HYDRAULIC FRACTURING & SUBSURFACE TRESPASS IN THE MARCELLUS SHALE REGION

I. INTRODUCTION

Hydraulic fracturing and the prospect thereof have sparked an intense legal debate over the socioeconomics of land development, environmental effects of hydraulic fracturing, and individual property rights. The Marcellus Shale, “a black shale formation extending deep underground from Ohio and West Virginia northeast into Pennsylvania and southern New York,” contains an estimated 168 trillion to 516 trillion cubic feet of natural gas.¹ The low porosity, permeability, and depth of the Marcellus Shale make hydraulic fracturing the preferred method of extracting natural gas. For many landowners, the prospect of leasing land for drilling represents a “modern-day gold rush” which will provide relief for struggling farmers, create jobs for citizens, and produce much needed “clean” energy.² Others are concerned with possible relinquishment of land rights and the negative and/or unknown environmental impacts brought by hydraulic fracturing, a relatively new technology.³

While Texas and other oil and gas producing states have used hydraulic fracturing as a method of extracting gas and oil in tight reservoir formations for over sixty years, the technology has only recently advanced enough to be a profitable means of extracting natural gas from the

² Mireya Navarro, AT ODDS OVER MONEY, LAND AND GAS, N.Y. TIMES, Nov. 28, 2009, at A14.
³ Id.
dense Marcellus Shale.\textsuperscript{4} As such, regional impacts of employing this new technology are unknown and the legal doctrine is ripe for development and interpretation.\textsuperscript{5} Although traditional oil and gas producing states such as Texas provide some legal guidance, other states’ application of the rule of capture and other policy oriented laws should not influence the development or interpretation of laws pertaining to states in the Marcellus Shale region.\textsuperscript{6} These doctrines reflect old, outdated surveying and drilling technologies not employed in this region. Because new technology enables the possibility and profitability of drilling in the Marcellus Shale region, the development of legal precedent in the area should reflect the significant geological, historical, and technological differences between other states and Marcellus Shale states. In this paper, I first introduce the technology used to hydraulically fracture the Marcellus Shale and the possible legal protections landowners wishing to protect their subsurface estate from hydraulic fracturing may employ. Next, I focus specifically on the doctrine of subsurface trespass and provide an analysis of available case law and possible analogous processes as applicable to hydraulic fracturing. Finally, I propose that New York State adopt a rule of subsurface trespass which accounts for modern technology and the development of the industry in this region.

\textit{a. Hydraulic Fracturing}

Hydraulic fracturing, commonly referred to as “fracing,” is used to release oil and gas from “tight” shale and other sedimentary rocks. Although seemingly simple, hydraulic

\textsuperscript{4} See e.g., Laura H. Bunny & Norman J. Hyne, \textit{Hydraulic Fracturing: Stimulating Your Well or Trespassing?}, 44 ROCKY Mtn. Min. L. Inst. 19 (1998) (“The first frac job was done by Pan American Petroleum (Amoco) on a well in Hugoton gas field in Kansas. Halliburton was granted an exclusive license for hydraulic fracturing in 1949. This exclusive license was withdrawn in 1953 and now many service companies companies offer the service”). \textit{See also}, N.Y. State Dep’t of Environmental Conservation: Marcellus Shale: Gas Well Drilling in the Marcellus Shale, http://www.dec.ny.gov/energy/46288.html (last visited May 20, 2010).

\textsuperscript{5} Id.

\textsuperscript{6} The rule of capture is discussed in the ensuing subsection.
fracturing involves several steps.\textsuperscript{7} Prior to hydraulic fracturing a well is drilled vertically.\textsuperscript{8} Once the well reaches the depth of the shale, the well is drilled horizontally.\textsuperscript{9} Hydraulic fracturing is accomplished by pumping fluid under pressure down a well to fracture the reservoir rock.\textsuperscript{10} This releases oil and gas from the shale and “creates channels for the oil and gas to flow through the reservoir into the well.”\textsuperscript{11} In their article, \textit{Hydraulic Fracturing: Stimulating Your Well or Trespassing?}, Laura Bunny and Norman Hyne provide a detailed description of the hydraulic fracturing process. In part they state:

Frac jobs are done in three stages. First, a volume of the frac fluid called the pad is pumped under pressure down the well to initiate and propagate fractures in the reservoir rock. During the second stage, a slurry of the frac fluid and propping agents (proppants) is pumped down the well to extend the fractures and carry the propping agents deep into the fractures. In the last stage called backflush, the frac fluid is pumped back up the well[,] leaving the propping agents to hold open the fractures.\textsuperscript{12}

Modern science and technology make the volume and length of the fractures predictable before the fracturing of the shale and after the frac job is complete.\textsuperscript{13} “The volume of the fractures (height \times length \times width) is directly proportional to the volume of the frac fluid pumped.”\textsuperscript{14} Although more difficult to predict, “. . . length of the fracture is inversely related to the height of the fracture. Lower fracture heights correspond to longer fractures with the same

\textsuperscript{7} For an illustration of the hydraulic fracturing process see Figure 2 in the subsequent subsection “c. Legal Remedies and Subsurface Trespass.”
\textsuperscript{8} N.Y. State Dep’t of Environmental Conservation: Marcellus Shale: Gas Well Drilling in the Marcellus Shale, \textit{supra} note 4.
\textsuperscript{9} Id.
\textsuperscript{10} See, \textit{e.g.}, Laura H. Bunny & Norman J. Hyne, \textit{supra} note 4 (Frac fluid usually contains water, biocides, breakers, buffers, surfactants, nonemulsifiers, clay stabilizers, foamers, friction reducers, temperature stabilizers, and diverting agents).
\textsuperscript{11} Id.
\textsuperscript{12} Id.
\textsuperscript{13} Id.
\textsuperscript{14} Id.
volume of frac fluid pumped.” Oil and gas can only flow through the hydraulically created fracture—larger fractures allow more oil or gas flow to the well head.

The Marcellus Shale is rich in natural gas. The gas is trapped 2,000 feet, in some places 7,000 feet, below the earth’s surface. Generally, hydraulic fracturing increases well production by 5 to 15%. In the case of the Marcellus Shale, hydraulic fracturing is perhaps the only economically viable recovery option.

b. Development of Modern Oil and Gas Law

Prior to the development of the commercial oil and gas industry and the implementation of policies encouraging oil and gas production, common law evinced the ad coelum doctrine—land ownership extended from the core of the earth through to the sky. The advent of the commercial gas and oil industry in the 1950’s imposed significant changes on the ad coelum doctrine. As many courts have iterated, “[i]t is ancient doctrine that at common law ownership of the land extended to the periphery of the universe—Cujus est solum ejus est usque ad coelum. But that doctrine has no place in the modern world.” The fugacious nature of oil and gas made application of the ad coelum doctrine impracticable. Furthermore, states’ adoption of policies encouraging commercial oil and gas production pushed courts to interpret laws in favor of

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15 Id.
17 See N.Y. State Dep’t of Environmental Conservation: Marcellus Shale: Gas Well Drilling in the Marcellus Shale, supra note 4.
18 See, e.g., Laura H. Bunny & Norman J. Hyne, supra note 4.
20 Id.
21 Laird v. Nelms, 406 U.S. 797, 799 (1972) (citing United States v. Causby, 328 U.S. 256, 266 (1946)).
22 See generally, Terry D. Ragsdale, supra note 18 at 313.
production and limit landowners’ individual property rights. As a result, courts applied the rule of capture to oil and gas.\textsuperscript{23}

The common law rule of capture holds that “the first person to reduce subsurface oil or gas to physical possession [becomes] the owner of the same regardless of whether the product was in fact extracted from beneath the surface of that person’s property.”\textsuperscript{24} Here, the rule of capture assumes that oil and gas migrate within reservoirs and between property lines.\textsuperscript{25} The Texas Supreme Court described the rule of capture in \textit{Elliff v. Texon Drilling Co.:}

\begin{quote}
[C]ourts generally have come to recognize that oil and gas, as commonly found in underground reservoirs, are securely entrapped in a static condition in the original pool, and, ordinarily, so remain until disturbed by penetrations from the surface. It is further established, nevertheless, that these minerals will migrate across property lines towards any low pressure area created by production from the common pool. This migratory character of oil and gas has given rise to the so-called rule or law of capture. That rule simply is that the owner of a tract of land acquires title to the oil or gas which he produces from wells on his land, though part of the oil or gas may have migrated from adjoining lands. He may thus appropriate the oil and gas that have flowed from adjacent lands without the consent of the owner of those lands, and without incurring liability to him for drainage.\textsuperscript{26}
\end{quote}

Thus, as applied, the rule of capture limits landowners’ liability for draining reservoirs spanning across property lines, thereby promoting public policies which encourage oil and gas production.\textsuperscript{27} According to the rule of capture, a non-consenting landowner’s remedy against drainage from a common oil or gas pool is one of self-help; landowners have the option to “go and do likewise.”\textsuperscript{28}

\begin{tabbing}
\textsuperscript{23} \textit{Id.} \tab \textsuperscript{24} Western Land Services, Inc. v. Dept. of Environmental Conservations of the State of New York, 26 A.D.3d 15, 16-17 (N.Y. App. Div. 2005). \textsuperscript{25} See generally, ANR Pipeline Co. v. 60 Acres of Land, 418 F.Supp.2d 933, 947 (W.D. Mich. 2006). \textsuperscript{26} 210 S.W.2d 558 (Tex. 1948). \textit{See} Terry D. Ragsdale, \textit{supra} note 18 at 313. \textsuperscript{27} \textit{Id.} \textsuperscript{28} ANR Pipeline, 418 F.Supp.2d at 940.
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c. Legal Remedies and Subsurface Trespass

Although the rule of capture decreases and weakens non-consenting landowners’ legal rights against oil and gas drilling from common reservoirs, the process of hydraulic fracturing may present specific elements which differentiate this drilling technique from other drilling processes and provide for alternative theories of liability. Various court decisions and legal scholars suggest subsurface trespass, takings, conversion, private nuisance, and negligence may provide valid liability theories and relief to landowners who do not consent to the hydraulic fracturing of their mineral estates. 29 Relative to the possibility of numerous topics, this paper focuses exclusively on subsurface trespass.

The common law tort definition of trespass is “an unauthorized and direct breach of the boundaries of another’s land.” 30 The trespass must be a physical invasion. 31 Trespassers will be liable where the “intrusion has been intentional, negligent, or the result of an abnormally dangerous activity in which he is engaged.” 32 Furthermore, each “landowner has a legal right that others shall not enter on or harm the land or take or interfere with the oil or gas under the land by operations conducted on the land.” 33 Accordingly, directional wells, the injection of fluids for secondary recovery operations, and arguably the hydraulic fracturing process interfere with landowners land rights. In application “the incursion of hydraulic fracturing fluid and proppants into another’s land [] below the surface constitutes a trespass for which the minerals[’]
owner can recover damages equal to the value of the royalty on the gas there by drained from the land.\textsuperscript{34}

Hydraulic fracturing drilling operations on one estate may involve fracturing and/or the injection of frac fluid into the subsurface estate of adjoining landowners. Figure 2 illustrates two possible trespass claims.\textsuperscript{35} First, where the drill enters the adjoining landowner’s property via slant or directional drilling, a trespass occurs. Second, where frac fluid is injected and pressure applied, the frac fluid may enter and cause fractures in the adjoining landowner’s subsurface mineral estate causing a trespass. Because modern surveying and fracturing technology allow gas and oil drillers to measure and predict the volume, length and direction of the fracture, courts may find a resulting subsurface trespass occurred intentionally or negligently.\textsuperscript{36}

II. CURRENT LEGAL CLIMATE

Although hydraulic fracturing presents the physical elements of a subsurface trespass, some states with a history of oil and gas production reject subsurface trespass claims based on

\textsuperscript{34} Coastal Oil & Gas Corp. v. Ganza Energy Trust, 268 S.W.3d 1, 9 (Tex. 2008).
\textsuperscript{35} Figure 2: Illustration of Hydraulic Fracturing and Subsurface Trespass, image has been significantly modified from the original image to show subsurface trespass. Original image available at http://www.mgs.md.gov/geo/marcellus.html (last viewed April 15, 2010).
\textsuperscript{36} Although subsurface trespass may occur unintentionally, intent and negligence bare on the extent of damages recoverable. See 1 Eugene Kuntz, A Treatise on the Law of Oil & Gas § 11.9 (1993).
the hydraulic fracturing process. As such, if states in the Marcellus Shale region apply and interpret trespass law similarly to Texas and other traditional oil producing states, an actionable trespass will likely not be found. However, as of yet, in the Marcellus Shale region, and specifically in New York State, there is no case law specifically holding in favor or against a hydraulic fracture subsurface trespass claim. The lack of legal precedent leaves New York free to interpret statutory laws and public policy and to analogize hydraulic fracturing with other processes which do constitute actionable trespass claims. Due to the relatively recent introduction of hydraulic fracturing to the Marcellus Shale region, case law examples and analogies are often found in Texas and other commercial oil production states. The process and effects of hydraulic fracturing are analogous to (a) slant drilling or directionally drilled wells and (b) the injection of fluids for secondary recovery and storage operations.

a. Directional Drilling

Directional drilling, also referred to as slant drilling, has long been held a clear example of subsurface trespass. Directional drilling occurs when a well is drilled on the surface of the landowner’s property and either intentionally or inadvertently deviates from a vertical line and bottoms on an adjoining landowner’s property. Courts have uniformly held that because directional drilling involves an unauthorized, direct, and physical intrusion, an actionable trespass exists. Accordingly, “any oil or gas produced from such a ‘slant drilled’ well was obtained through conversion” and the trespasser-tortfeasor is generally liable for the value of the

37 But see generally, Geo Viking, Inc. v. Tex-Lee Operating Co., No. D-1678, 1992 WL 80263 (Tex. 1992) (In this case, the Texas Supreme Court held “fracing under the surface of another’s land constitutes a subsurface trespass.” Although the decision has since been withdrawn without explanation, the decision presents a significant challenge to the rule of capture and previous precedent; See e.g., John W. Broome, Wrestling with a Downhole Dilemma: Subsurface Trespass, Correlative Rights, and the Need for Hydraulic Fracturing in Tight Reservoirs, 53 ROCKY MTN. MIN. L. INST. 20 (2007)).
38 See Pan Am. Petroleum Corp. v Orr, 319 F.2d. 612 (5th Cir. 1963); Hastings Oil Co. v. Texas Co., 234 S.W.2d 389 (Tex. App. 1950).
39 See e.g., 1 W.L. Summers, The Law of Oil & Gas § 2.3 (2004).
40 See e.g., id; 1 Eugene Kuntz, A Treatise on the Law of Oil & Gas § 11 (1993).
oil or gas produced.\textsuperscript{41} Where the trespass is committed in good faith, liability is “subject to a deduction for the reasonable costs of production”\textsuperscript{42}

Although no court has directly held that hydraulic fracturing presents an actionable subsurface trespass, several courts have analogized the process to directional drilling.\textsuperscript{43} In \textit{Delhi-Taylor Oil Corp. v. Holmes}, the Texas Supreme court commented that the process of hydraulic fracturing may be partially completed on an adjoining landowner’s land.\textsuperscript{44} While in this case as in most hydraulic fracturing subsurface trespass cases, the drill bit was not alleged to have entered into the non-consenting landowner’s land, “the same result is reached if in fact the cracks or veins extend into its land and gas is produced . . .”\textsuperscript{45} While the court did not determine whether the alleged trespass constituted subsurface trespass,\textsuperscript{46} this case demonstrates the analytical and physical similarities between directional drilling and hydraulic fracturing.

In the monumental 2008 case, \textit{Coastal Oil & Gas Corp. v. Gaza Energy Trust}, the Supreme Court of Texas addressed in dicta whether “hydraulic fracturing that extends beyond ones’ property is [ ] different from drilling a deviated or slant well.”\textsuperscript{47} In response the court stated the rule of capture is not applicable to slant well scenarios, whereas hydraulic fracturing is governed by the rule of capture. Additionally the court provided four reasons why the rule of capture rather than trespass governs hydraulic fracturing:

First, the law already affords the owner who claims drainage full recourse. This is the justification for the rule of capture, and it applies regardless of whether the drainage is due to fracing. . . . Second. . . [s]uch recovery assumes that the gas belongs to the owner of the minerals in the drained

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\item \textsuperscript{41} John W. Broomes, \textit{Wrestling with a Downhole Dilemma: Subsurface Trespass, Correlative Rights, and the Need for Hydraulic Fracturing in Tight Reservoirs}, 53 ROCKY MTN. MIN. L. INST. § 20.03 (2007)
\item \textsuperscript{42} Id.
\item \textsuperscript{43} See e.g., \textit{Coastal Oil & Gas Corp. v. Gaza Energy Trust}, 268 S.W.3d 1 (Tex. 2008); Gregg \textit{v. Delhi-Taylor Oil Corp.}, 344 S.W.2d 411 (Tex. 1961).
\item \textsuperscript{44} 344 S.W.2d 420 (Tex. 1961).
\item \textsuperscript{45} Id. at 27.
\item \textsuperscript{46} Id. at 412 (The primary issue in this case was one of jurisdiction.).
\item \textsuperscript{47} \textit{Coastal Oil & Gas Corp}, 268 S.W.3d 1, 13 (Tex. 2008)
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property, contrary to the rule of capture. Third, determining the value of oil and gas drained by hydraulic fracturing is the kind of issue the litigation process is least equipped to handle. One difficulty is that the material facts are hidden below miles of rock, making it difficult to ascertain what might have happened. Such difficulty in proof is one of the justifications for the rule of capture. Fourth, the law of capture should not be changed to apply differently to hydraulic fracturing because no one in the industry appears to want or need the change.\textsuperscript{48}

The third and fourth reasons given by the \textit{Coastal Oil & Gas Corp.} court suggest the court’s rationale is highly motivated by Texas public policy and the political strength of the oil and gas industry in Texas. The court posited Texas policy: “hydraulic fracturing is not optional: it is essential to the recovery of oil and gas . . .” and “hydraulic fracturing cannot be performed both to maximize reasonable commercial effectiveness and to avoid all drainage.”\textsuperscript{49} Here, contrary to the court’s assertion, proof of fracture is available and records documenting surveys of the fracture are even required in some states.\textsuperscript{50} While surveying and predicting the length and volume of the fracture was difficult and inaccurate when hydraulic fracturing was first adopted, modern technology makes these predictions more accessible, accurate, and affordable.\textsuperscript{51}

The current state of subsurface trespass and hydraulic fracturing law in Texas and other longtime commercial oil and gas producing states is indeterminate. Although \textit{Coastal Oil & Gas Corp. v. Gaza Energy Trust} suggests that subsurface invasion by hydraulic fracturing fluids does not constitute an actionable trespass, the court’s reasoning is weak and other cases suggest that an actionable trespass claim does exist.\textsuperscript{52} Furthermore history, outdated technology, and public policy rather than legal doctrine play an overbearing role in the court’s decision. States in the

\textsuperscript{48} Id. at 13-17.

\textsuperscript{49} Id. at 16.

\textsuperscript{50} See e.g., 1 W.L. Summers, \textit{The Law of Oil & Gas} § 2.2 (2004) (“In some oil-producing states, the regulations of conservation agencies require producers to make directional surveys of wells and to preserve records of these surveys. By using this information, a landowner or lessee can discover if land has been subject to subsurface trespass by adjoining owners through directional or slant drilling.”).

\textsuperscript{51} See e.g., Id.

\textsuperscript{52} See id; Geo Viking, Inc. v. Tex-Lee Operating Co., No. D-1678, 1992 WL 80263 (Tex. 1992), withdrawn, 839 S.W.2d 797 (Tex. 1992); Dehli-Taylor Oil Corp., 337 S.W.2d 216 (Tex. App. 1960);
Marcellus Shale region should adopt policies and laws which reflect currently available
technology and the prevailing public policy of the area.

b. Injection of Fluids for Secondary Recovery and Storage Operations

Case law involving the injection of fluids for secondary recovery and storage operations
provides a spectrum of decisions relating to the law of subsurface trespass. The process of fluid
injection bears many similarities with that of hydraulic fracturing. Again, public policy and
support for the oil and gas industry and increasing production heavily influences and guides the
courts’ analysis and decisions.53

Typical subsurface entry from injected fluids occurs during: (1) enhanced recovery
operations where salt water or other fluid are pumped into an injection well to “sweep”
hydrocarbons toward producing wells, thereby recovering reserves incremental to primary
recovery; (2) “pumping salt water into a well to inexpensively dispose of ‘waste’ fluids in salt
water formation; and (3) injecting natural gas into an underground storage.”54 Through these
techniques it is possible for the injected fluid to flow from the injection well into the adjoining
subsurface property, amounting to a subsurface trespass. As such, “courts have been asked to
enjoin water-flooding projects on the basis that the injected water will sweep across lease or unit
lines, resulting in an impermissible trespass.”55

In one such case, Jameson v. Ethyl Corp., the Arkansas Supreme court granted the
plaintiff landowner a temporary injunction.56 In this case, the court balanced public policy,
correlative rights, and the rule of capture.57 Accordingly the court explained:

53 See e.g., Terry D. Ragsdale, Hydraulic Fracturing: the Stealthy Subsurface Trespass, 28 TULSA L.J. 311, 334
(1993) (Due to strong public policies of promoting these types of operations, courts have been cautious in finding
liability for injected fluid subsurface entries and in fashioning remedies.).
54 Id.
55 Laura H. Bunny & Norman J. Hyne, Hydraulic Fracturing: Stimulating Your Well or Trespassing?, 44 ROCKY
56 See Jameson, 609 S.W.2d 346 (Ark. 1980).
A determination that a trespass or nuisance occurs through secondary recovery processes within a recovery area would tend to promote waste of such natural resources and extend unwarranted bargaining power to minority landowners. On the other hand, a determination that the rule of capture should be expanded to cover the present situation could unnecessarily extend the license of mineral extraction companies to appropriate minerals which might be induced to be moved from other properties through such processes and, in any event, further extend the bargaining power of such entities to reduce royalty payments to landowners who are financially unable to ‘go and do likewise’.  

The court’s commentary demonstrates the influence and importance of policy considerations which sway and craft decisions.

Other courts engage in a similar analysis; however, they reach vastly different conclusions. For example, in *Baumgartner v. Gulf Oil Corp.* the Nebraska Supreme Court weighed public policy in support of increasing oil and gas while decreasing waste against the individual landowner’s property rights and found in favor of public policy. Specifically, the court stated:

Certainly, it is relevant to consider and weigh the interests of society and the oil and gas industry as a whole against the interests of the individual operator who is damaged; and if the authorized activities in an adjoining secondary recovery unit are found to be based on some substantial, justifying occasion, then this court should sustain their validity.

We conclude that if, in the valid exercise of its authority to prevent waste, protect correlative rights, or in the exercise of other powers within its jurisdiction, the Commission authorizes secondary recovery projects, a trespass does not occur when the injected, secondary recovery forces move across lease lines, and the operations are not subject to an injunction on that basis. The technical rules of trespass have no place in the consideration of the validity of the orders of the Commission.

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58 *Jameson*, 609 S.W.2d at 351.
60 *Id.* at 398.
The role of public policy concerns in case law precedent suggests that courts in New York and other Marcellus Shale region states will interpret state laws in a manner which gives great deference to public policy. The New York Environmental Conservation Law promotes a public policy which protects landowners’ individual property rights while also encouraging natural gas production. The statute 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, and to provide in similar fashion for the underground storage of gas, the solution mining of salt and geothermal, stratigraphic and brine disposal wells.61

As written, New York’s Environmental Conservation Law may be interpreted to provide protection of the individual landowner’s property rights. If this is an accurate statement of New York public policy, New York courts may interpret the statute to provide legal remedies against trespass via fluid injection and hydraulic fracturing.

III. CONCLUSIONS AND POLICY RECOMMENDATIONS

The prospect of efficient and profitable extraction and production of natural gas resources, development of clean and sustainable energy sources, advancement of applicable technology, and expansion of community employment make the use of hydraulic fracturing a process worthy of consideration. Where public policy and an amiable climate in the courts and legislature exist, the rule of capture and laws concerning trespass should be interpreted to reflect and account for regional public policy differences, historical development of case law precedent, and expansion of new, advanced technologies.

61 McKinney's ECL § 23-0301
The fugacious nature of natural gas, the hydraulic fracturing process and advances in this science, along with new environmental impact consciousness suggest that laws regarding hydraulic fracturing and subsurface trespass in the Marcellus Shale region should not mirror the laws of Texas and other oil and gas producing states. Reflecting public policy and related analysis, New York should adopt a more fact/science specific legal analysis. The development of new technologies has enabled hydraulic fracturing to be used as a cost effective and efficient means of extracting gas trapped in the Marcellus Shale. The relatively recent introduction of this process to the region frees the legislature and courts from adopting outdated policies that do not reflect the current environmental or political climates.

In the near future New York State courts will set precedent regarding hydraulic fracturing and possible subsurface trespass implications. Specifically, the courts must determine whether "the law of capture includes the right to capture by artificial means or capture by trespass."62 In New York as in other states, prior to the development of commercial oil and gas law, property rights extended from the earth’s core to the limitless sky. As common law developed, New York courts modified the rule of capture to include the basic doctrine of correlative rights. Mainly, in New York, “. . . each landowner is entitled to be compensated for the production of the oil or gas located in the pool beneath his or her property regardless of the location of the well that effects its removal.”63 Texas, along with most other traditional oil and gas producing states, does not subscribe to a modified rule of capture doctrine as does New York, and for this and other reasons

63 Id. at 17. See ECL 23-0301; 6 NYCRR 550.3; See also Enviros, Inc. v Consolidated Gas Supply Corp., 98 AD2d 119, 122 (1983).
presents a poor analytical analogy for determining New York law regarding hydraulic fracturing and subsurface trespass.

In accordance with New York’s adoption of a modified rule of capture and the Environmental Conservation Law, courts should account for regional differences, technological advances and public policy while analogizing the hydraulic fracturing and the law of subsurface trespass to directional drilling and fluid injected recovery and storage operations, and find an actionable subsurface trespass claim where hydraulic fracturing implemented on one property encroaches on the mineral estate of another.