

North Carolina Mineral Rights / Access to Shale Gas¹

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I. Introduction/Scope

This manuscript provides an overview of mineral rights law in the context of potential shale gas exploration and development in North Carolina. Specific topics addressed include: background on shale gas resources and development; historical development of mineral rights law; understanding mineral rights and surface rights; the statutory and regulatory framework of the Gas Act, including the provisions of the recently enacted Session Law 2012-143; lease issues and provisions; royalty rights; and additional issues.

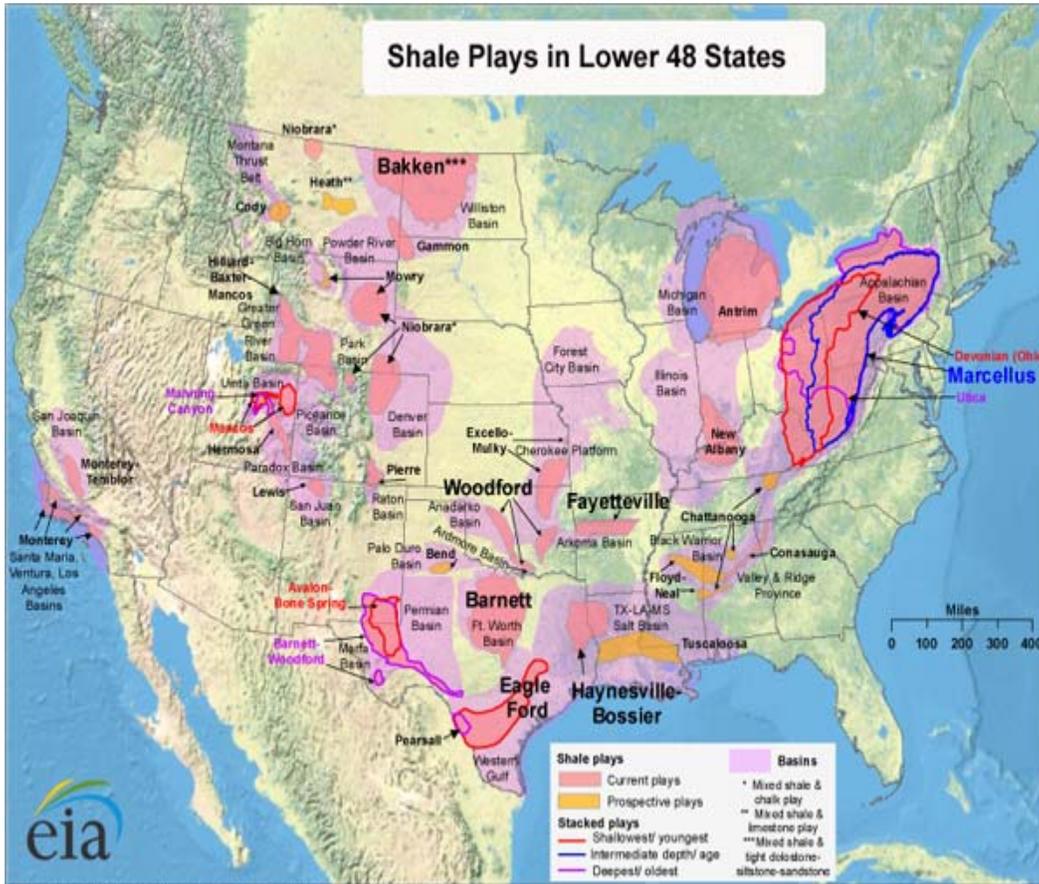
II. Shale Gas Resources and Development - Background

A. Generally

Shale gas is natural gas (methane) found within hydrocarbon-rich sedimentary rocks. The gas is located in “shale gas plays” – gas-rich rock formations with similar geologic properties and geographic distribution. Nationally, significant shale gas plays include the following: Marcellus (Ohio, Pennsylvania, New York); Haynesville, Barnett, Eagle Ford, Fayetteville and Woodford (Texas, Louisiana, Arkansas, Oklahoma); Antrim (Michigan); Hilliard (Wyoming); and others.

The following figure from the Energy Information Administration illustrates shale gas plays in the contiguous United States. Note that no North Carolina shale gas plays are depicted.

¹ This manuscript provides an overview of mineral rights issues related to shale gas development in North Carolina. The information and discussions contained herein do not constitute legal advice and are not a substitute for consultation with a knowledgeable attorney.



Source: Energy Information Administration based on data from various published studies. Updated May 9, 2011

Image from: http://www.eia.gov/energy_in_brief/images/charts/shale_map-1g.png.

Shale gas development has grown significantly over the past five years. Shale gas production was approximately 2 trillion cubic feet in 2008, a more than 70% increase over previous year. In 2009, national production grew to more than 3 trillion cubic feet. Shale gas accounts for over twenty percent of natural gas produced in the United States today and is projected to account for almost fifty percent of natural gas production by 2035.² Estimates of the extent of technically

² U.S. Energy Information Administration, *What is shale gas and why is it important?* http://www.eia.gov/energy_in_brief/about_shale_gas.cfm (last updated April 11, 2012).

recoverable shale gas reserves in the U.S. have ranged from somewhere in the neighborhood of 400 trillion cubic feet to upwards of 800 trillion cubic feet.³ For additional perspective, the United States consumption of natural gas in 2011 was approximately 24 trillion cubic feet.⁴

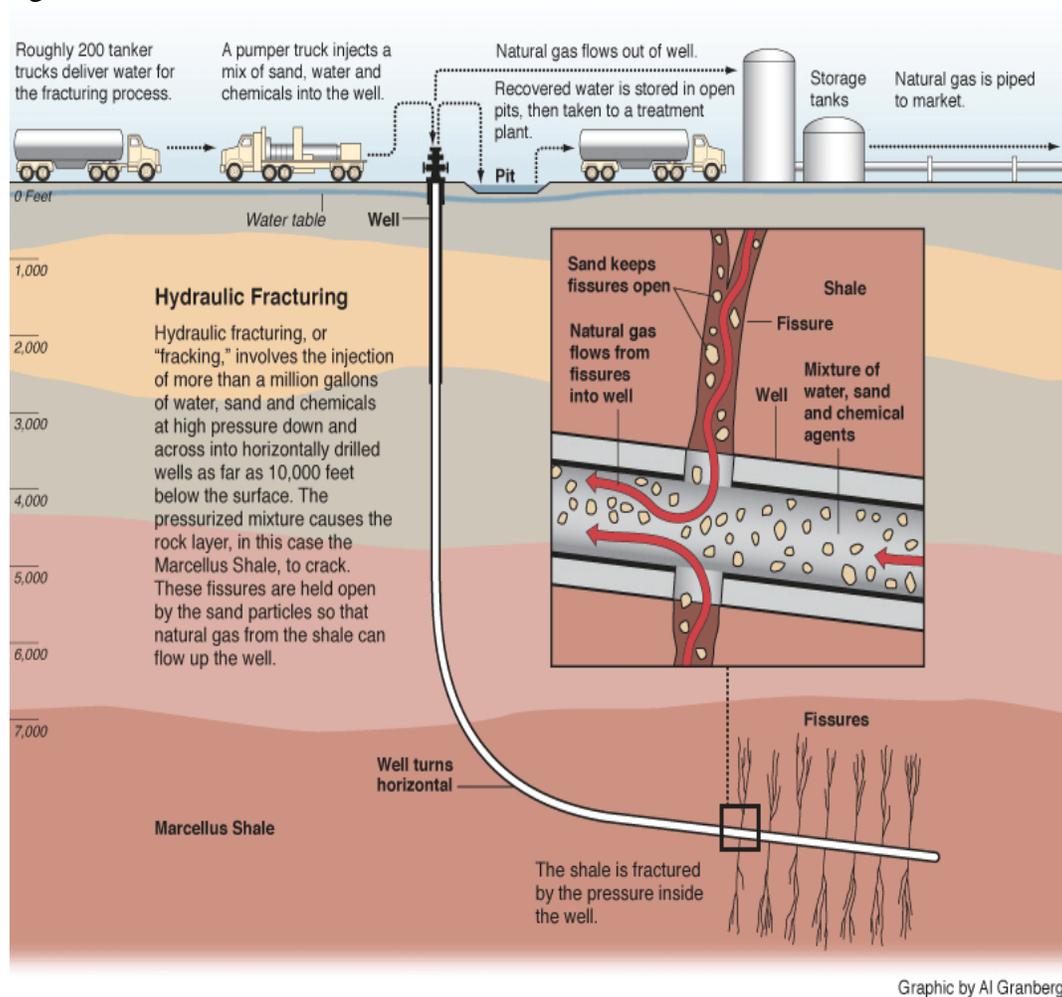
This recent growth in shale gas development is due to the refinement and implementation of advanced horizontal drilling and hydraulic fracturing technologies over the past decade. Very simply, these developments have allowed for horizontal drilling that allows a single vertical well shaft to access a larger area of rock underground. A vertical well is drilled and then a special drilling head is placed in the well and a horizontal well is drilled into the gas-rich rock. Usually, multiple horizontal wells are drilled from a single vertical well shaft.

Hydraulic fracturing (sometimes called “hydrofracturing” or “fracking”) is then employed to crack open hydrocarbon-rich shale and extract natural gas. Hydraulic fracturing is the process by which high volumes of water mixed with sand, and smaller volumes of various chemicals, are pumped under high pressure into the horizontal wells. The sand functions as a propping agent, holding or propping open the fractures created so that natural gas is able to flow up the well and be collected. The other chemicals include lubricants, surfactants, gelling agents, scale inhibitors, acids, corrosion inhibitors, antibacterial agents (to keep bacteria from consuming the natural gas), and clay stabilizers, among others. The composition and proportion of these chemicals is often considered a proprietary trade secret.

³ See U.S. Energy Information Administration, *Annual Energy Outlook 2012 – Early Release Overview*
<http://www.eia.gov/forecasts/aeo/er/pdf/0383er%282012%29.pdf> .

⁴ U.S. Energy Information Administration, *International Energy Statistics*,
<http://205.254.135.7/cfapps/ipdbproject/IEDIndex3.cfm?tid=3&pid=26&aid=2>
(2012).

A basic schematic of shale gas development is depicted in the following figure:



Graphic by Al Granberg, Propublica.org,
<http://www.propublica.org/special/hydraulic-fracturing-national>.

From a land-use and economic perspective, shale gas production using existing technologies requires units of land that range between 640 and 1,000 acres and may require would-be producers to invest \$1 million to \$10 million for each well.⁵

⁵ Theodore A. Feitshans, "Shale Gas In North Carolina: Issues in Law, Economics and Policy"; *NC State Economist* (May/June 2012)
<http://www.rafiusa.org/docs/ncstateshalegasarticle.pdf>.

B. North Carolina

Compared to shale gas resources available nationally, North Carolina's shale gas resources are relatively modest. The assessed resources are located in two Triassic basins, the Deep River Basin (Lee, Chatham, Durham, Wake, and Orange Counties) and the Dan River-Danville Basin (Rockingham County and Virginia), with an estimated total area of 785,000 acres. North Carolina's shale gas formations are relatively shallow, only about 6,000 feet below land surface. The United State Geological Survey (USGS) has estimated that the Deep River Basin has greater gas production potential, with a mean estimate of 1,660 billion cubic feet of gas, compared with about 50 billion cubic feet of gas in the Dan River-Danville Basin.⁶ An additional potential North Carolina shale gas play, the Cumberland-Marlboro Basin (Scotland, Hoke, Cumberland, and Harnett Counties) has not yet been assessed by the U.S. Geological Survey.⁷ To put these numbers in perspective, the estimated total shale gas reserves in North Carolina are anywhere from 0.2% to 0.4% of the total estimated national reserves. North Carolina currently consumes approximately 350 billion cubic feet of natural gas per year – about 1.5% of the total annual national consumption.⁸

In terms of the potential economic viability of the development of North Carolina shale gas resources, recent prognostications indicate that current natural gas prices are too low to justify active drilling, and that market conditions may not justify such development until 2025.⁹

⁶ U.S. Department of the Interior, U.S. Geological Survey, *Assessment of Undiscovered Oil and Gas Resources of the East Coast Mesozoic Basins of the Piedmont, Blue Ridge Thrust Belt, Atlantic Coastal Plain, and New England Provinces, 2011* (Fact Sheet 2012-3075), June 2012. <http://pubs.usgs.gov/fs/2012/3075/fs2012-3075.pdf>. Note that the Dan River-Danville Basin estimate includes portions of the rock formation that extend into the State of Virginia.

⁷ *Id.*

⁸ U.S. Energy Information Administration, *Share of Total U.S. Natural Gas Delivered to Consumers*, http://205.254.135.7/dnav/ng/ng_cons_pns_a_EPG0_VRP_pct_a.htm (2012).

⁹ See note 5, *Supra*.

From a legal perspective, until the recent enactment of Session Law 2012-143 on July 2, 2012, the practice of horizontal drilling and hydraulic fracturing necessary to economically extract shale gas was prohibited by North Carolina statutes and regulations.¹⁰ These prohibitions are removed effective August 1, 2012.¹¹

III. Development of Mineral Rights Law¹²

A. Historical Background

As common law emerged, mineral rights followed from rights in surface land. Whoever owned the surface land traditionally owned all the minerals beneath it. This history is the source of a basic legal presumption: the owner of the surface land is presumed to own all the minerals beneath it.¹³

Over time, the doctrine of horizontal estate severance developed, which allowed a landowner to separate the surface land from underlying minerals. This doctrine first developed from the prerogatives of the English King, who had the exclusive power to coin money (requiring gold and silver ore) and the

¹⁰ Prior to the enactment of S.L. 2012-143, a drilled well could not “unreasonably vary from the vertical.” N.C. Gen. Stat. § 113 393(d) (2011). DENR interpreted this provision to mean that variations from the vertical must not exceed “three degrees between the bottom of the hole and the top of the hole,” and must not cross property or drilling unit lines, unless an exception is granted by DENR. 15A N.C. Admin. Code 5D.0007(e) (2011). This regulation effectively prohibited the horizontal drilling necessary to make shale gas production economically feasible. Additionally, hydraulic fracturing was prohibited. Injection well regulations prohibit “oil and gas production . . . wells which are used to inject fluids . . . for enhanced recovery of oil or natural gas.” 15A N.C. Admin. Code 2C.0209(b) (2011).

¹¹ S.L. 2012-143 § 3(a).

¹² In addition to the cases cited, this discussion draws from Michelle Andrea Wenzel, Comment, *The Model Surface Use and Mineral Development Accommodation Act: Easy Easements for Mining Interests*, 42 Am. U.L. Rev. 607 (1993).

¹³ See, e.g., *Vance v. Guy*, 223 N.C. 409, 413, 27 S.E.2d 117, 120 (1943); *Hoilman v. Johnson*, 80 S.E. 249, 250 (N.C. 1913).

responsibility to defend the realm (requiring mining of saltpeter¹⁴ to make gunpowder). So-called “royal mines” existed and operated separately from the ownership of surface land, in contrast to unified property ownership. English colonists brought this concept with them to America, and estate severance became incorporated into American common law.

The Industrial Revolution promoted the growth of estate severance, as industries and railroads needed large quantities of coal, iron, and other minerals to support manufacturing and transportation infrastructure. Individual surface land owners simply did not have the means to mine the quantities of coal and ore required by industry and surface owners frequently did not own enough land to support a large mine. Mining entrepreneurs saw an opportunity and purchased mineral rights beneath many contiguous parcels of land, using the estate severance doctrine to separate those rights from the surface land. The mining company avoided the excessive and unnecessary costs of purchasing surface lands and surface owners acquired funds to support their endeavors on the surface estate in exchange for the transfer of mineral rights they did not have the capital to exploit. This promoted efficiency—the mining company had the capital and expertise necessary to extract minerals and the surface owner maximized the use of the surface land. Courts upheld these transactions, citing the doctrine of estate severance.

Under the doctrine of estate severance, the owner can sell the surface land and keep the mineral rights, or sell off the mineral rights and retain the surface land. The owner can also sell some portion of mineral rights (e.g. the rights to coal beneath the land, but not any other minerals; one-half of the coal beneath the land; coal to one buyer, iron ore to another, and the remainder of minerals to a third). Commonly, a mining company obtains title to the minerals, while a private landowner retains ownership of the surface.

The doctrine of estate severance applies in all legal jurisdictions today and may be accomplished in a deed (by grant, reservation, or exception), lease, or profit a prendre.¹⁵ “Once ownership is transferred, each severed estate is held

¹⁴ Saltpeter is a naturally occurring mineral that may contain potassium nitrate, sodium nitrate, calcium nitrate, or magnesium nitrate. Potassium nitrate is used to make gunpowder.

¹⁵ See, e.g., *Builders Supplies Co. of Goldsboro, N. C., Inc. v. Gainey*, 282 N.C. 261, 267, 192 S.E.2d 449, 453-54 (1972) (“Unquestionably, the owner of land may, by a conveyance otherwise valid, convey a present estate in unmined

under separate and distinct title, each of the estates is subject to the laws of descent, devise, and conveyance, and each is independently taxable and lienable.”¹⁶

B. Mineral Rights vs. Surface Rights and the Issues of Access and Support

The intent of the parties to the severing conveyance determines the exact property transferred, as evidenced by legal instrument conveying the property. In the shale gas context, this has led to litigation over exactly what was transferred in a historical conveyance (e.g., was the natural gas produced from shale intended to be transferred?).¹⁷

When the mineral and surface estates are severed, a fundamental conflict is created on two fronts. First, the mineral rights owner must access the surface land in order to obtain the minerals (e.g. drill a well; dig a mine). Second, the surface landowner requires enough support from the underlying land so that the surface does not collapse. The mineral rights owner usually cannot destroy the surface landowner’s “subjacent support.”

minerals, retaining in himself the title to the other parts of his land, or may convey a present estate in such other parts of the land and retain in himself the title to the unmined minerals therein.”); *Frye v. Arrington*, 58 N.C. App. 180, 183-84, 292 S.E.2d 772, 774 (1982) (“Ordinarily, a general grant is sufficient to convey minerals in and under the surface of the described land. Mineral rights, however, may be severed from surface rights.”).

¹⁶ Michelle Andrea Wenzel, Comment, *The Model Surface Use and Mineral Development Accommodation Act: Easy Easements for Mining Interests*, 42 Am. U.L. Rev. 607, 618 (1993) (footnotes omitted); see also *Vance v. Guy*, 223 N.C. 409, 412-13, 27 S.E.2d 117, 120 (1943) (“It is an established principle of law that when rights to the minerals in land have been by deed or reservation severed from the surface rights, two distinct estates are created, and that the estate in the mineral interests, being part of the realty, is subject to the ordinary rules of law governing the title to real property.”).

¹⁷ See *Butler v. Charles Powers Estate*, 29 A.3d 35, 43 (Pa. Super. Ct. 2011) (“[T]he parties should have the opportunity to obtain appropriate experts on whether Marcellus shale constitutes a type of mineral such that the gas in it falls within the [1881] deed’s reservation.”).

i. Access

If the instrument granting mineral rights does not contain express easements permitting access, the mineral owner's rights of access are left to the courts. The historical solution has been to designate the mineral estate as "dominant" and allow the mineral rights owner an implied easement for access "reasonably necessary" to obtain the minerals.¹⁸ The exact nature of the implied easement depends on the intent of the parties to the instrument that severed the surface land from the mineral rights.¹⁹

The implied access easement could lead to complete destruction of the surface land if pit mining techniques are necessary to obtain the minerals at issue.²⁰ In most cases, however, the "reasonably necessary" limitation prevents the mineral rights owner from causing significant harm to the surface land. Any abuse by the mineral rights owner provides the surface landowner with a cause of action for damages, if the surface landowner is able to prove excessive or negligent use of the access easement.

¹⁸ See, e.g., *Baltzley v. Wiseman*, 28 N.C. App. 678, 682, 222 S.E.2d 733, 736 (1976) ("Due to the unique nature of these independent estates in the same land, the owner of the surface and the owner of the minerals must each necessarily exercise the rights which go with his separate title with due regard for the rights of the other.").

¹⁹ See *Baltzley v. Wiseman*, 28 N.C. App. 678, 683, 222 S.E.2d 733, 736 (1976) ("[O]wnership alone does not give to the owner of the minerals the right to subject the estate of the owner of the surface to the burden of a use radically different in nature and extent from anything contemplated by the parties when the ownership of the two estates was severed by the 1899 deed.").

²⁰ See, e.g. *English v. Harris Clay Co.*, 225 N.C. 467, 469, 35 S.E.2d 329, 330 (1945) (mining of clay); Michelle Andrea Wenzel, Comment, The Model Surface Use and Mineral Development Accommodation Act: Easy Easements for Mining Interests, 42 Am. U.L. Rev. 607, 625 (1993) ("[I]f mineral dominance is construed literally, surface owners holding land under ambiguous conveyances become subject to any surface easement the mineral owner chooses to exercise.").

ii. Support

Generally, the surface landowner is entitled to “subjacent support” from the mineral rights owner and the mineral rights owner may not cause subsidence of the land surface, surface buildings, and other improvements. The mineral rights owner is strictly liable for damages caused to the land surface by his failure to provide subjacent support. The right to subjacent support may be waived either expressly or by necessary implication in the instrument of conveyance. This explains why instruments severing clay mining rights have allowed complete destruction of the surface to access the clay by strip mining methods.²¹

C. Oil, Gas, and the Development of Correlative Rights

Historically, oil and gas were subject to the “rule of capture,” which provided that ownership of oil and gas only vested when the oil or gas was drawn out of the ground.²² The rule of capture was inefficient and led to excessive well drilling, causing the development of conservation laws based on the principle of correlative rights in many states, including North Carolina. Under correlative rights, each owner of land over the same pool of oil or gas has ownership proportional to his or her ownership of the land surface. *See* N.C. Gen. Stat. § 113-392(d).

IV. North Carolina Statutory Framework Governing Shale Gas Development

A. Overview/Scope

The North Carolina Oil and Gas Conservation Act (“Gas Act”) is the principal statute governing oil and gas production in North Carolina. *See* N.C. Gen. Stat. §§ 113-378 to 113-424. The stated purpose of the Gas Act is the

²¹ *English v. Harris Clay Co.*, 225 N.C. 467, 469-70, 35 S.E.2d 329, 330 (1945).

²² *Elliff v. Texon Drilling Co.*, 210 S.W.2d 558, 561-62 (Tex. 1948) (“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. The nonliability is based upon the theory that after the drainage the title or property interest of the former owner is gone.”).

recognition of correlative rights of owners of oil and gas and “the protection of public interests . . . by prohibiting waste and compelling ratable production and authorizing regulations for the protection of the environment.” § 113-382. As discussed above, correlative rights grant each owner of land over the same pool of oil or gas a fair share of the oil or gas extracted from that pool. *See* § 113-392.

The Gas Act was recently and significantly amended by S.L. 2012-143 to, among other things, remove the previous prohibitions on horizontal drilling and hydraulic fracturing as discussed above. Session Law 2012-143 was in turn preceded by S.L. 2011-276, which directed various studies of oil and gas exploration in the State and the use of horizontal drilling and hydraulic fracturing. The discussion here seeks to address the significant provisions of S.L. 2012-143 in the overall context of the Gas Act and other relevant statutes and regulations.²³

B. Declaration of Policy

The stated policy of the Gas Act is to protect public interests by prohibiting waste, compelling ratable production, and protecting the environment from the “imminent evils that can occur in the production and use and waste of natural oil and/or gas in the absence of equal or correlative rights of owners in a common source of supply.”²⁴ The Session Law does not amend this policy.

C. Tax Assessment and Collection

The Gas Act authorizes the Department of Environment and Natural Resources (“DENR”), if deemed necessary, to assess a gas well tax to be collected at the first point of sale “not to exceed one-half mill on each 1000 cubic feet of gas”, which assessments must be used “solely to pay the expenses and other costs in connection with the administration” of the Gas Act.²⁵ The Session Law does not amend these provisions.

²³ While the private, public, and political interests, activities, and processes surrounding both Session Laws (and the consideration of shale gas exploration generally during the last few years in our state, and significant media coverage of the same) are beyond the scope of this manuscript, it does bear mentioning that these interests and processes will undoubtedly continue to influence further legislative and executive policy developments in this area.

²⁴ N.C. Gen. Stat. § 113-382.

²⁵ N.C. Gen. Stat. §§ 113-387 – 113-388.

D. Definitions

The Session Law sets forth newly created definitions for “Base Fluid,” “Hydraulic fracturing additive,” “Hydraulic fracturing fluid,” “Hydraulic fracturing treatment,” “Lessee,” “Lessor,” “Proppant,” and “Water Supply.”²⁶ Notably, the definition of “water supply” includes only water “intended or used for human consumption; household purposes; or farm, livestock, or garden purposes.”

E. Mining and Energy Commission

1. Formation and Authority

The Session Law abolishes the previously existing Mining Commission and newly establishes the Mining and Energy Commission, conveying upon the Commission:

- Powers and duties to adopt rules necessary to administer the Gas Act, which rules are to be enforced by the Department of Environment and Natural Resources;²⁷
- Authority to: regulate the spacing of wells and to establish drilling units; require the operation of wells with efficient gas oil ratios and to fix such ratios; limit and prorate the production of oil or gas, or both, from any pool or field for the prevention of waste; and require integration of interests.²⁸
- A requirement to submit quarterly reports to the newly created Joint Legislative Commission on Energy Policy, which is tasked with legislative oversight over energy policy in the state.²⁹

²⁶ S.L. 2012-143 §2.(b), N.C. Gen. Stat. § 113-389 (2012).

²⁷ S.L. 2012-143 §1.(b), N.C. Gen. Stat. § 143B-293.1 (2012).

²⁸ Before the enactment of Session Law 2012-143, NCDENR was vested with this authority.

²⁹ S.L. 2012-143 §1.(b), N.C. Gen. Stat. § 143B-293.1 (2012); S.L. 2012-143 § 6.(a), N.C. Gen. Stat. §§ 120-285 – 120-287 (2012).

2. Membership, Committees, and Procedures

The Commission is comprised of fifteen members, including three executive branch officers, eight General Assembly appointees and four members appointed by the Governor. The members serve three year terms and the required qualifications and criteria for each appointment are specifically set forth in the statute and include representatives of various private and public interests and individuals with expertise in a number of areas.³⁰

Two standing committees of the Mining and Energy Commission are established by S.L. 2012-143, including the Committee on Civil Penalty Remissions and the Committee on Mining, which are tasked with particular powers, including certain rule-making and quasi-judicial powers to be exercised in accord with the North Carolina Administrative Procedures Act.³¹

3. Jurisdiction and Authority - Establishment of Modern Regulatory Program For Oil and Gas Exploration and Development

a. Existing Administrative Rules

Existing administrative rules duly adopted by the Mining Commission remain in effect until amended or repealed by the newly formed Mining and Energy Commission.³² Current rules are not treated extensively in this discussion because the Commission is required to adopt comprehensive new rules as set forth below.

b. Required Promulgation of Rules

The Commission has authority and jurisdiction over, and is required to establish a “modern regulatory program for the management of oil and gas exploration and development in the State and the use of horizontal drilling and hydraulic fracturing treatments for that purpose.” The program is required to be “designed to protect public health and safety; protect public and private property;

³⁰ S.L. 2012-143 §1.(b), N.C. Gen. Stat. § 143B-293.2 (2012).

³¹ S.L. 2012-143 §1.(b), N.C. Gen. Stat. § 143B-293.2 (2012).

³² S.L. 2012-143 §1.(c). Administrative rules addressing mining are generally set forth in N.C. Admin. Code Title 15A Chapter 5, with Subchapter 5D addressing Oil and Gas development and conservation rules.

protect and conserve the State's air, water, and other natural resources; promote economic development and expand employment opportunities; and provide for the productive and efficient development of the State's oil and gas resources.” To establish the program, the Commission must adopt rules no later than October 1, 2014 for all of the following purposes:

- To regulate exploration activities;
- To regulate of all aspects of wells;
- To prevention of water pollution;
- To protect environmental quality;
- To regulate horizontal drilling and hydraulic fracturing treatments, including development of standards or requirements related to the following:
 - Information and data to be submitted with applications for permits;
 - Collection of baseline environmental data, including, at a minimum, establishment of standards to satisfy the pre drilling testing requirements;
 - Construction standards for oil and gas wells, which must address horizontal drilling and hydraulic fracturing treatments, and include sufficient standards for well casing and cementing and construction standards for other gas production infrastructure, such as storage pits and tanks;
 - Siting standards for wells and other gas production infrastructure, which must be consistent with applicable water quality standards;
 - Limits on water use, including requirements that oil and gas operators prepare and have a water and wastewater management plan approved by DENR, which limits water withdrawals during times of drought and periods of low flows and are consistent with existing statutes and rules regarding water quality and water resource management;
 - Management of wastes, including storage, transportation, and disposal;
 - Prohibitions on use of certain chemicals and constituents in hydraulic fracturing fluids, particularly diesel fuel;

- Disclosure of chemicals and constituents used in oil and gas exploration, drilling, and production, including hydraulic fracturing fluids, to State regulatory agencies and to local government emergency response officials, and, disclosure of that information to the public (with the exception of trade secrets);
 - Installation of safety devices and development of protocols for safety and emergency response;
 - Measures to mitigate impacts on infrastructure, including damage to roads by truck traffic and heavy equipment;
 - Notice, record keeping, and reporting;
 - Well closure, site reclamation, post closure monitoring, and financial assurance;
- To require surveys upon application of any owner who has reason to believe that a well has been unlawfully drilled by another person into land of the owner without permission (with costs to be borne by the owner);
 - To require the making of reports showing the location of oil and gas wells and the filing of logs and drilling records.
 - To prevent certain emergencies and regulate certain drilling and extraction techniques and safety and protective measures, including, as merited, protection of environmental quality and prohibition of impacts to environmental resources;
 - To identify the ownership of all oil and gas wells, leases, and infrastructure;
 - To regulate the spacing of wells and to establish drilling units; and
 - “Any other matter the Commission deems necessary for implementation of a modern regulatory program for the management of oil and gas exploration and development in the State and the use of horizontal drilling and hydraulic fracturing for that purpose.”³³

³³ S.L. 2012-143 §§2.(c), 2(m.), N.C. Gen. Stat. §§ 113-391(2012);

c. Discretionary Promulgation of Rules

The Commission has discretion to adopt rules:

- To require the operation of wells with efficient gas oil ratios and to fix such ratios;
- To limit and prorate the production of oil or gas, or both, from any pool or field for the prevention of waste;
- To require regulatory certification in connection with the transportation of oil or gas;
- To prevent reasonably avoidable drainage not equalized by counter drainage.

d. Additional Rules and Public Access to Data and Information

The Session Law requires the Environmental Management Commission to adopt, after consideration of recommendations from the Mining Commission, and with respect to oil and gas exploration and development activities, rules to address stormwater control and to regulate toxic air emissions and other matters within its jurisdiction and authorities. The law also provides that the Commissions and DENR shall have access to all available records, information, and data, and shall make such data available to the public, except to the extent such information is designated as confidential or a trade secret.³⁴ Additionally, the Department of Labor is required to adopt rules establishing health and safety standards for workers engaged in oil and gas exploration and development activities.³⁵

e. Studies and Reports

The Session Law requires the Mining Commission, in conjunction with other administrative departments and entities to study various and fairly comprehensive issues relating to oil and gas exploration and development,

³⁴ S.L. 2012-143 §2.(c), N.C. Gen. Stat. §§ 113-391(a4), (b), (b1) (2012); S.L. 2012-143 §2.(h), N.C. Gen. Stat. § 143B-282(2)(1)(2012); S.L. 2012-143 §2.(i), N.C. Gen. Stat. § 130A-29(c)(11)(2012).

³⁵ S.L. 2012-143 §2.(c), N.C. Gen. Stat. § 113-391(d) (2012).

including funding and funding sources, impacts to infrastructure and municipalities, remediation and reclamation of drilling sites, compulsory pooling and integration, local government regulation, and other matters. Reports of such studies are due to be issued by the Commission to the newly established Joint Legislative Commission on Energy Policy on or before January 1, 2013.³⁶

F. Correlative Rights – Pool Owners; Drilling Units; Shares; Well Locations

As amended by the Session Law, the Gas Act provides that the Commission has authority to establish (and revise as may be appropriate) drilling and drainage unit(s) for each oil/gas pool.³⁷ Each well is required to be drilled approximately in the center of a drilling unit, although the Commission has the authority to allow exceptions when certain statutory requirements are met.³⁸ Each producer’s equitable share of a common pool is “that part of the authorized production for the pool . . . which is substantially in the proportion that the quantity of recoverable oil and gas in the developed area of his tract in the pool bears to the recoverable oil and gas in the total developed area of the pool. . . .”³⁹

If a single drilling unit includes multiple owners of gas rights and the owners do not agree to pool their interests, the Commission has the authority to hold a public hearing and order the parties to pool interests in order to prevent waste or the drilling of unnecessary wells. A pooling order is required to be “just and reasonable” and allow each owner the opportunity to recover a “just and equitable share” of gas in the pool, which is based on his percentage ownership of the gas rights at issue. Under the order, the interested owner developing the well has the right to receive first production and the right to charge each other pool owner the reasonable “actual expenditures” of development and operation. If the parties dispute the costs, the Commission resolves the dispute. It appears that, as written, the Commission may order a landowner to allow the development of gas resources even when the landowner does not wish to develop the gas resource at

³⁶ S.L. 2012-143 §§2.(j)-(n).

³⁷ S.L. 2012-143 §2.(d), N.C. Gen. Stat. § 113-392(b) (2012).

³⁸ S.L. 2012-143 §2.(d), N.C. Gen. Stat. § 113-392(c) (2012).

³⁹ S.L. 2012-143 §2.(d), N.C. Gen. Stat. § 113-392(d) (2012).

all.⁴⁰ The Session Law also exempts horizontal drilling and hydraulic fracturing for the purpose of exploration and development of natural gas from the vertical-drilling requirement.⁴¹

The Commission also has authority to set production quotas if the potential supply of oil or gas in the state is greater than the amount necessary to meet North Carolina's demand.⁴²

G. Notices, Well Control, Emergency Hearings, Penalties, Violations, Enforcement

The Gas Act further provides a framework for DENR's administration, oversight, and enforcement of the statute, including provisions: requiring the provision of notice and payment to DENR prior to certain well drilling and abandonment activities; requiring well control and actions in the event of well failure; providing for emergency hearing authority and procedures, including appellate review, and authority for DENR to bring suits to enforce the Act; civil and criminal penalties and punishments for violations of the Act, including false record entries and dealing in illegal oil or gas.⁴³

H. Landowner and Public Protections

1. Recordation of Oil and Gas Leases and Renewals and Disclosures In Residential Property Transactions

The Gas Act requires all holders of petroleum leases to record each such lease with the register of deeds of the county within which the land covered by each lease is located within thirty (30) days of execution or assignment, and, on or before December 31 of each year, to file a list showing the leases that have been renewed for the ensuing year.⁴⁴ Moreover, S.L. 2012-143 amends the Residential Property Disclosure Act to require that sellers of residential property furnish a

⁴⁰ N.C. Gen. Stat. § 113-393 (2012).

⁴¹ S.L. 2012-143 §3.(a), N.C. Gen. Stat. § 113-393 (2012).

⁴² S.L. 2012-143 §2.(e), N.C. Gen. Stat. § 113-394 (2012).

⁴³ N.C. Gen. Stat. §§ 113-395–113-412 (2012).

⁴⁴ S.L. 2012-143 § 4.(d), N.C. Gen. Stat. §§ 113-414, 113-423(g), (h) (2012).

mandatory disclosure statement regarding any oil and gas rights and any severance thereof with respect to the surface property at issue.⁴⁵

2. Notice, Access, Liability, and Indemnification

a. Notice and Entry to Property

The Gas Act requires the gas developer or owner (if not also the surface owner) to provide fourteen (14) days written notice to the surface owner prior to entering the land to engage in activities that do not disturb the land surface (e.g., staking, surveys, measurement, general evaluation).⁴⁶ For land-disturbing activities (e.g., road construction, pipeline construction, installation of drill pads and drilling rigs), thirty days written notice is required.⁴⁷

Persons entering land on behalf of the gas developer must carry identification. There is a rebuttable presumption that the surface land owner properly protected those persons “against personal injury or property damage” while they were on the land.⁴⁸

b. Indemnification of Surface Owner

The gas developer must indemnify and hold harmless a surface owner against any claimed personal injury, property damage, or violations of state, local, or federal laws, regulations, or ordinances.⁴⁹

c. Presumptive Liability

The gas developer is presumptively liable for any contamination of water supplies within 5,000 feet of a drilling wellhead. The gas developer must provide a replacement water supply, in addition to paying other damages to the landowner. The gas developer may defend against this presumptive liability by: (1) conducting or, if refused, offering to conduct a pre-drilling water test; (2)

⁴⁵ S.L. 2012-143 § 4.(d), N.C. Gen. Stat. § 47E-4(b2).

⁴⁶ S.L. 2012-143 § 4.(a), N.C. Gen. Stat. § 113-420(a) (2012).

⁴⁷ S.L. 2012-143 § 4.(a), N.C. Gen. Stat. § 113-420(b) (2012).

⁴⁸ S.L. 2012-143 § 4.(a), N.C. Gen. Stat. § 113-420(b1) (2012).

⁴⁹ S.L. 2012-143 § 5, N.C. Gen. Stat. § 47E-4 (2012).

showing a distance greater than 5,000 feet; or (3) proving an alternate cause of contamination.⁵⁰

3. Lease Requirements

a. Information to Surface Owners and Recordation of Leases

The Gas Act requires that prior to negotiating a lease with a mineral rights or surface owner, the gas developer must provide the landowner with a copy of a portion of the Gas Act and a publication entitled “Oil & Gas Leases: Landowners’ Rights.”⁵¹ Moreover, all leases, lease assignments, and renewals are required to be recorded in the appropriate county registry of deeds as set forth above.

b. Required Lease Terms

The Gas Act requires the following terms for each lease pertaining to gas or oil rights:

- **Maximum Duration.** Any lease negotiated is limited to ten years in duration, unless at the end of the ten-year period gas is being produced for commercial purposes from the leased property. If commercial production halts for a period of six months or more after the ten-year period, ownership reverts to the surface owner. This provision cannot be waived and a force majeure clause may not be used to extend a lease beyond the statutory time frames.⁵²
- **Minimum Royalty Payments.** Any lease or “any other conveyance of any kind separating rights to oil or gas from the freehold estate of surface property” must require the lessor/landowner to receive a minimum royalty payment of 12.5% of the proceeds of the sale of oil or gas produced from the lessor/landowner’s share of gas in the pool. This payment may not be reduced by pre-production or post-production costs, fees, or other charges assessed by the gas developer against the property owner. Royalty payments are due

⁵⁰ S.L. 2012-143 § 4.(b), N.C. Gen. Stat. § 113-421 (2012).

⁵¹ S.L. 2012-143 § 4.(d), N.C. Gen. Stat. § 113-423(a) (2012).

⁵² S.L. 2012-143 § 4.(d), N.C. Gen. Stat. § 113-423(b) (2012).

no later than 60 days after the calendar quarter within which the production is sold. Payments must be accompanied by documentation showing the quantity of product sold and the price received by the gas developer. If payments are not timely made, interest accrues at 12.5% annually. Upon written request, the landowner/lessor has the right to inspect the gas developer's records related to production and royalty payments associated with the lease.⁵³

- Bonus Payments. Bonus or initial payments due under a gas lease or other conveyance severing mineral rights from the overlying surface property must be made within 60 days of the execution date of the lease. If payment is not timely made, interest accrues at 10% annually.⁵⁴
- Agreements To Use Other Resources. The lease or other conveyance must clearly state whether the gas developer plans to use groundwater or surface water supplies on the property and, if so, "shall clearly state the estimated amount of water to be withdrawn." The gas developer must pay for the water used "in an amount not less than the fair market value." Water use by the developer must not restrict domestic uses by the surface owner.⁵⁵
- Predrilling Testing of Water Supplies. The lease or other conveyance must include a requirement that the gas developer test all water supplies with 5,000 feet of a wellhead at least 30 days prior to initial drilling and at least twice within the 24-month period after production begins. NCDENR is required to locate water supplies and wells for the gas developer. The landowner/lessor may also opt to have NCDENR conduct water testing, with the gas developer paying NCDENR's costs. Landowners/lessors may refuse testing.⁵⁶

⁵³ S.L. 2012-143 § 4.(d), N.C. Gen. Stat. § 113-423(c) (2012).

⁵⁴ S.L. 2012-143 § 4.(d), N.C. Gen. Stat. § 113-423(d) (2012).

⁵⁵ S.L. 2012-143 § 4.(d), N.C. Gen. Stat. § 113-423(e) (2012).

⁵⁶ S.L. 2012-143 § 4.(d), N.C. Gen. Stat. § 113-423(f) (2012).

- **Lender Approval.** Any lease or other conveyance must include the following provision in bold text, which must be initialed by the surface owner :⁵⁷

NOTICE TO LENDER(S) PRIOR TO EXECUTION OF LEASE:

Surface owners are advised to secure written approval from any lender who holds a mortgage or deed of trust on any portion of the surface property involved in the lease prior to execution of the lease and obtain written confirmation that execution of the lease will not violate any provision associated with any applicable mortgage or deed of trust, which could potentially result in foreclosure.

I have read and understood the _____
terms of this provision. Surface Owner's
Initials

- **Three-Day Right of Rescission.** Any lease or other conveyance must include a bold and conspicuous notice of a three-day right to cancel the lease. In order to exercise the right to cancel, the lessee or landowner/lessor must provide written notice within three business days of the execution of the lease and the landowner/lessor must return any sums paid by the lessee.⁵⁸

4. Surface Activities

Furthermore, gas developers and operators are required to minimize intrusion upon and damage to the surface of the land, when less-intrusive alternatives “are technologically sound, economically practicable, and reasonably

⁵⁷ S.L. 2012-143 § 4.(d), N.C. Gen. Stat. § 113-423(i) (2012).

⁵⁸ S.L. 2012-143 § 4.(d), N.C. Gen. Stat. § 113-423(j) (2012).

available to the operator.” This obligation may be modified by the lease or other contract between the operator and landowner.⁵⁹

5. Registry of Landmen

The Session Law requires each landman (i.e., an individual who purchases or leases mineral rights from a landowner) to register with the NCDENR before conducting work as a landman after October 1, 2012.⁶⁰

V. Access to Shale Gas – Easements, Leases, and Other Agreements⁶¹

A. Generally

Although the severance of mineral rights from the surface land implies an easement of access as discussed above, prudent owners/purchasers (of both mineral and surface rights) will spell out the access easement in terms specific enough to set reasonable expectations, prevent confusion, and reduce the risk of litigating what exactly is “reasonable and necessary” access. The easement provision will usually be negotiated as part of the lease between the mineral rights owner and the gas development company or its representative. The mineral rights owner may be different from the surface land owner or, if the mineral rights have not been severed, it may be the same individual.

To acquire enough mineral rights to make shale gas development feasible, gas development companies commonly utilize “landmen,” who purchase the right to exploit mineral rights from a variety of landowners. Landmen typically use a standard lease form prepared by the energy company employing them. Alternatively, landmen use the standard lease form of the energy company to which they plan to sell the lease. Landmen’s use of standard lease forms means that the standard terms regarding access and royalty payments are not necessarily negotiated. Landowners/lessors that consult with legal counsel or negotiate on their own behalf may, however, add terms to the standard form. Payments under a lease have varied widely. For example, leases executed in the development of the Marcellus Shale formation in Pennsylvania have included “lease bonus

⁵⁹ S.L. 2012-143 § 4.(e), N.C. Gen. Stat. § 113-423.1 (2012).

⁶⁰ S.L. 2012-143 § 4(g), N.C. Gen. Stat. § 113-425 (2012).

⁶¹ In addition to the cited cases and statutes, this section is derived in part from Ross H. Pifer, *What a Short, Strange Trip It’s Been: Moving Forward After Five Years of Marcellus Shale Development*, 72 U. Pitt. L. Rev. 615 (2011).

payments (i.e., payments for executing the lease) for as little as \$1 to \$225 per acre to as much as \$2,500 to \$5,500 per acre.

B. North Carolina

The remainder of this section discusses requirements for gas leases executed and performed in North Carolina.

1. Background Principle—Freedom to Contract

The default principle governing all contracts is that parties to a contract are generally free to include whatever provisions they deem appropriate. In other words, parties are free to negotiate the burdens of a contract in whatever manner they find mutually agreeable. The general freedom to contract is limited in two ways: (1) contract provisions that are contrary to public policy will not be enforced (e.g., contracts to commit murder or other illegal acts); (2) contracts provisions that are prohibited by statute will not be enforced.⁶²

In the shale gas context, North Carolina statutes now limit the possible contractual provisions as discussed above. While certain lease terms are required, Session Law 2012-143 still recognizes the general freedom to contract. With respect to surface activities the new legislation states, “The developer or operator and the surface owner may enter into a mutually acceptable agreement that sets forth the rights and obligations of the parties with respect to the surface activities conducted by the developer or operator.”⁶³

2. Royalty Rights⁶⁴

A lease from the owner of oil and gas rights to an oil or gas developer usually contains a royalty clause defining the royalty obligation (i.e. the payment from the lessee-developer to the lessor-owner of the oil or gas rights). As discussed above, North Carolina law requires a minimum royalty payment of at least 12.5%.

⁶² *Turner v. Masias*, 36 N.C. App. 213, 217, 243 S.E.2d 401, 404 (1978) (“Where . . . a contract is not contrary to public policy or prohibited by statute, the constitutional guarantee of freedom to contract requires that it be enforced.”).

⁶³ N.C. Gen. Stat. § 113-423.1(a)(2012).

⁶⁴ This section is derived in part from John S. Lowe, *Defining the Royalty Obligation*, 49 SMU L. Rev. 223, 229-32 (1996).

Oil royalty clauses usually provide for a “royalty in kind” which means the rights owner receives oil, delivered at the well or credited to the owner’s account with a pipeline. The exact amount of money received depends on the price of oil at the time of sale.

Gas royalty clauses usually involve cash royalty payments,⁶⁵ either in “market value at the well,” “market price at the well,” or “amount realized at the well.”⁶⁶ Historically, gas royalty clauses have generated much more litigation than oil royalty clauses both because: (1) the royalty is due in cash; and (2) the cash generation from the gas usually occurs downstream from the well, making it difficult to determine an accurate price at the well.

Disputes regarding royalty provisions are resolved using the general legal rules for interpreting contracts. A court first examines the language of the contract to determine the parties’ intent. If intent is clear, that resolves the matter. If, on the other hand, intent is ambiguous, a court will try to harmonize conflicting provisions. A court will apply rules of contract interpretation which include the following general and commonly applied rules: (1) a contract is construed against the party that wrote it; (2) handwritten or typed language controls over inconsistent printed language; (3) a granting clause controls over other clauses; (4) specific descriptions control over general descriptions. If these rules and similar principles of interpretation still do not resolve the issue, a court may also consider extrinsic evidence including oral testimony about what the contract means, how the parties behaved before the contract dispute, and documentary evidence (e.g. letters and other correspondence) regarding contract negotiations.

⁶⁵ The distinction between royalty in kind and royalty in cash may be significant in determining the legal remedy for nonpayment of the royalty and may affect the application of tax laws. *Id.* at 267 n. 32. “The different royalty provisions for oil and gas stem from the physical and economic differences between the two substances. The royalty share of oil can be temporarily stored at or near the well and sold by the truckload. Natural gas, however, cannot be stored economically and must be delivered into a pipeline. In addition, larger volumes of gas usually command a premium; royalty in cash rather than in kind benefits both lessee and lessor.” *Id.* (citing John S. Lowe, *Oil and Gas Law in a Nutshell* 272 (3d ed. 1995)).

⁶⁶ *Id.* at 230 (footnotes omitted).

Additionally, where contracts do not specifically address a situation, courts may look to implied contractual provisions (i.e., promises that the parties made implicitly in order to enter into the contract) or contractual provisions implied by law (e.g., the covenant of good faith and fair dealing).

3. Additional Leasing Issues and Considerations

In addition to and in light of the above issues, the following issues should be considered by any party entering into leasing or other arrangements with respect to oil and gas exploration and development in North Carolina.

- Each and every matter and provision of a lease is negotiable – the parties are best advised to consider the current and potential future use of the surface land and both surface and subterranean resources at a minimum.
- Significant title work may be necessary to determine and confirm ownership of mineral rights. Even then, title may be inconclusive. Contract and lease provisions should address these circumstances.
- With respect to royalties, 12.5% is the minimum in North Carolina by statute as discussed above. Landowners may be able to negotiate terms as high as 20% as has occurred in other states. Terms may be convoluted and may result in gross or net. It matters.
- Use of surface lands and environmental resources (such as groundwater and surface water) as well as reclamation, well abandonment, and other issues should be addressed.
- Leases should address to what extent and for what specific purposes are easements granted, specifying the location of the easement, including both on the surface and (as relevant) depth.
- Whether storage wells may be used for wastewater storage.
- Whether the duration or term of lease is for a definite term of years or indefinite “so long as”
- Whether property not used is to be released from lease, when it will be released, and under what conditions.

- Whether development company clauses granting the landowner free gas should be renegotiated as cash payments.
- The parties should also address:
 - Pooling under the Gas Act and how various pooling scenarios will be treated under the lease;
 - Assignment of the lease;
 - Liability and indemnity.

VI. Conclusion

North Carolina's shale gas resources are relatively modest in comparison to the nation as a whole, and exploration and development may not be economically feasible until 2025 or later. The recent enactment of Session Law 2012-143 and amendments to the Gas Act provide a rudimentary framework to allow for shale gas access, exploration, and development. Much work remains to take the next steps to develop a workable regulatory regime to allow for efficient and effective shale gas exploration and development in North Carolina in a manner that protects the public and the environment. Regardless, judicial interpretation will be necessary to answer questions as to the interplay of the recent legislation and yet-to-be-promulgated administrative rules with various common law principles, constitutional safeguards, and other statutory schemes. In any event, anticipating issues and contracting to address uncertainties and protect against risks is recommended for all interested parties.