fracturing is now used to access hydrocarbon-rich formations such as shale, tight sands, and coalbed methane, collectively referred to as unconventional resources.[2] Although hydraulic fracturing has been used in the oil and gas industry for several decades, its recent trend in unconventional reserves has enabled operators to access formations once thought to be undevelopable. Not surprisingly, however, the rapid development with the use of hydraulic fracturing is not without issues, and questions about its impacts on human health and the environment are being raised. In response to public concern, the Environmental Protection Agency ("EPA"), in 2011, initiated a coordinated effort to study the impacts of hydraulic fracturing; and as a part of this review, EPA will likely determine whether additional regulatory oversight is appropriate.[3] Nonetheless, because shale gas is widely viewed as an energy bridge, accessing these unconventional formations will continue, to be a part of the future as this country moves towards becoming an independent energy nation.

The first section of this paper addresses the most common environmental issues associated with hydraulic fracturing, primarily focusing on impacts to water resources and air quality. The paper also discusses other relevant environmental statutes that may impose additional regulatory oversight. The focus of this first section is generally limited to the federal regulatory framework while recognizing that hydraulic fracturing activities may also be subject to a complex set of state laws. A more detailed discussion about state regulations, in particular Utah's regulatory program, is presented in the second part of the paper. The second section of the paper focuses on (i) recent regulatory developments that seek to manage and minimize potential adverse impacts to the environment; (ii) crafting of contractual terms that address

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[2] Tight sands gas is natural gas trapped in low permeability and non-porous sandstones; shale gas is natural gas trapped in shale deposits which are sedimentary rock formations like those found in the Green River Formation spanning Colorado, Utah, and Wyoming; and coal-bed methane is natural gas that is trapped in coal seams.

[3] *See* EPA, Study of the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources: Progress Report, EPA 601/R-12/011 (Dec. 2012), *available at* http://www.epa.gov/hfstudy/pdfs/hf-report20121214.pdf.

potential environmental liabilities facing surface landowners and oil and gas companies; (iii) EPA's authority to investigate and respond to releases of hazardous substances and issue administrative orders requiring owners and operators of well sites potentially responsible for a release of hazardous substances to take response actions and to seek relief in a federal court; and, finally (iv) potential claims under environmental and state common law to protect surface landowners against liabilities arising from horizontal drilling and hydraulic fracturing techniques.

In light of what appears to be a long-term energy trend towards continued domestic development, understanding the environmental issues and regulatory programs governing hydraulic fracturing operations will be essential to any oil and gas operator.

OVERVIEW

Hydraulic fracturing is the process of injecting large volumes of high-pressure fluid consisting of water, sand, and a proprietary chemical mixture into the subsurface layers to break up tight geological formations and release natural gas reserves. The resulting fractures are held open by injecting "proppants," fine grains of sand or ceramic beads, which allow the oil and gas to flow through the rock formation into the production well.[4] When the injection pressure inside the well is reduced, the direction of the fluid is reversed, resulting in the return of flowback and produced waters (collectively referred to as "wastewaters")[5] to the surface. Due to the significant advancements in technology, hydraulic fracturing, along with horizontal drilling, has gained considerable momentum in the natural gas industry in recent years. In fact, it is projected that oil and gas production from unconventional reserves will more than double between 2010 and 2040; and by 2040, it is expected that these unconventional resources will make up nearly 80% of total United States' natural gas production.[6]

Of primary concern are the potential impacts to water resources and air quality from hydraulic fracturing operations. EPA is tasked with protecting both these resources under its authority granted by the Safe Drinking Water Act ("SDWA"), the Clean Water Act ("CWA") and the Clean Air Act ("CAA"). For example, the SDWA applies to natural gas activities because it moderates underground injection of hydraulic fluids as well as the injection of wastewater for long-term disposal. The CWA regulates surface discharges associated with natural gas drilling and production, as well as storm water drainage. The CAA is triggered because it is responsible for limiting air emissions associated with production and processing activities, including associated engines and equipment. In addition to these major federal programs, other federal regulatory regimes may also apply to hydraulic fracturing operations.

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[4] EPA, *supra* note 3, at 5.

[5] Flowback is the water-based fluid returned to the surface once hydraulic fracturing has occurred but before the well is placed into production. This composition of flowback water is often poorly characterized because the addition of chemicals and other additives are considered proprietary information. These waters generally contain clay material, chemical additives, and total dissolved solids (TSD). Produced water is naturally occurring water found in shale formations that flows to the surface throughout the entire lifespan of the well. This water also contains high levels of TDSs as well as dissolved hydrocarbons such as methane, ethane, and propane

[6] *See* Richard K. Lattanzio, CONGRESSIONAL RESEARCH SERVICE: AIR QUALITY ISSUES IN NATURAL GAS SYSTEMS: IN BRIEF 1 (Mar. 4, 2013).

These include the Comprehensive Environmental Responsibility, Compensation, and Liability Act ("CERCLA"), the Resource Conservation and Recovery Act ("RCRA"), the Toxic Substance Control Act ("TSCA"), Environmental Planning Community Right to Know Act ("EPCRA"), and at times even the Endangered Species Act ("ESA") may play a role in managing these operations.

In light of these numerous environmental regulations that govern hydraulic fracturing operations, and considering the potential liabilities arising from possible environmental contamination, the attendant contractual provisions, reporting requirements and insurance considerations for both the mineral owner and surface owner, are all the more significant.

I. ENVIRONMENTAL IMPACTS.

Perhaps the greatest environmental risk from hydraulic fracturing is the potential impact on water resources. Impacts to ground and surface waters may occur due to: (1) chemical mixing and the potential for surface spills; (2) well injection and the fracturing process; (3) surface spills on or near well pads of flowback and produced water; or (4) wastewater treatment and waste disposal of flowback and produced waters.[7] If mismanaged, the potential for contamination is real, considering that hydraulic fracturing fluid-while nearly 90% water-is also composed of sand and chemical additives, all of which are injected deep into the subsurface strata. These chemical additives typically contain acids, sodium chloride, polyacrylamide, ethylene glycol, borate salts, and other such compounds.[8] These additives are important, not only because they help open the fractures, but they also serve to reduce friction and prevent corrosion of the equipment. Given these facts, if one's hydraulic fracturing operations are not well managed, or well-casings not sufficiently engineered, fracturing fluid may escape and contaminate groundwater. In addition to concerns with the injection of chemicals, surface spills and leaky equipment may be equally hazardous if not properly regulated. In fact, surface spills on or near a well pad may pose the greatest risk to water resources. [9]

A. The Safe Drinking Water Act

The SDWA, enacted in 1974, is the main federal statute that ensures the quality of America's drinking water.[10] Under the SDWA, EPA sets standards for drinking water quality

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[7] In addition to concerns with groundwater and surface water contamination, hydraulic fracturing is also a water intensive process. The EPA is studying the potential impacts from large volume water withdrawals on ground and surface waters. For instance, depending on the shale formation, an operator may use two to four million gallons of water. *See* Terry W. Roberson, *Environmental Concerns of Hydraulically Fracturing A Natural Gas Well*, 32 UTAH ENVTL. L. REV. 67, 75 (2012).

[8] *See id.*

[9] *See* Nathan Atkinson & Katie King, *Flooding and Fracking: A Review of Extreme Weather Impacts on Drilling Activities*, 27 NAT. RESOURCES & ENVTL. 28 (Fall 2012); *see also* Lattanzio, *supra* note 6, at 5 (stating that in cases that have been investigated, "regulators typically have determined that groundwater contamination was caused by failure of well-bore casing and cementing, well operation problems, or surface activities, rather than the hydraulic fracturing process" itself).

[10] 42 U.S.C. § 300f to 300j (2006).

and often delegates the administration of this program to qualifying states.[11] Thirty-three states have approved primacy programs, including Utah.

The Underground Injection Control ("UIC") program is one of SDWA's primary regulatory programs that regulate the injection of fluids into subsurface areas while protecting underground drinking water sources. Under the UIC program, EPA is authorized to set and enforce water quality standards that apply to siting, construction, operation, and closing injection wells.[12] Under this authority, EPA has established six classes of underground injection wells based on categories of material being injected. Class II wells are those that are managed for the injection of fluids associated with oil and gas development. Typically, the administration of Class II wells has been delegated to the states, and in Utah, the Division of Oil, Gas and Mining ("DOGM") manages this program. Class II wells are primarily used for enhanced recovery activities; although a small portion of currently permitted Class II wells are used to dispose of wastewater. With the current trend in hydraulic fracturing operations, it is expected, however, that a noticeable increase in permitted Class II wells for long-term disposal of wastewater will be forthcoming.[13]

Class II wells have been an important part of the oil and gas industry, although their relevancy to hydraulic fracturing operations was partially curtailed by the Energy Policy Act of 2005 ("EP Act"). Under the EP Act, Congress amended the SWDA's definition of "underground injection" to exclude "the underground injection of fluids or propping agents (other than diesel fuels) pursuant to hydraulic fracturing operations related to oil, gas or geothermal production activities."[14] Presumably, the amendment was intended to reflect the fact that fluid used in hydraulic fracturing is not injected for long-term disposal and, therefore, outside the scope of the Class II permitting requirements.[15] However, this exclusion does not extend to hydraulic fracturing activities that use diesel fuels in the fracking fluid. Thus, injections associated with hydraulic fracturing that use "diesel fuels" remain subject to the UIC requirements for Class II wells.

What constitutes "diesel fuels" for purposes of the UIC program remains unclear, and neither the SDWA, the EP Act, nor any EPA regulations define "diesel fuels." To resolve this regulatory deficit, EPA commenced rulemaking on May 10, 2012, publishing draft permitting

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[11] For a list of primacy programs in the country see http://water.epa.gov/type/groundwater/uic/Primacy.cfm.

[12] Safe Drinking Water Act ("SDWA"), 42 U.S.C. § 300h; U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-12-874, UNCONVENTIONAL OIL AND GAS DEVELOPMENT: KEY ENVIRONMENTAL AND PUBLIC HEALTH REQUIREMENTS 18 (2012) [hereinafter GAO REPORT].

[13] *See* Mary Tiemann & Adam Vann, CONGRESSIONAL RESEARCH SERVICE: HYDRAULIC FRACTURING AND SAFE DRINKING WATER ACT REGULATORY ISSUES 12 (2013).

[14] *See* Energy Policy Act, 42 U.S.C. § 300h(d).

[15] Scott E. Stewart, *Risks of the Uncontrolled Patchwork: Misperception of Existing Environmental Regulation of Unconventional Oil and Gas Development Could Severely Damage a Critical Industry and Lead to Poor Environmental Policy*, TERRALEX 2 (Oct. 2012), *available at* http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&cad=rja&ved=0CDUQFjAA&url=http%3A%2F%2Fwww.terralex.org%2Fcalendar%2Fevent%2F26fcb07256%2Fdownloadfile%3Ffileid%3D3d82362829&ei=setRUbLGOYTbyAGz7oCIDA&usg=AFQjCNHIRpekzyXe_jBrWtUyQV3WshC0_g&sig2=wkCeeR5Vcz9D59WJDMBrjQ&bvm=bv.44342787,d.aWc. [hereinafter Stewart].

guidance, which in part, attempts to define "diesel fuels."[16] In this effort, EPA recommends using six Chemical Abstracts Service Registry Numbers ("CASRNs") to make this determination.[17] These six CASRNs were selected by EPA because either their primary name or common synonyms contained the term "diesel fuel" and they meet the chemical and physical properties of "diesel fuel" as defined under the Toxic Substances Control Act ("TSCA").[18]

In addition to defining "diesel fuels," the proposed guidance also addresses various aspects of the overall permitting processing of the hydraulic fracturing operation. For instance, the proposed rule considers whether to authorize multiple wells through area permits; what the permit duration should be and the applicability of UIC's well closure requirements; what materials should be submitted with a permit application; recommendations for the construction, operation and mechanical integrity requirements for wells; monitoring and reporting requirements; plugging and abandonment provisions; and what types of financial responsibilities should be imposed.[19] These proposed rules only apply to states where EPA directly implements the UIC Class II program.[20] Therefore, because Utah is a delegated state, it would not be subject to these rules. Until the proposed guidance is final, EPA will continue to make permitting decisions on a case-by-case basis.[21]

B. The Clean Water Act

Hydraulic fracturing operations are also subject to the CWA's regulatory framework, which regulates the discharge of pollutants into waters of the United States.[22] Under this authority, EPA regulates the discharge of pollutants by setting water quality standards for surface contamination and creating wastewater standards for industry.

The National Pollution Discharge Elimination System ("NPDES") is the permitting program under which the EPA manages discharges.[23] The NPDES program applies to both the management and disposal of wastewaters, as well as stormwater discharges. Like other federal statutes, the NPDES program has largely been delegated to qualifying states, including Utah.

Typically, hydraulic fracturing wastewaters are stored on-site in impoundments or tanks. Eventually fluids are either recycled and re-injected into wells, or transferred off-site to a publicly owned treatment works facility ("POTW") for disposal. Currently, wastewaters

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[16] Permitting Guidance for Oil and Gas Hydraulic Fracturing Activities Using Diesel Fuels—Draft: Underground Injection Control Program Guidance #84, 77 Fed. Reg. 27,451 (May 10, 2012).

[17] *Id.* at 27,453.

[18] *Id.*

[19] *Id.* at 27,452-56.

[20] *See* Request for Comment on Draft Guidance Document, Permitting Guidance for Oil and Gas Hydraulic Fracturing Activities Using Diesel Fuels—Draft: Underground Injection control Program Guidance #84, 77 Fed. Reg. 27,451-52 (May 10, 2012).

[21] *Id.* at 27,452.

[22] Clean Water Act, 33 U.S.C. §§ 1251 to 1387 (2006).

[23] 33 U.S.C. § 1342.

associated with shale gas production are prohibited from being directly discharged into waters of the United States; thus, the NPDES effluent limitations program does not apply. [24] Instead, because these wastewaters are often sent to a POTW for treatment and disposal EPA's pretreatment standards apply. However, many POTWs are not equipped to treat these types of wastes and EPA has not established any pretreatment standard for the industry. However, in October 2011, EPA announced its intent to do so, although, to date, no such pretreatment standards have been issued. Notably, some states have even discussed banning all POTWs from accepting wastewater associated with hydraulic fracturing.[25] Nonetheless, until a final rule is promulgated, the general requirements prohibiting the discharge of pollutants to a POTW that cause pass through or interference with the POTW's permit compliance impose *de facto* pretreatment standards.

The NPDES program also governs stormwater discharges. The CWA limits EPA's authority to regulate stormwater discharges from oil and gas operations, and does not require a discharge permit for runoff from gas exploration, production, processing, or treatment operation or transmission facilities.[26] In 2005, Congress, through the EP Act expanded this exclusion, leading EPA to issue a new rule to address these amendments.[27] However, the rule was subsequently challenged by the Natural Resources Defense Council and vacated by the Ninth Circuit Court of Appeals.[28] As a result, the exemption reverts back to the original statutory limitation, meaning an operator only needs to obtain a permit for contaminated stormwater that includes a reportable quantity of a pollutant or for a discharge that will contribute to a violation of a water quality standard.[29]

C. Air Quality Impacts

The CAA of 1970 and its implementing regulations provide a comprehensive regulatory program that protects and enhances the nation's air quality.[30] EPA achieves this by regulating emissions from stationary and mobile sources. Among other things, the CAA authorizes EPA to establish standards and regulate two primary types of air pollutants: (1) Criteria Air Pollutants, and (2) Hazardous Air Pollutants ("HAPs"). The CAA's regulations apply to hydraulic fracturing because these operations results in significant emissions from various sources. For example, hydraulic fracturing requires the use of diesel-powered engines; compressors, and pneumatic controllers, all of which emit pollutants. In addition, natural gas emissions are associated with flowback, including a significant amount of volatile organic compound ("VOCs") emissions. Lastly, the CAA's provisions are also applicable because the oil and gas industry is now subject to EPA's greenhouse gas ("GHG") reporting rule.

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[24] GAO REPORT, *supra* note 12, at 24.

[25] Atkinson & King, *supra* note 9, at n.9.

[26] 33 U.S.C. §§ 1342 (K)(2) and 1362(24) (defining the term "oil and gas exploration and production").

[27] Roberson, *supra* note **Error! Bookmark not defined.**, at 84.

[28] *See* Natural Res. Def. Council v. EPA, 526 F.3d 591 (9th Cir. 2008).

[29] GOA REPORT, *supra* note 12, at 26 (citing 40 C.F.R. §§ 117.21, 302.6, 110.6 which include the reportable quantities triggering the permit requirements).

[30] Clean Air Act, 42 U.S.C. §§ 7401-7671q (2006).

1. Criteria Air Pollutants

Pursuant to section 109 of the CAA, EPA sets (and periodically revises) national ambient air quality standards ("NAAQS") for six criteria pollutants. These include: ozone (O_3), carbon monoxide (CO), particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and lead. EPA sets the NAAQS for these criteria pollutants at levels that reflect the maximum amount allowable in order to protect public health and welfare. Once the NAAQS are established, section 110 of the CAA requires states, and their local air agency, to develop and submit for EPA approval, a State Implementation Plan ("SIP") that establishes how the state will meet these standards.

Emissions of criteria air pollutants may result from both mobile and stationary sources at hydraulic fracturing sites. Of particular relevance are emissions of nitrogen dioxides and particulate matter ("PM") caused by diesel exhaust from mobile sources. Notably, nitrogen oxides may contribute to the formation of ozone.[31] To address those mobile sources, EPA has implemented stringent diesel emission standards that apply to diesel-powered engines like those used to move materials between well sites. These diesel rules also apply to compressors used to drill and hydraulically fracture wells.

EPA also maintains responsibility for regulating emissions from stationary sources, such as wells and related casing head, tubing head, pumps, compressors, heater treaters, storage vessels, pneumatic devices and dehydrators.[32] These emission sources are known to emit both criteria air pollutants (as discussed above) and HAPs (discussed below).

The CAA includes three main regulatory programs to regulate emissions from stationary sources. These include: (1) New Source Performance Standards ("NSPS"), which apply to new stationary facilities or modifications of these facilities that result in an increase in emissions of one or more of the six criteria pollutants or a precursor; (2) National Emission Standards for Hazardous Air Pollutants ("NESHAPs") that impose emission standards for hazardous air pollutants at an industrial source; and (3) the New Source Review ("NSR") program which implements standards for new and modified major sources of emissions.

2. New Source Performance Standard and National Emission Standards for HAPs

Section 111 of the CAA authorizes EPA to develop emission standards for new or modified stationary sources if these sources will cause or contribute significantly to air pollution that is likely to endanger the public health or welfare.[33] This is known as the New Source Performance Standard ("NSPS") program. The NSPS regulates criteria air pollutants, and its precursors such as VOCs, by requiring technology-based performance standards that reflect

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[31] U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-12-261, DIESEL POLLUTION: FRAGMENTED FEDERAL PROGRAMS THAT REDUCE MOBILE SOURCE EMISSIONS COULD BE IMPROVED (2012).

[32] Oil and Natural Gas Sector: New Source Performance Standards and National Emissions Standards for Hazardous Air Pollutants Reviews, 76 Fed. Reg. 52,738, 52,744 (Aug. 23, 2011) (to be codified at 40 C.F.R. pts. 60 & 63).

[33] 42 U.S.C. § 7411.

emission limits achievable by the "best system of emission reduction."[34] The NSPS program is particularly relevant to hydraulic fracturing operations because they emit large amounts of VOCs from a variety of stationary sources including wells, compressors, pneumatic controllers, storage vessels, pumps, and vehicles.

Section 112 of the CAA is similar to section 111 in that it also requires EPA to establish comparable standards for major sources of HAPs under the National Emissions Standards for Hazardous Air Pollutants ("NESHAP") program.[35] Under this program, EPA identifies industrial sources of HAPs and then imposes emission standards known as NESHAPs. These NESHAPs are applicable to both new and existing sources of HAPs for both "major sources" and "area sources." A major source is defined as one with the potential to emit 10 tons or more per year (tpy) of a single HAP or 25 tpy of a combination of pollutants.[36] An "area source" is all other sources not defined as a major source. The program requires EPA to develop technology-based standards that require emission levels met using maximum achievable control technology ("MACT") based on the best existing facilities.[37] The most common regulated HAPs include benzene, toluene, ethylbenzene and xylene ("BTEX") compounds, carbonyl sulfide, and n-hexane.[38] Currently, EPA has identified 189 HAPs, of which only a handful apply to the oil and gas industry. Nonetheless, the presence of any HAPs triggers federal oversight.

On August 16, 2012, EPA published the final rule affecting NSPS and NESHAP standards for the oil and gas sector.[39] While there are many components of this rule, it was largely promulgated to control VOC emissions from natural gas wells and affiliated machinery, as well as set new source performance standards for sulfur dioxide emissions from these same sources.[40] Most significantly, the final rule seeks to reduce VOC emissions by requiring gas wells drilled principally for the production of natural gas, to implement "green completion" technology by January 1, 2015. The "green completion" process-also referred to as "reduced emissions completions" or "RECs"-captures and separates the natural gas that enters the atmosphere with flowback water. This gas, otherwise vented, will be required to be captured, cleaned, and routed to a collection system, or reinjected into the well, or used as an on-site fuel source.[41] These new rules also expand on the existing standards for VOCs released from gas wells, compressors, pneumatic controllers, and storage wells by requiring these sources to achieve at least a 95% reduction of VOC emissions.[42] Certain provisions under the new rules have already taken effect and others will be applicable in the near future. EPA estimates that

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[34] 42 U.S.C. §§ 7411(a)(2), (4); *see also* Lattanzio, *supra* note 6, at 9.

[35] 42 U.S.C. § 7412.

[36] GAO REPORT, *supra* note 12, at 32.

[37] Lattanzio, *supra* note 6, at 10.

[38] *Id*.

[39] *See* Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews, 77 Fed. Reg. 49,490 (Aug. 16, 2012) (to be codified at 40 C.F.R. pts. 60 & 63).

[40] *Id.*

[41] Lattanzio, *supra* note 6, at 10.

[42] *Id.*

nearly 11,000 newly fractured wells will be required to use "green completion" techniques to capture and treat flowback emissions and approximately 1,400 refractured wells will also be impacted.[43]

The final rule also affects the NESHAPs for natural gas well sites, boosting stations, processing plants, transmission compressor stations, and various associated equipment. The rule revises the existing NESHAPs to establish MACT standards for small dehydrators (historically unregulated under NESHAP), strengthens the leak detection and repair requirements, and retains existing NESHAPs for storage vessels.[44] The new rules also include provisions affecting "source determinations," which impact whether a site is a major source of HAPs, which is one with the potential to emit HAPs in excess of 10 tpy of any single HAP or 25 tpy of two or more HAPs combined. Under the new rule, only emissions from equipment, other than wells or associated equipment may be aggregated.[45] Also of significance are the new flaring requirements. After Jan. 1, 2015, flaring will no longer be allowed to reduce pollution and all operators must employ "green completion" techniques to capture rather than combust gas that would otherwise escape during well completion. These NSPS and NESHAP rules are being phased-in overtime in order to provide industry time to develop appropriate machinery and to be trained in the "green completion" process.

3. New Source Review

The NSR program is a preconstruction permitting program implemented by the EPA under the CAA. Under the NSR program EPA requires new or modified "major sources" that emit air pollutants to obtain permits prior to beginning construction. The NSR program consists of three preconstruction permitting programs: (1) nonattainment NSR; (2) prevention of significant deterioration (PSD) (Title V permits); and minor NSR.

Historically, the EPA has not explicitly required hydraulic fracturing emissions to be authorized under the NSR program, most likely because these emissions qualify as "*de minimis*" or temporary. Certain states, however, do impose NSR permit authorization for well emissions, while others apparently assume these emissions are permitted by rule or fall within some other exemption. Whether NSR permits are required is somewhat governed by the "source determination" regulations of the CAA, which determine what qualifies as a single stationary source for purposes of title V authorization.[46]

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[43] See EPA: Overview of Final Amendments to Air Regulations For the Oil and Natural Gas Industry: Fact Sheet.

[44] Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews, 77 Fed. Reg. 49,492 (Aug. 16, 2012) (to be codified at 40 C.F.R. pts. 60 & 63).

[45] *Id.* at 49,568-71.

[46] Recently, the Sixth Circuit overruled an EPA "single emission source" determination for purposes of title V. *See Summit Petroleum Corp. v. EPA*, 690 F.3d 733 (6th Cir. 2012). In that case, the EPA concluded that Summit Petroleum's plant and related wells were a single stationary source and its aggregated emissions were sufficient to require a title V permit. The Sixth Circuit reversed, finding the term "adjacent" only related to physical proximity, thus EPA's claim of "functional interrelatedness" was not sufficient to aggregate the sources. In response to this recent decision, EPA issued a memorandum explaining that its long-standing practice of considering "functional interrelatedness" remains valid outside the Sixth Circuit but will no longer be applied within that jurisdiction. *See*

4. Greenhouse Gas Reporting

EPA's mandatory GHG reporting rule became effective at the end of 2009 when EPA implemented reporting requirements for certain source categories.[47] The purpose of the reporting rule was for EPA to understand potential impacts on climate change which in turn would guide subsequent policy and regulations. In 2012, EPA issued a new rule to impose the GHG reporting rule to the Petroleum and Natural Gas Systems sector, which includes gas wells. EPA identified potential GHG emissions sources at oil and gas well sites, including combustion sources such as engines, and process sources (pneumatic devices, dehydrators, and compressors) such as equipment leaks and vented emissions. This rule requires natural gas facilities including oil and gas well sites that emit 25,000 metric tons or more of carbon dioxide equivalent per year to report their annual emissions. These operators are specifically required to report annual emissions of carbon dioxide, methane, and nitrous oxide from equipment leaks and venting, gas flaring, and stationary and portable combustion.[48] EPA estimates that nearly 467,000 wells will be subject to this rule.

D. Comprehensive Environmental Response, Compensation, and Liability Act and Resource Conservation and Recovery Act

CERCLA was passed in 1980 to protect public health by requiring the cleanup of releases of hazardous substance.[49] CERLCA is a strict liability statute that includes reporting responsibilities as well as mandatory cleanup action. Specifically, under CERCLA EPA has investigative and response authority-meaning EPA may conduct investigations of any release, including response actions, and may also respond to a release and issue administrative orders requiring responsible parties to clean up the property. Thus, CERCLA's section 103(a) provisions, requiring an operator to notify the National Response Center ("NRC") of any spill or other release of a hazardous substance in reportable quantities may apply to a natural gas operator.

RCRA, known as the "cradle to grave" statute is similar to CERCLA in that it also authorizes EPA to regulate hazardous wastes.[50] However, both CERCLA and RCRA include a petroleum exclusion clause, discussed in more detail in section II.C. Thus, while hazardous substances such as benzene are exempt under CERLCA's petroleum exclusion, studies have shown that flowback water from hydraulic fracturing operations include as many as eleven

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Memorandum from Stephen D. Page, Director, Office of Air Quality Planning and Standards (Dec. 21, 2012) (regarding the applicability of the *Summit* decision to EPA title V and NSR source determinations), *available at* http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&cad=rja&ved=0CDUQFjAA&url=http%3A%2F%2Fwww.epa.gov%2Fregion07%2Fair%2Fnsr%2Fnsrmemos%2Finter2012.pdf&ei=f_JRUdCgFqiLywHgpoFI&usg=AFQjCNGWSHd-iEWm3et7Fn1BTg2we4XreA&sig2=GjLuFM1MLikebJ4Fxch0Kw&bvm=bv.44342787,d.aWc.

[47] Mandatory Reporting of Greenhouse Gases, 74 Fed. Reg. 56,260 (Oct. 30, 2009) (to be codified in scattered parts of 40 C.F.R.).

[48] 40 C.F.R. §§ 98.232(C), (c)(12-13) (addressing well flaring), (c)(21) (addressing leaks), (c)(22) (addressing combustion).

[49] 42 U.S.C. §§ 9601 to 9675 (2006).

[50] 42 U.S.C. §§ 6901to 6987 (2006).

hazardous substances that, if present, could trigger CERCLA liability. Similarly, Congress exempted waste generated in the oil and gas industry from RCRA's Subtitle C regulations. This does not, however, preclude these materials from RCRA's Subtitle D regulations. Moreover, EPA has taken the position that the RCRA Subtitle C exemption is narrow, and does not include transportation and manufacturing wastes; nor does it exclude wastes which are not "uniquely associated" with exploration, development, and production activities.[51] Furthermore, a pending petition filed by the Natural Resource Defense Council seeks to enforce RCRA's extensive regulatory program to drilling fluids and produced waters.[52] EPA has not responded to this petition and is not currently engaged in any rulemaking to this effect.[53] Clearly, both CERCLA and RCRA's regulatory programs are and will remain relevant to hydraulic fracturing operations.

E. The Emergency Planning and Community Right-to-Know Act

The EPCRA provides information to the public concerning chemicals in their community.[54] There are two provisions under this statute which apply to the oil and gas industry: (1) section 304(a) includes the release notification, which requires a company to notify state and local emergency planning authorities of certain releases that would affect the community; and (2) the chemical storage reporting provisions of EPCRA, which include an annual inventory submission detailing chemical information to state and local emergency planning authorities that may also apply to a natural gas operator. In addition, although EPCRA's Toxics Release Inventory ("TRI"), a publicly available database, including information about chemical releases at industrial facilities, does not apply to oil and gas well sites at this time, a pending petition requests EPA to require TRI reporting for hydraulic fracturing operations.

F. The Toxic Substance Control Act

The TSCA authorizes EPA to regulate the manufacture, processing, and use distribution in commerce, and disposal of chemical substances and mixtures.[55] As part of EPA's current study of the impacts of hydraulic fracturing on drinking water resources, the agency is reviewing a list of chemicals used in hydraulic fracturing operations and determining if these chemicals are on the TSCA inventory list. EPA is considering a more comprehensive rulemaking process under TSCA as that regime applies to hydraulic fracturing. It is not known when proposed rulemaking will be published.

II. PROTECTING SURFACE LANDOWNERS AND MINERAL OWNERS

Now that we have reviewed the potential environmental regulatory framework governing hydraulic fracturing operations, including a discussion of potential environmental liabilities, the

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[51] *See* Stewart, *supra* note 15, at 2-3.

[52] Roberson, *supra* note **Error! Bookmark not defined.**, at 87.

[53] Rebecca W. Watson & Nora Pincus, *Hydraulic Fracturing as a Subsurface Trespass: Will Texas Precedent Lead the Way?*, 49 ROCKY MTN. MIN. L. FOUND. J. 235, 256-258 (2012).

[54] 42 U.S.C. §§ 11001 to 11050 (2006).

[55] 15 U.S.C. § 260.

following section of the paper focuses on specific regulatory developments, contract terms, including insurance, reporting obligations and environmental and common law claims that may serve to minimize the surface landowner's potential liability.

A. Regulatory Developments

In order to understand some of the recent regulatory developments in Utah, it is important to first understand the legal relationship between mineral and surface estates. In Utah, the mineral estate is generally considered the dominant estate and the surface is the subservient estate. Unless the mineral interests have been severed from the surface, the owner of the surface land owns the minerals.[56] Ownership of the mineral estate includes, among other things, the right to develop, to lease, to bonus payments, and to royalties.[57] The right to develop is generally exercised by entering into an oil and gas lease agreement. As the dominant estate, the lease includes the right of the mineral interest owner to use as much of the surface estate as may reasonably be necessary to develop the mineral estate.[58] The mineral owner generally has the right of ingress and egress, to construct roads, to use reasonable amount of water, to construct production and storage facilities and to conduct seismic operations.[59] Some of these rights are subject to and, therefore, restricted by federal, state or local laws, regulations, or ordinances.

As discussed above, surface landowners should be concerned with environmental issues that could potentially cause damage to surface land and the underlying groundwater during the development of the mineral interest using horizontal drilling and hydraulic fracturing techniques.[60] Many of these concerns focus on potential leaks and spills and disposal issues related to produced water and flowback water containing hydraulic fracturing fluids.[61] Several states, including Utah, have adopted rules that regulate the technical aspects of hydraulic fracturing operations, including drilling, completing, producing, plugging and abandonment of well, as well as require disclosure of chemical substances used in hydraulic fracturing fluids.[62] More specifically, the hydraulic fracturing rules adopted by the Utah DOGM provide for the management of flowback water and surface protection measures, such as storage requirements,

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[56] *See* Kanawha & Hocking Coal & Coke Co. v. Carbon Cnty., 535 P.2d 1139, 1140 (Utah 1975).

[57] Res. Mgmt. Co. v. Weston Ranch & Livestock Co., 706 P.2d 1028, 1033 n.4 (Utah 1985).

[58] *See* NATIONAL BUSINESS INSTITUTE, FRACKING: LAND LEASE NEGOTIATIONS AND ENVIRONMENTAL CONCERNS 16-17 (2012).

[59] *See id.*

[60] The drilling of horizontal wells with hydraulic fracturing has the benefit of limiting the number of wells drilled and pads needed to support the operations. This effectively reduces the surface footprint of the development and consequently the impacts of drilling on the surface landowner. *Id.* at 17.

[61] In addition, landowners and mineral interest owners may also be concerned with other externalities of hydraulic fracturing operations, such as heavy traffic, excessive noise and seismic activity. *Id.* at 25-26. Development of oilfields involves the use of heavy trucks. While mineral owners may focus on the location of access roads for well drilling purposes, surface owners will be interested in the location of access roads to minimize the potential for surface land damage. Hydraulic fracturing drilling operations also involve a lot of heavy equipment and personnel that generate considerable noise. Depending on the location of the wells and landowner's use of land, noise from the drilling and post well completion activities can be an issue. In addition, there have been claims that hydraulic fracturing drilling or the disposal of hydraulic fracturing fluids have caused or contributed to seismic events.

[62] *See* Utah Admin. Code R649-3-39 (2012).

reserve pit and on-site pit management processes and waste management.[63] Operators conducting hydraulic fracturing operations are required, effective November 1, 2012, to report the amount and type of chemicals used to www.fracfocus.org within sixty days of hydraulic fracturing completion.[64]

These rules also include pollution and surface damage controls that require operators to take all reasonable precautions to avoid polluting land, surface water, and groundwater.[65] At a minimum, the owner or operator must take reasonable steps to prevent and must remove accumulations of oil or other materials deemed to be a fire hazard from the vicinity of wells, tanks and pits; provide secure workmanlike storage for chemical containers, barrels, solvents and hydraulic fluid; maintain tanks in a workmanlike manner that will prevent leaking and construct secondary containment around tanks stored on the property; maintain tops on crude or produced water storage tanks, except during well testing operations; and control leaks and drips, contain spills and cleanup promptly.[66] Owners or operators must dispose of produced water, tank bottoms and other miscellaneous waste in compliance with Utah's hydraulic fracturing rules and other state, federal or local regulations or ordinances.[67] In addition, small onsite field pits, including, but not limited to, reserve pits, emergency pits, workover and completion pits, storage pits, pipeline drip pits and sumps must be located and constructed to contain fluids and not cause pollution of waters and soils.[68]

With the sudden proliferation of oil and gas operations in eastern Utah, including hydraulic fracturing operations, DOGM recently established, in conjunction with S.B. 77 passed by the Utah Legislature in the 2012 General Session, standards for oil and gas well operators and surface landowners when there is privately-owned surface land overlying a separate party's privately owned mineral resources. Because of the perceived or real inequality in the bargaining power of an oil company and a private surface landowner, the purpose of the rule is to prevent private landowners from unreasonable losses while mineral owners or operators exercise their rights to enter the surface property.[69] The rule encourages mineral owners or operators and surface landowners to enter into surface use agreements.[70] These agreements are intended to address the use and reclamation of surface land owned by the surface land owner and provide compensation for damage to the surface land caused by oil and gas operations that result in a loss of the surface land owner's surface land crops, loss of value of existing siting improvements on the surface land owned by the surface landowner and permanent damage to the surface land.[71] Should a dispute arise, either party may request non-binding mediation if they are unable to

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[63] *Id.* R649-3-39.3.

[64] *Id.* R649-3-39.1.

[65] *Id.* R649-3-39-3.1.1; *see also id.* R649-3-15 (addressing Pollution and Surface Damage Control).

[66] *Id.* R649-3-39-3.1.2.

[67] *Id.* R649-3-39-3.1.2.7.

[68] *Id.* R646-3-39.3.2.

[69] *See* NATIONAL BUSINESS INSTITUTE, *supra* note 58, at 17.

[70] Utah Admin. Code R646-3-38 (2013).

[71] *Id.* R646-3-38.2.6-.3.

reach agreement on the amount of damages for unreasonable loss of crops, value to existing surface land improvements or permanent damage to the surface land.[72] Subject to certain conditions, if the parties cannot reach agreement on the terms of a surface use agreement, then the mineral owner or operator must furnish, in addition to other bonding requirements, such as well plugging and abandonment and restoration, a surface use bond in the amount of $6,000 per well site. The bond must be conditioned on the performance by the mineral owner or operator of the obligation to protect the surface landowner against such unreasonable loss.[73] Except as is reasonably necessary to conduct oil and gas operations, a mineral owner or operator must mitigate the effects of accessing the surface landowners surface land, minimize interference with the surface landowner's use of the surface land and compensate a surface landowner for the unreasonable loss of surface land crops, unreasonable value of existing improvements on the surface land owned by the surface landowner and unreasonable permanent damages to the surface land.[74]

Consideration of surface damages should include both the extent of the temporary use of the surface land during well drilling operations and the more permanent use of the surface land for access roads, pad sites, pipelines and facilities related to processing and compression, including storage tanks for oil or produced or flowback water, separators, compressors and well monitoring equipment.[75] The value of the surface land, the use or potential use of the surface land and revenues lost due to the operations on the surface land also need to be considered in understanding the potential for surface damages.[76] Surface damage payments are typically one time payments and are negotiated before access to the surface land is granted. These payments are sometimes not paid until after the well drilling operations when the drilling locations have been identified.[77]

B. Contractual Protections for Surface and Mineral Owners

Although a private surface landowner would likely not have negotiating leverage, private mineral owners may have leverage to seek favorable lease terms with an oil and gas company, particularly when the company is ready to drill on a particular tract, knows what type of production to expect, and wants the lease.[78] For more complex projects involving horizontal drilling using hydraulic fracturing techniques, private landowners and mineral owners should seek from oil and gas companies certain representations and warranties and indemnity provisions that adequately identify environmental issues and suitably and reasonably address the allocation of liabilities. Representations and warranties from the oil and gas company might include that the operations will be in compliance with all applicable environmental laws; that the operations have all necessary environmental permits and licenses; that the operations will be in compliance

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[72] *Id.* R646-3-38.5.

[73] *Id.* R646-3-38.6, 6.2.

[74] *Id.* R646-3-38.4.1.

[75] *See* NATIONAL BUSINESS INSTITUTE, *supra* note 58, at 16.

[76] *Id.*

[77] *Id*.

[78] *Id.* at 19.

with all material terms of such environmental permits and licenses; and that the operations will not create any environmental contamination on the surface land or underlying groundwater. The oil and gas company may seek representations and warranties from the surface landowner that, except for environmental conditions disclosed on a schedule, there is no known environmental contamination on the surface property, that there are no known notices or claims involving environmental issues or liabilities relating to the surface property and that the surface property is not subject to any contingent liabilities relating to its environmental condition. These types of provisions establish a baseline that serves to distinguish existing from future environmental conditions that could arise from drilling and well operations on the property.

Depending on the relative negotiating leverage of the parties, environmental indemnification provisions can potentially be the subject of intense negotiations between the surface and mineral owner and the oil and gas company. Generally, the outcome of the negotiations will depend on which party enjoys greater leverage in the transaction. Environmental indemnities now found in lease agreements concerning hydraulic fracturing techniques include full indemnifications by the oil and gas company for all environmental liabilities associated with the operations. The scope of environmental indemnification provisions can be the subject of further negotiations involving baskets and caps on the dollar amounts that limit the indemnity; shared costs for certain environmental liabilities that are subject to indemnification; financial assurances or even insurance policies to support the indemnity; survival periods; control over the remedial action decisions required in response to an environmental indemnification liability; and the terms of the actual performance of any remedial action (*e.g.*, access, cleanup standards, agreements with the environment oversight agency).

A review of an executed oil and gas lease in the Barnett Shale play near Ft. Worth, Texas between a surface landowner who owns the mineral right or the right to produce minerals and an oil and gas company using horizontal drilling and hydraulic fracturing techniques, where apparently the mineral estate owner held considerable leverage, is instructive. The Barnett lease contains several environmental provisions, including provisions concerning reclamation, spills, damages, liability and hold harmless, environmental issues, and insurance, which are protective of the surface landowner. Following are excerpts of some of these provisions:

1. Reclamation

As soon as possible, or upon the request of the Lessor, after the conclusion of drilling and completion operations on each well, whether a dry hole or producing well, all pits shall be emptied by vacuum truck and the contents thereof disposed off of the Land and, unless otherwise directed by Lessor, all pits shall be backfilled and leveled. . . . Any materials and equipment used on the Land deemed not necessary for continued access to a productive well shall be dug up and hauled off by Lessee and Lessee shall have the area cleaned up. Lessee shall have the original or similar top soil replaced, leveled and restored to as near its original condition as reasonably possible and shall have the area seeded with native grass species approved by the Lessor.

2. Spills

Lessee hereby agrees that it will use its best efforts to prevent the escape of salt water, oil, noxious waters or other substances and will not permit the same to run into any surface water tank, water well, creek, ravine, or pond or over the premises, nor to penetrate, seep or flow or be injected into any subsurface fresh water strata, but will contain and dispose of the same in keeping with prudent operations and applicable government rules and regulations. All storage tanks on the Land shall have adequate spill containment around them that hold the capacity of the largest storage tank, plus a[n] allowance for a 6 inch rainfall. In any case, Lessee shall reasonably cooperate with Lessor as to the manner in which the surface is restored.

3. Damages

Lessee shall be liable for all damages to the Land (including, without limitation, damages to any improvements, growing crops, personal property, pasture land and livestock) that may be caused by Lessee's operations. The reasonable value for actual damages to the surface of the Land shall be the amount specified below which shall be paid prior to the commencement of each operation described.

. . .

[Lease agreement sets fixed damages - $10,000 per total acre used for the well site, $10,000 for each subsequent wellbore drilled by Lessee; payment of all roads built located off of a well site at $10.00 per linear foot of road; payment for all pipelines located off a well site at $10.00 per foot of pipeline.]

. . .

The foregoing amounts shall not be considered payment for any damages which are in excess of the type normally associated with the stated activity. Additional surface damage compensation shall be due for any excessive or unreasonable surface damages caused by Lessee's operations.

4. Liability/Hold Harmless

(a) Lessee hereby agrees to exonerate, indemnify, defend, release, discharge, and hold harmless Lessor (including, without limitation, Lessor's heirs, directors, attorneys, accountants, auditors, officers, employees, partners, agents, independent contractors . . . and their respective successors and assigns) of and from all and any actions or causes of action of every nature, or other harm, *including environmental harm*, for which recovery of damages is sought … caused by [L]essee's operations on wells located on the Land . . . , or on drillsites located on the Land hereunder . . . , or that may arise out of or to be occasioned by any breach of any of the terms or provisions of this lease, including, without limitation, any negligent or strictly liable act or omission of Lessee. Lessee's obligations under this section shall survive the termination of this lease for five (5) years. (Emphasis added.)

(b) Lessee hereby agrees to be liable for its heirs, directors, officers, employees, partners, agents, independent contractors . . . , against any and all claims, liabilities, losses,

damages, actions, personal injury (including death), costs and expenses, or other harm for which recovery of damages is sought, including, without limitation, losses and expenses, attorney fees, expert fees and court costs, under any theory including tort, contract, or strict liability, including attorneys' fees and other legal expenses, *including those related to environmental hazards, on the leased premises or lands pooled therewith or in any way related to Lessee's failure to comply with any and all environmental laws, arising from or in any way related to Lessee's use of the surface of said lands*, and those that may arise out of or be occasioned by any breach of any of the terms or provisions of this lease . . . . (Emphasis added.)

5. Environmental Issues

(a) Lessee shall use the highest degree of care and all reasonable safeguards to prevent contamination or pollution of any environmental medium, including soil, surface waters, groundwater, sediments, and surface or subsurface strata, ambient air or any other environmental medium, in, on, or under, said lands or any lands pooled therewith or drilled therefrom, by any waste, pollutant, or contaminant. Lessee shall not bring, or permit to remain on said lands, any asbestos containing materials, explosives, toxic materials, or substances regulated as hazardous wastes, hazardous materials, or hazards substances except ordinary products commonly used with oil and gas exploration and development operations and stored in the usual manner and quantities.

. . .

(b) Lessee shall cause and/or shall be liable for, the cleanup, remedy, repair, removal, or response actions undertaken pursuant to CERCLA or any other environmental law or regulation, related to contamination and/or damage caused by the presence of any hazardous materials in, on, under, or about said lands as a result of Lessee's operations on said Land, in conformance with the requirements of applicable law.

(c) Lessee shall immediately give Lessor written notice of any breach or suspected breach of this section, upon learning of the presence of any hazardous materials, or upon receiving a notice from any governmental agency pertaining to hazardous materials which may affect said Land. The obligations of Lessee hereunder shall survive the expiration or earlier termination, for any reason, of this Lease.

6. Insurance

As a condition of this Lease and prior to commencement of Lessee's operations on the Land, and subsequently at all times during the term of this Lease, Lessee shall acquire and maintain insurance, at Lessee's expense, . . . covering all of Lessee's operations on the Land, including any work performed on behalf of Lessee by independent contractors, subcontractors, and others, naming Lessors, surface owner, surface owner tenants, if any, and Lender (and their heirs and assigns, in case of change of ownership or interest) as additional named parties. Said insurance policies shall include coverage for comprehensive general liability, including without limitation any bodily injury, personal property damage, and loss of well coverage incurred due to Lessee's operations on the Land or on adjacent Land, and *coverage for any damage to the*

environment, including, without limitation, coverage for the costs of clean up, surface remediation, and sudden and accidental pollution. . . . (Emphasis added.)

As a consequence of the environmental concerns and uncertainties surrounding hydraulic fracturing operations, careful drafting of oil and gas lease agreements with environmental representations and warranties, indemnities and insurance provisions, involving surface landowners with mineral estate interests and oil and gas companies, are important and may become increasingly commonplace. These concerns and uncertainties, most notably that hydraulic fracturing operations could contaminate drinking water with either the chemical-bearing fluids used in the hydraulic fracturing technique – through surface spills, improper disposal or underground migration – or even with natural gas has raised questions about the role of insurance to manage such risks.[79]

The private insurance market currently offers two risk management tools to manage the risks associated with hydraulic fracturing operations – comprehensive general liability insurance, and environmental insurance through pollution legal liability insurance and contractors' pollution liability insurance. The standard comprehensive general liability policy, drafted by the insurance industry to provide broad liability coverage to insureds, transfers the risk of loss to an insurer absent specific coverage exclusion. These policies provide coverage against third party liability, whenever imposed or threatened to be imposed, as a result of bodily injury and property damage that occurs during the policy term. These policies can be very important because they provide coverage for any bodily injury or property damage that took place during the policy period, no matter when the bodily injury or property damage was discovered. However, these policies are not drafted to cover specific environmental risks. Under many jurisdictions, claims that trigger coverage under these policies must arise from a sudden and unexpected event, such as a tank spill to the ground surface, rather than a latent, longer term, gradual release, such as groundwater contamination. Indeed, most standard comprehensive general liability insurance policies now contain a "pollution exclusion" or "absolute pollution exclusion" that precludes coverage for, among other coverage, bodily injury and property damage "arising out of the actual, alleged or threatened discharge, dispersal, seepage, migration, release or escape of Pollutants anywhere at any time."[80] This standard coverage and exclusion can be modified through a policy endorsement to include coverage for third party bodily injury or property damage claims arising from longer term, gradual releases.

Alternatively, owners and operators can turn to an environmental insurance policy structured to address specific environmental risks at individual sites, such as groundwater contamination and spills resulting in property damage or bodily injury. Available coverage under environmental insurance policies includes finite risk, excess cleanup costs, pollution legal liability, legal expenses, natural resources damages, contractors' pollution legal liability, off-site transport and disposal, non-owned sites, pollutant-specific coverage, business interruption and impaired collateral. Insurable conditions may include existing and new pollution conditions, known and unknown pollution conditions, on-site and off-site conditions and soils, surface water

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[79] Matthew Jokajtys, *Insuring Fracking Risk: Can Conventional Insurance Tools Manage Unconventional Risk?*, 27 NAT. RESOURCES & ENVTL. 28 (Winter 2013).

[80] *Id*.

and groundwater conditions. Specifically, pollution legal liability policies provide owners and operators with a menu of coverage that addresses both cleanup and third party liability. This coverage can include, for example, property damage and bodily injury claims on- or off-site and third party claims, such as toxic tort and cleanup costs caused by a condition emanating from the property. Thus, a pollution legal liability insurance policy is better suited than a comprehensive general liability policy to cover the environmental risks and insurance requirements under, for example, the above Barnett Shale lease agreement.

C. State and Federal Notification of a Release

In Utah, an owner or operator of an oil or gas drilling, producing, or transportation facility, or any injection or disposal facility must immediately notify DOGM of any fires, leaks, breaks, spills, blowouts, and other "undesirable events."[81] Immediate notification is required for all major undesirable events.[82] Major undesirable events include: (1) leaks, breaks, or spills which result in the discharge of more than 100 barrels of liquids; (2) equipment failures or accidents which result in the flaring, venting, or wasting of more than 500 Mcf of gas; (3) any fire which consumes the volumes immediately above in (1) and (2); (4) any spill, venting, or fire, regardless of the volume involved, which occurs in a sensitive area stipulated on the approval notice of the initial APD for a well (*e.g.*, parks, recreation sites, wildlife refuges, lakes, reservoirs or urban or suburban areas); (5) each accident which involves a fatal injury; and (6) each blowout or loss of control of a well.[83] Immediate notification means the operator must submit a verbal report to DOGM as soon as practical but within a maximum of 24 hours after discovery of an undesirable event.[84] The operator must submit a complete written report of the event to DOGM within five days following the conclusion of the undesirable event.[85]

For any minor undesirable event, the operator must, following the initial notification to DOGM, provide a subsequent notification to DOGM.[86] Subsequent notification means that the operator must complete a written report of the event to DOGM within five days following completion of the undesirable event.[87] Unlike major undesirable events, no verbal, immediate notification after the discovery of the event is required for a minor undesirable event. Minor undesirable events include: (1) leaks, breaks, or spills which result in the discharge of more than ten barrels of liquids; (2) equipment failures or accidents which result in the flaring, venting, or wasting of more than 50 Mcf of gas; (3) any fire that consumes the volumes of liquid immediately above in (1) and (2); and (4) each accident involving a major or life-threatening injury.[88] Complete written reports of both major and minor undesirable events may be submitted

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[81] Utah Admin. Code R649-3-32.1 (2013).

[82] *Id.* R646-3-32-5-2.

[83] *Id.* R646-3-32-5.

[84] *Id.* R646-3-32-2.1.

[85] *Id.* R646-3-32-2.2.

[86] *Id.* R646-3-32-3.

[87] *Id.* R646-3-32-3.1.

[88] *Id.* R646-3-32-6.

on Form 9, Sundry Notice and Report on wells.[89] This report includes: (1) the date and time of the event and, if immediate notification was required, the date and time the occurrence was reported to DOGM; (2) the location where the event occurred described by section, township, range and county; (3) the specific nature and cause of the event; (4) a description of the resultant damage; (5) the action taken, the length of time required for control and containment of the event, and the length of time required for subsequent cleanup; (6) an estimate of the volumes discharged and the volumes not recovered; and (7) the cause of death if any fatal injuries occurred.[90]

Although undesirable events are reported to DOGM, the division does not provide emergency response for such events. During an undesirable event, the division's oil and gas program will serve as a central gathering point of information, provide short-term guidance to operators and citizens and provide long term oversight to assure that cleanup of the undesirable event is accomplished.

In addition to the above state reporting requirements, where there has been a release of a hazardous substance, CERCLA section 103 requires the "person in charge" of a facility to report such release above reportable quantities[91] as soon as he or she has knowledge of such release immediately to the National Response Center.[92] While releases of pure petroleum (e.g., petroleum in which hazardous substances have not increased, such as by addition or processing) are exempt from reporting, releases of CERCLA hazardous substances that are commingled with petroleum are subject to the reporting requirement.[93] Similarly, under section 304 of EPCRA, the "owner or operator" of a facility is required to report immediately to the appropriate state emergency response commissions and local emergency planning committee when there is a release of a CERCLA hazardous substance or of an extremely hazardous substance at or above the reportable quantity.[94] As soon as practicable after this initial notice, EPCRA section 304(c) requires the facility owner or operator to submit written follow up notices providing and updating the initial notice's information and including additional information concerning response actions taken, any known or anticipated acute or chronic health risks associated with the release and, where appropriate, advice on medical attention for exposed individuals.

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[89] *Id.* R646-3-32-4.

[90] *Id.* R646-3-32-4.1-.7.

[91] EPA regulations establish CERCLA hazardous substances and their reportable quantities. *See* 40 C.F.R. § 302.4 (1994).

[92] Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) § 103(a), 42 U.S.C. § 9603(a) (2006). The National Response Center is the sole federal point of contact for reporting all hazardous substances and oil spills that trigger federal notification requirements under several laws. Information reported to the National Response Center is disseminated to the agencies, such as the EPA Regions and to the states.

[93] *See* Memorandum from Francis S. Blake, General Counsel 5, *available at* http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&cad=rja&ved=0CDIQFjAA&url=http%3A%2F%2Fwww.epa.gov%2Fcompliance%2Fresources%2Fpolicies%2Fcleanup%2Fsuperfund%2Fpetro-exclu-mem.pdf&ei=UP9RUfGfFMrarAGz0IC4Bw&usg=AFQjCNEznzJO3nfigxMGin7XYOvUBW2O0Q&sig2=hCl_KYTS2QUiGb9UJsGoJA&bvm=bv.44342787,d.aWM (regarding the scope of the CERCLA petroleum exclusion). Releases of certain waste oils are also regulated under CERCLA, 40 C.F.R. § 302.4.

[94] Emergency Planning and Community Right-to-Know Act (EPCRA), §304, 42 U.S.C. § 11004 (2006).

As discussed above, the CWA prohibits the discharge of oil or hazardous substances into navigable waters of the United States or on adjoining shorelines. Specifically, the CWA requires facilities – including oil and gas well sites – to report any unpermitted releases of oil or hazardous substances above threshold quantities to the National Response Center. In addition, oil discharges must be reported if they cause a film or sheen on the surface of the water or adjoining shorelines or if they violate water quality standards.[95]

D. EPA Authority to Respond to a Release

As discussed above, EPA has the authority to respond to certain releases to the environment, but excludes under the petroleum exclusion releases that are purely petroleum, including crude oil, natural gas, and fractions of crude oil. This would include hazardous substances, such as benzene that are indigenous in those petroleum substances.[96] Despite this exclusion, because hydraulic fracturing fluids allegedly contain certain non-petroleum hazardous substances,[97] EPA has the authority at oil and gas well sites to investigate and respond to releases of hazardous substances itself and to issue administrative orders requiring a landowner or company potentially responsible for a release of hazardous substances, which may pose an imminent and substantial endangerment, to take response actions, and to seek relief in a federal court.[98]

More specifically, EPA may conduct investigations, including activities, such as monitoring, surveying, and testing, in response to actual or threatened releases of hazardous substances or pollutants or contaminant.[99] EPA may also require persons to provide information concerning alleged releases or threats of release.[100] Under CERCLA section 104(a), EPA may conduct removal actions.[101] Removal actions generally include actions to monitor, assess and evaluate the release; to remove and dispose of contaminated materials; and to take such other actions necessary to prevent, minimize or mitigate damage to the public health or welfare or to

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[95] 40 C.F.R. § 110.3(b). Such releases may be reportable under provisions of other laws, such as the Oil Pollution Act of 1990. *See* Clean Water Act § 311(b)(3)-(5), 33 U.S.C. § 1321(b)(3)-(5) (2013); 40 C.F.R. § 300.300(b).

[96] GAO REPORT, *supra* note 12, at 38-39, 171-172.

[97] According to data in FracFocus, some hydraulic fracturing operations may use hazardous substances, such as hydrochloric acid, formaldehyde, formic acid, acetaldehyde, ethylene glycol, methanol, acetic acid, sodium hydroxide, potassium hydroxide, acrylamide and naphthalene. *See id. at* 181 (referencing http://fracfocus.org/chemical-use/what chemicals-are-used and 40 C.F.R. § 302.4 (2013)); *see also* Watson & Pincus, *supra* note 53, at 256-258 ("In the Pavillion EPA study, a draft of which was released in January 2011, EPA identified 11 of the 39 wells tested and noted that many of these substances were used in nearby hydraulic fracturing operations.").

[98] CERCLA §§ 104(a)-(b), (e), 106(a), 42 U.S.C. §§ 9604(a)-(b), (e), 9606(a) (2006).

[99] *Id.* § 9604(b).

[100] *Id.* § 9604(e).

[101] In addition to removal actions, EPA may also conduct remedial actions at non-federal sites that are listed on the National Priorities List. *Id.* §§ 9604(a), (c)(1), 9611(e). This list includes sites that EPA has determined are among the nation's most seriously contaminated hazardous waste sites to receive attention under the federal Superfund program. In light of the petroleum exclusion, among other factors, it is somewhat unlikely an oil and gas well site would be listed on the National Priorities List.

the environment.[102] Under the same statutory authority, EPA may also conduct removal actions, provide for remedial actions or take any other response actions consistent with the National Contingency Plan ("NCP")[103] to address a release or substantial threat of a release into the environment that presents an imminent and substantial endangerment to the public health or welfare. Finally, EPA, through the United States Department of Justice, may pursue injunctive relief in court, where an actual or threatened release of hazardous substances from a facility may pose an imminent and substantial endangerment to public health or welfare or to the environment,[104] may issue an administrative order requiring a potentially responsible party to take response actions[105] or pursue cleanup and related costs from potentially responsible parties, enter into settlements or pursue, together with federal and state trustees, potentially responsible parties for damages to federal, state and tribal natural resources.[106]

EPA has recently exercised its CERCLA authority to conduct response action activities, investigations, and to obtain records relating to alleged hazardous substances or pollutant or contaminant releases from oil and gas sites. For example, EPA used its CERCLA authority to investigate private water well contamination potentially related to nearby shale gas wells and to undertake emergency removal actions, including well sampling and the provision of alternative water supplies, at a site in Dimock, Pennsylvania.[107] In addition, EPA is currently using the same authority to investigate private water well contamination potentially related to well sites in Pavillion, Wyoming.[108] Under the same analysis above, the Utah Department of Environmental Quality ("UDEQ") would have the authority to respond to a release or threated release at an oil and gas well site under its CERCLA program.[109] If a response action is required, and EPA does not seek such action, surface landowners and operators might consider conducting a response action under the UDEQ's Utah Voluntary Cleanup Program.[110] This program offers a more streamlined process than the traditional CERCLA program, is purely voluntary, and upon completion provides a certificate of completion – and, for those parties who are not responsible for the contamination, liability protection for state cleanup and contribution claims regarding matters covered by the certificate completion.

The final section of this paper addresses potential legal recourse surface landowners may have against operators whose hydraulic fracturing operations have environmentally impaired their surface lands. Potential CERCLA and state common law claims are briefly considered and discussed.

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[102] *Id.* § 9601(23).

[103] 40 C.F.R. §§ 300 to 1105. The NCP establishes the basic criteria that govern responses to releases and threatened releases of hazardous substances and the investigation and development of appropriate remedial alternatives, whether financed by the government or private parties.

[104] 42 U.S.C. § 9606(a).

[105] *Id.* § 9606(a).

[106] *Id.* §§ 9607, 9622.

[107] *See* GAO Report, *supra* note 12, at 38-39.

[108] *Id*.

[109] Utah Hazardous Substances Mitigation Act, Utah Code Ann. §§ 19-6-301 to 325 (1995).

[110] Utah Code Ann. §§ 19-8-101 to 119 (2003 & Supp. 2005).

E. Potential Environmental Claims to Protect Surface Landowners

Since nearly the inception of CERCLA there has been a gradual, yet discernible, trend from government-initiated environmental cleanups to private party-initiated environmental cleanups. Limited federal resources to address the number of hazardous waste sites in need of cleanup, EPA's enforcement success against private parties and cost inefficiencies and delays associated with EPA-initiated cleanups are just some of the reasons articulated for this trend. As current "owners" under CERCLA facing liability for potentially significant environmental cleanup costs, private parties, such as surface landowners, often must resort to more streamline state voluntary programs or contributions from other parties and resources, such as insurance, to address contamination on their surface lands.

Under CERCLA, potentially responsible parties that have incurred response costs related to contaminated sites may be able to recover costs from other potentially responsible parties through a cost recovery claim under section 107 of CERCLA or a contribution claim under section 113.[111] Section 107 allows any party who voluntarily cleans up a site to recover "all costs of removal or remedial action incurred by the United States Government or a State or an Indian tribe . . ." and "any other necessary costs of response incurred by an any other person . . ." from potentially responsible parties.[112] Section 113 provides that "[a]ny person may seek contribution from any other person who is liable or potentially liable under [CERCLA section 107(a)] . . . during or following any civil action under [CERCLA section 106] or under [CERCLA section 107(a)]. . . ."[113]

The private right of action under section 107 of CERCLA[114] has emerged over the many years as the principal means of cost recovery.[115] However, the scope of cost recovery under section 107 is not without limitations. For openers, relief under section 107 is limited solely to response costs. Unless related to the response action, costs incurred, for example, to repair or replace property improvements are not covered under section 107. In addition, private parties, particularly those performing voluntary cleanups without the benefit of government oversight, may not be in a position to meet the critical elements or requirements of a section 107 claim. Accordingly, private parties often times must seek additional relief under alternative federal statutes and state common law theories. Understanding the means by which private parties can recover environmental cleanup costs from other potentially responsible parties and indemnitors has become increasingly important and sometimes a matter of economic survival. As noted

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[111] 42 U.S.C. §§ 9607, 9613.

[112] *Id.* § 9607.

[113] *Id.* § 9613(f)(1).

[114] *Id.* § 9607.

[115] There have been numerous United States Supreme Court decisions addressing the distinctions between section 107 and section 113 claims under CERCLA and apportionment and allocation of liability among potentially responsible parties under CERCLA. *See* Cooper Indus. Inc. v. Aviall Servs., Inc., 543 U.S. 157 (2004); United States v. Atl. Research Corp., 551 U.S. 128 (2007); Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599 (2009). This paper does not address these decisions or the strategies and considerations as to under what circumstances private parties might file a section 107 or section 113 CERCLA claim. Rather, the paper simply describes the nature and basis for the section 107 and 113 CERCLA claims.

above, this paper briefly reviews the potential claims for private cost recovery for environmental cleanups, including statutory, contractual, and tort claims.

1. Private Right of Action Under CERCLA Section 107

Section 107(a) of CERCLA expressly creates a private cause of action for recovery of costs incurred by private parties in response to a release or threatened release of hazardous substances. This provision provides, in pertinent part:

> Notwithstanding any other provision or rule of law, and subject only to the defenses set forth in subsection (b) of this Section --
>
> (1) The owner and operator of . . . a facility,
>
> (2) Any person who at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of,
>
> (3) Any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person, by any other person or entity, at any facility owned or operated by another party or entity and containing such hazardous substances, and
>
> (4) Any person who accepts or accepted any hazardous substance for transport to disposal or treatment facilities, incineration vessels or site selected by such person, from which there is a release or threatened release which causes the incurrence of response costs, or a hazardous substance *shall be liable for . . .*
>
> *(B) Any other necessary costs of response incurred by any other person consistent with the National Contingency Plan; . . .*[116]

Thus, CERCLA establishes a private right of action for "any other person" who incurs response costs against persons responsible for contamination at that site. Consistent with the purposes behind CERCLA, this private right of action encourages the cleanup of hazardous waste sites and allocates liability for the cost of cleanup to those parties that are responsible for the environmental pollution. This private right of action is different than other private actions authorized by CERCLA.[117]

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[116] CERCLA § 107(a), 42 U.S.C. § 9607(a) (emphasis added). As discussed below, section 113(f) of CERCLA specifically authorizes an action for contribution by any person against "any other person who is liable or potentially liable under section 9607(a) . . . ." CERCLA § 113(f)(1).

[117] Other private actions authorized by CERCLA are citizen suits, contribution claims and claims against the Superfund under sections 112(a), 113(f) and 310(a), respectively.

2. Elements of a Private Cost Recovery Action

A private cost recovery action under section 107(a) of CERCLA consists of six basic elements. The private plaintiff must establish: (1) the "person" against whom recovery is sought must be a "liable person" under section 107(a); (2) that there has been a release or threatened release; (3) of a hazardous substance;[118] (4) from a facility resulting in the; (5) incurrence of necessary costs of response; (6) that are consistent with the NCP. The first five elements, often referred to as the "liability" elements, are uniquely suited to disposition by way of summary judgment. Thus, entry of partial summary judgment on the issue of joint and several liability is common in CERCLA cost recovery cases.[119] With certain exceptions, the first five elements of liability have not proved difficult obstacles for private plaintiffs to establish and would generally expect the same with respect to any claims filed by surface landowners against operators of hydraulic fracturing operations.

However, CERCLA also provides that private plaintiffs may only recover necessary response costs incurred "consistent with the [NCP]."[120] The NCP is comprised of regulations promulgated by EPA that establish procedures and standards for responding to releases or threatened releases of hazardous substances and pollutants, including detailed guidance in performing remedial investigations, feasibility studies, remedial design, and remedial actions in conformity with CERCLA requirements.

The "NCP consistency" requirement poses the most difficult burden in the prima facie case for recovery of response costs under section 107. This difficulty stems, in large part, from the breadth of the requirements themselves. Critical to the ultimate resolution of a cost recovery claim under section 107 are the issues of what measures must be taken to meet the NCP consistency requirement and how this consistency requirement fits into a private plaintiff's prima facie case.[121] The 1990 revisions to the NCP established "substantial compliance" as the measure of NCP consistency.[122] Although this departure from the strict compliance standard imposed by some courts has encouraged more voluntary cleanups and eased cost recovery, nevertheless, even the substantial compliance standard is just that – substantial. Thus, in

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[118] As discussed above, the petroleum exclusion potentially limits CERCLA claims; s*ee also* Watson & Pincus, *supra* note 53, at 256-258.

[119] *See, e.g.*, United States v. Mottolo, 695 F. Supp. 615 (D.N.H. 1988) ("[s]ummary judgment is routinely applied to resolve legal issues in CERCLA cases."); New York v. Shore Realty Corp., 759 F.2d 1032 (2d Cir. 1985) (upholding entry of partial summary judgment).

[120] The standard for NCP compliance substantially differs between government and private plaintiffs. Section 107(a)(4)(B) of CERCLA states that potentially responsible parties are liable for all necessary costs of response incurred by parties consistent with the NCP. In contrast, government plaintiffs may recover all costs of response that are incurred in a manner not inconsistent with the NCP. Thus, the government enjoys a rebuttable presumption that its response actions are consistent with the NCP, whereas private plaintiffs bear the affirmative burden of proving that all of their response actions are consistent with the NCP. *See* United States v. Ne. Pharm. & Chem. Co., 579 F. Supp. 823, 850-51 (W.D. Mo. 1984), *aff'd in part, rev'd in part on other grounds*, 810 F.2d 726 (8th Cir. 1986), *cert. denied*, 484 U.S. 848 (1987). This elevated standard may act as a disincentive to those private parties that are considering voluntary cleanup actions.

[121] Daniel M. Steinway, *Private Cost Recovery Actions: What is the Impact of the Consistency Requirements?*, 20 ENV'T REP (BNA) 1947, 1948 (Apr. 6, 1990).

[122] 40 C.F.R. §§ 300.700(c)(3)(i), 300.400(i)(2).

evaluating a cost recovery claim under section 107, private plaintiffs must carefully assess whether response costs incurred, or to be incurred, will at a minimum, meet this standard of NCP compliance.

3. Potentially Responsible Parties

Section 107(a) identifies four categories of potential defendants which may be liable for reimbursement of response costs incurred by private parties at a hazardous waste site:

(1) Current owner or operator at the site;

(2) Any person who owned or operated the site at the time of disposal of hazardous substances;

(3) Transporter of hazardous substances for disposal or treatment at the site; and

(4) Anyone who arranged for disposal or treatment of hazardous substances at the site.[123]

The first category of potentially responsible defendants, established by section 107(a)(1), has been construed broadly to include not only current owners and operators of a facility,[124] but may include bankruptcy estates,[125] absent landowners or lessors,[126] lessees,[127] foreclosing banks,[128] corporate officers,[129] parent corporations,[130] and successors.[131] In contrast to section

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[123] *See* CERCLA § 107(a), 42 U.S.C. § 9607(a) (2006).

[124] For purposes of Section 107(a)(1), the term "current" has been defined as ownership or operation at the time the cost recovery action is filed. *See, e.g.*, United States v. Fleet Factors Corp., 901 F.2d 1550 (11th Cir. 1990).

[125] *In re* T.P. Long Chem., Inc., 45 Bankr. 278 (Bankr. N.D. Ohio 1985) (holding that a bankruptcy estate may become an owner of a facility).

[126] United States v. Argent, 14 Envtl. L. Rep. (Envtl. L. Inst.) 20,616 (D.N.M. 1984) (holding an absent landowner who leased the facility to another party liable as an owner or operator). However, no decisions interpreting the "owner" under CERCLA suggest that a royalty interest in oil and gas production constitutes ownership of the underlying mineral or surface estate and, therefore, ownership of a CERCLA facility. Only those who actually operate or exercise control over the facility that creates an environmental risk can be held liable under CERCLA for the costs of reducing that risk." Edward Hines Lumber Co. v. Vulcan Materials Co., 685 F. Supp. 651, 657 (N.D. Ill.1988), *aff'd*, 861 F.2d 155 (7th Cir. 1988).

[127] United States v. S. Carolina Recycling & Disposal, Inc., 653 F. Supp. 984 (D.S.C. 1984) (holding that a lessee of a facility may be an owner or operator, particularly when a lessee had authority to sublease), *aff'd in part, vacated in part sub nom.* United States v. Monsanto Co., 858 F.2d 160 (4th Cir. 1988).

[128] United States v. Maryland Bank & Trust Co., 632 F. Supp. 573 (D. Md. 1986) (holding that a bank that foreclosed on a facility, then purchased it at a foreclosure sale, and then owned the facility for four years was liable as a current owner); United States v. Mirabile, 15 Envtl. L. Rep. (Envtl. L. Inst.) 20,994 (E.D. Pa. 1985) (holding that a bank that foreclosed on a facility but assigned its right to purchase to another party was not liable as an owner).

[129] United States v. Carolawn, 14 Envtl. L. Rep. (Envtl. L. Inst.) 20,699 (D.S.C. 1984) (holding that corporate officers who exercise control or authority over a facility's activities are personally liable as operators).

[130] United States v. Kayser-Roth Corp., 910 F.2d 24 (1st Cir. 1990) (holding that a parent corporation was an operator of its subsidiary's facility because the parent exercised pervasive control of the subsidiary); *see also* United

107(a)(2), section 107(a)(1) imposes liability on current owners and operators regardless of whether the disposal of hazardous substances occurred during the current ownership or operation period. Section 107(a)(2), on the other hand, imposes liability on a second category of potential defendants – persons who owned or operated a facility "at the time of disposal" of hazardous substances. Thus, these provisions are sufficiently broad to include not only current owners and operators at an oil and gas well site, but also former owners, operators, and lessees who operated such well site. The third category of potential defendants, established by section 107(a)(3), consists of persons, usually generators of hazardous waste, who "arranged for" the treatment or disposal of hazardous substances at a facility for which there was a release or threatened release of hazardous substances.[132] This category of potential defendants may be of particular importance if the oil and gas operator disposes of its produced waters and flowback waters off site at another facility. The final category of potential defendants, established by section 107(a)(4), consists of persons who transported hazardous substances to treatment or disposal facilities. Courts have, however, interpreted this section as requiring plaintiffs to demonstrate that the transporter chose the treatment, storage, or disposal facility.[133]

4. Statutory Exclusions and Defenses

As part of evaluating a cost recovery claim under section 107, private plaintiffs must consider the scope of the statutory exclusions and defenses under CERCLA. Though limited, those exclusions and defenses may have the effect of either diminishing or even defeating a cost recovery claim under section 107.

The statutory exclusion of most significance and discussed above is the petroleum exclusion. Section 101(14) expressly excludes petroleum, crude oil, and natural gas as hazardous substances under CERCLA. This exclusion has been interpreted by courts to encompass hazardous substances that are indigenous to petroleum substances or that are routinely added or blended to petroleum substances during the refining process.[134] However, the

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States v. Bestfoods, 524 U.S. 51, 71 (1998) (a parent company can be liable for the acts of its subsidiary only when a basis exists for "piercing the veil" under traditional corporate law principles or when the parent company actually "manage[s], direct[s], or conduct[s] operations specifically related to pollution, that is, operations having to do with the leakage or disposal of hazardous waste, or decisions about compliance with environmental regulations.")

[131] Anspec Co. v. Johnson Controls, Inc., 922 F.2d 1240 (6th Cir. 1991) (holding that successor corporations are within the scope of potentially responsible parties if its activities constitute a substantial continuation of the predecessor's activities).

[132] United States v. Aceto Agric. Chems. Corp., 699 F. Supp. 1384 (S.D. Iowa 1988), *aff'd in part, rev'd in part*, 872 F.2d 1373 (8th Cir. 1989) (holding defendant pesticide manufacturers, by virtue of their relationship with pesticide formulation, "arranged for" disposal because generation of hazardous waste was inherent in formulation process); *but see* United States v. Sharon Steel Corp., 681 F. Supp. 1492 (D. Utah 1989) (holding companies that provided ore for processing at CERCLA mill site does not constitute "arranging for disposal" and, therefore, are not liable).

[133] Jersey City Redevelopment Auth. v. PPG Indus., 18 Envtl. L. Rep. (Envtl. L. Inst.) 20,364 (D.N.J. 1987) (holding that the defendant was not liable as a transporter because defendant did not chose the facility), *aff'd*, 866 F.2d 1411 (3d Cir. 1988).

[134] *See, e.g.*, Wilshire Westwood Assocs. v. Atlantic Richfield Co., 881 F.2d 801, 806-07 (9th Cir. 1989) (dismissing government's claim for response costs incurred in the cleanup of leaded gasoline on the grounds that such material is exempt by the petroleum exclusion under CERCLA). Similarly, oil and gas exploration and production wastes are not regulated as hazardous waste under the federal Resource Conservation and Recovery Act ("RCRA"). 42 U.S.C.

petroleum exclusion does not apply to hazardous substances that are either added to the petroleum substance or that increase in concentration solely as a result of contamination of the petroleum during use.[135] Thus, if the cost recovery action involves a release or threatened release of petroleum substances, or a release of petroleum substances which is divisible from other hazardous substances released, then cost recovery under section 107 may be either not available or substantially limited. On the other hand, the petroleum exclusion, arguably, would not preclude cost recovery arising out of a release or threatened release of petroleum substances commingled with other hazardous substances that, as a practical matter, cannot be separated.

In addition to these statutory exclusions, section 107(b) of CERCLA also provides for three affirmative defenses to persons that are otherwise liable under section 107(a).[136] Of the statutory defenses available, the "third party" defense has been the subject of considerable litigation. Under this defense, defendants must demonstrate no direct or indirect contractual relationship with a third person responsible for the release or threatened release of hazardous substances.[137] Thus, this defense imposes a substantial burden on a defendant to show that a "totally unrelated third party is the sole cause of the release."

5. Recoverable Response Costs

Courts have construed recoverable response costs in a private cost recovery action to include costs of investigation, assessment, soil and ground water monitoring, and other information-gathering activities;[138] cleanup costs incurred as part of either a removal or remedial action;[139] RCRA closure costs;[140] temporary relocation and evacuation costs;[141] costs of providing alternative water supplies;[142] and security and fencing costs.[143] Other categories of

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§§ 6901-6992k (2006). Thus, drilling fluids, produced water and other wastes associated with the exploration, development or production of oil or gas are not regulated as hazardous waste. According to EPA guidance issued in 2002, these exempt wastes include wastes generated within the well and wastes generated from field operations. Thus, this paper does not address private rights of action available under RCRA.

[135] *See, e.g.*, United States v. Alcan Aluminum Corp., 964 F.2d 252, 266-67 (3d Cir. 1992); City of New York v. Exxon Corp., 766 F. Supp. 177, 185-88 (S.D.N.Y. 1991).

[136] CERCLA § 107(b), 42 U.S.C. § 9607(b). The statute contains three limited defenses: acts of God; acts of war; and acts or omissions of a third party that is not contractually related to a defendant, provided that defendant exercised due care and took all appropriate precautions.

[137] 42 U.S.C. § 9607(b)(3).

[138] *See, e.g.*, Wickland Oil Terminals v. ASARCO, Inc., 792 F.2d 887, 892 (9th Cir. 1986) (interpreting section 107(a)(2)(B) of CERCLA to allow recovery of on-site investigation and monitoring costs); *see also* Artesian Water Co. v. New Castle Cnty., 659 F. Supp. 1269, 1294-95 (D. Del. 1987), *aff'd*, 851 F.2d 643 (3d Cir. 1988).

[139] Amoco Oil Co. v. Borden, Inc., 889 F.2d 664, 672 (5th Cir. 1989); Versatile Metals, Inc. v. Union Corp., 693 F. Supp. 1563, 1577-78 (E.D. Pa. 1988).

[140] *See* Chem. Waste Mgmt., Inc. v. Armstrong World Indus., Inc., 669 F. Supp. 1285, 1289-91 (E.D. Pa. 1987); United States v. E.I. Dupont De Nemours & Co. Inc., 432 F.3d 161, 163 (3d Cir. 2005).

[141] Lutz v. Chromatex, Inc., 718 F. Supp. 413, 419-20 (M.D. Pa. 1989); *Artesian Water Co*., 659 F. Supp. at 1287.

[142] *Lutz*, 718 F. Supp. at 419; *Artesian Water Co*., 659 F. Supp. at 1289 (costs of providing alternative water supplies are recoverable, but only if the existing water supply is either contaminated as a result of a release of, or threatened by the release of, hazardous substances).

[143] Cadillac Fairview/California, Inc. v. Dow Chem. Co., 840 F.2d 691, 695 (9th Cir. 1988).

response costs which courts have uniformly upheld as recoverable include indirect costs,[144] prejudgment interest,[145] and future cleanup costs.[146]

F. Contribution Claims Under CERCLA Section 113

1. Right of Contribution

Contribution is a statutory or common law right available to those parties that have paid more than their equitable share of a common liability. Contribution claims under CERCLA may arise under a variety of procedural settings. Private parties that are subject to liability may generally bring an independent action for contribution under section 113 against other responsible parties. In addition, defendants in a cost recovery action under section 107 may assert counterclaims and cross-claims for contribution or file third party complaints for contribution against other responsible parties.[147] Defendants in these cost recovery actions commonly assert their contribution right and seek a declaratory judgment against other responsible parties on the issue of liability.

The prima facie elements of a contribution claim under section 113 are less clear than the elements of a cost recovery claim under section 107. At least one circuit court has stated that private plaintiffs, in order to prevail, must establish the prima facie elements of a cost recovery action under section 107. In *County Line Investment Co. v. Tinney*,[148] a case of first impression, the Tenth Circuit concluded that the liability standard under section 113(f)(1) expressly links the contribution right to liability under section 107.[149] Accordingly, the court ruled that no right to contribution exists absent a showing of a prima facie case of liability under section 107, including a showing that response costs were "necessary" and "consistent with the NCP."[150] As

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[144] Early judicial decisions held that only EPA was entitled to recover indirect costs. However, private plaintiffs more recently have been successful in recovering indirect costs. *See, e.g.*, Lykins v. Westinghouse Elec. Corp., 715 F. Supp. 1357, 1359 (E.D. Ky. 1989) (supervisory costs are recoverable as response costs); T & E Indus., Inc. v. Safety-Light Corp., 680 F. Supp. 696, 706-07 (D.N.J. 1988) (value of time devoted to monitoring, assessing and evaluating cleanup by company president are deemed recoverable).

[145] Section 107(a) expressly provides for recovery of interest at the same rate as specified for interest on the Superfund. For decisions upholding prejudgment interest, *see, e.g.*, Key Tronic Corp. v. United States, 766 F. Supp. 865, 869 (E.D. Wash. 1991), *rev'd in part on other grounds*, 984 F.2d 1025 (9th Cir. 1993), *aff'd in part and rev'd in part on other grounds*, 511 U.S. 809 (1994); Gen. Elec. Co. v. Litton Bus. Sys., Inc., 715 F. Supp. 949, 963 (W.D. Mo. 1989), *aff'd sub nom.* Gen. Elec. Co. v. Litton Indus. Automation Sys., 920 F.2d 1415 (8th Cir. 1990), *cert. denied*, 499 U.S. 937 (1991).

[146] Southland Corp. v. Ashland Oil, Inc., 696 F. Supp. 994, 999 (D.N.J. 1988) (citing T & E Indus., Inc. v. SafetyLight Corp., 680 F. Supp. 696, 708 (D.N.J. 1988)).

[147] *See, e.g.*, Colorado v. ASARCO, Inc., 608 F. Supp. 1484, 1492 (D. Colo. 1985).

[148] 933 F.2d 1508 (10th Cir. 1991).

[149] *Id.* at 1516-17; *see* CERCLA § 113(f)(1), 42 U.S.C. § 9613(f)(1) (2006) ("[a]ny person may seek contribution from any other person *who is liable or potentially liable under section 9607(a)*") (emphasis added).

[150] County Line Inv. Co., 933 F.2d at 1516-17. For other decisions which hold that section 113 contribution claims are dependent on establishing a prima facie case of liability under section 107, *see* Edward Hines Lumber Co. v. Vulcan Materials Co., 685 F. Supp. 651, 658 (N.D. Ill. 1988), *aff'd*, 861 F.2d 155 (7th Cir. 1988); New York v. Shore Realty Corp., 648 F. Supp. 255, 262 (E.D.N.Y. 1986); *but see* Envtl. Transp. Sys., Inc. v. ENSCO, Inc., 763

is the case with private cost recovery actions under section 107, the point at which a private plaintiff must make the necessary showing of consistency with the NCP is dependent on the development of the factual record, which in turn is dependent on the time a contribution action is filed relative to when the response costs were incurred.[151]

For a party to assert a CERCLA contribution claim, a defendant, as a condition to a private contribution action, must be a person that is liable or potentially liable under sections 106 or 107. Thus, a plaintiff may not bring a contribution action under section 113 against a defendant, such as a former oil and gas owner or operator, which did not generate or own or operate a well at the time of disposal of hazardous substances. In those circumstances, courts would generally allow a private plaintiff to assert a pendent or supplemental state law contribution action for response costs against a defendant.[152]

2. Allocation of Liability

Consistent with the notion of contribution, section 113 of CERLCA further provides that courts may allocate response costs among responsible parties by using "such equitable factors as the court determines are appropriate."[153] By the terms of the statute, courts have considerable latitude in determining what criteria should govern the allocation process. Courts have consistently identified five "equitable factors" (the so-called "Gore factors") to consider in allocating response costs:

(1) Amount of hazardous substances involved;

(2) Degree of toxicity or hazard of the materials involved;

(3) Degree of involvement by parties in the generation, transportation, treatment, storage or disposal of the substances;

(4) Degree of care exercised by the parties with respect to the substances involved; and

(5) Degree of cooperation of the parties with government officials to prevent any harm to public health or the environment.[154]

The first two equitable factors, the amount and toxicity of material, have traditionally been utilized by courts to allocate liability among generator potentially responsible parties.

F. Supp. 384, 387 (C.D. Ill. 1991), *aff'd*, 969 F.2d 503 (7th Cir. 1992) ("necessary costs of response" and consistency with the NCP are not expressly identified as elements of a section 113(f) contribution claim).

[151] *County Line Inv. Co.*, 933 F.2d at 1516 n.12.

[152] *See, e.g.*, United States v. Hooker Chems. & Plastics Corp., 739 F. Supp. 125, 128-29 (W.D.N.Y. 1990) (stating that CERCLA does not preempt "any state law remedies to recover the costs of site cleanup from parties who are not liable under CERCLA but are potentially liable under state law.").

[153] 42 U.S.C. § 9613(f)(1).

[154] *See, e.g.*, United States v. Northernaire Plating Co., 20 Envtl. L. Rep. (Envtl. L. Inst.) 20,200, 20,200 (W.D. Mich. 1989); Allied Corp. v. Acme Solvents Reclaiming, Inc., 691 F. Supp. 1100, 1116-17 (N.D. Ill. 1988); United States v. A & F Materials Co., 578 F. Supp. 1249, 1256 (S.D. Ill. 1984).

Where, however, the allocation is between past and present owners or operators, or between a group of generator potentially responsible parties and an owner or operator, courts have found the first two equitable allocation factors unimportant and have focused on the remaining factors.[155] The remaining factors, degree of involvement, degree of care exercised, and degree of cooperation with government officials, essentially collapse into an examination of the parties' respective dealings with the government. Thus, if a defendant's dealings with respect to a site are characterized by a pattern of recalcitrance, while a plaintiff expeditiously responds to governmental concerns and efficiently completes response actions, liability may be allocated accordingly.

The Gore factors are neither exhaustive nor exclusive. Thus, courts have looked beyond those factors to other equitable considerations to allocate liability.[156] Equitable defenses, such as the doctrines of unclean hands, estoppel, and laches, though not applicable as defenses to liability under section 107, may be relevant to allocation of liability in contribution claims under section 113.[157] Other courts have also considered the economic benefits received by parties from the contaminating activities and the parties' respective knowledge or acquiescence in such activities as well as economic benefits derived from cleanup activities.[158]

The list of equitable factors to be considered in allocating liability will likely continue to evolve. Certainly equitable factors that may be relevant to oil and gas sites will vary depending on the particular facts of the case. However, applying the various allocation factors, it is likely that the allocation process would largely tip the liability scale towards the operator and away from the surface landowner.

3. Contractual Claims for Cost Recovery

In addition to cost recovery claims under CERCLA, private parties may pursue cost recovery for environmental cleanups based on indemnification and hold harmless provisions in asset, stock, or property transfer agreements, including lease agreements. Section 107(e)(1) of CERCLA expressly preserves the right of private parties to allocate or to release one another

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[155] *See, e.g.*, Amoco Oil Co. v. Dingwell, 690 F. Supp. 78, 86 (D. Me. 1988), *aff'd sub nom.* Travelers Indem. Co. v. Dingwell, 884 F.2d 629 (1st Cir. 1989) (applying the Gore factors, the court stated that in a "dispute between waste generators and the site operator, the last three factors . . . are most important for the Court's consideration."); Elizabeth H. Temkin & Kristin Tita, *Multiparty Issues: CERCLA Mining and Energy Sites*, 35 ROCKY MT. MIN. L. INST. 6-1, 6-77 to -78 (1989).

[156] *See, e.g.*, Envtl. Transp. Sys., Inc. v. ENSCO, Inc., 969 F.2d 503, 509 (7th Cir. 1992) (CERCLA section 113(f)(1) does not limit courts to any specific list of equitable factors).

[157] *See, e.g.*, Versatile Metals, Inc. v. Union Corp., 693 F. Supp. 1563, 1572 (E.D. Pa. 1988).

[158] *See, e.g.*, Weyerhaeuser Co. v. Koppers Co., Inc., 771 F. Supp. 1420, 1426-27 (D. Md. 1991) (allocating 40% of the cleanup cost to the site owner and 60% to the lessee operator because the site owner had requested the lessee's contaminating wood treatment activities for the site and had derived some indirect benefit from those activities); PVO Int'l, Inc. v. Drew Chem. Corp., 19 Envtl. L. Rep. (Envtl. L. Inst.) 20,077 (D.N.J. 1988) (noting that the possible increases in value of the burdened property arising after a cleanup may in some instances be an important factor to consider in allocating response costs between a seller and purchaser); Amoco Oil Co. v. Borden, Inc., 889 F.2d 664, 673 (5th Cir. 1989) ("[T]he circumstances and conditions involved in the property's conveyance, including the price paid and discounts granted, should be weighed in allocating response costs.").

from CERCLA liability;[159] however, in those instances the private parties remain accountable to the government for the cost of responding to a release or threatened release of hazardous substances.[160]

In contrast to cost recovery and contribution claims under CERCLA, defendants need not be responsible parties under CERCLA in order to be held liable for CERCLA response costs in an indemnity action. However, the indemnification or hold harmless provision must clearly allocate environmental risks among the parties to the agreement.[161] Boilerplate indemnity clauses will probably not withstand judicial scrutiny.[162] As an example, the indemnification provision in the Barnett Shale lease agreement discussed above included specific indemnity language concerning "environmental harm" and "environmental hazards" relating to the operations. Depending on the scope of the indemnification or hold harmless provision, an indemnification claim may seek broader relief, such as economic damages or consequential damages, than otherwise offered under CERCLA. Unlike contribution claims under CERCLA or state common law, which shift liability among responsible parties, the indemnity claim may seek to transfer the entire liability to another responsible party. In determining the effectiveness of an indemnification or hold harmless provision, state law rather than federal common law generally governs.[163]

Moreover, an indemnification claim may provide added strategic leverage if the contractual indemnity includes recourse for private plaintiffs to recover litigation costs and attorneys' fees. In addition, indemnification claims are not subject to the rigors of establishing

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[159] CERCLA § 107(e)(1), 42 U.S.C. § 9607(e)(1) (2013).

[160] Mardan Corp. v. C.G.C. Music, Ltd., 804 F.2d 1454, 1459 (9th Cir. 1985) (finding parties are jointly and severally liable with respect to the government but are free to contractually allocate risks of CERCLA liability as they may see fit); Olin Corp. v. Consol. Aluminum Corp., 807 F. Supp. 1133, 1137-39 (S.D.N.Y. 1992), *aff'd in part, vacated in part*, 5 F.3d 10 (2d Cir. 1993) (finding private parties may contract out of, or allocate, liability with other private parties, but may not contract out liability to the government under section 107(e)(1); Jones-Hamilton Co. v. Kop-Coat, Inc., 750 F. Supp. 1022, 1025-27 (N.D. Cal. 1990), *aff'd in part, rev'd in part sub nom.* Jones-Hamilton Co. v. Beazer Materials & Servs., Inc., 959 F.2d 126 (9th Cir. 1992) (finding that private parties may contract out of liability vis-a-vis other private parties, but may not by contract avoid CERCLA liability vis-a-vis the government).

[161] *See* U.S. Steel Supply, Inc. v. Alco Standard Corp., No. 89 C 20241, 1992 WL 229252, at *7 (N.D. Ill. Sept. 9, 1992) (finding shift of CERCLA liability "is permissible only when the contractual language clearly and unequivocally indicates that it is the parties' intent to transfer that liability"); *but see Jones-Hamilton Co.*, 750 F. Supp. at 1027-28 (indemnification agreement encompassing "all losses, damages, and costs resulting from any violation of law held sufficient to release indemnity from CERCLA liability even though agreement did not specifically mention CERCLA or CERCLA-type liability.").

[162] *See* Smith Land & Improvement Corp. v. Celotex Corp., 851 F.2d 86, 89 (3d Cir. 1988).

[163] *See, e.g.*, *Mardan Corp.*, 804 F.2d at 1459 (concluding, based on New York law, that settlement agreement and release barred purchaser's cost recovery claim under section 107 of CERCLA); Kaufman & Broad-S. Bay v. Unisys Corp., 882 F. Supp. 1468, 1472-73 (N.D. Cal. 1993) (following Mardan, contract releasing CERCLA liability should be construed under state law), *disapproved of by* KFC W., Inc. v. Meghrig, 49 F.3d 518 (9th Cir. 1995); *but see* Mobay Corp. v. Allied-Signal, Inc., 761 F. Supp. 345, 351-52 (D.N.J. 1991) (observing that uniform CERCLA law would prevent differences in state laws from affecting incentives for voluntary cleanup, that application of state law to contract releases could delay cleanups, and that application of a uniform federal law would not disrupt existing relationships predicated on state law, the court concluded that federal common law governs interpretation of whether a contract releases CERCLA liability).

"necessary costs of response," NCP consistency, or factual and legal causation. Unlike cost recovery and contribution actions under CERCLA, these claims are subject to and may be defeated by broad equitable defenses. On balance, however, contractual agreements with other potentially responsible parties often provide substantial cost recovery opportunities and, therefore, should be carefully considered.

4. State Common Law Tort Claims

Because recovery in CERCLA section 107 actions is limited to necessary response costs that have been incurred consistent with the NCP, private litigants are sometimes left to seek state common law remedies in order to recover damages and costs that are not, or may not be, recoverable under CERCLA. Potential state common law claims include, for example, nuisance, trespass, negligence, fraud, negligent misrepresentation, and strict liability.[164]

Private plaintiffs routinely include these types of common law claims as part of their CERCLA suit.[165] However, given the strict liability remedy available under CERCLA, private plaintiffs often pursue state common law claims aggressively only when they have incurred, or expect to incur, either damages that cannot be classified as response costs, such as economic or consequential damages resulting from contamination, or response costs that may not be necessary and consistent with the NCP. In most instances, the state common law claims will be supplementary to a plaintiff's federal statutory claims under CERCLA.

5. Nuisance

Nuisance is defined as any substantial and unreasonable non-trespassary interference with another's use or enjoyment of land.[166] In contrast to most other tort claims, nuisance is not principally concerned with the nature of the conduct causing the damage, but with the nature and relative importance of the interests interfered with or invaded.[167] Thus, for example, the interference with property interests arising from the migration of contaminated ground water to

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[164] Other state common law causes of action which are less frequently pleaded include conversion, negligence per se, nuisance per se, and waste. Private plaintiffs that successfully prove state common law waste may be entitled to judgment for treble damages. *See, e.g.*, Utah Code Ann. § 78-38-2 (2009).

[165] State common law claims may be filed in state court or as pendent claims to CERCLA suits in federal court under CERCLA section 114. *See, e.g.*, Allied Towing Corp. v. Great E. Petroleum Corp., 642 F. Supp. 1339, 1351-52 (E.D. Va. 1986) (noting that courts should carefully exercise their discretion in allowing state law claims as pendent to RCRA suits, but finding the right to invoke pendent jurisdiction in CERCLA and RCRA suits "untrammeled"); New York v. Shore Realty Corp., 759 F.2d 1032, 1050 (2d Cir. 1985) (holding that since "[t]he public nuisance claim for abatement and the CERCLA claims clearly 'derive from a common nucleus of operative fact' and the state 'would ordinarily be expected to try them all in one judicial proceeding,'" the court allowed pendent state law claims) (quoting United Mine Workers v. Gibbs, 383 U.S. 715, 725 (1966)).

[166] *See* Turnbaugh v. Anderson, 793 P.2d 939, 942 (Utah Ct. App. 1990); Johnson v. Mount Ogden Enters., Inc., 460 P.2d 333, 336 (Utah 1969); Branch v. W. Petroleum, Inc., 657 P.2d 267, 276 (Utah 1982) ("[w]hen the conditions giving rise to a nuisance are also a violation of a statutory prohibition, those conditions constitute a nuisance per se"); Solar Salt Co. v. S. Pac. Transp. Co., 555 P.2d 286, 289 (Utah 1976) (defining public nuisance as affecting "an interest common to the general public, rather than peculiar to one individual, or several") (quoting W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS § 90, at 645 (5th ed. 1984) [hereinafter PROSSSER & KEETON, TORTS]).

[167] *Branch*, 657 P.2d at 274.

one person's property from the land of another gives rise to a nuisance action.[168] Unlike other state common law theories, some courts have held that actual contamination need not occur before a plaintiff may bring an action under a nuisance theory.[169] Thus, depending on the jurisdiction, the mere threat of contamination may be sufficient to allow a plaintiff's recovery. This may prove to be a major advantage of suing for nuisance, as opposed to other tort theories, if the applicable forum's law adopts the threat of contamination rule.

To compensate for the loss or injury sustained as a result of the nuisance, all damages, whether real or personal, and whether temporary or permanent, are recoverable.[170] For permanent injuries to the land, the measure of damages is the diminution of the property's value[171] as well as any special damages resulting from the nuisance.[172] In the case of a temporary nuisance, damages for loss of the use of the property are ordinarily recoverable.[173] Furthermore, in the case of a public nuisance, a court may issue an order enjoining the nuisance, whereas injunctive relief is not available to private plaintiffs under CERCLA.[174]

However, the availability of a nuisance suit may be limited by some state statutes precluding nuisance actions against manufacturers whose facilities have been in operation for a certain number of years, if those facilities were not nuisances when they began operation.[175] In addition, nuisance claims are generally subject to a barrage of common law equitable defenses.[176]

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[168] *See id.*

[169] *See, e.g.*, Exxon Corp. v. Yarema, 516 A.2d 990 (Md. Ct. Spec. App. 1986) (finding that plaintiff could recover for nuisance when gasoline had leaked from storage tanks on defendant's property, even though plaintiff's property was upgradient of the tanks and was not contaminated); *but see* Pratt v. Hercules, Inc., 570 F. Supp. 773, 802 (D. Utah 1982) (applying Utah and federal law, and holding that "there can be no nuisance arising solely from the existence of harm arising from a possible future explosion or accident").

[170] *See* PROSSSER & KEETON, TORTS, *supra* note 166, § 89, at 637-43.

[171] *See, e.g.*, Spaulding v. Cameron, 239 P.2d 625, 628 (Cal. 1952); PROSSSER & KEETON, TORTS, *supra* note 166, § 89, at 637-38.

[172] *See Solar Salt*, 555 P.2d at 290; Adams v. Arkansas City, 362 P.2d 829, 836 (Kan. 1961).

[173] *See* Alexander v. Arkansas City, 396 P.2d 311, 314-15 (Kan. 1964).

[174] *See* New York v. Shore Realty Corp., 759 F.2d 1032, 1049-52 (2d Cir. 1985) (denying an injunction under CERCLA, but allowing an injunction under a state common law nuisance theory).

[175] *See, e.g.*, Utah Code Ann. § 78-38-5 (2009) (barring nuisance claims against manufacturing facilities in operation for more than three years).

[176] *See Branch*, 657 P.2d at 276; RESTATEMENT (SECOND) OF TORTS § 840C (1977). The elements of assumption of risk are knowledge of the danger and voluntary consent to assume it. Meese v. Brigham Young Univ., 639 P.2d 720, 724 (Utah 1981); *see Pratt*, 570 P.2d at 793-94 (finding that plaintiffs are not entitled to recover the loss of speculative profits because plaintiffs knowingly took a calculated risk when they purchased agricultural land adjoining a manufacturing operation to develop it as residential property).

6. Trespass

A suit for trespass is appropriate when a defendant has intentionally used a plaintiff's real property without authorization and without a legal privilege to do so.[177] The off-site migration of wind-blown tailings or contaminated ground water or surface water may, for example, trigger a claim for trespass.

Actual physical invasion by a defendant is not required, but rather a defendant's act must result in an invasion of tangible matter on the property.[178] Some courts no longer require a physical invasion of visible proportion.[179] While the facts giving rise to a trespass claim may seem indistinguishable from those giving rise to a nuisance claim, the decision to characterize the intrusion as either a nuisance or a trespass can have substantial consequences, especially in the context of statutes of limitations, because some states' statutes allow different periods for nuisance and trespass.[180]

Ordinarily, a defendant is liable for trespass even though it acted in good faith and believed it had a legal right to enter the land.[181] Conversely, consent of the owner is an absolute defense to a plaintiff's claim of trespass.[182] Courts generally allow recovery for the diminution of value of the land in trespass cases.[183]

7. Negligence

Negligence is defined as conduct that "falls below the standard established by law for the protection of others against unreasonable risk of harm."[184] While courts have generally not articulated the precise standard of care that oil and gas operators or owners owe to their neighbors to protect them from pollution,[185] state law often provides that the standard of care in

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[177] *See* PROSSSER & KEETON, TORTS, *supra* note 166, § 13, at 70; Plotkin v. Club Valencia Condo. Ass'n. Inc., 717 P.2d 1027, 1027 (Colo. Ct. App. 1986); *see also* Collier v. City of Portland, 644 P.2d 1139, 1141 (Or. Ct. App. 1982) (trespass to real property is an intentional entry upon the land of another by one not privileged to enter).

[178] *See* PROSSSER & KEETON, TORTS, *supra* note 166, § 13, at 71.

[179] *See, e.g.*, Martin v. Reynolds Metals Co., 342 P.2d 790 (Or. 1959), *cert. denied*, 362 U.S. 918 (1960) (holding that invasion of invisible gases and particulates constitutes trespass).

[180] *See, e.g., id*. at 791 (issue of whether invasion was a nuisance or a trespass was critical because the statute of limitations had run for nuisance but not for trespass).

[181] Luoma v. Donohoe, 588 P.2d 523, 526 (Mont. 1978).

[182] *See* PROSSSER & KEETON, TORTS, *supra* note 166, § 18, at 112.

[183] *See* Pitts v. Pine Meadow Ranch, Inc., 589 P.2d 767, 769 (Utah 1978).

[184] RESTATEMENT (SECOND) OF TORTS § 282 (1965); *see* Williams v. Melby, 699 P.2d 723, 728 (Utah 1985). If claims asserted against a defendant contain solely elements of intentional conduct, such as trespass and not negligence, defendant may encounter difficulties in obtaining insurance coverage which, in turn, may delay settlement. Thus, it may be advisable for a plaintiff to assert a claim based on non-intentional conduct to enhance a defendant's chances of coverage.

[185] Cases that address the standard of care owed by mine operators deal principally with personal injuries suffered in abandoned mining shafts during the early 1900's, rather than with liability for environmental contamination. *See, e.g.*, Richardson v. El Paso Consol. Gold Mining Co., 118 P. 982, 986 (Colo. 1911). The standard of care imposed on mine operators in those cases was generally a duty of reasonable care. *See, e.g., id*. Likewise, cases that address

any particular case should depend on the "circumstances of [the] case and on the extent of foreseeable danger involved."[186] If there has been no lack of due care on the part of a defendant, then recovery will not be available.

Commonly asserted defenses to a negligence claim include assumption of the risk,[187] contributory negligence and comparative negligence.[188] Such defenses may be available in environmental claims involving, for example, a dispute between current and former landowners concerning the cleanup of soil or ground water contamination. Most jurisdictions do not recognize a cause of action in negligence for purely economic loss when there has been no damage to persons or property.[189] This potential limitation on recoverable damages under a negligence theory might apply in the case of a plaintiff whose property value declines as the result of threatened, but not actual, contamination from a neighboring industrial or oil and gas site. Depending on the jurisdiction, such a plaintiff may be unable to recover in negligence for the diminution of value of its property, although other common law theories, such as nuisance, may permit recovery.

8. Fraud

Fraud is another potential state common law theory under which a plaintiff may recover damages that are not compensable under CERCLA, especially in cases involving a plaintiff's purchase of property from a prior owner that falsely represented or omitted to disclose a material fact concerning contamination, actual or threatened, on or off the site.[190] The measure of damages for fraud is the difference between the value of the land as is and the value the land would have had if the representations had been true.[191] Defenses to fraud include failure to establish one or more of the elements of the claim (*e.g.*, knowing falsehood, reasonable reliance,

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the standard of care owed by oil property operators, generally refer to it as a duty of reasonable case. *See, e.g.*, Cooper v. Ohio Co., 108 F.2d 535, 537 (10th Cir. 1939) ("It is elementary that a duty rests upon the operator of an oil property to protect it against drainage through adjoining wells and to develop the property in a prudent and proper manner. . . . It is a duty that must be exercised with reasonable care and diligence. In practically all cases, courts have said that it is the lessee's duty to prevent substantial drainage through the exercise of reasonable care and diligence.").

[186] *Williams*, 699 P.2d at 727 (quoting DCR, Inc. v. Peak Alarm Co., 663 P.2d 433, 435 (Utah 1983)).

[187] *See* PROSSSER & KEETON, TORTS, *supra* note 166, § 68, at 484-98.

[188] *See id.* § 68, 468-79; *see also* Utah Code Ann. § 78-27-38 (2009) (providing that plaintiff may only recover from a defendant or group of defendants whose fault exceeds that of the plaintiff).

[189] *See, e.g.*, Hale v. Groce, 744 P.2d 1289, 1290 (Or. 1987) (stating that a person is not ordinarily liable for negligently causing a stranger's purely economic loss without injuring that stranger's person or property, even where the harm was foreseeable); *but see* Mattingly v. Sheldon Jackson Coll., 743 P.2d 356, 359-61 (Alaska 1987) (allowing recovery in negligence for purely economic losses, but only because the losses were "particularly foreseeable" to defendants).

[190] *See generally* Atkinson v. IHC Hosps., Inc., 798 P.2d 733, 737-38 (Utah 1990), *cert. denied*, 498 U.S. 1090 (1991); Taylor v. Gasor, Inc., 607 P.2d 293, 294 (Utah 1980) (discussing elements of fraud).

[191] *See* Dugan v. Jones, 615 P.2d 1239, 1249 (Utah 1980).

etc.); waiver or estoppel;[192] and a plaintiff's actual or constructive knowledge of the facts.[193] Contributory negligence is not a defense to fraud.[194]

9. Negligent Misrepresentation

This cause of action involves the careless or negligent misrepresentation of a material fact by a person having a pecuniary interest in the transaction and having a superior opportunity to know the material facts.[195] The elements of fraud need not be independently established in a claim of negligent misrepresentation.[196] Unlike fraud, contributory negligence is an available defense to a defendant.[197] Accordingly, a plaintiff may not heedlessly accept a defendant's statements as true, but must exercise reasonable care to protect its own interest – that is, the care that would be exercised by an ordinary, prudent person in that plaintiff's circumstances.

10. Strict liability

Strict liability may be imposed where an injury is occasioned by an abnormally dangerous or, in some states, an ultra-hazardous activity, even in the absence of negligence or culpable conduct by a defendant.[198] The line of decisions allowing recovery under strict liability for environmental contamination is long and distinguished,[199] although state courts vary in their

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[192] *See id.* at 1247; Chester v. McDaniel, 504 P.2d 726, 727-28 (Or. 1972).

[193] *See* Dillon-Malik, Inc. v. Wactor, 728 P.2d 671, 673 (Ariz. Ct. App. 1986) (actual knowledge is a defense); Snow's Auto Supply, Inc. v. Dormaier, 696 P.2d 924, 930 (Idaho Ct. App. 1985) (actual knowledge is a defense); Young v. Hecht, 597 P.2d 682, 688 (Kan. Ct. App. 1979) (constructive knowledge is a defense).

[194] *See* Berkeley Bank for Coops. v. Meibos, 607 P.2d 798, 804 (Utah 1980) (contributory negligence is not a proper defense in the case of intentional misrepresentation, but it is a proper defense to negligent misrepresentation); *see also* Pacific Maxon, Inc. v. Wilson, 619 P.2d 816, 817 (Nev. 1980), *modified*, 714 P.2d 1001 (Nev. 1986); Kang v. Harrington, 587 P.2d 285, 290 (Haw. 1978).

[195] *See* Price-Orem Inv. Co. v. Rollins, Brown & Gunnell, Inc., 713 P.2d 55, 59 (Utah 1986); *see also* Ellis v. Hale, 373 P.2d 382, 385 (Utah 1962) (stating that an essential element of a negligent misrepresentation claim is that there was a special duty of care running from the representor to the representee).

[196] *See Price-Orem Inv. Co.*, 713 P.2d at 59.

[197] *See Berkeley Bank for Coops.*, 607 P.2d at 804 (negligence is a proper defense to a claim of negligent misrepresentation, but it is not a proper defense in the case of intentional misrepresentation).

[198] PROSSSER & KEETON, TORTS, *supra* note 166, § 78, at 555. Courts have found certain conditions and activities surrounding mining operations to be abnormally dangerous. For example, blasting has long been an activity to which strict liability attaches. *See* Colton v. Onderdonk, 10 P. 395, 397 (Cal. 1886); *see also* McGregor v. Barton Sand & Gravel, Inc., 660 P.2d 175, 182 (Or. Ct. App. 1983) (holding that the storage of water created a potential for harm of exceptional magnitude which could not be averted by exercise of utmost care); *but see* Williams v. Amoco Prod. Co., 734 P.2d 1113, 1122-23 (Kan. 1987) (holding that the drilling and operation of a natural gas oil well is not an abnormally dangerous activity); Anderson v. Farmland Indus., Inc., 136 F. Supp. 2d 1192, 1201 (D. Kan. 2001) (holding that the operation of a refinery was not an abnormally dangerous activity); Greene v. Prod. Mfg. Corp., 842 F. Supp. 1321, 1326-27 (D. Kan. 1993) (holding that a metal fabrication business' use of solvent to degrease metal parts was not abnormally dangerous activity triggering strict liability in connection with groundwater contamination).

[199] See William B. Johnson, *Common-Law Strict Liability in Tort of Prior Landowner or Lessee to Subsequent Owner for Contamination of Land with Hazardous Waste Resulting from Prior Owner's or Lessee's Abnormally Dangerous or Ultra Hazardous Activity*, 13 A.L.R. 5TH 600 (1993); *see generally* T & E Industries, Inc. v. Safety-

position on whether a successor landowner may recover from prior owners in strict liability.[200] As between sellers and buyers of real property, state court decisions often rely on the allocation of risk of environmental contamination as articulated by the parties in a purchase agreement.[201] Nevertheless, the potential reach of strict liability in environmental contamination cases can be broad. For example, in *T & E Indus., Inc. v. Safety-Light Corp.*,[202] the court held that a defendant seller was strictly liable to a purchaser of radium-contaminated property based on the abnormally dangerous activity of a distant predecessor in title.[203] Assumption of, or consent to, a risk is available as a defense to strict liability.[204] However, contributory negligence is not a defense.[205]

CONCLUSION

This paper has examined the most common environmental issues associated with hydraulic fracturing, primarily focusing on the potential adverse impacts to water resources and air quality and regulatory developments to manage and minimize these impacts. Understanding these impacts is important in negotiating and crafting contractual provisions in oil and lease agreements that protect surface landowners from potential environmental risks relating to hydraulic fracturing. Among such risks includes EPA's authority to investigate and respond to releases of hazardous substances itself and to issue administrative orders requiring a surface landowner or oil and gas company, potentially responsible for a release of hazardous substances, to take response actions, and to seek relief in a federal court. Faced with the prospects of potential costly environmental cleanups and cleanup liability, private parties, such as those perhaps involved in well sites using horizontal drilling and hydraulic fracturing techniques, often must pursue claims against other responsible parties to recover all or part of the costs of cleanup and damages arising from environmental contamination. Private parties that understand the complexities associated with pursuing CERCLA cost recovery and contribution claims as well as other statutory, contractual, and tort claims for recovery of environmental costs and damages are

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Light Corp., 587 A.2d 1249 (N.J. 1991) (holding that the current owner of contaminated property was not limited to contract remedies, but could maintain a tort action against the prior owner of property based on strict liability for having engaged in abnormally dangerous activities).

[200] *See, e.g.*, Wellesley Hills Realty Trust v. Mobil Oil Corp., 747 F. Supp. 93, 101-02 (D. Mass. 1990) (applying Massachusetts law and dismissing a gas station owner's strict liability claim against a prior owner for contamination because the harm caused by the defendant was to its own property rather than that of another).

[201] *See, e.g.*, Hanlin Grp., Inc. v. Int'l Minerals & Chem. Corp., 759 F. Supp. 925, 934 (D. Mo. 1990) (applying Maine law and finding that the existence of a purchase agreement between the current and prior owners does not by itself eliminate the current owner's strict liability claim); *Wellesley Hills Realty Trust*, 747 F. Supp. at 102 (dismissing plaintiff's claim because plaintiff had assumed the risk of bearing the costs of cleanup which it knew of at the time of purchase); Allied Corp. v. Frola, 730 F. Supp. 626, 630 (D.N.J. 1990) (applying New Jersey law and holding that an "as is" clause in a land sale contract did not extinguish the current owner's strict liability claims for damages resulting from the prior owner's processing of coal tar).

[202] 587 A.2d 1249 (N.J. 1991).

[203] *Id.*

[204] *See* PROSSSER & KEETON, TORTS, *supra* note 166, § 79, 565-67 (strict liability does not apply when the person harmed has reason to know of the risk that makes the activity dangerous and participates in the activity); *see also Wellesley Hills*, 747 F. Supp. at 101-02.

[205] *See Branch*, 657 P.2d at 276.

in the best position to recover against other responsible parties. A strategic approach that realistically assesses each of the various theories of recovery will enhance the likelihood of success.