

**HEARING OFFICER'S REPORT
To the Environmental Management Commission**

**Proposed Stormwater Management Rule
Proposed Waste Not Discharged to Surface Waters Permitting By Regulation Rule Revisions
Proposed Closed-Loop Recycle Systems Rule Revisions
Proposed Soil Remediation Rule Revisions
Proposed Reclaimed Water Permitting by Regulation Rule Revisions**

Adoption of 15A NCAC 02H .1030
Amendments to 15A NCAC 02T .0113
Amendments to 15A NCAC 02T .1001
Amendments to 15A NCAC 02T .1501
Amendments to 15A NCAC 02U .0113

November 2014

THIS PAGE BLANK

TABLE OF CONTENTS

PAGE

INTRODUCTION

A-4

The Public Hearing and Hearing Officer’s Report	A-4
Purpose and Scope of the Proposed Stormwater Management Rule (15A NCAC 02H .1030)	A-4
Purpose and Scope of the Waste Not Discharged to Surface Water Rule (15A NCAC 02T) Revisions	A-5
Purpose and Scope of the Reclaimed Water Rule (15A NCAC 02U) Revisions	A-6
Schedule Going Forward	A-6

CONCLUSIONS AND RECOMMENDATIONS

A-7

Public Concerns Identified in the Hearing and Public Comment Period	A-7
Recommendations on the 2H Stormwater Management Rule	A-7
Recommendations on the 2T and 2U Rule Revisions	A-17
Air Quality Concerns	A-23
Solid Waste Concerns	A-25
Record of Comments Not Actionable in the Rules under Consideration	A-26

APPENDIX A, Text of Proposed Revisions to the Draft Water Quality Rules

A-28

Proposed Stormwater Management Rule, 15A NCAC 02H .1030	A-29
Proposed 15A NCAC 02T .0113	A-35
Proposed 15A NCAC 02T .1001	A-37
Proposed 15A NCAC 02T .1501	A-38
Proposed 15A NCAC 02U .0113	A-39

APPENDIX B, Public Comments

A-41

Written Public Comments Received During the Public Comment Period	A-42
Staff Paraphrasing of Oral Comments at the Public Hearing	A-108

INTRODUCTION

The Public Hearing and Hearing Officer's Report

The Environmental Management Commission (EMC) conducted a Public Hearing on July 1, 2014 at the Dennis A. Wicker Civic Center in Sanford, North Carolina for the purpose of inviting public comment on the proposed adoption and revisions to water quality rules published in draft form in the North Carolina Register on June 2, 2014. The proposed new rule and rule amendments are in response to the General Assembly's directive in Session Law 2012-143 for the EMC to develop rules to regulate oil and gas exploration and development. Dr. Robert Rubin, Commissioner of the EMC served as the Hearing Officer.

The subjects of the Public Hearing included a proposed new rule for stormwater management that specifically addresses oil and gas exploration, development, and production activities, **15A NCAC 02H .1030**, as well as the proposed minor revisions to four existing water quality rules necessary to regulate horizontal drilling and hydraulic fracturing, **15A NCAC 02T .0113**, **.1001**, **.1501**, and **15A NCAC 02U .0113**. These five rules are the full extent of the EMC's water quality rule making for the oil and gas industry.

Approximately 80 citizens attended the Public Hearing. Fifteen citizens spoke at the Public Hearing, and 20 citizens or organizations submitted written comments during the public comment period, which extended from the date of the Public Hearing until Friday, August 1, 2014. Ten speakers at the Public Hearing later submitted written comments. One set of written comments were received on August 2, 2014, and were considered in this report.

This Hearing Officer's Report summarizes the verbal and written comments received, responds to them, and provides recommendations to the EMC for the final form of the proposed rules. The Hearing Officer and staff from the Division of Water Resources and from the Division of Energy, Mineral, and Land Resources met in August, September, and October in order to consider the public comments received and to prepare this report.

Purpose and Scope of the Proposed Stormwater Management Rule (15A NCAC 02H .1030)

The purpose of the stormwater management rule is to protect surface waters from pollutants potentially transported by stormwater runoff from oil and gas sites. Stormwater from oil and gas exploration, development, and production is currently exempted from federal NPDES stormwater permitting requirements, except after the release of a reportable quantity or a violation of water quality standards. The 2012 report by the State Review of Oil and Natural Gas Environmental Regulations, Inc. (STRONGER) recommended adoption of additional standards to address gaps in the state's existing stormwater program to ensure that stormwater from all phases of site development and all potential pollutants from oil and gas sites are addressed. DENR's May 1, 2012 *North Carolina Oil and Gas Study* reached a similar conclusion.

The proposed rule **15A NCAC 02H .1030** establishes new industry-specific requirements for a permitting program for oil and gas sites, while relying on the already existing structure found in the pre-existing portions of the 02H .1000 rules, generally referred to as the 'State Stormwater Rules' or 'Coastal Stormwater Rules', as distinct from the federal NPDES industrial stormwater rules. The Division anticipates that the stormwater management requirements in the proposed Rule will be implemented within a comprehensive Oil or Gas Well Permit that also contains requirements from other regulatory programs.

Purpose and Scope of the Waste Not Discharged to Surface Waters Rule (15A NCAC 02T) Revisions

Also known as the “non-discharge” rules, 15A NCAC 02T established administrative code for wastewater and wastewater residuals management systems that dispose of or beneficially reuse waste to the land surface. Revisions are proposed to clarify its scope and applicability to waste management practices associated with oil and gas exploration and production.

Rule 15A NCAC 02T .0113 provides for permitting by regulation for land application of a number of wastewaters or residuals that the EMC has deemed individual or general permits unnecessary. One of the activities permitted by regulation under this rule, in 15A NCAC 02T .0113(a)(10), is for on-site spreading of “drilling muds, cuttings, and well water from the development of wells or from other construction activities including directional boring.” This rule language was written well before the recent interest in shale gas development and was intended to address wastes generated from water well construction and shallow directional borings for utility line installation, which are much smaller in volume, and have different characteristics, than oil and gas well drilling wastes. Other land-based disposal methods, such as recycling, disposal in lined landfills, or use as daily cover in lined landfills are allowed in North Carolina and may be appropriate for disposal of rock cuttings from oil and gas drilling operations. In order to ensure that these wastes are not spread at land surface without appropriate oversight, the EMC proposes to update and clarify this rule to retain the existing permit by regulation except in the case of wastes generated from oil and gas wells subject to permitting by the Mining and Energy Commission.

Rule 15A NCAC 02T .1001 defines the scope and applicability of a section of regulations pertaining to “closed-loop recycle systems,” which recycle wastewater repeatedly through the process in which the waste was generated. This rule is not intended to address recycling of wastewaters in ways that the wastewater is introduced into the environment, such as the reuse or recirculation of wastewaters or drilling fluids generated from oil and gas exploration or production. However, oil and gas exploration and production often utilizes drilling fluid management systems which recirculate drilling fluids repeatedly within a single drilling operation or from one drilling operation to another. These drilling fluid systems are commonly called “closed loop systems.” In addition, modern hydraulic fracturing operations often recycle wastewaters produced by oil or gas production as source fluids for hydraulic fracturing. In each of these cases, there is the potential that the regulated community or general public may misunderstand the applicability of Rule 15A NCAC 02T .1001. The EMC therefore proposes to clarify that reuse or recirculation of drilling fluids or flowback water from oil and gas operations is not a closed-loop recycle system, since the fluid is re-introduced into the subsurface. Moreover, drilling fluids used in oil and gas exploration activities are subject to the regulations of the Mining and Energy Commission.

Rule 15A NCAC 02T .1501 defines the scope and applicability of a section of regulations pertaining to remediation of petroleum contaminated soils, by spreading such soils on the surface of the land, allowing petroleum contaminants to volatilize from the soil. During the review of existing regulations conducted following passage of S.L. 2012-143, DWR and Division of Waste Management staff identified this rule as having the potential to be misinterpreted or misapplied to rock cuttings derived from oil and gas exploration and development. Rock cuttings from oil and gas exploration and development may be coated by naturally-occurring oil or other hydrocarbons or oil from oil-based drilling muds, and so might be considered “petroleum-contaminated.” However, rock cuttings are not soil. In addition, rock cuttings from oil and gas drilling are not appropriate for disposal using the same practices as are covered by this rule. Rock cuttings from oil and gas drilling are obtained from deep underground formations which have not been exposed to air and so may contain sulfide minerals which would release sulfuric acid and metals when exposed to air at the land surface, issues not encountered with soils obtained from shallow excavations associated with remediation of petroleum leaks and spills. Disposal of such materials by land-spreading under the requirements this rule and others in Section 15A NCAC 02T .1500 may lead to runoff of acidic,

metal-laden drainage waters. Other land-based disposal methods, such as recycling, disposal in lined landfills, or use as daily cover in lined landfills are allowed in North Carolina and may be appropriate for disposal of rock cuttings from oil and gas drilling operations. Disposal of cuttings from oil and gas drilling under this section would not be in the public interest, but the public interest is served by other more appropriate avenues for disposal of these materials. The purpose of the proposed amendment to 15A NCAC 02T .1501 clarifies that rock cuttings from oil and gas drilling operations are not intended to be disposed of under Section 15A NCAC 02T .1500.

Purpose and Scope of the Reclaimed Water Rule (15A NCAC 02U) Revisions

Rule 15A NCAC 02U .0113 provides for permitting by regulation for beneficial reuse of wastewater (reclaimed water) for specific situations which the EMC has deemed individual or general permits unnecessary. The proposed amendment to this rule provides for permitting by regulation for beneficial reuse of wastewater generated from oil and gas wells provided the use is in accordance with Mining and Energy Commission rules. The Mining and Energy Commission is developing rules which will require oil and gas exploration and production operations to have a waste management plan approved under rules of that commission. During its deliberations over the waste management plan rules, the Mining and Energy Commission has expressed its intent to encourage reuse of wastewaters produced from oil and gas exploration and production. The proposed revision to this rule harmonizes the EMC's rules with the intent of the Mining and Energy Commission by eliminating the need for a separate permit for reuse of wastewaters produced from oil and gas operations when such reuse is conducted in accordance with a waste management plan approved under the rules of the Mining and Energy Commission.

Schedule Going Forward

Session Law 2014-4 revised SL 2012-143 and directs the EMC to adopt the necessary rules by **January 1, 2015**. (An earlier deadline of October 1, 2014 had been established in SL 2012-143.) The EMC, MEC, and the Commission for Public Health are all subject to this deadline. Compliance with the statutory deadline depends on EMC action in the November 2014 meeting.

Note that the public comments received generated changes to the published draft Stormwater Management Rule. If the Rules Review Commission finds that the changes are sufficient to require another public notice and comment period, the EMC's promulgation of the final version of the Stormwater Management Rule may occur after January 1, 2015

CONCLUSIONS AND RECOMMENDATIONS

Summary of Public Concerns Identified in the Hearing and Public Comment Period

Commenters generally found the proposed new 02H stormwater management rule insufficiently protective of surface waters, and made comments on several aspects of the rule arguing for a broader scope of regulation, for more stringent controls, for provisions specifying rigorous agency oversight, and for improved enforceability. Commenters made relatively few comments on the revisions to the 02T and 02U rules. Generally their comments were in support of the 02T and 02U draft rule revisions.

Recommendations on the 2H Stormwater Management Rule.

Many commenters addressed the same provisions of the draft Stormwater Management Rule (**15A NCAC 02H .1030**) and offered very similar comments. Where possible without loss of meaningful content, this section presents a summary of the similar comments, and addresses them together. For each group of comments this report includes a recommendation to accept, accept in part, or reject the comment as a basis for changing the draft Stormwater Management Rule. References in this section to the Division mean the Division of Energy, Mineral, and Land Resources, the agency responsible for administration of the draft Stormwater Management Rule. The list of comments below generally follows the sequence of the text of the draft Stormwater Management Rule.

- 1) Comment: One commenter noted that while **2H .1030(a)(3)** authorizes the Division to permit stormwater-only discharges and explicitly does not authorize the Division to permit the discharge of stormwater commingled with any other fluids, the Rule should further establish that any such commingled discharge is a violation of the Rule. Also while acknowledging other existing authority, the commenter asserts that without a clear prohibition and statement of a violation in the Stormwater Management Rule itself, the Division's ability to effectively enforce good management of site stormwater is significantly hampered.
 - Recommendation: *No changes to the draft Rule are proposed on these points. As the commenter points out, existing statutory authority prohibiting any non-permitted discharge already exists in G.S. 143-215.1. Repeating the General Statute authority in the Rule does not add to effective program implementation.*

- 2) Comment: Continuing in **2H .1030(a)(3)**, four commenters advised that the draft Rule is too narrow in prohibiting the Division from permitting "...stormwater commingled with any other fluid", and that the draft Rule should be broadened by substituting the word "wastes" for "other fluid." Commenters also suggest that the revised text refer to the definition of waste in G.S. 143.213(18).
 - Recommendation: *Agree in part with this comment to the extent of referencing the broader prohibitions on discharges established in statute. Change the draft Rule at **2H .1030(a)(3)** as follows: **(a)(3) "This Rule authorizes the Division to issue a stormwater-only permit. The Division shall not authorize by permit the discharge to surface waters of stormwater commingled with any other fluid. Any other discharge to surface waters is prohibited unless permitted in accordance with General Statute 143-215.1."** The cited General Statute specifically applies to the Stormwater Management rules*

(15A NCAC 02H .1000) established in other parts of the same General Statute Article 21. Article 21 also contains the requested definition of waste, and also the prohibition on discharges resulting in water pollution. The revised Rule text is not fully responsive to the commenter's objectives, but is consistent with the existing provisions of General Statute.

- 3) **Comment:** One commenter noted that applicable existing rule at **2H .1010(b)(4)** allows, but does not require, the Director to hold public meetings on any permit application to obtain additional information relative to the review of the application. Commenter suggests that given the intense interest of the immediate neighbors and local public, the Division should expand the draft Rule to require the Director to provide public notice and to accept public comment on pending stormwater permit applications under the existing authority of **2H .1010(b)(4)**.

- ***Recommendation:** Agree with a portion of this comment. Amend the draft Rule to allow, but not require, the Director to notice receipt of either a stormwater permit application or the stormwater management portions of the combined permit application, and to receive public comment, with or without the public meeting separately authorized under 2H .1010(b)(4). Add a new, renumbered item 2H .1030(b)(3). It seems reasonable to invest in the Director the discretionary authority to seek public comment on proposed stormwater control measures if he deems it necessary to carry out his responsibilities to protect surface waters.*

Note that draft MEC rules at 15A NCAC 05H .1201 and following provide public notice requirements for an application to the MEC for the creation or modification of a "drilling unit" which may contain multiple well pads, with each well pad potentially containing multiple wells. Once a drilling unit is created and permitted, the permittee may then apply for the comprehensive Oil or Gas Well Permit. The draft MEC rules do not provide for a public notice or comment period on each Oil or Gas Well Permit application, but only at the time of the creation or modification of a drilling unit. It is unlikely that a detailed site plan drawing of the many potential well pads within a drilling unit will be available at the time of approval of the drilling unit. MEC rules do not require such detail at that step in the permitting process.

The review of the stormwater management portion of the permit application will be coordinated with the reviews of the several other regulatory agencies to the extent possible in order to adhere to the overall timeframe for issuance of each comprehensive Oil or Gas Well Permit.

- 4) **Comment:** Two commenters note that **2H .1030(b)(4)(D)** requires that the permit application identify threatened and endangered species in the receiving water, but does not require any response from the permit applicant if T&E species are identified. Commenters noted the local presence of the Cape Fear shiner (USFWS Endangered) for example, and ask that the permittee be required to provide stormwater controls for the protection of any T&E species identified in the receiving water.

- ***Recommendation:** Agree with this comment. Revise the draft Rule at renumbered item 2H .1030(b)(5)(D) to establish that the applicant must*

propose how to address the protection of the T&E species from pollutants in site stormwater, and that the Division will evaluate the proposal and may accept the proposed measures, or may require other measures as part of the permit application review and approval process.

- 5) Comment: While using varying terminology, four commenters suggested that the draft Rule be amended to require the permittee to develop an analog of a Stormwater Pollution Prevention Plan similar to that required under the current NPDES industrial stormwater permitting program.

- *Recommendation: Agree with this comment and change the draft Rule to establish a requirement for an analog to the NPDES Stormwater Pollution Prevention Plan, proposed as the "Stormwater Management Plan" (SMP). Additionally, recommend that general requirements on the content of the SMP be added to the draft Rule at new item **2H.1030(b)(6)** as part of the permit application requirements. The Division may develop guidance to aid the permittees in developing effective SMPs.*

*Note that while the draft MEC rules at **15A NCAC 05H .1304** and **.1502** anticipate an SMP will be required under **15A NCAC 02H .1030**, the MEC rules do not provide the necessary requirements on the content of such a plan.*

- 6) Comment: Further with respect to the scope of a SMP, one commenter suggested that the draft Rule should be amended to achieve distributed and timed discharges via an area-wide management plan coordinated among several permittees and well sites.

- *Recommendation: No changes to the draft Rule are proposed on these points. Division staff advise that the coordination effort and uncertainty as to the effective legal mechanisms make this suggestion appear infeasible under their current understanding of the proposal. Further, it appears that the comment is at least partly concerned with potential flood control issues and the state does not have authority in this area. Flood control measures are the authority of local governments.*

- 7) Comment: Seven commenters agreed with the materials separation, segregation, and other management measure requirements during well pad construction in **2H.1030(c)(1)** and **(c)(2)**, but recommended that they should be extended beyond just the well pad construction phase and into all subsequent phases of the site activity. In addition to presenting stormwater risks in and of themselves, these materials may become contaminated by toxic or hazardous materials during the more intense site operations, and commenters suggest that the Rule should address the stormwater risks during those phases as well.

- *Recommendation: Agree with this comment. Propose an additional new section, **2H.1030(c)(4)(F)** to establish that all the stormwater management measures identified for initial site construction in **2H.1030(c)(1)** and **(2)** pertain to all subsequent phases of site operation. This is a reasonable alternative for continuing surface water protection at these facilities and is a logical extension of the proposed requirements.*

- 8) **Comment:** One commenter advised that the draft Rule should be amended at **2H .1030(c)(1)** to expand the separation requirements to require a minimum distance of undisturbed buffer between all construction activity and surface waters.
- *Recommendation: No changes to the draft Rule are proposed on these points. The Division notes that this type of separation criterion has been included as part of the site location criteria developed under other rules of the Mining and Energy Commission. Note that the MEC draft rule **15A NCAC 05H .1601(a)(3)** provides for: a 100' separation between intermittent streams and the nearest operating element within the well pad (pit, tank, well head, equipment battery, etc.); and a 200' separation from other surface waters. Generally we agree that establishing a separation distance from surface water works to reduce the risk of stormwater pollution in the receiving water.*
- 9) **Comment:** One commenter advised that the timing of ground stabilization cover requirements in **2H .1030(c)(2)(B)** (seven days for perimeter disturbed areas and steep slopes; fourteen days for other areas and slopes) should be made more protective of surface waters by reducing the allowable lag time for effective ground cover. Commenter suggests adoption of the recommendations from the July 2014, Maryland Department of Environment, *Marcellus Shale Safe Drilling Initiative Study*, of three days and seven days for both the perimeter disturbed areas and steep slopes, and other areas, respectively.
- *Recommendation: No changes to the draft Rule are proposed based on these points. The seven days and fourteen days proposed in the draft Rule are parallel to the ground cover requirements already existing in the Division's Construction Stormwater General Permit, NCG010000. During the period of site grading a typical well pad site strongly resembles a construction site in the clearing and grading phase. The similarity in requirements seems appropriate for the similar risks from stormwater transport of sediment during the construction phase at the oil and gas locations. Further, Division staff have the authority to require additional control measures if site inspections indicate that problems are occurring at a permitted site.*
- 10) **Comment:** Continuing in **2H .1030(c)(2)**, the same commenter notes that the draft Rule establishes authority for the Division to grant or withhold time extensions for the stabilization of disturbed areas. Based on impending bad weather the commenter urges that the Rule should also establish the Division's authority to shorten the cover period lag time, or to delay the start of construction activities on the same basis.
- *Recommendation: It is doubtful that the Division could effectively and even-handedly communicate such a restriction among multiple sites that might be within the forecasted area of intense weather, given the relatively short lead time that might precede intense weather events. While the concerns of the commenter are noted, it does not appear that a specific and feasible Rule requirement can be developed for this concern.*

*However, please note that recommended revisions to the draft Rule at **2H .1030(b)(6)** include the implementation of a Stormwater Management Plan,*

one element of which must address the permittee's advance preparations and subsequent response actions for large or intense rain events.

11) Comment: One commenter asserted that sediment has been a major source of surface water pollution from oil and gas sites, and recommended additional regulation of how much land area can be disturbed at any one time, in order to better control sediment discharges.

- Recommendation: *No changes to the draft Rule are proposed on these points. Other regulations addressing sediment from construction sites already exist. Additional provisions in this Rule are not required.*

12) Comment: One commenter urged the Commission to retain the provision in **2H .1030(c)(3)** establishing that the Division shall require a written certification that the facility was constructed in conformity with the approved plans, and that the Division may inspect the facility before accepting the written certification. Commenter further recommended that the Commission revise the draft Rule to specifically require that the Division will inspect the built, but not-yet-operating, facility prior to mobilization to the site of any materials or equipment in support of subsurface activity.

- Recommendation: *Agree with this comment in part, and change the draft Rule at **2H .1030(c)(3)** to provide that:*
 - *the permittee must deliver the designer's certification that the stormwater management system and BMPs were installed in accordance with the permit seventy-two hours before spudding the well rather than before mobilization to the site;*
 - *the Division's acceptance of the certification is dependent on a favorable inspection of the stormwater control measures;*
 - *the permittee may not proceed to spud the well without the Division's written acceptance of the stormwater control measures;*
 - *but that the Division's failure to respond to the certification within seventy-two hours releases the permittee to proceed with spudding the well.*

The objective of the stormwater system inspection is to alert the permittee to defects in the stormwater management system and BMPs so that the defects might be immediately corrected prior to the intense well drilling and development phase. "Spudding the well" is defined in draft MEC rules and essentially identifies the act of breaking the surface with the drill bit.

13) Comment: Nine commenters objected to the proposed 1" design storm option in **2H .1030(c)(4)(A)** as being insufficiently protective, and one commenter recommended instead a 25-year rainfall event (or approximately 6" in the counties immediately west of Raleigh.) Several commenters suggested a zero-discharge model in which no rainwater from the well pad could be discharged. Commenters recommending the zero-discharge model were concerned that stormwater on the well pad will unavoidably become commingled with waste materials, and should not be discharged (except, as recommended by some commenters upon analytical testing showing no pollution.) In relation to the P90 design basis option also offered in **2H .1030(c)(4)(A)**, one commenter observed that while his environmental advocacy organization generally supports that approach because it encourages the use of infiltration BMPs and hydrologic matching of pre-existing conditions,

for this industry they oppose the P90 approach because infiltration BMPs at these highly polluted sites could drive known and unknown pollutants into the soil and groundwater. Another commenter faulted the hydrologic matching design basis for being concerned with the volume of stormwater, but not speaking to the pollutant content of the stormwater.

- *Recommendation: As published, the draft Rule offered the option of sizing structural BMPs either to control and treat the 1" rainfall, or to control and treat the difference between pre-construction and post construction runoff under the 90th percentile storm event (hydrologic matching of the P90 storm event). The P90 rainfall event in the counties immediately west of Raleigh is approximately 1.5".*

With respect to the proposal that no stormwater at all should be discharged from the well pad (the zero-discharge model), where the permittee's operating procedures can accomplish zero discharge, that's a good result. However, it's not certain that all or any operators could accomplish a zero discharge operation. As to commingling of stormwater and waste materials, the EMC's draft Rule already only authorizes permitting of stormwater-only flows in 15A NCAC 02H .1030(a)(3). As published, the MEC's draft Rule at 15A NCAC 05H .1502(g) provides that the well pad will be designed and constructed to prevent spills or releases of any substance from escaping the well pad. Consider that the goal in other stormwater regulatory programs is not to prohibit the discharge of stormwater, but to control the discharge volume so as to mitigate damage in the receiving waters due to high flows from increased runoff from the permittee's site, and to provide treatment to remove pollutants from the stormwater flow and improve water quality in the receiving stream.

With respect to the comment that this Rule should not encourage infiltration BMPs via the P90 approach as presented, the Division does not have sufficient information to concur with a blanket prohibition of stormwater infiltration practices specifically targeting this industry. However, caution is indicated by acknowledging that our experience with the industry is limited at this time. We propose to remove the reference to the P90 hydrologic matching approach in the Rule.

With respect to the comments suggesting that a 1" design rainfall is not sufficiently protective: several other current programs under the 15A NCAC 02H .1000 rules establish that the 1" rain is the design basis that pertains across the state, other than to the especially protected categories of coastal waters and shell fishing waters. With some variability and conditions, in those more sensitive waters the 1½" rainfall event is included as part of the regulatory design basis for stormwater control.

We note that the design criteria option of the 1" rainfall or the P90 rainfall provided in the draft form of 15A NCAC 02H .1030(c)(4)(A) are not the only numerical criteria established in the draft Rule. In addition, 15A NCAC 02H .1030(c)(4)(B) requires that stormwater control measures shall have a discharge rate less than or equal to the peak pre-development discharge rate for the 1-year, 24 hour storm. In the counties immediately west of Raleigh the 1-year, 24-hour storm is approximately 3".

Considering all the comments reported above, this report recommends that the Commission revise the draft Rule to establish the P90 rainfall as the design basis, but not as part of a hydrologic matching approach. The P90 value represents controlling and treating the rainfall from 90% of all storm events. The P90 is approximately 1.5" for the counties immediately west of Raleigh. Typically, when storms greater than the BMP design basis occur, stormwater BMPs function in either of two operating modes. In one mode the BMP is overloaded, but still partially functioning on the whole of the flow (a 'flow-through' BMP). In another common mode, the incremental fraction of the storm bypasses the BMP, but the full design portion of the flow is still fully treated in the BMP (a 'bypass' BMP). In either mode significant treatment is provided even during many storms that exceed the design basis.

- 14) ***Comment:*** Two commenters recommend expanding the use of the 1" rainfall design basis in ***2H.1030(c)(4)(A)*** so that the Rule will require, or at least encourage, on-site reuse of the first 1" of rain. Commenters envision environmental stewardship benefits in that reuse would both reduce the fresh water demand, and would reduce the amount of stormwater eventually discharged.
- ***Recommendation:*** No changes are proposed to the draft Rule on these points. Presumably using the first 1" of rain might only be feasible during the drilling and hydraulic fracturing phase of well pad activity, but not during the initial grading phase, nor during the final production phase, neither of which require a water supply. Even during the drilling and hydraulic fracturing phase whether the operator's momentary water demand could be correlated with a recent rainfall seems uncertain. When the use of accumulated rain is feasible the existing rules would allow it without specifically requiring it in this Rule. The Commission and Division encourage the use of stormwater runoff where that approach is applicable. The Rule does not prohibit the use of accumulated rainfall.
- 15) ***Comment:*** One commenter asked if a maximum ***TSS discharge limit per storm event*** should be imposed instead of the ***85% average annual TSS removal*** requirement referenced in ***2H.1030(c)(4)(D)***. Commenter observed that a single heavy event could adversely impact the receiving waters, and implied that a per-event discharge limitation might work to drive the design of stormwater control practices to prevent such a single adverse impact.
- ***Recommendation:*** No changes to the draft Rule are proposed on these points. The Division has developed the draft Rule for oil and gas sites around the State Stormwater Management regulatory model already established in the ***02H.1000*** rules, and which requires installation of structural BMPs designed in accordance with established design criteria. An alternative regulatory model would be the NPDES industrial stormwater model, where surface water protection is typically achieved, in part, through periodic analytical monitoring of stormwater discharges over extended periods of time. In the case of oil and gas sites both the initial grading phase and the drilling and well stimulation phase are of such comparatively short duration that periodic monitoring seems inappropriate.

16) **Comment:** One commenter suggests that stormwater in stormwater impoundments should be tested before release if a required inspection indicates that the impoundment also contains runoff from the well pad.

- ***Recommendation:** No changes to the draft Rule are proposed on these points. Note that stormwater treatment measures designed in accordance with **15A NCAC 02H .1030**, and with the other standards in **Section 02H .1000** are already required under the draft Rule. Additionally, a discharge of stormwater commingled with any waste material constitutes a violation of General Statute. The Division would prefer to establish that a commingled discharge is not permitted and is a violation of General Statute: not that it might be tested and then allowed to be discharged under the stormwater permit.*

17) **Comment:** Two commenters observed that the requirement for an underflow baffle on all stormwater BMPs in 2H .1030(c)(4)(E) is inadequate by itself, and that the draft Rule should be revised to also require skimming of ponds. Commenter further notes that the provision for an underflow baffle does not address water-soluble pollutants.

- ***Recommendation:** No changes to the draft Rule are proposed on these points. The underflow baffle is intended to address the possibility of hydrocarbons or other floatables in the stormwater. We note that although underflow baffles are fairly common practice, the broad requirement for an underflow baffle is not a standard requirement in any other stormwater management program. Additionally, removal of any hydrocarbons accumulated on the water surface is addressed with the addition of the requirement for regular maintenance of BMPs under the SMP. While it is uncertain what amount of hydrocarbons will be entrained in the stormwater, unless and until experience with the permitted sites establishes that stormwater will contain a significant floating layer of hydrocarbons, Division staff advise that the underflow baffle and the requirement for BMP maintenance together are a sufficient treatment approach.*

It is correct to observe that an underflow baffle is not designed to remove soluble pollutants. However, the addition of the underflow baffle is intended to address only floatable pollutants. Generally stormwater treatment and control measures have a limited effectiveness on soluble pollutants. However, certain stormwater BMPs are more effective at removal of some soluble pollutants, and consideration should be given in their selection.

18) **Comment:** One commenter recommended revisions to the draft Rule for inspections of erosion controls by paraphrasing the requirements existing in the Division's Construction Stormwater General Permit under the NPDES stormwater permitting program. The commenter suggested self-inspections of erosion controls and record keeping both weekly and in response to a rain event greater than 0.5". Commenter further recommended requiring the operator to contact the Division in the event that any erosion control measure repairs are required.

- ***Recommendation:** Agree with this comment in part, and revise the draft Rule to respond to these points, in part. Consistent with the perspective that the initial site preparation phase strongly resembles the clearing and grading phase of a*

construction project, it seems appropriate to include the inspection and recordkeeping requirements applicable to other construction sites around the state. While records of repairs to the erosion control measures may be part of the record-keeping requirements in the eventual permit, Division staff do not recommend that the Rule itself should require the operator to contact the Division to report those repairs.

*Further, this report recommends that the weekly inspections and record keeping requirements continue only through the initial site grading and preparation phase, and that the Division's acceptance of the designer's certification of the stormwater control measures provided in **15A NCAC 02H .1030(c)(3)** will serve to release the permittee from those requirements. Revise the draft Rule with new item **2H .1030(c)(7)** to incorporate the commenter's recommendations.*

19) **Comment:** Ten commenters objected strongly to the self-monitoring and self-reporting provisions in **2H .1030(c)(5)**, and instead urged that a requirement for monitoring and inspections by the Division be written into the Rule. Several comments emphasized that self-monitoring and self-reporting would be grossly unreliable and ineffective in preventing polluted discharges. Several commenters complained that no details as to the self-monitoring and self-reporting requirements were included in the draft Rule. One commenter recommended that the Division acquire sufficient staff to inspect every site after every major storm in order to accelerate repairs and clean up.

- *Recommendation: Commenters overlook or discount the Division's already existing authority to inspect permitted sites established in other rule and law. This portion of the Rule is intended to establish the authority of the Division to require the permittee himself to bear a burden of monitoring and reporting. The Rule does not preclude the Division from using its pre-existing authority to conduct such inspections as it deems necessary to protect surface water quality. Division staff advise that inspecting every site after every significant storm may not be feasible from a program implementation perspective, and should not be written into this Rule. This limitation is the underlying reason behind including self-inspection requirements in the draft Rule.*

*However, revisions to **2H .1030(c)(5)** and new items **(c)(6)** and **(c)(7)** are recommended to address concerns raised in a courtesy pre-review of the Rule by RRC staff. The courtesy review noted that the draft language in **(c)(5)** was not sufficiently specific as to what the Commission and Division are requiring of the permittee as to record-keeping, self-inspections, and self-reporting. As now revised and proposed, **(c)(5)** establishes that any records must be kept on site for the life of the permit; new item **(c)(6)** specifies what reporting is required; and in new item **(c)(7)** self-inspections are more specifically identified.*

20) **Comment:** Six commenters urged that the Rule should include specific provisions for monetary fines and penalties for violation of the Rule or permit conditions. In addition, one commenter recommended that the draft Rule be amended to specifically establish the state's authority to issue a stop-work order for on-going violations of the Rule or a permit issued under the Rule.

- *Recommendation: No changes to the draft Rule are proposed on these points. Commenters overlook or discount that **2H.1030** is a new section in an already existing body of stormwater permitting program rules. The existing rules and supporting law already enable enforcement actions with the provisions necessary. It is not necessary to repeat those provisions in this Rule.*

21) Comment: Two commenters suggested that auxiliary development in addition to the well pad should be regulated by the Rule. They suggested expanding the scope of the Rule to include access roads, pipe lines, compressor stations, borrow pits, and soil stockpiles.

- *Recommendation: Agree that the scope of the draft Rule should be explicitly broadened to clarify that access or haul roads in proximity to the well pad are included. Changes to explicitly include pipe lines, compressor stations, borrow pits, or soil stockpiles remote from the well pad are not recommended in the final proposed Rule. Add new section **2H.1030(c)(8)** clarifying that the Rule and subsequent permits also apply to access and haul roads in proximity to the well pad.*

22) Comment: One commenter appreciated the provisions in **2H.1030(d)**, which establish that where other water quality rules may be more stringent than the Rule, the more stringent provisions apply, and urged the Commission to retain this part of the draft Rule.

- *Recommendation: Agree with this comment. No change to the draft Rule required.*

Recommendations on the 2T and 2U Rule Revisions.

Very few comments were received that addressed the proposed revisions to the 15A NCAC 02T or 15A NCAC 02U rules, and the majority of comments supported the proposed rule changes. The following eight sets of comments listed below summarize all comments received. A response to each comment is provided by Division of Water Resources staff. There are no recommended changes to the proposed rules as a result of the public comments received.

Comments from Leatha A. Wood and James Wood (email 7/2/14)

Rule 15A NCAC 02T .0113: Mandate company to set aside funds for legal fees for landowners to challenge losses occurred and damages that occurred due to the neglect, mismanagement and/or accidental. Having in place a set distance from waterways, ponds, lakes and/or drinking wells, gas line and other municipal lines.

Recommendation: The proposed rule change removes an exemption for drilling fluids generated as part of oil and gas exploration from needing an individual or general permit. This change will require that land application of drilling fluids are subject to the same permitting requirements as other wastewaters and wastewater residuals to ensure protection of public health and water resources. The Division feels that existing requirements for the land application of wastewater and wastewater residuals have sufficient requirements in place and sufficient enforcement authority that it is not necessary for companies to set aside funds for potential neglect, mismanagement and/or accidents. There are no recommended changes to the proposed rule as a result of this comment.

Rule 15A NCAC 02T .1001: Again there needs to be fines to support the testing, evaluating and fines for the abuse for not using recycled waters from the used resources per 24 hour period. Fines to begin at no less than said amount to be higher as testing reveals deemed by Regulatory agency.

Recommendation: The proposed rule change clarifies that closed-loop recycle permits are not applicable permitting mechanism for managing wastes generated at oil and gas exploration sites. Since this is not a permitting option, requirements for established fines as part of these rules are not appropriate. There are no recommended changes to the proposed rule as a result of this comment.

Rule 15A NCAC 02T .1501: Again (1) there needs to be fines to support the testing, evaluating and fines for the abuse for not using recycled waters from the used resources per 24 hour period. Fines to begin at no less than said amount to be higher as testing reveals deemed by Regulatory agency. (2) There must be an impact study to how it is the dispose goods are care for no less than 100 years from the time the site is opened. (3) Having a set amount of monies held in savings by the state of North Carolina whereas monies will be used for the care, removal and or clean up but not to be used as costs of fines, clean up by the company in other means that containment of the contaminated resources. (4) A set mandate and plan for the contaminated resources in place prior to any set up at the site.

Recommendation: The proposed rule change clarifies that soil remediation permits are not an applicable permitting mechanism for managing wastes generated at oil and gas exploration sites. Since this is not a permitting option, requirements for established fines as part of these rules are not appropriate. There are no recommended changes to the proposed rule as a result of this comment.

Rule 15A NCAC 02U .0113: Again (1) there needs to be fines to support the testing, evaluating and fines for the abuse for not using recycled waters from the used resources per 24 hour period. Finds to begin at no less than said amount to be higher as testing reveals deemed by Regulatory agency. A set amount of fresh water to be used per 24 hour session per week should be stated with needed fines and implemented without court action having the Water Quality Regulatory to deem as needed only with testing and/or responsible reporting.

Recommendation: This rule would move the enforcement authority to the MEC for reuse activities approved under the sites operation plan. Any enforcement requirements or stipulated fines would be established by the MEC and are not within the scope of this rulemaking effort. For reuse activities that would not be deemed permitted as part of this rule, the Division of Water Resources feels that existing requirements for reuse of wastewater have sufficient requirements in place and sufficient enforcement authority that it is not necessary for companies to set aside funds for potential neglect, mismanagement and/or accidents. There are no recommended changes to the proposed rule as a result of this comment.

Comments from Diana Hales, 528 Will Be Lane, Siler City, NC 27344 (Public Hearing)

Open water/chemical pits at gas sites, currently authorized by the MEC rules, may be the preferred onsite storage system because it will cost less than building tank batteries. According to rules discussion in MEC meetings in the last two years, there are currently no permitted disposal facilities in NC to treat chemical-laden water waste produced by gas drilling.

Recommendation: The comment concerning rules to be developed by the MEC is outside of the scope of this rulemaking effort. The comment concerning the existence of permitted disposal systems to treat chemical-laden water waste produced by gas drilling does not seem to be a comment regarding the proposed rules; however, there are existing treatment and disposal regulations that would apply to disposal facilities intending to treat wastewater produced by oil and gas exploration and development. Rules have been implemented by the Environmental Management Commission under the authority of GS 143.215 to prohibit, abate, or control water pollution. There are no recommended changes to the proposed rule as a result of this comment.

Comments from Debra Champion (Written comments also spoke at Public Hearing)

Rule 15A NCAC 02T .0113 amends an existing rule to clarify that drilling muds and cuttings from fracking cannot be disposed of by spreading them around on-site (in contrast to muds and cuttings from directionally-drilled utility lines, for example). This is a good change, because fracking produces much greater volumes of drilling waste, and the waste is more likely to include corrosive minerals.

Rule 15A NCAC 02T .1001 amends an existing rule to clarify that fracking operations that reuse fracking fluid are not “closed-loop recycle systems,” in the same sense as, say, recirculating systems for industrial cooling water. This is a good change, since the rule was not written for fracking operations.

Rule 15A NCAC 02T .1501 amends an existing rule to clarify that rock cuttings and muds from fracking operations are not “petroleum contaminated soil” and may not be disposed of at sites permitted for disposal or remediation of petroleum contaminated soils. Instead, fracking wastes will be managed under rules being proposed by the NC Mining & Energy Commission. This is good.

Rule 15A NCAC 02U .0113 amends an existing rule to clarify that reuse of fracking fluids must comply with a waste management plan approved under Mining & Energy Commission rules, not under conventional beneficial reuse rules for reclaimed wastewater. This is good.

Recommendation: The Division agrees with the above statements. There are no recommended changes to the proposed rule as a result of this comment.

Comments from Chuck Parnell email 6/9/14

This e-mail is in regards to Rule 15A NCAC 02H .1030 Stormwater permits and Rule 15A NCAC 02U .0113 Regulation for beneficial reuse of wastewater (reclaimed water). Will either of these two rules or any other applicable rules require large storage tanks for containment purposes on the oil and gas exploration and production sites?

Recommendation: 15A NCAC 02U does not require large storage tanks for containment purposes, however any wastewater treatment unit or storage basin permitted under the reclaimed water rules (15A NCAC 02U) would be required to demonstrate a maximum hydraulic conductivity or modeling that supports compliance with the States Groundwater Standards (15A NCAC 02L). There are no recommended changes to the proposed rule as a result of this comment.

Who would be the person or persons to contact within the DENR or DWR that will be involved with any future storage tank requirements?

Recommendation: Design requirements vary depending on the type of wastewater treatment and disposal system utilized. For contacts within DWR please visit the Division's website at: <http://portal.ncdenr.org/web/wq/dwr-home-page>. There are no recommended changes to the proposed rule as a result of this comment.

Comments from David Waechter (email 6/9/14)

Rule 15A NCAC 02T .0113 is an existing rule that provides for permitting by regulation for land application of a number of wastewaters or residuals that are generally inert or produced in such low volumes that the EMC has deemed individual or general permits unnecessary. One of the activities permitted by regulation under this rule, in 15A NCAC 02T .0113(a)(10), is for on-site spreading of "drilling muds, cuttings, and well water from the development of wells or from other construction activities including directional boring." This rule is proposed to be clarified to ensure that this permit exemption does not apply to wastes generated from oil and gas exploration and production.

Well, this would require that EMC be informed of the content of the residuals/wastewaters. It is not legal for EMC to know this in NC. Anything done here is going to be challenged in court, so the advice of the attorney general would be prudent.

Recommendation: The intent of this comment is not fully clear to us, however by clarifying the rule to ensure that drilling muds, cutting and well water from the development of wells for oil and gas exploration and production are not covered by the permit by regulations section ensures that these wastes must receive a general or individual permit to be applied to the land surface. Current Administrative code 15A NCAC 02T allows for full characterization of the

waste prior to permitting. Any statutory exemptions provided to oil and gas exploration to provide waste characterization data is beyond the scope of this rulemaking. There are no recommended changes to the proposed rule as a result of this comment.

Rule 15A NCAC 02T .1001 is an existing rule that defines the scope and applicability of a section of regulations pertaining to “closed-loop recycle systems,” which recycle wastewater repeatedly through the process in which the waste was generated. The most common example of such a system is recycling of cooling water within an industrial process. This rule is proposed to be amended to clarify that reuse or recirculation of drilling fluids or wastewaters from oil and gas operations do not constitute closed-loop recycle systems subject to this rule.

Obviously drilling and injecting anything into the earth is not closed loop - water and chemicals are replacing mud and rock. If this were closed-loop, we wouldn't need a stormwater plan, or soil plan or anything else. This is definitely not closed-loop.

Recommendation: The Division agrees with this comment; however feels the proposed change is necessary to ensure that future confusion does not occur. There are no recommended changes to the proposed rule as a result of this comment.

Rule 15A NCAC 02T .1501 is an existing rule that defines the scope and applicability of a section of regulations pertaining to remediation of petroleum contaminated soils, by spreading such soils on the surface of the land, allowing petroleum contaminants to volatilize from the soil. This rule is proposed to be amended to clarify that rock cuttings and drilling muds from oil and gas operations do not constitute “petroleum contaminated soil” for the purposes of this rule and thus are not appropriate for disposal at sites permitted for disposal or remediation of petroleum contaminated soils.

I have never understood why we remove petroleum contaminated soil from one location to be volatilized in another location. We go from one contaminated site to contaminating the air for everyone plus we contaminate another site. Surely there must be a better way to handle this material. I do agree that the material they bring up that is contaminated with anything needs to be monitored and mitigated, but this seems like a really sorry method. Not only can this contaminate soil, but also water and air.

Recommendation: The Division agrees that the soil remediation rules (15A NCAC 02T .1501) are not applicable for wastes generated at oil and gas exploration sites. There are no recommended changes to the proposed rule as a result of this comment.

Rule 15A NCAC 02U .0113 is an existing rule that provides for permitting by regulation for beneficial reuse of wastewater (reclaimed water) for specific situations which the EMC has deemed individual or general permits unnecessary. The proposed revision to this rule would eliminate the need for a separate permit for reuse of wastewaters produced from oil and gas operations when such reuse is conducted in accordance with a waste management plan approved under the rules of the Mining and Energy Commission.

This is a dangerous loophole that could allow the introduction of wastewaters that have been corrupted with other unknown substances either during or after the extraction process and then injected into the ground as a covert [sic: covert?] means of disposal. I think the EMC should review options in depth here and determine a more specific and stringent ruling.

***Recommendation:** The requirements for the classification and water quality standards applicable to the groundwaters of North Carolina (15A NCAC 02L Sections .0100, .0200, .0300) are applicable regardless of the permitting requirements for the management of the wastewater. These rules establish groundwater quality standards and required actions that must be taken in the event that the groundwater standards are violated. Deeming the reuse of wastewater generated at oil and gas explorations sites for use on site allows provided it is part of plan approved by the Mining and Energy Commission (MEC) allows for a single agency (MEC) to regulate on-site activities associated with wastewater reuse. The MEC will be responsible for ensuring that appropriate site management and operations occur to protect human health and the environment. There are no recommended changes to the proposed rule as a result of this comment.*

Comments from Hope Taylor – Clean water for NC – (Comments from Hearing)

Deemed permitting rule: I have seen comments from well informed folks as these being exempt from rules over all. Makes me want to go back and look at these rules again. Rules need to be clear these are not exemptions and are just saying that other rules apply.

***Recommendation:** See comment above concerning applicability of groundwater standards. In addition, 15A NCAC 02U .0113(e) allows for the Director of the Division of Water Resources to determine if a system should not be deemed permitted, and thus require the activity to be permit individually or as part of a general permit (if one is available). This provisions ensures that if the Division was Water Resources has evidence that water quality impacts are occurring as part of the reuse of the wastewater onsite that an individual permit is required. There are no recommended changes to the proposed rule as a result of this comment.*

Comments from Grady McCallie, Policy Director, NC Conservation Network (Email 8/1)

We think the proposed clarifications to 02T and 02U rules are wise, and appreciate the initiative of the Commission and the Department of Environment & Natural Resources (DENR) in raising these – the changes are not mandated by statute, but make much sense, and will help prevent unintended consequences in the future. We support these amendments.

***Recommendation:** The Division agrees with the above statements. There are no recommended changes to the proposed rule as a result of this comment.*

Comments from Liz Cullington, (Email 8/1)

15A 02T .0113: Yes, this is a good and necessary rule amendment, O&G drilling muds and cuttings should not be allowed to be disposed of by surface spreading on site.

15A 02T .1001: This is a good and necessary rule amendment. Simply re-using fracking fluid does not constitute a "closed loop recycle system" because there is no actual, literal closed loop, fluid can be remixed during re-use, and "re-use" is sometimes re-use at a different well or even different well site.

15A 02T .1501: This is a good and necessary rule amendment. Drill muds and cuttings should not be treated as "petroleum contaminated soil" or disposed of at sites that are permitted for the disposal or remediation of that material. Drill muds are a different and unique chemical material that could not be "remediated" by the same process.

15A NCAC 02U .0113: This is also a needed amendment, since re-use of fracking fluids bears no resemblance to the current rules for conventional beneficial reuse of reclaimed wastewater. That latter process produces an end product that can be safely used for some irrigation or non-potable uses. Re-use of fracking fluids would involve no pre-treatment and would be the same use, just not in a true closed loop.

Recommendation: The Division agrees with the above statements. There are no recommended changes to the proposed rule as a result of this comment.

Air Quality Concerns

References in this section to the Division or DAQ refer to the Division of Air Quality. Air quality rules were not the specific subject of the Public Hearing, but selected comments are reported here for the Commission's information.

Comment from Grady McCallie, Policy Director, NC Conservation Network (Public Hearing)

Any drilling that happens in NC over next few years would not be under federal air toxics rules. It is important that Commission take action on that.

Recommendation: All federal air quality rules that apply to the oil and gas industry are already adopted by reference in the North Carolina air quality rules. The National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63, Subparts HH and HHH, are already adopted by reference in 15A NCAC 02D .1111. The New Source Performance Standard, 40 CFR Part 60, Subpart 0000, is adopted by reference in 15A NCAC 02D .0524. All of these federal air quality rules will apply at the time of any affected activities commencing in North Carolina. No changes to existing rules are proposed based on these points.

Comment from Therese Vick, Blue Ridge Environmental Defense League (Public Hearing)

In September 2013, BREDL formally requested that the EMC direct the DAQ to develop rules for toxic air pollution. We have to this day not gotten a response from EMC.

Recommendation: No changes to existing rules are proposed based on these points. The September 12, 2013 letter from BREDL to the EMC was not an official petition for rulemaking. After receiving the letter from the Blue Ridge Environmental Defense League (BREDL) in September 2013, the Environmental Management Commission (EMC) invited the Division of Air Quality (DAQ) to speak at its next meeting in November 2013. The DAQ spoke to the EMC about air emission sources related to unconventional shale gas development and the regulatory structure that is in place. The minutes of that meeting are found here: http://portal.ncdenr.org/c/document_library/get_file?uuid=2790dc1c-7ccb-4917-aa91-2f395bfb57f0&groupId=61581

The EMC has kept abreast of this issue and has determined that no additional rulemaking is necessary at this time.

Comment from Hope Taylor, Clean Water for North Carolina (Public Hearing)

The EMC has failed to deal with air toxic rules dealing with operations. Many of the serious health concerns from states where hydraulic fracturing is occurring are related to air emissions. I think this is a real failure here as far as rules development.

Recommendation: No changes to existing rules are proposed based on these points. All federal air quality rules that apply to the oil and gas industry are already adopted by reference in the North Carolina air quality rules. Additionally, many of the experiences of other states were during a time prior to the federal air rules being in place.

Comment from Hannah Ehrenreich (Public Hearing)

I am very concerned about the lack of air quality regulations on the oil and gas industry.

Recommendation: No changes to existing rules are proposed based on these points. All federal air quality rules that apply to the oil and gas industry are already adopted by reference in the North Carolina air quality rules. The National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63, Subparts HH and HHH, are already adopted by reference in 15A NCAC 02D .1111. The New Source Performance Standard, 40 CFR Part 60, Subpart 0000, is adopted by reference in 15A NCAC 02D .0524. All of these federal air quality rules will apply at the time of any affected activities commencing in North Carolina.

Comment from Gretchen Gochenauer, Carrboro, NC (emails dated June 27, 2014)

Please monitor for air pollution.

Recommendation: No changes to existing rules are proposed based on these points. The North Carolina Division of Air Quality (DAQ) has assessed its air quality monitoring network and taken action to better characterize baseline air quality in the area that may hold potential for shale gas production. Based on a review of available literature on the predominant air pollutants from unconventional oil and gas operations and an analysis of the existing air quality monitoring network, the DAQ in November 2013 established a multi-pollutant air monitoring site in Lee County that employs identical monitoring methods and equipment as is used at all other monitoring sites.

Electric rigs only- NON DIESEL compressors, NON DIESEL FRACKING lift compressors and all compressor stations.

Vapor recovery system a must at every storage tank. No VENTING to air.

New vent technology to keep toxic silica dust on padsite only.

Mandate ventless emission free flow back pressure tanks. No OPEN HATCH FRACKING tanks.

Setback from people schools water supplies Greater than 2500 feet. RURAL METHOD drilling is not acceptable in URBAN areas. Downwind of sites have health effects.

TEST for METHANE LEAKS with FLIR cameras.

Recommendation: No changes to existing rules are proposed based on these points. These comments are beyond the scope of the current rulemaking. The Division of Air Quality is keeping abreast of the air quality issues associated with shale gas exploration and is in the process of evaluating the impact of potential development and production operations on the national ambient air quality standards (NAAQS) in the Lee County area and downwind of the activity in the greater Triangle area. If the analysis shows potential issues with maintaining the NAAQS, DAQ will recommend appropriate rulemaking action to require further control of emissions at these operations. No additional rulemaking is necessary at this time to address these comments.

Solid Waste Concerns

References in this section to the Division or DWM refer to the Division of Waste Management. Solid waste rules were not the specific subject of the Public Hearing, but selected comments are reported here for the Commission's information.

Comment from Helen Livingston, Laurinburg, NC (email June 30, 2014)

One issue of particular interest, and I'm not sure whether or not you are addressing this now, is that fracking wastes should not be allowed in MSW landfills. As with coal ash, transferring the responsibility, ultimately, to the counties, would be something that the fracking industry would love to do. It would be devastating in the long run for the counties, who would not have the money for the inevitable remediation.

Recommendation: DWM staff report that according to NCGS 130A-290(a)(35), garbage, refuse or sludge from industrial operations to be discarded is defined as solid waste. These types of solid waste may go to a Municipal Solid Waste landfill (MSWLF) according to Solid Waste Management regulations in 15A NCAC 13B .1600. A MSWLF permit is written to provide operational and design conditions specific to industrial wastes. The majority of waste disposed of in MSW landfills goes to privately owned landfills, not county owned landfills. It is the prerogative and duty of the landfill to turn away any waste which is prohibited by regulation, such as liquids or radioactive waste. No changes to existing rules are proposed based on these points.

Record of Comments Not Actionable in the Rules Under Consideration.

Some written and oral comments were not germane to the rules that were the specific subject of the Public Hearing and public comment period. Other comments did not call for sufficiently specific revisions to, or actions on, the rules under consideration. Other comments were judged to be thoroughly within the normal conduct of regulatory actions, and consequently did not appear to call for specific provisions in the rules. Other comments asked for actions or responses not within the authority of the EMC to respond to. Note that a few selected comments on air quality and solid waste management have been moved from this list into the body of the text immediately above for the Commission's information. Otherwise, while all of these comments represent citizen input in a public process on a controversial topic, for the reasons noted they have not been evaluated in this Hearing Officer's Report other than the abbreviated summary below. No further response is provided to these comments.

1. "Please think of the health of the people of this state."
2. The references to "more stringent measures" in .1030(d)(1) and (2) are too vague.
3. Concerns about citizens' property rights.
4. Questions what towns are safe.
5. Concerns about Shearon Harris Nuclear Power Plant
6. Please keep our water clean.
7. Make regs so tight that the gas companies are responsible for clean ground water and surface water.
8. "Establish testing rules for current water supplies"
9. Cross test analytical results to have the benefit of a comparison.
10. Respect the property rights of all landowners.
11. Respect the input from citizens.
12. Learn from the experiences of other states.
13. Fracking is not currently a safe procedure.
14. Object to keeping downhole ingredients secret. Related: other states have a way for labs to test water for the relevant constituents, and still keep the secret.
15. Cites a report concluding that local societal and environmental costs in dollars are greater than local profit in dollars.
16. Can we sue the operating company if their operations affect us?
17. Require huge pollution bonds since the industry is certain that the operations are non-polluting.
18. Stormwater rule deficient in that no baseline testing is required. Related: suggests baseline macro-invertebrate characterization of receiving water before drilling begins.
19. Advises repeat 90-day testing in all media should be required.
20. Recommends soil samples as part of the final close out requirements.
21. Recommends that every obligation and responsibility of the permittee be enlarged to "permittee and landowner."
22. Advises that references to "control measure" in the stormwater rule is too vague.
23. Citizen reports relying on well water and wants to know that she is safe from O&G ponds.
24. Advises that rules are not detailed enough to protect against wildcatters.
25. Will a tax be levied to create a stormwater management office for this dirty industry?
26. Wants to know if claims of Acts of God would allow oil and gas companies to escape responsibility and pass their mitigation costs onto landowners or taxpayers.
27. What will be done to insure protection of benthic organisms in smaller streams?
28. Asks if the EMC has similar protections to protect groundwater in other rules.

29. Notes that pollutants discharged from the probable area of operations would come downstream in the Cape Fear River and would have to be treated at the Fayetteville Water Treatment Plant.
30. Diabase wetlands are a unique habitat and deserve protection.
31. Advises that the industry presents unique challenges.
32. Voluminous attachment chronicling the Opossum Creek spill in Ohio.
33. DENR should defer to any local government with more stringent stormwater regs.
34. Reports that the environmental advocacy organization was unable to find a good regulatory model for stormwater management in other states.

APPENDIX A
TEXT OF PROPOSED REVISIONS TO THE DRAFT WATER QUALITY RULES

The attached Rules are recommended to the Commission for adoption and amendment as printed here.

Public comment resulted in numerous changes to the draft Stormwater Management Rule as shown with strikethroughs and underlining. The Division of Energy, Mineral, and Land Resources recommends the changes shown.

15A NCAC 02H .1030

Public comment did not result in any changes to the four Rules proposed for amendment. The Division of Water Resources recommends no changes from the draft versions published June 2, 2014.

15A NCAC 02T .0113

15A NCAC 02T .1001

15A NCAC 02T .1501

15A NCAC 02U .0113

1 15A NCAC 02H .1030 is proposed for adoption with changes as follows:

2
3 **15A NCAC 02H .1030 STORMWATER REQUIREMENTS: OIL AND GAS EXPLORATION AND**
4 **PRODUCTION**

5 (a) Regulated Development Activity. Persons engaged in oil and gas exploration, development, and production
6 activities shall manage stormwater runoff in accordance with the provisions of this Rule.

7 (1) Such persons shall submit a permit application to the Division of Energy, Mineral, and Land
8 Resources (Division) in accordance with the requirements of this Section.

9 (2) Such persons shall obtain a permit from the Division prior to any on-site activities other than land
10 surveying, and surface soil testing of hydraulic conductivity and engineering properties.

11 (3) This Rule authorizes the Division to issue a stormwater-only permit. ~~The Division shall not~~
12 ~~authorize by permit the discharge to surface waters of stormwater commingled with any other~~
13 ~~fluid.~~Any other discharge to surface waters is prohibited unless permitted in accordance with G.S.
14 143-215.1.

15 (4) The Division may issue stormwater permits as discrete, stand-alone stormwater permits or may
16 incorporate stormwater permit conditions into an environmental protection permit encompassing
17 multiple regulatory programs.

18 (b) Permit Application Requirements.

19 (1) Notwithstanding the qualifying provisions of Rule .1003(b)(1), (2), and (3) of this Section, a
20 complete permit application and a permit are required for oil and gas exploration, development,
21 and production activity, regardless of whether the activity also requires a CAMA major
22 development permit or an Erosion and Sedimentation Control ~~Plan~~;Plan. A permit application and
23 permit are also required ~~and~~ regardless of whether the development is located in the 20 coastal
24 counties, or drains to Outstanding Resource Waters (ORW), or drains to High Quality Waters
25 (HQW).

26 (2) The Division shall treat each stormwater permit application for oil and gas exploration,
27 development, and production activities as a High Density Project application as provided for in
28 Rule ~~.1003(d)(2)~~,1003(d)(2) of this Section, and shall only grant permit coverage if the
29 application itself and the proposed development meet the requirements of this Rule.

30 (3) The Director may solicit and receive comments from other regulatory agencies and the public
31 when necessary to obtain additional information needed to complete the review of either the
32 stormwater permit application or the stormwater conditions in an application for an environmental
33 protection permit encompassing multiple regulatory programs.

34 ~~(3)~~(4) The permit application for oil and gas exploration, development, and production activities shall be
35 submitted to the Division at the Raleigh Central ~~Office~~;Office located at 512 North Salisbury
36 Street, Raleigh, North Carolina 27604.

- 1 ~~(4)~~(5) The stormwater permit application shall comply with the requirements in Rule .1003(g) of this
2 Section. In addition, the application shall include the following ~~information;~~information:
- 3 (A) all North Carolina classifications and supplemental classifications (if any) assigned to the
4 receiving water;
- 5 (B) the location of all stormwater discharge points, both by latitude and longitude coordinates
6 and by graphic ~~representation at a scale sufficient for the Division's~~
7 ~~review;~~representation:
- 8 (C) the graphic representation of the location and delineation of wetlands and regulated
9 buffers on the site, adjacent to the site, or between the site and the receiving ~~water at a~~
10 ~~scale sufficient for the Division's review;~~water;
- 11 (D) a statement that there are no threatened or endangered species identified for the receiving
12 water or for downstream receiving waters. ~~Alternatively, If threatened or endangered~~
13 ~~species are present~~ the application shall identify the threatened and endangered species
14 and their reported locations in the receiving water and downstream receiving
15 ~~waters;~~waters. The application shall propose specific measures for the protection of any
16 threatened or endangered species present in the receiving water. The Division shall
17 evaluate the proposed measures and may require additional or different measures in the
18 final form of the stormwater management permit;
- 19 (E) a design narrative that explains the assumptions and calculations for the engineering
20 design of the stormwater control systems proposed and that ~~individually~~ identifies how
21 the design complies with each specific requirement of this Section; and
- 22 (F) ~~Final Site Close Out Plan: the~~ a graphic ~~representation, at a scale sufficient for the~~
23 ~~Division's review;~~ representation of the final site grade and site conditions that will be
24 implemented in support of a future request to rescind the stormwater permit, or
25 comprehensive environmental permit, based on the final close out and the end of the
26 permit holder's commercial interest in the site.
- 27 (6) As a part of the permit application, the applicant shall submit a Stormwater Management Plan that
28 identifies the physical and procedural stormwater management measures proposed to minimize
29 the discharge of pollutants via stormwater. The Stormwater Management Plan shall address all
30 phases of site activity and operation. The Stormwater Management Plan shall include:
- 31 (A) a description of site activities with the potential to affect the pollutant content of
32 stormwater runoff;
- 33 (B) a description of the permittee's stormwater management strategy to control and minimize
34 stormwater exposure of significant materials;
- 35 (C) a description of the permittee's spill prevention and response procedures;

- 1 (D) a description of the permittee's preparations in anticipation of, and in response to, rainfall
 2 events in excess of the design basis of the physical stormwater control and treatment
 3 measures employed;
 4 (E) a description of good housekeeping measures and supporting facility inspections
 5 including a schedule of inspections and maintenance on any structural control measures;
 6 (F) a description of the training of site personnel in stormwater pollution prevention; and
 7 (G) the identification of the specific person or position responsible for the overall
 8 coordination, development, implementation, and revision of the Stormwater Management
 9 Plan.

10 (c) Stormwater Management Requirements.

- 11 (1) During initial site clearing, grading, excavation, and construction of earthen surface features,
 12 including temporary erosion and sedimentation control measures and permanent stormwater
 13 control measures, the permittee shall manage (control, operate, maintain, store, handle, clean up,
 14 and dispose of) site conditions, materials, activities, and stormwater as ~~follows~~follows:
 15 (A) Equipment, petroleum products, equipment wash waters, and associated spent fluids shall
 16 be managed ~~(operated, maintained, stored, handled, cleaned up, and disposed of)~~ to
 17 prevent the potential or actual pollution of surface waters by direct discharge or via
 18 stormwater runoff.
 19 (B) Herbicides, pesticides, fertilizers, and similar materials shall be managed to prevent
 20 introduction into stormwater runoff, and in accordance with label restrictions and the
 21 Federal Insecticide, Fungicide, and Rodenticide ~~Act~~Act, 7 U.S.C. 136 et seq.
 22 (C) Building material waste, land clearing and demolition debris, litter, and sanitary wastes
 23 shall be managed to prevent introduction into stormwater runoff. Dedicated management
 24 areas shall be established for these materials a minimum of 50 feet away from surface
 25 waters and discrete stormwater conveyances.
 26 (D) Topsoil and excavated material stockpiles shall be located a minimum of 50 feet away
 27 from surface waters and stormwater conveyances and shall be managed to prevent runoff
 28 transport of the stockpiled materials to ~~the surface waters of North Carolina~~ waters.
 29 (E) Excess concrete, concrete wash water, and cement slurries shall be managed to prevent
 30 the potential or actual pollution of surface waters by direct discharge or via stormwater
 31 runoff.
 32 (2) During initial site clearing, grading, excavation, and construction of earthen surface features,
 33 including temporary erosion and sedimentation control measures and permanent stormwater
 34 control measures, the permittee shall manage site conditions, materials, activities, and stormwater
 35 as ~~follows~~follows:
 36 (A) All perimeter dikes, perimeter swales, perimeter ditches, perimeter slopes, all slopes
 37 steeper than 3:1, and all slopes longer than 50 feet shall be provided with temporary or

- 1 permanent ground cover stabilization ~~as soon as practical, but in every case~~ within 7
 2 calendar days from the last land disturbing activity.
- 3 (B) All other disturbed areas shall be provided temporary or permanent ground cover
 4 stabilization ~~as soon as practical, but in every case~~ within 14 calendar days from the last
 5 land disturbing activity.
- 6 (C) Time extensions may be granted by the Division based on weather or site-specific
 7 conditions. The Division may also deny requests for such extensions.
- 8 (D) Treatment measure requirements.
- 9 (i) All sediment basins and traps with a contributing drainage area of ~~one~~ acre or
 10 greater ~~must~~shall utilize outlet structures that withdraw water from the surface.
- 11 (ii) Stormwater treated with polymers, flocculants, or other treatment chemicals
 12 ~~must~~shall be routed through sediment traps, filters, ~~and/or~~ other settling
 13 devices to ensure removal prior to discharge to surface waters. Only chemicals
 14 that have been approved by the Division may be used.
- 15 (3) During initial site clearing, grading, excavation, and construction of earthen surface features,
 16 including temporary erosion and sedimentation control measures and permanent stormwater
 17 control measures, and at least 72 hours prior to ~~the full demobilization of the site preparation~~
 18 ~~equipment and forces, and prior to any mobilization to the site of any equipment or material~~
 19 ~~intended to support subsurface activities, spudding an oil or gas well, the permittee shall deliver to~~
 20 ~~the Division written certification by the individual designing the stormwater control system~~
 21 ~~identified in accordance with Rule .1008(j) of this Section must certify in writing to the Division~~
 22 ~~in accordance with Rule .1008(j) of this Section. Regardless of whether a certificate of occupancy~~
 23 ~~is provided or required by other authority, no additional mobilization to the site shall take place~~
 24 the permittee shall not proceed with spudding the well until the Division accepts the designer's
 25 certification in writing. The Division shall inspect the permitted stormwater control system.
 26 Subsequent to the inspection, the Division may withhold acceptance of the designer's certification
 27 pending a favorable site inspection by the Regional Office, upon concluding that the stormwater
 28 control system has not been installed in accordance with the stormwater permit and the approved
 29 stormwater permit application documents. If the Division fails to inspect the stormwater control
 30 system within 72 hours of receiving the designer's certification, the permittee may proceed with
 31 spudding the well. For this Rule, 'spudding' the well means starting the oil or gas well drilling
 32 process by removing rock, dirt, and other sedimentary material with the drill bit.
- 33 (4) After completion of the surface site preparation activity, and beginning with the surface activity in
 34 direct support of well ~~drilling and continuing thereafter, drilling,~~ the permittee shall manage site
 35 conditions, materials, activities, and stormwater as ~~follows, follows:~~
- 36 (A) Stormwater control measures shall control and treat the runoff from the 1st rainfall; or,
 37 ~~stormwater control measures shall control and treat the difference in runoff for pre-~~

- 1 ~~development and post development conditions for the 90th percentile rainfall~~
2 ~~event.~~ rainfall event with a 24-hour precipitation total greater than or equal to 90 percent
3 of all 24-hour rainfall event totals on an annual basis.
- 4 (B) Stormwater control measures shall discharge at a rate less than or equal to the peak pre-
5 development discharge rate for the 1-year, 24-hour storm.
- 6 (C) Stormwater control measures shall be designed in accordance with the provisions of Rule
7 .1008 of this Section, ~~with options and guidance provided by the version of the Division's~~
8 ~~Stormwater Best Management Practices Manual current at the time of permit application~~
9 ~~or permit revision request.~~ Section.
- 10 (D) In addition to the measures identified in Rule .1008(a) of this Section, other measures
11 ~~appearing in the Division's Stormwater Best Management Practices Manual~~ shall be
12 approved where individually, or in combination, the measures achieve 85% average
13 annual removal of Total Suspended Solids, and upon the Division's review and
14 conclusion of appropriate design and suitability for the anticipated site conditions.
- 15 (E) All stormwater control measures shall be equipped with underflow baffles or other
16 effective means to prevent the discharge of hydrocarbons and floating pollutants.
- 17 (F) The requirements identified in Subparagraphs (1) and (2) of this Paragraph for initial site
18 construction also apply to all subsequent phases of site operation.
- 19 (5) ~~The Division shall establish record keeping, self inspection, and self reporting permit~~
20 ~~requirements to insure effective site management attention, response actions, and control of the~~
21 ~~potential for polluted stormwater.~~ All records required by this Rule shall be kept on site for the life
22 of the permit.
- 23 (6) The permittee shall report all bypasses, malfunctions, failures, and unpermitted discharges of the
24 stormwater control system to the Division's Regional Office within 24 hours of becoming aware
25 of the conditions.
- 26 (7) During the initial site clearing and grading phase of site operations, the permittee shall inspect all
27 erosion control measures weekly and after any storm event greater than 0.5" of rain per 24-hour
28 period; and shall keep written records of the inspections, observations, and response actions. The
29 Division's acceptance of the certification required in Subparagraph (3) of this Paragraph shall be
30 used to release the permittee from the inspections and record keeping required during the initial
31 site clearing and grading phase.
- 32 (8) Stormwater management requirements provided in this Paragraph pertain to the well pad area, all
33 adjacent developed areas, and access and haul roads in proximity to the well pad or directly
34 associated with the operation of the permitted site.
- 35 (d) Coordination with other water quality regulations.
- 36 (1) For oil and gas exploration, development, and production activities, compliance with this Rule
37 satisfies the requirements of Rule .1006 of this Section. However, pursuant to Rule .1006 of this

1 Section, the Division may require more stringent measures for development activities draining to
2 HQW ~~waters as provided in Rule .1006 of this Section-waters.~~

3 (2) For oil and gas exploration, development, and production activities, compliance with this Rule
4 satisfies the Freshwater ORW requirements of Rule .1007 of this Section. However, pursuant to
5 Rule .1007 of this Section, the Division may require more stringent measures for development
6 activities draining to ORW ~~waters as provided in Rule .1007 of this Section-waters.~~

7 (3) This Rule is not intended to modify, repeal, or supersede any other rule, regulation, or other
8 provision of law. The requirements of this Rule are in addition to the requirements of any other
9 rule, regulation, or other provision of law. Where any requirement of this Rule imposes
10 restrictions different from those imposed by any other rule, regulation, or other provision of law,
11 whichever requirement is more restrictive or imposes higher protective standards for human or
12 environmental health, safety, and welfare shall control. This includes, but is not limited to,
13 Sections 15A NCAC 02B .0100, 15A NCAC 02B .0200, and 15A NCAC 02B .0300, whether
14 administered by the State or by a local unit of government.

15
16 *History Note:* Authority G.S. 143-214.1; 143-214.7; 143-215.1; 143-215.3(a); ~~113-391(a3)(1)~~113-391(a3)(1);
17 S.L. 2014-4 Section 2.(e);
18 Eff. January 1, 2015.

1 15A NCAC 02T .0113 is proposed for adoption as follows:

2

3 **15A NCAC 02T .0113 PERMITTING BY REGULATION**

4 (a) The following disposal systems as well as those in Permitting By Regulation rules in this Subchapter (i.e., Rules
5 .0203, .0303, .0403, .1003, .1103, .1203, .1303, .1403, and .1503) are deemed to be permitted pursuant to G.S. 143-
6 215.1(b) and it shall not be necessary for the Division to issue individual permits or coverage under a general permit for
7 construction or operation of the following disposal systems provided the system does not result in any violations of
8 surface water or groundwater standards, there is no direct discharge to surface waters, and all criteria required for the
9 specific system is met:

- 10 (1) Swimming pool and spa filter backwash and drainage, filter backwash from aesthetic fountains, and
11 filter backwash from commercial or residential water features such as garden ponds or fish ~~ponds~~
12 ponds, that is discharged to the land surface;
- 13 (2) Backwash from raw water intake screening devices that is discharged to the land surface;
- 14 (3) Condensate from residential or commercial air conditioning units that is discharged to the land surface;
- 15 (4) Discharges to the land surface from individual non-commercial car washing operations;
- 16 (5) Discharges to the land surface from flushing and hydrostatic testing water associated with utility
17 distribution systems, new sewer extensions or new reclaimed water distribution lines;
- 18 (6) Street wash water that is discharged to the land surface;
- 19 (7) Discharges to the land surface from fire fighting activities;
- 20 (8) Discharges to the land surface associated with emergency removal and treatment activities for spilled
21 oil authorized by the federal or state on-scene coordinator when such removals are undertaken to
22 minimize overall environmental damage due to an oil spill;
- 23 (9) Discharges to the land surface associated with biological or chemical decontamination activities
24 performed as a result of an emergency declared by the Governor or the Director of the Division of
25 Emergency Management and that are conducted by or under the direct supervision of the federal or
26 state on-scene coordinator and that meet the following criteria:
- 27 (A) the volume produced by the decontamination activity is too large to be contained onsite;
- 28 (B) the Division is informed prior to commencement of the decontamination activity; and
- 29 (C) the wastewater is not radiologically contaminated or classified as hazardous waste;
- 30 (10) Drilling muds, cuttings and well water from the development of wells or from other construction
31 activities including directional ~~boring~~; boring, except such wastes generated in the construction and
32 development of oil and gas wells regulated by Article 27 of G.S. 113;
- 33 (11) Purge water from groundwater monitoring wells;
- 34 (12) Composting facilities for dead animals, if the construction and operation of the facilities is approved
35 by the North Carolina Department of Agriculture and Consumer Services; the facilities are constructed
36 on an impervious, weight-bearing foundation, operated under a roof; and the facilities are approved by
37 the State Veterinarian pursuant to G.S. 106-403;

- 1 (13) Overflow from elevated potable water storage facilities;
- 2 (14) Mobile carwashes if:
- 3 (A) all detergents used are biodegradable;
- 4 (B) no steam cleaning, engine or parts cleaning is being conducted;
- 5 (C) notification is made prior to operation by the owner to the municipality or if not in a
- 6 municipality then the county where the cleaning service is being provided; and
- 7 (D) all non-recyclable washwater is collected and discharged into a sanitary sewer or wastewater
- 8 treatment facility upon approval of the facility's owner;
- 9 (15) Mine tailings where no chemicals are used in the mining process;
- 10 (16) Mine dewatering where no chemicals are used in the mining process; and
- 11 (17) Wastewater created from the washing of produce, with no further processing on-site, on farms where
- 12 the wastewater is irrigated onto fields so as not to create runoff or cause a discharge.

13 (b) Nothing in this Rule shall be deemed to allow the violation of any assigned surface water, groundwater, or air quality

14 standards, and in addition any such violation shall be considered a violation of a condition of a permit. Further, nothing

15 in this Rule shall be deemed to apply to or permit disposal systems for which a state NPDES permit is otherwise required.

16 (c) Any violation of this Rule or discharge to surface waters from the disposal systems listed in Paragraph (a) of this

17 Rule or the activities listed in other Permitted By Regulation rules in this Subchapter shall be reported in accordance with

18 15A NCAC 02B .0506.

19 (d) Disposal systems deemed permitted under this Subchapter shall remain deemed permitted, notwithstanding any

20 violations of surface water or groundwater standards or violations of this Rule or other Permitted By Regulation rules in

21 this Subchapter, until such time as the Director determines that they should not be deemed permitted in accordance with

22 the criteria established in this Rule.

23 (e) The Director may determine that a disposal system should not be deemed to be permitted in accordance with this

24 Rule or other Permitted By Regulation rules in this Subchapter and require the disposal system to obtain an individual

25 permit or a certificate of coverage under a general permit. This determination shall be made based on existing or

26 projected environmental impacts, compliance with the provisions of this Rule or other Permitted By Regulation rules in

27 this Subchapter, and the compliance history of the facility owner.

28

29 *History Note:* Authority G.S. 130A-300; ~~143-215.1(a)(1)~~; 143-215.1(a); 143-215.1(b)(4)(e); ~~143-215.3(a),(d)~~; 143-

30 215.3(a);

31 *Eff. September 1, 2006;*

32 *Amended Eff. June 18, 2011.*

33

1 15A NCAC 02T .1001 is proposed for adoption as follows:

2

3 **15A NCAC 02T .1001 SCOPE**

4 This Section applies to closed-loop recycle systems in which nondomestic wastewater is repeatedly recycled back
5 through the process in which the waste was generated. The following systems are not regulated by this Section:

6 (1) the reuse or return of wastewater from a permitted animal waste lagoon facility for waste flushing
7 ~~cover~~ covered by Section .1300 of this Subchapter;

8 (2) the recycling of wastewater from groundwater remediation systems through an Injection Well or
9 Infiltration Gallery ~~specifically~~ covered by Section .1600 of this Subchapter; ~~and~~

10 (3) the reuse of wastewater through treatment and distribution as reclaimed water ~~specifically~~ covered by
11 Section .0900 of this ~~Subchapter. Subchapter; and~~

12 (4) the recycling of wastewater or well drilling fluids for well construction, well development, well
13 stimulation, or well rehabilitation.

14

15 *History Note: Authority G.S. 143-215.1; 143-215.3(a);*

16 *Eff. September 1, 2006.*

1 15A NCAC 02T .1501 is proposed for adoption as follows:

2

3 **15A NCAC 02T .1501 SCOPE**

4 The rules in this Section apply to the Disposal or Treatment of Soils Containing Petroleum Products or other
5 Contaminated Soil by Land Application, Storage, or Containment and Treatment. These Rules do not apply to:

6 (1) hazardous waste as defined in 40 CFR 260.10 as adopted by reference in 15A NCAC 13A .0102(b),
7 40 CFR 261.3 as adopted by reference in 15A NCAC 13A .0106(a), and North Carolina General
8 Statute ~~130A-290~~; or 130A-290;

9 (2) soil contaminated with hazardous waste or hazardous waste constituents as defined in 40 CFR 260.10
10 as adopted by reference in 15A NCAC 13A .0102(b) and 40 CFR 261.3 as adopted by reference in
11 15A NCAC 13A .0106(a) from Hazardous Waste Management Units or Solid Waste Management
12 Units as defined in 40 CFR 260.10 as adopted by reference in ~~15A NCAC 13A .0102(b)~~; 15A NCAC
13 13A .0102(b); or

14 (3) ~~cuttings and other wastes generated in the construction and development of oil and gas wells regulated~~
15 by Article 27 of G.S. 113.

16

17 *History Note:* Authority G.S. 143-215.1; 143-215.3(a);

18 Eff. September 1, 2006.

19

1 15A NCAC 02U .0113 is proposed for adoption as follows:

2

3 **15A NCAC 02U .0113 PERMITTING BY REGULATION (SEE S.L. 2011-48)**

4 (a) The following utilizations of reclaimed water are deemed to be permitted pursuant to G.S. 143-215.1(b) and it is not
5 necessary for the Division to issue individual permits or coverage under a general permit for construction or operation of
6 the following utilization systems provided the system does not result in any violations of surface water or groundwater
7 standards, there is no unpermitted direct discharge to surface waters, and all criteria required for the specific system is
8 met:

- 9 (1) Discharges to the land surface from flushing and hydrostatic testing water associated with utility
10 distribution systems, new sewer extensions or new reclaimed water distribution lines;
- 11 (2) Overflow from elevated reclaimed water storage facilities where no viable alternative exists and all
12 possible measures are taken to reduce the risk of overflow;
- 13 (3) Any de minimus runoff from reclaimed water used during fire fighting or extinguishing, dust control,
14 soil compaction for construction purposes, street sweeping, overspray on yard inlets, overspray on golf
15 cart paths, or vehicle ~~washing provided the use is approved in a permit issued by the Division;~~
16 washing;
- 17 (4) Incidental discharge to a municipal separate storm sewer system (MS4) that occurs as a result of
18 reclaimed water utilization ~~activities provided the use is approved in a permit issued by the Division,~~
19 activities, and the discharge does not violate water quality standards. This does not exempt the
20 reclaimed water user from complying with any applicable local ordinances that may prohibit such
21 discharges;
- 22 (5) Rehabilitation, repair, or replacement of reclaimed water lines in kind (i.e., size) with the same
23 horizontal and vertical alignment;
- 24 (6) In accordance with 15A NCAC 02H .0106(f)(5), flushing (including air release valve discharge) and
25 hydrostatic testing water discharges associated with reclaimed water distribution systems provided that
26 no water quality standards are violated;
- 27 (7) Utilization of reclaimed water received from a reclaimed water bulk distribution program permitted
28 under Rule .0601 of this Subchapter;
- 29 (8) Irrigation of residential lots or commercial (non-residential) application areas less than one acre in size
30 that are supplied with reclaimed water as part of a conjunctive use reclaimed water system meeting the
31 requirements of Rules .0301, .0401, .0403, .0501, and .0701 of this Subchapter; Chapter 89G of the
32 General Statutes; approved by the local building inspection department; and installed by a North
33 Carolina Licensed Irrigation Contractor pursuant to G.S. 89G. A scaled site map showing the location
34 of the reclaimed water irrigation system and all features necessary to show compliance with applicable
35 setbacks in Rule .0701 of this Subchapter shall be submitted to the reclaimed water provider;

1 (9) Irrigation of agricultural crops supplied with reclaimed water as part of a conjunctive use reclaimed
2 water system meeting the requirements of this Subchapter and approved by the reclaimed water
3 ~~provider; and provider;~~

4 (10) Drip irrigation sites supplied with reclaimed water as part of a conjunctive use reclaimed water system
5 generated from an onsite wastewater treatment facility meeting the criteria of this Subchapter and
6 where the conjunctive system has been approved by the Department and is permitted under ~~48A-1900.~~
7 15A NCAC 18A .1900; and

8 (11) Reuse of produced waters and flowback waters from oil and gas wells regulated by Article 27 of G.S.
9 113 for reuse in accordance with water and waste management plans approved pursuant to rules of the
10 Mining and Energy Commission.

11 (b) Nothing in this Rule shall be deemed to allow the violation of any assigned surface water, groundwater, or air quality
12 standards, and in addition any such violation is a violation of a condition of a permit.

13 (c) The reclaimed water user shall report any violation of this Rule or discharge to surface waters from the utilization
14 systems listed in Paragraph (a) of this Rule.

15 (d) Utilization systems deemed permitted under this Subchapter shall remain deemed permitted, notwithstanding any
16 violations of surface water or groundwater standards or violations of this Rule or other Permitted By Regulation rules in
17 this Subchapter, until such time as the Director determines that they should not be deemed permitted in accordance with
18 the criteria established in this Rule.

19 (e) The Director may determine that a utilization system should not be deemed to be permitted in accordance with this
20 Rule and require the utilization system to obtain an individual permit or a certificate of coverage under a general permit.
21 This determination shall be made based on existing or projected environmental impacts, compliance with the provisions
22 of this Rule and the compliance history of the facility owner.

23
24 *History Note: Authority G.S. 130A-300; 143-215.1(a)(1); 143-215.1(b)(4)(e); 143-215.3(a),(d);*
25 *Eff. June 18, 2011 (See S.L. 2011-48).*

APPENDIX B Public Comments

The following pages contain the text of emails and other written comments received. A total of twenty written comments were received. Every comment received is attached. Several emails included active links to other documents, some voluminous. None of the linked or attached extra documents are reproduced here.

We have redacted information that we interpreted as individual home addresses, phone numbers, or email addresses out of concern for the individual's privacy. None of the commenters specifically requested this action on our part, and the original written documentation in Division files still contains the information.

Staff from the Division of Energy, Mineral, and Land Resources paraphrased the oral comments from the Public Hearing as they were spoken to the Hearing Officer. The record of the oral comments is the last item in this Appendix B.

[Redacted]

From: Patricia Moore [Redacted]
Sent: Sunday, June 08, 2014 6:46 AM
To: Stormwater_and_LandApp_Rules@lists.ncmail.net
Subject: [Stormwater_and_LandApp_Rules] Waste water

Please think of the health of the people of this state Not ease of fracking or corporate profits. We depend on you.

Sent from my iPhone

Stormwater_and_LandApp_Rules mailing list Stormwater_and_LandApp_Rules@lists.ncmail.net

Pickle, Ken

From: G. David Waechter [mailto:gdwaechter@ncmail.net]
Sent: Monday, June 09, 2014 12:01 PM
To: Stormwater_and_LandApp_Rules@lists.ncmail.net
Subject: [Stormwater_and_LandApp_Rules] Initial comments/thoughts on proposed rule changes
Attachments: ATT00001.c

Rule 15A NCAC 02H .1030 is a proposed new rule to establish the framework for obtaining stormwater permits for sites where oil and gas exploration and production activities take place and the stormwater management requirements permittees would have to follow. This proposed rule has been drafted in response to the specific mandate in S.L. 2012-143, described above. This rule would fill a gap in the state's existing framework for stormwater management and is intended to avert adverse impacts of uncontrolled stormwater discharges from oil and gas exploration and production sites.

Comment: This will never fly. You had better come up with what "more stringent measures" are. Leaving this open and the burden upon the EMC is dangerous from a jurisprudence standpoint. This type of rule targeting the oil and gas industry alone sounds like a violation of the Equal Protection clause. I think having a set of fundamental alerts in place, which when activated, would define what justifies more stringent measures is more likely to be acceptable than specifying an industry. Why specify the oil and gas industry in the first place? Why not specify that any future well drilled in the state be subject to testing to ensure the safety of the resource being sought and furthermore that if contamination be found, that it be determined where the contaminant first entered the groundwater, and then have a set of interventions defined. Similarly, what are you going to do if someone drills a water well or test well or excavates a large area near a petroleum well and the contents of the adjacent groundwater turn up contaminated with petroleum or even chemicals unknown to EMC? Wouldn't that call for a "more stringent measures" to be enforced at that point? Would that require the State Geologist to open his safe and get out the recipe book for the oil and gas industry? Limiting the measures only to oil and gas industry, limits the scope of enforcement especially where oil and gas drilling activities cross paths with other traditionally benign activities that ultimately could unleash the very things EMC is trying to prevent, and could result in a system failure for EMC.

Also, what about when the oil and gas exploration activity closes? Who is responsible for ensuring the site stormwater is safe and properly designed such that no further contamination will occur over the course of time?

Rule 15A NCAC 02T .0113 is an existing rule that provides for permitting by regulation for land application of a number of wastewaters or residuals that are generally inert or produced in such low

volumes that the EMC has deemed individual or general permits unnecessary. One of the activities permitted by regulation under this rule, in 15A NCAC 02T .0113(a)(10), is for on-site spreading of “drilling muds, cuttings, and well water from the development of wells or from other construction activities including directional boring.” This rule is proposed to be clarified to ensure that this permit exemption does not apply to wastes generated from oil and gas exploration and production.

Comment: Well, this would require that EMC be informed of the content of the residuals/wastewaters. It is not legal for EMC to know this in NC. Anything done here is going to be challenged in court, so the advice of the attorney general would be prudent.

Rule 15A NCAC 02T .1001 is an existing rule that defines the scope and applicability of a section of regulations pertaining to “closed-loop recycle systems,” which recycle wastewater repeatedly through the process in which the waste was generated. The most common example of such a system is recycling of cooling water within an industrial process. This rule is proposed to be amended to clarify that reuse or recirculation of drilling fluids or wastewaters from oil and gas operations do not constitute closed-loop recycle systems subject to this rule.

Comment: Obviously drilling and injecting anything into the earth is not closed loop - water and chemicals are replacing mud and rock. If this were closed-loop, we wouldn't need a stormwater plan, or soil plan or anything else. This is definitely not closed-loop.

Rule 15A NCAC 02T .1501 is an existing rule that defines the scope and applicability of a section of regulations pertaining to remediation of petroleum contaminated soils, by spreading such soils on the surface of the land, allowing petroleum contaminants to volatilize from the soil. This rule is proposed to be amended to clarify that rock cuttings and drilling muds from oil and gas operations do not constitute “petroleum contaminated soil” for the purposes of this rule and thus are not appropriate for disposal at sites permitted for disposal or remediation of petroleum contaminated soils.

Comment: I have never understood why we remove petroleum contaminated soil from one location to be volatilized in another location. We go from one contaminated site to contaminating the air for everyone plus we contaminate another site. Surely there must be a better way to handle this material. I do agree that the material they bring up that is contaminated with anything needs to be monitored and mitigated, but this seems like a really sorry method. Not only can this contaminate soil, but also water and air.

Rule 15A NCAC 02U .0113 is an existing rule that provides for permitting by regulation for beneficial reuse of wastewater (reclaimed water) for specific situations which the EMC has deemed individual or general permits unnecessary. The proposed revision to this rule would eliminate the need for a separate permit for reuse of wastewaters produced from oil and gas operations when such reuse is

conducted in accordance with a waste management plan approved under the rules of the Mining and Energy Commission.

Comment: This is a dangerous loophole that could allow the introduction of wastewaters that have been corrupted with other unknown substances either during or after the extraction process and then injected into the ground as a convert means of disposal. I think the EMC should review options in depth here and determine a more specific and stringent ruling.

David Waechter
[REDACTED]

Pickle, Ken

From: w.b. Chance [REDACTED]
Sent: Friday, June 27, 2014 4:51 PM
To: Stormwater_and_LandApp_Rules@lists.ncmail.net
Subject: [Stormwater_and_LandApp_Rules] Questions and Concerns
Attachments: ATT00003.c

Hi,

I almost made an offer on a home within the Deep River Basin "Mesozoic Area" seven miles south of Pittsboro off 15-501. I teach school and am 51. Being able to buy a home has been a goal requiring rigorous pursuit. Now I feel my journey has led to conundrums. My heart also goes out for the person trying to sell her modest home or the buyer who may not have my research skills.

So I have three question.

What are the rights of the citizens regarding property? This home had city options yet currently well water. With so many people (and Nature) potentially effected, I find this terrifying?

How can I know that the area where I seek a home is relatively safe? Siler, Pinehurst, etc.?

Why isn't more being said about how the area of prime consideration surrounds Sheron Harris?

Thank You for your time and efforts.

Brad

--
Will Brad Chance

Pickie, Ken

From: Kane, Evan [REDACTED]
Sent: Monday, June 30, 2014 3:34 PM
To: stormwater_and_Landapp_rules@lists.ncmail.net
Subject: [Stormwater_and_LandApp_Rules] FW: Fracking talking points
Attachments: EMC frack stormwater rules factsheet.docx; ATT00001.c

FYI.

Evan
919-807-6461

E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties.
<http://portal.ncdenr.org/web/wq/ps/gwp>

From: Helen Livingston [REDACTED]
Sent: Monday, June 30, 2014 2:18 PM
To: Kane, Evan
Subject: Re: Fracking talking points

To: Evan Kane
Re: Public Hearing on July 1, 2014

I am Helen Livingston of Laurinburg, NC. I am unable to attend the EMC public hearing on fracking, but understand that my written comments can be placed in the records.

I have attached the fact sheet from NC Conservation Network, as it carefully explains that four out of the five recommendations are good ones. The concern is with the fifth, related to storm water.

While I think the state is making a big mistake to hurriedly invite fracking in, the least we can do is to do all we can to keep our water clean. Fracking will be short term gain for the few (mostly outside NC). There are so many ways in which our land, air and water will be impacted, and thus our health care costs will increase. Plus, there is thought to be so little valuable shale in the first place, we have no business encouraging the industry into our state.

Our state has done so well with solar, and we are poised to do well with wind power, and should be focused on forward looking solutions, not risking the beauty and the health of our state on the last dregs of fossil fuel.

One issue of particular interest, and I'm not sure whether or not you are addressing this now, is that fracking wastes should not be allowed in MSW landfills. As with coal ash, transferring the responsibility, ultimately, to the counties, would be something that the fracking industry would love to do. It would be devastating in the long run for the counties, who would not have the money for the inevitable remediation.

Thank you for your time and consideration of these important issues.

Sincerely,

Helen Livingston

Speak out on proposed stormwater fracking rules!

The NC Environmental Management Commission is seeking public comment on five fracking rules, including one that sets standards for management of stormwater on fracking sites. (this is separate from MEC hearings in August)

**A public hearing is scheduled for 6 pm on Tuesday, July 1,
Dennis Wicker Center at 1801 Nash Street in Sanford**
(signup to speak opens at 5 pm).

EMC will accept written comments through August 1, 2014 at evan.kane@ncdenr.gov, or mail to Evan Kane, Division of Water Resources, 1611 Mail Service Center, Raleigh, NC 27699-1611.

Talking Points

Four of the proposed rules are changes for the better, which we support:

Rule 15A NCAC 02T .0113 amends an existing rule to clarify that drilling muds and cuttings from fracking cannot be disposed of by spreading them around on-site (in contrast to muds and cuttings from directionally-drilled utility lines, for example). This is a good change, because fracking produces much greater volumes of drilling waste, and the waste is more likely to include corrosive minerals.

Rule 15A NCAC 02T .1001 amends an existing rule to clarify that fracking operations that reuse fracking fluid are not “closed-loop recycle systems,” in the same sense as, say, recirculating systems for industrial cooling water. This is a good change, since the rule was not written for fracking operations.

Rule 15A NCAC 02T .1501 amends an existing rule to clarify that rock cuttings and muds from fracking operations are not “petroleum contaminated soil” and may not be disposed of at sites permitted for disposal or remediation of petroleum contaminated soils. Instead, fracking wastes will be managed under rules being proposed by the NC Mining & Energy Commission. This is good.

Rule 15A NCAC 02U .0113 amends an existing rule to clarify that reuse of fracking fluids must comply with a waste management plan approved under Mining & Energy Commission rules, not under conventional beneficial reuse rules for reclaimed wastewater. This is good.

The 5th proposed stormwater rule, 15A NCAC 02H .1030 has problems

Rule 15A NCAC 02H .1030 requires control of stormwater at sites related to shale gas extraction.

What’s good about this rule:

- North Carolina is right to regulate stormwater from fracking operations. Not only is this mandated by the legislation in 2012, (S820) but it is essential, since federal rules in this

area are extremely weak. Thanks to industry lobbying, the only time an operator must obtain a federal stormwater permit is if it discharges a 'reportable quantity' of pollutants, or violates a water quality standard. With no one checking, the chance of triggering that requirement is low. This proposed state rule will be the only real control on stormwater.

- It will protect public drinking water. The area where fracking seems most likely to happen – Lee County in the Deep River watershed has public water systems with intakes not far downstream from where stormwater will enter the river system.
- It would require that, during construction of a wellpad, operators keep toxic chemicals and other pollutants where they will not get mixed with stormwater. That is important, because once pollutants are mixed with stormwater, it is virtually impossible to separate them out again.

What's bad or missing from this rule:

- **Bad:** The proposed rule should impose the same requirement during drilling of the well, operation, production, and closure. Hazardous chemicals are much more likely to contaminate stormwater during drilling and production operations than during wellpad construction, but the proposed rule does not address this threat. (This concern may be partly addressed by a rule proposed by the Mining & Energy Commission, 15A NCAC 05H .1403, which requires that wellpads be designed not to discharge, but it should be in this rule, too).
- **Bad:** The proposed rule requires operators to control runoff from a one inch rainfall, .1030(c)(4)(A). That standard means it is legal for larger storms to overwhelm the stormwater capture and treatment system and discharge directly to streams. To allow discharges of stormwater from a chemically-intensive drilling operation during large storms presents unacceptable risk to public health and the environment downstream.
- **Inadequate:** The proposed rule appears to require that any discharges from a stormwater pond on a fracking site must draw from well under the surface, to avoid taking along any hydrocarbons floating on top, .1030(c)(4)(E). That's a start, but it does not require skimming of hydrocarbons from the pond, so they may eventually escape when the water level drops. Also, this provision does not address pollutants that are water soluble.
- **Inadequate:** The proposed rule states that state regulators shall establish 'self-reporting' and 'self-inspection' requirements to ensure that the other standards are met, .1030(c)(5). The rule provides no details about these, and there is little reason to believe that self-regulation will deliver meaningful compliance with the rule. Neighbors and the general public deserve direct state inspections and enforcement to assure compliance with the terms of the rule.

(Thanks to Grady McCallie at NC Conservation Network for factsheet information on this issue)

PICKLE, Ken

From: Diana Hales <dianahales@earthlink.net>
Sent: Wednesday, July 02, 2014 10:57 AM
To: Stormwater_and_LandApp_Rules@lists.ncmail.net
Subject: [Stormwater_and_LandApp_Rules] Public Comment, Stormwater and fracking
Attachments: StormwaterPublicHearing_Jul 1, 2013.docx; ATT00001.c

Evan, thanks for conducting the public hearing in Sanford, yesterday, July 1, 2014.

I spoke, and here are the written comments for the record.

Thank you.

Diana Hales, retired

Diana Hales, [REDACTED] Siler City, NC 27344
I spoke, these are the written comments.

Public Hearing, EMC, July 1, 2014, Wicker Civic Center, Sanford, NC

Stormwater fracking rules

1. Inadequate protection from heavy rainfalls, rule: 0130(c)(4)(a). Cases in point: Hurricane Floyd in 1999 that overwhelmed hog cess pools and sent millions of gallons of feces and thousands of hogs downstream in the coastal plain and led to a large tax-funded buyout of many flooded agribusinesses. This past spring, Colorado was rocked by severe flooding in a gas-producing region that sent well pad equipment across the land. Just yesterday, huge rainfalls in Iowa, North Dakota, and Illinois show how quickly entire systems are flooded and swamped by several inches of rain falling in a few hours. By Friday, the Triangle could be facing major rainfall from a tropical system crawling up our coast.

Basing rules to control stormwater run-off on a one-inch rainfall is not only wrong, it is seriously dangerous to the population that will receive these polluted waters. This a health risk that will be borne by citizens the state is supposed to protect.

Open water/chemical pits at gas sites, currently authorized by the MEC rules, may be the preferred onsite storage system because it will cost less than building tank batteries. According to rules discussion in MEC meetings in the last two years, there are currently no permitted disposal facilities in NC to treat chemical-laden water waste produced by gas drilling. Nowhere to take it; therefore, the open pits could remain onsite at the wellpad...forever? These pits and wellpad will absolutely be subject to heavy storms and hurricanes dumping in excess of 1-inch of rain per hour. Think about coal-ash "ponds."

2. Self reporting and self-inspection. Rule .0130(c)(5) is another direct giveaway to the gas industry that wants exemption from rules that interfere with its bottom-line. It is astonishing how quickly the call for deregulation...shouted by the oil and gas industry, and energy sector...is turned into a rout on any rules that might protect citizens, our air and water. Although the legislature and current administration seek to gut the thin veneer of protection that the State should provide, to enshrine self-regulation with this industry with its national record of contempt for the public and the money to fight every individual in court who dares stand-up...we expect NC DENR to at least appear to care about the environment.

Let's go further. All restaurants should self-report their sanitary conditions. Would any have less than an "A" rating? There is a reason for inspections to protect the public. When there is no stick, the carrot is meaningless.

Strengthen these rules.

Picklo, Ken

From: Cartner, Barry J [REDACTED]
Sent: Wednesday, July 02, 2014 4:32 PM
To: Stormwater_and_LandApp_Rules@lists.ncmail.net
Subject: [Stormwater_and_LandApp_Rules] Fracking Practices
Attachments: ATT00002.c

Greetings.

All though I support the exploration and use of the State's natural energy resources; I am seriously concerned by the adverse effects of fracking for natural gas that I have come to understand after speaking at length with friends in West Virginia.

They were not experiencing problems with arsenic and other chemicals in their drinking (well) water or local streams until after the natural gas companies began fracking. Residents within a 100 mile radius of the drill sites were finding horrible odors from their water supplies, black oozing sludge from fissures in mountain side stream bed, and chemical testing found toxic levels of chemicals in the drinking water that had not previously existed.

Each of the individuals whom I spoke with said that they had filed complaints and concerns with the respective natural gas companies / State Government agencies only to be told that these were all "naturally occurring events" that were unrelated to the fracking activities.

Employees for the natural gas companies who service the drilling sites confided to a number of residents that they bring their own drinking water on the job by the case simply because they understand that the toxic waste that is being forced back into the empty drill sites leaches into the water table and will find its way to wells and streams in time.

I would certainly understand if any community of citizens decided to prohibit fracking in their regions if indeed this was the case. I do not want to see North Carolina become the next toxic waste dump as West Virginia is becoming.

So please, make the restrictions on fracking practices so tight as to basically force the natural gas companies to accept full responsibility for the cleanliness of all well water and surface streams that are even remotely at risk. Establish testing rules for current water supplies that are used as the benchmark for comparison against any later testing once fracking begins. Build in a number of independent testing procedures so that neither the State nor the Natural Gas company's testing serves as the only basis for comparison. Then default to the side of caution for public safety in all cases.

Finally, respect the inherit property rights of all land owners and those who live along the shores of any coastal fracking sites. If a doubt exists, then the benefit of the doubt must always go to the individual citizen.

Respectfully,

Barry J Cartner
 NC Division of Veterans Affairs
 State Veteran's Home

[REDACTED]
 Salisbury, NC 28145
 Office: (704) 600-1200 EXT. 2504
 Fax: (704) 600-1570
 Email: [REDACTED]

From: DiamondtelDeb@
Sent: Thursday, July 03, 2014 1:39 PM
To: Stormwater_and_LandApp_Rules@lists.ncmail.net
Cc: diamondteldeb@aol.com; Massengale, Susan; Munger, Bridget
Subject: [Stormwater_and_LandApp_Rules] Please read all! DWQ DENR Stormwater Rule Comments
Attachments: ATT00001.c

Stormwater and LandApp Rules@lists.ncmail.net CC: evan.kane@ncdenr.gov, bridget.munger@ncdenr.gov, susan.massengale@ncdenr.gov Susan Massengale Public Information Ofcr DENR- Division of Water Resources 1617 MSC, Raleigh, NC 27699-1617 (919) 707-9014 emailed 6/30/14

July 3, 2014 DENR

I expect NC Department of Environment and Natural Resources to be open and honest and protect my water quality here on well water in Anson County on the Triassic natural gas basin. However, I understand the difficult, if not impossible, task the folks at DENR have been given to regulate stormwater runoff from a PROPOSED groundwater injection of toxic and secretive frack fluids.

This will be lengthy, but I ask you to 1) consider our personal insight, situation, hopes and prayers for clean drinking water protection; 2) not try to hide the realities of fracking from the public, 3) incorporate what you can learn from the experiences of other State Departments of Environmental regulations where fracking is already underway and it is too late to reverse the damage. Please read and review thoroughly the articles from many sources pertinent to stormwater runoff from fracking. 4) I have also included at the end of this email the specific recommendations from NC clean water nonprofit citizen groups which, BTW, will NOT excuse or mitigate after-the-fact the unnecessary rush-to-frack by industry-backed legislators or regulators in NC.

1. We are a retired couple, living basically on Social Security, in NC to be near our grandchildren. We are on well water on the Triassic Basin for natural gas and would be affected if the State of NC refuses to learn from other States and permits the PROPOSED process of hydraulic fracturing to drive natural gas to the surface.

We have learned this is currently a very polluting process which drills down over one mile, then goes sideways, injects 400 diesel truck loads of clean water mixed with toxic chemicals into a cement-lined casing that actually leaks immediately in 5% of frack wells....according to the industry's own research/records...and then leaks in 50% of wells over time!

There is, to date, no way to clean up that poisoned water! As my legislator told me, he favors natural gas exploration if it can be done "safely." Well, from all the evidence, that is not a current possibility! All the rules put in place would be worthless unless and until that time.

2. Over a year ago, Walt Haven from DENR came to our Anson Women's League Luncheon to speak about fracking and showed a few chemicals, mostly salts and calcium, plus a picture of a cute little green hand gas well pump which is NOTHING LIKE what Southwestern Energy Oil and Gas frackers plan for us if they have their way.

I know firsthand from sitting in on Mining and Energy meetings in far-away Sanford with industry-friendly Commissioners asking the industry, Southwestern Energy's Jim Dewbry, what they want and need to come frack us!!!! Southwestern Energy just happens to be the industry lobby group mentioned in Gasland, the movie, that admits their frack wells fail at the rate of 5% IMMEDIATELY (and 50% over a number of years)!

Who do they think they are kidding? Keeping toxic chemicals like benzene and toluene secret, buying expensive lobbyists to our State Legislators and media ads for "Americas Natural Gas Alliance" or "Koch Industries" as they pollute our groundwater to sell dirty energy at home and abroad is just plain criminal! No amount of imagined "jobs" is justified.

Where are the safeguards, the explanation of each and every chemical injected and its possible effects on our water with well casings that will leak, 5% immediately according to Southwestern Energy's own records (see www.gasland.com)? I surely want to know where DENR stands on methane pollutants which enable those in frack well areas to light tap water and streams on fire from natural gas leakage!

Why would a public organization like DENR allow fracking chemicals be kept "secret" when monopoly-corporations like Halliburton, Shell, Exxonmobil rule the industry for their profit as evidenced by the private meetings attended with NC "public" officials. These fossil fuel industries certainly have patents on their formulas, do they not?

Why would frackers be allowed to keep toxic chemicals like benzene "secret" from the public when even Coke and Pepsi must reveal their formulas, just not the exact combinations? Why would they be kept "secret" in view of the recent spills and contamination, droughts and potential for harm to clean drinking water on residents, farms, animals due to oil and gas production and transportation?

The only reason I can fathom is that these dirty polluters do not want to face the public outcry about 60 chemicals like benzene, toluene and petroleum distillates that will enrich them temporarily while ruining our groundwater forever!

3. I have attached articles on groundwater pollution both from storm runoff and fracking in general. and can supply hundreds of others from around the nation and around the world.*

DENR should be rescuing us from farm pesticides and especially from the irresponsible use of Roundup/Glyphosphates around farm ponds and drainage ditches, not extending the hazards to North Carolinians by the sneaky, but obvious, rush to frack. Big money industries only want to sell more natural gas overseas while treating NC like some third world country to be dumped on for their further enrichment...not to mention the hazards and expenses we all obviously face from attempts at water cleanup after the gas corporations abandon their wells and, more urgently, climate disruption.

Allowing frack chemicals to pollute our groundwater is suicidal! I trust the real people involved at DENR and in decision-making positions will place more value on their families, friends and fellow citizens than allowing fracketeers to pocket more dollars by destroying our groundwater, wells, aquifers and community water supplies.

Sincerely, Deb & Arne Arnason [REDACTED], Wadesboro NC 28170 [REDACTED]

Numerous sources below, Please review thoroughly:

<http://thetimes-tribune.com/news/cloud-looms-over-a-life-spent-hiding-from-chemicals-1.1707213> Please read this article. I have been called the canary in the coal mine by my doctors and likely will be affected as the woman in this article was. Also, they do mention the **very same SW Energy** that is working with MEC to push fracking on us ASAP. Must we be forced to "subsidize our own demise?" Deb

http://www.journalnow.com/news/state_region/no-money-in-house-budget-for-fracking-tests/article_3a99c1db-9135-5610-bc56-d0abb5fda0ae.html

[Ken Ilgunas questions the fracking bill - Winston-Salem Journal: Columnists](#) Water contamination mentioned

[Fracking North Carolina - emails reveal Halliburton influence](#) Greenpeace Blogs

[RALEIGH, N.C.: Gov. McCrory signs NC fracking gas drilling bill - Business Breaking News - MiamiHerald.com](#)

Now what do we do?

[From fracking to pipelines -Michael G. Noll | On the LAKE front](#)

LTE in the VDT today. I added the images and the links. -jsq

Albert Einstein once said that "the world will not be destroyed by those who do evil, but by those who watch them without doing anything." This philosophy can be applied to countless social and political issues and speaks of the dangers of apathy. Add to this situation a lack of information and our society is truly in danger, as companies like SPECTRA Energy not only count on our apathy, but will also try to hoodwink us.

From the above article - that private well on the right is MINE - Deb Arnason [REDACTED], Wadesboro, NC 28170 [REDACTED]

[Study: Conservation in Delaware Basin worth \\$8B annually | recordonline.com](#)

In PA, \$8 Billion annually for conservation versus \$420 Million profits from fracking...which would WE WANT?.

*We need a study like the above here in NC that **compares our drinking water supply**, agriculture and livestock farming, tourism, **clean air**, roads destroyed by diesel trucks, real estate values **VERSUS** fracking profits.....long before we even consider fracking permits, frack waste in landfills and fracketeer industry "wants" to entice industry to come "frack" us.*

Review notes from Apr 26, 2013 Mining and Energy Commission meeting in Sanford which I attended much to my dismay!

See Gasland 2 documentary <http://www.gaslandthemovie.com/> and local in which SW Energy (industry group consulting with MEC) study admits 5% of nat gas wells toxic fluids LEAK into groundwater drinking supplies IMMEDIATELY upon completion and 50% by 25 years, long after fracketeers are gone! Let the studies begin!

READ THIS HEARTBREAKER:

[Tell the EPA to stop blocking fracking investigations: Thank You - Environmental Action](#)

<http://ecowatch.com/2013/05/02/fracking-ourselves-to-death-in-pennsylvania/>

*By the time the animals began dying, five high-volume wells had been drilled on neighbors' land. Soon, water started bubbling up under their barn floor and an **oily sheen and foam appeared on their pond**. In 2008, a compressor station was built half a mile away. These facilities, which compress natural gas for pipeline transport, emit known carcinogens and toxins like **benzene and toluene**.*

Web Results I am sure you will find thousands more for yourselves if you look objectively.

- **Natural Gas Drilling: Impacts of Fracking on Health, Water | ...**
www.nrdc.org/energy/gasdrilling/ - Similar to Natural Gas Drilling: Impacts of Fracking on Health, Water | ...
*NRDC: The rapid expansion of **natural gas** drilling across the nation endangers human ... **Fracking** is a suspect in **polluted** drinking water in Arkansas, Colorado, ...*
- **Dangers of Fracking**
www.dangersoffracking.com/ - Similar to Dangers of Fracking
*There are more than 500,000 active **natural gas** wells in the US. ... of **water contamination** next to areas of gas drilling as well as cases of sensory, respiratory, ...*
- **Feds Link Water Contamination to Fracking for the First Time ...**
www.propublica.org/.../feds-link-water-contamination-to-frackin... - Similar to Feds Link Water Contamination to Fracking for the First Time ...
*Dec 8, 2011 ... The EPA's investigation into **water pollution** near Pavillion, Wyo., ... And, it is a fact that the retail price for **natural gas** is less than half the ...*
- **4 states confirm water pollution from drilling - USA Today**
www.usatoday.com/story/money/...water-pollution.../4328859/ - Similar to 4 states confirm water pollution from drilling - USA Today
*Jan 5, 2014 ... Over the past 10 years, hydraulic fracturing, or **fracking**, has led to a boom in oil and **natural gas** production around the nation. It has reduced ...*
- **Fracking Water Contamination - Huffington Post**
www.huffingtonpost.com/news/fracking-water-contamination/
*Obama EPA Shut Down Weatherford, TX Shale Gas **Water Contamination** Study ... linked **methane** migration in groundwater to hydraulic fracturing ("**fracking**") in ...*
- **Fracking Pollution - Huffington Post**
www.huffingtonpost.com/news/fracking-pollution/
***Water Pollution** From Drilling Confirmed In At Least Four States. AP | KEVIN ... What impact has **natural gas** development had on the U.S.? "**Fracking** by the ...*

[More results from www.huffingtonpost.com]
- **EPA: Natural Gas Fracking Linked to Water Contamination: ...**
o www.scientificamerican.com
o › Energy & Sustainability
o › ProPublica
- Similar to EPA: Natural Gas Fracking Linked to Water Contamination: ...

*Dec 9, 2011 ... EPA: **Natural Gas Fracking** Linked to **Water Contamination**. The finding is likely to shape how the U.S. regulates and develops **natural gas** ...*
- **Natural Gas Fracking - Introduction**
gracelinks.org/191/natural-gas-fracking-introduction
*The role that **natural gas fracking** will play in the United States' energy future is ... And the **contamination** of watersheds that provide drinking water for millions of ...*
- **Hydraulic fracturing - Wikipedia, the free encyclopedia**
en.wikipedia.org/wiki/Hydraulic_fracturing - Similar to Hydraulic fracturing - Wikipedia, the free encyclopedia

The **fracking** technique is commonly applied to wells for shale gas, tight gas, tight ... noise **pollution**, the migration of gases and hydraulic-fracturing chemicals to the ... 6.2.1 Water usage; 6.2.2 Injected fluid; 6.2.3 Flowback; 6.2.4 Methane; 6.2.5 ...

• **Methane found in Pa. drinking water near fracked wells - CBS ...**

www.cbsnews.com/.../methane-found-in-pa-drinking-water-near-fra... - Similar to Methane found in Pa. drinking water near fracked wells - CBS ...

Jun 25, 2013 ... One study finds methane in water wells near gas wells but another finds methane pollution occurring far away from drilling.

Groundwater Contamination in Colorado from flooding -----

I am submitting my comments on line. This whole thing is insane, so I will start with that premise based on storm water runoff from frack fluids in Colorado floods!

How can DENR write rules to deal with this?

<http://www.onearth.org/articles/2013/09/a-view-from-above-shows-how-the-colorado-superstorm-damaged-fracking-facilities>

<http://money.cnn.com/2013/09/18/news/economy/colorado-flooding-fracking/>

http://www.salon.com/2013/09/25/colorado_flooded_with_fracking_fluid_partner/

....the State of Colorado has only 15 inspectors for all of Colorado's oil and gas wells....."Once the water starts to recede, we'll see....the infrastructure, what's beneath all this mess."....The Environmental Protection Agency is now arriving to help with this situation—belatedly. **"We have serious concerns because the industry is out there 'self policing,'"**

"We have serious concerns because the industry is out there 'self policing,' in regard to DWQ Rule 5:

Inadequate: The proposed rule states that state regulators shall establish 'self-reporting' and 'self-inspection' requirements to ensure that the other standards are met, .1030(c)(5). The rule provides no details about these, and there is little reason to believe that self-regulation will deliver meaningful compliance with the rule. Neighbors and the general public deserve direct state inspections and enforcement to assure compliance with the terms of the rule.

<http://www.weather.com/news/colorado-flooding-more-oil-spills-20131003>

<http://www.fastcoexist.com/3017562/fracking-may-be-making-colorados-flood-disaster-even-worse#5>

I'm sure they can stem the bleeding a little. I imagine a lot of the damage is done, certainly if there were open pits--and as I understand it, there are," says Hugh MacMillan, a senior researcher at the environmental group Food and Water Watch and a former science advisor in the U.S. Senate. **Drilling waste pits often hold an unsavory mix of chemicals and contaminants, including volatile organic compounds and metals like lead. And they don't even need to be flooded for damage to occur. They just need to fill up, he says.**

"They have liners, and if there is not enough space between the top of the liner and the surface of the waste, then you'll get spillover the side that soaks into the dirt and over a longer period of time can find some preferential pathway of flow and begin to cause problems," explains MacMillan. Where the waste flows depends on when the groundwater dries out (the wetter it is, the more it moves) and the different geological formations in the ground.

Layers of bedrock are heavily fractured--one layer might be impermeable, for example--but thin out in certain locations, kind of like swiss cheese. That creates "preferential pathways" for the water to flow. And it can flow far. MacMillan estimates that waste can reach as deep as a mile underground, all the way down to the level of streams. Sludge can also contaminate sensitive local land that lies in places like schools, backyards, and farms.

Rob Jackson, a professor of environmental sciences at Duke University, agrees with MacMillan's assessment. "Any flood that breeches a wastewater pit will flush the waste and contaminated sediments into streams and rivers. Another concern is pipeline ruptures for oil and gas lines," he wrote in an email.

Once contamination has occurred, the only way to clean it up is to dig up the affected dirt and send it to a landfill--a big problem if that dirt is on farmland, for example. If waste has reached water, workers have to continuously pump out water and test it for contamination until it finally looks safe. But that's not a foolproof method: Waste plumes don't stay in the same place, so it's always possible that tested water is fine and other water is not.

Even residents who diligently stay out of contaminated floodwaters may still have to deal with these potential long-term consequences once the disaster has subsided. Oil and gas companies were likely prepared for flash flooding, which is not unheard of in Colorado, but nothing of this magnitude.

"We don't have a uniform set of laws and regulations that govern this industry and that provide basic protections from a public health perspective," says Miriam Rotkin-Ellman, a staff scientist at Natural Resources Defense Council. "Without comprehensive regulations to protect public health, we're very hampered in the public health world in responding to disasters like this."

<http://www.cbsnews.com/news/colorado-floods-spur-fracking-concerns/>

The biggest concern is open-wastewater pits," said Robert Jackson, a professor of environmental sciences at Duke University, who lead a study earlier this year linking fracking to water contamination. The hazardous fluid waste from hydraulic fracturing, also called flowback water, is sometimes stored in open-air pits that Jackson said can possibly overflow if inundated.

<http://www.reuters.com/article/2013/09/18/us-usa-colorado-flooding-fracking-idUSBRE98H15820130918>

"....Fertilizer and pesticides running from vast tracts of farmland may pose a bigger threat. But fracking waste is one of the newest problems in a state where energy production is on the rise, and spills could pose the latest environmental challenge to the multibillion-dollar oil and gas industry.

"We don't know the disposition of the chemicals and waste at this point, but there's a possibility that the flooding allowed their release, and that is a major concern," said Tony Ingraffea, professor of engineering at Cornell University in Ithaca, New York..."

We request NC DENR follow up and report back to the public and MEC on this and other stormwater runoff effects of fracking BEFORE proceeding with this "multibillion-dollar oil and gas industry" experiment in our State at taxpayers expense and risk!

4) Speak out on proposed stormwater fracking rules!

The NC Environmental Management Commission is seeking public comment on five fracking rules, including one that sets standards for management of stormwater on fracking sites. (this is separate from MEC hearings in August)

**A public hearing is scheduled for 6 pm on Tuesday, July 1,
Dennis Wicker Center at 1801 Nash Street in Sanford
(sign up to speak opens at 5 pm).**

EMC will accept written comments through August 1, 2014 at evan.kane@ncdenr.gov, or mail to **Evan Kane, Division of Water Resources, 1611 Mail Service Center, Raleigh, NC 27699-1611.**

Talking Points

Four of the proposed rules are changes for the better, which we support:

Rule 15A NCAC 02T .0113 amends an existing rule to clarify that drilling muds and cuttings from fracking cannot be disposed of by spreading them around on-site (in contrast to muds and cuttings from directionally-drilled utility lines, for example). This is a good change, because fracking produces much greater volumes of drilling waste, and the waste is more likely to include corrosive minerals.

Rule 15A NCAC 02T .1001 amends an existing rule to clarify that fracking operations that reuse fracking fluid are not "closed-loop recycle systems," in the same sense as, say, recirculating systems for industrial cooling water. This is a good change, since the rule was not written for fracking operations.

Rule 15A NCAC 02T .1501 amends an existing rule to clarify that rock cuttings and muds from fracking operations are not "petroleum contaminated soil" and may not be disposed of at sites permitted for disposal or remediation of petroleum contaminated soils. Instead, fracking wastes will be managed under rules being proposed by the NC Mining & Energy Commission. This is good.

Rule 15A NCAC 02U .0113 amends an existing rule to clarify that reuse of fracking fluids must comply with a waste management plan approved under Mining & Energy Commission rules, not under conventional beneficial reuse rules for reclaimed wastewater. This is good.

The 5th proposed stormwater rule, 15A NCAC 02H .1030 has problems

Rule 15A NCAC 02H .1030 requires control of stormwater at sites related to shale gas extraction.

What's good about this rule:

- **North Carolina is right to regulate stormwater from fracking operations.** Not only is this mandated by the legislation in 2012, (S820) but it is essential, since federal rules in this area are extremely weak. Thanks to industry lobbying, the only time an operator must obtain a federal stormwater permit is if it

discharges a 'reportable quantity' of pollutants, or violates a water quality standard. With no one checking, the chance of triggering that requirement is low. This proposed state rule will be the only real control on stormwater.

- It will protect public drinking water. The area where fracking seems most likely to happen – Lee County in the Deep River watershed has public water systems with intakes not far downstream from where stormwater will enter the river system.
- It would require that, during construction of a wellpad, operators keep toxic chemicals and other pollutants where they will not get mixed with stormwater. That is important, because once pollutants are mixed with stormwater, it is virtually impossible to separate them out again.

What's bad, or missing from this rule:

- **Bad:** The proposed rule should impose the same requirement during drilling of the well, operation, production, and closure. Hazardous chemicals are much more likely to contaminate stormwater during drilling and production operations than during wellpad construction, but the proposed rule does not address this threat. (This concern may be partly addressed by a rule proposed by the Mining & Energy Commission, 15A NCAC 05H .1403, which requires that wellpads be designed not to discharge, but it should be in this rule, too).
- ****Bad:** The proposed rule requires operators to control runoff from a one inch rainfall, .1030(c)(4)(A). That standard means it is legal for larger storms to overwhelm the stormwater capture and treatment system and discharge directly to streams. To allow discharges of stormwater from a chemically-intensive drilling operation during large storms presents unacceptable risk to public health and the environment downstream.
- **Inadequate:** The proposed rule appears to require that any discharges from a stormwater pond on a fracking site must draw from well under the surface, to avoid taking along any hydrocarbons floating on top, .1030(c)(4)(E). That's a start, but it does not require skimming of hydrocarbons from the pond, so they may eventually escape when the water level drops. Also, this provision does not address pollutants that are water soluble.
- **Inadequate:** The proposed rule states that state regulators shall establish 'self-reporting' and 'self-inspection' requirements to ensure that the other standards are met, .1030(c)(5). The rule provides no details about these, and there is little reason to believe that self-regulation will deliver meaningful compliance with the rule. Neighbors and the general public deserve direct state inspections and enforcement to assure compliance with the terms of the rule.

The above recommendations are from a coalition of clean water groups that I support, however, I cannot support ANY FRACKING EXPLORATION that does not protect our drinking water and streams from ALL possibilities, including the unusual flooding events that are taking place due to climate disruption like that in Colorado! Please write rules accordingly

CAN DENR GUARANTEE those immediate 5% frack well failures won't affect us? The 50% over time? What is our recourse if they do? Can we sue the fracker corporations, large or small? Until what time period after we discover the contamination? Can we sue the landowner who sold his/her mineral rights? Can we sue the legislators or regulators who write the faulty laws? What can we receive to mitigate the damages or what

recourse do we have to make the corporations/landowners who profited pay for their mess left behind and our poisoned water?

If the industry is so sure of its lack of pollution , they will not be afraid to offer huge bonds for damage mitigation to our groundwater.

Please keep this in mind and all of us in your prayers as you write your proposed Fracking Stormwater Rules.

Thank you! Deb and Arne Arnason, our friends and neighbors in North Carolina
██████████ Wadesboro, NC 28170 ██████████

<http://abc11.com/news/sanford-residents-speak-out-on-fracking/150858/>

Good comments by our friend Martha!

PS For a fun look at the overall solution, one that will appeal to everyone, no matter what political affiliation or beliefs, www.storyofcitizensunited.org Share with the children!

Pickle, Ken

From: Leatha Wood leathawood@johncornell.edu
Sent: Wednesday, July 02, 2014 7:28 PM
To: Kane, Evan
Subject: Water quality
Attachments: Evan Kane.doc; Evan Kane.doc

Please read the attached addressing the proposed EMC rules: Thank you

Leatha A. Wood

[REDACTED]

Evan Kane
 Division of Water resources:

Having attended last night's meeting (July 1, 2014) I was amazed at the lack of protection you have placed in the behalf of North Carolina waterways. There appears to be a weakness in the following:

Rule 15A NCAC 02H.1030 in that there are no provisions for (1) A base line in as much as there aren't any mandatory laws stating air quality, water and soil evaluations taken prior to any action made to the land. This evaluation must be paid to the Division Air quality, Division of Water Quality and Division of Soil Quality. These fees must be made (of a set amount to rise per quality testing deemed needed by the Division of Quality experts are made and testing would conclude no later than 90 days of application). Water, soil and Air quality would be tested every 90 days with the cost of such testing to be charges to each site. (2) Set fees and charges for violations to be set at cost of no less than..)

Rule 15A NCAC 02T .0113 Mandate company to set aside funds for legal fees for landowners to challenge losses occurred and damages that occurred due to the neglect, mismanagement and/or accidental. Having in place a set distance from waterways, ponds, lakes and/or drinking wells, gas line and other Municipal lines.

Rule 15A NCAC 02T .1001 Again there needs to be fines to support the testing, evaluating and fines for the abuse for not using recycled waters from the used resources per 24 hour period. Fines to begin at no less than said amount to be higher as testing reveals deemed by Regulatory agency.

Rule 15A NCAC 02T .1501 Again (1) there needs to be fines to support the testing, evaluating and fines for the abuse for not using recycled waters from the used resources per 24 hour period. Fines to begin at no less than said amount to be higher as testing reveals deemed by Regulatory agency. (2) There must be an impact study to how it is the dispose goods are care for no less than **100 years** from the time the site is opened. (3) Having a set amount of monies held in savings by the state of North Carolina whereas monies will be used for the care, removal and or clean up but not to be used as costs of fines, clean up by the company in other means that containment of the contaminated resources. (4) A set mandate and plan for the contaminated resources in place prior to any set up at the site.

Rule 15A NCAC 02U .0113 Again (1) there needs to be fines to support the testing, evaluating and fines for the abuse for not using recycled waters from the used resources per 24 hour period. Fines to begin at no less than said amount to be higher as testing reveals deemed by Regulatory agency. A set amount of fresh water to be used per 24 hour session per week should be stated with needed fines and implemented without court action having the Water Quality Regulatory to deem as needed only with testing and/or responsible reporting.

In conclusion remember that all the other states that have accepted Fracking have had to fight the monies of the Oil companies that have deep pockets and an abundances of lawyers where as our North Carolina does not. It has been brought to by attention too that the EPA has had budget cuts forcing them to sit back idle, as there are no funds for them to fight the Oil companies. Please do not allow this to happen to our state.

Thank you,

Leatha A. Wood and James Wood

[REDACTED]
Sanford NC 27330
[REDACTED]

Tickle, Ken

From: Debra Champion
Sent: Friday, July 04, 2014 11:26 AM
To: Kane, Evan
Subject: Fracking Public Comments Stormwater July 1,2014 Sanford
Attachments: 7-01-14 Sanford Public Meeting Comments.docx

Dear Mr. Kane,

Attached is a summary of my comments from the July 1, 2014 Public Meeting held in Sanford, NC regarding Stormwater Requirements

I am truly grateful for your time and consideration.

Most Sincerely,
Debra Champion

July 4, 2014

To: NC Environmental Management Commission
 From: Debra Champion
 Re: July 1, 2014 Sanford Public Meeting
Standards for Management of Stormwater on Fracking Sites

I thank you for providing a platform by which my concerns regarding 15A NCAC 02H.1030 could be addressed and heard. I have summarized my public comments/concerns regarding the fracking industry and their desire to begin operations in North Carolina. I look to this Commission, and the standards which you establish, as stewards of North Carolina's Environment. Every resident wishes to enjoy the right of clean air and water now and for countless future generations.

-With the absence of Federal EPA regulations, your Commission is the only regulating agency I look to for assurances in the creation of measured standards and regulations. The fracking industry is currently self-regulated. The above mentioned standard is a beginning, however it lacks specific accountability.

Initial surface soil testing is required under this section, however there is no specific standard mentioned regarding the process of daily operations and ultimately their Final Site Close Out Plan. I recommend the permittee and landowner are required to randomly, under the supervision of NCEMC, submit soil samples from this same area to assure compliance throughout operations. This would create a new number under 02H.1030 (d) Coordination with other water quality regulations, Number 4 would occur on line 34.

-Please make note in these standards: the landowner is equally responsible for all operations which occur upon their property. Where the word "permittee" is written, I recommend the landowner's responsibility automatically be included. Section 02H.1030 (c) Stormwater Management Requirements: (4) line 32; "thereafter, the permittee and landowner shall manage site conditions..." This addition of landowner responsibility must be added in all of cases where permittee is specified as both are legally liable and responsible for all activity which occurs upon their property.

-In the same above mentioned Section, item (3) line 22 and 23 each include the word "control". This is far too vague as it does not give nor provide any definition, measurement or criteria of what the "control" is to be. I request your Commission be specific in dealing with this unregulated industry. In the absence of specific and measureable controls specified, the words are rather meaningless.

-In the same Section, there must be fines and penalties specified for those who will not follow proper standards and controls. Every industry across our country and specifically North Carolina must comply with rules assuring the public safety. When an industry fails to do so, there are costs associated with improper compliance and conduct. The natural gas industry must be accountable. Currently, they are unregulated. Please do not allow this industry to self-regulate with a "free pass" in the state of North Carolina.

I am a landowner who relies on well water and live in an area where the potential of hydraulic fracking is relatively high. I want my state to protect me. I need to know my "new neighbors" (the property owner and permittee) are accountable for all contaminated stormwater collected upon their property.

Thank you for taking my recommendations, suggestions and concerns under consideration!

Pickle Run

From: Keely Wood [redacted]
Sent: Tuesday, July 22, 2014 10:15 AM
To: Stormwater_and_LandApp_Rules@lists.ncmail.net
Subject: [Stormwater_and_LandApp_Rules] STORMWATER questions and comments
Attachments: ATT00001.c

Thank you for trying to write rules for the NC residents who are in the shale region, including my family.

I don't think the rules are detailed enough for limited liability gas and oil companies who will be drilling in North Carolina. The large companies have no interest in this small shale region, we will be experiencing Wildcatters, especially since the bonds are so low. Hazardous wastes are much more likely to contaminate storm water during drilling and production exploration. Specific rules detailing all industrial machinery used during this time should be listed.

Self-reporting and self-inspection are an insult to the NC residents. Like a fox watching the hen house as they say. We deserve state inspections and the strictest enforcement. Where are the fines listed for being non-compliant on storm water? Will a tax be levied to create a storm water management office for this dirty industry?

Thousands of miles of pipe lines will impact water and land with hard surfaces, which increases storm water runoff. Will storm water regulations oversee gathering lines and pipelines? Does storm water management rules include soil stock piles, access roads, borrowing pits, air compressor stations that grow from 1 engine to 5?

Will access roads with heavy diesel truck traffic, be required to be seeded, limed, and fertilized to help storm water?

Imagine another hurricane hitting Lee County or another tornado? Can gas and oil companies declare acts of GOD and pass their mitigation and costs onto landowners, state and federal governments?

Stop protecting the industry and start protecting the residents of NC

Keely Wood
Hide Away farm
Sanford NC
[redacted]

Fickie, Ron

From: Mick Noland mick.noland@fayetteville-nc.gov
Sent: Tuesday, July 29, 2014 10:33 AM
To: bill@fayetteville-nc.gov; Stormwater_and_LandApp_rules@lists.ncmail.net
Cc: bill@fayetteville-nc.gov
Subject: [Stormwater_and_LandApp_Rules] FW: Letter to Evan Kane - Comments on the Stormwater and Other Minor Rules Revision Application
Attachments: Comments on the Stormwater and Other Minor Rules Revision Application to Oil and Gas Exploration and Production Sites.pdf; ATT00001.c

Fayetteville Public Works Commission comments on Stormwater and Other Minor Rules Revisions applicable to Oil and Gas Exploration and Production Sites.

Mick Noland, PE
 Chief Operations Officer
 Water Resources Division
 Public Works Commission of the
 City of Fayetteville
 355 Old Wilmington Road
 Fayetteville, NC 28302
 [Redacted]
 [Redacted]
 [Redacted]

The information contained in this communication (including any attachment) is privileged and confidential information that is intended for the sole use of the addressee. Access to this communication by anyone else is unauthorized. If the reader is not the intended recipient, or an employee or agent responsible for delivering this communication to the intended recipient, you are hereby notified that any distribution or copying of this communication is strictly prohibited and may be unlawful. If you have received this transmission in error, please reply and notify us of this error and delete this message. Finally, the recipient should check this communication and any attachments for the presence of viruses. The Public Works Commission of the City of Fayetteville, NC, accepts no liability for any damage caused by any virus transmitted by this communication.



MICHAEL G. LALLIER, COMMISSIONER
 WICK SMITH, COMMISSIONER
 LYNNE B. GREENE, COMMISSIONER
 DARSWEIL L. ROGERS, COMMISSIONER
 STEVEN K. BLANCHARD, CEO/GENERAL MANAGER

PUBLIC WORKS COMMISSION
 OF THE CITY OF FAYETTEVILLE

855 OLD WILMINGTON RD
 P.O. BOX 1089
 FAYETTEVILLE, NORTH CAROLINA 28302 1089
 TELEPHONE (910) 483-1401
 WWW.FAYPWC.COM

ELECTRIC & WATER UTILITIES

July 29, 2014

Evan Kane
 Division of Water Resources
 1611 Mail Service Center
 Raleigh, NC 27699-1611

**Subject: Comments on the Stormwater and Other Minor Rules Revision
 Application to Oil and Gas Exploration and Production Sites**

Dear Evan,

My name is Mick Noland and I am the Chief Operating Officer for Water Resources for the Public Works Commission of the City of Fayetteville – generally referred to as PWC. I want to thank the Environmental Management Commission and the Department of Environment and Natural Resources for the opportunity to comment on these rules.

PWC provides water, wastewater and electric services to the citizens of Fayetteville and Cumberland County. The Cape Fear River is a tremendous resource to our community providing our major source of water supply as well as affording many recreational opportunities for our citizens. For this reason, we try to pay attention to rules that have the potential to influence the quality and quantity of our water supply.

The proposed stormwater rules for Oil and Gas Exploration and Production sites are statewide rules. However, it is my understanding that the area with the most potential for oil and gas exploration is upstream in the Cape Fear River Basin in or near Lee County. This means that any pollutants discharged as part of this activity would eventually come downstream, to our water intake in the Cape Fear River and would need to be treated at our Water Treatment Plant.

We have reviewed the stormwater requirements proposed to be included as **15A NCAC 02H .1030** and find that they have been developed to be consistent with other stormwater requirements already included in state rules. The following are some specific comments:

- Paragraph (a) (3) of the rules includes the following second sentence – “The Division shall not authorize by permit the discharge to surface waters of stormwater commingled with any other fluid.” While we support the apparent intent of this statement to not allow other process or wastewaters to be co-mingled with stormwater, there is really no definition of “fluids” in the rule. The requirement would be clearer if the rule language referenced the definitions of “Waste” included in GS 143-213 (18) which further defines, sewage, industrial waste, other waste and toxic waste. We believe the intent of the rule is for these requirements to pertain to stormwater from areas where it will not be co-mingled with these others types of waste.

BUILDING COMMUNITY CONNECTIONS SINCE 1905

AN EQUAL EMPLOYMENT OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER

- We strongly support the requirements contained paragraph (b) of the proposed rule; in particular the requirements to provide full permit application in subparagraph (1), the specification that stormwater requirements are required to have engineered stormwater controls required by High Density projects in subparagraph (2), and the additional information to be included in the permit application in subparagraph (4). This additional information will allow the DENR staff to make a decision on the stormwater permit with comprehensive environmental information. Even with these requirements in place, what is to be done to ensure that there will be no damage to the benthic organisms in smaller receiving streams?
- We support the stormwater management requirements during initial site activities specified in Paragraph (c) (1), (2), and (3) of the rule. The requirement in (1) (A) is as follows: – “Equipment, petroleum products, equipment wash waters, and associated spent fluids shall be managed (operated, maintained, stored, handled, cleaned up, and disposed of) to prevent the potential or actual pollution of surface waters by direct discharge or via stormwater runoff”. Is there a similar requirement to protect groundwater somewhere in other rules of the EMC?
- While we support the stormwater requirements in subparagraph (c) (4) “after completion of the surface site preparation activity, and beginning with the surface activity in direct support of well drilling and continuing thereafter”, we believe the rules should be modified to require or to at least encourage site owners to utilize the captured or retained stormwater from the 1 inch rainfall for use for some process or hydraulic fracturing purposes. This would represent good stewardship of our natural resources. If the collected stormwater is good enough for discharge to surface waters, it should be good enough to use on-site use.
- We are somewhat surprised that the draft requirements included in (c) (4) do not have a requirement for the sites to have and maintain a Stormwater Pollution Prevention Plan. The General Stormwater Permits for “industrial activities” issued by the state have this requirement and it makes sense to require it for this category of industrial stormwater discharge.
- The other minor revision of rules proposed seem appropriate since it would limit options for well-established activities or pollution sources from applying to this new and unique type of industrial activity.

I want to thank you for this opportunity to provide comments on these rules. They represent an opportunity to continue to protect valuable surface water such as the Cape Fear River while allowing this type of oil and gas development. This completes the comments at this public hearing. We may issue additional written comments during the comment period.

Very truly yours,

PUBLIC WORKS COMMISSION



Mick Noland, PE
Water Resources Officer/COO

Pickle, Ken

From: Laura Young [redacted]
Sent: Wednesday, July 30, 2014 6:07 PM
To: Pickle, Ken
Subject: Fwd: stormwater fracking rules

----- Forwarded message -----

From: Laura Young [redacted]
Date: Wed, Jul 30, 2014 at 6:05 PM
Subject: stormwater fracking rules
To: evan.kane@ncdenr.gov

I would like to address the rule requiring control of runoff from a 1" rainfall. I wish to assert that this rule does not adequately protect waterways from damaging runoff. A check of weather service data at the Raleigh station reveals that in the last two years between June of 2012 and May 2014 there have been 22 days with daily rainfall amounts in excess of 1". In addition, there may be 24 hour periods falling on two calendar days that exceed 1" of rainfall. The one ince standard is not adequate to protect from stormwater run off risks. The pre and post development option must consider the quality and not merely the quantity of the runoff.

I also assert that standards to protect from stormwater risks should apply to all phases from initial land disturbance to closure and include roads and pipelines.

Since making these comments at the public hearing, the rain guage in my yard in Lee County has registered 5 additional days with rainfall over 1".

Please insist on rules that will protect human and environmental health.

Laura Young
Lee County resident

Fickle, Ken

From: Liz Cullington [redacted]
Sent: Friday, August 01, 2014 11:33 AM
To: Kane, Evan; Stormwater_and_LandApp_Rules@lists.ncmail.net
Subject: [Stormwater_and_LandApp_Rules] Comment on stormwater rules
Attachments: ATT00001.c

Comment on proposed rule revisions on 15A NCAC 02H .1030, 15A NCAC 02T .0113, .1001, and .1505, 15A NCAC 02U .0113

15A NCAC 02H .1030

Stormwater control at hydraulic fracturing sites ought to be far more stringent than at, for example, construction sites or shopping centers, where the only concern is flooding, on or off site, not the spread of hazardous and/or toxic chemicals and other substances both on and off site, with or without actual flooding.

The proposed hydraulic fracturing rules (15A NCAC 05H) admit that once rainwater or stormwater enter a waste storage pit, it too becomes E&P waste and thus can't just be gradually released to state waters.

Thus it is totally inappropriate for stormwater control fracking sites to be designed only for a one inch rainfall (.1030[c](4)(A)). Rainfall events in NC can produce up to 8" locally, and during a stalled hurricane like Floyd, even more, closer to 20".

The proposed rule does require that during pad construction, chemicals be isolated, but not during drilling, fracturing, or production.

The rule requires state regulators to establish self-reporting and self-inspection rather than state inspection and enforcement (.1030[c]5). Such a system cannot protect state waters (including drinking water) or neighboring properties. State stormwater staff should have the right to inspect sites without prior notice at any time, and to promptly respond to reports or complaints.

15A 02T .0113

Yes, this is a good and necessary rule amendment, O&G drilling muds and cuttings should not be allowed to be disposed of by surface spreading on site.

15A 02T .1001

This is a good and necessary rule amendment. Simply re-using fracking fluid does not constitute a "closed loop recycle system" because there is no actual, literal closed loop, fluid can be remixed during re-use, and "re-use" is sometimes re-use at a different well or even different well site.

15A 02T .1501

This is a good and necessary rule amendment. Drill muds and cuttings should not be treated as "petroleum contaminated soil" or disposed of at sites that are permitted for the disposal or remediation of that material. Drill muds are a different and unique chemical material that could not be "remediated" by the same process.

15A NCAC 02U .0113

This is also a needed amendment, since re-use of fracking fluids bears no resemblance to the current rules for conventional beneficial reuse of reclaimed wastewater. That latter process produces an end product that can be safely used for some irrigation or non-potable uses. Re-use of fracking fluids would involve no pre-treatment and would be the same use, just not in a true closed loop.

Liz Cullington
[redacted]
Pittsboro NC 27312

Pickle, Ken

From: Sharon Garbutt [redacted]
Sent: Friday, August 01, 2014 1:12 PM
To: Stormwater_and_LandApp_Rules@lists.ncmail.net
Subject: [Stormwater_and_LandApp_Rules] Attached comments on Proposed Storm Rule
Attention: Evan Kane
Attachments: COMMENTS ON EMC PROPOSED RULE 15A NCAC 02H.pdf; 7.10
_Version_Final_BP_Report.pdf; ATT00001.c

Dear Evan,

Thank you for the opportunity to comment on the Storm Rule proposed by the Environmental Management Commission. I appreciate the time and effort the EMC is dedicating to assure that this rule serves to protect the citizens of North Carolina.

My comments on the Proposed Rule are attached. In reviewing the proposed EMC rule, I came across the report: *Marcellus Shale Safe Drilling Initiative Study* (July, 2014.) This report is based on research done by the University of Maryland Center for Environmental Science—Appalachian Laboratory (UMCES-AL) and subsequent review of the UMCES-AL findings by an Advisory Commission and the public. I have attached the *MSSDIS* report since I reference it several times. If you are interested in the UMCES-AL original report, here is the link: <http://www.umces.edu/sites/default/files/al/pdfs/EshlemanandElmore-FinalReport-2013.pdf>

I hope my comments are helpful to your rule making process.

Thank you,

Thelma Sharon Garbutt

[redacted]

Pittsboro, NC 27312

[redacted]

COMMENTS ON EMC PROPOSED RULE 15A NCAC 02H .1030
STORMWATER REQUIREMENTS: OIL AND GAS EXPLORATION
AND PRODUCTION

(a)(3): The rules proposed by the MEC as *Subchapter 05H—Oil and Gas Conservation* appear to rely on the EMC to adopt rules for control of stormwater, regardless of whether the stormwater is contaminated. Subchapter 05H rules refer only to exploration and production wastewater and do not cover either stormwater or contaminated stormwater.

Toxic chemicals and toxic solids are consistently stored and spilled on drilling pads. It is nearly impossible to assure before each rain event that all chemical containments are clean and securely closed and that the pad has been sufficiently cleaned to remove all hazardous material. Containment of *all* stormwater on the frack pad is the only way to assure that polluted water is not directly or indirectly discharged onto adjoining land or into surface waters and groundwater. The contaminated water should be collected and reused or moved to a facility that will treat the water so that it is safe to discharge; if adequate treatment is impossible, then the water needs to be disposed of to ensure it does not contaminate land or water. In *The Marcellus Shale Safe Drilling Initiative Study, Part II, Interim Final Best Practices (MSSDIS)* (Prepared by the Maryland Department of the Environment and the Maryland Department of Natural Resources: July, 2014) a zero-discharge, lined and bermed well pad is recommended.

(b)4(D): If threatened or endangered species are identified, the applicant should be required to outline steps that will be taken to protect these species. Because of the highly industrialized nature of fracking operations and the likelihood of spills of highly toxic substances during operations, the only

way to assure that threatened and endangered species will not be adversely impacted is to approve rules prohibiting any discharge of stormwater into waters where these species live.

(c)(1)(A): Given the heavily industrialized nature of a drilling pad, the rules should specify a minimum undisturbed buffer between surface waters and all construction activity in order to help minimize the impact to surface waters of accidental contaminated stormwater runoff or direct discharge of contaminants. A system needs to be in place to collect and treat stormwater runoff--or to dispose of all discharges and stormwater runoff-- since these are likely to contain toxic substances that should be kept from adjacent land, surface waters and groundwater.

(c)(1)(C)(D): The 50 ft. buffer is inadequate. The wastes described can be highly toxic. Given the likelihood of a high level of toxicity at these construction sites, a much larger buffer should be required to prevent the adverse impacts of accidental contaminated runoff/discharge into surface waters. Sediment runoff will also likely be a problem in areas where the described materials are stored. In addition to the larger buffer, a system for collection of runoff from these storage areas should be put in place since the runoff will likely contain toxins that should be kept from the land, surface waters and groundwater.

(c)(1) (E): A minimum buffer size should be specified between cement products and surface waters in order to prevent the adverse impact to surface waters of a direct discharge or of contaminated stormwater runoff from concrete/cement products. Erosion from these areas is also likely to be a problem. A system should be put in place to collect any stormwater runoff from these cement/concrete storage areas

in order to prevent land, surface water and groundwater contamination.

(c)(2)(A)(B): Why not require *all* disturbed areas to have ground cover stabilization within 7 calendar days of the last land disturbing activity in order to reduce erosion, especially since erosion/sedimentation are considered to be major problems in site development? The recommendation from the *MSSDIS* is that all slopes steeper than 3:1 and all perimeter controls be stabilized within 3 calendar days and all other disturbances within 7 calendar days (pg. C-96, Marcellus Shale Safe Drilling Initiative Study. Part II, Interim Final Best Practices, July, 2014: Prepared by the Maryland Department of the Environment and the Maryland Department of Natural Resources.) . This standard would be more effective than the proposed standard and should be adopted.

(c)(2)(C): The Division needs the authority to also *shorten* allowable time for stabilization in the event of an impending hurricane or other catastrophic weather event. The Division also needs the authority to delay the start of site development if there is an impending catastrophic event, such as a hurricane.

(c)(2)(D)(ii): All stormwater from a drilling site needs to be tested for toxins before being discharged into surface water. Because the industry has proven itself to be unreliable with self-testing, the testing needs to be done by qualified State of NC employees or by qualified consultants paid for by the State (Studies show that hired consultants consistently error on the side of those who pay them!) Additional funding needs to be provided for the hiring of additional DENR staff to do this testing or for hiring of outside consultants to do the testing! A listing of all chemicals used at the site should be available to

those testing for contaminants. As described in the *MSSDIS* (pgs. 32 and 33) this can be accomplished without compromising trade secrets.

(c)(4)(A): The *Marcellus Shale Safe Drilling Initiative Study* recommends retention and treatment of *all* stormwater from the drilling pad. Given the potential for the presence of an indeterminate amount of highly toxic chemicals on drill pads, it makes sense to require the total containment standard described in the *MSSDIS*. This study also recommends a drill pad design that holds 4 inches of rain in a 24 hour rainfall (pgs. c-95 and c-96.) During rain events greater than 4", an excessive number of trucks would be needed to remove excess water—a situation that would cause an increase in diesel fumes, road wear, traffic congestion etc. Therefore, the study recommends containment of excess stormwater in on-site tanks. The water stored onsite would then be available for well stimulation activities, reducing the amount of water needed to be hauled into the site.

If the Division does not require containment of all stormwater on the drill pad, then it would still make sense to increase the amount of initial runoff to be contained to a level higher than the current 1" standard. It is likely that the drilling pads are going to have higher concentrations of dangerous toxins than what is found in most current industrial sites in NC, so it seems to follow that even though the first inch of rain usually carries away most pollutants, this may not be the case with these drill pads.

(c)(4)(D): Should a maximum TSS discharge limit per event be established? Without a discharge limit for each discharge event, the 85% *annual* removal requirement would allow at least one very high TSS discharge event that could have a

severe adverse impact on the receiving body of water and its aquatic life.

(c)(5): To assure industry compliance with stormwater rules, DENR staff or qualified consultants will need to do unannounced inspections at sites. It is well documented that this industry cannot be trusted to do reliable self-reporting.

General Comments:

1) Since sediment carried by stormwater runoff has been a major source of surface water pollution near fracking sites, there should be regulation of how much land can be disturbed at any one time so as not to overwhelm surface waters with sediment. After a section of disturbed land has been stabilized so as to prevent erosion, construction can begin in another section.

2): An overall site plan for stormwater management needs to be developed. Such a plan could achieve coordinated stormwater management among drilling pads and permittees so that discharges into the environment are distributed and timed to reduce adverse impacts to the environment. The overall plan could also minimize the number of control measures needed. Such a plan could also divert clean stormwater from nearby undeveloped areas so as to keep this uncontaminated runoff from flushing contaminated water through control measures.

3) The amount of people and the amount of activity on a well pad varies greatly over time from the construction of the pad, to pre-production activities, to production, post production

and permanent closure of all wells on the pad and eventual removal of the pad. Each permittee should be required to provide a stormwater management plan that describes ongoing stormwater management at each stage, including stormwater management during times when there are few, if any people working on the pad and when there is little, if any activity on the pad.

4) Penalties are needed for those who break the rules. Are penalties for violation of Stormwater Rules covered by the MEC? In order to encourage compliance with rules, meaningful financial penalties should be imposed for all violations and the permittee must be required to submit a plan for future compliance with the rule that was violated. Repeated violations of the same or of a variety of rules should lead to the revocation of the permit. This would send a strong message to permittees that they must adhere to all Stormwater Rules.

5) When testing stormwater runoff for contaminants, those doing the testing must have a list of every chemical used on the site, including "Trade Secret" constituents. The *MSSDIS*, on pgs. 32-33, describes a system by which this can be accomplished without compromising trade secrets.

Picote, Ken

From: Jeannie ~~jeannie@stormwater.org~~
Sent: Friday, August 01, 2014 2:13 PM
To: Stormwater_and_LandApp_Rules@lists.ncmail.net
Subject: [Stormwater_and_LandApp_Rules] public comment
Attachments: EMC Stormwater Public Comments-Final Draft-JA.pdf

Evan Kane:

We appreciate your efforts to review and revise existing stormwater rules, and propose new ones for the oil and gas program.

It is difficult for the general public to evaluate and weigh the consequences of these stormwater rules without the advantage of prior background experience and a thorough understanding of existing statutes.

Thank you for the opportunity to submit written public comments.

Jeannie Ambrose

Stormwater_and_LandApp_Rules mailing list
Stormwater_and_LandApp_Rules@lists.ncmail.net

Public Comments: EMC Stormwater Rules

Rule 15A NCAC 02H .1030

North Carolina has a small shale gas basin in comparison to other states. In the process of developing our State's modern regulatory program for the management of oil and gas, we should proceed with care and thoughtful planning to avoid the many problems encountered elsewhere. Faced with specific stormwater situations negatively impacting their communities, some local governments have passed ordinances more stringent than state or federal regulations. Changes in our state regulations for the energy sector may undermine the long-term, positive gains from current implementation of riparian buffers, stream setback distances, and other best management practices in existing local ordinances. Note, however, that all current or proposed oil and gas regulatory rules—at any level—are only as good as its enforcement action.

Therefore, a zero discharge stormwater regulation model is recommended to minimize potential contamination risks to surface waters from oil and gas operations and, thereby, safeguard the quality of our water supply. For example, open wastewater pits, allowed in the proposed Mining and Energy Commission rules, may increase the likelihood of uncontrolled spills or releases of toxic fluids during extreme weather events. Although oil and natural gas operations and its waste are exempted or excluded in 7 of the 15 major federal environmental laws, polluted stormwater runoff and contaminated sediments from these industrial sites can adversely impact surface water [and groundwater] harming aquatic life and the quality of downstream drinking water supply. A system for 100% retention of stormwater runoff from a well pad site will help protect our drinking water supply and aquatic ecosystems.

(a)(3) Although the intent of this rule is good, address what steps, if any, can be taken to determine and verify stormwater discharge has not commingled with any other potentially toxic fluids.

Sampling?

Cumulative, residual amounts of hazardous pollutants can remain on or escape from impervious or partially impervious well pad surface areas. These pollutants from industrial sites can contaminate stormwater runoff despite cleanup efforts for accidental releases or spills during active construction, routine operation and maintenance of [6 to 20+] multiple wells per well pad. In addition, direct runoff from rigwash and equipment cleaning on site can contribute to polluted discharge. Leaks, overtopping or breaching of pits, secondary containment systems, and plastic liners can occur due to severe storm events, mechanical failures, structural defects, or human error. Furthermore, chemical nondisclosure laws for oil and gas exploration, development and production complicate the process of identifying potentially toxic fluids and materials present in the stormwater discharge.

Potential sources of toxic chemicals on well pad site, including but not limited to:

1. diesel generators and diesel engine transport trucks
2. bulk chemical storage of solids and liquids. For example, biocides, a common chemical additive, have an adverse effect on aquatic life, exacerbating condition of receiving streams already classified as impaired.
3. ancillary equipment (sand movers, blender hoppers, separators, condensers, and glycol dehydrators)

4. surface impoundments.¹ Hazardous fluids may have both a liquid and solid component.

5. storage tanks

6. pipelines

7. gathering lines

8. mobile unit for treating wastewater for reuse until the waste water must be properly disposed.

(b)(4)(C) Isolated, diabase wetlands are unique habitats for rare plant species and should be protected.

(b)(4)(D) Explain why identifying threatened and endangered species and their locations on the application is required if no protection is given to them. Is its intent merely to record the location and status of the state's ecological resources in the Significant Natural Heritage Areas database?

(c) Stormwater Management Requirements

Require the following standards to minimize land disturbance and reduce potential erosion and sedimentation problems.

- Two-part, stormwater control protection plan [and a groundwater protection plan] as part of the new coordinated permit: data applicable to all sites and to specific sites.
- Indicate criteria for Best Management Practices used.
- Prepare overlays to master permitting map to show the following:
 1. Pre-development site conditions to identify soil/sediments and geologic hazards (natural fracture joints, diabase dikes, and faults), natural drainage patterns, seasonal high water tables, and waters of the State (including natural springs and seeps). These hydrologic and geologic parameters may contribute to the instability of equipment and infrastructure on well pad site.
 2. Watershed characterization/classification.
 3. Environmentally sensitive areas/habitats.
 4. Location of potential stormwater pollutant sources: ancillary infrastructure (road access, culverts, bridges, pits, pipelines, and gathering lines), equipment, and storage of all chemicals and materials)

¹ U.S. EPA, Compilation of Publicly Available Sources of Voluntary Mgmt. Practices for Oil and Gas Exploration & Production Wastes as They Address Pits, Tanks, and Land Applications, April 2014, at 28.

a. Reserve Pits. Pits used: (a) to store additional drilling fluids for use in drilling operations; and/or (b) to dispose of wastes generated by drilling operations and initial completion procedures.

b. Production Pits

i. Skimming/Settling: Pits used to provide retention time for settling of solids and separation of residual oil.

ii. Produced Water: Pits used for storage of produced water prior to injection for enhanced recovery or disposal, off-site transport, or surface-water discharge.

iii. Percolation: Pits used to dispose of waste liquids via drainage or seepage through the bottom and/or sides of the pits into surrounding soils.

iv. Evaporation: Lined pits used to contain produced waters which evaporate into the atmosphere by natural thermal forces.

c. Special Purpose Pits

i. Blowdown: Pits used for collecting material resulting from the emptying or depressurization of wells or vessels.

ii. Flare Pits: Pits used exclusively for flaring gas.

iii. Emergency Pits: Pits used to contain liquids on a temporary basis due to process upset conditions.

iv. Basic Sediment: Lined pits used for temporary storage of production wastes from tank batteries or production vessels which may contain residual oil.

v. Workover: Pits used to contain liquids during the performance of remedial operations on a producing well in an effort to increase production.

- **(c)(4)(A) and (c)(5):**

1. Require operator to examine all erosion controls on site and record inspections weekly and within 24 hours after any storm event greater than 0.5" of rain per 24-hour period. Contact Department immediately to inspect and approve any needed mitigation action.

2. Conduct periodic, unannounced site inspections by the Department to ensure permit rule compliance in implementing, maintaining, and reporting of structural and non-structural BMPs.

3. Keep an updated copy of stormwater prevention plan with all revisions on site.

SUBMITTED BY JEANNIE AMBROSE
AUGUST 1, 2014

Pickie, Kun

From: Therese Vick <[redacted]@gmail.com>
Sent: Friday, August 01, 2014 3:16 PM
To: Stormwater_and_LandApp_Rules@lists.ncmail.net
Subject: Re: [Stormwater_and_LandApp_Rules] Comments on proposed rule revisions
Attachments: TVickBREDLCommentsDWRStormwater08012014.docx; eisenbarth_well_pad_fire.pdf; ATT00001.c

Lets try again. Technology fails me. Comments and report attached.

On Fri, Aug 1, 2014 at 3:14 PM, Therese Vick <[redacted]@gmail.com> wrote:
Also- EPA report referenced in comments attached

On Fri, Aug 1, 2014 at 3:12 PM, Therese Vick <[redacted]@gmail.com> wrote:
Are attached

--

Therese Vick
 North Carolina Healthy Sustainable Communities Campaign Coordinator
 Blue Ridge Environmental Defense League
 [redacted]
 919-345-3673
 www.bredl.org
 [redacted] Twitter
<https://www.facebook.com/BlueRidgeEnvironmentalDefenseLeague?ref=hl>
 From Where I Sit: Reports From The North Carolina Mining and Energy Commission Meetings

BREDL 1984-2014: *Celebrating Thirty Years of Grassroots Action*

Be kind to all you meet, each of us carries a burden that others cannot see—



--

Therese Vick
 North Carolina Healthy Sustainable Communities Campaign Coordinator

Blue Ridge Environmental Defense League

www.BREDL.org

4617 Pearl Rd. Raleigh NC 27610

919.345.3673

Mr. Evan Kane
Division of Water Resources
1611 Mail Service Center;
Raleigh, NC 27699-1611

August 1, 2014

Dear Mr. Kane:

On behalf of the members and directors of Blue Ridge Environmental Defense League I offer the following comments on the proposed rule revisions related to oil and gas exploration. As a general comment, it is important that the Division of Water Resources develop regulations pertaining to the management of storm water from hydraulic fracturing activities.

Concerning 15A NCAC 02H .1030:

The Division of Water Resources (DWR) should be developing these rules taking into consideration the unique challenges posed by this industry and its practices, and the setbacks and variances for water bodies as proposed by the Mining and Energy Commission (MEC). The draft rules by the MEC currently out for public comment establish these setbacks:

15A NCAC 05H .1601 SETBACK DISTANCES

(a) Each oil or gas well, tank, tank battery, or pit shall comply with the following setback distances as measured from the center of a wellhead and the edge of the pit, production facility equipment, tank, or tank battery closest to the features below:

- (1) occupied dwellings and high occupancy buildings: 650 feet;
- (2) edge of a public road, highway, utility or railroad track right-of-way, or other right-of-way: 100 feet;
- (3) a perennial stream, river, watercourse, pond, lake, or other natural and artificial bodies of water including wetlands and trout stream: 200 feet;
- (4) intermittent stream: 100 feet; and

(5) a public or private water well intended for human consumption or household purpose: 650 feet.

(b) The permittee shall ensure a minimum setback of 100 feet from each oil or gas wellhead, tank, tank battery, or pit to the edge of the mapped 100-year floodplain and floodway.

(c) An applicant or permittee may request a variance to reduce the setback distances for an oil or gas wellhead, a tank or tank battery from an intermittent stream, or a pond, or other natural or artificial water body that is not a water of the State, wholly contained within the drilling unit required by Rule .1601 of this Section. The Commission shall consider the following factors in granting or denying variances:

(1) the variances shall include additional measures that eliminate, minimize, or mitigate potential adverse impacts to public health, welfare, and the environment, such as the use of secondary or backup containment measures;

(2) the measures proposed to eliminate, minimize or mitigate potential adverse impacts to public health, welfare and the environment are adequate to address all the risks at the well site and justify the reduction of setback distances as requested in the variance;

(3) the oil or gas wellhead, freshwater storage pit, tank, tank battery, or production facility shall be a minimum of 50 feet from any intermittent stream, pond, or other natural or artificial water body, that is not a water of the State, wholly contained within the drilling unit;

(4) no variance is allowed for any E & P waste pit setback from an intermittent stream; and

(5) oil or gas wellheads, tanks or a tank battery, or pits less than 650 feet from, and up-gradient of, a surface water body shall use tertiary containment, such as an earthen berm.

On June 28, 2014 a fire broke out at a natural gas well pad near Monroe, Ohio. The incident resulted in evacuations, a large fish kill, and a hard look at the dysfunctional flow of information during the emergency due to trade secret provisions and limited chemical disclosure. This event and others like it necessitate the need for careful assessment of setbacks, careful analysis of chemicals used on site and potentially discharged to the environment, and the ability of the DWR to respond to such an emergency. EPA's report is attached for the record. From the report "U.S. ENVIRONMENTAL PROTECTION AGENCY POLLUTION/SITUATION REPORT Statoil Eisenbarth Well Response - Removal Polrep Initial Removal Polrep".

- "Materials present on the Pad included but was not limited to: diesel fuel, hydraulic oil, motor oil, hydrochloric acid, cesium-137 sources, hydrotreated light petroleum distillates,

terpenes, terpenoids, isopropanol, ethylene glycol, paraffinic solvents, sodium persulfate, tributyl tetradecyl phosphonium chloride and proprietary components. As a result of fire-fighting efforts and flow back from the well head, significant quantities of water and unknown quantities of products on the well pad left the Site and entered an unnamed tributary of Opossum Creek that ultimately discharges to the Ohio River. Runoff left the pad at various locations via sheet flow as well as by two catch basins located at the northwest and southeast corners of the well pad.”

- Initial reports identified the following products were involved and lost in the fire: ~250 gallons of hydrochloric acid (28%), ~7,040 gallons of GasPerm 1000 (terpenes, terpenoids, isopropanol, citrus extract, proprietary components), ~330 gallons of LCA-1 (paraffinic solvents), ~1900 gallons of LGC-36 UC (hydrotreated light petroleum distillate, guar gum), ~1000 gallons of BC-140 (monoethanolamine borate, ethylene glycol), ~3300 gallons of BE-9 (tributyl tetradecyl phosphonium chloride), ~30,000 gallons of WG-36 (polysaccharide gel), ~1,000 gallons of FR- 66 (hydrotreated light petroleum distillate), ~9000 gallons of diesel fuel, ~300 gallons of motor and hydraulic oil. Additionally, there was an inventory of shaped charges, primer cord and detonators

on the site as well as three Cesium-137 radiological sources (2-100 millicurie and 1-55 millicurie) with unknown disposition as a result of the fire.“

- “There was concern over the ability to analyze for and detect the primary component of BE-9 [tributyl tetradecyl phosphonium chloride (TTPC)] for which there is no approved standard method to detect. In consultation with ATSDR, an industry method was obtained and shared with CTEH (Statoil’s environmental consultant) to work with a laboratory to develop a method to analyze for TTPC in environmental media.”

From a July 24, 2014 Mother Jones report on the incident, “Nevertheless, it took five days for the Environmental Protection Agency and its Ohio counterpart to get a full list of the chemicals polluting the waterway. “We knew there was something toxic in the water,” says an environmental official who was on the scene. “But we had no way of assessing whether it was a threat to human health or how best to protect the public.”¹

In addition, the proposed rule require that toxic and hazardous chemicals be isolated from contact with storm water during all phases of well development and production.

Thank you for the opportunity to comment.

¹ Blake, Mariah. “Halliburton Fracking Spill Mystery: What Chemicals Polluted an Ohio Waterway?” Mother Jones. July 2014. <http://www.motherjones.com/politics/2014/07/halliburton-ohio-river-spill-fracking>

Respectfully Submitted,

Therese Vick

North Carolina Healthy Sustainable Communities Campaign Coordinator



July 30, 2014

Mr. Evan Kane
NC Dept. of Environment and Natural Resources
Division of Water Resources
1611 Mail Service Center
Raleigh, NC 27699-1611



RE: DWR Proposed Rule Revisions Related to Oil and Gas Exploration

Dear Mr. Kane:

I am writing to comment on the proposed changes to five rule revisions related to oil and gas exploration and stormwater control. We support four of the proposed rule revisions but have concerns about the fifth. Specific comments and concerns are below.

Rule 15A NCAC 02T .0113 - amends an existing rule to clarify that drilling muds and cuttings from fracking cannot be disposed of by spreading them around on-site. We support this revision because fracking produces much greater volumes of drilling waste, and the waste is more likely to include corrosive minerals.

Rule 15A NCAC 02T .1001 - amends an existing rule to clarify that fracking operations that reuse fracking fluid are not closed-loop recycle systems. We support this revision since the rule was not originally written for fracking operations.

Rule 15A NCAC 02T .1501 - amends an existing rule to clarify that rock cuttings and muds from fracking operations are not petroleum contaminated soil and may not be disposed of at sites permitted for disposal or remediation of petroleum contaminated soils. We support this revision since it will require that fracking wastes be managed under rules being proposed by the NC Mining & Energy Commission.

Rule 15A NCAC 02U .0113 - amends an existing rule to clarify that reuse of fracking fluids must comply with a waste management plan approved under Mining & Energy Commission rules. We also support this revision because it places the requirement for reuse with other rules written to address fracking fluids and not under conventional beneficial reuse rules for reclaimed wastewater.

Rule 15A NCAC 02H .1030 – we have concerns with this rule revision. As written, it requires control of stormwater at sites related to shale gas extraction, which is essential as it will be the only state rule to control stormwater at fracking sites. It would require that, during construction of a wellpad, operators keep toxic chemicals and other pollutants where they will not get mixed with stormwater. This is an important step because once pollutants are mixed with stormwater, it will be virtually impossible to separate them out again.

However, the proposed rule should impose the same requirement during drilling of the well, operation, production, and closure. As has been demonstrated in some other states, hazardous chemicals are much more likely to contaminate stormwater during drilling and production operations than during wellpad construction, but the proposed rule does not address this threat. Depending on

the final outcome of a rule proposed by the Mining & Energy Commission, 15A NCAC 05H .1403, which requires that wellpads be designed not to discharge, this might be addressed but it should also be included in this rule as well.

The proposed rule also requires operators to control runoff from a one inch rainfall [.1030(c)(4)(A)]. That standard means it is legal for larger storms to overwhelm the stormwater capture and treatment system and discharge directly to streams. To allow discharges of stormwater from a chemically-intensive drilling operation during large storms presents unacceptable risk to public health and the environment downstream.

The proposed rule appears to require that any discharges from a stormwater pond on a fracking site must draw from well under the surface, to avoid taking along any hydrocarbons floating on top [.1030(c)(4)(E)]. It should also require skimming of hydrocarbons from the pond, so they will not eventually escape when the water level drops. Also, this provision does not address pollutants that are water soluble.

The proposed rule states that state regulators shall establish self-reporting and self-inspection requirements to ensure that the other standards are met [.1030(c)(5)]. The rule provides no details about these, and there is little reason to believe that self-regulation will deliver meaningful compliance with the rule. Neighbors and the general public deserve direct state inspections and enforcement to assure compliance with the terms of the rule.

Thank you for accepting my comments regarding these rule revisions. Protection of North Carolina's watersheds is of prime concern to the River Guardian Foundation and we stand ready to assist the State of North Carolina in every possible manner to ensure that together we are achieving this goal.

Sincerely,

A handwritten signature in cursive script that reads "George C. Matthis, Jr.".

George C. Matthis, Jr., President
River Guardian Foundation, Inc.

EMC Fracking Storm water comments:
Martha Girolami, resident of Chatham County, NC
July 31, 2014

1. The Rule 15A NCAC 02H .1030 must apply to all stages of natural gas development including pad and road construction, drilling, fracking, gas production, recycling and other operations of natural gas development and closure.

It is extremely likely that each well pad will have multiple wells...perhaps as many as twenty on one well pad. The well pad becomes a highly industrialized site with frequent truck traffic, chemical handling operations, drilling, fracking, etc.

Each well uses/stores about 80,000 gallons of chemicals or more for fracking one well and also needs large volumes of fuel for engines, compressors etc. Toxic spills are likely occur during drilling, chemical handling operations, during recycling of waste water, and when millions of gallons of polluted flow back and produced waste water are stored on site in pits or tanks.

From the Earthworks article titled "What is Hydraulic Fracturing?" the amount of chemicals used is described below:

"oil and gas industry and trade groups are quick to point out that chemicals typically make up just 0.5 and 2.0% of the total volume of the fracturing fluid. When millions of gallons of water are being used, however, the amount of chemicals per fracking operation is very large. For example, a four million gallon fracturing operation would use from 80 to 330 tons of chemicals."

http://www.earthworksaction.org/issues/detail/hydraulic_fracturing_101#.U9u-aMawD1o

This site indicates the number of spills in Colorado of frack water.

<http://westernpriorities.org/colorado-toxic-release-tracker-2013-summary/>

This site shows the flooding of gas infrastructure in Colorado that we must not emulate.

http://www.denverpost.com/breakingnews/ci_24116404/oil-field-flood-tally-1-900-wells-shut

This article discusses the fish kills from fracking waste water spills.

http://switchboard.nrdc.org/blogs/amall/halliburton_takes_5_days_to_gi.html

2. In order to prevent runoff from the frack pad, the Permittee must develop and submit to DEMLR/DWR a Storm water Prevention Plan (SWPP). This should include a plan of action for when the National Weather Service or local news reports the high probability of high rainfall from a hurricane, strong rain event, tornado, thunder storms, etc.

The SWPP for this type of rain forecast should require suspension of certain construction activities, fracking which produces flow back water, cleaning and maintenance operations that might risk spills or containment overflows. Also, the Permittee should plan to lower the pit level and/or access additional tank storage if pits or tanks are full. The Permittee should be prepared to acquire additional storage of liquid waste materials or contaminated runoff.

Additionally, stabilization of bare earth or earth piles should be accelerated to prevent erosion and runoff preceding a rain event.

In this reference, the author, discusses the need for a SPCC and a SWPP at the well pad and the damage that could have happened to Pennsylvania if Hurricane Sandy had made a direct hit.

<http://switchboard.nrdc.org/blogs/amaill/>

3. All storm water from at least a three inch rainfall must be contained before release.

Three inch rainfalls are not uncommon in North Carolina and one inch storms are very common. It is unacceptable and unconscionable to plan on polluting regularly with uncontrolled storm water release during a one inch rainfall. The EMC must understand that the storm water collected on a multi gas well site, is much more toxic than other outdoor industries. DEMLR storm water planning must face the fact that North Carolina has huge rainfalls from hurricanes. Hurricane impacts must be planned for and reduced.

4. All Rain that falls on the well pad must be contained.

Excess pad rainwater should be pumped to a holding tank or directed to drain to the flow back pit or pumped to tanks. In order to capture this rainwater, the pad needs to have a specially designed underground containment pad or it needs to be surrounded by berms that collect and direct this water to containment.

Fracking waste water is a toxic mixture. Fracking chemicals are often carcinogens and endocrine disruptor chemicals that can damage the health of wildlife and humans at minute concentrations. It is important to realize that the timing of an organism's exposure to chemicals is often critical and more important than the concentration of the pollutant. At these critical times in human or animal development, exposure to extremely small amounts in the parts per trillion range can cause a cascade of problems in neurological and physical development.

Please read this letter and others on the irreversible impacts of endocrine disruptor chemicals used in fracking by expert biologist Sandra Steingraber.
<http://us7.campaignarchive1.com/?u=d39fd060cfd0d18282deba3c7&id=e72af7c0b5&e=9256915a61>

5. After a large storm, there should be an inspection by DEMLR/ DWQ as soon as safe after the storm to do an inspection and accelerate repairs and clean up if needed.

There needs to be adequate staffing to monitor well sites. Inspectors must make regular inspections to ensure that erosion control devices and streams are in good condition. Also staff must be available to inspect on-site documentation and reports by the Permittee of storm water devices, berms, set backs, stream banks, water courses etc.

6. Storm water in storm water impoundments should be subject to testing before release if a required inspection shows the comingling of storm water and pad runoff water. If there is no inspection, all impoundments must be tested before release.

7. DEMLR/DWQ should adhere to the storm water rules developed by the responsible local government if these are more stringent than the State's storm water rules.

County regulations represent the will and wisdom of the people in that county and also the best judgment of what the standard should be for their neighborhood.

8. A baseline study of surface water quality should be conducted before fracking begins.

In 2014 DENR turned down EPA funding for a surface water baseline study. This is essential to understanding the impact and efficacy of the proposed Storm water program.

This is a copy of the proposed study:

http://www.wral.com/asset/news/state/nccapitol/2013/09/27/12933623/Wetlands_Monitoring_Grant_Proposal.pdf

More on the controversy of rejecting the study:

<http://www.wral.com/water-regulator-defends-return-of-grants/12932874/>

Martha Girolami, Chatham County, NC
[REDACTED]

Pickie, Ken

From: Grady McCallie [redacted]
Sent: Friday, August 01, 2014 4:58 PM
To: Stormwater_and_LandApp_Rules@lists.ncmail.net
Subject: [Stormwater_and_LandApp_Rules] NCCN comments on proposed EMC fracking rules
Attachments: NCCN fracking stormwater letter 8-1-14.pdf; ATT00001.c

Dear Evan,
I'm attaching the comments of the NC Conservation Network on the proposed EMC land and stormwater rules. Thank you so much for the opportunity to comment, and I'll be glad to provide any clarifications I can about our comments.

Best regards,
Grady

Grady McCallie
Policy Director
NC Conservation Network
[redacted]
Raleigh, NC 27601
[redacted]



T: 919.857.4699
F: 919.833.8819

19 East Martin St.
Suite 300
Raleigh, NC 27601

www.ncconservationnetwork.org

August 1, 2014

Evan Kane
Division of Water Resources
1611 Mail Service Center
Raleigh, NC 27699-1611

Re: Comments on proposed fracking rules, 15A NCAC 02H .1030, 02T .0113, .1001., and .1501, and 02U .0113

Dear Mr. Kane:

Thank you for the opportunity to comment on the package of five fracking-related water rules proposed by the NC Environmental Management Commission (Commission).

We think the proposed clarifications to 02T and 02U rules are wise, and appreciate the initiative of the Commission and the Department of Environment & Natural Resources (DENR) in raising these – the changes are not mandated by statute, but make much sense, and will help prevent unintended consequences in the future. We support these amendments.

Our comments thus focus on the proposed 15A NCAC 02H .1030, the fracking stormwater rule. We are glad to see the Commission propose this rule and believe it has some strong points – but we are concerned that as proposed it will be very difficult to implement and enforce. Our comments below recommend several specific changes to fix these problems.

1. Good management of stormwater is vital to protect North Carolina's public health and environment.

The Commission is right to regulate stormwater from fracking operations. Not only is this mandated by S.L.2012-143 (S820), but it is also essential, since federal rules in this area are extremely weak. Under the Clean Water Act and federal regulations, an operator must obtain a federal stormwater permit only if it discharges a 'reportable quantity' of pollutants, or if the stormwater violates a water quality standard. With no one checking, the chance of triggering that requirement is low. For practical purposes, the proposed state rule will be the only control on stormwater.

Studies from other states indicate that mismanagement of stormwater is one of the leading environmental violations from fracking operations, and a significant source of contamination of nearby groundwater and surface waters. Multiple studies of fracking in other states have found significant violations, including

substantial numbers of spills of contaminated fluids and chemicals into soil and groundwater.¹ Open pits can leak and are more likely to overflow during heavy rains. Contaminated stormwater flowing across the ground can poison streams and seep into groundwater and drinking water supplies.²

Unfortunately, states are all over the map in their management of stormwater. A number of states do not manage stormwater effectively from any sector. There are huge differences in the ways states address stormwater from oil and gas operations – not just in the design standards for management measures, but also in core choices about program structure: who permits construction and post-construction stormwater; who inspects; and what remedies apply to overflows and illegal discharges. We have not found a state whose institutional structure and rules invite direct adoption in North Carolina.

Good stormwater management is important to protect water quality everywhere, but will be particularly important in the area where fracking seems most likely to happen – Lee County in the Deep River watershed – because public water systems have intakes not far downstream. Moreover, the clay soils that lie on the surface of the Triassic basin are highly erodible, so inadequate stormwater controls will translate quickly into degraded Piedmont streams and rivers.

2. Proposed rule .1030 should sync with the Mining & Energy Commission’s rules

The most important concept in the proposed rule is in .1030(a)(3): that stormwater commingled with contaminants becomes wastewater and can no longer be discharged under this rule. This broadly tracks the conceptual structure of the NC Mining & Energy Commission’s (MEC) rules, also out for public comment in a concurrent rulemaking process.³ However, while the distinction between stormwater and wastewater lies at the heart of .1030, it is not expressed as clearly as it needs to be. We offer the following suggestions to ensure that .1030 provides clear guidance to operators on the distinction between stormwater and wastewater, and syncs up with the requirements in federal law and the proposed MEC rules:

- Subsection .1030(a)(3) specifically refers to commingling ‘with any other fluid’. But contaminants at a fracking operation may take the form of dry chemicals, colloids, or unoxidized (and therefore corrosive) sediments and cores brought up from deep underground. To match the federal prohibition on discharge of a ‘reportable quantity’ of pollutants, the rule should note that commingling with any of these turns stormwater into waste.
- Proposed .1030(a)(3) states that the Division “shall not authorize by permit the discharge to surface waters” of commingled water, but it doesn’t say that such discharge is itself a violation. In the absence of a clear statement to that effect, the stormwater program cannot itself enforce good management. Instead, enforcement must default back to the general prohibition on discharges without a permit, implemented by the Division of Water Resources. That requires different evidence collected by different staff and prioritized against a different set of program objectives, making actual enforcement against a violation very unlikely.
- The proposed Mining & Energy Commission rules, while requiring reporting and cleanup of spills, 5H .2005, do not actually forbid discharges of commingled wastes – they merely state that well sites are to

¹ Arkansas Public Policy Panel, *Violations of Water Quality Standards from Gas Production in Arkansas*, September 2011; PennEnvironment, *Risky Business: An Analysis of Marcellus Shale Gas Drilling Violations in Pennsylvania, 2008-2001*, February 2012; *Drilling Dysfunction: How the Failure to Oversee Drilling on Public Lands Endangers Health and the Environment*, February 2012.

² See, for example, Christopher Kassotis, et al, *Estrogen and Androgen Receptor Activities of Hydraulic Fracturing Chemicals and Surface and Ground Water in a Drilling-Dense Region*, *Endocrinology* 155: 897–907, March 2014 (surface and groundwater samples from Colorado sites with known natural gas drilling incidents had greater estrogen and androgen receptor activities than drilling-sparse or -absent reference sites).

³ In table I, we compare proposed rule .1030 with federal stormwater requirements and with various stormwater-related provisions of the proposed Mining & Energy Commission fracking rules.

be *designed* to keep stormwater out and prevent releases of ‘any substances’, .2005(g),(h). Thus, the proposed MEC rules are no substitute for language in .1030 stating that the discharge of commingled stormwater is a violation.

- Similarly, MEC proposed rule 5H .0102 says that exploration & production (E&P) wastes *may* include ‘stormwater in secondary containment and pits at the well site’. Though the MEC’s intent appears to be for such stormwater always to comprise waste, the rule doesn’t make this inevitable, and so the MEC rules for waste management will not fill in for any gaps left in .1030. As a practical matter, anything less than a bright line on this point will be impossible to police, for operators or for the agency. For clarity, and to sync up with the MEC’s apparent intent, .1030 should state explicitly that rainwater falling on the wellpad, onto equipment, or into pits or secondary containment areas is wastewater, not stormwater, and a discharge of such waste is a violation of the EMC’s stormwater rule.
- The provision naming discharge of commingled stormwater as a violation of the section should also include language parallel to existing 15 NCAC 02H .1003(h)(4), for example: “Any individual or entity found to be in noncompliance with the provisions of a stormwater management permit issued under this section, or in noncompliance with the requirements of this Section, is subject to enforcement procedures as set forth in G.S. 143, Article 21.”

3. ‘Good housekeeping’ measures during construction should also apply post-construction

The proposed rule wisely requires that, during construction of a wellpad, operators keep toxic chemicals, material stockpiles, and other potential pollutants where they will not get mixed with stormwater, .1030(c)(1). That is important, because once pollutants are mixed, it is virtually impossible to separate them out again. However, the kinds of hazardous chemicals identified in (c)(1) – wash waters, spent fluids, herbicides, building waste, sanitary wastes, topsoil and material stockpiles, and so on – are likely to remain on site for the life of the well. The rule should extend these good housekeeping provisions through the post-construction period, during drilling, operation, production, and closure.

4. The rules should require practices to meet a more intense design storm

The EMC has proposed a design standard – control the runoff from a one inch rainfall – that matches that standard for other land uses in the Piedmont, and has offered an alternative standard of a 90% hydrologic match between pre- and post-development runoff, .1030(c)(4)(a). We offer three comments on these standards:

- Controlling and treating one inch of rainfall – and keeping peaking flows to the 1 year- 24 hour storm – will not adequately protect water quality downstream. The Piedmont, where fracking is most likely to occur, regularly receives locally intense downbursts well in excess of the 1 year- 24 hour storm as indicated by rain gauges. When inadequately managed by stormwater controls, flows from such an intense rain can permanently alter stream banks and channels, increasing sedimentation and erosion and lowering water quality downstream. The EMC should require stormwater controls at racking operations to meet a significantly tougher design storm, such as the 25-year, 24 hour storm. Given that any field developed in North Carolina is likely to last less than 25 years, such a standard would offer a fair chance of avoiding permanent volume-driven channel degradation downstream from wellpads.
- Raising the design storm matters less if the EMC accepts our recommendation above for clarifying what is and what is not stormwater, and strengthening the language on violations. That’s because the approach in the MEC rules – most precipitation becomes wastewater and must be managed as such – will itself help reduce the volume of stormwater that must be captured and released gradually to avoid degradation downstream.

- The hydrologic match approach may be unwise for such a heavily industrial land use as fracking. We usually support hydrologic match as the preferred approach to managing stormwater. However, it works in large part by boosting infiltration of water on site. In the context of a heavily industrial activity, greater infiltration makes soil and groundwater contamination more likely. Worse, the state's capacity to police soil and groundwater contamination on an ongoing basis is arguably weaker than its capacity to recognize illegal discharges to surface waters. The EMC should take care to adopt a version of .1030 that does not incentivize use of BMPs that drive contaminants into soil and groundwater.

5. The rule should require and set standards for rehabilitation of BMPs affected by contamination

As a part of the post-construction measures, the proposed rule requires 'underflow baffles', which discharge water from the bottom of a pond, to 'prevent the discharge of hydrocarbons and floating pollutants', .1030(c)(4)(E). Of course, if the line between stormwater and wastewater is respected, hydrocarbons shouldn't be in the pond. However, this is a sensible backstop.

More generally, though, the rule as proposed does not really address the problem of what happens when contaminants do make it into a stormwater control structure. If floating hydrocarbons are not removed, they will eventually flow under the baffle when the water level drops. Similarly, if contaminated sediments get into a BMPs – or soluble contaminants into the pore spaces of a structure, time and large storms will eventually flush the pollutants downstream into public waters. So, .1030 needs to provide clear direction for how operators are to identify, manage, and rehabilitate a contaminated structure.

On a related point, it needs to be clear who has responsibility for maintaining the stormwater management system over time. This has been identified as a weakness of Pennsylvania's fracking stormwater program: the people who build the system are not necessarily the owners or operators who remain in charge of the site during operations.⁴ It probably makes sense to require the responsible part over the life of the system be articulated in the permit application; that provision might fit as a new subsection between .1030(b)(E) and .1030(b)(F).

6. The proposed rule should provide for much stronger state oversight

The proposed rule states that state regulators shall establish 'self-reporting' and 'self-inspection' requirements to ensure that the other standards are met, .1030(c)(5). The rule provides no detail of these, and self-regulation does not have a track record that inspires confidence. Neighbors and the general public deserve direct state inspections and enforcement to assure compliance with the terms of the rule.

We also note that, to the extent the state rule is intended to make unnecessary a full NPDES stormwater permit for these activities, the final version of .1030 needs to satisfy the federal requirements in cases where the NPDES permitting requirement would otherwise be triggered. In those cases, 40 CFR §123.27 requires that a state have enforcement authority, including the power to issue a stop work order, either directly or by making a showing to a state court, (a)(1). We recommend that the Commission explicitly note in .1030(a) DENR's authority to issue a stop work order to halt ongoing violations this section or conditions of a permit issued under it.

7. The proposed rule should provide for public notice and comment

Fracking is controversial, and residents in the areas where it may occur are rightly concerned about the potential impacts of spills, overflows, and long-term contamination on the uses and values of their properties. Currently, DENR may, but has no obligation to, hold a public hearing or accept public comments on a proposed stormwater permit, 15A NCAC 02H .1010(b)(4). Given the high stakes of stormwater management for the neighbors, it

⁴ Letter from Michael Helfrich, Lower Susquehanna Riverkeeper, to Sesquehanna River Basin Commission, January 15, 2014, at 3.

would be appropriate for .1030(b)(2) to include a statement that ‘the Division shall accept provide public notice and accept public comment on the permit application under .1010(b)(4).’

8. Several aspects of proposed rule .1030 are thoughtful and should be retained

The proposed rule has been drafted with evident care, and includes several pragmatic provisions that we urge the Commission to retain in the final rule:

- Subsection .1030(d), Coordination with other water quality regulations, wisely syncs the proposed rule with other water quality protections in state rules, including those for high quality waters and outstanding resource waters. The savings language in (d)(3) is particularly helpful in making clear how the agency and operators are to interpret inevitable divergences in standards or wording of different rules: the more stringent applies.
- Subsection .1030(c)(3) requires a written certification to the agency that the system was constructed in conformity with the approved plans, 15A NCAC 2H .1008(j), before any further mobilization can take place on site. That is an essential safeguard. As proposed, the provision allows but does not require the agency to conduct a site inspection before accepting the certification. We recommend that the rule explicitly require such an inspection, since this really is a crucial point in the development of a well – any problem not caught here (for example, a layout that departs from plans and allows runoff onto the wellpad) will be much harder to fix later.

Conclusion

We appreciate your consideration of these comments. While the Mining & Energy Commission has the more visible package of rules, these EMC rules will play a vital role in shielding public health and North Carolina’s environment from harms that have widely attended shale gas development in other states. We encourage you to adopt the 2U and 2T rules as proposed, and to strengthen proposed rule 2H .1030 as described above.

Sincerely,

Grady McCallie
Policy Director
NC Conservation Network

Table 1. Comparison of stormwater requirements

Element	Clean Water Act	Proposed 2H .1030	Proposed MEC rules (15A NCAC 05H)
Scope	40 CFR § 122.26(c)(1)(iii): no NPDES stormwater permit necessary <i>unless</i> there is a 'reportable discharge' or the stormwater 'contributes' to a violation of a water quality standard.	.1030(3) Division shall not authorize discharge of stormwater 'commingled with any other fluid'.	No direction discussion; implicit in measures, below.
Application	If triggered, handled through state individual NPDES permit process (in absence of general permit).	.1030(b) application requirements. .1030(a)(4) can be incorporated into coordinated permit.	.1304(c)(2) Well Site Development Plan must include Sediment & Erosion Control and Stormwater Management plans.
Measures		.1030(c)(1) good housekeeping during construction .1030(c)(2) standards for construction .1030(c)(4) standards for post-construction	.1502(a)(1),(12), .1503 well site, road access BMPs must be constructed to Design Manual and BMP Manual standards. .1502(h) well pads constructed to keep stormwater runoff out. .1502(g) well pads constructed to prevent 'any substances' escaping. .1502(g)(7); .1504(f) secondary containment must be sized for 110% of stored volume. .1504(c)(9) pits must have 2 ft berm to keep stormwater out. .1607(i) stormwater must be kept out of wellbore. .2005 spills and releases of E&P waste, which <i>may</i> include stormwater, must be reported and cleaned up.
Inspection	40 CFR §123.26 requires that states have "inspection and surveillance procedures to determine, independent of information supplied by regulated persons, compliance or noncompliance with applicable program requirements."	.1030(c)(3) optional agency inspection between construction and post-construction. .1030(c)(5) self-inspection requirements TBD.	.0203 requires that operators make the well site and any documentation available to DENR inspectors.
Enforcement	40 CFR §123.27 requires that a state have enforcement authority, including ability to issue or obtain from a court some form of stop work order.	None mentioned. Compare 15A NCAC .1003(h)(4), which specifically identifies enforcement authority.	.0901 includes very clear enforcement procedures. Note, however, that any violation found through an inspection under .0203 can only be enforced under .0901. So MEC inspections cannot substitute for stormwater inspections.
Citizen participation	40 CFR §123.25 requires that state-implemented programs provide for public notice and comment of NPDES stormwater permits.	No public notice and comment mentioned.	No public notice and comment mentioned.

Pickie, Ken

From: john_wagner@ncmail.net
Sent: Friday, August 01, 2014 4:58 PM
To: Stormwater_and_LandApp_Rules@lists.ncmail.net
Subject: [Stormwater_and_LandApp_Rules] Comments on the Proposed EMC Stormwater Rules
Attachments: ATT00001.c

Evan Kane,

I spoke in Sanford about the proposed Stormwater Rules. I raised a few serious concerns in the meeting, but have not yet submitted any written comments. I will do that before the end of the day today. I hope that you will take the comments even though they will arrive outside of normal business hours. My understanding is that the formal cutoff date is today, and so I hope that includes the full day.

Thank you,
John Wagner

Pickle, Ken

From: john_wagner@carbamate
Sent: Saturday, August 02, 2014 1:19 AM
To: Stormwater_and_LandApp_Rules@lists.ncmail.net
Subject: [Stormwater_and_LandApp_Rules] Stormwater Regulation comments
Attachments: EMC StormWater Regulations.doc; ATT00001.c

Evan Kane and members of the Environmental Review Commission,

Attached is a letter to the EMC with a few comments and suggestions regarding the Oil and Gas exploration and extraction issues.

I hope that you will take the citizen comments about these rules and incorporate them into an updated, expanded, and improved version of the rules.

Thank you for your consideration of these critical matters.
John Wagner

Comments on the EMC's Proposed Rules for Stormwater Requirements Regarding Oil and Gas Extraction

Evan Kane and members of the Environmental Management Commission,

Thank you for the opportunity to comment on the proposed North Carolina stormwater regulations. I want to also thank you for providing an initial start to some important regulations to protect our streams, rivers and wetlands.

I say "a start" because I believe that you have put a few critical rules in place, but left so many rules as vague or undefined suggestions that it leaves the impression that many of the rules will serve more to favor industrial development than to protect the health of citizens, wildlife, and future generations. Water is essential to a healthy population and a healthy economy. We cannot have successful and sustainable agriculture without clean and protected water. We cannot support successful urban centers, suburbs, or rural communities if there is not a protected and safe supply of drinking water.

Importance of protecting stormwater from hydrofracking wastes

I worked for three years on the invertebrate team on an EPA non-point source pollution study throughout Georgia. I worked with Georgia State University in conjunction with the Georgia Department of Natural Resources. Making collections and identifying aquatic macroinvertebrates such as mussels, crayfish, and a wide variety of aquatic insect larvae such as dragonflies, mayflies, and stoneflies, I know what surface runoff can do to water quality. If rainwater washing oil from a parking lot can be enough to disrupt stream life, then it is almost certain that long-term disruptions to aquatic communities would result from hydrofracking wastes.

Baseline Surface Water Testing

A single water sample from streams that had contained urban runoff, agricultural fertilizers or agricultural pesticides might, or might not, be detected by the chemical analyses. However, those chemicals could be ingested and passed up the food chain to other animals. The bottom dwelling organisms can continue to ingest contaminated heavy metals and sediment even though the water might not reflect the toxins. These long-term effects of toxins can kill off species and change the stream life for months or years.

This ability to reflect toxins flowing through a stream is what makes macroinvertebrate stream sampling such an essential tool for monitoring surface water quality. John Skvarla, Secretary of DENR, turned down an EPA grant that DENR had previously applied for. When this grant was approved, Mr. Skvarla returned the money which had been designated for surface water testing in the areas which might be affected by natural gas exploration, drilling and excavation. Approximately 300,000 dollars of money that had been designated for baseline macroinvertebrate and water quality testing of surface waters was returned.

At the time that Secretary Skvarla returned this money, he publicly stated that the state did not need federal help with testing and that North Carolina had sufficient personnel and funds to do our own testing.

Questions:

- What plans has DENR made for baseline surface water testing in Lee, Chatham and Moore Counties?
- What qualified and experienced aquatic biologist on staff will make reference collections of stream life in the Deep River and tributaries that may be affected by Triassic Basin methane extraction activities?
- What public records of the dates, times, and species, genera, or family level identifications will be available?
- What DENR funds will be used for the sampling and data collections?
- Pre-drilling baselines are essential for detecting changes. They also should reflect multiple samplings across seasonal changes. Since possible test wells may be drilled soon, when does Secretary Skvarla intend to begin the surface water testing?
- If funds and personnel are not adequate, will DENR re-apply to the EPA for the grant that was previously refused?
- If baseline surface water testing has not been done, will DENR submit a revised time for drilling to commence? This is important. If no baseline data has been collected, drilling should be postponed to allow a high quality baseline to be collected, cataloged, and preserved.

15A NCAC 02H .1030

(a)

3. "This Rule authorizes the Division to issue a stormwater-only permit. The Division shall not authorize by permit the discharge to surface waters of stormwater commingled with any other fluid. "

Comments - This rule is good in principle, but will be completely useless in the normal wellpad operations. How, precisely do you propose preventing commingling? Any rainwater that hits the wellpad will be commingled with dripped diesel fuel, fracking fluids, drilling mud, as well as blowback water. I cannot imagine how water and chemicals can be pumped between containers and equipment without spills. When dealing with millions of gallons of liquids, multiple hoses, connections, valves, and pump trucks building up pressures of 15,000 pounds per square inch in the wellbore, there will inevitably be drips, sprays, and fluids flowing onto the wellpad.

Questions

- Who from DENR will be monitoring the stormwater discharge to detect commingled fluids?
- What form of detection will be used to insure that diesel and other fluids are not mixed with stormwater runoff?

- What checks will be made for radioactive material that is present from leaked blowback waters? Naturally Occurring Radioactive Materials or NORMs are commonly found in blowback waters. Radioactivity is relatively easy to detect, so will the DENR inspectors that do unannounced spot checks during rainfall be equipped with calibrated and sensitive Geiger counters, or other appropriate monitoring equipment?

15A NCAC 02H .1030

(b) “Nothing in this Rule shall be deemed to allow the violation of any assigned surface water, groundwater, or air quality standards, and in addition any such violation is a violation of a condition of a permit”

Comments – This is an important rule and thank you for including it. However, a violation of the conditions of a permit must carry significant enough consequences that it will not be simply part of the cost of doing business for companies involved in the methane extraction business.

Also, the violations need to be part of easily accessed public records that are posted to the internet. Citizens have a right to know which companies are not acting in good faith and are violating the conditions of a state issued permit.

This section of the rules does not even begin to address fines, penalties, or conditions for revocation of existing permits until state approved remediation has been carried out. Companies in other states without penalties and conditional permitting standards have often shown a willingness to repeatedly violate state and federal regulations. North Carolina owes our citizens, businesses, and future generations greater respect for the state laws. Repeated driving violations can result in revocation of a license. Certainly contamination of state waters deserves clearly specified and enforced consequences as well.

15A NCAC 02H .1030

(c) “The reclaimed water user shall report any violation of this Rule or discharge to surface waters from the utilization systems listed in Paragraph (a) of this rule.”

Comments – Self-reporting of permit violations and water contamination by the industry should be encouraged and expected. However, their business is extraction of methane, not stormwater runoff monitoring. Protection of water quality and North Carolina’s water resources is the designated responsibility of DENR. It is not reasonable or moral to pass this responsibility to commercial enterprises. Again, to use a motor vehicle analogy, the state expects drivers to follow speed laws. However, it does not expect citizens to self-report speeding violations. The state puts law enforcement officers and highway patrol officers in charge of monitoring – and halting – those who violate the speed laws. Then there are financial or other consequences that are applied to those that are found to violate the law.

Questions:

- Why does the EMC solely rely on self-reporting of violations?
- What systematic, but un-announced inspections by DENR does the EMC intend to mandate?

- What clearly specified, significant and graduated system of penalties and consequence will the EMC insert into this set of rules?
- What are the conditions for “bad actors” in the industry that will lead to revocation of permits? In fairness to the public and to those in the industry, the revocation of permits needs to be clearly specified.

Thank you for reviewing and considering my questions and suggestions. I look forward to seeing these issues and more clearly defined terms, rules with consequences, and especially specific personnel, schedules, and funding requirements for adequate monitoring and enforcement. Please take into consideration the consequences of stormwater contamination of surface and groundwater. The state depends on the EMC and DENR to protect our waters.

Sincerely yours,

John Wagner


Pittsboro, NC 27312

Staff Paraphrasing of Oral Comments A-108

Public Hearing 7/1/2014

Wicker Center, Sanford

Rule 15A NCAC 02H .1030

Rule 15A NCAC 02T .0113

Rule 15A NCAC 02T .1001

1. **Grady McCaulie** – NC Conservation Network. We support the 2T and 2U rules. Most of my comments address stormwater rules. Any drilling that happens in NC over next few years would not be under federal air toxics rules. Important that Commission take action on that. Moving onto Rule – This is an important rule. If you look at studies of fracking in other states, by EPA, one common denominator is that erosion impacts, sediment impacts are significant percentage. In studies, they are leading cause of water quality violations so important that Commission get rule right. As I understand it, if rain falls on site during construction, that's stormwater. If falls after construction and it mingles with equipment, it is wastewater. That's not entirely clear from the rule. There are reasons to worry about enforcement process. Department has had problems with enforcement of water quality standards, confusion between sediment violation vs. water quality violation.

2. **Debra Champion** – Biggest issue is with the terms that on handouts that deal with "control" because I know that environmental protection agency will not be here monitoring any type of stormwater runoff at these sites. Can your agency define what type of specific controls you have in place to guarantee me as property owner that if huge storm comes and I see fracking water and I want to report it, do I have a right to go there and check water quality or land quality next to it? How would you define a control and who could I contact in the event of that? Are you a regulatory agency – can you take initiative, sir?

HEARING OFFICER: DWR is a regulatory agency and we have regulatory authority.

MS. CHAMPION: So I could call on your agency to test and see if something has happened on my property?

HEARING OFFICER: Yes, we do have access to that --

MS. CHAMPION: There aren't enough people to regulate every site. That's another concern of mine. I don't know if NC is equipped to have people on ground to monitor sites. In most states, there are no regulatory agencies that do this. I am concerned about my property value and well water. It was also mentioned in Rule .1030, first page, Line 10 where you talk about soil testing. Would the public be able to have access to that? Would testing be done before the activity and again once fracking site leaves? Would it have to be brought back to those original test results? What about soil testing around stormwater site?

HEARING OFFICER: We can address questions once rule has been adopted. If you have specific comments about the rule --

MS. CHAMPION: I would like to make a request that initial soil testing be done at fracking site and again once that industry is done. Then it should be not just at a scale sufficient to Division's review, but it should be returned as close to original findings when they applied for a permit.

3. **T. Sharon Garbutt**– resident of Chatham County. Reading extensively about fracking. Wellheads and runoff will be polluted. Unclear whether runoff will be considered stormwater runoff or wastewater runoff, but it will be polluted. Holding ponds that stormwater goes to -- that water will also be polluted. Didn't see in rules specification that holding pond be lined. Since they will be full of polluted water, important they have a lining. Also, ask what would be appropriate distance from surface water and from drinking water wells for holding pond of runoff water given how polluted it will be? Finally, would like to see how this water will be tested. How will stormwater be tested before it's allowed to be discharged into surface water or land? Will it be tested by DENR? Who in DENR will do it? Will they have the staff to do it?
4. **Elaine Chiosso** – Haw Riverkeeper – The 4 rules that are revisions all seem like great ideas. I commend you. The new stormwater rule is great step in right direction for protecting our waters in absence of federal regulation. My experience as Riverkeeper and on Sediment Control Commission, I know how much damage can be done to streams during construction. Fracking operations will be very large. During construction, keeping mud in place is good thing for streams. Many of our counties in NC have stronger local sedimentation and stormwater ordinances than these rules, including setbacks from streams. In a way this rule is a disservice to local communities to have less stringent rules. I also wanted to say a little about inadequacy of not having these rules talk about contamination of stormwater during production and closure. Needs to be more in this rule talking about this -- that's when the real contaminants will be getting in there. Spills happen all the time in other parts of country. We should expect it here as well. Idea of skimming off hydrocarbons off pond? I would also like to see teeth in enforcement – state enforcement and inspection, not self inspection, which does not play out well. Glad to see you mention danger to threatened species, but remember most likely basin is the Deep River Basin which is home to Cape Fear shiner. A lot of streams impacted by fracking will be going into Deep River and Upper Cape Fear.
5. **Laura Young** – Concerned about rainfall runoff. Stormwater rule does not adequately protect water. Raleigh weather station reveals that between June 2012 and May 2014, there were 22 rains in excess of one inch. One-inch standard not enough to protect against risk. Pre- and post- addresses quantity, but rule should also address quality. Standards should apply to all phases, including operation and closure and include runoff from all surfaces including roads.
6. **Therese Vick** – BREDL – As other speakers mentioned, I commend Commission and DWR on preparation of these rules which we generally support with some concerns. In Ohio, there was a fire on a frack pad. It's not clear whether what happened to Possum Creek was caused by runoff from emergency(?) services or not. But there was a fish kill which is still being investigated. Interested in how far Possum Creek is from that frack pad. I hope EMC and DWR are not looking at these rules in a vacuum, considering insufficient setbacks MEC is considering. It is reported that they suspect fracking chemicals ran into Possum Creek and caused fish kill, but that is still under investigation. Other thing on stormwater rules – they do not go far enough. Should include activities during production and drilling as well. That is where a lot of chemicals are used, spilled, dripped. I know MEC is developing onsite waste rules. In addition, I hope you will consider requiring the same thing in your rules. In Sept 2013, BREDL formally requested that

the EMC direct the DAQ to develop rules for toxic air pollution. We have to this day not gotten a response from EMC.

7. **Joe Langley** – Within framework of what you're currently doing, is there any forum or data comparing with other states like Ohio and PA? If so, could you make that available to the public?
8. **Hope Taylor** – Clean water for NC – EMC has failed to deal with air toxic rules dealing with operations. Many of the serious health concerns from states where hydraulic fracturing is occurring are related to air emissions. I think this is a real failure here as far as rules development. Clarification of rules about fracking operation, frack water not being closed loop operation; that muds not qualify as petroleum contaminated soil. In .0113 that fracking fluids must comply with special rules. I have seen comments from well informed folks as these being exempt from rules over all. Makes me want to go back and look at these rules again. Rules need to be clear these are not exemptions and are just saying that other rules apply. On .1030, I want to say these rules must apply to operation and closure activities. These are most intensive stages of operation. 1-inch, 24-hour standard far from adequate to protect waters. It is near criminal in term of potential impact on receiving waters. Need to require inspections on a schedule as well as unannounced and those requirements should be spelled out in the rules.
9. **John Wagner** – Thank you for your effort in beginning to protect water. Rules are terribly inadequate. Need to be expanded and clarified. Worked for several years on nonpoint source pollution studies in GA, on macroinvertebrate tream looking at runoff from urban runoff and agriculture. I know what runs off of field, wellpad, parking lot has huge impact on life of a stream, river and estuary. These are non-trivial matters. I will put my comments in writing because I have serious reservations. Two items: First, part of .1030, line 11 --rule authorizes Division to issue stormwater-only permit. Does not authorize to discharge comingled stormwater. How do you know what is comingled? How will you test waters to see what trade secrets are in there? Without knowing what chemicals are or testing, this is meaningless. Along same lines, state had grant money to study surface waters in these areas and look at stream life. That money was rejected by the state. At the time, Skvarla said the state could provide that, that we didn't need federal funds. What is DENR going to do to check surface waters and see what quality of stream life is before this takes place? Need to have baseline testing. When contamination event occurs, you will have nothing to compare and see what effects it has had. Second, on second page, line 21, equipment, petroleum products, washwater shall be managed to prevent potential contamination. . . .what type of management does that refer to? That needs to be very clear. If you're talking about highly toxic wash waters used to clean equipment, just saying it will be managed by the company without outside inspection is meaningless. I hope you'll address this and clear it up.
10. **Hanah Ehrenreich**– Sustainable Sandhills – Very concerned about lack of air quality regulations on oil and gas industry. Have not fully digested these regulations. One thing that our area is concerned about is DENR facing increased pressure to limit/reduce regulation. Permittees are going to be in charge that these regulations are followed. We're concerned this might not be best situation. Also concerned oil and gas has privatized environmental cleanup, and we're concerned this would happen in NC. Concerned that if oil and gas exploration doesn't have a clear sense as to what they are to do with wastewater, they will end up being discharged either

- illegally or in somebody else's backyard that connects to Cape Fear River. Would like regulations on what industries are to do with wastewater products.
11. **Mick Noland** - City of Fayetteville, PWC. Provides water and wastewater services to Fayetteville and Cumberland County. Pay attention to things that affect water supply. This area also provides water to military base Fort Bragg. Some of the discharge would come downstream to our part of Cape Fear River. Paragraph 3 of stormwater rule: coming with other fluid – there is no definition of fluids. Strongly support requirements in Paragraph B that speak to specifications of stormwater requirements and engineered controls. Main concern is what steps will be taken to make sure there are no toxic effects or damage to benthic organisms in receiving streams? Require first inch of rainfall be captured and reused rather than discharged. Final comment is we're surprised that draft requirements do not include that there be a stormwater pollution prevention plan. General stormwater permits for industrial activities require this, so it makes sense to require it here.
 12. **Keely Wood** – Thousands of miles of pipeline will impact water for decades. Stormwater management includes stock soil piles, borrow pits, air compressors. Will there be a tax levy to [inaudible]?
 13. **Diana Hales** – Two major concerns. One is the inadequate protection from heavy rainfalls in .1030 (c)(4)(A). Just requires one inch. Case in point – some of you recall Hurricane Floyd in 1999. What we saw happen with overwhelming of highways and millions of gallons of feces and thousands of hogs washing downstream in coastal plain. Lead to large tax-funded buyout of agribusinesses. Huge rainfalls in IA, IL show how quickly entire systems are flooded and swamped by several inches of rain falling in short period of time. Basing rules on one inch rainfall is not only wrong, it is seriously dangerous to citizens who will receive the polluted runoff. As you may recall from MEC rules, open pits are an authorized form of storage. That might be preferred storage like hog cesspools. Other thing about these preferred storage pits, they may stay in ground long term with no way to dispose of contents. They will be subject to hurricanes and large rain events. Other item is a self reporting and inspection rule .1030 (c)(5). This is a direct giveaway to gas industry. It is astonishing call for deregulation by energy sector that is a rout of rules that protect air and water. We expect DENR to at least appear to care about the environment.
 14. **Lib Hutchby** – Disappointed that Governor chose not to veto fracking bill in first place. Notice that some of MEC members are here. Seems to me to insult to have wasted taxpayer dollars to have spent so much time and effort to come up with these weak regulations, then have legislature not even give you a chance. My suggestion is to do everything in your power to take care of water in NC. I know you have rules, you have to have regulation. Weaknesses mentioned tonight are massive. I live at bottom of hill – when it rains, stormwater runs down street, across my yard, over to the creek. Town of Cary has come in and put in new storm drains – expensive. Notice that you want to use flowback from fracking. I don't understand that. I hope you will further explain it to the public before you suggest that we use water treated with chemicals that we know to be carcinogenic even the second time. Hard enough the first time. Thank you for your every effort to protect water in North Carolina.

15. **Debra Champion** (speaking again) Request that you be specific in regulations. If not specific, industry won't have anything to base it off of so they know when they've crossed the line. Should also be substantial penalties assessed if these are broken, by minute, by hour, heaven forbid by the day. That gives them some type of conscience that they know they have big brother to answer to and not the executive of an oil or gas company. They have to answer to you all and to all of us.
16. **Martha Girolami** – You are dealing with something not dealt with before. Large industrial sites and so much pollution, chemicals, diesel fuel. The way fracking is done now is multiple wells. I think that you cannot release water from those pads. It must be drummed or tanked, and it must go to hazardous waste site. Naïve to think that can have stormwater over here and pad/wastewater over there and they're not going to mix. Inconsistencies of weather – going to be over one inch many times. Water must be able to be captured somehow.

Hearing closed at 7:13 p.m.