Texas Wesleyan Law Review

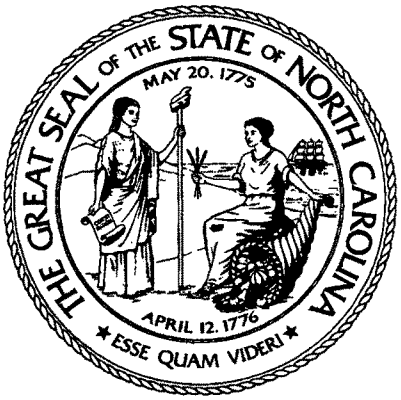
Volume 19 | Issue 2 Article 19

3-1-2013

North Carolina Oil and Gas Update

James L. Joyce

NORTH CAROLINA OIL AND GAS UPDATE



By: James L. Joyce[1]

TABLE OF CONTENTS

I. INTRODUCTION

North Carolina is not traditionally thought of as an oil and gas state. However, recent geological research regarding shale gas deposits and the recent legalization of shale gas extraction technologies in North Carolina could change that. This Article examines recent legislative

1. Jim Joyce is an attorney in the Raleigh, North Carolina office of K&L Gates LLP, a firm with vast experience in natural gas issues in Texas and that has led the way on important legal issues throughout the Marcellus Shale. Mr. Joyce's practice focuses on environmental, land use, and government affairs matters, including an emphasis on the development of shale gas resources in North Carolina. Prior to joining K&L Gates, he was a fellow at the University of North Carolina School of Government.

DOI: https://doi.org/10.37419/TWLR.V19.I2.17

and scientific developments that may make North Carolina a viable destination for shale gas development.

II. THE NORTH CAROLINA SHALE GAS RESOURCE

A 2009 study by the North Carolina Geological Survey ("NCGS") found that the state's potential shale gas reserves, once thought to be inadequate for commercial production, may be much larger than historically estimated.[2] As a result, some believe that exploration and development activity is on its way to North Carolina. In fact, over 9,000 acres of property in Lee County, which sits at the heart of the estimated shale gas deposits, is already covered by mineral leases.[3] However, more recent evidence suggests that the amount of these reserves might be less significant than originally thought.[4]

North Carolina's shale reserves are predominantly located in two Triassic Period river basins: the Deep River Basin, in the central and southern portions of the North Carolina Piedmont, and the Dan River Basin, in the northwestern corner of the North Carolina Piedmont and in southwestern Virginia. These rift basins formed between 200 and 235 million years ago, when the continents of North America and Africa began to separate.[5] The larger of the two basins, the Deep River Basin, covers just over 1,211 square miles, from Granville County north of Durham through the densely populated Research Triangle region in Wake, Orange, and Durham counties to Chatham, Lee, Moore, Montgomery, Richmond, Anson, and Union Counties near Charlotte and the South Carolina border. The Dan River basin crosses Stokes and Rockingham Counties before extending northward into Virginia and covers a much smaller area (roughly 152 square miles).[6]

---

2. JEFFREY C. REID & KENNETH B. TAYLOR, N.C. GEOLOGICAL SURVEY, SHALE GAS POTENTIAL IN TRIASSIC STRATA OF THE DEEP RIVER BASIN, LEE AND CHATHAM COUNTIES, NORTH CAROLINA WITH PIPELINE AND INFRASTRUCTURE DATA (N.C. Geol. Survey Openfile Report 2009-01) (2009), *available at* http://www.geology.enr.state.nc.us/pubs/PDF/NCGS_OFR_2009-01_20090709.pdf; *contra* ROBERT C. MILICI ET AL., 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 (U.S.G.S. Fact Sheet 2012-3075) (2012), *available at* http://pubs.usgs.gov/fs/2012/3075/fs2012-3075.pdf.

3. N.C. DEP'T OF ENVTL. & NATURAL RES. & N.C. DEP'T OF JUSTICE, NORTH CAROLINA OIL AND GAS STUDY UNDER SESSION LAW 2011-276, at 32 (2012) [hereinafter DENR STUDY], *available at* http://portal.ncdenr.org/c/document_library/get_file?uuid=9a3b1cc1-484f-4265-877e-4ae12af0f765&groupId=14.

4. Press Release, N.C. Dep't of Envtl. & Natural Res., Statement on Release of U.S. Geological Survey Assessment of North Carolina Oil and Gas Resources (June 6, 2012), http://portal.ncdenr.org/web/opa/shale-gas-news-releases/-/asset_publisher/Uj51/content/statement-on-release-of-u-s-geological-survey-assessment-of-north-carolina-oil-and-gas-resources?redirect=%2Fweb%2Fopa%2Fshale-gas-news-releases.

5. DENR STUDY, *supra* note 3, at 17.

6. *Id.*

Geological information about these basins is rather limited, but preliminary research by the NCGS estimates that at least 59,000 acres in the Sanford sub-basin (the central portion of the Deep River Basin) contain organic-rich shale and coals from which natural gas can be captured.[7] These areas contain organic-rich shales that might yield commercially viable quantities of natural gas.

Although early estimates suggested that North Carolina's formations could produce enough natural gas to meet the state's needs for decades, the United States Geological Survey ("USGS") recently released its estimates of the potential of five East Coast Mesozoic basins. While the Deep River Basin appeared to have the most potential, with the USGS estimating that it contains 1.66 trillion cubic feet of natural gas and 83 million barrels of valuable natural gas liquids,[8] this amount of gas, which represents a 5.6-year supply at current use rates, is more likely to make any North Carolina shale gas play a regional rather than a national one.[9]

III. THE REGULATORY BARRIER

Although shale gas has been discovered in North Carolina, the technologies that have made the shale boom possible in other parts of the world—horizontal drilling and hydraulic fracturing—were illegal under North Carolina law until the summer of 2012. For decades, oil and gas resources in North Carolina have been governed by the Oil and Gas Conservation Act (the "OGCA").[10] The OGCA was enacted in 1945 and was not significantly changed over the following sixty-plus years.[11]

During this time, the OGCA and regulations promulgated thereunder expressly prohibited horizontal drilling and hydraulic fracturing. First, the OGCA prohibited any deviation "from the vertical drawn from the center of the hole at the surface."[12] Regulations defined the "reasonable" deviation as no more than three degrees "between [the] bottom of the hole and the top of the hole."[13] This verticality requirement effectively cut off any use of horizontal drilling techniques. The prohibition on hydraulic fracturing was more explicit: North Carolina environmental regulations prohibited the construction of wells to "inject fluids" for "enhanced recovery of oil or natural gas,"[14] and re-

7. *Id.* at 15.
8. ROBERT C. MILICI ET AL., *supra* note 2.
9. *See* Press Release, *supra* note 4.
10. N.C. GEN. STAT. §§ 113-381 to -424 (2011).
11. *See* DENR STUDY, *supra* note 3, at 304; 1945 N.C. Sess. Laws 702; 1945 N.C. Sess. Laws 765; 1971 N.C. Sess. Laws 813; 1973 N.C. Sess. Laws 1262; 1977 N.C. Sess. Laws 771; 1987 N.C. Sess. Laws 827; 1989 N.C. Sess. Laws 727; 1997 N.C. Sess. Laws 443.
12. N.C. GEN. STAT. § 113-393(d) (2011).
13. 15A N.C. ADMIN. CODE 5D.0107(e) (2012).
14. 15A N.C. ADMIN. CODE 2C.0209(2)(b) (2012).

quired that pressure at the well head be such that it "not initiate new fractures or propagate existing fractures in the injection zone, initiate fractures in the confining zone, or cause the migration of injected or formation fluids outside the injection zone or area."[15]

Without the ability for the oil and gas industry to employ horizontal drilling or hydraulic fracturing techniques in North Carolina, any shale resources have been effectively off-limits. Nonetheless, these laws also put North Carolina in the unique position of having time to develop a thorough regulatory scheme without the immediate development pressures faced by some other states.

IV. THE PATH TO LEGALIZATION

A. *Introduction*

Shortly after the NCGS released its 2009 report on potential shale resources, the North Carolina General Assembly began to recognize the considerable potential value of shale gas to the state's economy and the growing interest in a potential North Carolina play.[16] As a result, in June 2011, the General Assembly passed Session Law 2011-276 (the "Study Bill"), which directed the North Carolina Department of Environment and Natural Resources ("DENR"), in concert with the North Carolina Department of Commerce and the North Carolina Department of Justice, to "study the issue of oil and gas exploration in the State and the use of directional and horizontal drilling and hydraulic fracturing for that purpose."[17]

Further, the Study Bill directed DENR and the other agencies to evaluate the potential shale resource in North Carolina and methods of natural gas extraction, and to conduct an analysis of potential economic impacts, environmental impacts, social impacts, consumer protection issues, infrastructure issues, as well as potential oversight and administrative issues related to shale gas development in North Carolina.[18]

DENR published a proposed outline of the study and held public hearings in late 2011 to solicit input on the scope of the study. At the same time, it requested that the State Review of Oil and Natural Gas Environmental Regulations, Inc. ("STRONGER"), an entity formed by the United States Environmental Protection Agency and the Interstate Oil and Gas Compact Commission, to review and report on state environmental regulations pertaining to oil and gas development and to conduct a neutral third-party review of current North Carolina environmental regulations. A STRONGER committee studied North Carolina's regulations and issued a review report in February 2012.

15. 15A N.C. ADMIN. CODE 2C.0213(e)(1) (repealed 2012).
16. DENR STUDY, *supra* note 3, at 15.
17. 2011 N.C. Sess. Laws 276.
18. *Id.*

The STRONGER committee made no recommendation regarding whether North Carolina should revise its regulations to permit hydraulic fracturing and horizontal drilling, but it noted that

> [w]hile North Carolina has mature environmental regulatory programs, the programs have not needed to focus on regulating the impacts of oil and gas development. That may change depending on decisions made by the state. If North Carolina decides to develop an oil and gas regulatory program, that program should contain criteria to address oil and gas related activities, including administrative criteria, technical criteria related to exploration and production waste management, stormwater management, abandoned sites, naturally occurring radioactive materials, and hydraulic fracturing.[19]

DENR took into account the STRONGER recommendations and after extensive additional research and review, released a draft of its oil and gas study on March 16, 2012.[20] The draft report concluded that

> [a]fter reviewing other studies and experiences in oil and gas-producing states, DENR believes that hydraulic fracturing can be done safely as long as the right protections are in place. It will be important to have those measures in place before issuing permits for hydraulic fracturing in North Carolina's shale formations.[21]

Following additional public hearings in the towns of Sanford and Chapel Hill, DENR finalized its study and made a full report to the General Assembly on April 30, 2012, just ahead of its statutory deadline. As in its draft study, DENR concluded that

> [a]fter reviewing other studies and experiences in oil and gas-producing states, DENR has concluded that information available to date suggests that production of natural gas by means of hydraulic fracturing can be done safely as long as the right protections are in place. Production of natural gas by means of hydraulic fracturing can only be done safely in North Carolina if the state adopts adequate safeguards in the form of regulatory standards specifically adapted to conditions in the state and invests sufficient resources in compliance and enforcement.[22]

However, the study also set forth a long list of recommendations before the use of hydraulic fracturing goes forward. The study made over twenty recommendations, including that the state government develop programs to regulate well construction, site selection,

---

19. *North Carolina State Review*, STRONGER 6 (Feb. 2012), http://portal.ncdenr.org/c/document_library/get_file?uuid=a76955dc-78d0-4b73-ad9f-336353173f45&groupId=14.

20. *Draft, North Carolina Oil and Gas Study Under Session Law 2011-276*, N.C. DEP'T OF ENVTL. & NATURAL RES. ET AL., 9–10 (Mar. 2012), http://mobile.ncleg.net/documentsites/committees/ERC/ERC%20Reports%20Received/2012/Department%20of%20Environment%20Natural%20Resources/2012-March%20Oil%20and%20Gas%20Fracturing%20Draft%20Rpt.pdf.

21. *Id.* at 293.

22. DENR STUDY, *supra* note 3, at 311.

stormwater, and wastes; address contamination and revenue distribution issues; ensure adequate emergency response preparedness; and fund additional research on baseline environmental conditions and potential impacts from shale development.[23]

B. *Draft Bill*

As a result of DENR's comprehensive study, North Carolina legislators began developing proposals for enabling legislation prior to the 2012 legislative session. One of the principal issues in the debate was whether to repeal the prohibition on hydraulic fracturing now, and place a moratorium on permits until regulatory updates are completed, or to repeal the prohibition later, after several years of rulemaking and additional study.

The former option ultimately won out, and as part of the North Carolina Senate Energy Policy Issues Committee's report to the General Assembly for the 2012 legislative session on April 18, 2012, that Committee approved a draft bill entitled the "Clean Energy and Economic Security Act."[24] The draft bill was introduced on the first day of the 2012 legislative session as Senate Bill 820, and it proposed making hydraulic fracturing and horizontal drilling legal by removing the statutory and regulatory prohibitions on these practices, but imposing a "moratorium" on the issuance of permits for such activities until July 1, 2014.[25] Other provisions were largely based on the recommendations in the DENR study.

V. THE CLEAN ENERGY AND ECONOMIC SECURITY ACT

Over the next seven weeks, the Clean Energy and Economic Security Act (the "Act") was the focus of significant legislative activity. Many provisions of the bill were modified from the original version, and many other provisions were deleted or overhauled completely.[26] Legislators made several rounds of amendments to the bill in addition to the four official editions. Ultimately, both chambers of the General Assembly ratified the revised Senate Bill 820 and submitted the bill to Governor Beverly Perdue for action. Among other things, the Act lifts the bans on horizontal drilling and hydraulic fracturing, but it also mandates the development of "a modern regulatory program for the

23. *Id.* at 312–14.

24. COMM'N ON ENERGY POLICY ISSUES, N.C. GEN. ASSEMBLY, REPORT TO THE 2012 SESSION OF THE 2011 GEN. ASSEMBLY OF N.C. (2012), *available at* http://www.ncleg.net/documentsites/committees/EPI-LRC/FINAL%20--%202012%20LRC%20Energy%20Policy%20Issues%20Report.pdf.

25. S.B. 820 (version 1), 2011 Leg., Reg. Sess. (N.C. 2012).

26. *See Senate Bill 820 / S.L. 2012-143 (=H1054)*, N.C. GEN. ASSEMBLY, http://www.ncga.state.nc.us/gascripts/BillLookUp/BillLookUp.pl?Session=2011&BillID=s820 (last visited Oct. 17, 2012).

management of oil and gas exploration and development in the State,"[27] as suggested by the DENR study.

Despite having expressed the opinion earlier in the year that "[f]rom what I saw, fracking can be done safely if you regulate it and put fees in place to have inspectors on the ground,"[28] Governor Perdue vetoed the bill with the explanation that "[t]his bill does not do enough to ensure that adequate protections . . . will be in place before fracking begins."[29] However, the North Carolina Senate and House promptly voted to override the Governor's veto the following day,[30] and the Act became law as Session Law 2012-143 on the last day of the session.[31]

A. *Lifting the Bans*

The core provisions of the Act remove the statutory prohibitions on hydraulic fracturing and horizontal drilling.[32] As of August 1, 2012, North Carolina General Statute 113-393 now exempts from the verticality requirement "wells drilled for the purpose of exploration or development of natural gas through use of horizontal drilling in conjunction with hydraulic fracturing treatments."[33] Similarly, General Statute 143-214.2, which was the basis for the regulatory bans on hydraulic fracturing, now contains an exception for "injection of hydraulic fracturing fluid for the exploration or development of natural gas resources."[34]

Although horizontal drilling and hydraulic fracturing are now legal in North Carolina, the Act prohibits issuance of permits for these activities until the General Assembly takes further legislative action.[35] This "you can do this, but not yet" approach signals the General Assembly's intent to allow shale gas development in North Carolina while providing regulatory authorities time to conduct further study and to develop the regulatory program required by the Act.

---

27. Clean Energy and Economic Security Act, No. 820, § 2(c), 2012 N.C. Sess. Laws 143.

28. *Perdue Open to 'Fracking' in NC*, WRAL.COM (Mar. 14, 2012), http://www.wral.com/news/state/nccapitol/story/10856881/ (last visited Sept. 18, 2012).

29. Gov. Beverly Eaves Perdue, *Governor's Objections and Veto Message: Senate Bill 820, "Clean Energy and Economic Security Act"* (July 1, 2012), *available at* http://www.ncleg.net/sessions/2011/S820Veto/govobjections.pdf.

30. *See* N.C. GEN. ASSEMBLY, *supra* note 26.

31. *See id.*; *Legislative Calendar*, N.C. GEN. ASSEMBLY, http://www.ncga.state.nc.us/LegislativeCalendar/LegislativeCalendar.pl?view=month&timePeriod=7/1/2012 (showing that the last day of the session was July 2, 2012) (last visited Oct. 17, 2012).

32. Clean Energy and Economic Security Act §§ 3(a)–(b).

33. *Id.* § 3(a).

34. *Id.*

35. *Id.* § 3(d).

B. *New Commissions*

To direct the development and implementation of the state's new modern regulatory program, the Act reconstitutes an executive branch commission, creates a new legislative commission, and outlines a wholly new regulatory program for oil and gas production in North Carolina's Triassic Basin.[36]

The body principally charged with developing this new regulatory program is the North Carolina Mining Commission, which has been reconstituted as the Mining and Energy Commission (the "Commission").[37] The Commission is a fifteen-member body made up of researchers, state officials, representatives of local governments in the Triassic Basin, members of conservation groups, oil and gas professionals, and representatives of the mining industry. The Governor, the Speaker of the House, and the President Pro Tempore of the Senate each will make four appointments to the Commission, with the final three seats filled by the State Geologist, the Assistant Secretary of Energy, and the Chair of the North Carolina State University Minerals Research Laboratory Advisory Committee.[38] The Commission will be supported by the staff of DENR's Division of Land Resources, which will be renamed the Division of Energy, Mineral, and Land Resources.[39]

The Act also creates a ten-member Joint Legislative Commission on Energy Policy, made up of five members each of the House and Senate, to which the Commission will be required to report on a quarterly basis.[40] This Joint Legislative Commission will monitor and evaluate state programs and policies, existing and proposed statutes and rules, developments in energy-related industries, and changes in federal law.[41]

With certain exceptions, regulatory and rule-making authority over shale gas production will rest with the Commission.[42] The Act sets out certain specific elements of the regulatory program that the Commission must address in the rule-making process as discussed further below.

---

36. The regulatory program specifically excludes off-shore oil and gas exploration, either in the coastal sounds or in the Atlantic Ocean. *See id.* § 2(c). Interest and information regarding this potential source of gas is much more limited. JEFFERY C. REID, NATURAL GAS AND OIL IN NORTH CAROLINA (N.C. Geol. Survey Information Circular 36) (2009), *available at* http://www.geology.enr.state.nc.us/pubs/PDF/NCGS_IC_36_Oil_and_Gas.pdf.

37. Clean Energy and Economic Security Act § 2(c).

38. *Id.* § 1(b).

39. *Id.* § 1(b), (e).

40. *Id.* § 1(b), 6(a).

41. *Id.*

42. *See id.* § 2(c). The North Carolina Environmental Management Commission will retain ultimate regulatory authority over stormwater and air emissions associated with oil and gas exploration and development activities. *Id.*

C. *Parameters of the Regulatory Program*

The Act outlines with some specificity the parameters of permitting and operational regulations to be developed by the Commission. New regulations are required to cover the entire development operation, from pre-drilling exploration through well construction, drilling, operation, casing, plugging, completion, and abandonment of wells. These regulations are to be designed to protect local water supplies, preserve air and water quality, require adequate safety standards for construction, and mitigate impacts on local infrastructure and environmental resources.[43] Among many other requirements, the Act instructs the Commission to develop standards for:

- Collection of baseline data regarding air, surface water, and groundwater quality, including pre-drilling surveys;
- Construction of oil and gas wells, including drilling, cementing, and casing standards, taking into account high pressures associated with hydraulic fracturing;
- Appropriate siting and layout of wells and gas-production equipment and operations;
- Regulation of spacing of wells and the establishment of drilling units;
- Limitations on water use during hydraulic fracturing operations;
- Wastewater management plans for each well, to be approved by DENR;
- Storage, transportation, and disposal of wastes, including those not currently subject to the federal Resource Conservation and Recovery Act ('RCRA');
- Mitigation of impacts on infrastructure, including damage to roads from heavy truck and equipment usage;
- Prohibition on the use of certain constituents in hydraulic fracturing fluids, particularly diesel fuel;
- Disclosure of chemicals and constituents used in exploration, drilling, and production, including hydraulic fracturing fluids, to state regulatory agencies and local government emergency response officials;

43. *Id.*

- Financial assurance for closure and post-closure activities, including any required corrective action; and

- Program permitting procedures, including the amount and quality of information required to be provided in support of permit applications.[44]

DENR will coordinate development and adoption of these new regulations and must report to the Joint Legislative Commission on Energy Policy and the Environmental Review Commission each quarter, with the first report due January 1, 2013.[45] The Act sets a final deadline of October 1, 2014 for adoption of required regulations.[46] Given the complexity of North Carolina's rulemaking process and the volume of regulations to be drafted, this deadline may be exceptionally ambitious, as state regulators and others have opined.[47]

D. *Landowner Protections*

The Act also contains a number of provisions, developed from a report by the Consumer Protection Division of the North Carolina Department of Justice, that are designed to protect landowners who might lease or convey subsurface rights for natural gas development. Unlike the regulatory prescriptions described above, these provisions are statutory changes effective now.

The substantive landowner protection provisions include the following:

- Any person who enters land on behalf of an oil and gas company is required to carry identification sufficient to identify himself and his employer or principal and to present this identification upon request.[48]

- Oil or gas developers are presumptively liable for contamination of any water supplies within 5,000 feet of a wellhead. In addition to any other remedies, any developer liable for water supply contamination is required to provide a replacement water supply.[49]

---

44. *Id.*

45. *Id.* § 2(m).

46. *Id.*

47. Robin W. Smith, N.C. Dep't of Env't & Nat. Res. Assistant Sec'y for the Env't, Past, Present and Future Time-Line for the Development of NC Shale-Gas Regulations, Address at the Conference of American Ground Water Trust and Association of Environmental & Engineering Geologists, Carolinas Section (Aug. 9, 2012).

48. Clean Energy and Economic Security Act § 4(a).

49. *Id.* § 4(b).

- Surface areas affected by oil and gas development activities must be reclaimed within two years. A reclamation bond must be obtained in favor of the surface estate owner.[50]

- Oil and gas developers and operators are required to indemnify surface owners for claims related to the developer's or operator's activities on that property.[51]

- All 'landmen' operating in the state must be registered with DENR beginning October 1, 2012. A 'landman' is broadly defined as anyone who acquires or manages oil or gas interests; performs title or contract functions related to exploration, exploitation, or disposition; negotiates the acquisition or disposal of oil or gas rights; or negotiates business agreements that provide exploration or development of oil or gas.[52]

The Act also imposes a number of required provisions for oil and gas leases.[53] Before any oil and gas lease may be executed, the lessee is required to provide the lessor with a copy of a publication, to be produced by the Department of Justice, which will outline the landowner's rights and will include a copy of the provisions described in this section.[54] Additionally, the following provisions must be included in all leases:

- Lease terms are limited to ten years unless oil or gas is being produced at the close of the ten-year period;

- Royalty payments to lessors must not be less than 12.5% of proceeds of sale of oil or gas, not to be reduced by pre-production or post-production costs, fees, or other charges, and payments must commence no later than six months after the date of first sale;

- Bonus payments must be made within sixty days of lease execution or the lessor is entitled to interest of ten percent per annum beginning on the due date;

- A provision stating the estimated amount of water, if any, the developer or operator will withdraw from supplies on the property, that the developer's water use may not restrict the surface owner's water supply for domestic uses, and that full compen-

50. *Id.*
51. *Id.* § 4(c).
52. *Id.* § 4(g).
53. *Id.* § 4(d).
54. *Id.* § 4(a).

sation of not less than fair market value must be provided to the surface owner for all water used; and

- A provision regarding pre-drill testing of all water supplies within 5,000 feet of the wellhead.[55]

Once a lease is signed, the Act provides a seven-day "cooling off" period during which either party can rescind the lease with no penalty,[56] and the lease must be recorded within thirty days of execution in the applicable county land records.[57]

VI. The Road Ahead: Unresolved Issues

While the Clean Energy and Economic Security Act sets forth a detailed legal framework for natural gas development in North Carolina, the Act leaves three major policy issues open for future study and for later resolution. For these three issues—public revenue, local government regulatory authority, and compulsory pooling—the Act requires the Commission, in conjunction with other governmental and non-governmental agencies, to make additional findings and recommendations, along with legislative proposals.

First, the Commission will undertake an evaluation of proper levels of funding and funding sources required (1) to support local governments, (2) to mitigate infrastructure impacts from oil and gas development activities, and (3) to administer the oil and gas regulatory program, including remediation of abandoned development sites. Funding sources could include permit fees, bonds, taxes, and local impact fees.

Second, the Commission is to evaluate the role of local governments in regulating oil and gas exploration and development activities while maintaining a uniform regulatory program on a statewide basis. The Act indicates that local governments may maintain some land use regulatory authority, but the exercise of such authority cannot have the effect of prohibiting natural gas development activities.[58] The local government authority issue remains an important issue in jurisdictions where the shale resource is located—some local governments in the Deep River Basin already have expressed opposition to shale development or concern about the scope of potential local government control.

Third, the Commission is to review the use of compulsory pooling and integration of oil and natural gas resources in drilling units.[59] The current oil and gas law in North Carolina includes compulsory pooling

55. *Id.* § 4(f).
56. *Id.* § 4(d).
57. *Id.*
58. *Id.* § 2(k).
59. *Id.* § 2(l).

provisions,[60] but such provisions have never been implemented. These three important policy issues were not fully resolved in the Act and may be the subject of substantial additional debate in future legislative sessions.

VII. CONCLUSION

Over the past two years, North Carolina has taken advantage of its unique position and gradually moved toward legalizing and preparing for development of shale gas resources. By lifting the ban on hydraulic fracturing and horizontal drilling, the state has taken its most significant step forward. Next year's survey update will undoubtedly contain a number of regulatory updates as DENR and the Commission move through the mountain of work in front of them.

60. N.C. GEN. STAT. §§ 113-392, 113-393 (2011).