The Attack on Frack: New York's Moratorium on Hydraulic Fracturing and Where It Stands in the Threat of Takings

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Summary

The Marcellus Shale region is experiencing a boom in natural gas drilling due to high-volume horizontal hydraulic fracturing, more commonly known as hydrofracking. This process has recently become controversial due to alleged drinking water contamination in Pennsylvania. New York prohibited hydrofracking through a de facto moratorium pursuant to an Executive Order that required the New York Department of Environmental Conservation to undertake a comprehensive review of the supplemental generic environmental impact statement required for drilling permits. While the moratorium has since been lifted, this Article examines whether New York could have effectively defended it against any takings claims.

With a growing state budget deficit and a demand for more jobs, an estimated $1.5 billion in revenue by 2015 from New York's Marcellus Shale formations certainly seems like a pot of gold.[1] But despite the potential for such a large payout, New York placed a de facto moratorium on high-volume horizontal hydraulic fracturing (hydrofracking) in 2010.[2] An Executive Order issued by former New York Gov. David A. Paterson delayed the New York Department of Environmental Conservation's (DEC's) ability to issue drilling permits until it released a revised draft supplemental generic environmental impact statement (SGEIS) that went through the public comment process.[3]

This Article examines whether a moratorium on hydrofracking in New York could result in a compensable taking of private property under the Takings Clause of the Fifth Amendment to the U.S. Constitution. Since this Article was written, the final revised SGEIS was released in September 2011, effectively lifting the moratorium. However, the final revised SGEIS recommends that hydrofracking should remain banned in some areas of New York State.[4] Part I addresses the background of hydrofracking, why it has recently become a controversial practice, and how these concerns are addressed at the federal level. Part II discusses New York's ban on hydrofracking and the current regulatory regime used for gas drilling in New York. Part III begins the takings discussion, arguing that New York can defend a moratorium on three grounds: the temporary duration of the moratorium; reasonable investment-backed expectations; and New York's public nuisance law.

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1. David King, *Tackling Fracking*, Gotham Gazette, Oct. 1, 2010, http://www.gothamgazette.com/article/albany/20101001/204/3376 (quoting Susan Lerner, Director of Common Cause NY, "In a budget crisis we look for a pot of gold.").
2. N.Y. Exec. Order No. 41 (Dec. 13, 2010), *available at* http://www.toxicstargeting.com/MarcellusShale/documents/exec-order-41, continued by N.Y. Exec. Order No. 2 (Jan. 1, 2011), *available at* http://www.governor.ny.gov/executiveorder/2.
3. *Id.* The DEC released the complete revised SGEIS in September 2011. The DEC has proposed to allow hydrofracking in the state, but would prohibit surface drilling within 2,000 feet of public drinking water supplies; on the state's 18 primary aquifers and within 500 feet of private wells, unless waived by the landowner; in floodplains; on principal aquifers without site-specific reviews; and within the Syracuse and New York City watersheds. The full revised SGEIS is available for review at http://www.dec.ny.gov/energy/75370.html. The first draft of the SGEIS is available at http://www.dec.ny.gov/energy/58440.html.
4. While this Article was written to specifically address New York's moratorium on hydrofracking, the analysis may still be useful in addressing the prohibited drilling areas outlined in DEC's revised draft SGEIS. *See* Colin Sullivan, *N.Y. Unveils Draft Rules for "Fracking,"* Greenwire (Sept. 28, 2011), *at* http://www.dec.ny.gov/regulations/77353.html.

I. Hydrofracking Background and Recent Controversy

High-volume horizontal hydraulic fracturing is a new approach to an old method of drilling for natural gas. Hydraulic fracturing was first introduced in 1949, when gelled crude and river sand were injected into limestone formations, creating fractures that provided a flow channel for gas to the well.[5] This method of drilling has recently become controversial, due to the large amount of water (high-volume) it uses and chemicals needed to drill at deep, horizontal levels[6] in the Marcellus Shale, along with the possibility of drinking water contamination and other environmental concerns.[7] Natural gas in the Marcellus Shale is difficult to access, because of the low permeability and slow flow-rate.[8] Hydraulic fracturing creates and increases the number of fractures between the well-bore and rock formations, allowing gas to travel from the pore spaces to the production well.[9] The fractures are created by injecting high-pressure water or gel into a sealed-off portion of the well that pushes the fractures open.[10] Sand and other "proppant" is pumped down the well and becomes wedged in the fractures to keep them partially open once the pressure is reduced, allowing gas to flow more freely.[11]

The Marcellus Shale is located in the subsurface beneath Pennsylvania, New York, Ohio, and West Virginia.[12] This area includes the Delaware River watershed, which provides drinking water to 17 million people from Philadelphia to New York.[13] When experts estimated in 2008 that the Marcellus formation may have more than 500 trillion cubic feet of gas,[14] Pennsylvania experienced a boom in well permits and construction.[15] This sudden gas rush soon drew grave concerns from the public, legislators, and environmental organizations over whether hydrofracking was a safe process.[16]

The main concern over hydrofracking is its connection to water and, more specifically, to drinking water. The hydrofracking process uses approximately two to five million gallons of water to fracture one horizontal well in a shale formation.[17] Fracturing fluids may contain up to 99% water.[18] Wastewater is disposed of by either returning it underground through a permitted underground injection well, discharging it to surface waters after removing contaminants, or applying it to land surfaces.[19] The recovery of wastewater, however, ranges broadly from 15-80%, while the rest remains underground.[20] The threat to drinking water is attributed to the chemicals used in the fracturing process and the naturally occurring radioactive materials in the shale that become mobilized and brought to the surface during a hydrofracking operation.[21] In early 2011, the *New York Times* reported on a confidential study written by a U.S. Environmental Protection Agency (EPA) consultant in 2009, concluding that fracking wastewater contained radioactivity at unsafe levels that could not be diluted in rivers and other waterways and that was not being tested in most sewage treatment plants.[22] A dozen

5. Carl T. Montgomery & Michael B. Smith, Hydraulic Fracturing: History of an Enduring Technology (2010), *available at* http://www.spe.org/jpt/print/archives/2010/12/10Hydraulic.pdf.
6. U.S. EPA, Hydraulic Fracturing Research Study (2010), *available at* http://www.epa.gov/safewater/uic/pdfs/hfresearchstudyfs.pdf (stating "[w]ells may extend to depths greater than 8,000 feet or less than 1,000 feet, and horizontal sections of a well may extend several thousands of feet away from the production pad on the surface"). *See* Louis Alstadt, Former Executive Vice President, Mobil Oil Corporation, Panel at the Cornell Energy Conference, Gas Drilling, Sustainability & Energy Policy: Searching for Common Ground (Apr. 1, 2011) (estimating that fluid volumes are 50 times greater than what has been used for hydrofracking in the past).
7. Ian Urbina, *Regulation Lax as Gas Wells' Tainted Water Hits Rivers*, N.Y. Times, Feb. 26, 2011, http://www.nytimes.com/2011/02/27/us/27gas.html. This Article focuses on the drinking water contamination concerns, since that is the focus of EPA's research study, but other environmental concerns include toxic waste disposal, air pollution, wastewater spills, excessive water use, and habitat fragmentation due to new roadways for transportation to and from wells.
8. Geological Society of America, *Marcellus Shale—Appalachian Basin Natural Gas Play*, http://geology.com/articles/marcellus-shale.shtml (last visited Mar. 25, 2011).
9. *Id.*
10. *Id.*
11. *Id.*
12. *Id.*
13. Mary Esch, *Gas Drilling Moratorium Passes NY Senate*, Bloomberg Bus. Wk., Aug. 4, 2010, http://www.businessweek.com/ap/financialnews/D9HCT98G0.htm.
14. Geological Society of America, *supra* note 8. Those experts were Terry Englander, a geosciences professor at Pennsylvania State University, and Gary Lash, a geology professor at the State University of New York at Fredonia. According to the website:
    > Using some of the same horizontal drilling and hydraulic fracturing methods that had previously been applied in the Barnett Shale of Texas, perhaps 10% of that gas (50 trillion cubic feet) might be recoverable. That volume of gas would be enough to supply the entire United States for about two years and have a wellhead value of about one trillion dollars.
15. Don Hopey, *EPA to Investigate Hydraulic Drilling: Does Natural Gas Removal Method Hurt Water Quality?*, Pittsburgh Post-Gazette, Mar. 19, 2010, http://www.post-gazette.com/pg/10078/1044016-113.stm (last visited Nov. 1, 2011) (in 2007 through 2009, the Pennsylvania Department of Environmental Protection issued approximately 2,500 Marcellus Shale gas well drilling permits).
16. *Id.*, quoting Jessica Ennis, Earthjustice legislative associate, who said:
    > Drillers are clamoring for access to regions of the country that are unprepared for this scale of industrial gas drilling. In Pennsylvania alone, where the pace of drilling has tripled in the past year, reports of drinking water contamination are multiplying. Without a federal floor to protect drinking water in states without sufficient regulations, we could end up jeopardizing water supplies for millions of people.
17. U.S. EPA, Hydraulic Fracturing Research Study (2010), *available at* http://www.epa.gov/safewater/uic/pdfs/hfresearchstudyfs.pdf.
18. *Id.*
19. *Id.*
20. *Id.*
21. *Id.*
22. Ian Urbina, *Regulation Lax as Gas Wells' Tainted Water Hits Rivers*, N.Y. Times, Feb. 26, 2011, http://www.nytimes.com/2011/02/27/us/27gas.html.

states have reported health problems and air and water contamination associated with hydrofracking.[23]

Hydrofracking is currently not regulated by federal law. The practice is exempted from regulation as an "underground injection" in the Safe Drinking Water Act (SDWA).[24] SDWA §1421 does not include hydraulic fracturing operations in its definition of "underground injection," and does not require any person using hydraulic fracturing to disclose the chemicals used in the process.[25] This exemption has commonly been referred to as "The Halliburton Loophole,"[26] which was created by amendments to the SDWA established by the Energy Policy Act of 2005.[27] The SDWA states:

> Regulations of the Administrator . . . for State underground injection control programs may not prescribe requirements which interfere with or impede (A) the underground injection of brine or other fluids which are brought to the surface in connection with oil or natural gas production or natural gas storage operations, or (B) any underground injection for the secondary or tertiary recovery of oil or natural gas, *unless such requirements are essential to assure that underground sources of drinking water will not be endangered by such injection*.[28]

Also:

> Underground injection endangers drinking water sources if such injection may result in the presence in underground water which supplies or can reasonably be expected to supply any public water system of any contaminant, and if the presence of such contaminant may result in such system's not complying with any national primary drinking water regulation or may otherwise adversely affect the health of persons.[29]

Because EPA can interfere with hydraulic fracturing operations when they threaten public drinking water supplies, the Agency is undertaking a comprehensive study to determine the effects of hydraulic fracturing on drinking water and public health.[30] The U.S. House of Representatives Appropriations Conference Committee allocated $1.9 million for EPA to undertake a comprehensive study to investigate possible relationships between hydrofracking and drinking water and the potential risks associated with hydrofracking.[31] The final study plan was released in November 2011and indicates initial study results will be available in late 2012.[32]

There are strong arguments that the United States needs the domestic gas supply that is provided through hydrofracking. The market for natural gas in the United States is strong, due to the large demand.[33] Shale gas may comprise over 20% of the total U.S. gas supply by 2020.[34] The location of the Marcellus Shale next to the Northeast is particularly attractive to the region's consumers, because of the implied lower transportation costs in a region where consumers rely mostly on imports.[35] "The Marcellus break-even wellhead gas prices are lower than those in most other U.S. shale regions that are currently being produced."[36] However, substantial infrastructure would be needed to move this new gas supply to market.[37] During a time when the United States is desperately seeking energy resources, the development of the Marcellus Shale is a tempting opportunity.

II. New York's Ban on Hydrofracking

New York has taken the most drastic approach to hydrofracking out of all the Marcellus Shale states. In 2010, the state Senate and Assembly passed legislation to impose a temporary moratorium on hydraulic fracturing.[38] But when the bill made its way to the governor's desk at the end of December, then-Governor Paterson vetoed the bill, issuing an Executive Order instead.[39] Gov. Andrew Cuomo has continued the Executive Order.[40] The Executive Order states that until a final SGEIS is released, no permits for high-volume horizontal hydrofracking can be issued.[41] This essentially creates a de facto temporary moratorium.

23. *Id.* (according to Walter Hang, President of Toxics Targeting, a business in Ithaca, New York, that compiles data on gas drilling).
24. 42 U.S.C. §§300f-300j-26, §300(h), ELR Stat. SDWA §§1401-1465, §1421.
25. *Id.*
26. Hopey, *supra* note 15.
27. *See* Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594, 694 (codified as amended in scattered sections of 42 U.S.C. §322) ("The term 'underground injection' . . . excludes . . . (ii) 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.").
28. *Id.* (emphasis added).
29. *Id.*
30. U.S. EPA, *supra* note 17.
31. U.S. EPA, *Hydraulic Fracturing*, http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/index.cfm (last visited Mar. 25, 2011); *see also* Hopey, *supra* note 15 (quoting EPA spokeswoman Ernesta Jones on the justification of the study: "There are concerns, but also a lack of scientific information to confirm them. This study will fill in some of the data and reduce the uncertainties.").
32. U.S. EPA, Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources (Nov. 2011), *available at* http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/upload/hf_study_plan_110211_final_508.pdf (stating the overarching goal of the study is to answer the questions: "Can hydraulic fracturing impact drinking water resources?" and "If so, what conditions are associated with these potential impacts?").
33. Massachusetts Inst. of Tech., The Future of Natural Gas 68 (2010), *available at* http://web.mit.edu/mitei/research/studies/report-natural-gas.pdf.
34. U.S. EPA, *supra* note 17.
35. Massachusetts Inst. of Tech., *supra* note 33, at 64.
36. *Id.*
37. *Id.* (giving as an example that currently less than one-half of the Pennsylvania wells in the Marcellus formation have pipeline access).
38. *See* S. 8129 233rd Sess. (N.Y. 2010) (suspending hydraulic fracturing so that "the Legislature [can] properly deliberate the numerous concerns that have come forward during the public comment period on the Department of Environmental Conservation's draft Supplemental Generic Environmental Impact Statement (draft SGEIS)" and allowing for a "thorough, deliberate and unrushed analysis of all factors involved").
39. *See* N.Y. Exec. Order No. 41 (Dec. 13, 2010), *available at* http://www.toxicstargeting.com/MarcellusShale/documents/exec-order-41 (requiring gthe DEC to revise the Draft SGEIS and accept public comment on it beginning June 1, 2011. Until the final SGEIS is complete, no permits for high-volume hydraulic fracturing with horizontal drilling may be issued.).
40. *See* N.Y. Exec. Order No. 2. (Jan. 1, 2011), *available at* http://www.governor.ny.gov/executiveorder/2.
41. N.Y. Exec. Order No. 41, *supra* note 39. New York proposed regulations for hydraulic fracturing in 2011. *See* Colin Sullivan, *N.Y. Unveils Draft Rules for*

The decision was praised by environmentalists, because it acknowledged that the draft SGEIS was not adequate, and required more consideration about the effects of hydrofracking before allowing the practice to continue in New York's Marcellus Shale.

On the local level, public pressure is building to ban hydrofracking completely using local land use law. The Common Council in Buffalo banned any form of natural gas extraction in February 2011.[42] This was largely a symbolic gesture, since no hydrofracking projects had been proposed in the area.[43] However, Jerusalem, New York, voted unanimously for a 12-month drilling moratorium, set to begin when the state's moratorium ends.[44] Several other small upstate New York towns are exploring the legal options to ban hydrofracking.[45]

Currently, gas and oil resources are regulated under Article 23 of the Environmental Conservation Law of New York by the DEC.[46] The DEC requires all operators planning to drill and fracture to submit an application for a permit to drill.[47] The application process requires review under the State Environmental Quality Review Act (SEQRA) or conformance to the conditions established in the generic environmental impact statement (GEIS).[48] The GEIS has statewide parameters for SEQRA review of gas well permitting.[49] In response to the additional concerns raised by hydraulic fracturing, the DEC created the first draft SGEIS that set additional parameters for SEQRA review when considering permits for gas wells using hydraulic fracturing.[50] When the first draft SGEIS was released, the DEC received more than 13,000 written comments and held four public hearings in the three-month notice-and-comment period.[51] The Executive Order halting hydrofracking permits gave the DEC extra time to analyze scientific information and consider public input when deciding what regulations were necessary to protect public health and the environment for the revised SGEIS.

Some New York legislators were not convinced that the Executive Order would be enough to protect the public from the health concerns associated with hydrofracking. Bills were introduced in the New York State Assembly and Senate that ranged from establishing a hydrofracking moratorium until 120 days after EPA completes its report on the effects of hydrofracking on water quality and public health[52] to prohibiting hydraulic fracturing entirely.[53] As the public expresses its fear over the health effects the public continues to express fear and concern over negative health and environmental effects associated with hydrofracking, but as legislators and town councils respond, they should keep in mind that regulations that go "too far" can result in a taking that requires just compensation.[54]

III. The Takings Issue

New York's de facto moratorium on hydrofracking presents several interesting takings issues. First, is the moratorium a compensable taking? Second, what takings analysis would be used to determine if a regulation on a partial interest in property, such as a gas lease, is enough to constitute a taking? Third, to what extent do background principles provided by New York State law limit the property rights obtained when the property is acquired?

This section argues that a takings claim from New York's de facto moratorium can likely be defended in three ways. First, because the moratorium is only temporary, it is not a taking, even if a partial interest in property has no economic value during the length of the moratorium. Second, if a court determines that the moratorium does not deprive the property of all economically beneficial use, then reasonable investment-backed expectations will be considered. In such a highly regulated field, it would be difficult for a claimant to establish she did not think she was subject

"Fracking," Greenwire (Sept. 28, 2011), *at* http://www.dec.ny.gov/regulations/77353.html.

42. Brian Meyer, *Council Votes to Ban Hydrofracking*, BuffaloNews.com, Feb. 8, 2011, http://www.buffalonews.com/city/article335761.ece.
43. *Id.*
44. Peter Mantius, *New York Wine and Tourism Industry Prepares to Battle Hydrofracking*, D.C. Bureau, Feb. 24, 2011, http://dcbureau.org/201102241299/Natural-Resources-News-Service/new-york-wine-and-tourism-industry-prepares-to-battle-hydrofracking.html.
45. *Id.*
46. N.Y. Envtl. Conserv. Law §§23-0301 et seq. (McKinney 2010).
47. N.Y. DEC, *Well Permitting Process: Well Permitting Requirements to Drill, Deepen, Plug Back and Convert for Oil, Gas, Solution Salt Mining and Other Regulated Wells*, http://www.dec.ny.gov/energy/1772.html (last visited Nov. 26, 2010).
48. N.Y. Comp. Codes R. & Regs. tit. 6 §617.3 (1996).
49. N.Y. DEC, *Supplemental Generic Environmental Impact Statement on the Oil, Gas, and Solution Mining Regulatory Program*, *New York State*, http://www.dec.ny.gov/energy/47554.html (last visited Dec. 4, 2010).
50. *Id.* These parameters mostly included disclosures of water sources, depth and elevation of fracture zone, information on existing water wells within one-half-mile of drilling locations, a fluid disposal plan, and basic operational information. In its revised draft SGEIS, the DEC included much more specific measures addressing well casing to prevent gas migration, spill control of flowback water, stormwater control, limits on water withdrawals, proper disposal, tracking and treatment of flowback water, identifying chemicals, controlling air pollution, conserving habitats, and off-setting community impacts. N.Y. DEC, *Revised Draft SGEIS on the Oil, Gas, and Solution Mining Regulatory Program (Sept. 2011)*, http://www.dec.ny.gov/energy/75370.html (last visited Nov. 8, 2011).
51. N.Y. Exec. Order No. 41, *supra* note 39.
52. A. 05547, 2011-2012 State Assembly, Reg. Sess. (N.Y. 2011). Other bills in the Assembly include: A. 00300, establishing a moratorium on disposal of fluids used in hydraulic fracturing occurring outside the state until 120 days after EPA issues report thereon; A. 01265, prohibiting the use of toxic fracking solutions during hydraulic fracturing; A. 02922, regulating the use of hydraulic fracturing fluids; A. 02924, requiring an environmental impact statement to be prepared for any natural gas or oil drilling involving the use of hydraulic fracturing fluid; A. 06488, regulating industrial waste from hydraulic fracturing operations; A. 06540, requiring certificates of competence for utilization of a derrick or other drilling equipment for the purposes of hydraulic fracturing; A. 06541, enacting the "look before you leap act of 2011" to establish a five-year moratorium on high volume hydraulic fracturing and the conducting of an investigation thereon.
53. S. 04220, 2011-2012 S., Reg. Sess. (N.Y. 2011). Other bills in the Senate include: S. 00425, regulating the use of hydraulic fracturing fluids; S. 02697, adding provisions to natural gas development laws to ensure safe hydraulic fracturing practices are used; S. 03765, prohibiting contracts that relate to hydraulic fracturing from containing provisions that prohibit the disclosure of the chemicals used; and S. 04251, requiring the promulgation of regulations requiring treatment works to test waste from hydraulic fracturing operations to test for radioactivity.
54. Pennsylvania Coal Co. v. Mahon, 260 U.S. 393, 415-16 (1922) "We are in danger of forgetting that a strong public desire to improve the public condition is not enough to warrant achieving the desire by a shorter cut than the constitutional way of paying for the change."

to these regulations. Finally, a takings claim can likely be defeated on background principles of state nuisance law. With these three defenses, New York should feel confident in using a temporary moratorium to halt high-volume horizontal hydrofracking until it has the opportunity to do more research and make sure it has adequate regulations in place. This discussion also aims to show some of the boundaries and gray areas that could leave the stricter regulations contemplated by New York legislators vulnerable to takings claims.

A. Background

The Takings Clause, provided in the Fifth Amendment to the Constitution, states that ". . . nor shall private property be taken for public use, without just compensation."[55] This principle also applies to state actions under the Fourteenth Amendment.[56] A taking stemming from a moratorium is known as a "regulatory taking" and was first acknowledged in *Pennsylvania Coal Co. v. Mahon*.[57] A regulatory taking occurs when the state or federal government imposes strict regulations on the use of private property that substantially diminishes its value[58] or deprives the property of all economically beneficial use.[59] Regulatory takings then are subject to two analyses: categorical takings under *Lucas v. South Carolina Coastal Council*[60]; or anything that does not deprive the owner of all economically beneficial use or result in a physical invasion under *Penn Central Transp. Co. v. City of New York*.[61] In *Lucas*, the U.S. Supreme Court found a compensable taking because the regulation that prohibited Lucas from building a beach house on the property he owned in fee simple deprived the property of "all economically beneficial use".[62] In *Penn Central*, the Court decided there was no taking when a Landmarks Preservation Law prohibited the owner of Grand Central Terminal from building a multistory office structure on top of the terminal.[63] Since the regulation did not deprive the owner of all economically beneficial use, the Court used a three-pronged analysis that included the economic impact of the regulation, the interference with reasonable investment-backed expectations, and the character of the government action in coming to this decision.[64] It is currently undetermined which takings analysis the Court would apply to ownership of a partial interest in property, such as a gas lease.[65] Although the owner of a fee-simple estate cannot claim a taking of a regulated segment (a stick in the bundle of property rights),[66] what happens when a partial interest in property is owned in fee (as a bundle itself)?

One of the first determinations that must be made is how state law recognizes partial interests and whether they are protected property rights. Owners of gas leases will likely be a group to claim a taking by the moratorium.[67] However, in New York, mineral interests are often acquired through a process known as "compulsory integration," in which gas companies are able to acquire natural gas reserves under the property of nonleasing landowners living near wells.[68] As part of the permitting process to drill, the operator must control "through fee ownership, voluntary agreement, or integration . . . no less than sixty percent of the acreage within the proposed spacing unit . . ." and must provide the DEC with "a demonstration that the applicant controls the oil or gas rights . . . in the target formation to be penetrated by the wellbore . . . ."[69] The significance of this in a takings analysis is not only that a partial interest in property is recognized in New York,[70] but also that state law could expand potential takings claimants beyond well operators. Landowners, who are brought into the drilling process by compulsory integration, are at the very least signed up for royalties, but they only receive royalties if the well produces.[71] With the new technology of hydrofracking introducing the potential of new productive wells, more New York landowners are realizing the potential value in their land. Because the policy behind compulsory integration is to

55. U.S. Const. amend. V.
56. "No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States." U.S. Const. amend. XIV, §1.
57. 260 U.S. 393 (1922).
58. Penn Central Transp. Co. v. New York City, 438 U.S. 104, 8 ELR 20528 (1978).
59. Lucas v. South Carolina Coastal Council, 505 U.S. 1003, 22 ELR 21104 (1992).
60. *Id.*
61. *Penn Central Transp. Co.*, 438 U.S. at 142.
62. *Lucas*, 505 U.S. at 1019.
63. *Penn Central Transp. Co.*, 438 U.S. at 138.
64. *Id.* at 124.
65. *See* Kristine S. Tardiff, *Closing the Last* Lucas *Loophole: The Partial Interest Problem*, The 12th Annual CLE Conference on Litigating Regulatory Takings and Other Legal Challenges to Land Use and Environmental Regulation (Nov. 6-7, 2009) (analyzing whether there can be a categorical taking of a partial interest in real property).
66. *See* Andrus v. Allard, 444 U.S. 51, 65-66, 9 ELR 20791 (1979) (stating: "At least where an owner possesses a full 'bundle' of property rights, the destruction of one 'strand' of the bundle is not a taking, because the aggregate must be viewed in its entirety.").
67. *See* N.Y. Envtl. Conserv. Law §23-1101 (McKinney 2010) (stating the procedure for obtaining oil and gas production leases that are limited to a period of 10 years and are not allowed within two miles from public water intake areas).
68. *See id.* §23-0901. This law provides that landowners who have not signed an oil and gas lease, but are located in the "spacing unit" of an oil or gas well, have three options for integrating with other properties in the unit. These options are a royalty owner, a nonparticipating owner, or a participating owner. Each option is associated with different costs, compensation, and liability, but the purpose of integration is to forward the policy outlined in §23-0301, which states that it is

> in the public interest to regulate the development, production and utilization of natural resources of oil and gas in this state in such a manner as will prevent waste; to authorize and 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.

69. *Id.* §23-0501(xiii)(3)(2).
70. *See* Frank v. Fortuna Energy, Inc., 856 N.Y.S.2d 322 (4th Dep't 2008) ("reservation of title constitutes a fee simple interest in the subsurface minerals, which includes both title to the minerals and the right to use any reasonable means to extract them" (citing Marvin v. Brewster Iron Mining Co., 55 N.Y. 538 (1874))). *See also* Ryckman v. Gillis, 57 N.Y. 68 (1874) (recognizing that a landowner may divide his or her estate horizontally as well as vertically so that title to the surface vests in one person and title to the minerals vests in another).
71. *Id.* §23-0901(3)(a)(3) ("'Integrated royalty owner' means an owner who has either elected to be an integrated royalty owner or who does not elect to become either a participating owner or a non-participating owner.").

protect property owners' "'correlative right' to an opportunity to receive the benefits of oil and gas beneath [their] acreage" the state will likely be faced with opposition when certain "correlative rights" (specifically within the prohibited areas) are no longer recognized.[72]

B. Temporal Dimension

New York's first takings defense is that the temporary nature of the moratorium does not impose the heavy burden that can amount to a taking. The seminal case for analyzing moratoria as potential regulatory takings is *Tahoe-Sierra Preservation Council, Inc. v. Tahoe Regional Planning Agency*.[73] In this case, the Tahoe Regional Planning Agency placed a 32-month moratorium on development around Lake Tahoe.[74] The Court narrowly held that this temporary restriction did not constitute a taking, because, when considering the "parcel as a whole," 32 months could not be segmented from the rest of the fee-simple estate to claim that the regulation deprived the landowner of "all economically beneficial use" under *Lucas*.[75] Thus, the "parcel-as-a-whole" concept also has a temporal dimension. The Court indicated the narrowness of the holding by emphasizing that this constitutional issue is best decided with a "careful examination and weighing of all the relevant circumstances."[76] The Court's lengthy dicta perhaps explains why it was unwilling to adopt a per se rule that established whether temporary moratoriums could constitute a compensable taking. Justice John Paul Stevens laid out seven different theories for which they could find that this moratorium was a taking of petitioner's property, and established a per se rule.[77] The Court clarified that, by itself, a delay in the use of property would not suffice to claim a taking, emphasizing that takings claims should be evaluated "upon the particular circumstances [of each] case" in the interests of "fairness and justice".[78] If anything, it suggested that a one-year moratorium may be more properly evaluated as an interference with reasonable investment-backed expectations.[79]

C. Reasonable Investment-Backed Expectations

1. The Proper Test for Partial Interests

Investment-backed expectations are part of the *Penn Central* test for partial takings, but generally do not apply to *Lucas'* categorical rule for regulations that eliminate all economically beneficial use of property.[80] Whether reasonable investment-backed expectations are considered in the takings analysis for partial interests owned in fee therefore depends on whether *Lucas* is limited to fee-simple interests in land and whether a partial interest is considered a severance of the parcel as a whole or its own bundle of sticks.[81]

Penn Central applies when regulations neither constitute a physical invasion nor result in total economic deprivation.[82] Under this analysis, the court considers the following three factors: the property owner's reasonable investment-backed expectations; the economic impact of the regulation; and the character of the government action.[83] The reasonable investment-backed expectations depend on existing regulations of the property interest, the timing of the purchase of the property interest and the regulation alleged to result in a taking, and what the owner was expecting with all these circumstances in place, beyond the mere opportunity to drill.[84]

Penn Central makes clear that one cannot segment a portion of their fee estate subject to regulation and declare

72. N.Y. DEC, *Landowner Option Guide*, http://www.dec.ny.gov/energy/1590.html (last visited Nov. 8, 2011).
73. Tahoe-Sierra Preservation Council, Inc. v. Tahoe Reg'l Planning Agency, 535 U.S. 302, 332, 32 ELR 20627 (2002).
74. *Id.* at 306.
75. *Id.* at 332.
> A permanent deprivation of the owner's use of the entire area is a taking of "the parcel as a whole," whereas a temporary restriction that merely causes a diminution in value is not. Logically, a fee simple estate cannot be rendered valueless by a temporary prohibition on economic use, because the property will recover value as soon as the prohibition is lifted."

76. *See id.* at 335 (quoting Palazzolo v. Rhode Island, 533 U.S. 606, 636, 32 ELR 20516 (2001)) (stating: "In rejecting petitioners' per se rule, we do not hold that the temporary nature of a land-use restriction precludes finding that it effects a taking; we simply recognize that it should not be given exclusive significance one way or the other . . . .").
77. *Id.* at 334. The seven theories are:
> (1) Create a categorical rule that requires compensation when the government temporarily deprives an owner of all economically viable use of her property; (2) Narrow the first suggestion so as to only cover temporary land-use restrictions that are not normal delays in permits, changes in zoning, variances . . . ; (3) Allow a one-year moratorium at maximum before compensation requirements "kick in"; (4) Declare that a series of "rolling moratoria" are the functional equivalent of a permanent taking; (5) Examine whether the agency was acting in bad faith and simply stalling to avoid rule promulgation; (6) Evaluate whether the moratorium substantially advanced a legitimate state interest; and (7) Examine the claim as a facial challenge.

78. Penn Central Transp. Co. v. New York City, 438 U.S. 104, 123-24, 8 ELR 20528 (1978).
79. *Tahoe-Sierra*, 535 U.S. at 342.
80. Lucas v. South Carolina Coastal Council, 505 U.S. 1003, 1019, 22 ELR 21104 (1992).
81. *See* Patrick C. McGinley, *Bundled Rights and Reasonable Expectations: Applying the Lucas Categorical Taking Rule to Severed Mineral Property Interests*, 11 Vt. J. Envtl. L. 525, 529 (2010) (arguing that less-than-fee mineral interests should be analyzed under *Penn Central* and consider the claimant's reasonable investment-backed expectations).
82. *Penn Central*, 438 U.S. at 123-24.
83. *Id.*
84. *See* Gazza v. New York State Dep't of Envtl. Conservation, 89 N.Y.2d 603, 615, 28 ELR 20053 (1997) (noting that denial of a variance request to build in protected wetlands did not constitute a taking nor disrupt reasonable expectations, because the plaintiff "had a reasonable expectation that the DEC would consider his request in accordance with the standards and purposes of the wetlands regulations"); Pennsylvania Coal Co. v. Mahon, 260 U.S. 393, 414-15 (1922) (holding that a statute that forbade the mining of coal that caused the subsidence of any house, unless the house was also owned by the owner of the underlying coal and was enacted after an owner had reserved only the mineral rights to a property constituted a taking, because the statute made it commercially impracticable for him to mine the coal and frustrated his distinct investment-backed expectations); Seven Up Pete Venture v. Montana, 114 P.3d 1009, 1017-19 (Mont. 2005) (stating an opportunity to drill does not constitute a property right unless "the discretion of the [permit] issuing agency is so narrowly circumscribed that approval of a proper application is virtually assured").

a taking.[85] Therefore, if a gas lease is not a conceptual severance of a fee interest, but rather a separate and distinct property interest owned outright, *Penn Central* may not apply.[86] However, Kristine Tardiff, a trial attorney in the Environment and Natural Resources Division of the U.S. Department of Justice, argues that "it makes little sense to preclude the owner of the fee from segmenting that fee in order to establish a taking of any one regulated segment, but to allow that owner to sell off partial interests, and then allow the purchaser of those partial interest[s] to claim a categorical regulatory taking of such interest because that is all she acquired."[87] Conversely, should an interest that has been broken off from the fee in exchange of fair compensation still be considered part of the original parcel and included in the "parcel-as-a-whole" analysis, or is that partial interest more than just a conceptual severance? A *Penn Central* analysis of a taking of a partial interest would include an examination of these factors in the "reasonable investment-backed expectations" prong, but perhaps a partial interest is more appropriately analyzed as a categorical taking using *Lucas*. Under either analysis, the claim may not make it past the temporal argument that one cannot segment a portion of time that their fee estate is regulated and declare a taking.[88]

In a categorical takings analysis, reasonable investment-backed expectations may be considered, but they are not part of the explicit test used by the court. Tardiff argues that in *Lucas*, the Court considered Lucas' expectations and concluded that reasonable investment-backed expectations should be included in all regulatory takings claims.[89] In that case, the Court created the categorical takings rule that states, "when the owner of real property has been called upon to sacrifice *all* economically beneficial uses in the name of the common good, that is, to leave his property economically idle, he has suffered a taking."[90] In *Lucas*, the property at issue was a fee-simple estate.[91] This is significant, because it may be easier to establish that a regulation eliminates all economically beneficial use for a partial interest than an entire fee-simple estate that has more potential uses. However, the Court has stated that the categorical rule is only for the "extraordinary case" in which a regulation permanently deprives property of all value,[92] indicating that the *Lucas* rule may be confined only to full fee interests in land,[93] and may not extend to alleged takings of partial property interests, such as gas leases or mineral estates. Since *Lucas*, courts have debated whether the categorical takings rule should disregard reasonable investment-backed expectations,[94] and the Supreme Court has been reluctant to grant certiorari in resolving this question.[95] Although courts have referenced expectations in dicta,[96] it remains undecided whether such expectations are a part of the categorical takings rule.

The distinction between these two takings analyses is relevant to possible takings claims as a result of New York's moratorium, because it would determine whether a court explicitly considers the reasonable investment-backed expectations of a partial interest owner. Expectations should be a part of the analysis under both tests, because a partial interest owned in fee is still associated with a piece of land, whether it is from royalties or owning a gas lease or mineral estate. The partial interest owner's expectations and awareness of regulations is perhaps more relevant than the fee-simple landowner who is responsible for the same awareness of regulations and may have similar expectations

85. *See Penn Central*, 438 U.S. at 130-31. The Court stated:
> Takings' jurisprudence does not divide a single parcel into discrete segments and attempt to determine whether rights in a particular segment have been entirely abrogated. In deciding whether a particular governmental action has effected [sic] a taking, this Court focuses rather both on the character of the action and the nature of the interference with rights in the parcel as a whole.

86. *See* Lucas v. South Carolina Coastal Council, 505 U.S. 1003, 1016 n.7, 22 ELR 21104 (1992) (acknowledging that the "deprivation of all economically feasible use" rule "is greater than its precision, since the rule does not make clear the 'property interest' against which the loss of value is to be measured"). *See also* Robert Meltz, *Substantive Takings Law: A Primer*, The 12th Annual CLE Conference on Litigating Regulatory Takings and Other Legal Challenges to Land Use and Environmental Regulation (Nov. 6-7, 2009) (discussing that while a surface and mineral estate are both part of the "parcel as a whole" in *Keystone Bituminous Coal Ass'n v. DeBenedictis*, 480 U.S. 470, 17 ELR 20440 (1987), state law can recognize the mineral interest as a separate property interest if the property was purchased solely for mining (citing State ex rel. R.T.G., Inc. v. State, 780 N.E.2d 998, 1008-09 (Ohio 2002)).

87. Tardiff, *supra* note 65, at 4.

88. Tahoe-Sierra Preservation Council, Inc. v. Tahoe Reg'l Planning Agency, 535 U.S. 302, 331, 32 ELR 20627 (2002) Although notably the temporal aspect does not apply to the areas where drilling is prohibited as outlined in the revised SGEIS.

89. *See* Tardiff, *supra* note 65 (providing evidence of this from questions asked during oral argument and Justice Anthony Scalia's majority opinion stating, "at the time Lucas acquired these parcels, he was not legally obligated to obtain a permit from the Council in advance of any development activity. His intention with respect to the lots was to do what the owners of the immediately adjacent parcels had already done: erect single-family residences" (citing *Lucas*, 505 U.S. at 1008)).

90. *Lucas*, 505 U.S. at 1019.

91. *Id.* at 1016.

92. *Tahoe-Sierra*, 535 U.S. at 332.

93. *See Lucas*, 505 U.S. at 1016 n.7 (while stating, "[t]he rhetorical force of our 'deprivation of all economically feasilble use' rule is great than its precision, since the rule does not make clear the 'property interest' against which the loss of value is be measured . . . ." the Court did not address this issue since Lucas' interest was a full fee simple interest in land).

94. *See* Tardiff, *supra* note 65, at 10 (citing Loveladies Harbor, Inc. v. United States, 28 F.3d 1171, 24 ELR 21072 (Fed. Cir. 1994) and Good v. United States, 189 F.3d 1355, 30 ELR 20102 (Fed. Cir. 1999), in which the *Good* appellate court stated "[w]e agree with the *Loveladies Harbor* court that the Supreme Court in *Lucas* did not mean to eliminate the requirement for [reasonable investment-backed expectations] to establish a taking." 189 F.3d at 1361). *But see* Palm Beach Isles v. United States, 231 F.3d 1354, 1364 (Fed Cir. 2000) (stating when a land use restriction "den[ies] the owner of the regulated property all economically viable uses of it . . . we have no doubt that both law and sound constitutional policy entitle the owner to just compensation without regard to the nature of the owner's initial investment-backed expectations").

95. *See* Good v. United States, No. 99-881, Petition for Writ of Certiorari, 1999 WL 33732720 (U.S. Nov. 24, 1999) (presenting the question:
> Whether the Federal Circuit erred in holding-contrary to *Lucas* . . . that a government regulation depriving a property owner of all economically viable use of his land does not result in a *per se* or categorical taking under *Lucas* unless the property owner can also prove "reasonable, investment-backed expectations."

The petition was denied on April 3, 2000. Good v. United States, 529 U.S. 1053 (2000)).

96. *See Palm Beach Isles*, 231 F.3d at 1364 (discussing that even though expectations were not a dispositive factor in the categorical context, they were not irrelevant and could play a role in the assessment of just compensation for a categorical taking).

for the use of the property, but is denied a compensable taking because there are other property interests to fall back on, such as market value. A partial owner takes a risk in buying or reserving only the partial interest that is the subject of the regulation itself, and the law should recognize this by considering his or her reasonable investment-backed expectations.

To defend a moratorium that affects a partial interest, a *Penn Central* analysis should be encouraged. But since takings claimants will try to steer courts toward the categorical rule in *Lucas* to avoid the expectations factor, an alternative argument should be made that investment-backed expectations must be a part of the analysis.[97]

Tardiff clearly illustrates that, if the categorical rule excludes consideration of the diminished investment-backed expectations of the owner of a partial interest, and the already-realized expectations of the owner who segmented the original fee-simple interest in land, courts are likely to reach illogical results.[98] She uses *Cane Tennessee, Inc. v. United States* to put this idea in context.[99] In that case, the Wyatts bought 10,000 acres of land and eventually sold it to Cane Tennessee, Inc., for $5.1 million,[100] reserving a nonparticipating coal royalty interest that they later transferred to their children.[101] Cane leased the property to Eastern Minerals International (EMI).[102] The Surface Mining Control and Reclamation Act was subsequently enacted, requiring permits to mine.[103] EMI obtained permits and mined 33 acres of this property for two years.[104] The U.S. Department of the Interior's Office of Surface Mining later declared the area unsuitable for mining operations,[105] and Cane and the Wyatt children pursued takings claims.[106] For Cane, which had a fee-simple interest in the land, including surface and mineral estates, the court applied *Penn Central*.[107] Under this test, the takings claim failed because Cane knew it was subject to mining regulations, a 49.6% diminution of value was not a serious enough financial loss to support a taking, and the character of government action was reasonable.[108] But for the Wyatt children, the court found that the nonparticipating royalty interest was a real property interest under state law[109] and concluded that they had suffered compensable takings under the categorical rule in *Lucas*.[110] The results of this litigation are troublesome. Tardiff points out that both property interests were based on the productivity of coal mining and both owners had similar investment-backed expectations. But the court refused to consider these expectations for Cane, the fee-simple owner, because the land retained some value, yet it found a taking for the Wyatt Trust, because the reserved coal royalty interest was essentially valueless when coal mining was prohibited, and thus no royalties would be received.

Hence, regardless of whether a court elects to use a *Penn Central* analysis or the *Lucas* categorical rule in determining whether there has been a taking of a partial interest, the court should associate the partial interest with the whole parcel it belongs to and consider the reasonable investment-backed expectations associated with the uses of that parcel as a whole.

2. Analysis of Reasonable Investment-Backed Expectations in Gas Drilling

Reasonable investment-backed expectations certainly differ, depending on when title was acquired and when regulations take effect; however, timing is not necessarily dispositive in determining whether one can claim a regulatory taking. In *Palazzolo v. Rhode Island*,[111] Justice Sandra Day O'Connor explained in her concurrence that a pre-existing regulatory scheme should not foreclose a takings claim, but rather should be considered as a factor in the "reasonableness" of the investment-backed expectations. This position has generally been accepted, and courts consider three factors for property that was acquired prior to regulation: (1) is it a highly regulated industry or activity; (2) was the plaintiff aware of the problem that spawned regulation when the property was acquired; and (3) could the regulation have been reasonably anticipated?[112]

Many potential takings claimants will have a difficult time making it past the reasonable expectations hurdle. Gas development is a heavily regulated field everywhere in the United States and subject to a rigorous permitting process.[113] Because gas development is such a heavily regulated

97. *See* Tardiff, *supra* note 65, at 6 (laying out the alternative path for defending regulatory takings claims involving partial interests).
98. *See* Tardiff, *supra* note 65, at 20-21 (using the *Cane* litigation as an example where a beneficiary's coal royalty interest was analyzed under *Lucas* and a taking was found, but the land owned separately in fee simple was subject to a *Penn Central* analysis and did not suffer a taking from regulations prohibiting mining in that area).
99. Cane Tennessee, Inc. v. United States (*Cane II*), 54 Fed. Cl. 100 (2002).
100. *Id.* at 102.
101. *Id.*
102. *Id.*
103. *Id.* at 103.
104. *Id.*
105. *Id.*
106. *Id.*
107. *Id.* at 105.
108. Cane Tennessee, Inc. v. United States (*Cane III*), 57 Fed. Cl. 115, 129 (2003).
109. Cane Tennessee, Inc. v. United States (*Cane V*), 60 Fed. Cl. 694, 699 (2004).
110. *Id.* at 696.
111. 533 U.S. 606, 635-36, 32 ELR 20516 (2001) (O'Connor, J., concurring). Justice O'Connor explained:

> If investment-backed expectations are given exclusive significance in the *Penn Central* analysis and existing regulations dictate the reasonableness of those expectations in every instance, then the State wields far too much power to redefine property rights upon passage of title. On the other hand, if existing regulations do nothing to inform the analysis, then some property owners may reap windfalls and an important indicium of fairness is lost.

112. *See* Robert Meltz, *Substantive Takings Law: A Primer*, The 12th Annual CLE Conference on Litigating Regulatory Takings and Other Legal Challenges to Land Use and Environmental Regulation (Nov. 6-7, 2009) (citing Schooner Harbor Ventures, Inc. v. United States, 569 F.3d 1359 (Fed. Cir. 2009) (a developer's knowledge of preexisting regulation is not per se dispositive in precluding a takings claim, and on remand, the trial court must consider all relevant factors)).
113. U.S. EPA, *Drilling Permit Application*, http://www.dec.ny.gov/energy/1783.html (last visited Mar. 25, 2011). In New York, an owner must have an approved organization report and demonstrate financial security before it can

field, any landowner who acquired property in New York for the purpose of gas drilling, as well as any gas driller, should be well aware that the economic prospects may be limited by regulations.[114] However, since high-volume horizontal hydrofracking is a relatively new process for extracting gas, many landowners in the Marcellus Shale may have just discovered the profitability of their property for gas development. The third prong of the analysis addresses this situation by considering whether regulation could have reasonably been anticipated when the industry introduced a new practice. Because hydrofracking is more invasive than previous methods used to extract gas, imminent regulation should have been anticipated. A landowner can change the economic expectations of his or her property once a new practice is introduced that can suddenly change the land's profitability, but those expectations will be considered in the context of the overall regulatory regime in place.

D. Background Principles of Nuisance

A taking may be avoided altogether if the regulation is abating a nuisance. Because New York's moratorium aims to prevent dangers associated with hydrofracking, and water pollution and other environmental degradations can be considered a public nuisance under New York common law, it is likely that potential takings claims can be defeated on this ground. This emphasizes the importance of studies, such as EPA's, that will determine whether these environmental and public health concerns are real**.** Well operators are "under the implied obligation that the owner's use [of their property] shall not be injurious to the community."[115] Drilling does not have to rise to the level of a public nuisance in order for the state to regulate it to some degree under the police power in protecting the health, safety, and welfare of its citizens.[116] A taking cannot be claimed when a state takes the necessary action to prevent a public nuisance, because an entitlement to engage in the harmful activity never existed for the state to "take."[117]

The core of public nuisance doctrine in common law is an injury to "a right *common* to the general public."[118] The *Restatement (Second) of Torts* defines a public right as "one common to all members of the general public . . . [i]t is collective in nature and not like the individual right that everyone has not to be assaulted or defamed or defrauded or negligently injured."[119] The conduct giving rise to this injury must be an "unreasonable interference" with a public right.[120] "Unreasonableness" is determined based on whether the conduct involves a significant interference with public health, safety, peace, comfort, or convenience; the conduct is proscribed by statute, ordinance, or administrative regulation; or the conduct is of a continuing nature or has produced a permanent or long-lasting effect and, as the actor knows or has reason to know, has a significant effect upon the public right.[121]

New York's public nuisance common law is slightly stricter than the *Restatement*, because the inquiry is limited to "whether the condition created, not the conduct creating it, is causing damage to the public."[122] The New York courts have determined that the "release or threat of release of hazardous wastes into the environment is a public nuisance."[123] The courts also seem to be sensitive to the number of people that could potentially be harmed.[124] The New York City watershed, which provides drinking water for nine million people through unfiltered reservoirs and aqueducts, certainly raises this concern.[125] These components will make it easier for the state to defend its actions if any takings claims should arise due to the moratorium.

For nuisance per se, however, New York statutory law focuses primarily on the conduct in determining whether someone can be held liable.[126] Nuisance per se is a nuisance based on an act that is unlawful, even if performed with due care.[127] For a plaintiff to advance a theory of nuisance per se, they do not need to show that the nuisance was intentional or negligent; rather, they must demonstrate that the defendant created a situation that endangers or injures the property, health, safety, or comfort of a considerable number of persons.[128] For drinking water supply contamination, therefore, a claimant could base a per se nuisance claim on Environmental Conservation Law §17-0501, which states:

> It shall be unlawful for any person, directly or indirectly, to throw, drain, run or otherwise discharge into such waters organic or inorganic matter that shall cause or contribute to a condition in contravention of the standards adopted by the department pursuant to section 17-0301.[129]

The term "discharge" in this statute does not include the indirect contamination by migration of pollutants through

complete a permit application. The application process consists of a description of the proposed drilling program, three copies of a plat, the permit fee, and an environmental assessment form.

114. *See* N.Y. Envtl. Conserv. Law §23-2703 (McKinney 2010) (prohibiting mining in counties with populations over one million or more where the primary source of drinking water for a majority of county residents is from a sole aquifer and local zoning laws or ordinances prohibit mining uses in the proposed area to be mined).

115. Keystone Bituminous Coal Ass'n v. DeBenedictis, 480 U.S. 470, 488-89, 17 ELR 20440 (1987).

116. *Id.*

117. *Id.*

118. Restatement (Second) of Torts §821B(1) (1979).

119. *Id.*

120. *Id.*

121. *Id.*

122. United States v. Hooker Chemicals & Plastics Corp., 722 F. Supp. 960, 968, 20 ELR 20354 (W.D.N.Y. 1989).

123. State v. Schenectady Chemicals, Inc., 479 N.Y.S.2d 1010, 1013 (N.Y. App. Div. 1984).

124. *See* People v. Sessano, 176 Misc. 723, 728 (N.Y. 1941) (stating "the rights of individuals are relative, not absolute. In a fast-growing community of 7,500,000 people greater care must be taken to protect the health and welfare of the individual than in areas less densely populated.").

125. *See* Peter Applebome, *Putting Water Ahead of Natural Gas*, N.Y. Times, Aug. 9, 2008, http://www.nytimes.com/2008/08/10/nyregion/10towns.html?_r=2 (raising the issue that New York has a federal waiver that allows the state to avoid building a filtration plant that could cost $10 billion to $12 billion).

126. N.Y. Envtl. Conserv. Law §17-0501 (McKinney 2006).

127. Delaney v. Philhern Realty Holding Corp., 280 N.Y. 461, 465 (N.Y. 1939).

128. State v. Fermenta ASC Corp., 238 A.D.2d 400, 403 (N.Y. App. Div. 1997).

129. N.Y. Envtl. Conserv. Law §17-0501 (McKinney 2006).

the soil, however.[130] So, for a drinking water contamination claim, the claimant will most likely be faced with causation issues.

The recent methyl tertiary butyl ether (MTBE) litigation in New York and the case *State v. Fermenta ASC Corp.*[131] provide a comprehensive analysis as to how New York courts will likely consider public nuisance claims for drinking water contamination. The MTBE litigation involves consolidated MTBE products liability cases in Nassau and Suffolk Counties. The plaintiffs—water districts in Long Island—allege claims of public nuisance, amongst other things, against petroleum company defendants for contamination of drinking water supply wells.[132] In *Fermenta ASC*, the state, county, and county water authority sued the manufacturer and distributer of an herbicide that was found in excess of the standards set by the New York State Department of Health and the New York DEC for drinking water supplies.[133]

Both cases rely on *CoPart Industries, Inc. v. Consolidated Edison Co. of New York* in establishing what constitutes a public nuisance in New York:

> A public nuisance, or as sometimes termed a common nuisance, is an offense against the State and is subject to abatement or prosecution on application of the proper governmental agency . . . . It consists of conduct or omissions which offend, interfere with or cause damage to the public in the exercise of rights common to all . . . in a manner such as to offend public morals, interfere with use by the public of a public place or endanger or injure the property, health, safety or comfort of a considerable number of persons.[134]

In public nuisance cases involving water contamination, *Fermenta ASC* established that the toxicity or harmfulness of the alleged contaminants is essential to establishing that the seepage into public waters is a public nuisance.[135] It is not enough to argue that the mere existence of a regulatory limit on the amount of contaminants that are allowed in a drinking water supply is conclusive evidence that the alleged contaminant is a hazardous substance.[136] The rationale is that regulatory limits on drinking water apply the same maximum contaminant level to all organic chemicals, including some that are known to be harmless.[137] Therefore, the regulatory limit has no "direct relationship to the toxicity of a compound" at issue.[138]

The MTBE litigation addresses a slightly different proximate cause issue that encompasses more circumstances in which a defendant could be liable for public nuisance. In this case, the court cited *State v. Schenectady Chemicals*, stating, "[t]here is little controversy that contamination of groundwater or public water with noxious chemicals is a substantial interference with a common right of the public."[139] The court relied primarily on the *Restatement (Second) of Torts* §834, which says, "[o]ne is subject to liability for a nuisance caused by an activity, not only when he carries on the activity but also when he participates to a substantial extent in carrying it on."[140] This section contemplates two categories for an "activity": one that causes harm only so long as the activity continues; and one that creates physical conditions that are harmful after the activity that created them has ceased.[141] Reviewing precedent, the court stated that public nuisance could be an appropriate legal tool to address consequential harm from lawful and regulated commercial activity where the activity produces harm directly attributable to it or where the harm is "inextricably intertwined with defendant's commercial activity."[142] The court concluded that two of the petroleum companies could be held liable for public nuisance, because their gasoline discharges were near the plaintiffs' wells, allowing MTBE to enter the plaintiffs' water supplies.[143]

The public nuisance case law in New York for water contamination reveals that the state will have two causation issues to address in defending a moratorium on this ground, in addition to establishing damage to a public right. The first causation issue has to do with the toxicity of the contaminant itself: the state will need to prove that it presents a health hazard beyond citing the limitation regulation in place. For the second causation issue, the state will need to show that the takings claimant's activity is the proximate cause of the damage. The state can argue either that the activity is inextricably intertwined with the harm, or that the harm is directly attributable to the claimant's activity.

If the state can successfully show that the moratorium was used to abate a public nuisance, it can likely defend any takings claims. The difficulty lies in first establishing that hydraulic fracturing creates a public nuisance. The scientific evidence is just now being developed to determine whether there is a link between health effects and drinking water contamination to hydrofracking. The state's use of this defense for takings claims may be made substantially stronger or weaker depending on the results of the EPA study.

130. *Id.* §15-0501.
131. In re Nassau County Consol. MTBE Prods. Liab. Litig., No. 601516, 2010 WL 4400075 (N.Y. Sup. Ct. Nov. 4, 2010) [hereinafter MTBE Prods.]; State v. Fermenta ASC Corp., 630 N.Y.S.2d 844 (N.Y. Sup. Ct. 1995).
132. MTBE Prods, 2010 WL 4400075, at **2-3.
133. *Fermenta ASC*, 630 N.Y.S.2d at 887.
134. CoPart Indus. Inc. v. Consolidated Edison Co. of New York, Inc., 41 N.Y.2d 564, 568, 7 ELR 20604 (N.Y. 1977). This definition comes partly from the *Restatement (Second) of Torts* §§821(B) and 822.
135. State v. Fermenta ASC Corp., 238 A.D.2d 400, 403 (N.Y. App. Div. 1997).
136. *Id.*
137. *Id.*
138. *Id.*
139. State v. Schenectady Chemicals, Inc., 103 A.D.2d 33 (N.Y. App. Div. 1984).
140. MTBE Prods., No. 601516, 2010 WL 4400075, *9 (N.Y. Sup. Ct. Nov. 4, 2010).
141. Restatement (Second) of Torts §834 cmt. b.
142. MTBE Prods., No. 601516, 2010 WL 4400075, *7 (N.Y. Sup. Ct. Nov. 4, 2010) (quoting People v. Sturm, 309 A.D.2d. 91, 98 (N.Y. App. Div. 2003)).
143. MTBE Prods., No. 601516, 2010 WL 4400075, *10.

IV. Conclusion

New York's approach to the hydrofracking controversy has certainly been a brave one, given current economic and employment pressures, along with frustrated drillers and landowners who insist the practice is safe and are having to forego the large financial payouts their neighbors to the south may be enjoying.[144] However, the state should feel confident in defending its moratorium and subsequent regulations, should any takings claims arise. When considering all the interests at issue in this debate—the gas industry's potential to recover part of the 500 trillion cubic feet of natural gas reserves in the Marcellus Shale,[145] the landowners' expectation of income from leasing their land to well operators, the ability to create of jobs in a poor economy, and the potential of contaminating the drinking water supply for over nine million people,[146] New York has made a responsible choice in carrying out its power to protect the health, safety, and welfare of its citizens.

While the law seems willing to recognize the hydrofracking moratorium as a legitimate government action that does not go "too far," the constitutional protections of the Takings Clause could make this regulation an expensive one, if the right circumstances align. If New York decided to ban hydrofracking, and the courts relied on the categorical *Lucas* rule to analyze partial interest takings claims without considering reasonable investment-backed expectations, takings claimants would likely prevail. However, under the current circumstances, New York can likely defend its de facto moratorium, because of its temporary duration, the reasonable investment-backed expectations of drillers and landowners in a highly regulated field, and the state public nuisance law. These legal principles support the idea that a moratorium can be an effective regulatory tool for environmental issues where lawmakers feel that industry needs to take a time-out while the science catches up. This science is needed to resolve the public's fear that "[u]nlike natural gas, which we can get from other places in the Marcellus Shale, we have no other place to go for our drinking water. This is it. We have one and only one drinking water system."[147]

144. Ian Urbina, *supra* note 7. Pennsylvania has been referred to as the Saudi Arabia of natural gas bringing in thousands of jobs and five-figure windfalls for residents who lease their land to drillers.
145. Geological Society of America, *supra* note 8.
146. Applebome, *supra* note 125.
147. *Id.* (quoting Councilman James Gennaro from Queens).