

North Carolina Department of Environmental Quality

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

MEMORANDUM

TO: ENVIRONMENTAL REVIEW COMMISSION
The Honorable Brent Jackson, Chairman
The Honorable Mike Hager, Co-Chairman

JOINT LEGISLATIVE COMMISSION ON ENERGY POLICY
The Honorable Bob Rucho, Co-Chairman
The Honorable Mike Hager, Co-Chairman

SENATE APPROPRIATIONS SUBCOMMITTEE ON NATURAL AND ECONOMIC
RESOURCES
The Honorable Bill Cook, Co-Chairman
The Honorable Andrew C. Brock, Co-Chairman
The Honorable Trudy Wade, Co-Chairman

HOUSE APPROPRIATIONS SUBCOMMITTEE ON AGRICULTURE AND NATURAL AND
ECONOMIC RESOURCES
The Honorable Roger West, Chairman
The Honorable Jimmy Dixon, Chairman
The Honorable Pat McElraft, Chairman

FISCAL RESEARCH DIVISION

FROM: Matthew Dockham, Director of Legislative Affairs

SUBJECT: Annual Report on Activities Conducted Pursuant to S.L. 2012-143

DATE: October 19, 2015

Pursuant to General Statute 113-391(e), the Department of Environment and Natural Resources shall submit to the Environmental Review Commission, the Joint Legislative Commission on Energy Policy, the Senate and House of Representatives Appropriations Subcommittees on Natural and Economic Resources, and the Fiscal Research Division of the General Assembly a report on its activities conducted pursuant to Session Law 2012-143 on or before Oct. 1 of each year.

Please consider this memorandum, along with the attached quarterly reports, as the Annual Report on Activities Conducted Pursuant to S.L. 2012-143.

The Department of Environment and Natural Resources has accomplished the following activities during the time period Oct. 1, 2014 through Sept. 30, 2015:

- a. Conducted normal business activities of the Energy Section within the Division of Energy, Mineral, and Land Resources (DEMLR), which includes the State Energy Program, the Weatherization Assistance Program, and the Oil and Gas Program. The Oil and Gas Program was charged with the responsibility of supporting the Mining and Energy Commission (MEC) in the development of a modern regulatory program to regulate the exploration and development of oil and gas in North Carolina. Oil and Gas Program personnel served as scientific consultants for, and provided administrative and logistical support to, the Mining and Energy Commission;
- b. Ensured efficient coordination and communication between the MEC, its Committees and Study Groups and DENR Secretary's Office, various DENR Divisions, and the Division of Energy, Mineral, and Land Resources with respect to research and rule drafting activities and the compilation of Study Group reports;
- c. Provided the Mining and Energy Commission with staff support of the activities conducted by the following committees:
 - Administration of Oil and Gas Committee;
 - Water and Waste Management Committee;
 - Environmental Standards Committee;
 - Rules Committee;
 - Mining Committee;
 - Petition for Rulemaking Committee; and
 - Committee on Civil Penalty Remissions (inactive to date).
- d. Provided the Mining and Energy Commission with staff support of the activities conducted by the following study groups:
 - Landman Study Group; and
 - Midstream Infrastructure Study Group;
- e. Assisted with developing the following reports, in coordination with MEC Study Groups:
 - Landman Study Group Report; and
 - Midstream Infrastructure Study Group Report;
- f. Conducted a compulsory pooling study and provided recommendations to the Department for consideration by the Legislature, in accordance with Session Law 2014-4;
- g. Engaged in scientific studies to better characterize NC's hydrocarbon resources, which were led by the NC Geological Survey, with assistance from DEMLR's Oil and Gas Program. Studies involved rock coring, core logging, and collection of samples for thin section and geochemical analysis.

- h. Processed 217,285 public comments related to the development of the 15A NCAC 05H rule set, which were received from four public hearings, as well as from e-mails, letters, and signed petitions. Comments were provided to MEC members for consideration and rule editing;
- i. Completed the development of the Oil and Gas Conservation Rules (15A NCAC 05H) and facilitated rule adoption by the MEC and approval by the Rules Review Commission. The rules (linked to [15A NCAC 05H](#)) address these regulatory matters:
- Administrative Rules – Establishes rules for the overall function of the Mining and Energy Commission, procedures for submitting petitions, hearing procedures, enforcement of rules, civil penalties, future rulemaking, record keeping, etc.;
 - Drilling Units and Well Spacing – Establishes requirements for petitioning the Commission for permission to create or modify a drilling unit. These rules also set forth oil or gas well spacing requirements for conventional and unconventional reservoirs;
 - Permitting – Establishes registration and permitting requirements for new oil or gas wells. These rules also establish procedures for review, modification, transfer, expiration, suspension or revocation, and release of an Oil or Gas Well Permit;
 - Financial Assurance – Establishes requirements for bonding for well construction, well plugging and abandonment, land disturbance, and environmental damage;
 - Well Site Construction – Establishes construction standards for oil and gas sites, including erosion and sedimentation control oversight;
 - Well Construction and Completion – Establishes standards for well construction, setbacks, well plugging and abandonment, well stimulation (including, but not limited to hydraulic fracturing), and well maintenance and security;
 - Chemical Disclosure – Establishes requirements of chemical disclosures for permittees, service companies, and vendors involved in oil or gas exploration and production. This Section delineates information to be posted to the Chemical Disclosure Registry (<http://fracfocus.org/>). These rules also specify the conditions under which trade secrets apply and the conditions under which trade secret information can be disclosed to health professionals or emergency responders;
 - Environmental Sampling (Baseline and Subsequent Sampling) – Establishes requirements for the pre-drilling testing of water supplies, the testing of water supplies after production has commenced, and the reporting of data collected;
 - Water Acquisition and Use – Establishes requirements for obtaining and managing water for use in oil and gas operations;
 - Waste Management – Establishes requirements for managing, controlling, and disposing of waste associated with exploration and production of oil or gas. This Section also sets requirements for pit closure, spill reporting, and monitoring;
 - Reclamation – Establishes requirements for reclaiming oil and gas sites; and
 - Operation and Production – Establishes requirements for production equipment, site inspection, and reporting requirements.

DEMLR personnel also participated in numerous local and regional education and outreach activities, which included speaking events and meetings with university classes, professional organizations, citizens' groups, and state and local government officials.

Specific details regarding DEMLR activities during the reporting period are provided in the attached MEC quarterly reports.

If you have any questions or need additional information, please contact me by phone at (919) 707-8618 or via e-mail at matthew.dockham@ncdenr.gov.

cc: Tom Reeder, Assistant Secretary for the Environment, NCDEQ
Tracy Davis, Director of Energy, Mineral, and Land Resources, NCDEQ
Jennifer Hoffman, Fiscal Research Division, NCGA
Jennifer McGinnis, Commission Council, NCGA
Jeffrey Hudson, Commission Council, NCGA
Mariah Matheson, Commission Assistant, NCGA

Quarterly Reports



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

MEMORANDUM

TO: ENVIRONMENTAL REVIEW COMMISSION
The Honorable Brent Jackson, Chairman
The Honorable Ruth Samuelson, Co-Chairman
The Honorable Mike Hager, Co-Chairman

JOINT LEGISLATIVE COMMISSION ON ENERGY POLICY
The Honorable Bob Rucho, Co-Chairman
The Honorable Mike Hager, Co-Chairman

FROM: Dr. Vikram Rao
Chairman of the North Carolina Mining and Energy Commission

Tracy Davis
Director of the Division of Energy, Mineral, and Land Resources

SUBJECT: Quarterly Report on Activities Conducted Pursuant to S.L. 2012-143

DATE: January 1, 2015

Pursuant to Session Law 2012-143, the North Carolina Mining and Energy Commission and the Division of Energy, Mineral, and Land Resources shall submit to the Environmental Review Commission and the Joint Legislative Commission on Energy Policy a report on activities conducted and progress made on a quarterly basis. Please consider the Quarterly Report on Activities Conducted Pursuant to S.L. 2012-143 attached as the formal submission of this report.

If you have any questions or need additional information, please contact me by phone at (919) 707-9201 or via e-mail at Tracy.Davis@ncdenr.gov.

cc: Mitch Gillespie, Assistant Secretary for the Environment
Tracy Davis, Director, Division of Energy, Mineral, and Land Resources
Brad Atkinson, Energy Section Chief, Division of Energy, Mineral, and Land Resources
Walt Haven, Oil and Gas Management Program Supervisor

Division of Energy, Mineral, and Land Resources
Energy Section • Geological Survey Section • Land Quality Section
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N.C. Mining and Energy Commission
And Department of Environment and Natural Resources
Quarterly Report on Activities Conducted Pursuant to S.L. 2012-143
To the Joint Legislative Commission on Energy Policy
And the Environmental Review Commission
January 1, 2015

Session Law 2012-143, the Clean Energy and Economic Security Act, was ratified on July 2, 2012 and reconstituted the North Carolina Mining Commission as the North Carolina Mining and Energy Commission. The Act directs the Mining and Energy Commission (MEC) 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 involved for that purpose. The Act directs the Commission to submit quarterly written reports on the Commission's operation, activities, programs, and progress to the Joint Legislative Commission on Energy Policy and the Environmental Review Commission (Section 1.(h)). The Department is also required to report on the progress in developing and adopting the rules required to be adopted by S.L. 2012-143. The quarterly reports shall include recommendations on changes required to existing rules and statutes and any other findings or recommendations necessary for the implementation of the Act (Section 2.(m)). This report satisfies both of these reporting requirements for the October through December 2014 timeframe.

Activities for each of the MEC Committees for this quarter are summarized below:

The **Administration of Oil and Gas Committee** did not meet during this quarter due to its completion of initial rule assignments.

The **Water and Waste Management Committee** did not meet during this quarter due to its completion of initial rule assignments.

The **Rules Committee** did not meet during this quarter due to its completion of initial rule assignments.

The **Mining Committee** did not meet during this quarter.

The **Petition for Rulemaking Committee** met on October 17, 2014 to consider a petition from the Blue Ridge Environmental Defense League (BREDL) for the MEC to develop rules for air quality and monitoring. The Committee received presentations from BREDL, the Division of Air Quality (DAQ) and the Division of Energy, Mineral, and Land Resources (DEMLR).

The Petition for Rulemaking Committee met again on Dec. 4, 2014, reviewed information from BREDL, DAQ, and DEMLR, and developed the following recommendations for MEC action:

- a. Deny the BREDL petition due to a lack of statutory authority for the MEC to develop respective rules;
- b. Establish either a new standing committee or study group, or use an existing standing committee to evaluate the following matters on a recurring basis:
 1. Applicability of federal law to air emissions in NC, with specific consideration of wildcatter exemptions and potential exploitation of "legal loopholes" related to such exemptions by operators;
 2. Overlap of federal and state authority in other states regarding air emissions and monitoring;

3. Review of NC's existing air quality regulatory framework for a more detailed analysis as to how the framework applies to oil and gas operations;
4. Review of NC's regulatory framework for addressing both cumulative and episodic impacts to air quality resulting from oil or gas industry activities;
5. Assessment of air monitoring procedures to determine at what point in the development process monitoring should occur (i.e. before, during, or after oil and gas activities);
6. Innovative technologies to reduce air emissions;
7. DAQ's ambient air monitoring program and the sufficiency of the program;
8. Best practices for emission monitoring and control across the country, especially as related to fence line monitoring;
9. Incentive opportunities (i.e. shorter permit application process) for using Best Available Control Technologies and other procedures to reduce emissions;
10. Potential impacts of air emissions based on the source(s) of the emissions;
11. Current MEC rules and the impact of 15A NCAC 05H rule implementation on air emissions (i.e. piping water to reduce truck trips and respective emissions); and
12. Determination of rulemaking or other recommendations that should be provided to the EMC through the MEC.

The **Environmental Standards Committee** held an orientation meeting on December 19, 2014 and discussed the recommendations presented by the Petition for Rulemaking Committee, including strategies to research air quality and air emission concerns related to oil and gas exploration and development. The Committee plans to develop respective rulemaking recommendations for consideration by the Environmental Management Commission.

Activities for MEC Study Groups for this quarter are summarized below:

The Midstream Infrastructure Study Group was established on December 5, 2014 and conducted its first meeting on December 19, 2014. Members discussed research requirements under Session Law 2014-4, group organization, and strategies for study completion and reporting.

The Landman Registry Study Group was established on December 5, 2014, but did not meet during this quarter. However, DEMLR staff conducted independent research to support study efforts.

Mining and Energy Commission activities for this quarter are summarized below:

During the last quarter, Dr. Vikram Rao, Commission Chairman, designated Vice Chairwoman Amy Pickle, Dr. Kenneth Taylor, and Mr. James Womack as Hearing Officers to preside over the Commission's rulemaking public hearings held on August 20, 22, and 25, and September 12, 2014. During October, these Hearing Officers led by Vice Chairwoman Pickle developed responses to public comments and drafted the Commission's Hearing Officers' report.

The Mining and Energy Commission held four meetings during this quarter. During the November 6 and 7, 2014 meeting, the Commission received an update from the Petition for

Rulemaking Committee regarding its October 17, 2014 meeting. Additionally, the MEC reviewed the Hearing Officers' report, and developed draft rule amendments in response to public comments. DEMLR staff compiled proposed amendments into the text of the draft rules for presentation and review at the next meeting.

The Commission convened again on November 14, 2014 and completed its development of amendments, adopted the new "Oil and Gas Conservation" rules (15A NCAC 05H), and repealed the former rules (15A NCAC 05D). Through this action, the MEC met its statutory deadline to adopt rules as established in Session Law 2014-4, Part I, Section 1. DEMLR staff subsequently processed the new rule set and submitted it to the Office of Administrative Hearings (OAH) on November 21, 2014.

During its December 5, 2014 meeting, Commissioners accepted recommendations regarding the BREDL petition for rulemaking from the Petition for Rulemaking Committee. The MEC denied the BREDL petition, but agreed to reconstitute the Environmental Standards Committee to consider the Petition for Rulemaking Committee's recommendations as noted above. Commissioners also reviewed comments received from OAH staff regarding 15A NCAC 05H and discussed DEMLR staff plans for presentation of the rule set before the Rules Review Commission (RRC) on December 17 and 18, 2014. Additionally, the MEC discussed plans for completing a landman registry study and a midstream infrastructure study, in accordance with Session Laws 2013-365 and 2014-4, respectively. Chairman Rao established two new study groups and reorganized the Environmental Standards Committee as follows:

- a. Midstream Infrastructure Study Group membership:
 1. Mr. James Womack (co-director);
 2. Ms. Jane Lewis-Raymond (co-director);
 3. Dr. Kenneth Taylor;
 4. Dr. Matt Mathews;
 5. Dr. Ray Covington; and
 6. Non-MEC members, as invited by the director;

- b. Landman Registry Study Group membership:
 1. Dr. Ray Covington (director);
 2. Mr. James Womack;
 3. Mr. George Howard;
 4. Ms. Charlotte Mitchell;
 5. Mr. Charles Taylor; and
 6. Non-MEC members, as invited by the director;

- c. Environmental Standards Committee membership:
 1. Mr. E.O. Ferrell (chairman);
 2. Mr. George Howard;
 3. Dr. Matt Mathews;
 4. Ms. Charlotte Mitchell; and
 5. Ms. Amy Pickle.

The MEC held its final meeting on December 19, 2014 and received a briefing from DEMLR personnel regarding their December 17, 2014 presentation of the 15A NCAC 05H rule bundle to the RRC. Commissioners noted that the RRC had approved 107 of the oil and gas rules and that the remaining 13 rules are scheduled for RRC review on January 15, 2015.

Commissioners provided input to DEMLR staff on some of the remaining rules and directed staff to finalize the 13 rules, with Commissioner input as needed, by the deadline for submission to the RRC staff to be included on the RRC's January 15 meeting agenda.

The Commission also discussed schedules and strategies for completing study group work.

Commissioners continue to participate in local and regional education and outreach programs, in addition to providing information briefings to the Legislature. Specific activities for this quarter included:

- October 1, 2014: Dr. Kenneth Taylor provided the presentation, "Emergency to Oil and Gas Issues – a North Carolina Perspective" to the Guilford County/Greensboro Local Emergency Planning Committee in Greensboro, NC;
- October 10, 2014: Dr. Kenneth Taylor provided the presentation, "Shale Gas 101: Natural Gas Exploration / Development – A North Carolina Perspective" to the North Carolina Society of Surveyors in Raleigh, NC;
- October 11, 2014: Mr. James Womack participated in the Cumberland County Panel Forum on Shale Energy Development at the Cumberland County Library in Fayetteville, NC. He joined other panel members representing NC State University and Clean Water for North Carolina;
- October 23, 2014: MEC Chairman, Dr. Vikram Rao served as a panelist on the "State of Things with Frank Stasio" as part of the program "Fracking in North Carolina, a Balanced View;"
- October 28, 2014: Dr. Kenneth Taylor and the NC Geological Survey's Senior Geologist briefed the DENR leadership team on oil and gas potential in NC;
- December 2, 2014: Chairman Dr. Vikram Rao presented an update on Commission Activities to the Joint Legislative Commission on Energy Policy in Raleigh, NC; and
- December 3, 2014: MEC Chairman, Dr. Vikram Rao was interviewed by News 14 Carolina regarding "Fracking in North Carolina."

DEMLR staff also participated in local and regional education and outreach programs. On October 15, 2014, staff provided presentations on North Carolina geology, hydrocarbon resources, and the current progress of rule development during the Onsite Water Protection Conference in Raleigh, NC. A similar presentation was also provided on October 24, 2014 during the North Carolina Surveyors Workshop at Sandhills Community College in Pinehurst, NC.

DEMLR has maintained its support of the Mining and Energy Commission and has continued taking a leading role in drafting oil and gas rules, as well as providing logistical and organizational support to the MEC. Additionally, DEMLR staff received, organized, and processed over 217,000 public comments related to the Oil and Gas Conservation rules received during the July 15 through September 30, 2014 public comment period. Public comments on the draft rules may be accessed through this website:

<http://portal.ncdenr.org/web/mining-and-energy-commission/public-comments>.

DEMLR has also worked with OAH staff to ensure that 15A NCAC 05H complied with RRC standards, as well as with applicable statutes. Additionally, staff members presented the oil and gas rule bundle to the RRC on December 17, 2014. The RRC approved 107 of the oil and gas rules, and plans to review these remaining rules during its January 15, 2015 meeting:

- 15A NCAC 05H .0704, "Completeness and Request for Additional Information;"
- 15A NCAC 05H .1308, "Permit Conditions;"
- 15A NCAC 05H .1310, "Permit Modifications;"
- 15A NCAC 05H .1404, "Disturbed Land Bond;"
- 15A NCAC 05H .1405, "Environmental Damage Bond;"
- 15A NCAC 05H .1406, "Inspection and Approval of Reclamation for Bond Release or Forfeiture;"
- 15A NCAC 05H .1407, "Bond Forfeiture Proceedings;"
- 15A NCAC 05H .1603, "Variance for Setbacks;"
- 15A NCAC 05H .1613, "Well Stimulation Requirements;"
- 15A NCAC 05H .1804, "Request for Investigation of Water Supply;"
- 15A NCAC 05H .1902, "Surface Water Source Documentation;"
- 15A NCAC 05H .1903, "Groundwater Source Documentation;" and
- 15A NCAC 05H .2003, "Exploration and Production Waste Disposal."

DEMLR's Oil and Gas Program continues to assist the North Carolina Geological Survey (NCGS) in assessing hydrocarbon potential and has helped with rock sample processing, data compilation and plotting, and the technical review of professional conference posters. Additionally, staff teamed with NCGS to set up a booth to advertise North Carolina resources and to network with industry professionals during the North American Prospect Expo in Denver, CO from December 9-12, 2014. Oil and Gas Program personnel have also been working with the NC Geological Survey, the American Association of Petroleum Geologists, the American Petroleum Institute, and other professional organizations to receive cost-effective, in-house continuing education. This instruction has helped staff becoming more technically proficient and has covered topics such as shale lithology, thermal maturity of hydrocarbon-bearing rocks, hydrocarbon fluid migration, well site cementing calculations, and well site safety.

Additional information about the MEC, including agendas, meeting minutes and audio recordings of meetings, can be found at the Commission's website: <http://portal.ncdenr.org/web/mining-and-energy-commission/>. The Department continues to manage this website and share information about the activities of the MEC with the public. The website lists meeting agendas, meeting minutes, PowerPoint presentations from meetings, contact information for MEC members, and other information. A listserv is also available for individuals who would like to receive updates on the MEC and changes to the website. To sign up for the listserv, visit <http://lists.ncmail.net/mailman/listinfo/denr.shale.gas>.

Figure 1 reflects current committee and study group members, as well as primary staff contacts for each committee and study group.

Committee	Chair/Vice Chair	Other Members	Primary DENR Staff
Mining	Tex Gilmore	George Howard, Amy Pickle, Dr. Marva Price, E.O. Ferrell, Dr. Robert Mensah-Biney, Dr. Ray Covington	Janet Boyer
Civil Penalty Remissions	Charlotte Mitchell	Jane Lewis-Raymond, Jim Womack, Charles Taylor, Dr. Robert Mensah-Biney	Walt Haven
Environmental Standards	E.O. Ferrell	George Howard, Dr. Matt Matthews, Charlotte Mitchell, Amy Pickle	Walt Haven (Ryan Channell)
Water & Waste Management	Dr. Vikram Rao, Charlotte Mitchell	Dr. Kenneth Taylor Amy Pickle Ivan "Tex" Gilmore	Katherine Marciniak
Administration of Oil & Gas	Jane Lewis-Raymond	Dr. Vikram Rao, E.O. Ferrell, Dr. Ray Covington, Dr. Kenneth Taylor, Ivan "Tex" Gilmore	Ryan Channell (Walt Haven)
Rules	Amy Pickle	Charlotte Mitchell, George Howard, Dr. Vikram Rao, Jane Lewis-Raymond	Robert Josey (Walt Haven)
Petition	Amy Pickle	Jane Lewis-Raymond E.O. Ferrell	Robert Josey (Walt Haven)
Study Group	Director	Other Members	Primary DENR Staff
Funding Levels & Potential Funding Sources	Jane Lewis-Raymond	Jim Womack, Dr. Vikram Rao, George Howard	Walt Haven (Katherine Marciniak)
Local Government Regulation	Charles Taylor, Dr. Marva Price	Jim Womack	Walt Haven
Compulsory Pooling	Dr. Ray Covington	Jim Womack, Charlotte Mitchell	Walt Haven
Coordinated Permitting	Dr. Kenneth Taylor	Jim Womack, Dr. Vikram Rao, Dr. Ray Covington, George Howard,	Walt Haven
Protection of Trade Secrets & Proprietary Information	Jim Womack	Amy Pickle, Jane Lewis-Raymond	Ryan Channell
Midstream Infrastructure	Jim Womack, Jane Lewis-Raymond	Dr. Kenneth Taylor, Dr. Matt Matthews Dr. Ray Covington	Walt Haven
Landman Registry	Dr. Ray Covington	James Womack, George Howard, Charlotte Mitchell, Charles Taylor	Katherine Marciniak

Figure 1. Commissioner responsibility and primary staff assignments.



North Carolina Department of Environment and Natural Resources

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MEMORANDUM

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JOINT LEGISLATIVE COMMISSION ON ENERGY POLICY
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FROM: Dr. Vikram Rao
Chairman of the North Carolina Mining and Energy Commission

Tracy Davis
Director of the Division of Energy, Mineral, and Land Resources

SUBJECT: Quarterly Report on Activities Conducted Pursuant to S.L. 2012-143

DATE: April 1, 2015

Pursuant to Session Law 2012-143, the North Carolina Mining and Energy Commission and the Division of Energy, Mineral, and Land Resources shall submit to the Environmental Review Commission and the Joint Legislative Commission on Energy Policy a report on activities conducted and progress made on a quarterly basis. Please consider the Quarterly Report on Activities Conducted Pursuant to S.L. 2012-143 attached as the formal submission of this report.

If you have any questions or need additional information, please contact me by phone at (919) 707-9201 or via e-mail at Tracy.Davis@ncdenr.gov.

cc: Tom Reeder, Assistant Secretary for the Environment
Tracy Davis, Director, Division of Energy, Mineral, and Land Resources
Brad Atkinson, Energy Section Chief, Division of Energy, Mineral, and Land Resources
Walt Haven, Oil and Gas Management Program Supervisor

N.C. Mining and Energy Commission
And Department of Environment and Natural Resources
Quarterly Report on Activities Conducted Pursuant to S.L. 2012-143
To the Joint Legislative Commission on Energy Policy
And the Environmental Review Commission
April 1, 2015

Session Law 2012-143, the Clean Energy and Economic Security Act, was ratified on July 2, 2012 and reconstituted the North Carolina Mining Commission as the North Carolina Mining and Energy Commission. The Act directs the Mining and Energy Commission (MEC) 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 involved for that purpose. The Act directs the Commission to submit quarterly written reports on the Commission's operation, activities, programs, and progress to the Joint Legislative Commission on Energy Policy and the Environmental Review Commission (Section 1.(h)). The Department is also required to report on the progress in developing and adopting the rules required to be adopted by S.L. 2012-143. The quarterly reports shall include recommendations on changes required to existing rules and statutes and any other findings or recommendations necessary for the implementation of the Act (Section 2.(m)). This report satisfies both of these reporting requirements for the January through March 2015 timeframe.

Activities for each of the MEC Committees for this quarter are summarized below:

The **Administration of Oil and Gas Committee** did not meet during this quarter.

The **Water and Waste Management Committee** did not meet during this quarter.

The **Rules Committee** did not meet during this quarter.

The **Mining Committee** did not meet during this quarter.

The **Petition for Rulemaking Committee** did not meet during this quarter.

The **Environmental Standards Committee** met on January 16, 2015 and received presentations from DENR's Division of Air Quality (DAQ) regarding federal air quality regulations, current North Carolina air quality rules, and comparisons of equivalent rules from other states.

The Environmental Standards Committee met again on March 26, 2015 and received additional DAQ presentations about air monitoring procedures and ambient air monitoring requirements. The Committee will continue evaluating the information it has received as it develops its findings for the MEC to consider and, if approved, recommend to the Environmental Management Commission for new air monitoring rules.

Activities for MEC Study Groups for this quarter are summarized below:

The **Midstream Infrastructure Study Group** met on January 12 and 26, as well as on February 9 and 23, 2015 and completed its report for transmission to the Legislature. The Study Group developed the following recommendations:

- a. Upstream development activity should be legislatively promoted by:
 1. Passing the MEC's rules for oil and gas development;

2. Providing modest funding to support core drilling and rock sampling in targeted areas of the state for which there is evidence of hydrocarbon deposits;
 3. Ensuring industry interest in exploring for oil and gas in North Carolina is vigorously assisted.
- b. The Department of Commerce and its regional economic development partners should gather relevant project information from midstream companies in the Marcellus, Utica, and Fayetteville shale regions of the country for future project planning purposes;
 - c. State government should strategize where processing and fractionation facilities might best be sited and begin recruiting for that purpose, independent of the ongoing exploration and development efforts;
 - d. The state should help plan and facilitate the integration of gathering systems and processing facilities into planned future transmission and distribution pipelines; and
 - e. NC should postpone legislation or rule development to extend or modify current pipeline safety rules to account for gathering lines, until the Pipeline and Hazardous Materials Safety Administration (PHMSA) has completed its latest round of respective rulemaking.

The Landman Registry Study Group met on February 9 and March 20, 2015 and completed its report for submission to the Legislature. The Study Group developed the following findings and recommendations:

1. The current landman registry contains no standards for registration, and anyone can register as a landman in North Carolina. As a result, the current registry may provide a false sense of security to landowners of the landman's qualifications and expertise, as well as the landman's authority to solicit leases in North Carolina;
2. A disclaimer should be added to the Department's registry webpage to inform the public that the registry is not a verified/vetted/endorsed registry;
3. The definition of "landman" should be modified based on the definition in Pennsylvania, which has been recommended by AAPL, so as to most accurately describe the responsibilities and services of landmen. PA has defined the term as follows, "...the term "landman" means a land professional who has been engaged primarily in (i) negotiating the acquisition or divestiture of mineral rights, (ii) negotiating business agreements that provide for the exploration for or development of minerals, (iii) determining ownership of minerals through research of public and private records, (iv) reviewing the status of title, curing title defects, and otherwise reducing title risk associated with ownership of minerals, (v) managing rights or obligations derived from ownership of interests and minerals, or (vi) activities to secure the unitization or pooling of interests in minerals;"
4. The Landman Registry should be removed from DENR and placed under the authority of the North Carolina Real Estate Commission. The Real Estate Commission is the regulatory agency for the State of North Carolina that is charged with licensing and regulating real estate brokers and has experience in regulating land and lease transactions which is not within the expertise of DENR;
5. A provision should be added to the existing landman statute, G.S. 113-425, to make it clear that a material violation of the statute, including but not limited to the false representation that one is a registered landman, or the engaging in any fraud, deception, material misrepresentation, or knowing omission certification of

material facts related to oil or gas interests by a landman may constitute an unfair and deceptive practice in violation of G.S. 75-1.1, which may be enforced by the Attorney General. While existing statutory law under Chapter 75 provides for this authority, the addition of this statutory provision would make clear the Attorney General's authority to obtain injunctive relief and other remedies in instances of material violations by landmen;

6. The Real Estate Commission authority should include the ability to remove an individual from the registry;
7. There should be a landman application and an annual renewal fee required. The fee should be appropriate depending on the level of oversight provided by the Real Estate Commission;
8. The Real Estate Commission should require that a landman disclose his or her credentials at time of leasing/negotiations and identify to the landowner where he or she may inquire in case of questions or complaints on the landman;
9. Require a landman to obtain and maintain a certain level of an independent and nationally recognized membership in a landman organization that requires continuing education for its members. The Real Estate Commission should have the authority to approve the organization and their educational requirements;
10. Allow the Real Estate Commission to waive registration requirements and approve a landman based on other registrations, licensure, or equivalent education or experience he or she may have; and
12. It would be beneficial for model lease documents to be made available to landowners. To that end, the legislature may want to consider directing the Consumer Protection Division of the Attorney General's Office to explore, in conjunction with the NC Cooperative Extension Service, and other interested parties, whether model lease documents can and should publicly be made available to landowners.

Mining and Energy Commission activities for this quarter are summarized below:

The Mining and Energy Commission held three meetings during this quarter. During the January 16, 2015 meeting, the Commission received Committee and Study Group updates, along with an informational presentation from DEMLR staff regarding the Rules Review Commission's approval of the 15A NCAC 05H rules.

The Mining and Energy Commission met again on February 25, 2015 and reviewed the Midstream Infrastructure Study Group Report, as well as recommendations developed by the Landman Registry Study Group. The Commission also made plans to discuss and develop a list of rule changes and new statutory recommendations during upcoming meetings.

The Mining and Energy Commission held its final meeting of the quarter on March 26, 2015 and received an update from the Environmental Standards Committee on its research of air quality concerns and recommendations for respective rule development for consideration by the Environmental Management Commission. The Commission also reviewed the final Landman Registry Study Group report and discussed regulatory matters related to the above ground storage of wastewater at oil and gas sites. Commissioners discussed possibilities of future oil and gas rule development, as well as suggestions for statutory changes, which included:

- a. Possible statutory change for GS 114-423(f) to require reporting of testing results within 30 days of receiving analytical results;
- b. Need for statutory clarity regarding the terms, timing, and extent of the environmental damage bond (GS 113-421(a3)(2));
- c. Statutory clarity to allow DENR to issue a “stop work” order;
- d. Changing GS 114-421(a2) to require that bonds related to surface reclamation run to NCDENR, not to a surface owner; and
- e. Changing GS 113-423(f) to require an operator to identify the location of water supplies before baseline sampling occurs.

Commissioners continue to participate in local and regional education and outreach programs, in addition to providing information briefings to the Legislature. Specific activities for this quarter included:

- January 28, 2015: Dr. Vikram Rao gave a Distinguished Lecture at Baker Hughes, Inc, in Houston, TX on *Innovating During a Downturn*;
- January 30, 2015: Dr. Kenneth Taylor provided a presentation on NC geology and hydrocarbon resources to students and faculty at Appalachian State University;
- February 5, 2015: Ms. Jane Lewis-Raymond spoke to Leadership North Carolina regarding shale development, and provided a general overview of Commission activities and respective rule development;
- February 5, 2015: Dr. Kenneth Taylor and Mr. James Womack participated as panel members to discuss natural gas exploration and development with the North Carolina Association of City and County Managers;
- March 2, 2015: Dr. Vikram Rao gave a lecture in a course at the University of Houston, TX on *Shale Oil and Gas: Process, Risks and Rewards*;
- March 3, 2015: Dr. Kenneth Taylor provided a presentation on NC geology and hydrocarbon resources to the NC Association of Soil and Water Conservation Districts in Fletcher, NC;
- March 4, 2015: Dr. Kenneth Taylor provided a presentation on NC geology and hydrocarbon resources to the NC Association of Soil and Water Conservation Districts in Mocksville, NC;
- March 5, 2015: Dr. Vikram Rao moderated a panel at The Indus Entrepreneurs (TiE) in Houston, TX, on *Innovating During a Downturn*;
- March 25, 2015: Dr. Vikram Rao, moderator/panelist on a panel *Using Data to Change Behavior* in the conference Data4Decisions in Raleigh, NC;
- March 27, 2015: Dr. Kenneth Taylor provided a presentation on NC geology and hydrocarbon resources to students and faculty at Sanford Community College.

DEMLR Oil and Gas Program staff also participated in local and regional education and outreach programs. On January 15 and February 20, 2015, staff provided presentations on North Carolina geology, hydrocarbon resources, and the potential for onshore and offshore exploration and development to U.S. Coast Guard officials in Morehead City and in Wilmington, NC, respectively. Additionally, staff provided a briefing to the North Carolina Sedimentation Control Commission on February 5, 2015 regarding the 15A NCAC 05H rules and Program organization. Program personnel also provided a presentation on NC oil and gas rules at Sanford Community College on March 27, 2015.

DEMLR has maintained its support of the Mining and Energy Commission and has continued taking a leading role in drafting oil and gas rules, as well as providing logistical and organizational support to the MEC.

DEMLR's Oil and Gas Program continues to assist the North Carolina Geological Survey (NCGS) in assessing hydrocarbon potential and has helped with rock sample processing, data compilation and plotting, and the technical review of professional conference posters. Additionally, staff teamed with the NCGS to set up an informational booth to provide scientific information on North Carolina resources and to network with industry professionals during the North American Prospect Expo (NAPE) in Houston, TX from February 10-13, 2015 and during the Annual Property and Prospect Expo (APPEX) in London, UK from March 2-5, 2015. Various oil and gas company representatives attending NAPE and APPEX expressed serious interest in developing a consortium with the State of North Carolina to further evaluate the state's hydrocarbon resources. The development of a joint state-industry partnership is consistent with the Governor's proposed budget for fiscal year 2016.

Oil and Gas Program personnel have also been working with the NC Geological Survey, the American Association of Petroleum Geologists, the American Petroleum Institute, and other professional organizations to receive cost-effective, in-house continuing education. These instructional sessions have helped staff to become more technically proficient and have covered topics such as shale lithology, thermal maturity of hydrocarbon-bearing rocks, hydrocarbon fluid migration, well site cementing calculations, and well site safety. Additionally, Oil and Gas personnel received formal training through DEMLR and the Water Resources Research Institute of the University of North Carolina System (WRRRI) on sedimentation and erosion control practices and rules on February 11-12 and again on March 10, 2015.

Finally, DEMLR's Oil and Gas Program hired Mr. Chandler Warner, EI to fill the role of Program Engineer. Mr. Warner is successfully working toward PE licensure and has prior experience with construction site management and with DENR's Public Water Supply Section.

Additional information about the MEC, including agendas, meeting minutes and audio recordings of meetings, can be found at the Commission's website:

<http://portal.ncdenr.org/web/mining-and-energy-commission/>. The Department continues to manage this website and share information about the activities of the MEC with the public. The website lists meeting agendas, meeting minutes, PowerPoint presentations from meetings, contact information for MEC members, and other information. A listserv is also available for individuals who would like to receive updates on the MEC and changes to the website. To sign up for the listserv, visit <http://lists.ncmail.net/mailman/listinfo/denr.shale.gas>.

Figure 1 reflects current committee and study group members, as well as primary staff contacts for each committee and study group.

Committee	Chair/Vice Chair	Other Members	Primary DENR Staff
Mining	Tex Gilmore	George Howard, Amy Pickle, Dr. Marva Price, E.O. Ferrell, Dr. Robert Mensah-Biney, Dr. Ray Covington	Janet Boyer
Civil Penalty Remissions	Charlotte Mitchell	Jane Lewis-Raymond, Jim Womack, Charles Taylor, Dr. Robert Mensah-Biney	Walt Haven
Environmental Standards	E.O. Ferrell	George Howard, Dr. Matt Matthews, Charlotte Mitchell, Amy Pickle	Chandler Warner (Walt Haven)
Water & Waste Management	Dr. Vikram Rao, Charlotte Mitchell	Dr. Kenneth Taylor Amy Pickle Ivan "Tex" Gilmore	Katherine Marciniak
Administration of Oil & Gas	Jane Lewis-Raymond	Dr. Vikram Rao, E.O. Ferrell, Dr. Ray Covington, Dr. Kenneth Taylor, Ivan "Tex" Gilmore	Ryan Channell (Walt Haven)
Rules	Amy Pickle	Charlotte Mitchell, George Howard, Dr. Vikram Rao, Jane Lewis-Raymond	Robert Josey (Walt Haven)
Petition	Amy Pickle	Jane Lewis-Raymond E.O. Ferrell	Robert Josey (Walt Haven)
Study Group	Director	Other Members	Primary DENR Staff
Funding Levels & Potential Funding Sources	Jane Lewis-Raymond	Jim Womack, Dr. Vikram Rao, George Howard	Walt Haven (Katherine Marciniak)
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Protection of Trade Secrets & Proprietary Information	Jim Womack	Amy Pickle, Jane Lewis-Raymond	Ryan Channell
Midstream Infrastructure	Jim Womack, Jane Lewis-Raymond	Dr. Kenneth Taylor, Dr. Matt Matthews Dr. Ray Covington	Chandler Warner
Landman Registry	Dr. Ray Covington	James Womack, George Howard, Charlotte Mitchell, Charles Taylor Dr. Karen Glaser	Katherine Marciniak

Figure 1. Commissioner responsibility and primary staff assignments.



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

MEMORANDUM

TO: ENVIRONMENTAL REVIEW COMMISSION
The Honorable Brent Jackson, Chairman
The Honorable Mike Hager, Co-Chairman

JOINT LEGISLATIVE COMMISSION ON ENERGY POLICY
The Honorable Bob Rucho, Co-Chairman
The Honorable Mike Hager, Co-Chairman

FROM: Dr. Vikram Rao
Chairman of the North Carolina Mining and Energy Commission

Tracy Davis
Director of the Division of Energy, Mineral, and Land Resources

SUBJECT: Quarterly Report on Activities Conducted Pursuant to S.L. 2012-143

DATE: July 1, 2015

Pursuant to Session Law 2012-143, the North Carolina Mining and Energy Commission and the Division of Energy, Mineral, and Land Resources shall submit to the Environmental Review Commission and the Joint Legislative Commission on Energy Policy a report on activities conducted and progress made on a quarterly basis. Please consider the Quarterly Report on Activities Conducted Pursuant to S.L. 2012-143 attached as the formal submission of this report.

If you have any questions or need additional information, please contact me by phone at (919) 707-9201 or via e-mail at Tracy.Davis@ncdenr.gov.

cc: Tom Reeder, Assistant Secretary for the Environment
Matthew Dockham, Director of Legislative Affairs
Brad Knott, Deputy Director of Legislative Affairs
Tracy Davis, Director, Division of Energy, Mineral, and Land Resources
Brad Atkinson, Energy Section Chief, Division of Energy, Mineral, and Land Resources
Walt Haven, Oil and Gas Management Program Supervisor

N.C. Mining and Energy Commission
And Department of Environment and Natural Resources
Quarterly Report on Activities Conducted Pursuant to S.L. 2012-143
To the Joint Legislative Commission on Energy Policy
And the Environmental Review Commission
July 1, 2015

Session Law 2012-143, the Clean Energy and Economic Security Act, was ratified on July 2, 2012 and reconstituted the North Carolina Mining Commission as the North Carolina Mining and Energy Commission. The Act directs the Mining and Energy Commission (MEC) 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 involved for that purpose. The Act directs the Commission to submit quarterly written reports on the Commission's operation, activities, programs, and progress to the Joint Legislative Commission on Energy Policy and the Environmental Review Commission (Section 1.(h)). The Department is also required to report on the progress in developing and adopting the rules required to be adopted by S.L. 2012-143. The quarterly reports shall include recommendations on changes required to existing rules and statutes and any other findings or recommendations necessary for the implementation of the Act (Section 2.(m)). This report satisfies both of these reporting requirements for the April through June 2015 timeframe.

Activities for each of the MEC Committees for this quarter are summarized below:

The **Administration of Oil and Gas Committee** did not meet during this quarter.

The **Water and Waste Management Committee** did not meet during this quarter.

The **Rules Committee** did not meet during this quarter.

The **Mining Committee** did not meet during this quarter.

The **Petition for Rulemaking Committee** did not meet during this quarter.

The **Environmental Standards Committee** met on April 23, 2015 and received presentations from DENR's Division of Air Quality (DAQ) regarding federal air quality regulations, current North Carolina air quality rules, and comparisons of equivalent rules from other states.

The Environmental Standards Committee met again on May 15, 2015 and evaluated all information it had received since January 2015, related to potential air quality impacts from oil and gas development activities. Committee members worked toward developing findings and recommendations for the MEC to consider.

The final meeting of the Environmental Standards Committee occurred on May 22, 2015, wherein Committee members developed the following recommendations for MEC consideration. Each task item that the Committee researched is underlined, with respective recommendations shown in italics:

- Applicability of federal law to air emissions in NC, with specific consideration of wildcatter exemptions and potential exploitation of "legal loopholes" related to such exemptions by operators.

- *Committee Recommendation: Amend the 15A NCAC 05H rules to include definitions of “wildcat” and “delineation well” and also amend the rules to clarify that these wells would not carry such classification once they become operational.*
- Overlap of federal and state authority in other states regarding air emissions and monitoring.
 - *Committee Recommendation: The MEC should establish an Air Quality Committee as a standing committee, which would have responsibility for air quality issues pertaining to the oil and gas industry in NC.*
 - *Committee Recommendation: DAQ should provide updates to the Air Quality Committee on an as-needed basis, but no less frequently than yearly with regard to the evolving air quality standards at the federal level and within other state government levels.*
- Review of NC’s existing air quality regulatory framework for a more detailed analysis as to how the framework applies to oil and gas operations.
 - *Committee Recommendation: The MEC establish an Air Quality Committee as a standing committee, which would have responsibility for air quality issues pertaining to the oil and gas industry in NC.*
- Review of NC’s regulatory framework for addressing both cumulative and episodic impacts to air quality resulting from oil or gas industry activities.
 - *Committee Recommendation: The Air Quality Committee should develop a strategy to address regulatory and enforcement issues associated with negative short term and cumulative air quality events associated with oil and gas operations are captured and adequately addressed.*
- Assessment of air monitoring procedures to determine at what point in the development process monitoring should occur (i.e. before, during, or after oil and gas activities).
 - *Committee Recommendation: The Air Quality Committee should focus on loss detection and reduction (LDAR) of fugitive emissions, including the development of a robust leak detection program that would be beneficial to air quality and would be cost effective for operators. The Environmental Standards Committee acknowledges that EPA is in the process of promulgating a rule to be proposed later this year, which should be considered when developing any leak detection program in NC.*
- Innovative technologies to reduce air emissions.
 - *Committee Recommendation: The Air Quality Committee should investigate measures to mitigate NOx and PM 2.5 emissions through regulatory incentives or directions to the appropriate legal authority.*

- DAQ's ambient air monitoring program and the sufficiency of the program
 - *The Environmental Standards Committee recognizes that DAQ's current program is comprehensive. No recommendation was developed.*
- Best practices for emission monitoring and control across the country, especially as related to fence line monitoring
 - *Committee Recommendation: The Air Quality Committee should have a point of emphasis on fence line monitoring and enabling technological advances. The Committee recognizes that no state is presently requiring fence line monitoring.*
- Incentive opportunities (i.e. shorter permit application process) for using Best Available Control Technologies and other procedures to reduce emissions
 - *Committee Recommendation: The Committee did not learn of viable examples of this. This topic should continue to be monitored for potential opportunities.*
- Potential impacts of air emissions based on the source(s) of the emissions
 - *Committee Recommendation: DAQ should continue its efforts with updated data and improved knowledge as such data and knowledge become available and are applicable to NC.*
- Current MEC rules and the impact of 15A NCAC 05H rule implementation on air emissions (i.e. piping water to reduce truck trips and respective emissions)
 - *Committee Recommendation: The Air Quality Committee should be apprised of developing knowledge regarding the use of pits versus tanks and the emissions impact of each and initiate action as indicated.*
- Determination of rulemaking or other recommendations that should be provided to the EMC through the MEC
 - *Committee Recommendation: the Air Quality Committee should regularly assess the appropriateness of MEC guidance to the EMC.*
 - *Committee Recommendation: The Air Quality Committee should conduct an on-going review of data on the public health impacts associated with the air emissions from the oil and gas industry to inform the Committee's actions.*

Mining and Energy Commission activities for this quarter are summarized below:

The Mining and Energy Commission held three meetings during this quarter. During the April 23, 2015 meeting, the Commission met in closed session to discuss attorney-client privileged information related to the legal matter in Haw River Assembly v. Rao et al., 15 CVS 000127.

The Mining and Energy Commission met again on May 22, 2015, wherein the MEC voted to accept the recommendations presented by the Environmental Standards Committee and to

pass them to the succeeding Oil and Gas Commission (OGC). Commissioners also received a presentation from DEMLR Oil and Gas Program staff on the functional use and regulatory requirements of storage pits and tanks in oil and gas producing states. MEC members agreed that the succeeding OGC should continue to evaluate best management practices for pits and tanks and develop respective rule modifications as needed.

The Mining and Energy Commission held its final meeting on June 26, 2015. Commissioners agreed to pass along the recommendations from the Environmental Standards Committee regarding air quality matters. Additionally, the MEC developed the following suggestions for OGC consideration:

- Suggest that the OGC review information regarding pits and tanks that had been previously provided by DEMLR to the MEC;
- Suggest that the OGC continue to research setbacks and to modify respective rules as needed;
- Suggest that the OGC consider operational procedures for managing drilling unit requests and pooling orders, including associated forms and checklists, as developed by staff;
- Suggest that the OGC consider monitoring for seismic activity in the potential resource areas to establish baseline conditions prior to oil and gas well development;
- Suggest that the OGC consider sanctioning a pre-drilling baseline study of public health in areas potentially affected by oil and gas operations;
- Suggest that the OGC take the lead in developing standards and procedures to ensure that local emergency officials have the training and capacity to respond to emergencies related to oil and gas industry activity; and
- Suggest that the OGC refer to the MEC's Compulsory Pooling Study Group Report and the Landman Study Group Report to ensure that respective OGC rules are protective of the public.

It was also agreed that staff would compile the following key applicable documents into an orientation and reference binder for the new OGC members, with the ability for staff to supplement these documents with additional documents as an appendix:

- Statutes
- Rules
- Bylaws
- Public Hearing Officers' Report on Initial Rule Bundle
- White Paper on Pits and Tanks
- Environmental Standards Committee's Recommendations on Air Quality Matters
- All Study Group Reports
- MEC Chairman Suggestions to OGC

Commissioners continued to participate in local and regional education and outreach programs, in addition to providing information briefings to the Legislature. Specific activities for this quarter included:

- April 12, 2015: Dr. Kenneth Taylor provided the presentation, "Understanding the Process of Fracking," as part of the Rothemel Lecture program in New Bern, NC;
- April 17, 2015: Dr. Vikram Rao presented "Innovating in a Low Price Environment" at the Coastal Carolina University's Natural Gas Symposium in Conway, SC;

- April 22, 2015: Dr. Kenneth Taylor presented a summary of the Bureau of Ocean Energy Management's (BOEM) 2011 Atlantic Outer Continental Shelf Assessment (OCS) and the 2014 Update to the Atlantic OCS Assessment during the 2015 State Energy Conference in Raleigh, NC;
- May 1, 2015: Dr. Ray Covington provided a presentation titled, "NC and Natural Gas Exploration.... What Does It Mean for Surveyors?" as part of a continuing education program for registered land surveyors in Asheboro, NC;
- May 16, 2015: Ms. Charlotte Mitchell provided a presentation on NC oil and gas legislation, rule development, and regulatory oversight during the Environmental, Energy and Natural Resources Lawyers Annual Meeting in Atlantic Beach, NC;
- May 16, 2015: Dr. Kenneth Taylor provided a presentation titled, "Shale Gas 101: Natural Gas Exploration & Development: A North Carolina Perspective" during the Environmental, Energy and Natural Resources Lawyers Annual Meeting in Atlantic Beach, NC;
- May 26 – June 3, 2015: Dr. Kenneth Taylor oversaw core drilling, core logging, and core sampling activities to assess the geophysical anomaly known as the "Cumberland-Marlboro Basin" in Scotland, Cumberland, and Hoke Counties. He subsequently provided an information presentation to DENR management regarding the drilling project;
- June 11, 2015: Dr. Vikram Rao presented "Shale Oil and Gas: Current Realities" to the Greensboro Bar Association, Greensboro, NC;
- June 9 – 12, 2015: Dr. Kenneth Taylor reviewed, analyzed, and presented recommendations to DENR management on the Eastern North American Margin (ENAM) Project request for a geophysical permit to shoot a series of nine active source explosions to obtain seismic reflection data from a deep crustal structure beneath the surface of North Carolina and Virginia (not related to hydrocarbon resource evaluation); and
- June 22 and 29, 2015: Dr. Kenneth Taylor served as seismic agent for the State, in accordance with 15A NCAC 05C and observed the ENAM active seismic source explosions (not related to hydrocarbon resource evaluation).

DEMLR's Energy Section staff also participated in local and regional education and outreach programs. On April 22, 2015, DEMLR's Energy Section Chief provided a presentation on Midstream Gas Processing during the 2015 State Energy Conference in Raleigh, NC. Additionally, on May 1, 2015, staff provided presentations on North Carolina geology and onshore and offshore hydrocarbon resource potential to environmental health specialists throughout the state via the North Carolina State of Practice Training Program, in Morehead City. Staff also provided similar presentations to the North Carolina Energy Emergency Working Group and to the E4 Carolinas Emerging Leaders Program on May 5 and June 18, respectively.

DEMLR's Oil and Gas Program continues to assist the North Carolina Geological Survey (NCGS) in assessing hydrocarbon resource potential and has helped with rock sample processing, data compilation and plotting, and the technical review of professional conference posters. Additionally, staff teamed with the NCGS to assist with rock core drilling throughout the month of June 2015, to geologically assess an underground geophysical anomaly known as the "Cumberland Marlboro Basin." Oil and Gas Program personnel also assisted the NCGS with

core drilling through hydrocarbon-bearing shale, as well as through other strata in the Dan River geologic basin. Additionally, staff supported the NCGS by serving as “seismic monitors,” in accordance with 15A NCAC 05C, for the ENAM seismic testing (not related to hydrocarbon resource evaluation). Finally, Oil and Gas Program personnel have been assisting DEMLR’s Land Quality Section with sedimentation and erosion site inspections and plan reviews. Experience gained by working with these other DEMLR entities is directly relevant to the Oil and Gas Program and its implementation of NC’s 15A NCAC 05H rule set.

Oil and Gas Program personnel continue to work with the NC Geological Survey, the American Association of Petroleum Geologists, the American Petroleum Institute, and other professional organizations to receive cost-effective, in-house continuing education. These instructional sessions have helped staff to become more technically proficient and have covered topics such as hydrocarbon source and reservoir rocks, well site safety, well site construction practices, and geo-statistics.

DEMLR’s Oil and Gas Program promoted Ms. Katherine Marciniak, P.G. from the position of Environmental Senior Specialist into the position of Geologist/Hydrogeologist during June 2015. Ms. Marciniak has extensive experience developing oil and gas rules, leading environmental investigation and remediation projects, and has previously served as a sedimentation and erosion control inspector. Finally, the Oil and Gas Program is hosting three interns and has tasked them with researching regulatory standards in hydrocarbon-producing states and is also providing them with opportunities for professional education.

Additional information about the MEC, including agendas, meeting minutes and audio recordings of meetings, can be found at the Commission’s website: <http://portal.ncdenr.org/web/mining-and-energy-commission/>. The Department continues to manage this website and share information about the activities of the MEC with the public. The website lists meeting agendas, meeting minutes, PowerPoint presentations from meetings, contact information for MEC members, and other information. A listserv is also available for individuals who would like to receive updates on the MEC and changes to the website. To sign up for the listserv, visit <http://lists.ncmail.net/mailman/listinfo/denr.shale.gas>.

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Figure 1. Commissioner responsibility and primary staff assignments.

North Carolina Department of Environmental Quality

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

MEMORANDUM

TO: ENVIRONMENTAL REVIEW COMMISSION
The Honorable Brent Jackson, Chairman
The Honorable Mike Hager, Co-Chairman

JOINT LEGISLATIVE COMMISSION ON ENERGY POLICY
The Honorable Bob Rucho, Co-Chairman
The Honorable Mike Hager, Co-Chairman

FROM: 
Dr. Vikram Rao
Former Chairman of the North Carolina Mining and Energy Commission

Tracy Davis
Director of the Division of Energy, Mineral, and Land Resources

SUBJECT: Quarterly Report on Activities Conducted Pursuant to S.L. 2012-143

DATE: October 19, 2015

Pursuant to Session Law 2012-143, the North Carolina Mining and Energy Commission and the Division of Energy, Mineral, and Land Resources shall submit to the Environmental Review Commission and the Joint Legislative Commission on Energy Policy a report on activities conducted and progress made on a quarterly basis. Please consider the Quarterly Report on Activities Conducted Pursuant to S.L. 2012-143 attached as the formal submission of this report.

If you have any questions or need additional information, please contact me by phone at (919) 707-9201 or via e-mail at Tracy.Davis@ncdenr.gov.

cc: Tom Reeder, Assistant Secretary for the Environment
Matthew Dockham, Director of Legislative Affairs
Tracy Davis, Director, Division of Energy, Mineral, and Land Resources
Brad Atkinson, Energy Section Chief, Division of Energy, Mineral, and Land Resources
Walt Haven, Oil and Gas Management Program Supervisor

**N.C. Mining and Energy Commission
And Department of Environmental Quality
Quarterly Report on Activities Conducted Pursuant to S.L. 2012-143
To the Joint Legislative Commission on Energy Policy
And the Environmental Review Commission
October 1, 2015**

Session Law 2012-143, the Clean Energy and Economic Security Act, was ratified on July 2, 2012 and reconstituted the North Carolina Mining Commission as the North Carolina Mining and Energy Commission. The Act directs the Mining and Energy Commission (MEC) 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 involved for that purpose. The Act directs the Commission to submit quarterly written reports on the Commission's operation, activities, programs, and progress to the Joint Legislative Commission on Energy Policy and the Environmental Review Commission (Section 1.(h)). The Department is also required to report on the progress in developing and adopting the rules required to be adopted by S.L. 2012-143. The quarterly reports shall include recommendations on changes required to existing rules and statutes and any other findings or recommendations necessary for the implementation of the Act (Section 2.(m)). This report satisfies both of these reporting requirements for the July through September, 2015 timeframe.

Activities for each of the MEC Committees for this quarter are summarized below:

The **Administration of Oil and Gas Committee** did not meet during this quarter.

The **Water and Waste Management Committee** did not meet during this quarter.

The **Rules Committee** did not meet during this quarter.

The **Mining Committee** did not meet during this quarter.

The **Petition for Rulemaking Committee** did not meet during this quarter.

The **Environmental Standards Committee** did not meet during this quarter.

The **Mining and Energy Commission** did not meet during this quarter. Additionally, the MEC was decommissioned on July 31, 2015, in accordance with Session Law 2014-4, Section 4(b).

On May 2, 2015, in Wake County Superior Court, Judge Stephens issued an order in 15 CVS 000127, Haw River Assembly v. Rao et al., enjoining the MEC from accepting applications for drilling units. The order also stayed the Haw River Assembly case pending the Supreme Court of North Carolina's decision in McCrory v. Berger. As a result, permits for oil or gas well drilling cannot be issued by DEQ until after Haw River Assembly v. Rao is resolved.

DEMLR's Energy Section continues to participate in local and regional education and outreach. On August 24, 2015, Oil and Gas Program staff provided a presentation on North Carolina geology, resource potential, and the 15A NCAC 05H rules to the Cary Central Rotary Club. Additionally, the Energy Section Chief gave a presentation titled, "Oil and Gas Development in North Carolina" to the E4 Carolinas Emerging Leaders Program on August 26, 2015.

DEMLR's Oil and Gas Program continues to assist the North Carolina Geological Survey (NCGS) in assessing hydrocarbon resource potential and has helped with rock sample

processing, data compilation and plotting, and the technical review of professional conference posters. Staff also teamed with NCGS to set up a booth to advertise North Carolina resources and to network with industry professionals during the North American Prospect Expo in Houston, TX from August 18-21, 2015.

Oil and Gas Personnel also assisted DEMLR's Land Quality Section with reviewing construction site plans and performing site inspections to help assess compliance with North Carolina's erosion and sedimentation control statutes and rules. Engaging in this work is directly relevant to the program's oversight of future oil and gas operations, which will involve land disturbance activities, requiring erosion and sedimentation control plan approval and on-site inspections.

Oil and Gas Program personnel continue to work with the NC Geological Survey, the American Association of Petroleum Geologists, the American Petroleum Institute, and other professional organizations to receive cost-effective continuing education. These instructional sessions have helped staff become more technically proficient and have covered topics such as hydrocarbon source and reservoir rocks, well site safety, structural geology, advanced geo-statistics, and NC's resource rocks. Additionally, staff attended the Unconventional Resources Technology Conference in San Antonio (July 20-22) and the Interstate Oil and Gas Compact Commission's annual meeting in Oklahoma City (September 28-30). These professional events provided DEMLR personnel with formal instruction on hydraulic fracturing, micro-seismic monitoring, oil and gas production, water and waste management, and resource assessment. These gatherings also allowed staff the unique opportunity to exchange professional knowledge with industry scientists to discuss and market NC's resources as well as the opportunity to meet with oil and gas regulators from around the country to discuss industry specific regulations and critical topics.

The Oil and Gas Program has continued to host three interns and has tasked them with researching regulatory standards in hydrocarbon-producing states and is also providing them with opportunities for professional education.

DEMLR is working with the Department to complete a large-scale website migration project. As a result of this work, as well as the decommissioning of the MEC, many of the Commission's webpages have been archived and will be made available through a "drop box" internet portal. However, overall information regarding the Oil and Gas Program and 15A NCAC 05H may still be found here: <http://portal.ncdenr.org/web/mining-and-energy-commission/>. Additionally, the Department continues to share information with the public and will be developing new websites to service the (future) Oil and Gas Commission. Finally, the listserv is still being maintained and remains available for individuals who would like to receive updates. To sign up for the listserv, visit <http://lists.ncmail.net/mailman/listinfo/denr.shale.gas>.