

5-1-2014

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Recommended Citation

Gallivan, Dakota, "Hydraulic Fracturing: The Intersection Of Commerce, Property Rights And The Environment In New York State" (2014). *Law School Student Scholarship*. 470.
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**Hydraulic fracturing:
The intersection of commerce, property rights and the environment in New York State**

INTRODUCTION

Hydraulic fracturing is the process by which rock layers are fractured by a pressurized liquid. Some fractures are naturally created; others are the result of induced hydraulic fracturing, commonly referred to as fracking, a technique used to release petroleum, natural gas or other valuable substances for extraction.¹ Hydraulic fracturing enables the extraction of natural gas from rock formations deep below the earth's surface, generally 5,000–20,000 feet. As of 2010, it was estimated that 60% of all new oil and gas wells worldwide were being hydraulically fractured.² As of 2012, 2.5 million hydraulic fracturing jobs have been performed on oil and gas wells worldwide, more than one million of them in the United States.³

Hydraulic fracturing has recently become a highly charged issue across environmental, political and social groups, particularly in the states most directly affected by this process, which include New York, Pennsylvania, Wyoming, Colorado and Texas. Because drilling technologies are developing so quickly and the full view of their environmental impact is not yet clear, creating informed, comprehensive regulation has proven difficult.

In 2009, then Governor Patterson issued a de facto moratorium on any new hydraulic fracturing in New York, and this moratorium remains in effect today. These past four years have given ample time for environmentalists, drilling companies, landowners and lawyers to organize and prepare for what will likely be a series of protracted legal battles. The litigation will involve

¹ 2 PHILIPPE A. CHARLEZ, ROCK MECHANICS: PETROLEUM APPLICATIONS 239 (1997).

² Carl T. Montgomery & Michael B. Smith, *Hydraulic Fracturing: History of an Enduring Technology* 26–41 (2010), <http://www.spe.org/jpt/print/archives/2010/12/10Hydraulic.pdf>.

³ George E. King, *Hydraulic Fracturing 101: What Every Representative, Environmentalist, Regulator, Reporter Investor, University Researcher, Neighbor, and Engineer Should Know About Estimating Frac Risk and Improving Frac Performance in Unconventional Gas and Oil Wells*, (Kansas Geological Survey, The University of Kansas) 1,2 (2012), http://www.kgs.ku.edu/PRS/Fracturing/Frac_Paper_SPE_152596.pdf.

many issues but perhaps few will be as prominent as the landowner's right to exclude, alienability, municipal zoning, state regulation and environmental safety.

After receiving over 13,000 public comments on a Revised Draft Supplemental Generic Environmental Impact Statement (SGEIS), issued in 2011, the New York State Department of Environmental Conservation appears ready to allow industry to move ahead with fracking.⁴ Recently, it was reported that Environmental Conservation Commissioner Joseph Martens might grant well drilling permits before the final State regulations have even been promulgated.⁵ This stands in stark contrast to the recent actions of the New York State Assembly, who on March 6, 2013, passed legislation continuing the moratorium until May 2015.⁶ It remains to be seen if the State Senate will pass this bill, and if so, if Governor Cuomo will sign it. Seemingly, it has never been an issue of whether hydraulic fracturing would be allowed in New York, but rather when, and more to the point, with how much regulation.

Proponents of fracking in New York State often point out that well drilling in the State has been continuous in New York since the 1800s, and that 14,000 of more than 75,000 wells drilled are still active and productive.⁷ Furthermore, and perhaps more relevant to their argument, current drilling contributes half a billion dollars to New York State's economy every year.⁸ Expanded fracking could further create a windfall for the state, both in employment and in

⁴ New York State Department of Environmental Conservation, *Revised Draft SGEIS on the Oil, Gas and Solution Mining Regulatory Program* (September 2011), <http://www.dec.ny.gov/energy/75370.html> (last visited March 4, 2013).

⁵ *N.Y. May Issue Fracking Permits Without Final Regulations*, BLOOMBERG.COM, <http://www.bloomberg.com/news/2013-02-12/new-york-may-issue-fracking-permits-without-final-regulations.html> (last visited March 4, 2013).

⁶ *New York State Assembly Votes to Block Fracking Until 2015*, REUTERS.COM, <http://www.reuters.com/article/2013/03/06/energy-fracking-newyork-idUSL1N0BYFK320130306> (last visited April 28, 2013).

⁷ New York State Department of Environmental Conservation, *Oil, Gas and Solution Salt Mining in New York State*, <http://www.dec.ny.gov/energy/205.html> (last visited March 4, 2013).

⁸ *Id.* <http://www.dec.ny.gov/energy/205.html>.

substantial economic investment, while simultaneously creating massive increases in tax revenues.

These proponents often cite neighboring Pennsylvania as a prime example of the type of economic prosperity that New York State could generate through fracking. Researchers believe that gas drilling has contributed a direct economic stimulus of 10.4 billion dollars to the Pennsylvania economy.⁹ The American Petroleum Institute cites a report that states, in addition to direct stimulus, there exists an indirect effect from state gross output and increased consumer output making the total economic benefit approximately 20.46 billion dollars in 2010.¹⁰ Ultimately, this results in a total of \$2 of total economic output for every \$1 invested in Pennsylvania by the gas drilling industry.¹¹ Tax revenue also drives the argument. In 2010, Pennsylvania saw an increase in state tax revenue from drilling to over a billion dollars, and Federal tax revenue increased by 1.44 billion as a result of shale drilling.¹² The potential windfall for New York State's economy makes it difficult for Governor Andrew Cuomo and the State Legislature to ignore drilling advocates and not end the moratorium expeditiously.

Opponents, or the even cautiously optimistic, cite recent reports by the United States Geological Survey, which states that the entirety of the Marcellus Shale Region only contains about 84 trillion cubic feet of undiscovered, technically recoverable natural gas.¹³ This estimate is in stark contrast to what is currently reported by the New York State Department of Environmental Conservation, which reports an estimated 489 trillion cubic feet of natural gas in

⁹ Timothy J. Considine, Robert Watson & Seth Blumsack, *The Pennsylvania Marcellus Natural Gas Industry: Status, Economic Impacts and Future Potential*, Penn State University: College of Earth and Mineral Sciences, Department of Energy and Mineral Engineering, at 23 (July 20, 2011).

¹⁰ *Id.* at 23-24.

¹¹ *Id.* at 24.

¹² *Id.* at 26.

¹³ United States Geological Survey, *USGS Releases New Assessment of Gas Resources in the Marcellus Shale, Appalachian Basin* (August 23, 2011), <http://www.usgs.gov/newsroom/article.asp?ID=2893>.

the region.¹⁴ The NYDEC does not explicitly say that the gas is all commercially recoverable, but certainly the vast disparity in the numbers is likely to further polarize groups on either side of this issue.

In the past three years, constituent groups, landowners and industry representatives have been actively advocating their positions in courtrooms and through local legislative bodies. Nonprofit organizations, such as the Joint Landowners Coalition of New York, Inc. (JLCNY), have formed to advocate for gas development and best environmental practices. This group represents 38 landowner coalitions, 70,000 New Yorkers, and speaks for landowners who possess roughly 800,000 acres of land.¹⁵ Among the organizations' varied interests, they exist to give landowners negotiating power to ensure the best possible gas lease terms.¹⁶ Similarly, even the State of New York joined forces with various NGOs and brought suit against the United States Army Corps of Engineers, United States Fish and Wildlife Service, the Department of the Interior, the EPA, and other Federal agencies to challenge actions taken in the Delaware River Basin related to gas development and environmental policy.¹⁷

The rallying cry of energy independence and for clean sources of fuel, contrasted with the sullied reputation of dirty coal, hopefully will drive New York State toward a regulatory regime that could have the potential to set precedent for other states. Largely, this will depend on the ability of the drilling industry to reap profits, the extent of the nearly certain environmental consequences, and of course, the effects on the populace. This paper will endeavor to examine

¹⁴ New York State Department of Environmental Conservation, *Marcellus Shale*, <http://www.dec.ny.gov/energy/46288.html> (last visited March 4, 2013).

¹⁵ Scott R. Kurkowski, *The Marcellus Shale: A Game Changer For The New York Economy?*, 84 N.Y. ST. B. J. 10, 11 (2012) (discussing the advantages of fracking in New York, and disputing Elizabeth Radow's assertions in previous month's journal).

¹⁶ *Id.*

¹⁷ *New York v. U.S. Army Corps of Engineers*, 896 F. Supp. 2d 180, 181 (E.D.N.Y. 2012) (New York sued federal agencies for approving preliminary actions for natural gas development. Dismissed by court for lack of standing, ripeness, and subject matter jurisdiction.).

the current legal landscape in relation to property rights, industrial leasing, proposed regulation in New York and the legal challenges available from an environmental perspective.

First, the paper will examine current fracking technology and processes along with commonly used techniques in shale gas extraction. The basics of well construction, chemical additive use in hydro-fracking, and the debate about their safety will be discussed. Next, the geographical underpinnings of shale gas exploration in the northeast are considered, with particular focus on Marcellus Shale. Later, the paper will outline the federal environmental regulatory framework that previously existed for petroleum and gas drilling operations and how that is distinguished by today's more deregulated scheme. The discussion will then move toward New York State's proposed guidelines, with close attention paid to new precautions the Department of Environmental Conservation has added to previous State regulations. The last section of this paper will attempt to illustrate how the energy industry can legally impose their collective will on property owners by examining present day problems with oil and gas leases in upstate New York. This section will also look at how municipal governments have found a way to prohibit fracking in their towns in spite of state law preemption.

I. THE PROCESS: HYDRAULIC FRACTURING

Hydraulic fracturing is a natural gas drilling technique that involves drilling a hole, typically around 15" in diameter, and forcing water, sand and chemicals at high pressure into the earth.¹⁸ This process creates fissures, which can occur as much as a mile below the surface, which release natural gas that can then be captured.¹⁹ Gas drilling advocates tout this process as a safe,

¹⁸ *Hydraulic Fracturing 101*, AMERICA'S NATURAL GAS ALLIANCE, <http://anga.us/issues-and-policy/safe-and-responsible-development/hydraulic-fracturing-101#.UXxUb4JnKfM> (last visited April 27, 2013).

¹⁹ *Id.*

homegrown American energy source, already subject to massive federal regulation, that will create jobs and aid the ailing economy.²⁰

Energy security is naturally a concern of the United States government but is less often a concern of large industry with profit motive. Yet, proponents of fracking indicate that a symbiotic relationship exists with regard to domestic energy production. In looking at the United States energy demands, 85% of supply comes from natural gas, oil, and coal.²¹ The advent of new drilling technologies and effective means of horizontal well drilling have produced estimates that, at the 2007 production rates, the U.S. can sustain, and increase natural gas production through fracking for the next 90 years.²² Natural gas is the primary fuel choice for many heavy industries such as petroleum refining, food processing, and chemical manufacture.²³ Unfortunately, it takes significant heavy industry to extract this resource from the earth.

a) Well Construction

Drilling deep into the earth to extract natural gas is initially a lengthy and labor-intensive process. First, well sites are chosen after geologists and hydro geologists engage in seismic mapping and survey.²⁴ Once a site has been assessed and selected, drilling begins and can last anywhere from a few days to a few months. The drilling rig bores into the earth, and a drilling fluid known as “mud” is placed in the wellbore to remove the cuttings created by the bit and to control pressure.²⁵ This “mud” is a combination of either water or oil mixed with salt, sand, and

²⁰ *Id.*

²¹ U.S. Department of Energy, *Modern Shale Gas Development in the United States: A Primer* 1, 19 (April 2009), www.netl.doe.gov/technologies/oil-gas/.../shale_gas_primer_2009.pdf.

²² *Id.*

²³ *Id.* at 20.

²⁴ Kurkowski, *supra* note 15, at 11.

²⁵ International Energy Agency, *Golden Rules for a Golden Age of Gas: World Energy Outlook Special Report on Unconventional Gas* 1, 23 (2012).

chemical additives.²⁶ There is no standard formula for this concoction, as it often needs to be adjusted in its composition during drilling, but the oil used in the mixture is purported to be food grade.²⁷ During the drilling, steel casings and concrete are placed in the well to prevent gas and liquids from escaping into other shallow rock formations or into aquifers.²⁸ Upon the initial completion of the drilling more casings are placed into the borehole; ultimately there will be four casing barriers emplaced to prevent gas leakage.²⁹ After the casings and barriers are installed, a wellhead is placed atop the well for the purpose of pressure testing the well.³⁰ Fluid, or “mud” is again injected into the well to ensure that no gas is leaking into the earth below the wellhead.³¹ At this point, in both vertical and horizontally drilled wells, fracturing fluid is pumped at high pressures into the production casing.³² This highly pressurized fluid creates fissures in the shale rock, which is relatively permeable.³³ The fracturing fluid consists of 98% fresh water and sand, with chemical additives comprising the other roughly 2% of the mixture.³⁴ During this process, while hydrocarbons are being released, proppants are pumped into the shale to keep the fissures open and releasing gas.³⁵ Typically, the proppant that “props” open the fissures is either sand or ceramic beads.³⁶

²⁶ *Id.*

²⁷ New York State Department of Environmental Conservation, *Revised Draft SGEIS on the Oil, Gas and Solution Mining Regulatory Program, Chapter 5 Natural Gas Development Activities and High-Volume Hydraulic Fracturing* at 34, (September 2011) (Hereinafter *Revised Draft SGEIS*).

²⁸ International Energy Agency, *supra* note 14, at 23.

²⁹ *Id.* at 24.

³⁰ New York State Department of Environmental Conservation, *Revised Draft SGEIS on the Oil, Gas and Solution Mining Regulatory Program, Chapter 5 Natural Gas Development Activities and High-Volume Hydraulic Fracturing* at 95, (September 2011).

³¹ *Id.*

³² International Energy Agency, *supra* note 25 at 25.

³³ *Id.* at 26.

³⁴ New York State Department of Environmental Conservation, *Revised Draft SGEIS Executive Summary*, 1, 8 (2011).

³⁵ International Energy Agency, *supra* note 25, at 23.

³⁶ International Energy Agency, *supra* note 25, at 26.

Hydraulic fracturing uses an enormous volume of water to release the gases embedded within the shale formations. It is estimated that the average multi-stage fracturing operation, in a typical 4,000-foot lateral well, uses between 2.4 million and 7.8 million gallons of water.³⁷ Opponents of hydro-fracking find this number concerning, but not nearly as much as the 2% of chemicals added to the water to release the trapped gasses. The water-use issue is certainly troublesome from an environmental perspective but for the purposes of this paper will not be discussed in any detail.

b) Chemical Additives

The chemical composition of fracking fluid has long been thought of as a trade secret, but it seems now that either through public pressure, the media or both, more about this product is being revealed every day. Water-based fluids, as opposed to oil-based, are comprised of 98-99% water with the remainder made up of the chemical components.³⁸ Prior to injecting the water-based fluid into the well, the initial preparation stage may involve the injection of a solution of hydrochloric acid, which cleans any wellbore damage in the well, which may have occurred during the drilling and casing work.³⁹ In the second phase, which most often contains water-soluble additives, the chemicals may vary, but usually include guar gum, ammonium, potassium, and salt of peroxydisulfate.⁴⁰ Biocides are also added to the drilling cocktail to increase viscosity and then are further treated with methanol and sodium thiosulfate to keep temperatures stable during the fracturing.⁴¹ Finally, either silica sands or resin-coated grains of sand are used as

³⁷ See Revised Draft SGEIS, *supra* note 23, at 8.

³⁸ CONGRESSIONAL RESEARCH SERVICE, UNCONVENTIONAL GAS SHALES: DEVELOPMENT, TECHNOLOGY, AND POLICY ISSUES, 1, 28 (2009).

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *Id.*

proppant to create pathways for gas extraction.⁴² This is not an exhaustive list of the chemical composition of fracturing fluid, but merely an illustration of potential fracking additives.

What remains largely unknown are the amounts and ratios of the chemical compounds used in the extraction process. The Occupational Safety and Hazard Administration requires Material Safety Data Sheets (MSDS) be kept on each chemical used on a drilling site.⁴³ This information can tell only part of the story, because the particular chemical amounts in the fluids do not need to be disclosed, as this information is considered proprietary.⁴⁴ One of several difficulties with allowing companies to maintain their trade secrets is that scientists and environmentalists do not have the opportunity to examine or opine on the potential deleterious health effects from certain concentrations or levels of the chemical compounds in humans. The trade group, American Petroleum Institute, claims that fracking fluid is safe and the chemicals used in drilling are in everyday consumer products such as deodorants, cosmetics, ice cream and detergent.⁴⁵ These claims are widely disputed, as consumer safety advocates and researchers have compiled a list of 944 products and 632 chemicals used during natural gas exploration, many of which are harmful.⁴⁶ This is yet another contentious area where state courts and legislatures will have to consider a cost-benefits analysis, the public good, and the necessity of a regulatory regime.

c) Marcellus Shale

Shale is a type of sedimentary rock that lies hundreds and sometimes thousands of feet under

⁴² *Id.*

⁴³ CONGRESSIONAL RESEARCH SERVICE, UNCONVENTIONAL GAS SHALES: DEVELOPMENT, TECHNOLOGY, AND POLICY ISSUE 1, 28 (2009).

⁴⁴ *Id.*

⁴⁵ *Understanding Fracturing Fluid*, AMERICAN PETROLEUM INSTITUTE, <http://www.api.org/news-and-media/infographics/understanding-fracturing-fluid.aspx> (last visited March 10, 2013).

⁴⁶ 17 Colborn T, Kwiatkowski C, Schultz K & Bachran M, *Human and Ecological Risk Assessment: Natural Gas Operations from a Public Health Perspective*, *Human and Ecological Risk Assessment: An International Journal*, Issue 5 1039-56 (September 2011).

the earth's surface.⁴⁷ The rock is millions of years old and is a result of the layers of mud and organic materials deposited over this time period.⁴⁸ The mud is formed either by bodies of standing water such as oceans, lakes or swamps, or when a slowing stream enters a standing body of water.⁴⁹ Mud particles settle to the bottom of the water, and if left undisturbed, may eventually become shale.⁵⁰ Shale has great porosity and permeability giving it the ability to trap substances during its formation.⁵¹ As a result of the decomposition of organic substances in the layers of mud and rock, natural gas developed in the tiny fissures and cracks in the rock formations.⁵²

Marcellus Shale, characterized by its black color and low-density, is just one type of shale that is found in a particular region of the United States.⁵³ Stretching across 95,000 square miles, the majority of the Marcellus Shale deposits covers portions of six states, New York, Pennsylvania, Ohio, West Virginia, Maryland and Virginia, but also extend ever so slightly into New Jersey.⁵⁴ The States with the largest deposits of Marcellus Shale are those in the Appalachian Basin, with Pennsylvania, New York, Ohio, and West Virginia having the greatest potential for gas extraction sometimes called “shale play.”⁵⁵

II. REGULATORY FRAMEWORK

⁴⁷ State Impact, A Reporting Project Between Local Media and NPR, *The Marcellus Shale, Explained*, <http://stateimpact.npr.org/pennsylvania/tag/marcellus-shale/> (last visited March 11, 2013).

⁴⁸ *Id.*

⁴⁹ *Shale: Environments of Shale Deposition*, GEOLOGY.COM, <http://geology.com/rocks/shale.shtml> (last visited April 27, 2013) (hereinafter GEOLOGY.COM)

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² State Impact, A Reporting Project Between Local Media and NPR, *The Marcellus Shale, Explained*, <http://stateimpact.npr.org/pennsylvania/tag/marcellus-shale/> (last visited March 11, 2013).

⁵³ GEOLOGY.COM, *supra* note 49.

⁵⁴ U.S. Department of Energy, *supra* note 21, at 37.

⁵⁵ Wilkes University, The Institute for Energy and Environmental Research of Northeastern Pennsylvania, *Marcellus Shale Information Clearinghouse*, <http://energy.wilkes.edu/pages/153.asp>.

Federal, State and local regulations typically apply to hydraulic fracturing, but there are various loopholes purposefully created by governmental actors to enable the drilling and gas industry access to resources with minimal interference. Currently, the Federal regulations only contain protections that existed prior to the advent of horizontal well drilling and local permitting seems to be perfunctory at best. This lack of regulation or oversight may well be due to the inability of government to keep up with the pace of innovation in the energy industry or it could be seen as a play for jobs and economic growth. An example of this can be seen in Pennsylvania, where Marcellus Shale exploitation is in full swing and has been for several years. Until 2008, the application fee for a drilling permit was only \$100 and has recently been raised to \$5,000.⁵⁶ Similarly, drilling operators are required to post a bond, which acts like an insurance policy on a well, that only runs from \$2,500 to \$25,000, which seems wholly inadequate when the cost of drilling a horizontal well can reach \$3M dollars.⁵⁷ Still, administrative fees and application requirements do not fully encompass the true regulatory requirements on energy companies. The next section will examine portions of the current Federal EPA regulations and then consider the proposed regulations in New York State.

a) Federal Regulations

Current Federal regulations on fracking are derived from the Safe Water Drinking Act (SWDA) and the Clean Water Act (CWA) and have little regulatory bite. The Clean Air Act is also germane but for the purposes of this paper will not be discussed.⁵⁸ Currently, the only hydraulic fracturing that is covered by the SWDA is of the type of drilling that injects diesel fuel into the

⁵⁶ Pennsylvania Department of Environmental Protection, *Marcellus Shale: Tough Regulations, Greater Enforcement*, http://www.portal.state.pa.us/portal/server.pt/community/marcellus_shale/20296 (last visited March 11, 2013).

⁵⁷ *Id.*

⁵⁸ The Clean Air Act regulates pollutants and carbon emissions that are released from the machinery used in fracking.

ground and thus potentially into the water table.⁵⁹ The 2005 Energy Act statutorily prevented the SWDA from regulating or prohibiting any type of Class II Underground Injection Control (UIC) program except for the diesel injection programs, which would be still allowable if the proper permits required were filed and approved by the EPA.⁶⁰ Class II injection wells are normally associated with drilling and extracting hydrocarbons from the ground.⁶¹ These wells inject brine, diesel, or another substance into the earth in order to release gas or petroleum from the ground.⁶² As stated, the 2005 Energy Act ensured that only petroleum wells that use diesel injection are now covered by the SWDA.⁶³ This exception is often called the Haliburton Loophole, as many attribute this to former Vice President Dick Cheney and his Energy Commission.⁶⁴ Others argue that this preclusive language in the Energy Act was more of a Congressional reaction to the decision in *LEAF v. EPA*, in which the 11th Circuit ruled that hydraulic fracturing was covered under the EPA's Class II injection program.⁶⁵ In *LEAF*, the court determined that under 42 U.S.C. §§ 300h to 300h-8, states must submit proposed plans to the EPA for regulation of Underground Injection Control programs.⁶⁶ After agency approval of a state regulation, the state would have primary enforcement and regulatory authority if its laws met the minimum requirements under the SWDA.⁶⁷ The Energy Act in essence just served to consolidate the power in the states if the drilling was absent diesel injection and permitting. It was the first step in limiting Federal control of hydraulic fracturing.

⁵⁹ United States Environmental Protection Agency, *Natural Gas Extretion-Hydraulic Fracturing*, http://www.portal.state.pa.us/portal/server.pt/community/marcellus_shale/20296.

⁶⁰ *Id.*

⁶¹ United States Environmental Protection Agency, *Class II Wells: Oil and Gas Related Injection Wells*, <http://water.epa.gov/type/groundwater/uic/class2/> (last visited April 27, 2013).

⁶² *Id.*

⁶³ *Id.*

⁶⁴ Kurkowski, *supra* note 15, at 13.

⁶⁵ Legal Env'tl. Assistance Found., Inc. v. U.S. E.P.A., 118 F.3d 1467, 1469-70 (11th Cir. 1997).

⁶⁶ *Id.*

⁶⁷ *Id.* at 1470.

The EPA has the authority to regulate, among many things, oil and gas extraction effluents that have the potential to reach navigable rivers and other water sources.⁶⁸ These regulations are a result of the evolution of the Clean Water Act. In 2010, the EPA began a proposed rule making concerning fracking, and issued a notice and comment period that eventually was extended.⁶⁹ As of this writing the proposed rulemaking will not be released by the EPA until 2014.⁷⁰ There is broad regulation under the current law that covers gas drilling on and offshore; it prohibits waste from reaching various types of water bodies. Though current regulations cover industry produced wastewater, produced sand, drilling fluids and drill cuttings from onshore drilling; the current regulations do not specifically cover shale gas exploration.⁷¹ The new proposed regulations to be released in 2014 will purportedly address shale gas drilling in the lower 48 states.

The Supreme Court has a narrow definition/interpretation of the CWA. The Court has determined that navigable waters only include relatively permanent, standing or flowing bodies of water and not intermittent flows of water.⁷² Furthermore, wetlands must be adjacent or have some kind of continuous connection to covered bodies of water to fall under the current guidelines of the Clean Water Act.⁷³ In essence, the Court has confirmed that the act covers only streams, oceans, rivers and lakes. Herein lies the necessity of new rule promulgation.

Underground aquifers may or may not connect to navigable waters, streams and lakes etc. They may be part of an eco-system that is near wetlands but not directly touching it. Under

⁶⁸ 40 C.F.R. § 435.10-15 (2013) (Oil and Gas Extraction Point Source Category).

⁶⁹ United States Environmental Protection Agency, *EPA Initiates Rulemaking to Set Discharge Standards for Wastewater From Shale Gas Extraction*, <http://water.epa.gov/scitech/wastetech/guide/shale.cfm> (last visited March 11, 2013).

⁷⁰ *Id.*

⁷¹ United States Environmental Protection Agency, *Oil and Gas Extraction Effluent Guidelines*, <http://water.epa.gov/scitech/wastetech/guide/oilandgas/index.cfm> (last visited March 11, 2013).

⁷² *Rapanos v. United States*, 547 U.S. 2208, 2211-20 (2006).

⁷³ *Id.*

current Federal regulation, it seems that beyond very broad measures involving blatant pollution, neither the CWA nor the SWDA will typically offer any more substantive protections above any state laws.

Under circumstances in which the Clean Water Act would provide more rigorous regulation than existing state law, federal regulation provides for preemption of the state's environmental law.⁷⁴ State laws, under the CWA, can be more comprehensive than federal regulations but not any less so.⁷⁵ The same holds true for the Safe Water Drinking Act.⁷⁶ The consequences of a lack of more stringent Federal regulations could have disastrous repercussions for the environment. Property owners could have their riparian rights compromised, and chemicals not removable by conventional wastewater treatment may find their way through the faucets of an unsuspecting population. In an unsettling comparison, cell phone carriers are subject to more and stricter regulation than companies emitting green house gases and using dangerous chemicals at unknown levels thousands of feet below the earth's surface.

The White House has their own view of this issue as well and has advanced the idea that the lack of regulation may be a violation of the National Environmental Protection Act (NEPA), which mandates that agencies take into account how their actions affect social and environmental goals.⁷⁷ NEPA requires agencies to develop or request environmental impact statements, or at the very least environmental assessments, for federal agency actions affecting the environment.⁷⁸ One could assume that gas drilling and mining regulation would meet the standard of affecting environmental quality. In speculating about the position of the Environmental Protection

⁷⁴ Clean Water Act § 510; 33 U.S.C. § 1370 (1982).

⁷⁵ *Id.*

⁷⁶ Safe Drinking Water Act § 1414(e); 42 U.S.C. § 300g-3(e) (1996).

⁷⁷ The White House, Council on Environmental Quality, <http://www.whitehouse.gov/administration/eop/ceq/about/> (last visited March 11, 2013).

⁷⁸ Elizabeth Burleson, *Comparative Federalism and Hydraulic Fracturing: A Human Right to a Clean Environment*, 22 CORNELL J.L. & PUB. POL'Y 290, 298 (2012).

Agency, the agency would likely find themselves in a defensible position in that they could claim the guidelines are currently being drafted, and will then be subject to a notice and comment period. Another possible alibi for the EPA is that they have issued (or could issue) a Finding of No Significant Impact (FONSI) and subsequently end environmental review.⁷⁹ An additional safeguard would allow the EPA to hide behind the statute by stating the agency is in “joint lead” with state or local governments and agencies and allow them to prepare the environmental impact statement.⁸⁰ If a state or local government actually opened a notice and comment period, as New York State has, then the requirements would be considered met. Generally, NEPA reviews are preliminary environmental assessments rather than full environmental impact statements, so proponents of drilling could argue that states are better regulators, as they actually commit to a more thorough EIS.⁸¹ On the other hand, possible difficulties arise for disparate regulatory regimes in neighboring states creating increased difficulties for multi-state drilling operators.

Other Federal regulatory laws on the environment such as the 1976 Resource Conservation and Recovery Act (RCRA) should theoretically cover parts of shale gas exploration. Unfortunately, Congress amended the act in 1980 with the passage of the Solid Waste Disposal Act.⁸² The later congressional amendment essentially took away the regulatory teeth of the RCRA by exempting drilling fluids, wastewater, and other forms of waste created by gas and oil drilling from complying with the standards of the original legislation.⁸³

In 1986, Congress passed the Emergency Planning and Community Right-To-Know Act (EPCRA), which established reporting requirements for industries using toxic chemicals in

⁷⁹ *Id.* at 9.

⁸⁰ Lead Agencies, 40 C.F.R. §1501.5 (2012).

⁸¹ Burleson, *supra* note 78, at 300.

⁸² U.S. Department of Energy, *supra* note 21, at 37.

⁸³ *Id.* at 37-38.

communities. The Act requires facilities using hazardous chemicals to adhere to reporting requirements, and creates additional requirements with various state agencies and departments.⁸⁴ Sections 311 and 312 of EPCRA mandate Material Safety Data Sheets be maintained for inspection by OSHA as previously discussed.⁸⁵ Additionally, the same information must be reported to the State Emergency Response Commission (SERC), Local Emergency Planning Committee (LEPC) and local fire department.⁸⁶ The goal was to create public awareness and disclosure, but again, quantities of chemicals present were exempt from the disclosure requirement because they qualify for the trade secret exclusion. Section 313 of the EPCRA creates a database specifying and reporting on annual toxic chemical release and waste treatment by the Federal government and certain industries, but to date oil and gas drilling remain exempt.⁸⁷ It appears that with every bill Congress passes to protect the environment, the oil and gas lobby persuades the Legislature to pass additional laws that either create loopholes or pass wholesale exemptions for the industry, thus allowing them to circumvent Federal environmental regulation.

Advocates of environmental federalism cite several reasons for relying on federal law and regulations to, at the very least, provide a baseline and foundation for additional state and or local laws. Perhaps the most obvious reason for an approach that more closely mirrors integrated federalism is that there are frequently political or economic forces that could affect what should be a reasoned scientific approach. State and local lawmakers/decision makers may be incented to accept what they lack the financial resources to mitigate, and these types of environmental

⁸⁴ U.S. Environmental Protection Agency, *EPCRA Hazardous Chemical Storage Reporting Requirements*, http://www.epa.gov/osweroe1/content/epcra/epcra_storage.htm (last visited April 28, 2013).

⁸⁵ U.S. Department of Energy, *supra* note 21, at 41.

⁸⁶ U.S. Environmental Protection Agency, *EPCRA Hazardous Chemical Storage Reporting Requirements*, http://www.epa.gov/osweroe1/content/epcra/epcra_storage.htm (last visited April 28, 2013).

⁸⁷ U.S. Department of Energy, *supra* note 21, at 41.

concerns require great subjectivity.⁸⁸ By creating Federal regulations the onus is transferred to the energy companies, and states and localities have the ability to focus their expertise and better utilize their scant resources effectively.⁸⁹ One theory is that through a type of collaborative process with greater participation, polarized groups would be equipped to make better decisions concerning the effect on shared resources, population density and the effects of negative externalities.⁹⁰ Greater involvement and rule promulgation by the Federal government would create opportunities for state and local governments to commit to best practices and work towards healthy prosperous communities.

b) New York State Regulation

The New York State law that governs gas drilling and hydraulic fracturing is the Environmental Conservation Law, Article 23, Title 1-27, also known as ECL 23.⁹¹ During the past four years, the current laws have largely been applicable only to wells drilled and operated after 1992 (and before the 2008 moratorium) when the N.Y. State DEC issued a Generic Environmental Impact Statement (GEIS).⁹² In 2008, during David Patterson's term as Governor of New York State, he directed the Commissioner of the DEC to create a new GEIS to address several new technologies in well drilling and gas extraction.⁹³ This new draft GEIS received over 130,000 public comments in its comment period and four public hearings were held across

⁸⁸ Emily C. Powers, *Fracking and Federalism: Support For An Adaptive Approach That Avoids The Tragedy Of The Regulatory Commons*, 19 BROOK. J.L. & POL'Y. 913, 952-53 (2011).

⁸⁹ *Id.* at 953.

⁹⁰ Burlison, *supra* note 78, at 310-313.

⁹¹ New York State Legislature, *Environmental Conservation*, <http://public.leginfo.state.ny.us/LAWSSEAF.cgi?QUERYTYPE=LAWS+&QUERYDATA=@PLENV0A23+&LIST=LAW+&BROWSER=BROWSER+&TOKEN=41503504+&TARGET=VIEW>

⁹² 9 NYCRR Part 270-1-10.9.

⁹³ *Id.*

the state.⁹⁴ During the drafting of the new guidelines, the Governor directed that no new well drilling permits be issued until a final version of the GEIS was issued.⁹⁵

As of today, the Department of Environmental Conservation has released what appears to be their ultimate Revised Draft Supplemental Environmental Impact Statement. There may be some changes yet to come, but the specificity with which the much-maligned fracturing techniques are addressed could lead one to believe that this is very close to final agency regulation. Additionally, the comment period ended on January 11, 2013, and nothing thus far indicates that there will be subsequent substantive changes.⁹⁶ The scope of the DEP's 2011 RDSGEIS is enormous and extends far beyond so the scope of this paper, so only a handful of the more controversial proposed regulations will be examined.

The permitting process and basic requirements for drilling operators will be covered under 6 NYCRR Parts 550 – 559 and under the current ECL, though there are some new specific permitting requirements in appendix 10 of the RDSGEIS.⁹⁷ Also new, are some exclusions to the State Environmental Quality Review Act (SEQRA), which make it possible to begin drilling in some cases without even a basic Environmental Assessment Form (EAF). According to the DEC report, if the Department determines “that the final generic EIS adequately addresses all potential significant adverse impacts of the subsequently proposed action, then no SEIS is necessary.”⁹⁸ When the SEQRA regulations pertaining to generic Environmental Impact

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ New York State Department of Environmental Conservation, *Revised Draft SGEIS Statement*, <http://www.dec.ny.gov/energy/75370.html> (last visited March 12, 2013).

⁹⁷ New York State Department of Environmental Conservation, *Revised Draft SGEIS, Proposed SEQRA Process*, Chapter 3, 3-18 <http://www.dec.ny.gov/energy/75370.html>.

⁹⁸ *Id.*

Statements (6NYCRR §617.10[d][1]) provide that a final generic EIS has been filed, no further compliance to SEQRA is required, if its actions are in compliance with the generic EIS.⁹⁹

Essentially, the state has made the bar lower. For example, a well using less than 300,000 gallons of water for fracturing only has to use the original 1992 GEIS standards for mitigation and does not even require an Environmental Assessment Form.¹⁰⁰ Wells using more than 300,000 gallons of water are covered by SEQRA by submitting an Environmental Assessment Form (EAF) under the new SGEIS without site-specific determination.¹⁰¹

Not all of the proposed regulations have been relaxed with regard to SEQRA. Site-specific determinations according to SEQRA would apply to wells that have a fracture zones shallower than 2,000 feet, or with a wellbore less than 1,000 feet below the base of a fresh water supply.¹⁰² Other covered circumstances include well pads that are within a 500-foot radius of an aquifer or 150 feet in the case of a perennial storm drain, lake or pond.¹⁰³ The City of New York has used its considerable lobbying power to ensure that any well location within 1000 feet of a subsurface water supply will also require adherence to SEQRA.¹⁰⁴

The New York State DEC, though clearly committed to hydraulic fracturing, has designed some regulation to limit resource disturbance and particularly land disturbance. The agency estimates that the typical multi-pad well will have a total land disturbance of about 7.4 acres.¹⁰⁵ This total includes the well, access roads and various necessary infrastructures and is based on average operations currently ongoing in Pennsylvania.¹⁰⁶ Multi-pad wells (horizontal wells) typically have a greater land disturbance than a single vertical well but are able to exploit greater

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² New York DEC, *Revised Draft SGEIS Executive Summary*, *supra* note 27, at 5.

¹⁰³ *Id.*

¹⁰⁴ *Id.* at 6.

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

acreage thus creating the need for fewer wells and ultimately less land disturbance.¹⁰⁷ The DEC suggests that with a spacing of 40 acres per shale gas well, a well pad with roughly 7 to 8 acres of total land disturbance could develop an area around 640 acres. Currently, ECL Article 23 Title 5, which is consistent with what the DEC is recommending, defines well spacing, but in some cases there can be up to a 10% tolerance for spacing.¹⁰⁸

Perhaps the greatest concern with shale gas exploration is water contamination. New York City with its significant resources has been at the forefront in advocating against hydro-fracking near water supplies. The environment near the watersheds has always been a concern of the City, so much so that it owns 34,000 acres of reservoirs and approximately 150,000 acres of water supply land.¹⁰⁹ The concern for the City's residents is primarily that water flowing to the City is unfiltered.¹¹⁰ Because of the City's efforts and pressure, the draft SGEIS supports that there be no fracturing operations permitted in either the New York City or Syracuse watersheds or in a protective 4,000-foot buffer around those watersheds.¹¹¹

Other determinations by the New York State Department of Health have led to 18 other aquifers in the state to be identified as primary municipal water sources and therefore it is recommended that no fracking occur there, or not within a 500-foot buffer.¹¹² Principal aquifers not used as primary drinking water sources also have site-specific SEQRA recommendations regarding fracturing and its discharge.¹¹³ Additionally, the draft SGEIS proposes that no well

¹⁰⁷ New York DEC, *Revised Draft SGEIS Executive Summary*, *supra* note 27, at 7.

¹⁰⁸ New York State Legislature, *Environmental Conservation*, [http://public.leginfo.state.ny.us/LAWSSEAF.cgi?QUERYTYPE=LAWS+&QUERYDATA=\\$\\$ENV23-0501\\$\\$@TXENV023-0501+&LIST=LAW+&BROWSER=BROWSER+&TOKEN=41503504+&TARGET=VIEW](http://public.leginfo.state.ny.us/LAWSSEAF.cgi?QUERYTYPE=LAWS+&QUERYDATA=$$ENV23-0501$$@TXENV023-0501+&LIST=LAW+&BROWSER=BROWSER+&TOKEN=41503504+&TARGET=VIEW)

¹⁰⁹ New York City Department of Environmental Protection, *Watershed Recreation*, <http://www.nyc.gov/html/dep/html/recreation/index.shtml> (Last Visited March 13, 2013).

¹¹⁰ New York DEC, *Revised Draft SGEIS Executive Summary*, *supra* note 27, at 20.

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.*

pads be located within 2,000 feet of any water supply, rivers, streams and reservoirs.¹¹⁴ The question remains, will these be the regulations enforced by the state, or will more liberal guidelines be established after a short period of well development? It seems entirely plausible that just as Federal regulations on oil and gas drilling were relaxed under subsequent laws, so too could the New York State Legislature slowly dial back the already lax laws due to pressure and economic incentives from the oil and gas lobby.

The Department of Environmental Conservation, in the draft SGEIS, discusses clean air regulations, Naturally Occurring Radioactive Materials (NORM), and solid waste disposal and makes recommendations as to their storage and disposal. Largely, ECL Article 23 already covers these.

On January 11, 2013, the public comment period ended. We now await the issuance of the final SGEIS and the lifting of the moratorium on drilling by Governor Cuomo, who has already stated his support for lifting the ban.¹¹⁵

III. LAND USE

In its coverage of fracking, the media often likens the situation in upstate New York to the gold rush days of the old Wild West.¹¹⁶ They tell tales of drilling company representatives trying to convince widows to lease their acreage for below market value, while environmentalists mount campaigns to inform the public that the industry, contrary to what it publicly purports, will poison the land and make no improvements to our energy security. There is indeed some

¹¹⁴ New York DEC, *Revised Draft SGEIS Executive Summary*, *supra* note 27, at 20.

¹¹⁵ Francis Gradijan, *State Regulations, Litigation and Hydraulicfracturing*, 7 ENV'T'L & ENERGY L. & POL'Y J. 47, 72-73 (2012) (discussing state regulations).

¹¹⁶ Dan Vergano, *Natural gas gold rush: Is your state next?*, USA TODAY NEWS, July 2, 2012, <http://usatoday30.usatoday.com/news/nation/story/2012-05-29/fracking-environment-gas/55845708/1>.

truth in these accounts. There *are* swarms of landmen looking to rush unsuspecting or vulnerable landowners into gas leases, but shrewd homeowner organization and coalitions are beginning to form and collaborate on efforts to educate property owners and help them achieve the best lease terms. Upstate NY may be poised for an economic boom when the moratorium is lifted, but it will come at a cost. In spite of the passionate campaigns of consumer groups and advocates, there will be exploitation. Regardless of state mining laws, local governments will fight hydraulic fracturing with all the legal power they can muster. Already, energy companies are being sued because of the terms of their gas leases, and local communities have been to court over the prohibition of drilling in their municipalities. This is the beginning, but the question remains: will it be the end as well?

a) Leases

Gas leases have become one of the more controversial property issues both in upstate New York, and neighboring states. The Congressional Research Service reports that as early as 1999 gas leases were being signed with an annual \$5.00 per acre price and productions royalties of about 12.5%.¹¹⁷ In earlier years there were less than six companies involved in securing gas leases, but as of 2008 there were approximately four-dozen companies signing leases for land in upstate New York.¹¹⁸ At first blush, the leases appear to be generous as far as compensation goes, but in fact the terms of the leases favor the tenant corporations rather than the lessor. These typically preprinted leases grant the lessor the right to explore, develop, measure, produce and market gas from both the leased land and adjacent lands using various methods and technologies.¹¹⁹ These surface/subsurface leases are most often for five-year terms but the gas leases being used in New York can often evolve into indefinite leases because the terms are

¹¹⁷CONGRESSIONAL RESEARCH SERVICE, UNCONVENTIONAL GAS SHALES, *supra* note 43, at 27.

¹¹⁸ *Id.*

¹¹⁹ Elisabeth N. Radow, *Homeowners and Gas Drilling Leases: Boon or Bust?*, 83 N.Y. ST.B.J., 11, 15 (2011).

extended when the land is still “capable of production.”¹²⁰ Situations like these can trap a landowner in commercial relationships for years and possibly decades.

This is a current and contentious issue in the area of Binghamton, N.Y. Hundreds of landowners have sued Chesapeake Energy Corporation and Inflection Energy, because the landowners state that present lease terms have expired, and that companies must either renegotiate new terms or terminate the contract.¹²¹ The energy companies claim “force majeure” because of the state-imposed de facto ban on drilling.¹²² Property owners have not received any royalties, as there has been no gas production, but with the impending lifting of the ban, some would profit from new leases containing better production splits, and of course, new per acre bonuses. These land leases basically have few if any termination clauses, and no automatic termination for non-payment, leaving the lessors at the mercy of the tenant corporations.¹²³

This atypical landlord-tenant relationship carries over into nearly every term of the lease. Another example of this pertains to the ability of gas companies to assign the lease without landlord approval, depriving landowners of the fundamental right to exclude.¹²⁴ Assignment of a leasehold not only denies a portion of the bundle of sticks but also gives new tenants rights not bargained for, and may create what are essentially de facto easements forever making the landowners property a servient estate burdened by the leaseholder. Here, the ability to allow or deny access, and to choose who may or may not be on your property is relative to our most basic

¹²⁰ *Id.* at 16.

¹²¹ *Drilling Ban Hits Leases*, WALL STREET JOURNAL, <http://online.wsj.com/article/SB10001424052702303674004577432520394905232.html> (last visited March 13, 2013).

¹²² *Id.*

¹²³ Radow, *supra* note 119, at 16.

¹²⁴ *Id.* at 16.

sense of trespass. This notion is so important to us that we have carefully crafted legislation to prevent this and courts may apply punitive damages to violators of the right to exclude.¹²⁵

Gas leases create other problems for landowners that they often do not fully contemplate when signing the documents, as the anticipation of a windfall in gas royalties can cloud better judgment. One such complication may be increases in the amounts of homeowners' insurance required by lenders. For a homeowner to obtain protection from the processes and waste inherent in gas drilling, they may need to look outside their normal insurance providers. Most policies, even broad risk policies, do not cover damage from water or soil contamination, radiation, and other risks associated with commercial activity on residential or agricultural land.¹²⁶ Though the drilling rig may be placed dozens or even hundreds of acres away from homes, banks may require property owners to adjust their premiums in order to not be in default on the terms of their mortgage.

Additionally, residential mortgages usually have prohibitions against hazardous activity and the storage of hazardous materials on the property. Mortgages stipulate that borrowers may not engage in behavior that will affect the value of the property or its marketability.¹²⁷ Methane gas migration or slickwater fracking fluid could potentially compromise well water or contaminate soils creating the possibility that lessor/owners may be in default on their loan.¹²⁸ Gas drilling advocates argue that in most mortgages, when the borrower gives the lender some rights in the real property, such as appurtenances and easements, then gas leases only grant a right to enter for extraction purposes, creating a license not an easement.¹²⁹ Because this is a license, the oil and

¹²⁵ *Jacque v. Steenberg Homes, Inc.*, 563 N.W.2d 154, 166 (Wis. 1997).

¹²⁶ Radow, *supra* note 119, at 19.

¹²⁷ Radow, *supra* note 119, at 20.

¹²⁸ *Id.*

¹²⁹ Kurkowski, *supra* note 15, at 14.

gas lease do not attach to the mortgage.¹³⁰ That said, it must be acknowledged that some mortgage agreements contain specific language that gives the lien holder an interest in any oil, gas, timber, etc, and the leases rent and royalties are assigned to the lien holder.¹³¹

Perhaps the most disturbing aspect of shale gas drilling in New York as well as in other states is involuntary compulsory integration. Landowners who do not lease their acreage to energy companies and seek to keep the land, particularly the subsurface land, untouched by human endeavor, are likely to be surprised by this controversial law. Compulsory integration, otherwise known as forced pooling, is not unique to New York State and in fact is the law (exists in statute) in 39 other states.¹³² Today, Environmental Conservation Law § 23-091 states that when 60% of the given acreage is leased for gas drilling the remaining acreage can be included, creating an integrated pool for exploitation.¹³³ This unsettling fact creates what could be called private eminent domain, or a regulatory taking, which is then given to private industry to utilize. In the case of New York, there is compensation given for compulsory integration.¹³⁴ The amount received by a landowner is less than would be received if a lease agreement were entered into, but eventually reaches the royalty levels of other voluntary participants.¹³⁵ Again, this eliminates an owner's right to exclude and could be construed as a trespass. Unfortunately, New Yorkers looking to keep their land free of the potential risks associated with drilling, such as mud and methane gas encroachment into the water supply, must persuade their neighbors to abstain from leasing lands. Marcellus Shale drilling played no part in creating this statute nor has it been responsible for new case law regarding oil and gas exploration.

¹³⁰ Kurkowski, *supra* note 15, at 14.

¹³¹ *Id.*

¹³² Marie C. Baca, *State Laws Can Compel Landowners to Accept Gas and Oil Drilling*, PRO PUBLICA (May 19, 2011) <http://projects.propublica.org/tables/forced-pooling> (last visited March 14, 2013).

¹³³ New York State Environmental Conservation Law § 23-091.

¹³⁴ *Id.*

¹³⁵ *Id.*

New York has a lengthy history of similar laws and the enforcement of such laws.¹³⁶ In *Sylvania Corp. v. Kilborne*, the court stated that the “State Legislature has established a comprehensive scheme designed ‘to provide for the operation and development of oil and gas properties in such a manner that a greater ultimate recovery of oil and gas may be had, and that the correlative rights of all owners, and the rights of all persons including landowners and the general public may be fully protected.’”¹³⁷ The statute creates the same issues for the involuntary participants as it does the lessors and tragically jeopardizes the owner’s ability to sell, refinance or assign their property.¹³⁸ Perhaps the State Legislature is well versed in utilitarian property theory, in using the reallocation of resources to those who will develop the greatest utility from them in order to reconcile market failures.¹³⁹ Compulsory integration creates encumbrances on property, eliminates fundamental property rights and may expose property owners to potentially toxic substances without recourse.

Other consequences of these preprinted gas leases include the inability to litigate a case in court. The typical preprinted gas lease used in New York State includes language that mandates disputes be settled by arbitration pursuant to the American Arbitration Association.¹⁴⁰ The courts in New York have enforced the arbitration clause in cases involving scores of property owners. In *Alexander v. Chesapeake Appalachia LLC*, 259 plaintiffs brought suit against an energy company whose gas leases had expired. The company had declared that the leases were still valid due to force majeure.¹⁴¹ The court not only compelled the plaintiffs to arbitrate, but also issued a stay for two plaintiffs who did not even have clauses in their leases obligating them

¹³⁶ *Sylvania Corp. v. Kilborne*, 427 N.Y.S. 2d 524, 526 (1971).

¹³⁷ *Id.*

¹³⁸ Radow, *supra* note 119, at 18.

¹³⁹ GREGORY S. ALEXANDER & EDUARDO M. PENALVER, AN INTRODUCTION TO PROPERTY THEORY, 136 (2012).

¹⁴⁰ *Drilling Down: Oil and Gas Leases*, NEW YORK TIMES, December 1, 2011, http://www.nytimes.com/interactive/2011/12/02/us/oil-and-gas-leases.html?_r=0 (last visited March 14, 2013).

¹⁴¹ *Aukema v. Chesapeake Appalachia, LLC*, 839 F. Supp. 2d 555, 557 (N.D.N.Y. 2012).

to arbitrate.¹⁴² This was inconsistent with the later ruling in *Aukema v. Chesapeake Appalachia, LLC*, in which the same company tried to persuade the court to stay litigation on the same grounds as in *Alexander*, but the District Court refused, as the leaseholders did not have an explicit arbitration clause in their leases.¹⁴³ Energy companies and their attorneys have learned their lesson, and the arbitration clause now appears to be standard.

b) Municipal Backlash

Some towns in New York have coalesced around the idea that fracking will ultimately harm their property, and isn't in the best interest of neither the community nor the environment. Whether it was out of this environmental concern, or to prevent unwanted industry and development in their small town, or all of the aforementioned reasons, the residents of the upstate New York hamlet of Dryden fought the gas companies with a law, and the law won! Dryden, in an effort to completely restrict hydraulic fracturing in the town, wrote and passed a municipal ordinance prohibiting fracking within town limits.¹⁴⁴ Anschutz Exploration Corporation filed suit, asserting that state law preempted the town's law and the town moved for summary judgment.¹⁴⁵ The town went one step further and, forbade all exploration, storage of production materials, and support activities related to gas or petroleum exploration.¹⁴⁶ Lastly, the local law stated that the town would deem any permit issued by any state, local, or federal agency that violated any provision of the town's ban of gas exploration invalid.¹⁴⁷

The energy company's attorneys contended that ECL 23 0303 preempts all local law by its supersedure clause, that specifically conditions state law pertaining to oil, gas and solution

¹⁴² *Id.*

¹⁴³ *Id.* at 561.

¹⁴⁴ *Anschutz Exploration Corp. v. Town of Dryden*, 940 N.Y.S.2d 458, 461 (N.Y. Sup. Ct. 2012).

¹⁴⁵ *Id.*

¹⁴⁶ *Id.* at 465.

¹⁴⁷ *Id.*

mining supersedes all local laws, but not any local jurisdiction, over local roads and property tax law.¹⁴⁸ The Supreme Court of New York used Court of Appeals cases to deal with the conundrum. In other cases the higher court ruled that state oil and gas law does supersede local law, but it does not prevent local government from enacting zoning laws for the purpose of regulating land use.¹⁴⁹ The court also stated that in the absence of clear legislative expression of an attempt to preempt local control of land, the law could not preempt local authority pertaining to zoning and land use.¹⁵⁰ Ultimately, the court determined the town could regulate drilling operations through land regulation that was within control of the local government; however, they could not invalidate any permits lawfully issued by state and federal agencies.¹⁵¹ The town achieved their objective, at least temporarily, but perhaps an appeal may follow.

Similarly, three days after the *Anschutz* decision, the Supreme Court in Otsego County, New York, reached a nearly identical decision.¹⁵² The Town of Middlefield enacted a zoning law banning all heavy industry including oil, gas, and solution mining and comprehensively included all support equipment, structures and processes related such industry.¹⁵³ Again the mining company moved for summary judgment based on New York State Environmental Conservation Law ECL § 2303.¹⁵⁴ The NY Supreme Court again looked at various Court of Appeals decisions and found a distinction between ordinances that regulate property and ordinances that regulate mining activities.¹⁵⁵ Environmental Law ECL § 2303's supersession clause only supersedes local laws on mining, but not on local land use regulation.¹⁵⁶ For the moment these two towns

¹⁴⁸ *Id.* at 466.

¹⁴⁹ *Id.*

¹⁵⁰ *Id.* at 466-67.

¹⁵¹ *Id.* at 473-74.

¹⁵² *Cooperstown Holstein Corp. v. Town of Middlefield*, 943 N.Y.S.2d 722, 729 (N.Y. Sup. Ct. 2012).

¹⁵³ *Id.* at 723.

¹⁵⁴ *Id.* at 722.

¹⁵⁵ *Id.* at 729.

¹⁵⁶ *Id.* at 730.

have found a way to combat the energy behemoths that threaten the property rights of townsfolk. No doubt other municipalities have taken notice and are drafting legislation and simultaneously preparing motions for summary judgment.

IV. CONCLUSION

Assuming that widespread hydraulic fracturing will continue to advance in the Appalachian Basin, one can only hope that regulation will evolve in unison. Property owners and localities will have their work cut out for them arbitrating and litigating, and courts will have to determine whether to apply the ECL § 2303 to municipalities, and when New York's General Obligation Law applies to lease provisions. What is less clear are the steps the Federal government will take in order to protect the environment from the effects of fracking. For the moment, it looks like New York has taken some steps towards risk mitigation of known bodies of water and aquifers but not necessarily towards preventing harm to property owners. This is an opportunity for the EPA to create at least baseline regulations for the protections of the groundwater, and soil from chemical contaminants. By the time the EPA issues proposed rules for fracking in 2014, New York may have experienced a series of environmental catastrophes. Notice and comment periods are often extended and this will be an opportunity for the energy companies to further exploit the Federal deregulation they have enjoyed for decades. Additionally, environmental groups need to coalesce with scientists and legislators to quickly propose recommendations to amend the Safe Water Drinking Act to regulate hydraulic fracturing.

Some have argued that this is still insufficient, and they are correct. State and local governments must also play a role, as should the private sector, which has the resources and

technology to develop safe, effective strategies for gas extraction.¹⁵⁷ In some states, corporate collaboration has produced safer processes and better outcomes in wastewater treatment.¹⁵⁸

Rather than just having a board of bureaucrats and appointees, the State could create a board that equally represents science, citizens, industry and government. Economic progress is necessary but not at the expense of our ecosystems and our people. Examples of effective risk mitigation can be found in Pennsylvania, which, to its credit, NYDEC's has examined carefully.¹⁵⁹

Speculation around the costs involved in fracking, along with falling gas prices may ultimately deter massive shale drilling investment in New York State. Though at the moment this appears unlikely while the rights of landowners are secondary to the needs of the gas industry and the regulatory burdens on industry are negligible. Hopefully, New York State will react accordingly and begin with the promulgation of slightly more stringent environmental laws, proposed penalties, and more importantly, enforcement.

¹⁵⁷ Hannah Wiseman, *Untested Waters: The Rise of Hydraulic Fracturing In Oil and Gas Production And The Need To Revisit Regulation*, 20 FORDHAM ENVTL. L. REV. 115 (2009).

¹⁵⁸ *Id.*

¹⁵⁹ New York State Department of Environmental Conservation, *Revised Draft SGEIS on the Oil, Gas and Solution Mining Regulatory Program, Chapter 10* Review of selected Non-Routine Incidents in Pennsylvania (September 2011).