

Form #3

2011 NOV 21 PM 3:20

OFFICE WEST VIRGINIA
SECRETARY OF STATE

\$49.50

QUESTIONNAIRE

(Please include a copy of this form with each filing of your rule: Notice of Public Hearing or Comment Period; Proposed Rule, and if needed, Emergency and Modified Rule.)

DATE: November 21, 2011

TO: LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

FROM: (Agency Name, Address & Phone No.) DEP - Office of Oil and Gas
601 57th Street, Se
Charleston, WV 25304
(304) 926-0440

LEGISLATIVE RULE TITLE: ~~Rules Governing Horizontal Well Development~~

1. Authorizing statute(s) citation W Va Code 22-1-3, 22-6-2, and 22-11-4(a)(16)

2. a. Date filed in State Register with Notice of Hearing or Public Comment Period:
September 8, 2011

b. What other notice, including advertising, did you give of the hearing?
Posted on agency website

c. Date of Public Hearing(s) *or* Public Comment Period ended:
October 11, 2011

d. Attach list of persons who appeared at hearing, comments received, amendments, reasons for amendments.

Attached XX No comments received

- e. Date you filed in State Register the agency approved proposed Legislative Rule following public hearing: (be exact)

November 21, 2011

- f. **Name, title, address and phone/fax/e-mail numbers** of agency person(s) to receive all *written correspondence* regarding this rule: (Please type)

James A. Martin, Chief
Office of Oil and Gas
Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304
(304) 926-0440

- g. **IF DIFFERENT FROM ITEM 'f'**, please give **Name, title, address and phone number(s)** of agency person(s) who wrote and/or has responsibility for the contents of this rule: (Please type)

Kristin A. Boggs, Esquire
General Counsel
Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304
(304) 926-0440

3. If the statute under which you promulgated the submitted rules requires certain findings and determinations to be made as a condition precedent to their promulgation:

- a. Give the date upon which you filed in the State Register a notice of the time and place of a hearing for the taking of evidence and a general description of the issues to be decided.

N/A

b. Date of hearing or comment period:

N/A

c. On what date did you file in the State Register the findings and determinations required together with the reasons therefor?

N/A

d. Attach findings and determinations and reasons:

Attached N/A

**DEPARTMENT OF ENVIRONMENTAL PROTECTION
BRIEFING DOCUMENT**

Rule Title: Rules Governing Horizontal Well Development

A. AUTHORITY:

W. Va. Code §§ 22-1-3, 22-6-2, and 22-11-4(a)(16)

B. SUMMARY OF RULE:

This rule shall govern and apply to permit application requirements, operational rules to protect water quantity and quality, and the public notice procedures for oil or natural gas operators developing horizontal wells, which wells are also regulated by W. Va. Code § 22-6-1, et seq. and the Legislative Rules promulgated in Title 35 of West Virginia's Code of State Rules and entitled *Oil and Gas*.

C. STATEMENT OF CIRCUMSTANCES WHICH REQUIRE RULE:

The Governor issued an Executive Order on July 12, 2011 directing the Department of Environmental Protection to promulgate emergency rules governing oil or natural gas wells that are drilled horizontally and that use 210,000 gallons or more of water per calendar month. This proposed rule is necessary to prevent substantial harm to the public interest, as discussed in more detail on the attached page.

D. FEDERAL COUNTERPART REGULATIONS – INCORPORATION BY REFERENCE / DETERMINATION OF STRINGENCY:

There is no federal counterpart regulation; thus, no determination of stringency is required.

E. CONSTITUTIONAL TAKINGS DETERMINATION

In accordance with W. Va. Code §§ 22-1A-1 and 3(c), the Secretary has determined that this rule will not result in taking of private property within the meaning of the Constitutions of West Virginia and the United States of America.

F. CONSULTATION WITH THE ENVIRONMENTAL PROTECTION ADVISORY COUNCIL:

At its meeting on September 22, 2011, the Environmental Protection Advisory Council Reviewed and discussed this proposed rule. See attached minutes for Council's discussion.

APPENDIX B
FISCAL NOTE FOR PROPOSED RULES

Rules Governing Horizontal Well Development

Rule Title:

Type of Rule:

☒ Legislative ☐ Interpretive ☐ Procedural

Agency:

DEP - Office of Oil and Gas

Address:

601 57th Street, SE
Charleston, WV 25304

Phone Number:

(304) 926-0440

Email: Kristin.A.Boggs@wv.gov

Fiscal Note Summary

Summarize in a clear and concise manner what impact this measure
will have on costs and revenues of state government.

This proposed Emergency Rule is being filed pursuant to an Executive Order from the Governor to enhance the environmental protection rules and oversight of the oil and natural gas industry. These additional regulations will result in an increase to the costs of State government. In order to implement these proposed rules, DEP's Office of Oil and Gas needs at least nine additional staff people to handle the increased volume of work due to the rapid advancement in the Marcellus Shale horizontal drilling activity in West Virginia and these proposed additional regulatory responsibilities. The annual cost of these nine additional positions is estimated to be \$1,074,623. This figure is designed to allow the agency to continue to operate at the status quo and in a manner that does not unduly delay the permitting process.

Fiscal Note Detail

Show over-all effect in Item 1 and 2 and, in Item 3, give an explanation of
Breakdown by fiscal year, including long-range effect.

FISCAL YEAR			
Effect of Proposal	Current Increase/Decrease (use "-")	Next Increase/Decrease (use "-")	Fiscal Year (Upon Full Implementation)
1. Estimated Total Cost		1,074,623.00	1,074,623.00
Personal Services		762,982.00	762,982.00
Current Expenses		311,641.00	311,641.00
Repairs & Alterations		0.00	0.00
Assets		0.00	0.00
Other		0.00	0.00
2. Estimated Total Revenues		0.00	0.00

Rule Title:

Rules Governing Horizontal Well Development

Rule Title: _____

3. Explanation of above estimates (including long-range effect):

Please include any increase or decrease in fees in your estimated total revenues.

DEP has estimated that the increased cost to the Office of Oil and Gas for nine additional staff people would be \$762,982 for wages and benefits. Current expenses are estimated at \$311,641 - which includes vehicle expenses, uniforms, office expenses, training costs, and supplies - bringing the total cost for nine additional staff people to \$1,074,623. This is expected to be an annual, ongoing cost.

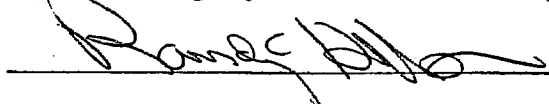
MEMORANDUM

Please identify any areas of vagueness, technical defects, reasons the proposed rule would not have a fiscal impact, and/or any special issues not captured elsewhere on this form.

Please be advised that the Office of Oil and Gas currently operates at a deficit of approximately \$1,055,377 per year. This current operational deficit, coupled with the additional \$1,074,623 impact this measure will have on the costs of State government, means that a funding mechanism that will raise approximately \$2,130,000 is necessary in order to implement a robust, fully functional regulatory program.

Date: 8/22/11

Signature of Agency Head or Authorized Representative



FILED

**TITLE 35
LEGISLATIVE RULE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS**

2011 NOV 21 PM 3:20
OFFICE WEST VIRGINIA
SECRETARY OF STATE

**SERIES 8
RULES GOVERNING HORIZONTAL WELL DEVELOPMENT**

§35-8-1. General

1.1 Scope. – This rule shall govern and apply to permit application requirements, operational rules to protect water quantity and quality, and public notice procedures for oil or natural gas operators developing horizontal wells, which wells are also regulated by W. Va. Code § 22-6-1, et seq. and the Legislative Rules promulgated in Title 35 of West Virginia's Code of State Rules and entitled *Oil and Gas*.

1.2. Authority. – W. Va. Code §§ 22-1-3, 22-6-2, and 22-11-4(a)(16)

1.3. Filing Date. –

1.4. Effective Date. –

1.5. Applicability. – Applications submitted after the effective date of this rule shall be subject to the provisions of this rule.

§35-8-2. Definitions

2.1 Unless the context in which the term is used clearly requires a different meaning, the definitions set forth in W. Va. Code §§ 22-6-1 and 22-11-3 and in 35 C.S.R. 4 § 2 shall apply to this Rule.

2.2. "Horizontal well" means any well that is drilled initially on a vertical plane but eventually curved to become horizontal, or nearly horizontal, to parallel or intersect a particular geologic formation or formations, for the purpose of maximizing the length and contact of the wellbore that is exposed to the formation or formations.

§35-8-3. Permit Application Requirements for Operators Developing Horizontal Wells

3.1. Erosion and Sediment Control Plan. – Erosion and sediment control plans submitted in conjunction with applications for well work permits involving well sites that disturb three acres or more of surface, excluding pipelines, gathering lines, and roads, shall be certified by, and constructed in accordance with plans certified by, a West Virginia registered professional engineer and in compliance with best management practices (BMPs) established by the Office of

Oil and Gas (Office) and contain both a narrative and a set of drawings. The plans shall be considered conditions of the permit and be enforceable as such.

3.1.a. The narrative components of the plan shall include:

3.1.a.1. A general sequence of events that describe in relative terms how and when each construction phase (i.e. clearing and grubbing, mass grading, stabilization) will occur and when each erosion and sediment control BMP will be installed;

3.1.a.2. A description of the stabilization methods to be used, including the application rates for temporary and permanent seeding and mulching, and provide the timeframes for establishing stabilization; and

3.1.a.3. Details or specifications for the erosion and sediment control BMPs employed on the project.

3.1.b. The drawings submitted with the plan shall include:

3.1.b.1. A vicinity map locating the site in relation to the surrounding area and roads;

3.1.b.2. A plan view site map at a scale of one inch equal to one hundred feet (1" = 100') or greater, showing appropriate detail of all site features, including the identification of site access that provides for a stabilized construction entrance and exit to reduce tracking of sediment onto public or private roads; and

3.1.b.3. The location of all proposed erosion and sediment control BMPs.

3.2. Site Construction Plan. – All applications for well work permits involving well sites that will disturb three acres or more of surface, excluding pipelines, gathering lines, and roads, shall be accompanied by a site construction plan certified by, and constructed in accordance with plans certified by, a West Virginia registered professional engineer. The plan should describe the nature and purpose of the construction project and identify the procedures for construction that will be used to achieve site stability. The plan shall be considered conditions of the permit and be enforceable as such.

3.2.a. The site construction plan shall contain the following information:

3.2.a.1. A vicinity map locating the site in relation to the surrounding area and roads;

3.2.a.2. A plan view site map at a scale of one inch equal to one hundred feet (1" = 100') or greater that shows appropriate detail of all site features and:

3.2.a.2.A. Clearly identifies the limit of disturbance for the project;

3.2.a.2.B. Provides existing topographic information on a contour interval that affords sufficient detail to illustrate site terrain conditions;

3.2.a.2.C. Identifies proposed cut and fill areas with grading contours at an interval that provides sufficient detail to accurately depict slope ratios, indicating top and bottom of slopes; and

3.2.a.2.D. Identifies any existing structures, roads, water bodies, and other critical areas within the area that would most likely be affected by the construction.

3.2.a.3. A cross-section of the length and width of the location, providing cut and fill volumes; and

3.2.a.4. Any other engineering designs or drawings necessary to construct the project.

3.2.b. At a minimum, site construction shall be conducted in accordance with the following criteria:

3.2.b.1. All woody material, brush, and trees shall be cleared from the site area and kept to the minimum necessary for proper construction, including the installation of necessary sediment controls. Trees six inches in diameter and larger shall be cut and logs stacked;

3.2.b.2. Topsoil shall be removed from construction areas and stockpiled for reuse during reclamation. In woodland areas, tree stumps, large roots, large rocks, tree and leaf debris, and ground vegetation shall be removed prior to actual site construction;

3.2.b.3. No embankment fill shall be placed on frozen material;

3.2.b.4. The fill material shall be clean mineral soil, free of roots, woody vegetation, stumps, sod, large rocks, frozen soil or other objectionable material;

3.2.b.5. Embankment material shall exhibit adequate soil strength and contain the proper amount of moisture to ensure that compaction will be achieved;

3.2.b.6. Earthen fill slopes should be constructed with slopes no steeper than a ratio of two-to-one (2:1);

3.2.b.7. Fill material will be placed in lifts or layers over the length of the fill. Lift thickness of the soil shall be as thin as the suitable random excavated material will permit, typically from six to twelve (12) inches; and

3.2.b.8. The size of rock lifts shall not exceed thirty-six (36) inches. The rock shall not be greater in any dimension than thirty-six (36) inches;

3.2.b.9. Compaction shall be obtained by compaction equipment or by routing the hauling equipment over the fill so that the entire surface of each fill lift is compacted by at least one wheel or tread track of equipment or by a compactor. Each lift shall be compacted before beginning the next lift;

3.2.b.10. Surface water diversion ditches shall be constructed above the disturbed area to intercept water and to divert surface water runoff around the site; and

3.2.b.11. In areas of steep terrain, a terraced bench shall be constructed at the base of the slope where fill is to be placed, creating a toe foundation and aid in holding fill material. Additional terracing shall be constructed for each additional fifty (50) vertical feet of slope and shall be a minimum of ten (10) feet wide.

3.3. Water Management Plan. – All applications for well work permits shall include an estimation of the volume of water that will be used in conjunction with drilling, fracturing or stimulating the well for which the permit is sought and, if the drilling, fracturing or stimulating of such well will require water withdrawals from the waters of this State in amounts of two hundred ten thousand (210,000) gallons or more during any one-month period, then the applicant shall file with the Office a water management plan as part of the application for the well work permit.¹ It shall be considered conditions of the permit and be enforceable as such. The water management plan, which may be submitted either on an individual well basis or on a watershed basis, shall include the following information:

3.3.a. The type of water source, such as surface or ground water, the county in which each water source to be used for water withdrawals is located, and the latitude and longitude of each anticipated withdrawal location;

3.3.b. The anticipated volume of each water withdrawal;

3.3.c. The anticipated months when water withdrawals will be made;

3.3.d. The planned management and disposition of wastewater from fracturing, stimulation, and production activities;

3.3.e. A listing of the anticipated chemical additives, on a form developed by the Office, that may be used in the water used for fracturing or stimulating the well, and, upon well completion, a listing of the chemical additives, on a form developed by the Office, that were actually used in the fracturing or stimulating of the well shall be submitted as part of the completion report required by W. Va. Code § 22-6-22;

3.3.f. For all surface water withdrawals, the water management plan shall include the following, in addition to the information required in subdivisions 3.3.a. through 3.3.e. above:

¹ This Rule in no way abrogates the statutory requirement that water withdrawals in excess of seven hundred fifty thousand (750,000) gallons per calendar month be registered with the Division of Water and Waste Management. See, W. Va. Code § 22-26-1, et seq.

3.3.f.1. Identification of the current designated and existing water uses, including any public water intakes within one mile downstream of the withdrawal location;

3.3.f.2. A demonstration, using methods acceptable to the Secretary, that sufficient in-stream flow will be available immediately downstream of the point of withdrawal. Sufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal; and

3.3.f.3. Identification of the methods to be used to minimize significant adverse impact to aquatic life.

3.4. Well Site Safety Plan. – All applications for well work permits involving well sites that will disturb three acres or more of surface, excluding pipelines, gathering lines, and roads, shall be accompanied by a well site safety plan to address measures to be employed by the operator for the protection of persons on the site, as well as the general public and the environment. The plan shall encompass all aspects of the operation, including the actual well work for which the permit is sought, completion activities, and production activities, and shall provide an emergency point of contact and twenty-four (24)-hour contact information for the well operator. The well operator shall provide a copy of the well site safety plan to the local emergency planning committee for the emergency planning district in which the well work will occur or to the county office of emergency services at least seven days before commencement of well work or site preparation work that involves any disturbance of land. It may be modified only upon approval by the Office and shall be considered conditions of the permit and be enforceable as such.

3.4.a. The well site safety plan shall be drafted in accordance with standards developed by the Office and include, at a minimum, the following:

3.4.a.1. A plan view map showing the well location, access road, pits, flare lines, dwellings, and noting the north and prevailing wind directions;

3.4.a.2. An area topographical map showing the well site location;

3.4.a.3. An evacuation plan for the removal of personnel and residents in the surrounding area who have the potential to be affected by an emergency;

3.4.a.4. A list of telephone numbers, including twenty-four (24)-hour contact information, for the following entities (which shall also be posted at the well site): the operator, any contractors of the operator, the Department, the local oil and gas inspector, and local emergency response units;

3.4.a.5. A list of all schools and public facilities within a one-mile radius of the proposed well, including telephone numbers for the same;

3.4.a.6. Material Safety Data Sheets (MSDS) for all materials and chemicals on the well site shall be readily available and maintained at the well site; and

3.4.b. Well site safety meetings. – Safety meetings shall be held on-site weekly, at a minimum, and specifically prior to the beginning of drilling, completion, and work-over operations. Meeting attendance shall be logged, and the log shall be maintained on site. A check-in and check-out list of all personnel shall be maintained during the drilling and completion phases of the operation.

§35-8-4. Operational Rules to Protect Water Quality and Quantity

4.1. All operators are required to protect the quality and quantity of water in surface and ground water systems both during and after drilling operations and during reclamation by:

4.1.a. Withdrawing water from surface waters of the State using methods deemed appropriate by the Secretary so as to maintain sufficient in-stream flow immediately downstream of the withdrawal location;

4.1.b. Casing, sealing or otherwise managing wells to keep fluids or natural gas from entering ground or surface waters;

4.1.c. Conducting oil and gas operations using BMPs so as to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to stream flow or runoff outside the permit area, but in no event shall the contributions be in excess of requirements set by applicable State or federal law; and

4.1.d. Registering all water supply wells with the Office and constructing and plugging all such wells in accordance with applicable laws governing drinking water well construction and plugging.

4.2. All operators who withdraw two hundred ten thousand (210,000) gallons or more of water from waters of this State during any one-month period shall adhere to the following operational and reporting requirements:

4.2.a. Within forty-eight (48) hours, but no less than twenty-four (24) hours, prior to the withdrawal of water, the operator shall identify the location of withdrawal by latitude and longitude; verify, using methods deemed acceptable by the Secretary, that sufficient flow exists to protect designated uses of the stream; and provide notice to the Office as prescribed by the Secretary;

4.2.b. All surface water withdrawal locations and facilities identified in the water management plan set forth in subsection 3.3 above shall be identified with a sign that discloses that the location is a water withdrawal point and the name and telephone number of the operator for which the water withdrawn will be utilized. When the withdrawal location is no longer being utilized, or at the direction of the Secretary, the operator shall notify the Office and remove all signage; and

4.2.c. For all water used in connection with hydraulic fracturing activities and for all produced water from production activities, operators shall comply with the following record-keeping requirements:

4.2.c.1. For production activities, the following information shall be recorded and ~~retained by the operator~~ provided to the Office:

4.2.c.1.A. The quantity of flowback water from hydraulic fracturing of the well;

4.2.c.1.B. The quantity of produced water from the well; and

4.2.c.1.C. The method of management or disposal of the flowback and produced water.

4.2.c.2. For transportation activities, the following information shall be recorded and ~~retained by the operator~~ provided to the Office:

4.2.c.2.A. The quantity of water transported;

4.2.c.2.B. The collection and delivery or disposal location(s) of the water; and

4.2.c.2.C. The name(s) of the water hauling company(ies).

4.3. All drill cuttings and associated drilling mud generated from well sites that disturb three acres or more of surface, excluding pipelines, gathering lines, and roads, or that use two hundred ten thousand (210,000) gallons or more of water during any one-month period shall be disposed of in an approved solid waste facility or managed on-site in a manner otherwise approved by the Secretary.

4.4. Casing and cementing standards. – The operator shall prudently drill through fresh groundwater zones so as to minimize any disturbance of such zones. Further, the operator shall construct the well and conduct casing and cementing activities of all horizontal wells in accordance with standards developed by the Office and in a manner that will provide for control of the well at all times, prevent the migration of gas and other fluids into the fresh groundwater and coal seams, and prevent pollution of or diminution of fresh groundwater. At a minimum, the following standards shall apply:

4.4.a. Casing standards.

4.4.a.1. All casing installed in the well, ~~must be new, with a whether new or used, must have a~~ pressure rating that exceeds the anticipated maximum pressure to which the casing will be exposed and meet the appropriate American Petroleum Institute (API) standards;

4.4.a.2. The casing must be of sufficient quality and condition to withstand the effects of tension and maintain its structural integrity during installation, cementing, and subsequent drilling and production operations;

4.4.a.3. Centralizers must be used, with the proper spacing, during the casing installation to ensure that the casing is centered in the hole;

4.4.a.4. Casing shall not be disturbed for a period of at least eight hours after the completion of cementing operations; and

4.4.a.5. No gas or oil production or pressure shall exist on the surface casing or the coal protection casing.

4.4.b. Cement standards.

4.4.b.1. All cement used in the well must meet the appropriate API or American Society for Testing and Materials (ASTM) standards and secure the casing to the wellbore, isolate the wellbore from all fluids, contain all pressures during all phases of drilling and operation of the well, and protect the casing from corrosion and degradation;

4.4.b.2. Cement used in conjunction with surface and coal protection casing must ~~prevent gas flow~~ provide zonal isolation in the casing annulus;

4.4.b.3. The operator shall provide notice to the Office at least twenty-four (24) hours prior to the expected commencement of any cementing operations and maintain a copy of the cementing ~~log~~ records at the well site during the drilling and completion of the well.

§35-8-5. Public Notice Procedures

5.1. Applicants for well work permits seeking to drill the first horizontal Marcellus Shale well on any particular well pad located in an area within the boundaries of any municipality, as that term is defined in W. Va. Code § 8-1-2, shall publish public notice of the filing of such well work permit application as follows: At the time that a well work permit application is filed, the applicant shall also place a Class I legal advertisement in a newspaper of general circulation in the area where the well is proposed to be located. No well work permit shall be issued to any applicant until at least thirty (30) days' notice has been provided to the public. The advertisement shall contain, at a minimum, the name of the applicant, the proposed location of the well, the proposed date on which site preparation for the proposed well will begin, and a contact telephone number for more information.

**PUBLIC HEARING ON PROPOSED LEGISLATIVE RULE 35CSR8 GOVERNING
HORIZONTAL WELL DEVELOPMENT**

COPY

**OCTOBER 11, 2011
6:09 P.M.**

**THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET SOUTHEAST
CHARLESTON, WEST VIRGINIA**

***TANIA STRICKER
Certified Court Reporter***

CAPITOL CITY REPORTING
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POST OFFICE BOX 11394, CHARLESTON WEST VIRGINIA 25339 • (304) 344-9505 FAX (304) 344-9506

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01 up to speak, please state your name and if you are
02 with any groups or organizations. Also, if you have
03 written comments that you would like to submit in
04 addition to your spoken comments, please hand them to
05 me after you speak or at the conclusion of the
06 hearing. Quite a few people have signed up to speak
07 so I would ask that if everyone could limit their
08 comments to five minutes that would be extremely
09 helpful. I apologize in advance for mispronouncing
10 anyone's names. I will do my best. Our first
11 speaker is Christopher London.

12 MR. LONDON: My name is Chris London.
13 I am the Marcellus Region Program Manager for HRL
14 Compliance Solutions, Incorporated. I'm also a
15 member of the West Virginia Oil and Natural Gas
16 Association's Environmental Committee. I have
17 several comments today pertaining to the Emergency
18 Rule 35CSR8 and it's mainly focusing on the proposed
19 environmental aspects of this legislation.
20 First, I'd like to start with Section 3.1, the
21 erosion and sedimentation control plan requirements.
22 Section 3.1 states that erosion and sedimentation
23 control plans must be submitted by registered PE in
24 conjunction with all well work permits involving

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PROCEEDINGS

01 MR. ALUISE: My name is Tom Aluisse and
02 I'm with the Public Information Office here in the
03 West Virginia Department of Environmental Protection,
04 and I'll be the facilitator for tonight's hearing on
05 the Proposed Legislative Rule 35CSR8 Governing
06 Horizontal Well Development. The rule proposes to
07 govern and apply to permit application requirements,
08 operational rules to protect the water quantity and
09 quality, and public notice procedures for oil and
10 natural gas operators developing horizontal wells in
11 municipalities.

12 The purpose for tonight's hearing is to give you
13 the opportunity to share your comments or information
14 about the proposed rule with the DEP. Tonight's
15 hearing is being recorded by a court reporter so that
16 the comments shared can be taken into consideration
17 and entered into the public record for this proposed
18 rule. To ensure that we successfully achieve the
19 purpose of this hearing, we ask that everyone be
20 respectful and considerate of each other by
21 refraining from interrupting others while they are
22 speaking, and keeping your comments on topic so our
23 time together is used efficiently. When I call you
24

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01 three acres or more of disturbance, and that the
02 plans shall be considered conditioned to the permit
03 and be enforced as such. It's often very common for
04 erosion and sedimentation control plans to be
05 modified during construction activities due to
06 unforeseen reasons or circumstances. I'd request to
07 have that the oil and gas inspector, the local oil
08 and gas inspector, be able to approve such changes in
09 the field by red lining plans and then perhaps
10 putting them in the mailbox for everyone to see the
11 changes, as is currently practiced. This will
12 eliminate the need to submit permit modifications
13 that would halt construction and drilling schedules,
14 and prevent the development of the oil and natural
15 gas industry.

16 This provision also requires that erosion and
17 sedimentation control plans be in compliance with
18 best management practices such as those that
19 currently exist in the Office of Oil and Gas' Erosion
20 and Sedimentation Control Field Manual. I would like
21 to ask if this existing manual will continue to be
22 used or will a new set of BMP's be created and if a
23 new set of BMP's are being developed, request that a
24 working group of Office of Oil and Gas, and industry

Public Hearing On Proposed Legislative Rule 35CSR8
Governing Horizontal Well Development
October 3, 2011

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01 representatives be created to offer input to be used
02 in the development of a new set of BMP's.
03 Section 3.3, Water Management Plan, this
04 requires an estimation of the volume of water to be
05 used in conjunction with drilling, fracturing, and
06 stimulation of a well to accompany all horizontal
07 well work permits. In addition, it also requires a
08 water management plan to accompany all permits
09 requiring greater than 210,000 gallons of water
10 withdrawn drawn during a one month period. I request
11 that only water withdrawn from the waters of the
12 state be counted up front for the purposes of the
13 water management plan inclusion. Therefore, it would
14 eliminate the necessity to include waters that are
15 being recycled and removed from well pad to well pad
16 in the plans, and this will prevent overestimation of
17 actual water consumption by industry. Recycled
18 waters can be tracked separately to create data
19 reflecting its reuse somewhere else in the plan. In
20 addition, it's nearly impossible to estimate the
21 amount of water to be withdrawn or used for
22 operations at the time of the permit application,
23 which may leave an operator with little option should
24 these estimates be held as an enforceable part of a

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01 water or more during a one month period be disposed
02 of in an appropriate solid waste facility, or managed
03 on-site by an approved method. Due to the relatively
04 small amount of landfills accepting cuttings in this
05 state, there are currently only about four or five,
06 and the potentially cost prohibitive leach aid fees
07 associated -- leach aid testing fees associated with
08 the taking of cuttings which approximately works out
09 to be about \$75,000.00 a year for the landfill
10 operator, I request that the Office of Oil and Gas
11 maintain flexibility and promote alternative methods
12 for managing drill cuttings and drilling mud on-site.
13 One final thing that I'd like to mention which
14 actually has to deal with the erosion and
15 sedimentation control plan, in Pennsylvania there is
16 a ESCGP1, which is Erosion and Sediment Control Plan
17 General Permit 1, which can be expedited 60 day
18 review period by a PE. This allows the operator to
19 begin construction on his drilling facilities before
20 the well work permit is accepted. This allows
21 operations to keep ahead of the schedule saving
22 costly conflicts that may arise due to unforeseen
23 circumstances while building a facility and allowing
24 them time to mitigate these situations before

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01 permit condition. I request that it be made that an
02 applicant be permitted to supplement the application
03 and/or water management plan throughout the
04 operations, so that the data therein is as accurate
05 as possible.

06 The proposed rule requires that special specific
07 information be included in this water management
08 plan. I request that a form be developed to
09 streamline this submission based on industry input
10 which would allow for more efficient application in
11 the Office of Oil and Gas review process. Also, I
12 request that an applicant may have the option to
13 supplement his application and/or water management
14 plan with an additional water withdrawal points
15 throughout the operations, allowing for the ability
16 to augment the permanent water supply should some
17 unforeseen event or some circumstance such as dry
18 weather, or the contracting of a new water provider
19 with its own water supply be necessary during the
20 life of the permit.

21 Section 4.3, Drill Cuttings, this requires that
22 all drill cuttings and associated drilling mud
23 generated from well sites that disturb more than
24 three acres or use greater than 210,000 gallons of

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01 drilling operations take place, therefore, creating a
02 more efficient safer environment for everyone.

03 Finally, I'd also like to add that as a
04 consultant, I've directly witnessed and have been
05 affected by the very short notice that was given
06 between the filing and enacting of this emergency
07 rule. It is nearly impossible for an operator or its
08 consultants who may have had months or even years of
09 scheduling, and permit planning for operations in
10 place to make the changes associated with this ruling
11 and already be in compliance to comfortably move
12 forward. I request that the regulated community be
13 given until at least January 1, 2012 to come into
14 full compliance with these new requirements. Thank
15 you.

16 MR. ALUISE: Okay. Our next speaker
17 is George Monk.

18 MS. SCHAFFNIT: If anybody wants to
19 hear what George has to say, I suggest you move up
20 because we don't have a mic and --

21 MR. MONK: I'm pretty soft spoken.

22 MR. ALUISE: Just so the court
23 reporter can hear you.

24 MR. MONK: My name is George Monk.

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01 This is Molly Schaffnit and we work together
02 examining gas wells in the Putman County and Kanawha
03 County area. We see two major issues. Regulations
04 and guidelines need to cover the period from full
05 siting to construction, to drilling, casing, and
06 cementing, through fracturing, through production and
07 beyond the final reclamation. The problem is the
08 state does not have a comprehensive program.
09 The other major issue is this industry's non-
10 compliance with existing regulations. The problem is
11 that five percent of new wells leak from the outer
12 continental shelf. This is wells constructed under a
13 very stringent regulatory program, more stringent
14 than what's been proposed here. Fifty percent of
15 those wells will be leaking in 15 years. This is
16 from a 2003 oil field review.

17 The API has constructed a publication, Hydraulic
18 Fracturing Operations Well Construction and Integrity
19 Guidelines to help deal with the well integrity
20 problem. The issue we have with the existing
21 regulations is that this publication was created for
22 all wells that are hydraulically fractured, vertical
23 and horizontal, not just shale, but non-shale so we
24 believe this publication should be used for all, for

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01 protect the surface water.

02 The monitoring program the state has is
03 inadequate. The operators are required after five
04 years of a well's life to file or to fill out a form
05 OP13. These are yes and no questions, no
06 quantification. There's questions on well integrity,
07 secondary containment for storage tanks and erosion
08 and sediment control. These forms are not filed with
09 the state. They're kept in the possession of the
10 operator. None of this information is quantified and
11 given to the state or calculated. Essentially, the
12 form's are filled out by the operator and stuck into
13 a file folder.

14 Sixty-eight percent of the wells we looked at
15 did not have adequate secondary containment. It's
16 one of the items on the inspection report. Say
17 you're a father and you have a son that gives you the
18 finger 68 percent of the time. When you're told to
19 do something that's extremely important, you have an
20 untenable situation. The new regulation adds a layer
21 of confusion to the state's haphazard process.
22 Remember the five percent that I mentioned earlier of
23 wells leaking, the state needs to require all wells
24 to follow the API guidelines.

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01 constructing the regulatory program.
02 The state does pick items from this for similar
03 types of guidance, but a glaring example of a missing
04 item is the minimum casing depth that the API
05 recommends for aquifers used for municipal water
06 supplies. They say that it has to be at least 100
07 feet. The problem with non-compliance in our area,
08 if you look at 30 wells since 2008 through about May
09 of this year, ten of these wells are done in the last
10 ten years. They're all vertical wells. Forty
11 percent did not have API numbers. This is a
12 regulation that is extremely simple to satisfy, but
13 only 60 percent of the wells have the regulations
14 satisfied. This is required by law and regulation.
15 Seven percent of the wells leak. These are
16 wells that they're contaminating domestic water
17 supplies. These are two out of the ten recent wells.
18 Since then, actually 20 percent of the wells are
19 leaking. Twenty-seven percent of these wells have
20 exposed pit waste on the surface in violation of the
21 general water pollution control permit which
22 explicitly states that it has to be aerated at a
23 sufficient depth. Of course, that's just given in
24 the permit. It is stated to be at specific depth to

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01 The state needs to collect information on the
02 well completion report filed by the operator
03 regarding casing pressure tests, formation integrity
04 pressure tests, and cement bond log. The state needs
05 a good well monitoring program that's preformed
06 quarterly by the operator. It should have annular
07 questions. It at least should be quantified, volumes
08 for leaks or venting, other pertinent information.
09 The material needs to be quantified on this form and
10 the state needs to have standards for sustained
11 casing pressure. It needs to have standards for
12 mediation and plugging. If the well is leaking, it's
13 a hazard to health and human safety. The regulation
14 won't protect water and will do nothing to change the
15 issue at hand, the industry's poor compliance with
16 the existing state environmental regulations.
17 Thirty-two percent of compliance and regulation won't
18 fix that. Thank you.

19 MR. ALUISE: Thank you. Our next
20 speaker is Jack, is it Booda?

21 MR. BOODA: Booda.

22 MR. ALUISE: Okay.

23 MR. BOODA: As he said, my name is
24 Jack Booda. I'm the President of the West Virginia

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01 Society of Professional Surveyors. I represent about
02 400 surveyors that are members of our society and, of
03 course, there are many other surveyors in the state,
04 upwards of 900. In Section 35-8-3.1 and 35-8-3.2 the
05 phrase "in accordance with plans certified by West
06 Virginia registered professional engineer" appear
07 when addressing erosion and sediment control plans,
08 and the site construction plan. As president of the
09 West Virginia Society of Professional Surveyors, I
10 ask that that phrase be amended in each section to
11 read in accordance with plans certified by a West
12 Virginia registered professional engineer or West
13 Virginia licensed professional surveyor. The
14 legislative rules for surveyors, Series 5, Section
15 6.2.a, "licensees shall undertake to perform
16 assignments only when qualified by education or
17 experience in the specific technical fields of
18 surveying involved". Many times in this permitting
19 process you'll get a collaboration of professional
20 engineers and professional surveyors.
21 Surveyors know what they can do and can't do as
22 far as engineering work, and design work. Many of
23 the West Virginia professional surveyors are
24 currently involved in a wide range of DEP permitting

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01 WVONGA supports the promulgation of reasonable
02 rules for the regulation of horizontally drilled
03 wells in order to protect the environment and the
04 citizens of the state, while at the same time
05 allowing for the development of oil and natural gas
06 in West Virginia. We ask that the rules be applied
07 consistent with the scope of the governor's executive
08 order and address those horizontally drilled wells
09 that are hydraulically fracked, and that either use
10 210,000 gallons or more per month of water, or
11 disturb three acres or more of surface area. We
12 request that for any further development of any
13 standards or best management practices that industry
14 be invited to work with the agency, and that their
15 comment and feedback be requested, and considered in
16 the development of any additional standards.
17 We also ask for flexibility within the agency at
18 this time while the emergency rule is currently in
19 effect, as little or no time is afforded to the
20 regulated community to prepare permit applications to
21 comply with the emergency rule. Again, we appreciate
22 the opportunity to provide comments here this evening
23 and hope that all the comments received by the
24 regulated community be considered in finalizing the

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01 activities, surface mining, gas well permits and
02 Marcellus permits, at this time. These proven
03 experts should not be excluded from projects
04 involving horizontal well planning and construction
05 in the future. This legislation needs to take
06 advantage of their past experience and allow them to
07 apply that expertise in future areas of natural
08 resource development. Thank you.

09 MR. ALUISE: The next speaker is Anne
10 Blankenship.

11 MS. BLANKENSHIP: Hi, my name is Anne
12 Blankenship. I'm an attorney with the law firm of
13 Robinson & McElwee here in Charleston and I'm here on
14 behalf of the West Virginia Oil and Natural Gas
15 Association. WVONGA appreciates the opportunity to
16 provide comments on the proposed legislation and also
17 previously we provided comments on the casing and
18 cement standards, and the well site safety plan
19 standards and we appreciate the agency requesting our
20 input on those. We actually did submit written
21 comments today earlier on the proposed rule and I
22 won't go through those and repeat all those, but I
23 did just want to make a couple of general comments
24 about the proposed rule on behalf of the association.

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01 rule. Thank you.

02 MR. ALUISE: Our next speaker is John
03 Casey.

04 MR. CASEY: I'm going to pass. You're
05 on four people and it's a half an hour, so I'm going
06 to let Jennifer Casey speak for me.

07 MR. ALUISE: Okay. Jennifer?

08 MS. CASEY: My name is Jennifer Casey
09 and I'm here tonight to represent the American
10 Counsel of Engineering Companies of West Virginia.
11 I'm the president of this organization and our
12 organization represents over 70 member firms who
13 employee hundreds, if not thousands of West
14 Virginians, many of them are engineers and surveyors,
15 and technical people in the State of West Virginia.
16 We are here to strongly oppose the proposed
17 amendment by the West Virginia Society of
18 Professional Surveyors which asks that the proposed
19 legislation rule amends the wordage and I quote to
20 say, "in accordance with plans certified by a West
21 Virginia registered professional engineer or West
22 Virginia licensed professional surveyor". Again, we
23 oppose this amendment. By definition, surveying by
24 professional surveyors is the making of geometric

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01 measurements and gathering related information in
02 developing such information into graphics and maps.
03 Whereas, engineering, professional engineers, by
04 definition is creative work requiring engineering CAP
05 education training and experience to evaluate, plan
06 and design the use of land, and water. Engineers are
07 responsible for safeguarding life, health and
08 property. Engineering is a learned profession and
09 its practitioners are held accountable to the state
10 and the public by professional standards. Many
11 professional engineers carry professional liability
12 insurance to further protect the state and the
13 public. Erosion and sediment control plans, and site
14 construction plans entail more than geometric
15 measurements, but require engineering education,
16 training and experience to evaluate, plan, and design
17 these structures to protect the state and the public.
18 There are numerous examples of failures of improperly
19 installed erosion and sediment control plans, and
20 site construction plans. It is in the state's and
21 public's interest that these plans be prepared by
22 professional engineers. ACEC West Virginia and its
23 member firms hold paramount the safety, health and
24 welfare of the public, and the communities they

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01 serve. We feel that by allowing this amendment to
02 35CSR8 may jeopardize the safety of those affected
03 communities, as well as the environment. Thank you
04 for this opportunity.

05 MR. ALUISE: The next speaker is Randy
06 Kesling.

07 MR. KESLING: Hello, I'm Randy
08 Kesling. I'm with the Mountaineer Chapter of Trout
09 Unlimited and I'm also the State TU Counsel Chair for
10 Marcellus Shale. We're also providing written
11 comments. Just to go over some of the more important
12 ones, the resource, the sources, the quantity and
13 methods of location and timing of water withdrawals
14 for drilling purposes are not clear, and the
15 cumulative effects of doing so is not considered as
16 far as we can tell. Being a member of Trout
17 Unlimited, certainly the water quantity and quality
18 is of great concern to us, and we think that there
19 needs to be a greater emphasis placed upon and
20 control on the withdrawal of our water.

21 The requirement that an engineer must oversee
22 the actual construction of the well that was
23 initially included in the governor's executive order
24 is omitted in the DEP's implementation so we would

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01 like to see that reinstated. The methods acceptable
02 to the Secretary that sufficient in stream flow will
03 be available immediately downstream of the point of
04 withdrawal, there is no guidance as to how that
05 decision will be made or what criteria the Secretary
06 will use. We'd like to see that fleshed out, what
07 the Secretary would consider a protective margin for
08 that activity. Drill cuttings and drill mud must be
09 disposed of in appropriate soil, a solid waste
10 facility or managed on-site in a method otherwise
11 approved by the Secretary. Here again, there is no
12 indication of what criteria the Secretary may or may
13 not use in making that determination.

14 In general, we see an absence of the
15 consideration of the cumulative effects on our
16 forests which are the home to our aquatic life. It
17 seems that throughout all this regulation, you could
18 have a scenario of where you have wells drilled
19 throughout an area and each well in and of itself may
20 meet all the criteria in accordance with our
21 regulation, but if you look at it over time in a
22 cumulative effect, you may actually be losing a
23 forest and so we feel strongly that there should be
24 some consideration made for the cumulative effects

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01 that may occur through a number of well operations
02 that may affect the habitat, and our forests. Along
03 with that, we would like to see a consideration of
04 special places that should not be drilled in those
05 areas because their environmental sensitivity is so
06 extreme that we should not risk that resource. We
07 would like to see a definition of some of those
08 special places and that those places be set aside
09 from drilling activities, or at least have additional
10 monitoring, additional constraints on their
11 activities. Thank you.

12 MR. ALUISE: Our next speaker is Carol
13 Warren.

14 MS. WARREN: Good evening. My name is
15 Carol Warren and I'm speaking this evening just as a
16 concerned citizen, so those of you who know the
17 groups that I'm associated with, please don't blame
18 them for what I'm about to say. This is more of a
19 philosophical comment, I think, than a technical
20 comment on these rules. In looking at the rules they
21 seem to me to be a very minimalist approach to
22 environmental protection. I know that that is this
23 agency's charge. It's the Department of
24 Environmental Protection. It's here to protect our

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01 air, our land and our water. From my experience, I
02 know that there are many very dedicated and committed
03 employees here whose aim is to do just that.
04 However, as some people have already noted, the
05 Secretary of the department is a political appointee
06 who serves at the discretion of the governor. That,
07 I believe, really politicizes the situation and
08 subjects the Secretary to being leaned on, pressured.
09 We all read in the papers how the governor made
10 changes in the original proposals after hearing from
11 the industry and I don't consider myself a stupid
12 person, but that's a little bit too much cognitive
13 dissonance for me. How an agency that is suppose to
14 protect the environment can be sort of manipulated
15 into doing another job which is the job of making
16 industry happy and comfortable operating in the
17 state. I'm not just talking about the gas industry,
18 but any industry.

19 I feel like one of the best things that could be
20 done is to admit that this is a set up that really is
21 kind of doomed to failure and I know everybody will
22 say, well, that's just the way it is, but everything
23 is subject to change and we are the people of West
24 Virginia, and I think there's probably a better way

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01 out there to do this so that industry gets
02 representation in a department that will tend to
03 their needs and hear what they have to say, while
04 protecting the environment remains something separate
05 and that's what I think about in looking at the set
06 of rules. Thank you for allowing me to say that.

07 MR. ALUISE: Our next speaker is Don
08 Garvin.

09 MR. GARVIN: Do you still have Julie
10 Archer on the list?

11 MR. ALUISE: Yes, did I call her?

12 MR. GARVIN: I'll just go ahead. Okay.
13 I'm Don Garvin. I don't think you'll need the
14 microphone to hear me. I'm the legislative
15 coordinator for the West Virginia Environmental
16 Counsel. Over the last year, Dave McMahon, who's
17 also here tonight, and I were on the Advisory
18 Committee that DEP put together to discuss
19 environmental regulation of the Marcellus and here I
20 am tonight barely thinking because my brain is still
21 at the cabin I've been at in Wyoming for the last two
22 months, my special fishing cabin, but here I am
23 tonight looking at three issues that we discussed in
24 great detail during those taskforce meetings. It

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01 wasn't an advisory committee, it was a taskforce.
02 The three things I just want to mention, we're
03 strongly supportive of requiring engineers to prepare
04 the erosion and sediment control plans, and the site
05 construction plans. I've worked in the industry. We
06 need a higher level dealing with this than the
07 surveyors I dealt with over a 25 year period. That's
08 not to denigrate surveyors, but I said back then
09 during our taskforce meetings that the three acres
10 should include pipelines and roads. Those are some
11 of the most likely sediment causing operations on a
12 drill site and I said again then that the 210,000
13 gallons limit should not be per month, but based on
14 any 30 day period.

15 The second thing is the water management plans,
16 and in particular the operational rules. I'm glad to
17 see these. They're okay as far as they go. That's
18 why I advocated for them then. The State of West
19 Virginia needs an actual water withdrawal permit
20 system. The language in this rule is from the DEP's
21 proposed bill last session and that language comes
22 the closest to an actual permit system, but it's
23 still not the same thing and the environmental
24 community would like to see an actual water

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01 withdrawal permit system, run by the Office of Water.
02 Finally, drill cuttings. For more than three
03 years it's been our position that drill pits, drill
04 cuttings should not be continued to be buried on-
05 site. We've created thousands of many hazardous
06 waste dumps on surface owners' land. The burying on-
07 site is not an acceptable method to the West Virginia
08 Environmental Counsel, nor is encapsulation. Thank
09 you for the opportunity.

10 MR. ALUISE: Our next speaker is Julie
11 Archer.

12 MS. ARCHER: Thank you. My name is
13 Julie Archer. I'm with the West Virginia Surface
14 Owners' Rights Organization and David McMahon, and I
15 submitted written comments on behalf of our
16 organization so I won't take the time to go through
17 all of our comments on the rule this evening, but
18 there is one thing that we didn't include in our
19 written comments that I would like to mention and
20 that is that we've been in touch with the
21 Environmental Defense Fund, and they have submitted
22 to the DEP model regulations on hydraulic fracturing
23 chemical disclosure and casing, and cementing and we
24 just strongly want to encourage the DEP to consider

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01 their recommendations for strengthening those
02 provisions in the rule. Thank you.

03 MR. ALUISE: Our next speaker is, is
04 it Chuck Wyrstok?

05 MR. WYRSTOK: My name is Chuck
06 Wyrstok. I am a landowner. I'm here tonight as a
07 landowner, even though I work with environmental
08 organizations. I thought in the rules there were
09 some things that stood out pretty drastically so I
10 thought I'd comment on those. I live in Roane County
11 which is a drilling area, which you all might know.
12 I want to thank you for the opportunity to comment
13 tonight on these rules. I'm going to make this short
14 and sweet. I'm just going to give the numbers of the
15 particular sections of the rules and all you lawyers
16 out there can take quick notes because I'm going to
17 run through this.

18 1.1, these rules should apply to vertical
19 Marcellus Shale wells that use the same amount of
20 water and disturb the same amount of land that the
21 rule would otherwise cover. On 3.3.d, the specific
22 placement of waste water -- I'm not going to call
23 this waste water because for anybody out there that
24 knows how these operations go, this is not waste

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01 meetings should include sub-contractors and truckers,
02 or either that or some other way of training truckers
03 must be found. At each well site safety meeting, all
04 workers, including truck drivers, should be provided
05 with and keep in their possession the up to date
06 phone numbers to call in case of any emergency.
07 Spills from trucks whether on the site or in transit
08 are, in fact, emergencies.

09 4.1.a, the phrase "using methods acceptable to
10 the Secretary" again, is not an acceptable phrase for
11 the above reasons which I detailed before. 4.1.b,
12 uses the phrase or otherwise managing wells. That's
13 not acceptable. Methods for managing fluids should
14 be specified. Drillers who continue to use hay bales
15 to stop sediment of chemical spills are not to be
16 trusted to decide how to manage fluids.

17 4.1.c, "to the extent practical" is an
18 unacceptably vague phrase opening the door to sloppy
19 use of or ignoring BMP's to control runoff. It
20 should be eliminated. 4.2.a, there's that phrase
21 again, "using methods acceptable to the Secretary", a
22 political appointee, vague. 4.3, this is the, I
23 think, most objectionable item in the rules. The
24 "approved solid waste facility" is a complete

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01 water. It's not just water. This contains toxins,
02 chemicals so we're talking really about waste fluid.
03 To call it water is sort of complementing it a little
04 too far, I think. The specific place of waste fluid
05 disposal should be in the water management plan. If
06 there is a shortage of places to dispose of waste
07 fluid, there should be a way to check that the plan
08 is being followed. Maybe some of you know the math,
09 about 5 billion gallons of water being used on most
10 Marcellus wells. That's an industry statement. They
11 also say that there's only one half of one percent of
12 that is chemicals is being used and it's fairly
13 inconsequential, we shouldn't worry about it. Well,
14 the math is its 25,000 gallons of chemicals so it's
15 called waste fluid.

16 3.3.f.2, "using methods acceptable to the
17 Secretary" is a phrase in there, but it is not
18 acceptable. The Secretary is a political appointee
19 who takes orders from elected politicians who depend
20 on campaign donations. I see a chain there.
21 Acceptable methods for determining sufficient in
22 stream flow which this section is about should be
23 made by politically independent scientists.
24 3.4.b, personnel attending well sites safety

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01 mystery. That's just a phrase. What does that mean?
02 "Or managed on-site in a manner otherwise approved by
03 the Secretary" means continued pit burial on the
04 site, really. Drill cuttings and drilling mud are
05 likely to contain toxins, and radioactive materials.
06 They should be tested and if they contain hazardous
07 materials they should be disposed of in a hazardous
08 waste facility. In no case should they be buried on-
09 site.

10 4.4.a.4, proper curing of casing cement is the
11 most critical function in protecting ground water.
12 An inspector, a DEP inspector should be required on-
13 site to sign off on the log verifying that the casing
14 cement was properly cured. The last one's 5.1,
15 coming to the public notice, this should be provided
16 for all wells, not just within municipalities. What
17 about the people outside of the municipalities? Just
18 putting a notice into newspapers, as a public notice,
19 how many of you read the public notices every day? I
20 don't read them every day. I probably should. It
21 should be registered mail. There are out of state
22 residents who own land in West Virginia who don't
23 read the papers here and they're never going to hear
24 about this otherwise. Thank you very much.

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01 MR. ALUISE: The next speaker is David
02 McMahon.

03 MR. McMahon: My name is David McMahon
04 I am an attorney and a co-founder of the West
05 Virginia Surface Owners' Rights Organization. As
06 Julie mentioned, we have submitted written comments.
07 We're not going to repeat them here, but they contain
08 things, some of which, for example, agree with Mr.
09 Wyrostok.

10 There are some things that are vague. Metal
11 casing shall be sufficient quality and condition, so
12 it's going say they should be insufficient quality
13 and condition? There's just not much guidance. It
14 leaves too much up to the agency and should be more
15 definite. Principally, I tried to sign up last so I
16 could respond to what some of these industries have
17 said so I'm going to do that. I apologize. I forget
18 the name of the first gentleman. In response to some
19 of the things he said, that there needed to be permit
20 mods at the site for the engineer that designed the
21 site if there needs to be modifications. I'm sure
22 that's true, but we think that the modifications need
23 to be approved by an engineer, not just the
24 inspector. Of course, everyone's aware of our

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01 conventional wells and perhaps from the other wells,
02 too. I am absolutely opposed to any state
03 regulation that approves drill cuttings on us. It's
04 a little disingenuous at the press announcement to
05 say that was going to stop, and when you read the
06 fine print, that allows that.

07 One of my best friends is a surveyor.
08 Nevertheless, I'm opposed to the surveyors designing
09 these. That's probably one of the reasons that we
10 have problems with pit walls collapsing in Wetzel
11 County when they were first done for the large
12 impoundments, impoundment walls, not pit walls. The
13 surveyors are not trained in hydrology, not material
14 properties, not load limits. They do a good job
15 surveying often, usually, almost always, but this is
16 outside of their training. That's really all and I
17 thank you for the opportunity to speak.

18 MR. ALUISE: The next speaker is
19 Gregory Smith.

20 MR. SMITH: This will be short and
21 sweet and we'll get out of here two minutes over our
22 time range. I'm Greg Smith, a previous chairman of
23 the Licensing Board for Surveyors in West Virginia.
24 I also served as president for the State Society for

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01 position there's just way too few inspectors for the
02 50,000 plus wells that exist that have problems that
03 Mr. Monk explained and so we need an engineer in
04 charge of that. The suggestion that there should be
05 a committee of the DEP of industry to work on the
06 Erosion Sediment Control Manual, a suggestion made by
07 Ms. Blankenship, the industry should be invited to
08 work with the standards for casing and cementing
09 shows an attitude that we think is a problem. How
10 about the people to be protected, too, the
11 environmental surface owners, the industry should
12 also think they should be included in those things.
13 As was pointed out once earlier, we already know that
14 the proclamation for this rule appeared on the
15 industry website before we knew about it and was
16 changed before it was actually done.

17 Drill cuttings, I understand it may be a problem
18 with where they put them. That's unfortunate, but
19 don't put them on my yard or on my land. We are
20 absolutely opposed to anything that approves drill
21 cuttings being placed on our land without there
22 having been any studies about what happens to those
23 drill cuttings, of whether they leach or not. We
24 have pictures that they do leach, certainly from

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01 many years. I've practiced in the oil and gas
02 industry since 1978. I'm very familiar with what's
03 going on, but actively involved with the DEP on the
04 rule changes, requirements, as far as mapping plats,
05 erosion sediment control. I've worked on various
06 committees through the whole timeframe.

07 I agree with the standpoint of the society's
08 position on Section 8-3.1 and 8-3.2 to add surveyors
09 back in on E&S. Primary for that reason, since 1985
10 surveyors have provided the plats in erosion and
11 sediment control plans in accordance to the bylaws of
12 the Office of Oil and Gas. Basically, the erosion
13 sediment control plans are set forth in best
14 management practices or E&S manuals that's been
15 developed by the DEP through the Oil and Gas
16 industry, or not the industry, but by the Oil and Gas
17 Regulatory Office. It's not a big rocket science for
18 E&S. I agree with the impoundments. Impoundments
19 should be done my engineers. We're dealing with very
20 large amounts and volumes of water. That is
21 definitely an engineering function.

22 Engineers have not been involved in the Oil and
23 Industry since the mid-80s since it crashed and there
24 was hardly any activity whatsoever. The Marcellus

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01 Shale, as well as the many downturns and other phases
02 of the industry with the infrastructure, the highway
03 department has brought a lot of the engineering
04 community back in to the oil and gas field. That's
05 where the activity is. My brother's a registered
06 professional engineer. We have a company and we
07 provide several services in West Virginia, PA and
08 Ohio. Yeah, there is a difference between what's
09 involved between surveying and engineering. In 1985
10 all engineers were grandfathered that practice any
11 type of surveying. The oil and gas industry in West
12 Virginia has had services provided by the surveying
13 community probably on about an 80 to 90 percent ratio
14 for preparing plats, reclamation plans and various
15 other permitting functions, I guess, that's required
16 by the Office of Oil and Gas, where the engineering
17 has not been involved.

18 There's not been many problems for years so I do
19 support the surveyors position that it would decrease
20 the livelihood that they have been providing for many
21 years. My office indirectly, it would probably
22 affect the livelihood of about 150 people. Directly,
23 I have about 50 employees. We're probably 95 percent
24 compliant on Oil and Gas right now. We've given up

00036

01 state and millions of dollars worth of infrastructure
02 that is going to the school systems, and into our
03 states' budget. If the only thing we're going to do
04 is over regulate our state, we'll be like New York.
05 We won't have any activity. They'll go back to PA
06 and they're going move to Ohio. That's where they're
07 moving. We're running operations out of our state
08 right now as delays in getting permits and things
09 being able to happen.

10 One comment that, I guess, one gentleman
11 commented this evening that he hadn't been able to
12 hire many surveyors that knew what they were doing.
13 Well, if you can't pay more than a nickel, you
14 probably aren't going to find anybody that knows what
15 they're doing. Sometimes you have to be willing for
16 what you want to pay for it. I don't care whether
17 your providing legal services, engineering, surveying
18 or what it may be. Sometimes you have to pay a
19 little bit to get what's a quality product. Thank
20 you.

21 MR. ALUISE: Is there anyone I didn't
22 call who has signed up to speak or is there anyone
23 who would like to speak who didn't indicate that they
24 initially wanted to? Okay. In that case, that will

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01 the commercial sector for shopping centers and
02 schools, and that type of work and we concentrate in
03 the Oil and Gas.

04 There's a difference, but impoundments, let the
05 engineering come in. It needs to be there. I agree
06 with that 100 percent. E&S, that's code book. We've
07 got BMP manuals. Contractors, developers have
08 followed BMP Manuals developed by the DNR, Water
09 Resources for years. They've not required surveyors.
10 They did not require engineers to follow these
11 practices. These are things that require to comply
12 with various regulations, whether it be banking or
13 government guidelines to -- we need to protect the
14 water resources. I agree with that, totally.

15 As far as adding just a few comments, as far as
16 adding new regulations, that's been mentioned
17 tonight. The DEP, as far as the Office of Oil and
18 Gas -- yes, Marcellus is changing and we need to
19 change, and adopt with it to include different
20 things, but to add on tons and tons of new
21 regulations, we just need to enforce what we have.
22 We don't need to bog down our states' opportunity to
23 do business and work in the Marcellus Shale climate.
24 That is providing thousands of jobs throughout the

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01 conclude the public hearing this evening on
02 Legislative Rule 35CSR8, covering horizontal well
03 development and the public comment period ends
04 tonight. The agency will review all comments and
05 take them into consideration to the rule. Thank you.

06 * * * * *

07 (Concluded at 7:11 a.m.)

08 * * * * *

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REPORTER'S CERTIFICATE
STATE OF WEST VIRGINIA,

COUNTY OF KANAWHA, to wit:

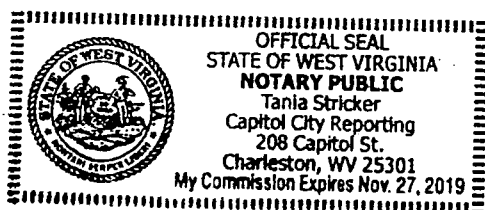
I, Tania Stricker, Notary Public in and for the State of West Virginia, duly commissioned and qualified, do hereby certify that the foregoing hearing duly taken by and before me, under the West Virginia Rules of Civil Procedure, at the time and place and for the purpose specified in the caption thereof; the said witness having been duly sworn by me to testify the whole truth and nothing but the truth concerning the matter in controversy.

I do certify that the said deposition was correctly taken by me by means of the Stenomask; that the same was transcribed by me, and that the said transcript is a true record of the testimony given by said witness.

I further certify that I am not connected by blood or marriage with any of the parties to this action, am not a relative or employee or attorney or counsel of any of the parties, nor am I a relative or employee of such attorney or counsel, or financially interested in the action, or interested, directly or indirectly, in the matter in controversy.

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Given under my hand this 6th day of
October, 2011.



Tania Stricker

Tania Stricker, C.C.R.
Notary Public

My commission expires November 27th, 2019.

Public Hearing Sign In Sheet

Proposed Horizontal Well Development Rule 35CSR8

Oct. 11, 2011, 6 p.m. Charleston

The Department of Environmental Protection asks for the information below so that agency staff may provide responses and information about decisions to you. The information you voluntarily provide on this sheet becomes part of the public record related to this topic and may be released if requested under the Freedom of Information Act.

Name (please print)	Address	Organization	Phone/Fax	E-mail	Comment Yes/No
Christopher London	597 Chambers Run RD Crownsville, MD 21032	HCL Compliance Solutions Inc.	410-952-1665	clondon@hcl.com	Y ~~X~~
George Monk	189 Brunsell Lane Foca, WV 25179		304 993-8997	gmonk@citynet.net	Y ~~X~~
MOLLY SCHAFENIT	"		"	"	N
Jack R. Booda	811-A Main St. East Oak Hill WV 25901	WV Society of Prof. Surveyors	304-462-9300	jacoboda@westlake-univ.edu	Y ~~X~~
Anne Blankenship	2000 West Main St. PO Box 871 Martinsburg WV 25801	WV DNR	304-347-8344	ab@dnr.wv.gov	Y ~~X~~
JOHN L. GREELE	405 CAPITOL ST. SUITE 904 CHAS. WV. 25301	WVSPS	304-552-4443	john.greele@hatchmote.com	N
Leu Baker	100 YOUNG ST. SCOTT DELOT WV	WV RUA	304 201 1689	leubaker@wvrua.org	N
John CASEY	101 N. COURT STREET RIPLEY WV 25271	FOX	(304) 550-0338	jcc@foxengineering.net	Y ~~X~~
JENNIFER CASEY	101 N. COURT STREET RIPLEY WV 25271	FOX ENGINEERING	304-532-4909	jfox@foxengineering.net	Y ~~X~~
JULIE ARCHER	1500 Dixie Street Charleston WV 25311	WV Surface Owners' Rights Assn.	(304) 356-5871	julie@wvsoa.org	Y ~~X~~
Randy Keslin	RT 2 Box 427 Bridle Pt WV 26330	TV	304 622 5982	RKeslin@MA.RR.com	Y ~~X~~
Dorel Warren	PO Box 652 Webster Springs WV 26088	Citizen	(304) 847-5721	placelwren@gmail.com	Y ~~X~~

Public Hearing Sign In Sheet
Proposed Horizontal Well Development Rule 35CSR8
Oct. 11, 2011, 6 p.m. Charleston

The Department of Environmental Protection asks for the information below so that agency staff may provide responses and information about decisions to you. The information you voluntarily provide on this sheet becomes part of the public record related to this topic and may be released if requested under the Freedom of Information Act.

Name (please print)	Address	Organization	Phone/Fax	E-mail	Comment Yes/No
Rev. Mr. Todd Garland	1110 Kanawha Blvd E	Diocese of Wheeling-Charleston	304 380 0155	tgardland@clwc.org	written
Magdalena Fry	3826 New Hope Drive	WVCA		magmiefry@gmail.com	no
DON GARVIN	PO Box 668 Buckhannon, 26206	WVCE	(304) 395-0019	D56Jr@aol.com	Yes X
BRETT LOFLIN	707 VA. ST. E. W.V.	NORTHWEST	304 414 7063	blafin@me-llc.com	No
Mark Clark	300 Kanawha Blvd E Charleston, WV	Spencer Thomas 604 Betty	304 340 3876	mlark@spencerthomas.com	WAO
Kathy Beckert	PO Box 553	Jacksonville	340 1019	kbeckert@jacksonville.com	No
Diana Morde	1312 Amphin Way, D.D. CHAS. WV			Omega538@jacksonville.com	WAO
Tom Rhule	1404 WATTS ST. 25302			OICITIZEN@GMAIL.COM	No
Chuck Kluprostok	230 Griffiths Rd. Spencer, WV 25276		304 927 2978	wyro2appal@tiam	Yes X
TRIP SHOWEN	900 VIRGINIA ST. E. CHAS. WV	TRIANA ENERGY	304 205 8523	TSHOWEN@TRIANA ENERGY	NO

Oct. 11, 2011, 6 p.m. Charleston

Name (please print)	Address	Organization	Phone/Fax	E-mail	Comment Yes/No

[illegible]

35 CSR 8

RULES GOVERNING HORIZONTAL WELL DEVELOPMENT

RESPONSE TO COMMENTS

On September 8, 2011, the Office of Oil and Gas (OOG) commenced a thirty-day public comment period and subsequently held a public hearing on October 11, 2011 to accept oral comments on the proposed new legislative rule 35 CSR 8. OOG also accepted written comments through 7:00 p.m. on Tuesday, October 11, 2011. Ninety-five (95) people or groups submitted written comments and/or provided substantive verbal comments regarding proposed rule 35 CSR 8. OOG addresses the comments below.

1. COMMENTER: POCAHONTAS COUNTY COMMISSION

COMMENT A. The commenter states, *“Notice and full information of any permits must be given to the County Clerk and County Commission when both first solicited and, thereafter, awarded.”* and *“All permits must be made subject to timely comment and review by the County commission and public prior to award. The State Department of Environmental Protection shall be charged to comment and opine on all County concerns in each and every application for permit prior to awarding a permit.”*

RESPONSE A. Notice procedures for conventional oil and natural gas wells are addressed by statute at W. Va. Code § 22-6-9; any attempt to change that procedure by Legislative rule would be invalid as a violation of the statute. Pursuant to the mandates of Governor Tomblin’s Executive Order of July 12, 2011, the proposed rule seeks to provide enhanced notice of a proposed Marcellus well within a municipal boundary. The intent of the Executive Order was to create a public notice process where none has ever existed. While the cited provision does not extend public notice as far as it could, the Executive Order has restricted the agency to limit public notice to municipal boundaries.

COMMENT B. The commenter states, *“Water testing shall be made by the State DEP of the area encompassed by the drilling pool and surrounding acreage equal to twice the area of the drilling pool. The testing shall be done and taxed as part of the costs for the solicited permit and the results shall be promulgated to the County and kept in a State registry created for this purpose.”* and *“Water testing shall be conducted by the DEP at each and every drilling site during every phase of drilling and the results monitored by the DEP and published to the County Commission. At any stage in which contamination is revealed, drilling shall immediately cease.”*

RESPONSE B. The procedures for water supply testing surrounding oil or natural gas operations are set forth in Legislative Rule 35 C.S.R. 4 entitled Oil and Gas Wells and Other Wells at section 19, which is entitled “Water Supply Testing.” Any attempt to change those mandates or procedures through another Legislative rule would be invalid as contrary to an already-existing rule.

COMMENT C. The commenter states, *“Liability for water contamination from hydrofracture drilling operations shall have no period of limitations and lawful actions may be commenced at any time after discovery of damage and judgment for same shall be met with sufficient bonding posted and kept in force in the amount of \$5,000,000.00 for each and every well drilled.”*

RESPONSE C. The civil remedies for contamination or deprivation of a fresh water source or supply are set forth in W. Va. Code § 22-6-35, and any attempt to change that procedure by Legislative rule would be invalid as contrary to the statute.

COMMENT D. The commenter states, *“No water may be withdrawn from any water source, well or stream within the borders of the county under any hydrofracture drilling permit without review first by the County Commission, the DEP and subject to public comment. Water withdrawal shall depend on public needs and use considerations. No withdrawal may be made which endangers water resource levels or environmental concerns consequent upon water levels. Also, any recreational use of water shall also be considered before any water withdrawals are allowed.”*

RESPONSE D. OOG notes that activity surrounding horizontal well development, as with all industrial activity in West Virginia, is governed by West Virginia’s narrative water quality criteria, which require public needs and use to be taken into consideration before withdrawal and does not allow so much water to be withdrawn from a stream that harm occurs to either the use or the aquatic life of that stream (*see*, 47 C.S.R. 2 § 3.2.i). In order to ensure that horizontal drilling activity complies with those criteria, the proposed rule requires operators to develop a water management plan detailing the methods the well operator will use to protect the quantity and quality of the State’s waters and requiring operators to disclose the chemical additives used during the hydraulic fracturing process.

COMMENT E. The commenter states, *“No well shall be placed within view of any State Park within the County nor be allowed within one mile of any incorporated municipality.”*

RESPONSE E. The site restrictions for oil or natural gas wells in relation to State parks are set forth in W. Va. Code § 20-5-2(b)(8), and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT F. The commenter states, *“Water used in hydrofracture may not be disposed of or treated in the County of Pocahontas. Stored water used in hydrofracture and tailings from drilling shall be monitored by the DEP until safely removed and disposed.”*

RESPONSE F. OOG notes that the DEP’s Division of Water and Waste Management prohibited the disposal of water used the hydraulic fracturing process in publicly owned treatment works in 2009. OOG also notes that Section 4.3 of the proposed rule states that “[a]ll drill cuttings and associated drilling mud . . . shall be disposed of in an approved solid waste facility or managed on-site in a manner otherwise approved by the Secretary.” OOG finally

notes that its existing rules and policies require water to be stored and disposed of in a safe manner.

COMMENT G. The commenter states, *"We view the proposed fines and crimes associated with willful violation of the proposed rules as woefully inadequate and as an invitation to violate the law."*

RESPONSE G. OOG notes that the proposed Legislative rule does not propose any fines or criminal penalties. Offenses and penalties for violations of the statutes or rules regulating the oil and gas industry are set forth in W. Va. Code § 22-6-34, and any attempt to modify that enforcement structure by Legislative rule would be invalid as contrary to the statute.

COMMENT H. The commenter states, *"Air quality monitoring shall be conducted at each drilling site and logged and reported to the County Commission. Any results which exceed health quality and safety parameters shall result in cessation of drilling operations until corrected."*

RESPONSE H. OOG notes that both DEP's Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation and truck traffic in order to determine appropriate regulation of this activity.

COMMENT I. The commenter also expressed concerns about county authority regarding determining and abating public nuisances, county roads and bridges, radiation and noise levels, and forced pooling.

RESPONSE I. These comments are outside the scope of the proposed rulemaking, and, therefore, no response is required. However, OOG shares a number of concerns raised by the commenter and notes that the Legislature is currently working on a comprehensive regulatory bill for the oil and gas industry that may address and resolve a number of these concerns.

2. COMMENTERS: CITY OF WELCH AND THE WEST VIRGINIA MUNICIPAL LEAGUE

COMMENT A. The commenters state, *"[T]he City of Welch may have opportunities to sell potable water and also effluent water the drilling industry from our municipal plants when feasible. We would request that any regulations allow a reasonable opportunity for these purchases. It occurs to us that the use of municipal water, whether potable or treated effluent, may be more environmental (sic) friendly than a straight withdrawal from the surface and ground water systems of this state especially during low flow months and the issue appears to be omitted in the rule."*

RESPONSE A. OOG notes that whether an operator chooses to purchase water, either potable or treated effluent, from a municipal plant is a business decision of that operator, and OOG does not have jurisdiction over industries' business decisions. OOG further notes that nothing in the rule prohibits such purchase.

COMMENT B. The commenters state, “[I]n 35-8-5, we agree and appreciate the mandate of public hearings especially when the permits are being considered in municipal limits, and would add that it would be proper to mandate a hearing if the permit is for an operation within one half mile of the municipal intake for a drinking water resource. The City of Welch must be able to assess the potential impact on the quantity and quality of water production caused by this development.”

RESPONSE B. Please see Response 1A above.

COMMENT C. The commenters state, “[T]he City of Welch is in an area where there is extensive drilling for natural gas including coal bed methane. Local growth and planning, transportation, emergency services, housing, courts, and tourism components will be affected and possibly overburdened with current local staffing and funding. We believe an increase in the severance tax, a higher category for the horizontal drilling, or a local impact fee would be more sustainable than the current proposal of simple permit fee increases. The permit fee dollars are dedicated to the DEP with no distribution to municipalities to offset additional expenses or losses. Local impact should be compensated at the local level the state should not make the mistake of overlooking the seriousness of these components.”

RESPONSE C. OOG appreciates the commenters concerns. However, OOG notes that the only source of funding over which it has any control is permit fees, which are set forth in W. Va. Code § 22-6-2(c)(10). Any attempt to change those fees by Legislative rule would be invalid as contrary to the statute.

3. COMMENTER: DARRELL R. DEAN, JR., PH.D., P.S.

COMMENT. The commenter states, “Please amend section 35-8-5 to include a public notice to the many WV residents in rural areas. Residents in rural areas should have notice of any pending drilling around their homes, water sources, and access roads as well. A reading of the draft rules appears to omit notice for rural residents.”

RESPONSE. Please see Response 1A above.

4. COMMENTERS: JACK R. BOODA, PRESIDENT, WEST VIRGINIA SOCIETY OF PROFESSIONAL SURVEYORS; JEFFREY W. ADAMS, JEMERCO LAND SURVEYING AND MAPPING; DUANE K. BOWERS, P.S., SUNSHOT SURVEYING SERVICES; DARRELL R. DEAN, JR., PH.D., P.S.; LARRY ELLIS, P.S., CORNERSTONE CONSULTING & DESIGN, INC.; J. MICHAEL EVANS, P.S.; CHAD FREELS; JOHN L. GREEN, P.S., HATCH MOTT MACDONALD; MICHAEL D. HUFFMAN, P.S., TERRADON CORPORATION; STEPHEN D. LOSH, P.S.; LEON G. MALLOW, P.S.; MICHAEL W. MARS, L.S., VALLEY ENGINEERING; THOMAS MEEKS AND VIC MOYERS; KEN MORAN, P.S.; GREG PERKINS, P.S., PERKINS SURVEYING, LLC; TOM RAYBURN, P.S.; JAMES K. ROBERTS, P.E., P.L.S., BELL ENGINEERING; TIMOTHY N. ROSS, P.L.S., EASTHAM & ASSOCIATES; ROY E. SHREWSBURY, II, P.S., ESIWV, PLLC; ALLEN J. SMITH, P.S.; ROGER L. TACKETT, P.L.S.; AND CHESTER R. VAUGHAN, P.S.

COMMENT. The commenters all stated, *“In §35-8-3.1 and in §35-8-3.2 the phrase ‘in accordance with plans certified by a West Virginia registered professional engineer’ appears when addressing Erosion and Sediment Control Plans and the Site Construction Plan. I ask that the phrase be amended in each section to read ‘in accordance with plans certified by a West Virginia registered professional engineer or West Virginia licensed professional surveyor.’”*

RESPONSE. OOG notes that the purpose of requiring an engineer to certify erosion and sediment control plans and site safety plans for sites that involve large area surface disturbance is to ensure that such plans result in sites that are constructed in a safe and stable manner. By law, such work may only be performed by a registered professional engineer. West Virginia Code § 30-13A-3(ff) defines “surveying” or “land surveying” as,

[P]roviding, or offering to provide, professional services using such sciences as mathematics, geodesy, and photogrammetry, and involving both (1) the making of geometric measurements and gathering related information pertaining to the physical or legal features of the earth, improvements on the earth, the space above, on or below the earth; and (2) providing, utilizing or developing the same into survey products such as graphics, data, maps, plans, reports, descriptions or projects.

On the other hand, W. Va. Code § 30-13-3(e) defines the “practice of engineering” as

[A]ny service or creative work, the adequate performance of which requires engineering education, training and experience in the application of special knowledge of the mathematical, physical and engineering sciences to such services or creative work as consultation, investigation, evaluation, planning and design of engineering works and systems; planning the use of land and water; . . . and the review of construction for the purpose of assuring compliance with drawings and specifications any of which embraces such services or work . . . in connection with any utilities, structures, buildings, machines, equipment, processes, work systems, projects and industrial or consumer products or equipment of a mechanical, electrical, hydraulic, pneumatic or thermal nature, insofar as they involve safeguarding life, health or property. . . .

While licensed land surveyors provide valuable services to operators and the public by, among other things, developing the plats operators are required to provide to OOG and providing assistance in the proper siting of facilities related to the development of natural gas, ensuring that such sites are constructed in a safe manner is uniquely within the purveyor of registered professional engineers. OOG notes that the law has not changed with regard to plats prepared for submission with applications for well work permits; those maps must be prepared by a professional surveyor or a registered professional engineer. The proposed rule mandates that erosion and sediment control plans and site construction plans for sites that propose to disturb more than three acres of surface must be certified by a registered professional engineer.

5. COMMENTER: AFFILIATED CONSTRUCTION TRADES FOUNDATION

COMMENT A. The commenter states, *“Require an Environmental Impact Assessment of individual and cumulative impacts of the hydraulic fracturing process as part of the Well Work Permit application process – the assessment should address, at a minimum, but not limited to, individual and cumulative surface water withdrawal impacts, stormwater erosion impacts associated with the construction and operation of the well pads, air emission impacts associated with well pad operation and truck traffic.”* and *“Require a trigger for preparing an Environmental Impact Statement should the Environmental Impact Assessment identify significant adverse impacts to determine whether the project will result in unavoidable or unmitigatable impacts.”*

RESPONSE A. OOG notes that, while the proposed rule does not require an environmental impact assessment per se, there are provisions of the rule that require the operator to consider the effects of surface water withdrawals and take extra steps to mitigate stormwater erosion. Specifically, the water management plan, which is evaluated for effectiveness by DEP, details the methods the well operator will use to protect the quantity and quality of the State’s waters. Activity surrounding horizontal well development, as with all industrial activity in West Virginia, is governed by West Virginia’s narrative water quality criteria, which require public needs and use to be taken into consideration before withdrawal and does not allow so much water to be withdrawn from a stream that harm occurs to either the use or the aquatic life of that stream (*see*, 47 C.S.R. 2 § 3.2.i). Further, the rule requires enhanced erosion and sediment control plans and site construction plans to ensure that sites are constructed so as to minimize the wearing away of soil into the State’s waters or onto contiguous property. Finally, OOG notes that both DEP’s Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation in order to determine appropriate regulation of this activity.

COMMENT B. The commenter states, *“Include public comment/hearing/appeal requirements to the Well Work Permit application process.”* and *“Section 5.1 Public Notice Procedures states that WVDEP will issue the permit 30-days (sic) after the applicant publishes a public notice in a local newspaper. There are no provisions for public comment or appeal of the permit. The public notice provision only applies to the first horizontal well on a pad site. If any problems arise from the first well on a pad site, the public should have a mechanism for addressing those issues prior to future well construction.”*

RESPONSE B. Please see Response 1A above.

COMMENT C. The commenter states, *“Require the applicant and the named treatment facility to identify and certify that the wastewater treatment/disposal method identified in the permit has adequate capacity to treat the flowback water in combination of all other flow received by the facility. In addition, if the facility is a Publically Owned Treatment Works (POTW), it should be required to certify that the facility is allowed to receive the flowback water in accordance with the Industrial Pretreatment Program requirements of its NPDES permit.”*

RESPONSE C. OOG notes that the proposed rule requires, as part of the water management plan, “the planned management and disposition of wastewater from fracturing,

stimulation, and production activities.” If the operator’s proposed management and disposition of wastewater is not appropriate, the plan will not be approved by DEP. Once the water management plan is approved, its contents become permit conditions, violations of which may result in enforcement action by the agency. OOG further notes that DEP’s Division of Water and Waste Management prohibited the disposal of water used the hydraulic fracturing process in publicly owned treatment works in 2009.

COMMENT D. The commenter states, “*Require tracking and reporting system for flowback wastewater disposal be submitted to the WVDEP for its review. Require a spill containment plan for portable chemical storage containers.*”

RESPONSE D. OOG notes that Section 4.2.c of the proposed rule requires the operator to maintain records “for all water used in connection with hydraulic fracturing activities and for all produced water from production activities.” These records include, for production activities, the quantity of flowback water from hydraulic fracturing of the well, the quantity of produced water from the well, and the method of management or disposal of the flowback and produced water. For transportation activities, the operator must record the quantity of water transported, the collection and delivery or disposal location(s) of the water, and the name(s) of the water hauling company(ies). The operator must produce those records upon request by the agency, pursuant to W. Va. Code § 22-6-28(a). OOG further notes that its Legislative Rule entitled Miscellaneous Water Pollution Control Rules, which has been in effect since June 1, 1991, requires “[a]t each production facility, which includes all wells, flowlines, separation equipment, storage facilities, injection facilities, and auxiliary non-transportation-related equipment and facilities, all operators shall have appropriate containment and/or diversionary structures or equipment to prevent discharged oil or other pollutants from reaching the waters of the state.” 35 C.S.R. 1 § 7.

COMMENT E. The commenter states, “*Erosion and Sediment Control plan requires detailed information similar to but not inclusive of the detailed requirements set forth in the WV Erosion and Sediment Control Best Management Practice Manual (2006).*” The commenter then goes on to list the contents of the Erosion and Sediment Control Manual that should be included in the rule.

RESPONSE E. OOG notes that the requirements for erosion and sediment control plans set forth in the proposed rule are in addition to the requirements outlined in the Erosion and Sediment Control Manual, not in place of them. As stated in §1.1 of the proposed rule, these proposed rules are for horizontal wells, “which wells are also regulated by W. Va. Code § 22-6-1, et seq. and the Legislative Rules promulgated in Title 35 of West Virginia’s Code of State Rules and entitled Oil and Gas.” (emphasis added)

COMMENT F. The commenter states, “*The Rule does not require but should require provisions in the Site Management Plan to evaluate the impacts of individual well sites or the cumulative effects of multiple proximate well sites during the construction process.*”

RESPONSE F. OOG notes that one of the purposes of both the site construction plan and the erosion and sediment control plan is to evaluate the effects of the proposed well site on the surrounding land.

COMMENT G. The commenter states, *"The Rules do not require but should require evaluation of the cumulative environmental impacts of the operation of multiple wells on the same surface water body."*

RESPONSE G. Please see Response 5A above.

COMMENT H. The commenter states, *"Section 3.3.d requires the Water Management Plan to include 'The planned management and disposition of wastewater from fracturing, stimulation, and production activities'; however, no requirements are included in the Rule to provide certification that the planned disposition is realistic or available. Certification should be required."*

RESPONSE H. Please see Response 5C above.

COMMENT I. The commenter states, *"Section 3.3.e requires the Water Management Plan to provide a list of 'anticipated additives' to the fracturing fluid and only requires any changes be documented in the completion report. It will be impossible for a POTW or privately owned wastewater treatment plant to ensure adequate treatment schemes without knowing what the wastewater will contain. The applicant should be required to notify WVDEP prior to making any change to the additives and provide additional assurances that the disposal method will accommodate those changes."*

RESPONSE I. Please see Response 5C above.

6. COMMENTER: WEST VIRGINIA ASSOCIATION OF COUNTIES

COMMENT A. The commenter states, *"It would be helpful for counties' emergency management and law enforcement to have vicinity maps, as referenced in 3.2.a.1 and well site safety plans/maps as referenced in 3.4 in a consistently accessible area that is the same for each county. We suggest that these plans be provided to the Office of the Sheriff and the Emergency Management office of the county. It might also be helpful to file these with the County Clerk for public access."*

RESPONSE A. OOG notes that subsection 3.4 of the proposed rule requires the well site safety plan to be filed with the local emergency planning committee for the emergency planning district in which the well work will occur or to the county office of emergency services. Local emergency planning committees include, pursuant to statute, "law enforcement, civil defense, fire fighting (sic), first aid, health, local environmental, hospital and transportation personnel." W. Va. Code § 15-5A-7(a). By requiring submission of the well site safety plan to the local emergency planning committee OOG feels it will reach the appropriate local personnel.

COMMENT B. The commenter states, *"Public Notice Procedures, 5.1, refer to notice 'within the boundaries of any municipality.' We suggest that this be expanded to include the county as well and not be limited to municipalities only."*

RESPONSE B. Please see Response 1A above.

COMMENT C. The commenter states, *“Operators should notify WV Dept of Transportation of scheduled water deliveries so truck conditions may be better scrutinized and/or inspected. Trucks need to be inspected to ensure there is no faulty equipment and potential overweight issues need to be monitored. While this issue may be out of DEP’s direct jurisdiction, transportation issues certainly part of safety plans.”*

RESPONSE C. This comment is outside the scope of the proposed rulemaking and the jurisdiction of OOG and DEP and, therefore, no response is required.

COMMENT D. The commenter states, *“Plans need to conform to counties’ Flood Plain Management plans.”*

RESPONSE D. OOG notes that it advises operators in the well work permit application that they need to coordinate with other agencies of government that may have jurisdiction over the proposed operation, including the United States Army Corps of Engineers and county flood plain coordinators.

COMMENT E. The commenter states, *“We need to have coordination between DEP and Assessors for site locations so the county may benefit from the appropriate property taxes. We request that DEP share with the County Assessor any approved drilling permits in that county so the Assessor knows the location for appraisal and assessment purposes.”*

RESPONSE E. OOG notes that it provides copies of all plats of issued well work permits to county assessors, pursuant to W. Va. § 22-6-11.

7. COMMENTER: COUNTY COMMISSIONERS ASSOCIATION OF WEST VIRGINIA

COMMENT. The commenter states, *“While CCAWV is not suggesting that such process [the public notice procedure for well work permit applications within municipal boundaries in 35-8-5] be required when the well is located in the unincorporated area of the county, it is our request that electronic notification of all well work permit applications be sent to the county commission where the well is located. This electronic notification could be achieved at a minimal cost, and would allow county commissions to be aware of possible well activity in their county.”*

RESPONSE. Please see Response 1A above.

8. COMMENTERS: DIOCESE OF WHEELING-CHARLESTON; OHIO VALLEY ENVIRONMENTAL COALITION; SIERRA CLUB WEST VIRGINIA CHAPTER; CHUCK WYROSTOK

COMMENT A. The commenter states, “3.3.d – *The location of disposal should be specified in the plan. Care must be taken to not overwhelm any one area.*”

RESPONSE A. OOG notes that the information requested in subsection 3.3 of the proposed rule is information that must be submitted with the well work permit application. Once issued, the well work permit is viable for two years, and work does not need to begin pursuant to that permit for almost two years. Thus, at the time the operator applies for a permit, it need only advise OOG how it plans to manage and dispose of its wastewater. Once the operation is actually active, the operator must keep records of how it actually managed and disposed of the water pursuant to subdivision 4.2.c of the proposed rule.

COMMENT B. The commenter states, “3.3.e – *The list of chemicals actually used should be submitted upon beginning the fracturing operation. Such knowledge is extremely important to emergency responders responsible for the health of workers and local citizens in event of an accident.*”

RESPONSE B. OOG notes that the information requested in subsection 3.3 of the proposed rule is information that must be submitted with the well work permit application. Once issued, the well work permit is viable for two years, and work does not need to begin pursuant to that permit for almost two years. Thus, at the time the operator applies for a permit, it need only advise OOG of the additives it plans to use in the hydraulic fracturing process. Once the operation is actually active, the operator must maintain on-site a list of the chemicals it is actually using the fracturing process, and Material Safety Data Sheets for each of those chemicals must also be maintained on-site pursuant to federal Occupational Safety and Health regulations. Finally, a list of chemicals actually used in the fracturing process must be submitted to OOG as part of the completion report required by W. Va. Code § 22-6-22, as the proposed rule mandates.

COMMENT C. The commenter states, “3.3.f.2 – *Decisions about water withdrawal and other aspects of the drilling operation should be made on the basis of independent science and in a standard, clearly specified manner, with no opportunity for politics or the appearance of politics to be involved.*”

RESPONSE C. OOG notes that decisions about water withdrawal and approval of the operators’ submitted water management plans are being made on the basis of independent science and in a standard, clearly specified manner. DEP’s Division of Water and Waste Management has developed guidance and a water use tool to help operators know when it is environmentally safe to withdraw water from a stream. The guidance is based on percentages of mean annual flow, based on a ten-year period that affords an appropriate flow to protect the aquatic habitat. Since passage of the Emergency Rule that is a precursor to this proposed rulemaking, DEP has instituted a process whereby, as part of the approval process for water management plans, it will ask well operators to provide information as to the location of the intended water withdrawals, and DEP will then use resources at its disposal to provide the public

water supply location and stream uses components of the water management plan. DEP will further calculate an acceptable pass-by flow and provide it to the operator as part of DEP's approval of the water management plan. Absent this standardized process by DEP, multiple operators would be attempting to calculate an acceptable pass-by flow using multiple methodologies, leading to confusion and inconsistency. DEP is confident its standardized processes, which are based on scientific methodology, will shield the permit approval process from political pressure.

COMMENT D. The commenter states, *"3.4.a.6 – A complete list of chemicals being used for the drilling operation should be provided as early as possible (as 3.3.e above). A list of all the chemicals that are present on the site is not sufficient. Emergency responders need to know what has been used in each case."*

RESPONSE D. Please see Response 8B above.

COMMENT E. The commenter states, *"3.4.b – Safety instruction and emergency contact information must be made compulsory for truckers as well."*

RESPONSE E. OOG notes that it does not have any jurisdiction over trucks traveling on the State's roads and highways nor does it have authority over the persons operating those trucks; such authority resides with the West Virginia Public Service Commission and the West Virginia Department of Transportation. As such, this comment is outside the scope of the proposed rulemaking and, therefore, no response is required.

COMMENT F. The commenter states, *"4.1.a – 'Methods deemed appropriate by the Secretary' is insufficient. (see 3.3.f.2)"*

RESPONSE F. Please see Response 8C above.

COMMENT G. The commenter states, *"4.1.b – 'Otherwise managing wells' is quite open to interpretation. Acceptable practices should be spelled out, or the loophole language removed."*

RESPONSE G. OOG notes that "otherwise managing wells" means that, in addition to casing and sealing, the operator must take all necessary steps to ensure that fluids or gas do not migrate into surface or groundwater.

COMMENT H. The commenter states, *"4.1.c - . . . 'to the extent practicable' is open to interpretation. Acceptable practices should be spelled out, or the loophole language removed."*

RESPONSE H. OOG notes that the purpose of this subdivision, when read in its entirety, is to mandate that horizontal wells must be operated in such a way as to prevent erosion and sedimentation from running into streams. OOG further notes that some circumstances, such as extreme weather events, may cause conditions that the best erosion and sediment control plans cannot mitigate, and the phrase "to the extent practicable" is meant to recognize that some things are beyond the control of the well operator. OOG finally notes that this subdivision of the rule

makes clear to the operator that it is subject to the water quality criteria outlined in State and federal law.

COMMENT I. The commenter states, “4.2.a – ‘Methods deemed appropriate by the Secretary’ is insufficient. (see 3.3.f.2).”

RESPONSE I. Please see Response 8C above.

COMMENT J. The commenter states, “Drill cuttings and mud waste should never be permitted to be ‘managed on site.’ Specific criteria for solid waste facilities to handle these products safely and securely should be specified, not left to ‘a manner otherwise approved by the Secretary.’”

RESPONSE J. OOG notes that its preferred method of disposal is in an approved solid waste facility; however, in the event that the operator can prove to the Secretary, on a case-by-case basis, that its method of disposal on-site is safe for the environment, the Secretary needs to have the flexibility to approve the same. OOG is currently working with DEP’s Division of Water and Waste Management to develop criteria for the Secretary to consider when making these determinations.

COMMENT K. The commenter states, “4.4.a.4 – ‘casing shall not be disturbed for a period of at least eight hours’ is not adequate to ensure safety. The casing should not be disturbed until cement is dry. A reliable test to ensure the readiness of the cement should be required.”

RESPONSE K. OOG notes that the language in the proposed rule is that casing shall not be disturbed for at least eight hours after the completion of the cementing operation. The cement used must meet certain engineering standards and requirements, which include achieving levels of compressive strength at certain setting times. Further, OOG will have established procedural standards for the various casing strings to further ensure proper cementing has occurred. Finally, the proposed rule requires that a copy of the cementing records be maintained at the site during drilling and completion of the well.

9. COMMENTER: WEST VIRGINIA BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS

COMMENT: The commenter states, “We would encourage you to consider including professional engineer’s (sic) at key technical decision points in the Oil and Gas Standards (sic) currently being developed. The points include site development and preparation, the well site safety program, well head design, blow out prevention and casing through the water bearing strata.”

RESPONSE: OOG appreciates the important contributions of both engineers and surveyors to the development of regulations for this burgeoning industry.

**10. COMMENTER: AMERICAN COUNCIL OF ENGINEERING COMPANIES
OF WEST VIRGINIA**

COMMENT: The commenter opposes language proposed by professional surveyors that would include professional surveyors as persons who could certify erosion and sediment control plans and site construction plans for sites that disturb more than three acres of surface land.

RESPONSE: Please see Response 4 above.

11. COMMENTER: ENVIRONMENTAL DEFENSE FUND

COMMENT A. The commenter states, *"DEP should include within this rulemaking robust requirements for the public disclosure of all chemicals used in hydraulic fracturing other than those chemicals that are legitimate trade secrets."*

RESPONSE A. OOG notes that the proposed rule requires disclosure of the chemical additives used in the hydraulic fracturing process at two separate stages of the operation: the operator must disclose a list of anticipated chemical additives at the time it submits its application for a well work permit, and the operator must disclose a list of the chemical additives it actually used in its completion report.

COMMENT B. The commenter states, *"DEP should include within this rulemaking state of the art requirements regarding well construction and operation."*

RESPONSE B. OOG notes that the commenter does not tie its recommendations to any particular provision of the proposed rule, and that many of the matters outlined in its submittal are outside the scope of the proposed rulemaking or changes that must be made statutorily. Therefore, no response is required.

12. COMMENTER: LEAGUE OF WOMEN VOTERS OF WEST VIRGINIA

COMMENT A. The commenter states, *"We believe the rules should be applied to vertical Marcellus Shale wells as well as to horizontal drilling."*

RESPONSE A. OOG notes that traditional vertical wells, even vertical wells into the Marcellus Shale, do not disturb the amount of surface area or use the volume of water that raises the environmental concerns that horizontal drilling does. OOG's effort in the proposed rule is to outline a regulatory framework for wells that disturb large land areas and use large volumes of water, regardless of the rock formation disturbed.

COMMENT B. The commenter states, *"To protect our water supplies drillers must be required to test for all chemicals used in fracturing. Testing flowback for naturally occurring radioactive materials, or NORMS, must be part of the program"*

RESPONSE B. OOG notes that the only approved method of disposal for flowback water in West Virginia is in an approved underground injection control (UIC) well; it cannot be land-

applied or disposed of in publically owned treatment works (POTWs). The conditions outlined in UIC permits are designed to ensure that materials injected pursuant thereto are isolated from aquifers and surface water.

COMMENT C. The commenter states, *“West Virginia must provide enough inspectors to see that the plan is implemented during construction, drilling process, and reclamation so that erosion and sedimentation are controlled. We also are concerned about erosion from access roads. If the present erosion/sediment control program for roads is not fully staffed, then there should be provisions to require extra inspectors for erosion/sediment control for the access roads to well pads.”*

RESPONSE C. OOG appreciates the commenter’s comment, but notes that its staffing and funding problems cannot be addressed through rulemaking. This comment is outside the scope of the proposed rulemaking and, therefore, no response is required.

COMMENT D. The commenter states, *“Gas drillers must be limited in how much water they can take from surface water. Determining what is adequate downstream flow should be determined by independent scientists rather than by the Secretary of the DEP, a political appointee.”*

RESPONSE D. Please see Response 8C above.

COMMENT E. The commenter states, *“The disposal of wastewater must be in facilities with the ability to treat the water. Municipal treatment plants do not have the capability to treat wastewater from fracking/drilling for natural gas. The rules must clearly state what is necessary for safe disposal rather than leave it up to the Secretary of the DEP.”*

RESPONSE E. Please see Response 8C above.

COMMENT F. The commenter states, *“Strict regulations must be imposed on the disposal of pit waste.”*

RESPONSE F. Please see Response 1F above.

COMMENT G. The commenter states, *“Measures must be established that will prevent the release of methane and other air pollutants from the fracking/drilling process.”*

RESPONSE G. OOG notes that both DEP’s Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation and truck traffic in order to determine appropriate regulation of this activity.

COMMENT H. The commenter states, *“All landowners must be notified well in advance of drillers’ applications for permits and be given the opportunity to negotiate well and road locations. After a driller applies for a permit, the public must have a reasonable amount of time to review the permit. There must be provisions for a public hearing, if the nearby landowners request one.”*

RESPONSE H. Notice to surface owners and the amount of time they have to comment are set forth in W. Va. Code § 22-6-9, and any attempt to change those processes by Legislative rule would be invalid as contrary to the statute.

COMMENT I. The commenter states, *“Gas well drilling must not be allowed so close to nearby homes that it will make living in these homes untenable.”*

RESPONSE I. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

13. COMMENTER: WEST VIRGINIA RIVERS COALITION

COMMENT A. The commenter states, *“We applaud the addition of a requirement for a water management plan for volume uses over 210,000 a month, however, we would recommend that this reporting and planning requirement be a required portion of the permitting process and that the applicant be required to demonstrate that this withdrawal would still allow for adequate flow immediately downstream.”*

RESPONSE A. OOG notes that the water management plan is a required portion of the permitting process. Part of the water management plan must be submitted with the operator’s application for a well work permit and, once approved, its provisions become permit conditions enforceable by the agency if violated. OOG further notes that the Water Use Tool developed by DEP’s Division of Water and Waste Management for use in approval and execution of water management plans is a scientific means of determining adequate downstream flow and whether or not it would be appropriate for an operator to withdraw water from a particular point in a stream in a particular point in time.

COMMENT B. The commenter states, *“WVRC is encouraged to see additional regulations governing the construction of well pads, but disappointed to see that these additional regulations do not cover access roads and pipelines, and will not mitigate the potential aquatic damage associated with the additional sedimentation resulting from these large scale contructions.”*

RESPONSE B. OOG notes that operators of horizontal wells, as with all oil or natural gas operators in West Virginia, are required to abide by the West Virginia Erosion and Sediment Control Manual in developing their individual erosion and sediment control plans, no matter the size of the operation. A section of the Erosion and Sediment Control Manual is devoted to access road construction and the best management practices an operator must employ in construction of the same. The language at subsection 3.1 of the proposed rule “sites that disturb three acres or more of surface, excluding pipelines, gathering lines, and roads . . .” (emphasis added) means that those three structures are not taken into consideration in calculating whether the site disturbs three acres or more of surface, not whether construction of the site has to comply with the Erosion and Sediment Control Manual. OOG further notes that construction of pipelines is outside its jurisdiction and subject to the authority of the Public Service Commission;

however, an operator who constructs a pipeline may be required to obtain a Stormwater Construction Permit from DEP's Division of Water and Waste Management pursuant to 47 C.S.R. 10 §§ 2.8, 2.14, and 3.1.

COMMENT C. The commenter states, *"Additionally absent from these regulations is the requirement of adequate set backs (sic) to ensure the safety and integrity of drinking water supplies and stream health."*

RESPONSE C. Please see Response 12I above.

COMMENT D. The commenter states, *"WVRC objects to the wide ranging agency discretion given in overseeing a variety of issues including determination of a protective level of flow and the discretion over management and disposal of solid waste."*

RESPONSE D. Please see Response 8C above.

14. COMMENTER: SIERRA CLUB WEST VIRGINIA CHAPTER

COMMENT A. The commenter states, *"1.1 – The rules should apply to vertical Marcellus Shale wells that use the amount of water and disturb the amount of land that the rule would otherwise cover."*

RESPONSE A. Please see Response 12A above.

COMMENT B. The commenter states, *"'Approved solid waste facility' is a complete mystery, and 'or managed on-site in a manner otherwise approved by the Secretary' means continued pit burial. Drill cuttings and drilling mud . . . should be tested, and if they contain hazardous materials, they should be disposed of in a hazardous waste facility. In no case should they be buried on-site."*

RESPONSE B. OOG notes that an "approved solid waste facility" is one that has a permit from DEP's Division of Water and Waste Management to operate a solid waste facility pursuant to W. Va. Code §22-15-5(b). Please also see Response 8J above.

COMMENT C. The commenter states, *"5.1 – Public notice should be provided for all wells, not just within municipalities."*

RESPONSE C. Please see Response 1A above.

15. COMMENTER: WEST VIRGINIA SURFACE OWNERS' RIGHTS ORGANIZATION

COMMENT A. The commenter states, *"The limited applicability of the rules to horizontal wells is disappointing. The applicability of the rule should be based on the amount of land disturbed and the amount of water used."*

RESPONSE A. Please see Response 12A above.

COMMENT B. The commenter states, *"It is also disappointing that the [rule] (sic) does not give surface owners notice of plans to drill the wells until the permit is actually filed, and then there is only 15 days to file comments, no hearing on the permit application, and no power for the State to help a surface owner whose future home site is now going to be a well site."*

RESPONSE B. Notice to surface owners and the amount of time they have to comment are set forth in W. Va. Code § 22-6-9, and any attempt to change those processes by Legislative rule would be invalid as contrary to the statute.

COMMENT C. The commenter states, *"With regard to drinking water supplies, there are no expanded set backs (sic), testing distances or testing parameters included in the rule."*

RESPONSE C. Please see Response 1B above.

COMMENT D. The commenter states, *"Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing, or naturally occurring radioactive materials (NORMS) known to exist in the Marcellus Shale, or for the other fluids and materials that will be used on the well pads."*

RESPONSE D. Please see Response 12B above.

COMMENT E. The commenter states, *"[T]here is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies, even though the current testing parameters and groundwater remediation are in rule (35CSR 4, Sections 19 and 20) not statute."*

RESPONSE E. Please see Response 1C above.

COMMENT F. The commenter states, *"Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations."*

RESPONSE F. OOG notes that both DEP's Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation and truck traffic in order to determine appropriate regulation of this activity.

COMMENT G. The commenter states, “[*With regard to erosion and sediment control plans and site construction plans*], [*the engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves.*”

RESPONSE G. Please see Response 13B above.

COMMENT H. The commenter states, “[*With regard to well site safety plans, the rule*] *continues to allow gas wells to be drilled within 200 feet of peoples’ homes.*”

RESPONSE H. Please see Response 12I above.

COMMENT I. The commenter states, “[*The information collected regarding the amount of water actually used or withdrawn, and the quantity of flowback and produced water from a well (and how it is disposed of) only has to be kept by the operator and is not reported to the state. This information should be collected to help the State make informed decisions on future regulations and to monitor whether wastewater is being disposed of properly.*”

RESPONSE I. OOG agrees with the comment and will modify the proposed rule accordingly.

COMMENT J. The commenter states that *with regard to the disposal of pit waste, the rule is vague as to what “or managed on-site in a manner otherwise approved by the Secretary” means.*

RESPONSE J. Please see Response 8J above.

COMMENT K. The commenter states, “[*Many of the new casing and cementing requirements are too vague. For example, the rule states that all cement used must ‘secure the casing to the well bore . . .’ (Section 4.4.b.1) but does not require the driller to run a bond log to make sure that it actually does. Similarly, the rule only says that cement should ‘contain all pressures during all phases of drilling and operation’ (Section 4.4.b.1), but still allows bare casing pipe in most of the vertical part of the hole. It does not require that the entire casing be cemented from the Marcellus Shale all the way to the surface – so that intermediate gas bearing formations could create pressures in the open annuli – or require operators to monitor annulus pressure.*”

RESPONSE K. OOG notes that W. Va. Code § 22-6-21 states, “When a permit has been issued for the drilling of an oil or gas well or both, each well operator shall run and permanently cement a string of casing in the hole through the fresh water bearing strata in such a manner and to the extent provided for in rules promulgated by the [Secretary] in accordance with the provisions of this chapter.” Thus, bare casing pipe is not allowed. OOG further notes that operators of horizontal wells are still subject to the mandates of 35 C.S.R. 4, the Legislative rule entitled Oil and Gas Wells and Other Wells, which, at Section 11 sets out casing and cementing standards. Additionally, the cement used must meet certain engineering standards and requirements, which include achieving levels of compressive strength at certain setting times.

Further, OOG will have established procedural standards for the various casing strings to further ensure proper cementing has occurred. Finally, the proposed rule requires that a copy of the cementing records be maintained at the site during drilling and completion of the well.

COMMENT L. The commenter states, *“The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits.”*

RESPONSE L. Please see Response 1A above.

16. COMMENTER: TROUT UNLIMITED

COMMENT A. The commenter states, *“The rule fails to establish a clear timeframe for the ex post disclosure [of the chemical additives used in the hydraulic fracturing process]. The rule requires only that the list be included in the completion report, pursuant to W. Va. Code § 22-6-22, within a ‘reasonable time’ after the completion of the drilling. To provide necessary information to emergency personnel and conservation officers in the event of a spill or accident, this rule should set a firm 24-hour deadline for submission of a well completion report.”*

RESPONSE A. OOG notes that once the operation is actually active, the operator must maintain on-site a list of the chemicals it is actually using the fracturing process, and Material Safety Data Sheets for each of those chemicals must also be maintained on-site pursuant to federal Occupational Safety and Health regulations. Thus, emergency personnel will have immediate access to the necessary information.

COMMENT B. The commenter states, *“The water plan requirement provides no limitations on the sources, quantities, methods, location, or timing of withdrawals for drilling operations. There is no requirement that water be used in basin, or that wastewater must be recycled or reused. There is no requirement that the DEP consider the cumulative impacts of proposed withdrawals when it makes permitting decisions.”*

RESPONSE B. OOG notes that, when DEP approves a water management plan, there will be limitations placed on the amount of water, timing, locations of withdrawals, pumping rates and other measures, which are intended to be protective of the designated uses of the stream. Failure to follow the components of a water management plan as approved may result in enforcement action by the agency, as the water management plan becomes a condition of an operator’s permit. While there is no requirement that water be recycled, current DEP information indicates that over 80% of return water from hydraulic fracturing processes is currently being reused. The agency believes that this level of reuse, combined with the relative volumes of water involved, makes mandating reuse or containment within a basin unnecessary. Furthermore, there are no requirements in West Virginia for any other industry or municipality to keep water within the basin from which it was withdrawn. Regarding cumulative impacts, when approving water management plans, DEP will conduct a detailed review of other users on the stream and establish withdrawal cutoffs to protect those users. As for a cumulative assessment of all water used in the oil and natural gas industry, this information is tracked as part of the DEP’s responsibilities under the Water Resources Protection and Management Act. In the

unlikely event cumulative impacts would become apparent, these considerations could be incorporated into future water management plan approvals.

COMMENT C. The commenter states, *“The requirement that an engineer must oversee actual construction of the well – initially included in the Governor’s Executive Order – was unfortunately omitted from this rule. As there are too few state inspectors to oversee well site construction, this omission is a serious flaw.”*

RESPONSE C. OOG notes that the Governor’s Executive Order of July 12, 2011 does not require that an engineer actually supervise construction of the well site. The proposed rule mandates that well sites be constructed in accordance with plans certified by a registered professional engineer, that plan becomes a condition of the operator’s permit, and failure of the operator to follow that plan could result in enforcement action by the agency.

COMMENT D. The commenter states, *“The engineering design requirement is specific to well pads and fails to cover well access roads, storage areas or pipelines, which are frequently as problematic as well pad sites.”*

RESPONSE D. Please see Response 13B above.

COMMENT E. The commenter states, *“The rule creates regulatory uncertainty by leaving too much to agency discretion. The commenter specifically cites the language ‘methods acceptable to the Secretary that sufficient in-stream flow will be available’ and ‘pass-by flow that is protective of the identified use of the stream.’”*

RESPONSE E. Please see Response 8C above.

COMMENT F. The commenter states, *“The rule calls for all drill cuttings and drilling mud to be disposed of in an approved solid waste facility or ‘managed on-site in a manner otherwise approved by the Secretary.’ There is no indication of what the Secretary may or may not approve – leaving the public in the dark about how drilling waste will be treated and disposed of.”*

RESPONSE F. Please see Response 8J above.

COMMENT G. The commenter states, *“With regard to drinking water supplies and streams, there are no expanded set backs (sic) or testing parameters included in the rule. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies.”*

RESPONSE G. Please see Response 1B above.

17. COMMENTER: CHESAPEAKE ENERGY (JOHN M. ANGIULLI)

COMMENT A. The commenter states, *“A water management plan should be its own separate approval and not tied to the well work permit or tied to any specific well. If the water*

management plan was its own separate approval and not attached to the well work permit, then operators would have more time to develop a more complete and accurate plan and when they submit to the DEP there would be less need for modification later on."

RESPONSE A. OOG agrees that, in some instances, one water management plan may be suitable for multiple wells, especially in light of a movement in the industry towards centralized ponds with a consolidated withdrawal location. For operators that are proposing one or more centralized storage ponds that will serve multiple wells in an area and that are anticipated to have a somewhat constant long-term withdrawal, one water management plan should be developed and submitted with the initial well work permit application. Subsequent well work permit applications, using water from the impoundment(s), will need only reference the previously approved water management plan number and supply limited information on volume and timing. As for the suggestion that a water management plan receive its own approval, not tied to the well work permit, the agency does not believe this is necessary. DEP's work to make water management plan submittals consistent and straightforward should eliminate any perceived approval delays and also allow for timely modifications by the operator.

COMMENT B. The commenter states, "*Section 3.3.f.1 requires the identification of current designated and existing water uses, including any public water intakes within one mile downstream of the withdrawal location. In my discussions with DEP representatives, a database containing this information does not exist. So basically, there is no place to get this information. It does not make sense for these proposed regulations to become law if there is no practical way for the industry to provide the information required in the water management plan.*"

RESPONSE B. DEP recognized the commenters concern and has taken steps since passage of the Emergency Rule that prompted this proposed rulemaking to address this concern. The well operator will submit to DEP, as part of its well work permit application, the location of its intended water withdrawals by longitude and latitude. DEP will then use resources at its disposal, to answer the public water supply location and stream uses questions, and provide those answers to the operator as part of DEP's approval of the water management plan.

COMMENT C. The commenter states, "*Section 3.3.f.2 requires a demonstration that sufficient in-stream flow be maintained downstream of the surface water withdrawal point. In my discussions with DEP representatives, nobody can tell me how the industry can demonstrate this in an acceptable way. There is no guidance currently available that the industry can use to determine if the proposed pass-by-flow is protective of the identified use of the stream. It does not make sense for these proposed regulations to become law if there is no practical way for the industry to provide the information required in the water management plan.*"

RESPONSE C. DEP recognized the commenters concern and has taken steps since passage of the Emergency Rule that prompted this proposed rulemaking to address this concern. DEP will calculate an acceptable pass-by flow and provide it to the operator as part of DEP's approval of the water management plan. Absent this standardized process by DEP, multiple operators would be attempting to calculate an acceptable pass-by flow using multiple methodologies, leading to confusion and inconsistency. DEP is confident its standardized

processes, which are based on scientific methodology, will be convenient and consistent for both the regulated community and the agency.

COMMENT D. The commenter states, “Section 4.2.a requires a notification of not less than 24 hours prior to the withdrawal of water. Often the best time to withdrawal (sic) is immediately following a large rain event. If the operator is required to wait 24 hours after notifying the EP before they can withdrawal, you could actually miss a large part of the elevated stream levels that would be the optimum time to withdrawal (sic) in order to ensure adequate pass-by flow downstream.”

RESPONSE D. OOG notes that this is an administrative issue, not a comment that goes to the substance of the rule and, therefore, no response is required.

18. COMMENTER: EQT (JOSEPH M. DAWLEY)

COMMENT A. The commenter would amend subsection 4.4 of the proposed rule to read as follows: “Further, the operator shall construct the well and conduct casing and cementing activities of the vertical portions of all horizontal wells in accordance with current practices and standards developed by the Office and in a manner that will provide for control of the well at all times. . . .”

RESPONSE A. OOG believes that standards for casing and cementing should apply to the entirety of the well, not just the vertical portion. Further, OOG recognizes that various aspects of the drilling activities will be conducted through accepted current practices that may not be specifically identified in the standards developed by the Office, but OOG doesn’t believe a change in the rule language to acknowledge this administrative tenant is warranted.

COMMENT B. The commenter would amend paragraph 4.4.a.1 of the proposed rule to read as follows: “All casing installed in the well must be new or, if used, pressure tested, and have with a pressure rating that exceeds the anticipated maximum pressure to which the casing will be exposed and meet the appropriate American Petroleum Institute (API) standards engineering standards;”

RESPONSE B. OOG agrees that used casing may be allowed if it has been tested and meets the appropriate API standard. However, OOG believes that the standard should be more specifically defined than to only refer to “engineering” standards and declines to accept the proposed amendment.

COMMENT C. The commenter would amend paragraph 4.4.a.3 of the proposed rule to read as follows: “Centralizers in the vertical portion of the well must be used with the proper spacing, during the casing installation to ensure that the casing can be uniformly cemented is centered in the hole;”

RESPONSE C. OOG believes that standards for casing and cementing should apply to the entirety of the well, not just the vertical portion. Further, OOG believes that installation of the casing in such a manner as to provide for centralization of the casing in the hole is a prudent

practice and, where cement is needed, facilitates a quality cementing result. Therefore, OOG declines to accept the proposed amendment.

COMMENT D. The commenter would amend paragraph 4.4.a.4 of the proposed rule to read as follows: *“Casing shall not be disturbed in a manner that would adversely impact cement bond integrity for a period of at least eight hours after the completion of cementing operations;”*

RESPONSE D. OOG believes it is critically important to achieve a high quality cementing job and that the proposed eight-hour undisturbed waiting time is a reasonable minimum period of time for such purpose. Therefore, OOG declines to accept the proposed amendment.

COMMENT E. The commenter would amend paragraph 4.4.b.1 of the proposed rule to read as follows: *“All Cement used in the for the surface, intermediate and production casing must be the appropriate engineering and manufacturing standards, satisfy the quality control testing approved by the Secretary to well must meet appropriate API standards and secure the casing to the wellbore”*

RESPONSE E. OOG believes that any cement used in association with the casing component of well construction should meet the appropriate established standards for such use. OOG recognizes that the appropriate standard may be established by the American Society for Testing and Materials (ASTM) and will accept that standard, as well as the API standard. The rule shall reflect this change. OOG declines to accept the remainder of the proposed amendment.

COMMENT F. The commenter would amend paragraph 4.4.b.2 of the proposed rule to read as follows: *“The cementing process Cement used in conjunction with for cementing the surface and coal protection casing must prevent gas flow in the casing annulus in excess of the permissible casing pressure, which is eighty percent of the hydrostatic pressure of the well, which is calculated by multiplying the total vertical depth of the well (TVD) by 0.433 pounds per inch per foot.”*

RESPONSE F. OOG notes that the comment appears to be addressing an issue that the referenced paragraph does not intend to address. The objective of this paragraph is to state that proper cementing of the surface and coal protection casing strings will properly isolate the zones behind those casing strings. However, OOG agrees that its intent is not clearly conveyed in the cited paragraph, and it will amend the language to clarify its intent.

COMMENT G. The commenter would amend paragraph 4.4.b.3 of the proposed rule to read as follows: *“The operator shall provide notice to the Office at least twenty-four (24) hours prior to the expected commencement of any cementing operations and maintain a copy of the cementing records log at the well site during the drilling and completion of the well.”*

RESPONSE G. OOG agrees with the commenter’s suggestion and will amend the rule to reflect the same.

19. COMMENTER: TRIANA ENERGY (WALTER C. SHOWEN, III)

COMMENT A. The commenter states, *“Can we assume each of the components will be reviewed separately?”*

RESPONSE A. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT B. The commenter states, *“How will the department administer the overall permit approval process?”*

RESPONSE B. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT C. The commenter states, *“What is the expected timeframe for receiving approval?”*

RESPONSE C. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT D. The commenter states, *“For items requiring demonstration of sufficiency, does the Department have default methods acceptable to the Secretary?”*

RESPONSE D. Please see Response 8C above.

COMMENT E. The commenter states, *“Can the [erosion and sediment control] plan be incorporated into the design drawings as note, along with detail of BMPs, or must this be a separate document/manual?”*

RESPONSE E. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT F. The commenter states, *“Does the existing O&G E&S Manual still apply, or are we to propose individual specifications?”*

RESPONSE F. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT G. The commenter states, *“What is the anticipated review and approval time? Will this fit into the 30 legal notice timeline?”*

RESPONSE G. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT H. The commenter states, *“Identification of current designated & existing water uses – does this include other Operators Water Withdrawals? If so, will the DEP provide us with that information since most Operators do not share this information?”*

RESPONSE H. Please see Response 17A – 17C above.

COMMENT I. The commenter states, *“Demonstration of flow maintenance and determinations of beneficial use – What is an acceptable demonstration to the Department?”*

RESPONSE I. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT J. The commenter states, *“Demonstration of sufficient in-stream flow remains unaffected immediately downstream (using methods acceptable to the Secretary – what is an acceptable demonstration to the Secretary? Does this mean that Water Resources will step in and require permitting for each withdrawal?”*

RESPONSE J. Please see Response 17A – 17C above.

COMMENT K. The commenter states, *“Acceptable identification of methods to minimize significant adverse impacts to aquatic life – again what is an acceptable method, is it the guidance tool that we know has issues with it?”*

RESPONSE K. Please see Responses 17A – 17C above.

COMMENT L. The commenter states, *“Assume the notification prior to withdrawal of water is for the initial withdrawal for a particular source.”*

RESPONSE L. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT M. The commenter states, *“When is the Department considering the water flow back vs. produced water, is there a time frame? Will it be 30 days after the well has been completed or if there is some % recovered?”*

RESPONSE M. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT N. The commenter states, *“Quantity of water produced from the well – How long does the Department want this information tracked for? Does this information get reported to just kept on file at Operators Headquarters?”*

RESPONSE N. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT O. The commenter states, *“How will the Department handle the sharing of Operators recycled waters? Is sharing recycled water between Operators an acceptable method of management or disposal?”*

RESPONSE O. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT P. The commenter states, *“Managed on-site in a manner otherwise approved by the Secretary (not specific) – What is acceptable?”*

RESPONSE P. Please see Response 8J above.

COMMENT Q. The commenter states, *“Note: Landfills throughout WV have received a new memo from appropriate DEP Section concerning a new requirement of bi-monthly leachate testing if they want to accept drill cuttings from operators - DEP will be limiting the disposal facilities for drill cuttings disposal when these cuttings can still be encapsulated on site in a drill pit?”*

RESPONSE Q. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT R. The commenter states, *“Keep in mind the Landfills are telling Operators that these tests will cost the Landfill approximately \$75,000.00 and they are in fact requiring Operators to share some of that cost, which will then make disposal of cuttings very high as a result.”*

RESPONSE R. OOG notes that this statement does not go to the substance of the rule and, therefore, no response is required.

COMMENT S. The commenter states, *“Can top hole cuttings be incorporated into the site for grading, etc.?”*

RESPONSE S. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT T. The commenter states, *“Is there any way for us to determine a beneficial reuse for this material?”*

RESPONSE T. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT U. The commenter states, *“Will there be a distinction between Marcellus and other cuttings or requirement for segregation on site?”*

RESPONSE U. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT V. The commenter states, *“Public Notice to Municipalities – Is the notice good for a 2 Year term like the Drill Permits are?”*

RESPONSE V. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT W. The commenter states, *“Will the Department require a hearing or something of that sort if there are comments/issues brought up by the public that would not allow the Department to issue the drill permit to the Operator?”*

RESPONSE W. OOG notes that this is an administrative question, not a comment that goes to the substance of the rule and, therefore, no response is required.

20. COMMENTER: INDEPENDENT OIL & GAS ASSOCIATION OF WEST VIRGINIA

COMMENT A. The commenter states, *“IOGA requests that DEP identify any and all directives and/or guidance issued and effective prior to the Emergency Rule and indicate whether they are superseded or modified, in whole or in part, by these rulemaking activities.”*

RESPONSE A. OOG notes that this is an administrative request, not a comment that goes to the substance of the rule and, therefore, no response is required.

COMMENT B. The commenter states, *“IOGA seeks clarification that for all well work applications filed prior to August 29, 2011 [effective date of emergency rule], the rules and requirements in existence at the time of the application will govern, including modifications or amendments of such applications that may occur after August 29, 2011.”*

RESPONSE B. OOG notes that subsection 1.5 of the proposed rules states, “Applications submitted after the effective date of this rule shall be subject to the provisions of this rule.”

COMMENT C. The commenter states, *“It is apparent from the stated scope of the Proposed Rule and issues raised by various stakeholders that the impetus for this rulemaking was and is gas exploration and drilling activities that can have greater impacts with regard to surface disturbance, the use of water resources and local roadways. However, this is not the case for all horizontal well drilling activities. Certain under-pressured formations, like the Lower Huron, are drilled horizontally, but are not hydraulically fractured, and therefore require much less water and surface area to drill and complete. Thus IOGA recommends that the Proposed Rule be targeted specifically at the exploration and drilling activities that can have these greater impacts. To this end, IOGA suggests incorporating into the definition of “Horizontal Well” (§ 35-8-2.2) the anticipated or actual use of 210,000 gallons or more of water from West Virginia sources in drilling or fracturing activities. Through the adoption of this definitional change, the Rule would address those operations that have been the impetus for this rulemaking and will avoid imposing requirements that may be unnecessary or inappropriate for other horizontal drilling operations that do not use water resources in excess of more conventional drilling completion techniques and, consequently, involve less surface disturbance*

as well. Indeed, imposing inappropriate or unnecessary requirements may impede or discourage the development of other formations which may yield benefits to our State that will be as great or greater than the benefits of the development of the Marcellus Shale. For these reasons, IOGA urges DEP to adopt the following definition: 'Horizontal well' means any well, other than a coalbed methane well, which is drilled using a horizontal drilling method and the drilling, fracturing or stimulating of which requires the use of water obtained by withdrawals from waters of this state in amounts that exceed 210,000 gallons during any month."

RESPONSE C. OOG notes that the proposed rule does specifically target the well activities that can have greater impacts. Most of the requirements found within the proposed rule are only applicable if the well work meets the following thresholds: (1) "If the drilling, fracturing or stimulating of such well will require water withdrawals from the waters of this State in amounts of two hundred ten thousand (210,000) gallons or more during any one-month period" (35 CSR § 8-3.3, 4.2, 4.3); and (2) If the well work involves "well sites that will disturb three acres or more of surface" (35 CSR § 8-3.1, 3.2, 3.4, 4.3). Both thresholds address different environmental and safety concerns. The suggested definition would remove requirements for wells involving a site with three or more acres of surface disturbance but withdraws less than 210,000 gallons of water during any one-month period. The requirements based upon well site size are not contingent on the amount of water withdrawal and are mutually exclusive. Surface disturbances of three acres or more: (1) increase the potential for erosion; (2) increase the need for properly designed well sites to avoid instability, particularly in steep terrain and in the use of fills; (3) have the potential to leave a larger, degraded surface area if not reclaimed properly; and (4) increase the likelihood of an accident since larger well sites generally correlate to more equipment and personnel working for longer periods. Due to the increased potential of the above, it is necessary to ensure proper construction and reclamation practices are implemented with the expertise afforded by a West Virginia registered professional engineer as well as provide an adequate safety plan in the event of an emergency. The additional requirements that do not require meeting one of the thresholds are aimed at protecting the quantity and quality of the State's waters, both surface and groundwater (35 CSR § 8-4.1, 4.4). A horizontal well, regardless of the amount of water withdrawn or the well site footprint, should be drilled in a responsible manner so as to protect the waters of the state. Therefore, OOG declines to adopt the suggested definition.

COMMENT D. The commenter states, "*Preliminary questions include: (i) How will DEP administer the overall well work permit review and approval process? (ii) Will each of the required Plans submitted with the application be separately reviewed and evaluated? (iii) How promptly does DEP anticipate being able to review and approve applications containing the additional Plans being required? (iv) Does the undated 42 page document titled "West Virginia Erosion and Sediment Control Field Manual, West Virginia Division of Environmental Protection Office of Oil and Gas, Charleston, West Virginia" which appears on DEP's website at <http://www.dep.wv.gov/oil-and-gas/GI/Forms/Documents/Erosion%20and%20Sediment%20Control%20Field%20Manual2.pdf> represent the current "best management practices for alleviating soil disturbing activities during oil and gas industry activities"? Can operators rely upon that Field Manual to aid in the development of approvable ESC plans?*"

RESPONSE D. OOG notes that these are administrative questions, not comments that go to the substance of the rule and, therefore, no response is required.

COMMENT E. The commenter states, “IOGA has great concerns with the language of the Proposed Rule stating that the required Plans “shall be considered conditions of the permit and enforceable as such.” The well work permit application and related Plans are necessarily based upon projections and estimates of work to be performed up to 24 months following the application date. Because the Plans can only reflect projections and estimates based upon the operator's experience, enforcing such projections and estimates as literal conditions of the well work permit is unrealistic. There must be a mechanism for making adjustments in the field to the specifications in the Plans. The prior permitting process has necessarily allowed operators to adjust their operations to the circumstances in existence when work begins. For example, requiring an operator to include in the ESC plan a general sequence of events that describe in relative terms how and when each construction phase will occur and when each erosion and sediment control best management practice (“BMP”) will be installed, or requiring an operator to include in the WM plan the latitude and longitude of each anticipated water withdrawal location, anticipated volume of each water withdrawal and anticipated months when water withdrawals will be made may arguably result in multiple amendments or modifications of the permit if such estimates are not completely accurate.

In the alternative, IOGA requests that the Rule expressly authorize reasonable and practical modifications of the Plans subject to approval by the oil and gas inspector, based upon conditions existing in the field at the time work is being performed, without creating the enormous delays and added expense that would result if work had to be halted while an amendment or modification to the well work permit is pursued. This revision to the Proposed Rule is supremely practical and would conform to current practice and reduce administrative burdens for both the DEP and operators while still requiring DEP approval of the field adjustments by participation of the oil and gas inspectors. IOGA and its member operators understand that a verbal notification requirement of such field adjustments set forth in the Proposed Rule would be an acceptable alternative.”

RESPONSE E. OOG notes that this is an administrative issue and, therefore, no response is required.

COMMENT F. The commenter states, “While IOGA recognizes that requiring some amount of information reporting to DEP may be authorized and appropriate under existing statutes, the requirement of review and approval of a WM plan regulating the withdrawal of water from the waters of this State exceeds the DEP's authority under the State Water Pollution Control Act, W.Va. Code §§ 22-11-1 et seq., and the Oil and Gas Act, W.Va. Code §§ 22-6-1 et seq., and under certain circumstances is contrary to the common law riparian rights doctrine. Does DEP believe it has the same authority to regulate all users of waters in West Virginia? Will farmers, golf course owners, coal operations, electric power plants and other industrial operations have the same requirements applied to their water withdrawals? While the Legislature has given the DEP the authority to collect information regarding water withdrawals and water uses under the Water Resources Management and Protection Act, W. Va. Code §§ 22-26-1 et seq., it has not been given the authority to regulate or control water withdrawals and water uses.”

RESPONSE F. OOG notes that activity surrounding horizontal well development, as with all industrial activity in West Virginia, is governed by West Virginia's Water Pollution Control Act, which require public needs and use to be taken into consideration before withdrawal and does not allow so much water to be withdrawn from a stream that harm occurs to either the use or the aquatic life of that stream. *See W.Va. Code §§ 22-11-2(b) and 22-11-4(a)(16)* (authority to adopt rules implementing "the public policy of the State of West Virginia that the water resources of this State with respect to the quantity thereof be available for reasonable use by all of the citizens of this State." In order to ensure that horizontal drilling activity complies with the public policy of this State, the proposed rule requires operators to develop a water management plan detailing the methods the well operator will use to protect the quantity of the State's waters.

COMMENT G. The commenter states, "*Sections 3.3.b and 3.3.c require operators to include 'anticipated volume' and 'anticipated months,' respectively, as part of the WM plan. IOGA suggests that 'reasonable estimate of' be substituted for 'anticipated' to clarify that the volume and months are simply estimates at the time the application and WM plan are filed.*"

RESPONSE G. OOG notes that Section 3.3 of the proposed rule indicates that the volume of water is an estimate. Therefore, there should be no confusion that OOG is seeking an estimate of the volume of water. "Anticipated months when water withdrawals will be made" is self-explanatory and requires no further response.

COMMENT H. The commenter states, "*Section 3.3.f.1. requires the 'identification of current designated and existing water uses, including any public water intakes within one mile of the withdrawal location.' Does this requirement include seasonal recreational uses that may or may not be known or apparent to the operator? Does this requirement include other oil and gas operators whose activity may not be known or apparent? Will DEP make information available about designated and existing uses of waters of the State? These issues can be addressed by inserting at the end of the subsection the following: ' , which uses are known to the applicant at the time the well work permit application is submitted. '*"

RESPONSE H. Since passage of the Emergency Rule that is a precursor to this proposed rulemaking, DEP has instituted a process whereby, as part of the approval process for water management plans, it will ask well operators to provide information as to the location of the intended water withdrawals, and DEP will then use resources at its disposal to provide the public water supply location and stream uses components of the water management plan. DEP will further calculate an acceptable pass-by flow and provide it to the operator as part of DEP's approval of the water management plan. Absent this standardized process by DEP, multiple operators would be attempting to calculate an acceptable pass-by flow using multiple methodologies, leading to confusion and inconsistency.

COMMENT I. The commenter states, "*Section 3.3.f.2. requires a 'demonstration, using methods acceptable to the Secretary, that sufficient in-stream flow will be available immediately downstream of the point of withdrawal' and that '[s]ufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal.' Please identify and explain the 'methods acceptable to the Secretary' for making the required 'demonstration.' Please clarify or confirm that use of the*

United States Geological Survey real time database which includes data on current levels of stream flow, which can be found at http://waterwatch.usgs.gov/new/?state=vv&map_type=real, is an approved basis for making the 'sufficient in-stream flow' demonstration."

RESPONSE I. Please see Response 20H above.

COMMENT J. The commenter states, "*Section 3.3.f.3. requires '[i]dentification of the methods to be used to minimize significant adverse impact to aquatic life.' Similarly, please identify and explain the methods acceptable 'to minimize significant adverse impact to aquatic life.'*"

RESPONSE J. OOG notes that Section 3.3.f.3 is deliberately drafted to be general in nature so as to allow operators and OOG flexibility in identifying and developing methods to minimize significant adverse impacts to aquatic life. Each well work application is reviewed on its own merits and where some methods may work for one well or site they may not work for others. Therefore, identification of specific methods in this instance would unnecessarily constrain operations and potentially prevent the use of future, more effective methods of minimizing impacts. However, OOG notes that best management practices, taking into account site and stream specific conditions, including the amount, rate and frequency of water withdrawal, would generally be acceptable.

COMMENT K. The commenter states, "*Section 4.1.a. is duplicative of § 3.3.f.2. One of these provisions should be eliminated.*"

RESPONSE K. OOG notes that Section 4.1.a of the proposed rule is not duplicative of Section 3.3.f.2, because 4.1.a applies to the withdrawal of water for all horizontal well work permits, not just those well work permits that require Section 3.3.f.2 as part of a water management plan because they withdraw more than two hundred ten thousand (210,000) gallons or more of water during any one-month.

COMMENT L. The commenter states, "*Section 4.1.c. requires that operators conduct 'oil and gas operations using BMPs so as to prevent to the extent practical....' The word 'prevent' is an unattainable standard and the more practical word 'minimize' should be inserted instead of 'prevent.'*"

RESPONSE L. OOG notes that the purpose of this subdivision, when read in its entirety, is to mandate that horizontal wells must be operated in such a way as to prevent erosion and sedimentation from running into streams. OOG further notes that some circumstances, such as extreme weather events, may cause conditions that the best erosion and sediment control plans cannot mitigate, and the phrase "to the extent practicable" is meant to recognize that some things are beyond the control of the well operator. OOG finally notes that this subdivision of the rule makes clear to the operator that it is subject to the water quality criteria outlined in State and federal law.

COMMENT M. The commenter states, "*Section 4.2.a. requires, as a condition to water withdrawal, notice to the Office as described by the Secretary within 48 hours but no less than*

24 hours prior to withdrawal. IOGA requests that DEP provide for notification by calling a telephone number designated for the purpose of receiving such notices. Moreover, the section can be read to mean that notice to the Office is required each time that water is withdrawn regardless of volume which is an undue administrative burden when the first notification should be adequate at least for the month period during which 210,000 gallons or more of water is to be withdrawn."

RESPONSE M. OOG notes that DEP has interpreted this language to mean that, once a water management plan is approved, the operator only needs to contact DEP twenty-four to forty-eight hours prior to its initial withdrawal (and completion of withdrawal) for the well in question. Daily notification of withdrawal activity is not required. For example, if a plan is approved November 1, 2011 allowing for a water withdrawal period from January 15, 2012 through March 15, 2012, and the actual withdrawal begins January 21, the Agency only expects twenty-four to forty-eight hours' notification to be made in advance of January 21, not every day thereafter as stream flow is or isn't available. When the call is made to the Agency, staff will check to see if anything has changed since the plan was approved, advise the operator of how to follow its approved plan, and answer any questions.

COMMENT N. The commenter states, "*Section 4.2.b. requires that surface water withdrawal locations and facilities be identified by a sign disclosing the location as a water withdrawal point and the name and telephone number of the operator. IOGA suggests that the signs be required during periods of active use of the withdrawal point only.*"

RESPONSE N. OOG notes that the purpose of Section 4.2.b is to identify on-the-ground withdrawal locations and, as long as a withdrawal location may be used by an operator, OOG believes it is appropriate to identify the withdrawal location. Furthermore, the proposed rule provides that when the withdrawal location is no longer being utilized, the operator shall remove all signage.

COMMENT O. The commenter states, "*Sections 4.2.c.1.A and B require the operator to record and retain records of the quantity of flowback water from hydraulic fracturing and the quantity of produced water from the well. IOGA requests both definitions of terms and clarification of the time period that the operator is required to record this information. For "flowback water," IOGA recommends that this term be defined as all water returned from the well within 30 days of completion of fracturing. All water returned from the well thereafter would be deemed "produced water." With regard to the period during which the operator is required to track and record the production of returned waters, IOGA recommends that this tracking and recording obligation for produced water be limited to 12 months and that all document retention be limited to 3 years.*"

RESPONSE O. For the purposes of the proposed rule, OOG will adhere to the definitions of flowback and produced water currently being used by DEP's Division of Water and Waste Management in its water use reporting requirement. Furthermore, many of these wells remain in production for years, if not decades, and the need to report and track the management and disposal of water does not diminish because it happens to be one year later.

COMMENT P. The commenter states, “*Section 4.2.c.1.C requires the operator to record and retain the "method of management or disposal of the flowback and produced water." IOGA recommends that DEP encourage reuse and recycling of flowback and produced water by expressly authorizing the reuse of these waters by the operator and others in ongoing drilling operations. This waste management practice would maximize the value of the State's water resources and ultimately reduce the quantity of water that would require disposal.*”

RESPONSE P. OOG notes that nothing within Section 4.2.c.1.C prohibits the reusing or recycling of either flowback or produced water. OOG encourages the reuse and recycling of flowback or produced water. However, the drilling of horizontal wells and hydraulic fracturing is rapidly evolving. As such, OOG recognizes that in some instances reuse or recycling of flowback or produced water may not be appropriate.

COMMENT Q. The commenter states, “*Section 4.3 requires that '[a]ll drill cuttings and associated drilling mud' from well sites that disturb 3 acres or more of surface or use 210,000 gallons or more of water during any one month period 'shall be disposed of in an approved solid waste facility or managed on-site in a manner otherwise approved by the Secretary.' By memorandum dated March 23, 2010 regarding Drilling Pit Reclamation, Office of Oil and Gas Chief James Martin authorized the disposal of Marcellus shale drill cuttings by solidification and use of liners on the well site. We assume and seek confirmation that the disposal method referenced in Chief Martin's memorandum is a 'manner otherwise approved by the Secretary' for purposes of the Proposed Rule. Furthermore, IOGA asks that the DEP provide its factual and scientific basis for requiring special handling of drilling cuttings as defined in this Section.*”

RESPONSE Q. Please see Response 8J.

COMMENT R. The commenter states, “*Section 35-8-5 requires a well work applicant for a well located within a municipality to place a Class I legal advertisement in a newspaper of general circulation in the area where the well is proposed to be located at the time the well work application is filed. This section also prohibits the issuance of a well work permit until at least 30 days after notice has been provided to the public. DEP has no statutory predicate for requiring notice by applicants beyond that required by statute, See W.Va. Code §§ 22-6-9 and -12. Of course, DEP may publish notice of well work permits in appropriate newspapers if it so chooses. Furthermore, this section doubles the minimum waiting time before DEP may issue a permit which is inconsistent with current W. Va. Code § 22-6-11.*”

RESPONSE S. Please see Response 1A above.

21. COMMENTER: COLLEEN ANDERSON

COMMENT A. The commenter states, “*Improper or irresponsible drilling practices can and will ruin our water.*”

RESPONSE A. OOG appreciates the commenters concerns; however, the statement does not go to the substance of the rule and therefore no response is required.

22. COMMENTER: PAUL E. HAMRICK

COMMENT A. The commenter states, *“Drilling Waste disposal should be part of the statewide Solid Waste Management Plan and also in the county/regional Comprehensive SW Management and Litter Control plans -which still affords the local public an opportunity to review and to be heard before approval.”*

RESPONSE A. The intent of the State Solid Waste Management Plan is to provide for the proper management of solid waste. This plan is developed using the existing sections of State Code relating to the proper handling and disposal of solid waste. County/Regional Comprehensive Solid Waste Management and Litter Control Plans are required by each County/Regional Solid Waste Authority to provide for the proper management of solid waste at the local level. Neither plan is intended to regulate the disposal of a particular waste, nor to grant the public control over what is or what is not considered a solid waste, or if that particular waste should be disposed of in a commercial solid waste facility. That authority rests with the DEP.

Currently, Marcellus Shale drilling waste is being regulated as a Special Waste by DEP and is being accepted into commercial solid waste facilities. In a Staff Memorandum dated March 23, 2010 from Chief Martin of Oil and Gas, this method of disposal is an approved method of disposal by the Office of Oil and Gas. Therefore, DEP is currently treating these drilling wastes as a special solid waste which can lawfully be disposed of in a commercial solid waste facility with a minor modification to their SWF permit.

If DEP continues to classify this drilling waste as a solid waste, there is no need for it to be highlighted in the State Plan as it would be proper to dispose of this waste in a commercial solid waste facility. However, if DEP changes this classification to prohibit drilling waste from being disposed of in a solid waste facility, the Solid Waste Management Board (SWMB) would certainly identify it in the State Plan under the Special Waste section and relay the information that DEP develops on how to properly dispose of this waste. In either case, the SWMB does not find it appropriate for the specific type of waste to be included in the County/Regional Comprehensive Solid Waste Management and Litter Control Plans.

COMMENTS: WALT R. SHUPE

COMMENT A. The commenter states, *“a moratorium on drilling until permanent regulations are enacted”*

RESPONSE A. This comment is outside the scope of the proposed rulemaking and, therefore, no response is required.

COMMENT B. The commenter states, *“remove inspector approval from gas and oil board” and “abolish gas and oil board.”*

RESPONSE B. The selection of oil and gas inspectors by the Oil and Gas Inspectors Examining Board is set forth in W. Va. Code § 22C-7-1 *et seq.*, and any attempt to change that process by Legislative rule would be invalid as contrary to the statute.

COMMENT C. The commenter states, *“assess [sic] the gas companies for road damage and salaries for additional inspectors. The recently suggested assessments of 10,000 dollars for the first well and 5,000 dollars for additional wells seems very reasonable to me.”*

RESPONSE C. This comment is outside the scope of the proposed rulemaking and, therefore, no response is required.

COMMENT D. The commenter states, *“prevent companies from ruining surface owners property and require them to pay for future losses as well as the present damages incurred.”*

RESPONSE D. This comment is outside the scope of the proposed rulemaking and, therefore, no response is required.

COMMENT E. The commenter states, *“require the damaged property to be reclaimed to original contour, using the original top soil and reseeded to owner's wishes.”*

RESPONSE E. The reclamation requirements are set forth in W. Va. Code § 22-6-30 and the Legislative rule at 35 CSR 4 § 16 and any attempt to change those requirements in this proposed rule would be invalid as contrary to the statute and an already existing rule.

COMMENT F. The commenter states, *“limit use of water from streams and lakes.”*

RESPONSE F. OOG notes that activity surrounding horizontal well development, as with all industrial activity in West Virginia, is governed by West Virginia’s narrative water quality criteria, which require public needs and use to be taken into consideration before withdrawal and does not allow so much water to be withdrawn from a stream that harm occurs to either the use or the aquatic life of that stream (*see*, 47 C.S.R. 2 § 3.2.i). In order to ensure that horizontal drilling activity complies with those criteria, the proposed rule requires operators to develop a water management plan detailing the methods the well operator will use to protect the quantity and quality of the State’s waters and requiring operators to disclose the chemical additives used during the hydraulic fracturing process.

COMMENT G. The commenter states, *“report source of disposal of frac water and chemicals it contains.”*

RESPONSE G. OOG notes that Section 4.2.c of the proposed rule requires the operator to maintain records “for all water used in connection with hydraulic fracturing activities and for all produced water from production activities.” These records include, for production activities, the quantity of flowback water from hydraulic fracturing of the well, the quantity of produced water from the well, and the method of management or disposal of the flowback and produced water. For transportation activities, the operator must record the quantity of water transported, the collection and delivery or disposal location(s) of the water, and the name(s) of the water hauling company(ies). The operator must produce those records upon request by the agency, pursuant to W. Va. Code § 22-6-28(a).

COMMENT G. The commenter states, “*monitor and restrict noise and air pollution.*”

RESPONSE G. OOG notes that both DEP’s Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation and truck traffic in order to determine appropriate regulation of this activity.

23. COMMENTER: DANA W. LIGHT

COMMENT A. The commenter states, “*Improved rights for surface owners including more involvement in how/where the gas company operates, fairer compensation, and a longer response time for concerns once the application is received by the DEP.*”

RESPONSE A. The commenter’s concerns are outside the scope of the proposed rulemaking and, therefore, no response is required to the first portion of the comment. In regards the response time for surface owners, please see Response 12H above.

COMMENT B. The commenter states, “*Full disclosure of all fracking components with laws to reduce and eliminate the more problematic chemicals such as benzene, hexane, and toluene.*”

RESPONSE B. OOG notes that the proposed rule requires disclosure of the chemical additives used in the hydraulic fracturing process at two separate stages of the operation: the operator must disclose a list of anticipated chemical additives at the time it submits its application for a well work permit, and the operator must disclose in its completion report a list of the chemical additives it actually used in its hydraulic fracturing process.

COMMENT C. The commenter states, “*Casings need to be deeper, ideally extending below fresh water aquifers, and their integrity verified before any fracking is allowed.*”

RESPONSE C. OOG notes that operators of horizontal wells are still subject to the mandates of West Virginia 35 C.S.R. 4, the Legislative rule entitled Oil and Gas Wells and Other Wells, which, at Section 11 sets out casing and cementing standards that are written to protect such fresh water aquifers. Further, the cement used must meet certain engineering standards and requirements, which include achieving levels of compressive strength at certain setting times. Additionally, OOG will have established procedural standards for the various casing strings to further ensure proper cementing has occurred. Finally, the rule requires that a copy of the cementing records be maintained at the site during drilling and completion of the well.

COMMENT D. The commenter states, “*More thorough before and after water testing with a more extensive panel of tests around well sites.*”

RESPONSE D. Please see Response 1B above.

COMMENT E. The commenter states, “*Long term road maintenance funding. I have witnessed many sound roads with limited wear reduced to rubble overnight. Patching is not enough.*”

RESPONSE E. This comment is outside the scope of the proposed rulemaking and, therefore, no response is required.

COMMENT F. The commenter states, *“More monitoring of air quality at well sites.”*

RESPONSE F. OOG notes that both DEP’s Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation and truck traffic in order to determine appropriate regulation of this activity.

COMMENT G. The commenter states, *“Proper treatment/reuse of frack water with no land application of waste products, including cuttings.”*

RESPONSE G. OOG notes that effective August 1, 2010, under the General Water Pollution Control Permit GP-1-WV-88 (also known as the land application permit), the land application of any return fluids from completion in the Marcellus Shale formation is prohibited. Recycling, reuse and UIC continue to be acceptable disposal methods.

COMMENT H. The commenter states, *“Fair compensation to the state for the use of surface water with restrictions for use during drought conditions.”*

RESPONSE H. OOG notes that activity surrounding horizontal well development, as with all industrial activity in West Virginia, is governed by West Virginia’s narrative water quality criteria, which require public needs and use to be taken into consideration before withdrawal and does not allow so much water to be withdrawn from a stream that harm occurs to either the use or the aquatic life of that stream (*see*, 47 C.S.R. 2 § 3.2.i). In order to ensure that horizontal drilling activity complies with those criteria, the proposed rule requires operators to develop a water management plan detailing the methods the well operator will use to protect the quantity and quality of the State’s waters and requiring operators to disclose the chemical additives used during the hydraulic fracturing process.

COMMENT I. The commenter states, *“Placement of wells away from sensitive water ways, with improved regulations and monitoring for erosion and sediment.”*

RESPONSE I. OOG notes that the proposed rule requires enhanced erosion and sediment control plans and site construction plans to ensure that well sites are constructed so as to minimize the wearing away of soil into the State’s waters or onto contiguous property and water management plans that detail the methods the well operator will use to protect the quantity and quality of the State’s waters.

COMMENT J. The commenter states, *“Regulation and monitoring of compression stations to reduce noise and minimize health risks to those in the vicinity.”*

RESPONSE J. OOG notes that both DEP’s Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation in order to determine appropriate regulation of this activity.

24. COMMENTER: DAVID THOMPSON, EVELYN THOMPSON & IRIS THOMPSON

COMMENT. The commenter states, *"don't let the gas company drill closer than 1000' to my home."*

RESPONSE. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

25. COMMENTER: (Mr. and Mrs.) ROBERT H. UHLER

COMMENT A. The commenter states, *"Why do rules apply only to horizontal [sic] wells and not vertical Marcewillus [sic] wells that use copious amounts of water and large [sic] areas? Also, no improvement on conventional wells."*

RESPONSE A. Please see Response 12A above.

COMMENT B. The commenter states, *"Surface owners are not notified until permits are filed with no hearing on permit application. There is no power for state to help surface owner who has lifetime investment in home that will become a gas well even though pays taxes, mortgage, insurance, etc.. After permit is granted only 15 days allowed to file comments (minus delivery times)."*

RESPONSE B. Notice to surface owners and the amount of time they have to comment are set forth in W. Va. Code § 22-6-9, and any attempt to change those processes by Legislative rule would be invalid as contrary to the statute.

COMMENT C. The commenter states, *"Drilling allowed within 200 feet of a home is ridiculous ! [sic] I have been told to expect a 2 year duration of air,, [sic] noise, light, and other pollution in addition to possible fires and explosions that have already occurred [sic] in the recent past..[sic] Restriction should be at least 2,000 feet."*

RESPONSE C. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT D. The commenter states, *"Methods for withdrawing water from surface waters should not be determined by the Secretary, but by politely [sic] independent scientists,"* and *"The Secretary is a political appointee, there by subject to political pressure in his/her decisions. Determination of withdrawal locations, disposal of drill cuttings, etc. should be made by non political experts."*

RESPONSE D. Please see Response 8C above.

COMMENT E. The commenter states, *"There are no expanded setbacks or testing parameters for drinking water supplies and drillers are not required to test for chemicals used in hydraulic fracturing."*

RESPONSE E. Please see Response 1B above.

COMMENT F. The commenter states, *"No studies of air quality for releasing of methane, nitric oxide and othe [sic] volatile compounds from wells and compressors."*

RESPONSE F. OOG notes that both DEP's Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation and truck traffic in order to determine appropriate regulation of this activity.

COMMENT G. The commenter states, *"No published notice required of proposed well sites outside of city limits. WHY?"*

RESPONSE G. Please see Response 1A above.

COMMENT H. The commenter states, *"An inspector should be required on-site to sign off, verifying casing cement is properly cured."*

RESPONSE H. OOG notes that this comment states an administrative concern that does not go to the substance of the rule and therefore no response is required.

26. COMMENTER: PAMELA C. DODDS, PH.D., R.P.G., & ARTHUR W. DODDS, JR.

COMMENT A. The commenter states, *"At the very least, drillers and associated workers should be wearing badges that enable them to know how much radiation they are absorbing cumulatively."*

RESPONSE A. OOG notes that the occupational health and safety of an operator's employees are outside of its jurisdiction and outside the scope of the proposed rulemaking and, therefore, no response is required.

COMMENT B. The commenter states, *"To protect our water resources, all gas drilling associated with fracking should be required to submit an Underground Injection Control (UIC) program application, which includes a notarized signature of the owner or company stating responsibility for any contamination of water resources caused by the drilling operations, including the fracking fluids as well as contaminants released by the Marcellus shale drill cuttings and gas."*

RESPONSE B. OOG notes that the Energy Policy Act of 2005 (EPACT), section 322, amended the Safe Drinking Water Act (SDWA) to change the definition of "underground injection" to exclude "the underground injection of fluids or propping agents pursuant to hydraulic fracturing operations."

27. COMMENTER: LINDA IRELAND

COMMENT A. The commenter states, *"I recommend that we require closed-loop systems on large (horizontal) drilling operations. This system uses tanks and separates solids on site, and fracking fluid can be reused on the next operation."*

RESPONSE A. OOG notes that W. Va. Code § 22-11-4(a)(16) prohibits the Secretary from specifying the design of equipment, type of construction, or particular method that a person can use to reduce the discharge of pollutants.

COMMENT B. The commenter states, *"We should also require disclosure of chemical components of fracking fluid so that waters can be tested for contamination. Chemicals that pose serious health risks should not be allowed to be used" and "Disclosure of frack fluid contents, and tracking of all wastewater disposal, including GPS tracking of wastewater transport trucks."*

RESPONSE B. OOG notes that the proposed rule requires disclosure of the chemical additives used in the hydraulic fracturing process at two separate stages of the operation: the operator must disclose a list of anticipated chemical additives at the time it submits its application for a well work permit, and the operator must disclose in its completion report a list of the chemical additives it actually used in the hydraulic fracturing process. OOG also notes that the flowback is not tested, however, the disposal of the fluid is documented.

COMMENT C. The commenter states, *"Sediment control plans should be part of the permitting process and enforced."*

RESPONSE C. OOG notes that the erosion and sediment control plan is a required portion of the permitting process. It must be submitted with the operator's application for a well work permit and, once approved, its provisions become permit conditions enforceable by the agency if violated. See, W. Va. Code § 22-6-6(d).

COMMENT D. The commenter states, *"The amount of water used for hydrofracking operations is on an industrial scale. Withdrawal of such large quantities of water from local creeks can have a devastating effect on fish and other creek life as well as drinking water quality and quantity. Water withdrawals on the scale used in hydrofracking should be limited to major rivers and to periods of adequate rainfall" and "An actual water withdrawal permit system to protect streams and rivers."*

RESPONSE D. OOG notes that activity surrounding horizontal well development, as with all industrial activity in West Virginia, is governed by West Virginia's narrative water quality criteria, which require public needs and use to be taken into consideration before withdrawal and does not allow so much water to be withdrawn from a stream that harm occurs to either the use or the aquatic life of that stream (see, 47 C.S.R. 2 § 3.2.i). In order to ensure that horizontal drilling activity complies with those criteria, the proposed rule requires operators to develop a water management plan detailing the methods the well operator will use to protect the quantity and quality of the State's waters. OOG finally notes that the Water Resources Protection and

Management Act prohibits the DEP from permitting water withdrawals. *See*, W. Va. Code § 22-26-3(a)

COMMENT E. The commenter states, *“Emergency plans should also be part of the permitting process. All workers should be familiar with the plan.”*

RESPONSE E. OOG notes that subsection 3.4 of the proposed rule mandates that well safety plans are part of the permitting process.

COMMENT F. The commenter states, *“The number of well site inspectors needs to be increased so that all well sites can be inspected often. A permit fee of \$10,000 should be instituted to fund this”* and *“Increased funding for more inspectors, and elimination of the industry-dominated Oil and Gas Examiners Board.”*

RESPONSE F. OOG appreciates the commenter’s comment, but notes that its staffing and funding problems cannot be addressed through rulemaking. OOG notes that the regulations pertaining to permit fees are set forth in W. Va. Code § 22-6-2(c)(10), and any attempt to change those fees by Legislative rule would be invalid as contrary to the statute. Further, the Oil and Gas Examination Board is authorized by W. Va. Code § 22C-7-1 *et seq.*, and any attempt to eliminate that Board by Legislative rule would be invalid as contrary to the statute.

COMMENT G. The commenter states, *“The practice of burn-off should be prohibited to protect air quality;”* *“Compressor stations should be required to install the latest emission reduction technology to protect air quality;”* and *“Monitoring and regulation of air quality on drilling sites.”*

RESPONSE G. OOG notes that both DEP’s Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation and truck traffic in order to determine appropriate regulation of this activity.

COMMENT H. The commenter states, *“Public notice and comment period prior to issuing drilling permits.”*

RESPONSE H. Please see Response 1A above.

COMMENT I. The commenter states, *“Adequate permit fees and bonding amounts.”*

RESPONSE I. OOG notes that permit fees are established in W. Va. Code § 22-6-2(c)(10), and bonding requirements are set forth in W. Va. Code § 22-6-26. Any attempt to change permit fees or bonding requirements by Legislative rule would be invalid as contrary to the statute.

COMMENT J. The commenter states, *“Removal and proper disposal of drilling pits.”*

RESPONSE J. Please see Response 8J above.

COMMENT K. The commenter states, *“Enhanced inspection of casing/cementing as critical for groundwater protection.”*

RESPONSE K. OOG notes that the comment states an administrative concern that does not go to the substance of the rule and, therefore, no response is required.

COMMENT L. The commenter states, *“The Special protections for drilling on public lands and near high-quality streams.”*

RESPONSE L. The site restrictions for oil or natural gas wells in relation to State parks are set forth in W. Va. Code § 20-5-2(b)(8), and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT M. The commenter states, *“Protection of surface owners’ property and rights.”*

RESPONSE M. This comment is outside the scope of the proposed rulemaking and, therefore, no response is required.

28. COMMENTER: MANDIE SIMPSON

COMMENT A. The commenter states, *“They should have the right to refuse to allow frackers onto their land, the land that they OWN. They should have plenty of notice that frackers are interested in drilling on their land.”*

RESPONSE A. Notice to surface owners and the amount of time they have to comment are set forth in W. Va. Code § 22-6-9, and any attempt to change those processes by Legislative rule would be invalid as contrary to the statute.

COMMENT B. The commenter states, *“There should be MANDATORY predrilling tests done on air and water quality within a mile of each site by state laboratories, free of outside influence.”*

RESPONSE B. Please see Response 1B above.

COMMENT C. The commenter states, *“The fees for permitting should be \$40,000 as Dr. Bob Henry Baber has suggested in order to pay for inspectors.”*

RESPONSE C. OOG notes that permit fees are authorized by W. Va. Code § 22-6-2(c)(10), and any attempt to change those fees by Legislative rule would be invalid as contrary to the statute.

COMMENT D. The commenter states, *“There should be a reasonable amount of wells per inspector such that each well could and would be inspected in the very least, yearly.”*

RESPONSE D. OOG notes that the comment addresses an administrative concern and, therefore, no response is required.

COMMENT E. The commenter states, *"The drilling should not be allowed to occur in such close proximity to homes, would you want a well head 200 feet from your home?"*

RESPONSE E. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT F. The commenter states, *"The waste should not be kept in a pit, which is a ridiculous method of storing such hazardous materials."*

RESPONSE F. Please see Response 8J.

COMMENT G. The commenter states, *"Drillers should have to invest in frack fluid recycling technology, which is available."*

RESPONSE G. Please see Response 27A above.

COMMENT H. The commenter states, *"Independent scientists should be a part of all possible stream disturbances that may result."*

RESPONSE H. Please see Response 8C above.

COMMENT I. The commenter states, *"Roads should be kept in as well a condition as they were previous to drilling."*

RESPONSE I. OOG notes that it does not have any jurisdiction over the State's roads and highways; such authority resides with the West Virginia Public Service Commission and the West Virginia Department of Transportation. As such, this comment is outside the scope of the proposed rulemaking and, therefore, no response is required.

COMMENT J. The commenter states, *"All fracking fluid ingredients must be disclosed."*

RESPONSE J. Please see Response 11A above.

29. COMMENTER: LOUIS YATES JENKINS

COMMENT A. The commenter states, *"I would like to see you maintain the \$10,000 permit fee and at least a \$5,000 fee for each well drilled. This would provide funding for additional inspectors for the numerous well sites being developed."*

RESPONSE A. OOG notes that permit fees are established in W. Va. Code § 22-6-2(c)(10), and any attempt to change those fees by Legislative rule would be invalid as contrary to the statute.

COMMENT B. The commenter states, *"I believe that a lease should be subject to a time limit of not more than five years. Also it should be necessary for modification of leases signed decades ago, as the oil and gas industry has obviously changed."*

RESPONSE B. These comments are outside the scope of the proposed rulemaking and, therefore, no response is required.

COMMENT C. The commenter states, *"Another issue I would like to see addressed is the right of way factor that is a major issue for me and I'm sure for many others. You may consider this a legal issue; however I would still like to stress the importance of this matter. In the past, a right of way was between two parties and provided a private access to an adjoining property. Fast forward to 2011 and landowners find themselves faced with the company, who has the original lease, now selling or out-sourcing various aspects of the activities of a gas well to two or three other companies and providing these companies with a "piggyback" right of way. Multiply this by the number of companies that can be involved when you have three wells on one property and the additional traffic impact on a private farm road. Then add a company who has purchased the marcellus shale rights and consider the truck traffic. The right of way agreements signed years ago were done so with the understanding of certain restrictions as to the mode and purpose of the use of the right of way. Excessive use, such as a multitude of truck traffic and over-sized equipment, was not granted under these agreements as the individuals who signed these agreements could not possibly have envisioned the present concept."*

RESPONSE C. These comments are outside the scope of the proposed rulemaking, and, therefore, no response is required.

30. COMMENTER: CHRISTINA WOODS

COMMENT A. The commenter states, *"The rules are of limited applicability and apply only to horizontal wells. The rules does not apply to vertical Marcellus Shale wells."*

RESPONSE A. Please see Response 12A above.

COMMENT B. The commenter states, *"The rule does not give surface owners notice of plans to drill the wells until the permit is actually filed, and then there are only 15 days to file comments, no hearing on the permit application, and no power for the State to help a surface owner whose future home site is now going to be a well site."*

RESPONSE B. Notice to surface owners and the amount of time they have to comment are set forth in W. Va. Code § 22-6-9, and any attempt to change those processes by Legislative rule would be invalid as contrary to the statute.

COMMENT C. The commenter states, *'The rule continues to allow gas wells to be drilled within 200 feet of peoples' homes. This close proximity is of particular concern for Marcellus Shale operations, given their duration, the air, noise, light and other pollution from the sites. In*

addition, there is the potential for more serious accidents such as the fires and explosions that occurred last year in the Northern Panhandle.”

RESPONSE C. The site restrictions for oil or natural gas wells in relation to dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT D. The commenter states, “*Section 4.3 also states, “or managed on-site in a manner otherwise approved by the Secretary,” There is no indication of what the Secretary may approve. “Approved solid waste facility” is a complete mystery, and “or managed on site in a manner otherwise approved by the Secretary” means pit burial. “Approved by the Secretary” is not acceptable. The secretary is a political appointee who takes orders from elected politicians who depend on campaign donations.*”

RESPONSE D. OOG notes that an “approved solid waste facility” is one that has a permit from DEP’s Division of Water and Waste Management to operate a solid waste facility pursuant to W. Va. Code §22-15-5(b). Please also see Response 8C and 8J above.

COMMENT E. The commenter states, “*In Section 4.1.a. Withdrawing water from surface waters of the State using methods deemed appropriate by the secretary so as to maintain sufficient in-stream flow immediately downstream of the withdrawal location; Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists.*”

RESPONSE E. Please see Response 8C.

COMMENT F. The commenter states, “*4.2.a. Within forty-eight (48) hours, but no less than twenty-four (24) hours, prior to the withdrawal of water, the operator shall identify the location of withdrawal by latitude and longitude; verify, using methods deemed acceptable by the secretary, that sufficient flow exists to protect designated uses of the stream; and provide notice to the Office as prescribed by the Secretary; using “methods deemed acceptable by the Secretary” is not acceptable.*”

RESPONSE F. Please see Response 8C.

COMMENT G. The commenter states, “*3.3.f.2. A demonstration, using methods acceptable to the Secretary (There’s that unacceptable phrase again), that sufficient in-stream flow will be available immediately downstream of the point of withdrawal. Sufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal.*”

RESPONSE G. Please see Response 8C.

COMMENT H. The commenter states, “*The requirement that an engineer must design the well pad if it is more than 3 acres is a good thing. However, having an engineer supervise the construction and reclamation would help ensure that the soil erosion and sediment control plans*

are followed since there are too few inspectors to oversee these activities. The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves."

RESPONSE H. OOG notes that the proposed rule mandates that well sites be constructed in accordance with plans certified by a registered professional engineer, that plan becomes a condition of the operator's permit, and failure of the operator to follow that plan could result in enforcement action by the agency. OOG further notes that operators of horizontal wells, as with all oil or natural gas operators in West Virginia, are required to abide by the West Virginia Erosion and Sediment Control Manual in developing their individual erosion and sediment control plans, no matter the size of the operation. A section of the Erosion and Sediment Control Manual is devoted to access road construction and the best management practices an operator must employ in construction of the same. The language at subsection 3.1 of the proposed rule "sites that disturb three acres or more of surface, excluding pipelines, gathering lines, and roads . . ." (emphasis added) means that those three structures are not taken into consideration in calculating whether the site disturbs three acres or more of surface, not whether construction of the site has to comply with the Erosion and Sediment Control Manual. OOG further notes that construction of pipelines is outside its jurisdiction and subject to the authority of the Public Service Commission; however, an operator who constructs a pipeline may be required to obtain a Stormwater Construction Permit from DEP's Division of Water and Waste Management pursuant to 47 C.S.R. 10 §§ 2.8, 2.14, and 3.1.

COMMENT I. The commenter states, "*Many of the new casing and cementing requirements are too vague. The rule sets standards that would allow the State to cite the driller if something went wrong, as opposed to standards that could prevent problems from occurring in the first place. For example, the rules state that all cement used must 'secure the casing to the well bore' but do not require the driller to run a bond log to make sure that it actually does.*"

RESPONSE I. Please see Response 15K.

COMMENT J. The commenter states, "*With regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing.*"

RESPONSE J. Please see Response 1B above.

COMMENT K. The commenter states, "*And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies.*"

RESPONSE K. The civil remedies for contamination or deprivation of a fresh water source or supply are set forth in W. Va. Code § 22-6-35, and any attempt to change that procedure by Legislative rule would be invalid as contrary to the statute.

COMMENT L. The commenter states, *“Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.”*

RESPONSE L. OOG notes that both DEP’s Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation and truck traffic in order to determine appropriate regulation of this activity.

COMMENT M. The commenter states, *“The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown. Language should cover public notice for all wells, not just within municipalities.”*

RESPONSE M. Please see Response 1A above.

COMMENT N. The commenter states, *“3.3.d. The planned management and disposition of wastewater from fracturing, stimulation, and production activities; The specific place of wastewater disposal should also be in the water management plan. Restrictions should be tightened.”*

RESPONSE N. Please see Response 8A.

COMMENT O. The commenter states, *“3.4.b. Well site safety meetings. – Safety meetings shall be held on-site weekly, at a minimum, and specifically prior to the beginning of drilling, completion, and work-over operations. Meeting attendance shall be logged, and the log shall be maintained on site. A check-in and check-out list of all personnel shall be maintained during the drilling and completion phases of the operation. Personnel attending well site safety meetings should include subcontractors and truckers (or some other provision for training truckers must be found). At each well site safety meeting all workers, including truck drivers, should be provided with and keep in their possession the up-to-date phone numbers to call in case of any emergency. Spills from trucks, whether on the site or in transit, are emergencies.”*

RESPONSE O. Please see Response 8E.

COMMENT P. The commenter states, *“4.1.b. Casing, sealing or otherwise managing wells to keep fluids or natural gas from entering ground or surface waters; “or otherwise managing wells” – does this phrase open the door to anything? Drillers that continue to use hay bales to stop sediment of chemical spills are not to be trusted to decide how to manage fluids.”*

RESPONSE P. Please see Response 8G.

COMMENT Q. The commenter states, *“4.1.c. Conducting oil and gas operations using BMPs (Best Management Practices) so as to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to stream flow or runoff outside the permit area,*

but in no event shall the contributions be in excess of requirements set by applicable State or federal law; "to the extent practicable" is an unacceptable loophole."

RESPONSE Q. Please see Response 8H.

COMMENT R. The commenter states, *"4.4.a.4. Casing shall not be disturbed for a period of at least eight hours after the completion of cementing operations; This is the most critical function in protecting groundwater. An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured. Is there not a test to determine when the cement has set?"*

RESPONSE R. Please see Response 8K.

31. COMMENTER: BARBARA HARVEY

COMMENT A. The commenter states, *"Your new rules are of limited applicability and apply only to horizontal wells; this Rule also needs to apply to Marcellus Vertical Wells. These Wells use the same amount of water and disturb the same amount of land that the rule would not otherwise cover and there are no improvements for the many conventional wells that are still drilled."*

RESPONSE A. Please see Response 12A above.

COMMENT B. The commenter states, *"The Rule still allows drillers to sneak out onto landowners' property and survey well sites and well roads without contacting the Surface Owners first. It does not give Surface Owners notice of plans to drill the wells until the permit is actually filed, and then there is only 15 days to file comments (this 15 days includes the time it is still in Charleston and then the time the Permit is in the mail to the Surface Owner). There is no hearing on the permit application, and no power for the State to help a surface owner whose home or future home site is now going to be a well site. There should be a notice to Surface Owner when the Permit Application is filed. This Permit time needs to be 45 days from the time the Surface Owner receives it to allow for them to file comments."*

RESPONSE B. Notice to surface owners and the amount of time they have to comment are set forth in W. Va. Code § 22-6-9, and any attempt to change those processes by Legislative rule would be invalid as contrary to the statute.

COMMENT C. The commenter states, *"The Rule also continues to allow gas wells to be drilled within 200 feet of peoples' homes. The Well Pads and Wells should be a minimum of 2500 feet from a home."*

RESPONSE C. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT D. The commenter states, *"Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations."*

RESPONSE D. OOG notes that both DEP's Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation and truck traffic in order to determine appropriate regulation of this activity.

COMMENT E. The commenter states, *"Additionally, with regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing."*

RESPONSE E. Please see Response 1B above.

COMMENT F. The commenter states, *"And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies."*

RESPONSE F. The civil remedies for contamination or deprivation of a fresh water source or supply are set forth in W. Va. Code § 22-6-35, and any attempt to change that procedure by Legislative rule would be invalid as contrary to the statute.

COMMENT G. The commenter states, *"Wells and Pads should stay 1500 feet from Water Wells and 500 feet from ponds, streams, springs, etc."*

RESPONSE G. The site restrictions for oil or natural gas wells in relation to existing water wells are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT H. The commenter states, *"Many of the other new requirements are too vague. 'The [metal] casing must be of sufficient quality and condition . . . ' 'Centralizers must be used with proper spacing . . . ' Would the Rule say that practices do not have to be sufficient or proper? These standards would only allow the State to cite the driller if something went wrong, but do not implement standards that could be enforced, even if there were enough inspectors, to prevent problems from occurring in the first place. Why is there not an Outside Engineer or an Inspector present at this time. The State requires an Engineer or Inspector on the job when concrete is poured to build a bridge or roadway – WHY NOT HERE!"*

RESPONSE H. Please see Response 15K.

COMMENT I. The commenter states, *"The rule does say that cement should meet American Petroleum Institute standards, but then only sets a goal to 'secure the casing to the well bore . . . ' It does not require the driller to run a bond log to make sure that it actually does! Similarly, the rule only says that cement should 'contain all pressures during all phases of drilling and operation,' but still allows bare casing pipe in most of the vertical part of the hole. It does not require that the entire casing be cemented from the Marcellus Shale all the way*

to the surface -- so that intermediate gas bearing formations could create pressures in the open annuluses that, in places like Dimock, Pennsylvania, allowed gas to migrate via bad surface cement jobs into peoples' water wells. Why isn't there Concrete Test Molds taken and send to a Lab for testing of the concrete strength and density."

RESPONSE I. Please see Response 15K.

COMMENT J. The commenter states, "*Section 4.3 also states, "or managed on-site in a manner otherwise approved by the Secretary," There is no indication of what the Secretary may approve. "Approved solid waste facility" is a complete mystery, and "or managed on-site in a manner otherwise approve by the Secretary" sounds like it means "burial Pit". "Approved by the Secretary" is not acceptable. The Secretary is a political appointee who takes orders from elected politicians who depend on campaign donations. This material needs to be hauled away and treated!!"*

RESPONSE J. OOG notes that an "approved solid waste facility" is one that has a permit from DEP's Division of Water and Waste Management to operate a solid waste facility pursuant to W. Va. Code §22-15-5(b). Please also see Response 8J above..

COMMENT L. The commenter states, "*Section 4.1.a. Withdrawing water from surface waters of the State using methods deemed appropriate by the Secretary, so as to maintain sufficient in-stream flow immediately downstream of the withdrawal location; Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists. This should be limited to 1500 gallons per day per stream."*

RESPONSE L. Please see Response 8C.

COMMENT M. The commenter states, "*Section 4.2.a. Within forty-eight (48) hours, but no less than twenty-four (24) hours, prior to the withdrawal of water, the operator shall identify the location of withdrawal by latitude and longitude; verify, using methods deemed acceptable by the Secretary, that sufficient flow exists to protect designated uses of the stream; and provide notice to the Office as prescribed by the Secretary; "using methods acceptable to the Secretary" This is not acceptable ! This should be limited to 1500 gallons per day per stream."*

RESPONSE M. Please see Response 8C.

COMMENT N. The commenter states, "*3.3.f.2. A demonstration, using methods acceptable to the Secretary (There's that unacceptable phrase again), that sufficient in-stream flow will be available immediately downstream of the point of withdrawal. Sufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal."*

RESPONSE N. Please see Response 8C.

COMMENT O. The commenter states, "*The requirement that an engineer must design the well pad if it is more than 3 acres is a good thing. However, having an engineer supervise the*

construction and reclamation would help ensure that the soil erosion and sediment control plans are followed since there are too few inspectors to oversee these activities. The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves."

RESPONSE O. Please see Response 13B.

COMMENT P. The commenter states, *'Many of the new casing and cementing requirements are too vague. The rule sets standards that would allow the State to cite the driller if something went wrong, as opposed to standards that could prevent problems from occurring in the first place. For example, the rules state that all cement used must "secure the casing to the well bore..." but do not require the driller to run a bond log to make sure that it actually does.'*

RESPONSE P. Please see Response 15K.

COMMENT Q . The commenter states, *"With regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing.*

RESPONSE Q. Please see Response 1B.

COMMENT R. The commenter stats, *"And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies."*

RESPONSE R. Please see Response 1C.

COMMENT S. The commenter states, *"Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations. The EPA is limiting our use of Aerosol Cans and Freon BUT the Gas Companies can release all these gases into the air without penalties."*

RESPONSE S. Please see Response 15F above.

COMMENT T. The commenter states, *"The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown. Language should cover public notice for all wells, not just within municipalities."*

RESPONSE T. Please see Response 1A.

COMMENT U. The commenter states, *"3.3.d. The planned management and disposition of wastewater from fracturing, stimulation, and production activities; The specific place of wastewater disposal should also be in the water management plan. They are going to run out of*

places to put this waste fluid (which obviously is NOT just “wastewater”). Restrictions should be tightened.”

RESPONSE U. Please see Response 8A.

COMMENT V. The commenter states, *“3.4.b. Well site safety meetings. – Safety meetings shall be held on-site weekly, at a minimum, and specifically prior to the beginning of drilling, completion, and work-over operations. Meeting attendance shall be logged, and the log shall be maintained on site. A check-in and check-out list of all personnel shall be maintained during the drilling and completion phases of the operation. Personnel attending well site safety meetings should include subcontractors and truckers (or some other provision for training truckers must be found). At each well site safety meeting all workers, including truck drivers, should be provided with and keep in their possession the up-to-date phone numbers to call in case of any emergency. Spills from trucks, whether on the site or in transit, are emergencies.”*

RESPONSE V. Please see Response 8E.

COMMENT W. The commenter states, *“4.1.b. Casing, sealing or otherwise managing wells to keep fluids or natural gas from entering ground or surface waters; “or otherwise managing wells” – does this phrase open the door to anything? Drillers that continue to use hay bales to stop sediment of chemical spills are not to be trusted to decide how to manage fluids.”*

RESPONSE W. Please see Response 8G.

COMMENT X. The commenter states, *“4.1.c. Conducting oil and gas operations using BMPs (Best Management Practices) so as to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to stream flow or runoff outside the permit area, but in no event shall the contributions be in excess of requirements set by applicable State or federal law; “to the extent practicable” is an unacceptable loophole.”*

RESPONSE X. Please see Response 8H.

COMMENT Y. The commenter states, *“4.4.a.4. Casing shall not be disturbed for a period of at least eight hours after the completion of cementing operations. This is the most critical function in protecting groundwater. An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured. Is there not a test to determine when the cement has set? There should be Concrete Test Molds taken and send to a Lab for testing of the concrete strength and density, just like is done with every State Highway or Building job !!”*

RESPONSE Y. Please see Response 15K.

32. COMMENTER: TIM WIGTON

COMMENT. The commenter states, *“In regard to the management of runoff in the following Emergency Rule: “4.1.c. Conducting oil and gas operations using BMPs (Best Management Practices) so as to prevent, to the extent practicable, additional contributions of*

suspended or dissolved solids to stream flow or runoff outside the permit area, but in no event shall the contributions be in excess of requirements set by applicable State or federal law" and "to the extent practicable" is in there to placate Energy Lobbyists. Please take it out."

RESPONSE. Please see Response 8H.

33. COMMENTER: D. WRIGHT

COMMENT A. The commenter states, *"The rules are of limited applicability and apply only to horizontal wells. The rule does not apply to vertical Marcellus Shale wells (like the one shown on the WV-SORO website) that use the amount of water and disturb the amount of land that the rule would otherwise cover and there are no improvements for the many conventional wells that are still drilled."*

RESPONSE A. Please see Response 12A.

COMMENT B. The commenter states, *"The rule does not give surface owners notice of plans to drill the wells until the permit is actually filed, and then there is only 15 days to file comments, no hearing on the permit application, and no power for the State to help a surface owner whose future home site is now going to be a well site."*

RESPONSE B. Please see Response 12H above.

COMMENT C. The commenter states, *"The rule continues to allow gas wells to be drilled within 200 feet of peoples' homes."*

RESPONSE C. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT D. The commenter states, *"The requirement that an engineer must design the well pad if it is more than 3 acres is a good thing. However, having an engineer supervise the construction and reclamation would help ensure that soil erosion and sediment control plans are followed since there are too few inspectors to oversee these activities. The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves."*

RESPONSE D. Please see Response 30H.

COMMENT E. The commenter states, *"Many of the new casing and cementing requirements are too vague. The rule sets standards that would allow the State to cite the driller if something went wrong, as opposed to standards that could prevent problems from occurring in the first place. For example, the rules state that all cement used must 'secure the casing to the well bore' but do not require the driller to run a bond log to make sure that it actually does."*

RESPONSE E. Please see Response 15K.

COMMENT F. The commenter states, *“With regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing.*

RESPONSE F. Please see Response 1B.

COMMENT G. The commenter stats, *“And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies.”*

RESPONSE G. The civil remedies for contamination or deprivation of a fresh water source or supply are set forth in W. Va. Code § 22-6-35, and any attempt to change that procedure by Legislative rule would be invalid as contrary to the statute.

COMMENT H. The commenter states, *“Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.”*

RESPONSE H. OOG notes that both DEP’s Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation and truck traffic in order to determine appropriate regulation of this activity.

COMMENT I. The commenter states, *“The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown.”*

RESPONSE I. Please see Response 1A above.

34. COMMENTER: LINDA FOSTER

COMMENT A. The commenter states, *“Besides the toxic waste, we are told that fracking requires one- to eight-million gallons of water per well, and that there are at least twelve wells in a drilling pad. This water is coming from WV rivers and streams. Can they sustain this level of use and still yield the water we need?*

RESPONSE A. Please see Response 1D.

COMMENT B. The commenter states, *“Meanwhile, fracking will add thousands of heavily-laden, air polluting truck trips onto our fragile, dangerous, taxpayer-maintained highways.”*

RESPONSE B. OOG notes that it does not have any jurisdiction over trucks traveling on the State’s roads and highways; such authority resides with the West Virginia Public Service

Commission and the West Virginia Department of Transportation. As such, this comment is outside the scope of the proposed rulemaking and, therefore, no response is required.

35. COMMENTER: THERESA HIGGINS

COMMENT A. The commenter states, *"There are no limitations on the maximum amount of fresh water that can be taken from our lakes, streams and reservoirs. We need limitations for the whole stream and not just per permit. The average well in WV takes 5.5 million gallons of water."*

RESPONSE A. Please see Response 1D.

COMMENT B. The commenter states, *"Flaring and excess [sic] discharges from gas well frack sites should meet the CLean Air [sic] Act standards and should be filtered or avoided altogether."*

RESPONSE B. OOG notes that both DEP's Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation and truck traffic in order to determine appropriate regulation of this activity.

COMMENT C. The commenter states, *"Sewer permits for onsite worker habitation should be left in local government hands and they should be responsible for compliance. There are too few inspectors to manage all aspects of the permit regulations."*

RESPONSE C. This comment is outside the scope of the proposed rulemaking and the jurisdiction of OOG or the DEP and, therefore, no response is required.

COMMENT D. The commenter states, *"Cementing should be extended to a 24 hour not eight hour period."*

RESPONSE D. Please see Response 8K.

COMMENT E. The commenter states, *"We need stronger and clearer language in the identification of methods used to minimize adverse effect on aquatic life. The ruling is too vague."*

RESPONSE E. Please see Response 5A.

COMMENT F. The commenter states, *"The distance from drinking water sources (private water wells) should be increased to at least 1500 feet."*

RESPONSE F. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT G. The commenter states, *"At no place in this proposed rule is there any*

mention of protecting aquifers and drinking water. This needs to be taken care of FIRST not made another report for the drillers to fill out. It needs intense and strict regulation."

RESPONSE G. Please see Responses 12B and 23C.

COMMENT H. The commenter states, *"The last section on Public Notice Procedures has a good point in requiring [sic] 30 day public notice. However, not every one reads the local small town paper. Gas well permits should include written notification to adjacent landowners as well as surface owners where wells are being placed. It also should be a 30 day notice."*

RESPONSE H. Please see Response 12H above.

36. COMMENTERS: LETTY BUTCHER; DANETTE CONDON; HEDDA HANING; LINDA KJELDGAARD; DANIEL ROMM; STEVE RUNFOLA

COMMENT A. The commenter states, *"The rules are of limited applicability and apply only to horizontal wells. The rule does not apply to vertical Marcellus Shale wells (like the one shown on the WV-SORO website) that use the amount of water and disturb the amount of land that the rule would otherwise cover and there are no improvements for the many conventional wells that are still drilled."*

RESPONSE A. Please see Response 12A.

COMMENT B. The commenter states, *"The Rule still allows drillers to sneak out onto landowners' property and survey well sites and well roads without contacting the Surface Owners first. It does not give Surface Owners notice of plans to drill the wells until the permit is actually filed, and then there is only 15 days to file comments (this 15 days includes the time it is still in Charleston and then the time the Permit is in the mail to the Surface Owner). There is no hearing on the permit application, and no power for the State to help a surface owner whose home or future home site is now going to be a well site."*

RESPONSE B. Notice to surface owners and the amount of time they have to comment are set forth in W. Va. Code § 22-6-9, and any attempt to change those processes by Legislative rule would be invalid as contrary to the statute..

COMMENT C. The commenter states, *"The Rule also continues to allow gas wells to be drilled within 200 feet of peoples' homes."*

RESPONSE C. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT D. The commenter states, *"Section 4.3 the Rule also states, 'or managed on-site in a manner otherwise approved by the Secretary,' and there is no indication of what the Secretary may approve." and "Approved solid waste facility' is a complete mystery, and 'or managed on-site in a manner otherwise approve by the Secretary' Sounds like it means 'burial*

Pit.’ ‘Approved by the Secretary’ is not acceptable. The Secretary is a political appointee who takes orders from elected politicians who depend on campaign donations.”

RESPONSE D. OOG notes that an “approved solid waste facility” is one that has a permit from DEP’s Division of Water and Waste Management to operate a solid waste facility pursuant to W. Va. Code §22-15-5(b). Please also see Response 8C and 8J above.

COMMENT E. The commenter states, *“Section 4.2.a. Within forty-eight (48) hours, but no less than twenty-four (24) hours, prior to the withdrawal of water, the operator shall identify the location of withdrawal by latitude and longitude; verify, using methods deemed acceptable by the Secretary, that sufficient flow exists to protect designated uses of the stream; and provide notice to the Office as prescribed by the Secretary; ‘using methods acceptable to the Secretary’ is not acceptable.*

RESPONSE E. Please see Responses 8C.

COMMENT F. The commenter states, *“3.3.f.2. A demonstration, using methods acceptable to the Secretary (There’s that unacceptable phrase again), that sufficient in-stream flow will be available immediately downstream of the point of withdrawal. Sufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal.”*

RESPONSE F. Please see Response 8C.

COMMENT G. The commenter states, *“The requirement that an engineer must design the well pad if it is more than 3 acres is a good thing. However, having an engineer supervise the construction and reclamation would help ensure that the soil erosion and sediment control plans are followed since there are too few inspectors to oversee these activities. The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves.”*

RESPONSE G. Please see Response 30H.

COMMENT H. The commenter states, *‘Many of the new casing and cementing requirements are too vague. The rule sets standards that would allow the State to cite the driller if something went wrong, as opposed to standards that could prevent problems from occurring in the first place. For example, the rules state that all cement used must “secure the casing to the well bore...” but do not require the driller to run a bond log to make sure that it actually does.’*

RESPONSE H. Please see Response 15K.

COMMENT I. The commenter states, *“With regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing.*

RESPONSE I. Please see Response 1B above.

COMMENT J. The commenter states, *“And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies.”*

RESPONSE J. The civil remedies for contamination or deprivation of a fresh water source or supply are set forth in W. Va. Code § 22-6-35, and any attempt to change that procedure by Legislative rule would be invalid as contrary to the statute.

COMMENT K. The commenter states, *“Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.”*

RESPONSE K. Please see Response 15F.

COMMENT L. The commenter states, *“The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown. Language should cover public notice for all wells, not just within municipalities.”*

RESPONSE L. Please see Response 1A above.

COMMENT M. The commenter states, *“3.3.d. The planned management and disposition of wastewater from fracturing, stimulation, and production activities; The specific place of wastewater disposal should also be in the water management plan. They are going to run out of places to put this waste fluid (which obviously is NOT just “wastewater”). Restrictions should be tightened.”*

RESPONSE M. Please see Response 8A.

COMMENT N. The commenter states, *“3.4.b. Well site safety meetings. – Safety meetings shall be held on-site weekly, at a minimum, and specifically prior to the beginning of drilling, completion, and work-over operations. Meeting attendance shall be logged, and the log shall be maintained on site. A check-in and check-out list of all personnel shall be maintained during the drilling and completion phases of the operation. Personnel attending well site safety meetings should include subcontractors and truckers (or some other provision for training truckers must be found). At each well site safety meeting all workers, including truck drivers, should be provided with and keep in their possession the up-to-date phone numbers to call in case of any emergency. Spills from trucks, whether on the site or in transit, are emergencies.”*

RESPONSE N. Please see Response 8E.

COMMENT O. The commenter states, *“4.1.b. Casing, sealing or otherwise managing wells to keep fluids or natural gas from entering ground or surface waters; “or otherwise*

managing wells” – does this phrase open the door to anything? Drillers that continue to use hay bales to stop sediment of chemical spills are not to be trusted to decide how to manage fluids.”

RESPONSE O. Please see Response 8G.

COMMENT P. The commenter states, *“4.1.c. Conducting oil and gas operations using BMPs (Best Management Practices) so as to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to stream flow or runoff outside the permit area, but in no event shall the contributions be in excess of requirements set by applicable State or federal law; “to the extent practicable” is an unacceptable loophole.”*

RESPONSE P. Please see Response 8H.

COMMENT Q. The commenter states, *“4.4.a.4. Casing shall not be disturbed for a period of at least eight hours after the completion of cementing operations; This is the most critical function in protecting groundwater. An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured. Is there not a test to determine when the cement has set?”*

RESPONSE Q. Please see Response 8K.

37. COMMENTER: BARRY YATES & LAURINE YATES

COMMENT A. The commenter states, *“For instance, wells being drilled within 200 feet of someone’s house is not fair.”*

RESPONSE A. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT B. The commenter states, *“Where the frack fluid full of toxic chemicals goes needs to be seriously addressed.”*

RESPONSE B. Please see Response 5D.

38. COMMENTER: MS. KAIA

COMMENT The commenter states, *“These rules allow a new well within 200 feet of a dwelling. At this time, I live with a well that is about a quarter mile from my house. Not only is it incredibly difficult to live through the time when the machinery and trucks are going in and out to drill the location, but I must breathe the toxic fumes and now my groundwater is neither pure nor plentiful.”*

RESPONSE. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

39. COMMENTER: CINDY ASHWORTH

COMMENT A. The commenter states, *"The 200 foot rule from dwelling to well pad is completely inadequate. This should be at least 500 -1000 feet."*

RESPONSE A. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT B. The commenter states, *"Inspectors need to be trained specifically to deal with this process; to know whether or not cement casing has cured; to determine if correct processes have been followed and they need to be independent of the energy companies."*

RESPONSE B. OOG notes that inspector training is an administrative matter that does not go to the substance of the rule, and therefore, no response is required.

COMMENT C. The commenter states, *"Energy companies must pay permit fees commensurate with the potential wealth they are extracting; fees that will allow for the hiring, training and development of a sufficient number of inspectors."*

RESPONSE C. Permit fees are authorized by W. Va. Code § 22-6-2(c)(10), and any attempt to change those fees by Legislative rule would be invalid as contrary to the statute.

40. COMMENTER: L. DADISMAN

COMMENT A. The commenter states, *"Allowing a gas well within 200 ft of a house or school is dangerous and reckless. These needsto [sic] be lengthened to a safe distance or in some cases not allowed in the area at all."*

RESPONSE A. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT B. The commenter states, *"Drinking water is precious and to allow undocumented fluids to expand into the underground aquifers is a criminal act. These fluids need to be of a safe chemical makeup to humans. These methods need to be tested and studied to be safe before permanately [sic] destroying life supporting water."*

RESPONSE B. Please see Responses 12B and 23C.

COMMENT C. The commenter states, *"Wastewater should be treated and all harmful chemicals removed before any reintroduction intowater [sic] supplies. The amount of water withdrawal should be halted if effecting neighboring citizens. Notices of water withdrawal should be given to citizens within a large area around withdrawal sites."*

RESPONSE C. Please see Response 5C.

COMMENT D. The commenter states, *“Pits holding wastewater should be of a flood resistant form protecting surrounding areas.”*

RESPONSE D. OOG notes that the construction standards of large volume pits and impoundments are set forth in the Legislative rule entitled Oil and Gas Wells and Other Wells at 35 CSR 4 § 21, and any attempt to modify those standards in this proposed rule would be invalid as contrary to an already existing Legislative rule.

COMMENT E. The commenter states, *“Air monitoring at well sites and automatic shut off valves need to be implemented against harmful gases.”*

RESPONSE E. OOG notes that both DEP’s Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation and truck traffic in order to determine appropriate regulation of this activity.

COMMENT F. The commenter states, *“Citizens rights to inspect areas within 100ft of wells, pits, etc. constructed on their land. A citizens [sic] right to stop access on their land until a major problem with safety or pollution has been reconciled.”* and *“Landowners right to approve detailed plans for the site setup. Landowner’s right to approve the road entrance to the well site.”* and *“Landowners remediation rights and final approval of well site setup plans by landowners.”*

RESPONSE F. These comments are outside the scope of the proposed rulemaking, and, therefore, no response is required.

COMMENT G. The commenter states, *“Notification within a reasonable amount of time to landowners of any immediate danger both during and after the process of drilling.”*

RESPONSE G. OOG notes that subsection 3.4 of the proposed rule mandates, “All applications for well work permits involving well sites that will disturb three acres or more of surface . . . shall be accompanied by a well site safety plan to address measures to be employed by the operator for the protection of persons on the site, as well as the general public and the environment.” (emphasis added)

COMMENT H. The commenter states, *“Trucks hauling materials to sites must not convoy within 300ft of each other and must not transfer mud and rock onto roadways.”*

RESPONSE H. OOG notes that it does not have any jurisdiction over trucks traveling on the State’s roads and highways; such authority resides with the West Virginia Public Service Commission and the West Virginia Department of Transportation. As such, this comment is outside the scope of the proposed rulemaking and, therefore, no response is required.

41. COMMENTER: MARILYN MCGEORGE

COMMENT A. The commenter states, *“The rules should apply to vertical Marcellus Shale wells that use the amount of water and disturb the amount of land that the rule would otherwise cover.”*

RESPONSE A. Please see Response 12A above.

COMMENT B. The commenter states, *“3.3.d - The specific place of wastewater disposal should also be in the water management plan. If there is a shortage of places to dispose of wastewater there should be a way to check that the plan is being followed.”*

RESPONSE B. Please see Response 8A.

COMMENT C. The commenter states, *“3.3.f.2 - “using methods acceptable to the Secretary” is not acceptable. The secretary is a political appointee who takes orders from elected politicians who depend on campaign donations. Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists.”*

RESPONSE C. Please see Response 8C.

COMMENT D. The commenter states, *“3.4.b - Personnel attending well site safety meetings should include subcontractors and truckers (or some other provision for training truckers must be found). At each well site safety meeting all workers, including truck drivers, should be provided with and keep in their possession the up-to-date phone numbers to call in case of any emergency.”*

RESPONSE D. Please see Response 8E.

COMMENT E. The commenter states, *“4.1.a - “using methods acceptable to the Secretary” is not acceptable (see 3.3.f.2 above).”*

RESPONSE E. Please see Response 8C.

COMMENT F. The commenter states, *“4.1.b - “or otherwise managing wells” is not acceptable. Methods for managing fluids should be specified. Drillers who continue to use hay bales to stop sediment of chemical spills are not to be trusted to decide how to manage fluids.”*

RESPONSE F. Please see Response 8G.

COMMENT G. The commenter states, *“4.1.c - “to the extent practicable” is an unacceptably vague phrase opening the door to sloppy use of, or ignoring, BMPs to control runoff. It should be eliminated.”*

RESPONSE G. Please see Response 8H.

COMMENT H. The commenter states, *“4.2.a - “using methods acceptable to the Secretary” is not acceptable (see 3.3.f.2 above).”*

RESPONSE H. Please see Response 8C.

COMMENT I. The commenter states, *“4.3 - “approved solid waste facility” is a complete mystery, and “or managed on-site in a manner otherwise approved by the Secretary” means continued pit burial. Drill cuttings and drilling mud are likely to contain toxins and radioactive materials. They should be tested, and if they contain hazardous materials, they should be disposed of in a hazardous waste facility. In no case, should they be buried on-site.”*

RESPONSE I. Please see Response 14B.

COMMENT J. The commenter states, *“4.4.a.4 - Proper curing of casing cement is the most critical function in protecting groundwater. An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured.”*

RESPONSE J. Please see Response 8K.

COMMENT K. The commenter states, *“5.1 - Public notice should be provided for all wells, not just within municipalities.”*

RESPONSE K. Please see Response 1A above.

42. COMMENTER: PATRICIA JACOBSON

COMMENT A. The commenter states, *“With regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing.*

RESPONSE A. Please see Response 1B above.

COMMENT B. The commenter stats, *“And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies. This needs to be addressed.”*

RESPONSE B. The civil remedies for contamination or deprivation of a fresh water source or supply are set forth in W. Va. Code § 22-6-35, and any attempt to change that procedure by Legislative rule would be invalid as contrary to the statute.

COMMENT C. The commenter states, *“I am also quite concerned about air quality. There is nothing in the rule to require a study of the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.”*

RESPONSE C. OOG notes that both DEP’s Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation and truck traffic in order to determine appropriate regulation of this activity.

COMMENT D. The commenter states, *"The rule devalues those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. The rule should cover public notice for all wells, not just within municipalities."*

RESPONSE D. Please see Response 1A above.

43. COMMENTER: SARA WILTS

COMMENT. The commenter states, *"I would like to see stronger protections for communities and the environment from disposal of the drilling waste. Currently it is being dumped in sanitary landfills. I am concerned that this waste can contain arsenic, benzene, lead and radioactive materials and that it should be treated as hazardous waste."*

RESPONSE. OOG notes that federal regulations exempt drilling wastes from the definition of hazardous waste (see, 40 C.F.R. 261.4.b.5). In West Virginia, drill cuttings are considered a "special waste," which can only be disposed of in landfills with the written approval of the Secretary of DEP. In order to receive that approval, the landfill operator must agree to perform laboratory analyses on the cuttings prior to allowing their disposal at the landfill. DEP requires testing for TCLP metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), total petroleum hydrocarbons, and percent solids. If the test results are not in the acceptable range, the landfill cannot accept the cuttings. If the test results indicate that the cuttings may contain hazardous waste, they must be disposed of in an approved hazardous waste landfill and not the regular landfill. Only if the test results are in the approved range may the cuttings be disposed of in the "sanitary landfills." West Virginia currently has several landfills that are authorized by the Secretary to accept drilling waste.

44. COMMENTER: PEGGY DAWSON

COMMENT A. The commenter states, *"Marcellus rules need to apply to all wells - horizontal and vertical."*

RESPONSE A. Please see Response 12A above.

COMMENT B. The commenter states, *"Surface owners should be given a minimum of three (3) months notice of plans to drill wells. These are their homes that will forever be impacted, for pity's sake! Give them some time to try to come up with a plan!"*

RESPONSE B. Notice to surface owners and the amount of time they have to comment are set forth in W. Va. Code § 22-6-9, and any attempt to change those processes by Legislative rule would be invalid as contrary to the statute.

COMMENT C. The commenter states, *"Wells should NOT be near a home. Current rules allow closer than one football field."*

RESPONSE C. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT D. The commenter states, *"In no way should any provision be subject to 'Secretary approval'. Politically independent scientists should be making these decisions."*

RESPONSE D. Please see Response 8C.

COMMENT E. The commenter states, *"Well sites, access roads, and pipelines should all be inspected and supervised by engineers, not just the well sites."*

RESPONSE E. Please see Response 13B.

COMMENT F. The commenter states, *"Water supplies need to be tested for chemicals and chemical compounds used in hydraulic fracturing."*

RESPONSE F. Please see Response 1B above.

COMMENT G. The commenter states, *"Air quality studies need to be included and implemented."*

RESPONSE G. OOG notes that both DEP's Division of Air Quality and the federal Environmental Protection Agency are undertaking studies of air emissions associated with well pad operation and truck traffic in order to determine appropriate regulation of this activity.

COMMENT H. The commenter states, *"All people, whether within city limits or in rural areas, should be publicly notified of the siting of industrial drill sites prior to drilling."*

RESPONSE H. Please see Response 1A above.

COMMENT I. The commenter states, *"Wastewater disposal of all wells should be specifically stated."*

RESPONSE I. Please see Response 5D.

COMMENT J. The commenter states, *"Remove any statements of 'to the extent practicable.' This is a completely unenforceable and unacceptable loophole."*

RESPONSE J. Please see Response 8H.

COMMENT K. The commenter states, *"Require inspectors to be onsite during the entire time cement is curing for the casing. This needs to be strictly supervised."*

RESPONSE K. OOG notes that this comment states an administrative concern that does not go to the substance of the rule and, therefore, no response is required.

45. COMMENTER: CAROL CLEVINGER

COMMENT. The commenter states, *"Please put some regulation on the disposal of the remains (call it fill or waste) [sic] in public landfills."*

RESPONSE. Please see Response 43.

46. COMMENTER: ART GLICK

COMMENT. The commenter states, *"Nothing but an all out ban on fracking will safeguard our environment for our children and our children's children."*

RESPONSE. This comment is outside the scope of the proposed rulemaking and the jurisdiction of OOG or the DEP and, therefore, no response is required.

47. COMMENTER: ROBERT A. MERTZ

COMMENT A. The commenter states, *"I am most concerned to extent of which the regulations are at the discretion of the Secretary. There are many regulations left to be 'approved by the Secretary.' This is not an acceptable. The secretary is a political appointee who takes orders from elected politicians who depend on campaign donations."*

RESPONSE A. Please see Response 8C.

COMMENT B. The commenter states, *"There is also too much vague language. For example 'Approved solid waste facility' is not well defined. Who approved, What?"*

RESPONSE B. Please see Response 14B.

48. COMMENTER: MARK BLUMENSTEIN

COMMENT A. The commenter states, *"Drilling within 200 ft of a dwelling or out buildings is unacceptable . Any well sight must be out of sight of a residence and farm buildings. Also sighting must take into account sound from such sights."*

RESPONSE A. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

COMMENT B. The commenter stats, *"Drill rules must be subject to any well being drilled no matter if it's a vertical Marcellus or a horizontal well for both require the same amount of safety procedures and cause the same amount of noise and disturbance of soils overburden and contamination issues."*

RESPONSE B. Please see Response 12A.

COMMENT C. The commenter states, *"There should be more than a 15 day comment period and more notice when a permit is planned and a site is selected to comment."*

RESPONSE C. Notice to surface owners and the amount of time they have to comment are set forth in W. Va. Code § 22-6-9, and any attempt to change those processes by Legislative rule would be invalid as contrary to the statute.

COMMENT D. The commenter states, *"All drill by products , ie mud, tailings , liquids MUST to disposed of in a licensed facility!"*

RESPONSE D. Please see Response 8J.

COMMENT E. The commenter states, *"Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists before any water is taken from a river or a stream."*

RESPONSE E. Please see Responses 8C and 17C.

COMMENT F. The commenter states, *"An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured. Is there not a test to determine when the cement has set?"*

RESPONSE F. Please see Response 15K.

49. COMMENTER: GARY LOAR

COMMENT. The commenter states, *"If you want to protect the people and environment you need to pass regulations, like no wells within 2500 feet of surface water or 1500 feet of a home."*

RESPONSE. The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

50. COMMENTER: DAVE CASSELL

COMMENT A. The commenter states, *"I suggest that flow measurements be taken, and recorded at schedule intervals. This info could then be made available to those responsible for the withdrawal. Decisions as to what the safe points are would have to be incorporated into the procedure. This decision to allow withdrawals must be made on conditions at the withdrawal point. The present system of looking at a map of streams in nearby locations and basing decisions is not at all adequate."*

RESPONSE A. Please see Responses 8C, 17B, and 17C.

COMMENT B. The commenter states, *"Spills other incidents must have formalized procedures in place for investigation, follow-up and reporting to the public. I suggest that a database be constructed and added to the WVDEP web site for this purpose. Details of the incident, sample findings, contents of a spill, remediation reports could be centralized in one location and made available to the public. At this point, one finds that after the spill or incident is reported all contact and communication is lost."*

RESPONSE B. OOG notes that its Legislative rule entitled Miscellaneous Water Pollution Control Rules, which has been in effect since June 1, 1991, requires all operators, regardless of the type of well they operate, to report any spill to the Office of Oil and Gas immediately (see, 35 C.S.R. 1 § 3). OOG further notes that DEP has procedures in place across its divisions and program offices to respond to and investigate spills.

51. COMMENTER: LETTY BUTCHER

COMMENT: The commenter states, *"WV Code 22-6-21 states "no oil or gas well shall be drilled nearer than two hundred feet from an existing water well or dwelling without first obtaining the written consent of the owner of such a water well or dwelling". [sic] No mention from the edge of a gas well pad." and "The WVDEP did not address in its Emergency Rules about expanding the distance between a gas well and a dwelling or private water source such as a water well, spring or surface water body" and "I propose that no less than 1000 feet be considered as a distance from the edge of the gas well pad and a dwelling an no less than 1000 feet be considered as a distance from the edge of the gas well pad and private water sources like a water well, spring and water surface bodies."*

RESPONSE: The site restrictions for oil or natural gas wells in relation to existing water wells or dwellings are set forth in W. Va. Code § 22-6-21, and any attempt to change those restrictions by Legislative rule would be invalid as contrary to the statute.

52. COMMENTER: GEORGE MONK & MOLLY SCHAFFNIT

COMMENT A. The commenter states, *"We take issue with the new regulation's exclusivity to horizontal wells and limitation to those sites of 3.5 acres or more. While we believe that these larger sites and horizontal wells require specific regulatory attention, the way this rule is written excludes vertical wells or those sites with smaller footprints, which are of equal concern."*

RESPONSE A. Please see Response 12A.

COMMENT B. The commenter states, *"This section requires an erosion and sediment control plan using the so-called Best Management Practices of the Office's obsolete Erosion and Sediment Control Field Manual (cited hereafter as Field Manual). If the Office and Department are concerned about erosion and sedimentation of the state's waters, then the DEP's Division of Water's erosion and sediment control manual should be used. The Office of Oil and Gas has a somewhat better revision of the Field Manual, but that is not linked to on the Oil and Gas forms page on the Office's website."*

RESPONSE B. Please see Response 5A.

COMMENT C. The commenter states, *“Nowhere in the regulation is there a limitation as to the relation of the edge of the pad to surface water. This is a serious fault.”*

RESPONSE C. OOG shares the commenters’ concerns about possible erosion from the well site, but believes the requirements set forth in the erosion and sediment control plan, the site construction plan, and the water management plan will provide the necessary protections for the State’s waters and lands adjacent to horizontal well operations.

COMMENT D. The commenter states, *“Nowhere in the regulation is there a requirement for a well-vegetated buffer zone between disturbed areas and surface water. This is another serious fault.”*

RESPONSE D. Please see Response 52C.

COMMENT E. The commenter states, *“Nowhere in the regulation is there a requirement for a berm around the perimeter above downslope grades. This is required to limit the extent of spills. Site drainage must be to an area that can be sequestered in the case of a spill.”*

RESPONSE E. OOG notes that its Legislative Rule entitled Miscellaneous Water Pollution Control Rules, which has been in effect since June 1, 1991, requires “[a]t each production facility, which includes all wells, flowlines, separation equipment, storage facilities, injection facilities, and auxiliary non-transportation-related equipment and facilities, all operators shall have appropriate containment and/or diversionary structures or equipment to prevent discharged oil or other pollutants from reaching the waters of the state.” 35 C.S.R. 1 § 7.

COMMENT F. The commenter states, *“Nowhere in this regulation or the Well Site Safety Plan is there rule or guidance regarding the proper storage of chemicals on site, their handling, and state and federal secondary containment requirements.”*

RESPONSE F. OOG notes that the occupational health and safety of an operator’s employees are outside of its jurisdiction and outside the scope of the proposed rulemaking and, therefore, no response is required.

COMMENT G. The commenter states, *“3.1: Certification by a professional engineer for larger sites is a good requirement but if the Office’s guidance is the Field Manual then little good can come from the provision. Construction of roads and pipelines is a serious concern that is ignored by this regulation.”*

RESPONSE G. Please see Response 30H.

COMMENT H. The commenter states, *“3.1.b: The drawings submitted to the Office must include both plan and elevation, not plan alone. The elevation drawing is important for those sites, especially, where water storage for hydraulic fracturing is at a different location above the*

pad where the well is sited. The professional engineer must consider the hydraulic factors in these situations, so that, if necessary, different couplings and valves be specified in the water delivery system."

RESPONSE H. OOG notes that operators are already required to submit topographic maps as part of their well work permit applications (*see*, 35 C.S.R. 4 § 9.2.i). The requirements set forth in subdivision 3.1.b of the proposed rule are requirements in addition to those promulgated in 35 C.S.R. 4, not in lieu of them.

COMMENT I. The commenter states, "*3.2.b.6: Both fill and cut slopes must have the proper slopes. We've noted that cut slopes are often nearly vertical, collapsing during drilling or later. While fill slope integrity is an important issue, cut slope integrity is just as important.*"

RESPONSE I. OOG notes that the cited paragraph is meant to address the stated concern.

COMMENT J. The commenter states, "*3.3: The regulation doesn't cover dewatering structures and should. Dewatering structures must have the approval of the Division of Water.*"

RESPONSE J. OOG does not know what the commenter means by "dewatering structure" and, therefore can provide no response to this comment.

COMMENT K. The commenter states, "*3.3.e: The listing of products used for fracturing a well must include the quantities per 1,000 gallons of water. There are certain products such as glutaraldehyde which, by Federal regulation, require that personal safety equipment be worn during use. There are other products which require special handling to prevent environmental contamination such as dipropylene glycol monomethyl ether. The state's allowing the burial of wastes on site must be forbidden when these and other chemicals are present.*"

RESPONSE K. Please see Responses 8J and 11A.

COMMENT L. The commenter states, "*The well control section has serious lapses. Blowout preventers require hydraulic pressure to work. In a loss of control situation, power to the drill rig's hydraulic system must be shut off to prevent explosion. All wells, therefore, require a separate auxiliary hydraulic system for the blowout preventer placed a distance from the well (at least 50 feet).*"

RESPONSE L. OOG notes that the comment states an administrative concern that does not go to the substance of the rule and, therefore, no response is required.

COMMENT M. The commenter states, "*In this state operators have lost control of wells while drilling out fracture plugs. A snubbing unit should be used in this process. Some operators/crew members are not aware that a blowout preventer's stripper rubber is unable to take pressure. A stripper rubber cannot be used to control a well.*"

RESPONSE M. OOG notes that the comment states an administrative concern that does not go to the substance of the rule and, therefore, no response is required.

COMMENT N. The commenter states, “4.1.c: It is extremely troubling to read that the Office and DEP condones sediment in the state’s waters. Constructed properly and with the right sediment control, no sediment (or pollution) should leave a construction site.”

RESPONSE N. Please see Response 8H.

COMMENT O. The commenter states, “4.2.c.1: Flowback/produced water volume, along with products used for fracturing individual wells, must be given to the Office and made public on the Office’s website.”

RESPONSE O. Please see Response 15I.

COMMENT P. The commenter states, “4.2.c.1.A and B: If there is a meaningful difference [between fracture flowback and produced water], the regulation must specify this difference, otherwise fracture flowback is produced water.”

RESPONSE P. OOG notes that, historically, there has been a distinction between flowback and produced water. This difference has been recognized in relation to how those fluids may be disposed. For the purposes of this proposed rule, OOG will adhere to the definitions of flowback and produced water currently being used by DEP’s Division of Water and Waste Management regarding its water use reporting requirement.

COMMENT Q. The commenter states, “4.2.c.2: The disposal of solid and liquid waste must be reported to the Office, both volume and name and location of the disposal site.”

RESPONSE Q. Please see Response 15I.

COMMENT R. The commenter states, “4.3: There are a number of reasons to prohibit the burial of solid waste on a wellsite.”

RESPONSE R. Please see Response 8J.

COMMENT S. The commenter states, “A public notice is one of the requirements that must be made of operators. Operators must provide notice (public and specific) when a well is drilled through or near (for instance, 5 miles) an underground municipal drinking water source. Specific notice must be given to governing official (mayor) and municipal water manager. Daily monitoring for, at a minimum, metals, TDS, uranium, radium 226 and 228, and volatile organics (including benzene, ethylbenzene, toluene, xylenes, acrylonitrile, and methane) must be performed at the operator’s expense until 6 months after completion of the well and quarterly thereafter. Operators must provide notice (public and specific) when a well is drilled within a municipal water supply’s surface water intake’s watershed. Specific notice must be given to governing official (mayor) and municipal water manager. Daily monitoring for, at a minimum, metals, TDS, uranium, radium 226 and 228, and volatile organics (including benzene, ethylbenzene, toluene, xylenes, acrylonitrile, and methane) must be performed at the operator’s expense if the well is within 1 mile of intake, weekly otherwise, until 6 months after completion of

the well and quarterly thereafter. Operators drilling within 1 mile of schools, hospitals and business districts must provide public notice and specific notice to school boards and other administrating officials affected."

RESPONSE S. Please see Response 1A.

53. COMMENTERS: RICHARD S. BAILEY; MARK BRUNS; CLOGGRMAN@AOL.COM ; JOHN COBB; JOYCE DOUCETTRE; ART GLICK; ALAN HARPER; CHARLES HUDSON; JESSE JOHNSON; ADRIAN KETTERING; DONNA MARTIN; CARLI MARENECK; DANIEL MUSICK; HARRIETT PARSONS; DEIRDRA SCANLON; DAVE SHIELDS; JERRY TIMBROOK

The commenters shared general concerns about natural gas drilling and drilling into the Marcellus shale, but such comments did not specifically address any provisions of the rule and, therefore, no response is required.



107 Hale Street, Suite 202
Charleston, WV 25301
Phone: 304-720-3299

September 13, 2011

RECEIVED
Office of Oil & Gas

SEP 15 2011

WV Department of
Environmental Protection

Department of Environmental Protection
Office of Oil and Gas
601 57th Street
Charleston, WV 25304

Re: 35CSR8 – Horizontal Well Development Rule

In §35-8-3.1 and in §35-8-3.2 the phrase “in accordance with plans certified by, a West Virginia registered professional engineer” appears when addressing Erosion and Sediment Control Plans and the Site Construction Plan. As President of the West Virginia Society of Professional Surveyors, I ask that the phrase be amended in each section to read “in accordance with plans certified by, a West Virginia registered professional engineer or West Virginia licensed professional surveyor.”

Many West Virginia professional surveyors are currently involved in a wide range of WVDEP permitting activities. These proven experts should not be excluded from projects involving horizontal well planning and construction. This legislation needs to take advantage of their past experience and allow them to apply that expertise in future areas of natural resource development.

Please do not hesitate to contact me if you have specific questions or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jack R. Booda'. The signature is fluid and cursive, with a large initial 'J'.

Jack R. Booda
President-WVSPS

Mullen-Thaxton, Jennifer L

From: Jack Booda <jackbooda@westlake-wv.com>
Sent: Tuesday, September 13, 2011 5:50 PM
To: DEP Comments
Cc: Mullen-Thaxton, Jennifer L
Subject: 35CSR8 Emergency Rules comment

35CSR8 – Horizontal Well Development Rule

In §35-8-3.1 and in §35-8-3.2 the phrase “in accordance with plans certified by, a West Virginia registered professional engineer” appears when addressing Erosion and Sediment Control Plans and the Site Construction Plan. As President of the West Virginia Society of Professional Surveyors, I ask that the phrase be amended in each section to read “in accordance with plans certified by, a West Virginia registered professional engineer or West Virginia licensed professional surveyor.”

Many West Virginia professional surveyors are currently involved in a wide range of WVDEP permitting activities. These proven experts should not be excluded from projects involving horizontal well planning and construction. This legislation needs to take advantage of their past experience and allow them to apply that expertise in future areas of natural resource development.

Please do not hesitate to contact me if you have specific questions or require additional information.

Thank you for your time and attention,

Jack R. Booda

Westlake, Inc.

811-A Main St. East

Oak Hill, WV 25901

304-469-9300

The information contained in this communication is intended solely for the use of the individual or entity to whom it is addressed and others authorized to receive it. It may contain confidential or legally privileged information. If you are not the intended recipient you are hereby notified that any disclosure, copying, distribution or taking any action in reliance on the contents of this information is strictly prohibited and may be unlawful. If you have received this communication in error, please notify us immediately by responding to this email and then delete it from your system. Westlake, Inc. is neither liable for the proper and complete transmission of the information contained in this communication nor for any delay in its receipt.

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, September 14, 2011 8:55 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on Reg's

From: mtbikewv@comcast.net [mailto:mtbikewv@comcast.net]
Sent: Sunday, September 11, 2011 9:25 PM
To: DEP Comments
Subject: Comments on Reg's

1. **Water withdrawal** is dependent on whether or not there is sufficient flow available to replenish the stream to avoid any damage to wildlife, fish and so on. Without any method of control, the tanker operator simply backs up to the stream, hooks up and begins the process of filling their container. I suggest that flow measurements be taken, and recorded at schedule intervals. This info could then be made available to those responsible for the withdrawal. Decisions as to what the safe points are would have to be incorporated into the procedure. The decision to allow withdrawals must be made on conditions at the withdrawal point. The present system of looking at a map of streams in nearby locations and basing decisions is not at all adequate.

2. **Spills other incidents** must have formalized procedures in place for investigation, follow-up and reporting to the public. Based on my experience with a recent spill in Marion County, It appears that there are no procedures to handle these situations. I suggest that a database be constructed and added to the WVDEP web site for this purpose. Details of the incident, sample findings, contents of a spill, remediation reports could be centralized in one location and made available to the public. At this point, one finds that after the spill or incident is reported all contact and communication is lost.

I have already sent in comments on the casing and cement reg's so I will not repeat that. I'm sure you have received a number of comments on many of the other issues. I feel that the WVDEP has the expertise to properly formulate the regulations needed. I do hope you will concentrate on environmental issues and leave the land and mineral right issues to the legal folks. Do what you do best.

Thanks for the opportunity to comment
Dave Cassell
Whiteday Creek Watershed
Fairmont, WV
304-366-7248

"When we tug at a single thing in nature, we find it attached to the rest of the world."
— John Muir

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, September 14, 2011 1:30 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8

From: Chester Vaughan [mailto:plumbbob_sc@yahoo.com]
Sent: Wednesday, September 14, 2011 11:49 AM
To: DEP Comments
Subject: 35CSR8

I aske that this be amended in each section to read "in accordance with plans certified by, a West Virginia registered professional engineer or West Virginia licensed professional surveyor."

Thank you,
Chester R. Vaughan, PS
email Plumbbob_sc@yahoo.com

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, September 14, 2011 1:30 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8

From: Mike Huffman [mailto:Mike.Huffman@terraddon.com]
Sent: Wednesday, September 14, 2011 12:01 PM
To: DEP Comments
Subject: 35CSR8

To whom it may concern:

Please make sure that you include West Virginia licensed professional surveyors in the permitting process for rules concerning horizontal well drilling for natural gas resources.

Thank you,

Michael D. Huffman, P.S. (W.V.,VA.)
Terradon Corporation
425 North Jefferson Street
Lewisburg, W.V. 24901
304-645-4636

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 19, 2011 2:35 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Public comment on Marcellus regulations by Dana Light

-----Original Message-----

From: dalumina [mailto:dalumina@vtrocket.com]
Sent: Monday, September 19, 2011 12:02 PM
To: DEP Comments
Subject: Public comment on Marcellus regulations by Dana Light

September 19, 2011

To Whom it may concern,

I am a lifelong resident of West Virginia and surface owner who has had to contend with a gas line right of way over my property and gas wells placed on either side of me. Due to an attentive neighbor, my spring was spared thanks to a strong argument against one of the wells applied for immediately above my spring, fortunately the DEP water inspector advocated on behalf of my spring and the well was blocked, but had my neighbor not notified me, the well would have been permitted without my knowledge, there was no effort made by the gas company to ensure that there was no water supply in proximity to their proposed well.

The current feeding frenzy for Marcellus gas is a continuation of this state's long history of exploitation by outside forces for its mineral wealth, where the citizens benefit little, while taking numerous assaults to our social and environmental health, with the real wealth traveling out as it travels up. The regulations in place are antiquated and do not address the potential problems that the extensive horizontal hydro fractured wells bring.

Some regulations that need to be considered are:

- 1) Improved rights for surface owners including more involvement in how/where the gas company operates, fairer compensation, and a longer response time for concerns once the application is received by the DEP.
- 2) Full disclosure of all fracking components with laws to reduce and eliminate the more problematic chemicals such as benzene, hexane, and toluene.
- 3) Casings need to be deeper, ideally extending below fresh water aquifers, and their integrity verified before any fracking is allowed.
- 4) More thorough before and after water testing with a more extensive panel of tests around well sites.
- 5) Long term road maintenance funding. I have witnessed many sound roads with limited wear reduced to rubble overnight. Patching is not enough.
- 6) More monitoring of air quality at well sites.
- 7) Proper treatment/reuse of frack water with no land application of waste products, including cuttings.
- 8) Fair compensation to the state for the use of surface water with restrictions for use during drought conditions.
- 9) Placement of wells away from sensitive water ways, with improved regulations and monitoring for erosion and sediment..
- 10) Regulation and monitoring of compression stations to reduce noise and minimize health risks to those in the vicinity.

Clean water is essential to life as we know it and its protection needs to be given the highest priority, its value will eclipse fossil fuels soon enough. Please act for future generations and do not allow the profit motive to determine public policy.

Sincerely, Dana W Light

RR 1 Box 306

Thornton, WV 26440

304-265-6279

dalumina@vtrocket.com

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 19, 2011 2:35 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8

From: CHAD FREELS [mailto:chadfreels@yahoo.com]
Sent: Friday, September 16, 2011 4:38 PM
To: DEP Comments
Subject: 35CSR8

I ask that WV licensed surveyors be included in the permitting rules for horizontal well drilling.

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 19, 2011 2:36 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8

From: Mike Mars [mailto:mmars@valleyesp.com]
Sent: Friday, September 16, 2011 12:18 PM
To: DEP Comments
Subject: 35CSR8

To whom it may concern,

The WVSPS is concerned by the language included in §35-8-3.1 and in §35-8-3.2, specifically the phrase "in accordance with plans certified by, a West Virginia registered professional engineer" that appears when addressing Erosion and Sediment Control Plans and the Site Construction Plan. We have asked that this be amended in each section to read "in accordance with plans certified by, a West Virginia registered professional engineer or West Virginia licensed professional surveyor."

Per the above paragraph and having a current license as a Licensed Professional Surveyor in the State of West Virginia (License #2195) I strongly encourage the WVDEP to include Licensed Professional Surveyors in the amendment. Thanking you in advance for your consideration in the matter.

Mike

Michael W. Mars LS
Director of Surveying

VALLEY | ENGINEERING
IDEAS MADE REAL

3231 Peoples Drive
Harrisonburg, Va. 22801
Tel. # 540-434-6365, Ext. 114
Fax. # 540-433-0685
Toll Free # 1-800-343-6365

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 19, 2011 2:36 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8 Marcellus Rules

From: Jeff Adams [mailto:jemerco@yahoo.com]
Sent: Friday, September 16, 2011 9:54 AM
To: DEP Comments
Subject: 35CSR8 Marcellus Rules

Dear WVDEP,

Please don't leave licensed W.Va. Surveyors out of work regarding natural gas erosion and sediment control plans.

I am a licensed surveyor and have been surveying and preparing NPDES permits and gas well reclamation plans for over twenty years. The proposed wording in the Marcellus Emergency Rules §35-8-3.1 and in §35-8-3.2 would force my longstanding clients to turn elsewhere for work I am presently involved in.

Please amend this section to read "in accordance with plans certified by, a West Virginia registered professional engineer or West Virginia licensed professional surveyor."

Thank you for your consideration of this matter of great concern to the surveying profession in West Virginia.

Sincerely,
Jeffrey W. Adams, P.S. 791

JemerCo Land Surveying and Mapping
106 Orchard Street
Elkins, WV 26241

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 19, 2011 2:37 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: marcellus drilling

-----Original Message-----

From: ethompson1@frontier.com [mailto:ethompson1@frontier.com]
Sent: Thursday, September 15, 2011 12:52 PM
To: DEP Comments
Subject: marcellus drilling

Dear Sirs:

Please, please, please – don't let the gas company drill closer than 1000' to my home. Being from beautiful WV I retired back home four years ago, sinking all our money into a beautiful new home on twelve acres (408 ft. by 1300 ft.). We love the privacy and beauty and serene stillness along with the many deer, turkey and other fauna. But, we recently were told by our neighbor that he was negotiating with a gas company to put a well right beside our house. I take care of my 89 year old mother who has Alzheimer's disease. Mom's house is only 75 feet from our property line and my house is 50 feet from her house. The neighbor's field beside us is only 400 feet wide so we think the gas company will have to locate their well as close as possible to us. I might add that there are many hundreds of acres contiguous to our neighbor, that have signed leases with the gas company , so I'm puzzled why they want to drill out here next to our homes, when they could choose many nearby pastures for drilling and not disturb anyone.

I know we need the energy independence and I am not opposed to them responsibly going after the gas, but please - not right on top of us.

Please protect us from a well being located so close. The lights, constant noise and air pollution would be devastating. Thanks for a chance to speak my piece.

David & Evelyn & Iris Thompson
HC77 Box 336, Ballard, WV 24018
Phone 304-466-3081

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 19, 2011 2:37 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8

From: Greg Perkins [mailto:wvsurveyor@gmail.com]
Sent: Thursday, September 15, 2011 7:04 AM
To: DEP Comments
Subject: 35CSR8

I am a land surveyor that works primarily in the oil and gas field and I am concerned by the language included in §35-8-3.1 and in §35-8-3.2, specifically the phrase "in accordance with plans certified by, a West Virginia registered professional engineer" that appears when addressing Erosion and Sediment Control Plans and the Site Construction Plan. I ask that this be amended in each section to read "in accordance with plans certified by, a West Virginia registered professional engineer or West Virginia licensed professional surveyor."

Thank you

--
Greg Perkins, PS
Perkins Surveying, LLC
301 Valley Lake Drive
Kenova, WV 25530
304-453-4039

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 19, 2011 2:37 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8

From: kmoran@prosurvey.com [mailto:kmoran@prosurvey.com]
Sent: Thursday, September 15, 2011 6:46 AM
To: DEP Comments
Subject: 35CSR8

I am sending this email to request the inclusion of WV Professional Surveyors within the above subject rule. WV Professional Surveyors have been able to prepare mining applications for as long as I can remember. WV Professional Surveyors have attained the training and experience necessary to prepare E & S plans and should be included in the rule. Thank You for considering my request.

HAVE A GREAT DAY!

I provide a wide variety of services to clients/customers located in WV & PA. Please check out my website at www.prosurvey.com for a complete list. **Call me for your next project and i do take referrals and would appreciate yours.**

"The difference between try and triumph is just a little umph!"
-- Marvin Phillips

Ken Moran, P.S.
Adjunct Professor, Penn State University
Fayette-Eberly Campus (klm33@psu.edu)

Ken Moran
Professional Surveyor
kmoran@prosurvey.com
16260 Veterans Memorial Hwy.
Kingwood, WV 26537
(304)329-3000
1-800-734-7215
Mobile: (304)288-9499
F: (304)329-3763

Member: WV Society of Professional Surveyors
Pennsylvania Society of Land Surveyors
Maryland Society of Surveyors
National Society of Professional Surveyors

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Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 19, 2011 2:37 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Emergency Drilling Rules

-----Original Message-----

From: Darrell R. Dean, Jr. [mailto:ddeanjr@labyrinth.net]
Sent: Wednesday, September 14, 2011 5:01 PM
To: DEP Comments
Subject: Emergency Drilling Rules

Please amend each to these sections - 35-8-3.1 and 35-8.3.2 - to read:
"in accordance with plans certified by, a West Virginia registered professional engineer or West Virginia licensed professional surveyor"

Also, please amend section 35-8-5 to include a public notice to the many WV residents in rural areas. Residents in rural areas should have notice of any pending drilling around their homes, water sources, and access roads as well. A reading of the draft rules appears to omit notice for rural residents.

Thank you,

--
Darrell R. Dean, Jr., Ph.D., P.S.
PO Box 38
Rowlesburg, WV 26425

304-454-9458
304-612-7037 (cell)

--

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 19, 2011 2:37 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Title 35 Legislative Rules - Series 8 Horizontal Well Development

-----Original Message-----

From: biz13m5rp [mailto:sdlosh@frontier.com]
Sent: Wednesday, September 14, 2011 4:25 PM
To: DEP Comments
Subject: Title 35 Legislative Rules - Series 8 Horizontal Well Development

To Jennifer Thaxton:

In regard to the proposed Title 35 - Series 8 rules captioned above I am concerned that only engineers and not Professional Surveyors were mentioned in Section 35-8-3.1 (Erosion and Sediment Control Plan) and Section 35-8-3.2 (Site Construction Plan). Professional Surveyors are more than capable to perform such work and should be included in the wording. It would be a detriment to the Professional Surveyors of this state and to the public in general if we were omitted from these legislative rules in this regard.

Respectfully,

Stephen D. Losh, PS #674
21 Cedar Lane
Bridgeport, WV 26330
Phone: 304-677-5296

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 19, 2011 2:38 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8 Rules Governing Horizontal Well Development

From: Larry Ellis [mailto:larry.ellis@cornerstonewv.com]
Sent: Wednesday, September 14, 2011 4:12 PM
To: DEP Comments
Subject: 35CSR8 Rules Governing Horizontal Well Development

RE: 35CSR8 Rules Governing Horizontal Well Development

As a Professional Surveyor, with an underground endorsement, I am concerned by the language included in 35-8-3.1 and in 35-8-3.2, specifically the phrase "in accordance with plans certified by, a West Virginia registered profession engineer" that appears when addressing Erosion and Sediment Control Plans and the Site Construction Plan. I am urging that this be amended in each section to read "in accordance with plans certified by, a West Virginia registered professional engineer or West Virginia licensed professional surveyor." I feel certain that there are many Professional Surveyors, which are qualified to prepare such plans. Many of these individuals are current approved by the Department of Environmental Protection, Division of Mining and Reclamation to design structures closely resembling the structures outlined within these proposed rules.

Larry S. Ellis, P.S.

CORNERSTONE CONSULTING & DESIGN, INC.
137 Peach Court
P.O. Box 678, Danville, WV 25053
Office: 1-304-369-1330
Fax: 1-304-369-1331
Mobile: 1-304-784-5203
larry.ellis@cornerstonewv.com

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 19, 2011 2:38 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Well Permitting Process

From: leon@mallowsurveying.com [mailto:leon@mallowsurveying.com]
Sent: Wednesday, September 14, 2011 4:17 PM
To: DEP Comments
Subject: Re: Well Permitting Process

Dear Sirs:

As a professional surveyor in West Virginia that has worked with well surveys and well permits and know we are qualified and experienced to do the work, I ask that WV licensed professional surveyors be included in the permitting rules for horizontal well drilling.

In concern is the language included in §35-8-3.1 and in §35-8-3.2, specifically the phrase "in accordance with plans certified by, a West Virginia registered professional engineer" that appears when addressing Erosion and Sediment Control Plans and the Site Construction Plan. Myself, and other member surveyors of WVSPS are asking that this be amended in each section to read "in accordance with plans certified by, West Virginia licensed professional surveyor or a West Virginia registered professional engineer."

Sincerely,
Leon G. Mallow, PS 567

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 19, 2011 2:38 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8

From: James Roberts [mailto:JRoberts@gwmail.hkbell.com]
Sent: Wednesday, September 14, 2011 3:39 PM
To: DEP Comments
Subject: 35CSR8

Gentlemen:

As a WV registered Professional Land Surveyor, LS #1619, I am concerned by the language included in §35-8-3.1 and in §35-8-3.2, specifically the phrase "in accordance with plans certified by, a West Virginia registered professional engineer" that appears when addressing Erosion and Sediment Control Plans and the Site Construction Plan. I am asking that this be amended in each section to read "in accordance with plans certified by, a West Virginia registered professional engineer or West Virginia licensed professional surveyor."

I am asking that WV Licensed Professional Surveyors be included in the permitting rules for horizontal well drilling.

Thank you for your time and attention to this matter.

Respectfully,

James K. Roberts, PE, PLS

James K. Roberts, PE, PLS, LEED Green Assoc.
Executive Vice President
Bell Engineering
2480 Fortune Drive, Suite 350
Lexington, KY 40509
859-278-5412 voice
859-421-6216 cell
859-278-2911 fax
jroberts@hkbell.com

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 19, 2011 2:38 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: "35CSR8"

From: Roy Shrewsbury [mailto:rshrewsbury@esiwv.com]
Sent: Wednesday, September 14, 2011 2:24 PM
To: DEP Comments
Subject: "35CSR8"

To Whom it may concern,

Please consider this my public comment to the above referenced emergency rule concerning horizontal drilling. My concern is that the WV Licensed Professional Surveyor has been left out of the persons allowed for certification. I would ask that WV Licensed Professional Surveyor be inserted along with WV Registered Professional Engineer.

Any questions, please give me a call.

Thank You

Roy E. Shrewsbury, II, PS
ESIWV, PLLC
119 Appalachian Drive
Beckley, WV 25801
Office 304.255.5296
Fax 304.252.6077
rshrewsbury@esiwv.com
Cell 304.673.0245

POCAHONTAS COUNTY COMMISSION

David M. Fleming, President
Martin V. Saffer, Commissioner Jamie Walker, Commissioner

900 Tenth Avenue Marlinton, West Virginia 24954
Telephone: (304)799-6063 Fax: (304) 799-3977
Office Hours 8:30 a.m. - 4:30 p.m. Monday through Friday

FAX COVER SHEET

DATE: September 21, 2011

TO: West Virginia Department of Environmental Protection
Marcellus Shale Public Comments
601 57th Street, Southeast
Charleston, West Virginia 25304

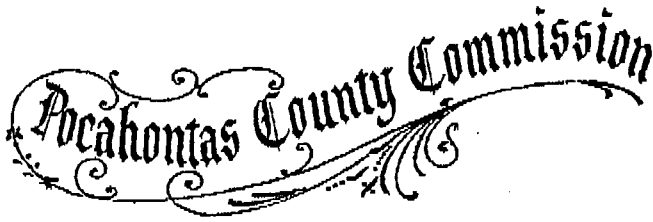
FAX NO: 1-304-926-0452

FROM: Pocahontas County Commission
Phone: 304-799-6063

IN RE: Marcellus Shale Public Comments

COMMENTS: Original letter to follow.

Thank you.



DAVID M. FLEMING
President

MARTIN V. SAFFER
Commissioner

JAMIE WALKER
Commissioner

September 20, 2011

West Virginia Department of Environmental Protection
Marcellus Shale Public Comments
601 57th Street, Southeast
Charleston, West Virginia 25304

Gentlemen:

Please accept these comments on proposed rules and legislation to regulate horizontal gas drilling in the Marcellus shale.

The Pocahontas County Commission is gravely concerned about the impacts to our pristine environment and rural culture from the impending possibility of hydrofracture drilling in the Marcellus shale underlying our borders. As well, we, as a governing body, do not want our local rights on this very local issue usurped or diminished by State government. The Commission views the present proposed rules as grossly inadequate and failing to speak to our county's unique needs.

First, we challenge the notion that our authority as a County Commission to enact our own protective rules as to public nuisance and protection of public health and safety under our general police powers are diminished by any actions, or lack thereof, that may occur by legislation or state administrative rule.

We make the following suggestions as to the proposed legislation and rules:

1. Notice and full information of any permits must be given to the County Clerk and County Commission when both first solicited and, thereafter, awarded.
2. All permits must be made subject to timely comment and review by the County Commission and public prior to award. The State Department of Environmental Protection shall be charged to comment and opine on all County concerns in each and every application for permit prior to awarding a permit.
3. Water testing shall be made by the State DEP of the area encompassed by the drilling pool and surrounding acreage equal to twice the area of the drilling pool. The testing shall be done and taxed as part of the costs for the solicited permit and the results shall be promulgated to the County and kept in a State registry created for this purpose.

Pocahontas County Commission

September 20, 2011

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4. Liability for water contamination from hydrofracture drilling operations shall have no period of limitations and lawful actions may be commenced at any time after discovery of damage and judgment for same shall be met with sufficient bonding posted and kept in force in the amount of \$5,000,000.00 for each and every well drilled.
5. Nothing in the proposed legislation shall be considered to diminish or usurp the County Commission's right and duty to ameliorate or otherwise protect the health and safety of the community or protect against public nuisance.
6. No water may be withdrawn from any water source, well or stream within the borders of the county under any hydrofracture drilling permit without review first by the County Commission, the DEP and subject to public comment. Water withdrawal shall depend on public needs and use considerations. No withdrawal may be made which endangers water resource levels or environmental concerns consequent upon water levels. Also, any recreational use of water shall also be considered before any water withdrawals are allowed.
7. Water testing shall be conducted by the DEP at each and every drilling site during every phase of drilling and the results monitored by the DEP and published to the County Commission. At any stage in which contamination is revealed, drilling shall immediately cease.
8. Any county road or bridge used to haul water for hydrofracture drilling shall be monitored by the DOH for weight and safety violations.
9. No well shall be placed within view of any State Park within the County nor be allowed within one mile of any incorporated municipality.
10. Air quality monitoring shall be conducted at each drilling site and logged and reported to the County Commission. Any results which exceed health quality and safety parameters shall result in cessation of drilling operations until corrected.
11. Water used in hydrofracture may not be disposed of or treated in the County of Pocahontas. Stored water used in hydrofracture and tailings from drilling shall be monitored by the DEP until safely removed and disposed.
12. Radiation levels of radon gas shall be monitored and reported. Any levels exceeding health quality and safety concerns shall result in cessation of drilling operations until corrected.
13. Noise levels of drilling operations will be maintained within parameters which protect public health and which are not levels or duration to be considered as a public nuisance.
14. We view the proposed fines and crimes associated with willful violation of the proposed rules as woefully inadequate and as an invitation to violate the law.

Pocahontas County Commission

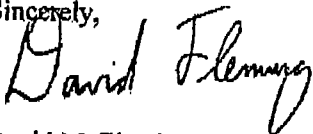
September 20, 2011

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15. We view any attempt at "forced pooling" as an egress violation of personal and property rights.

The County Commission views the danger and impacts associated with drilling as a serious concern to our rural and envious culture and valuable water. We request a moratorium on all drilling until these issues and others can be timely addressed and reasonable action taken to protect the people of Pocahontas County and West Virginia.

Sincerely,



David M. Fleming
President

Cc: Honorable Earl Ray Tomblin
West Virginia Governor
State Capitol
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305

Senator Walt Helmick
West Virginia State Senate
Room 200M, Building 1
State Capitol Complex
Charleston, West Virginia 25305

Senator Clark Barnes
West Virginia State Senate
Room 203W, Building 1
State Capitol Complex
Charleston, West Virginia 25305

William G. Hartman
West Virginia House of Delegates
Room 202E, Building 1
State Capitol Complex
Charleston, West Virginia 25305

Denise Campbell
West Virginia House of Delegates
Room 225E, Building 1
State Capitol Complex
Charleston, West Virginia 25305

Pocahontas County Commission
September 20, 2011
Page -4-

Senator Douglas E. Facemire, Co-Chair
Marcellus Shale Interim Joint Select Committee
Room 217W, Building 1
State Capitol Complex
Charleston, West Virginia 25305

Tim Manchin, Co-Chair
West Virginia House of Delegates
Marcellus Shale Interim Joint Select Committee
Room 212E, Building 1
State Capitol Complex
Charleston, West Virginia 25305

Mullen-Thaxton, Jennifer L

From: Martin, James A
Sent: Friday, September 23, 2011 1:18 PM
To: Mullen-Thaxton, Jennifer L
Subject: Fw: WVSORO Comments
Attachments: DOC092211.pdf

For our comment file.

From: McClung, Lisa A
Sent: Thursday, September 22, 2011 02:53 PM
To: Martin, James A
Subject: WVSORO Comments

**Emergency Rule Comments from WV-SORO:
Almost Nothing for Landowners, and Only Baby Steps for the Environment**

The Rules are of limited applicability -- only to horizontal wells. While most Marcellus Shale wells are drilled horizontally, some vertical Marcellus Shale wells (like the one shown on the WV-SORO web site) that use the amount of water and disturb the amount of land that the Rule would otherwise cover are still drilled, yet the Rule does not apply to them. There are absolutely no improvements for these wells or the many conventional wells that are still drilled.

For the horizontal wells the Rule is designed to cover, the Rule only takes baby steps on environmental concerns, some of which are shared by surface owners, beyond what is currently being done. Most of the provisions are things that the Manchin administration already had imposed in practice. The Rule still allows drillers to sneak out onto landowners' property and survey well sites and well roads without contacting the landowner first. It does not give surface owners notice of plans to drill the wells until the permit is actually filed, and then there is only 15 days to file comments, no hearing on the permit application, and no power for the State to help a surface owner whose future home site is now going to be a well site. The Rule also continues to allow gas wells to be drilled within 200 feet of peoples' homes. This close proximity is of particular concern for Marcellus Shale operations, given their duration, the air, noise, light and other pollution from the sites, in addition to the potential for more serious accidents like the fires and explosions that occurred last year in the Northern Panhandle.

The State's press release was misleading when it said that the Rule, "stipulates that all drill cuttings and drilling mud be disposed of in an approved solid waste facility." In Section 4.3 the Rule also states, "or managed on-site in a manner otherwise approved by the Secretary," and there is no indication of what the Secretary may approve. The only non-industry scientific study of the problems associated with on-site burial of pit waste that we know about is on a conventional well drilled in Fernow Experimental Forest. The report documented seeps and leaching into surrounding soils. Marcellus Shale wells contain more potential contaminants (including naturally occurring radioactive materials (NORMs) than conventional wells and at much greater volumes.

The only new, substantial good thing is that an engineer must design the well pad if it is more than 3 acres. (The requirement that an engineer oversee the construction was taken out of the Governor's executive order after the industry saw it. Since there are too few inspectors to oversee well site construction, that was a serious loss.) The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves. (Note that under the Rule the engineer must design the well pad to the State standards, which are in many cases less than we suspect a registered professional engineer would come up with on his or her own -- and in fact we know that the requirements for roads in the current erosion control manual (which has been under revision for more than a year but not finalized that we know of) are in many cases weaker than those for timbering roads.)

There appear to be some small improvements like saving the topsoil for reclamation. Another example is slope toe foundations and fill layering to prevent slips, though we have not had time to

determine if the standards in the rule for these are appropriate.

[Surface owners will leave the water management plan provisions in the Rule to the environmental community to evaluate. However it looks like the Rule is what has already been implemented in practice under the Manchin administration. We also note that the data regarding quantity of frac flowback waters and produced and other waters from a well only has to be kept by the operator and not reported into the State, so the public and the State will not have this information to make informed decisions on future regulations.]

Many of the other new requirements are too vague. "The [metal] casing must be of sufficient quality and condition . . ." "Centralizers must be used with proper spacing . . ." (Would the Rule say that practices do not have to be sufficient or proper? These standards would only allow the State to cite the driller if something went wrong, but do not implement standards that could be enforced, even if there were enough inspectors, to prevent problems from occurring in the first place.

The rule does say that cement should meet American Petroleum Institute standards, but then only sets a goal to "secure the casing to the well bore" It does not require the driller to run a bond log to make sure that it actually does!

Similarly, the rule only says that cement should "contain all pressures during all phases of drilling and operation", but still allows bare casing pipe in most of the vertical part of the hole. It does not require that the entire casing be cemented from the Marcellus Shale all the way to the surface -- so that intermediate gas bearing formations could create pressures in the open annuluses that, in places like Dimock, Pennsylvania, allowed gas to migrate via bad surface cement jobs into peoples' water wells.

Additionally, with regard to drinking water supplies, there are no expanded set backs or testing parameters included in the Rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies.

Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.

Finally, the rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. Rural citizens have even more trouble than city dwellers with roads and some of the other impacts of the industrialization of rural West Virginia caused by Marcellus Shale development. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown.

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Friday, September 23, 2011 1:54 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8

From: JOHNMICHAEL EVANS [mailto:jmevans@dishmail.net]
Sent: Friday, September 23, 2011 10:09 AM
To: DEP Comments
Subject: 35CSR8

Good Day Sirs,

I am writing today as a Licensed Land Surveyor, and more recently, a Professional Surveyor to address the language of 35-8-3.1 and 35-8-3.2 with regards to "Erosion / Sediment Control Plans and Site Construction Plans" for Marcellus gas sites.

I EARNESTLY request that the language of the Emergency Rules be amended to include West Virginia Licensed Professional Surveyors with WV Registered Professional Engineers in that group that may prepare and certify said plans.

Thank you for your consideration and I would be very interested in any feedback.

J. Michael Evans, PS

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 26, 2011 11:46 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: marcellus drilling

From: j corathers [mailto:jcorathers@hotmail.com]
Sent: Friday, September 23, 2011 3:37 PM
To: DEP Comments
Subject: marcellus drilling

please consider the following in formulation of regulations of marcellus drilling;

1. a moratorium on drilling until permanent regulations are enacted.
2. remove inspector approval from gas and oil board
3. abolish gas and oil board.
4. assess the gas companies for road damage and salaries for additional inspectors. the recently suggested assessments of 10,000 dollars for the first well and 5,000 dollars for additional wells seems very reasonable to me.
5. prevent companies from ruining surface owners property and require them to pay for future losses as well as the present damages incurred.
6. require the damaged property to be reclaimed to original contour, using the original top soil and reseeded to owner's wishes.
7. limit use of water from streams and lakes.
8. report source of disposal of frac water and chemicals it contains.
9. monitor and restrict noise and air pollution.

Please do the right thing for the people and State of WV. and do not permit the gas and oil industry to decimate the central and northern parts of our state the way the coal industry has done to the southern part of W.V.

thank you, Walt R. Shupe
2417 wheeler fork road
Horner W.V. 26372

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Office of Oil & Gas

SEP 26 2011

WV Department of
Environmental Protection

To whom it may concern

If you want to protect the people and environment you need to pass regulations, like no wells within 2500 feet of surface water or 1500 feet of a home. You have to protect what people have worked for. Once the water wells, or ponds and springs are polluted, you can't go back and start over.

As of August 16, 2011, there still was nothing done about the streams that were filled in in Wetzel County. Looks like Chesapeake is in charge.

This is one example, Allentown, Pa.--- A Tuesday in April, Chesapeake Energy lost control of the well and thousands of gallons of fracking fluid ran from the well, on Wednesday it was still flowing, this got into a farmers pond and a trout stream.

They are putting a well south of me on St Johns Road, Brooke County. If this example would happen here it would be in Cross Creek and the Ohio River in no time.

I was contacted by three gas companies and my answer has always been no, I will not sign because of pollution concerns, what I have is more important to me than the money. I was told by one company, you may as well take the money because what you have is probably going to get polluted anyway...WOULD YOU SIGN????????????

Every day I have to walk out around the hill to make sure some gas company 'sneak' hasn't come in and laid out it's next move.

Brooke County Resident
Gary Loar

Mullen-Thaxton, Jennifer L

From: Aluise, Thomas J
Sent: Monday, September 26, 2011 3:24 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Oil & Gas Emergency Rule

From: Boggs, Kristin A
Sent: Monday, September 26, 2011 3:23 PM
To: Aluise, Thomas J
Subject: FW: Oil & Gas Emergency Rule

Comments from the Municipal League re the Horizontal Well Rule.

Kristin A. Boggs, Esquire
General Counsel
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57th Street
Charleston, West Virginia 25304
(304) 926-0440
(304) 926-0447 (facsimile)
(304) 941-8017 (cellular)

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From: Lisa Dooley [mailto:wwml@wwml.org]
Sent: Thursday, September 22, 2011 9:27 AM
To: Boggs, Kristin A; 'Bill Raney'; 'Jackie Hallinan'; 'Karen Price'; 'Larry Harris'; 'Rick Roberts'; 'Ted Hapney'
Cc: dprice@wwml.org
Subject: RE: Oil & Gas Emergency Rule

Kristin, (all)

I will be unable to attend the meeting today; however, I am sending Debbie Price who works with me both here and during the Legislative Session.

I may be missing it somewhere, but I do not see the inclusion of water purchase from our municipal systems. This is current practice at some locations and seems to be working well.

The comment I would like to have recorded/discussed is be omitted under 35-8-4 dealing with the Operational Rules to protect Water Quality, I believe:

"The Municipal League would like to assure the continuation of water purchases being made at our municipal plants when possible with the addition of a paragraph that outlines the issue either in this section or another appropriate section in the rule. It appears the sale of water from the plants, whether potable or even a look at using sewer effluent, would be more environmental friendly than a straight withdrawal from the streams, especially during low water months."

Thanks guys. Have a good meeting. Should you need me, I am traveling but should be within cell coverage. 304-546-3685

Lisa

From: Boggs, Kristin A [<mailto:Kristin.A.Boggs@wv.gov>]
Sent: Monday, August 22, 2011 2:48 PM
To: Bill Raney; Jackie Hallinan; Karen Price; Larry Harris; Lisa Dooley; Rick Roberts; Ted Hapney
Subject: Oil & Gas Emergency Rule

Filed this afternoon.

<<DOC082211.pdf>>

Kristin A. Boggs, Esquire

General Counsel

West Virginia Department of Environmental Protection

601 57th Street

Charleston, West Virginia 25304

(304) 926-0440

(304) 926-0447 (facsimile)

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From: COPIER ROOM3048 [<mailto:DEP.COPIER.ROOM3048@WV.GOV>]
Sent: Monday, August 22, 2011 2:44 PM

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, September 26, 2011 4:01 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments/Horizontal Drilling

From: Patti Hamilton [mailto:patti@wvaco.org]
Sent: Monday, September 26, 2011 2:20 PM
To: DEP Comments
Cc: Burdette, Gary C
Subject: Comments/Horizontal Drilling

To: Mr. James A. Martin, Chief, WV DEP Oil & Gas Division
Re: Proposed Emergency Rules Governing Horizontal Well Development
From: West Virginia Association of Counties Marcellus Shale Study Committee

On behalf of our county officials who make up our Marcellus Shale Study Committee, I would like to offer the following comments:

- (1) It would be helpful for counties' emergency management and law enforcement to have vicinity maps, as referenced in 3.2.a.1. and well site safety plans/maps as referenced in 3.4 in a consistently accessible area that is the same for each county. We suggest that these plans be provided to the Office of the Sheriff and the Emergency Management office of the county. It might also be helpful to file these with the County Clerk for public access.
- (2) Public Notice Procedures, 5.1, refer to notice "within the boundaries of any municipality." We suggest that this be expanded to include the county as well and not be limited to municipalities only.
- (3) We concur with comments submitted by the Director of Marshall County's Emergency Management, including:
 - Plans be provided to the local emergency planning committee and county office of emergency management.
 - Notification for well flaring go to the county 911 center who in turn notifies the local fire department, as most of our county fire departments are volunteers.
 - Well sites should be marked with signage identifying the operator/company, physical address, road/ridge name, county name, and 24 hour emergency phone number and coordinates.
 - Plans should be site specific and reviewed/updated annually.
- (4) Operators should notify WV Dept of Transportation of scheduled water deliveries so truck conditions may be better scrutinized and/or inspected. Trucks need to be inspected to ensure there is no faulty equipment and potential overweight issues need to be monitored. While this issue may be out of DEP's direct jurisdiction, transportation issues are certainly part of safety plans.
- (5) Plans need to conform to counties' Flood Plain Management plans.
- (6) We need to have coordination between DEP and Assessors for site locations so the county may benefit from the appropriate property taxes. We request that DEP share with the County Assessor any approved drilling permits in that county so the Assessor knows the location for appraisal and assessment purposes. The West Virginia Association of Counties offers our assistance in setting up the coordination process.

Thank you for the opportunity to comment on the emergency rules as proposed.

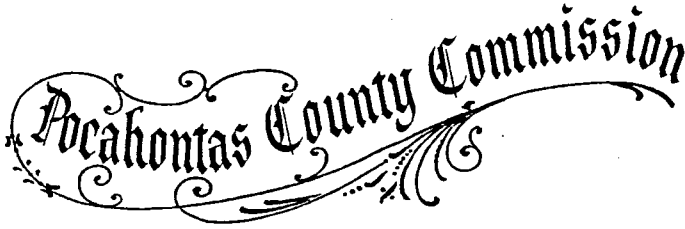
Patti Hamilton

Members of WVACO Marcellus Shale Study Committee: Commissioners Don Mason & Scott Lemley, Sheriffs John Gruzinskas & Virgil Miller, County Clerk Donnie Evans, Circuit Clerk David Stover, Prosecutor Gary Morris, Assessors Jim Priester, Michael Cook & Terri Funk; and County Administrator Willie Parker

Patricia L Hamilton, CAE
Executive Director
WV Assoc of Counties
2211 Washington St. E.
Charleston, WV
Charleston, West Virginia 25311
304-346-0591 (ph)
304-346-0592 (fax)

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DAVID M. FLEMING
President

MARTIN V. SAFFER
Commissioner

JAMIE WALKER
Commissioner

September 20, 2011

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**WV Department of
Environmental Protection**

West Virginia Department of Environmental Protection
Marcellus Shale Public Comments
601 57th Street, Southeast
Charleston, West Virginia 25304

Gentlemen:

Please accept these comments on proposed rules and legislation to regulate horizontal gas drilling in the Marcellus shale.

The Pocahontas County Commission is gravely concerned about the impacts to our pristine environment and rural culture from the impending possibility of hydrofracture drilling in the Marcellus shale underlying our borders. As well, we, as a governing body, do not want our local rights on this very local issue usurped or diminished by State government. The Commission views the present proposed rules as grossly inadequate and failing to speak to our county's unique needs.

First, we challenge the notion that our authority as a County Commission to enact our own protective rules as to public nuisance and protection of public health and safety under our general police powers are diminished by any actions, or lack thereof, that may occur by legislation or state administrative rule.

We make the following suggestions as to the proposed legislation and rules:

1. Notice and full information of any permits must be given to the County Clerk and County Commission when both first solicited and, thereafter, awarded.
2. All permits must be made subject to timely comment and review by the County Commission and public prior to award. The State Department of Environmental Protection shall be charged to comment and opine on all County concerns in each and every application for permit prior to awarding a permit.
3. Water testing shall be made by the State DEP of the area encompassed by the drilling pool and surrounding acreage equal to twice the area of the drilling pool. The testing shall be done and taxed as part of the costs for the solicited permit and the results shall be promulgated to the County and kept in a State registry created for this purpose.

4. Liability for water contamination from hydrofracture drilling operations shall have no period of limitations and lawful actions may be commenced at any time after discovery of damage and judgment for same shall be met with sufficient bonding posted and kept in force in the amount of \$5,000,000.00 for each and every well drilled.

5. Nothing in the proposed legislation shall be considered to diminish or usurp the County Commission's right and duty to ameliorate or otherwise protect the health and safety of the community or protect against public nuisance.

6. No water may be withdrawn from any water source, well or stream within the borders of the county under any hydrofracture drilling permit without review first by the County Commission, the DEP and subject to public comment. Water withdrawal shall depend on public needs and use considerations. No withdrawal may be made which endangers water resource levels or environmental concerns consequent upon water levels. Also, any recreational use of water shall also be considered before any water withdrawals are allowed.

7. Water testing shall be conducted by the DEP at each and every drilling site during every phase of drilling and the results monitored by the DEP and published to the County Commission. At any stage in which contamination is revealed, drilling shall immediately cease.

8. Any county road or bridge used to haul water for hydrofracture drilling shall be monitored by the DOH for weight and safety violations.

9. No well shall be placed within view of any State Park within the County nor be allowed within one mile of any incorporated municipality.

10. Air quality monitoring shall be conducted at each drilling site and logged and reported to the County Commission. Any results which exceed health quality and safety parameters shall result in cessation of drilling operations until corrected.

11. Water used in hydrofracture may not be disposed of or treated in the County of Pocahontas. Stored water used in hydrofracture and tailings from drilling shall be monitored by the DEP until safely removed and disposed.

12. Radiation levels of radon gas shall be monitored and reported. Any levels exceeding health quality and safety concerns shall result in cessation of drilling operations until corrected.

13. Noise levels of drilling operations will be maintained within parameters which protect public health and which are not levels or duration to be considered as a public nuisance.

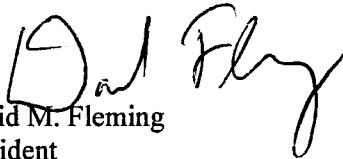
14. We view the proposed fines and crimes associated with willful violation of the proposed rules as woefully inadequate and as an invitation to violate the law.

Pocahontas County Commission
September 20, 2011
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15. We view any attempt at "forced pooling" as an egress violation of personal and property rights.

The County Commission views the danger and impacts associated with drilling as a serious concern to our rural and envious culture and valuable water. We request a moratorium on all drilling until these issues and others can be timely addressed and reasonable action taken to protect the people of Pocahontas County and West Virginia.

Sincerely,


David M. Fleming
President

Cc: Honorable Earl Ray Tomblin
West Virginia Governor
State Capitol
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305

Senator Walt Helmick
West Virginia State Senate
Room 200M, Building 1
State Capitol Complex
Charleston, West Virginia 25305

Senator Clark Barnes
West Virginia State Senate
Room 203W, Building 1
State Capitol Complex
Charleston, West Virginia 25305

William G. Hartman
West Virginia House of Delegates
Room 202E, Building 1
State Capitol Complex
Charleston, West Virginia 25305

Denise Campbell
West Virginia House of Delegates
Room 225E, Building 1
State Capitol Complex
Charleston, West Virginia 25305

Pocahontas County Commission
September 20, 2011
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Senator Douglas E. Facemire, Co-Chair
Marcellus Shale Interim Joint Select Committee
Room 217W, Building 1
State Capitol Complex
Charleston, West Virginia 25305

Tim Manchin, Co-Chair
West Virginia House of Delegates
Marcellus Shale Interim Joint Select Committee
Room 212E, Building 1
State Capitol Complex
Charleston, West Virginia 25305

Roger Tackett

From: Roger Tackett
Sent: Monday, September 26, 2011 7:59 AM
To: 'DEP.comments@wv.gov'
Subject: Erosion & Sediment Control plans Horizontal Well Development 35-8-1, 35-8-3.2

Dear Regulatory Agency:

As a lead professional for over 30 years in the preparation of Mining and Reclamation Plans, I wish to urge you to include Professionals Surveyors in your Rules Governing Horizontal Well Development. Surveyors are the "Boots on the Ground" professionals and we are well versed in Erosion and Sediment Control and Site Construction Plans.

I understand that this new surge in the development of horizontal drilling for natural gas is expected to play a vital role in West Virginia's economic prosperity. I would like to think that you would want to included the professionals that work in the field hand in hand with field personnel in the development and installation of these sites to insure the success of these plans and site construction techniques.

Sincerely,

Roger L. Tackett, PLS # 643SU



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SEP 28 2011

WV Department of
Environmental Protection

Mullen-Thaxton, Jennifer L

From: Aluise, Thomas J
Sent: Wednesday, September 28, 2011 11:37 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: contact-us - David

Marcellus Comments.

From: Home [mailto:support@wvinteractive.com]
Sent: Wednesday, September 28, 2011 8:16 AM
To: Aluise, Thomas J
Subject: contact-us - David

Home

David has been added

[Modify my alert settings](#) | [View David](#) | [View contact-us](#)

First Name: David

Last Name: Shields

E-mail Address: dms Shields@atlanticbb.net

Phone Number: 304 738-8982

Message: Comments about Marcellus drilling rule: I would suggest that the legislature proceed with factual information (Texas & Okolahoma experiences, etc.) rather than emotional/political interests when defining rules for gas drilling in the Marcellus field. Defining practical scientifically supported actions required for successful gas drilling and production, while not "scaring away" gas field producers, is in West Virginia's best interest. Dave Shields

Last Modified 9/28/2011 8:10 AM by (unknown)

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, September 28, 2011 1:51 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW:

From: Carli Mareneck [mailto:cmareneck@yahoo.com]
Sent: Tuesday, September 27, 2011 8:25 PM
To: DEP Comments
Subject:

To Whom it May Concern,

First I would like to thank you for mailing me a copy of the proposed Emergency Rule governing Horizontal Well Development..

I appreciate the intent of the DEP to maintain and protect the environment for WV citizens. I believe the permitting process should be halted until it can be proven that no harm to our water supplies will be incurred by this industrial development. While I fully appreciate the DEP outlining the need for more funds for nine additional staff persons to oversee and regulate the Marcellus Shale advancement those staff members cannot prevent the inevitable pollution to the air we breathe and our precious water supplies.

I am in favor of the proposed rule but maintain it does not go far enough to truly protect against destruction evident in this industry. Permitting should be halted. The public deserves to be informed on what dire consequences have resulted in other states before being taken over by forces that are irreversible. Rules regarding our state's unique Kasrt formations should also be addressed in advance of permitting.

Thank you. Sincerely, Carli Mareneck

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Thursday, September 29, 2011 11:37 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8

From: Tom Rayburn [mailto:trayburn@elrobinson.com]
Sent: Thursday, September 29, 2011 8:55 AM
To: DEP Comments
Subject: 35CSR8

Gentlemen:

It is my belief that WV Professional Land Surveyors be included to be allowed to Certify plans according the proposed regulations concerning Horizontal Drilling (35CSR8) and would like to see that this be amended in each section to read "in accordance with plans certified by, a West Virginia registered professional engineer or West Virginia licensed professional surveyor."

Respectfully,
Tom Rayburn, PS
Sent from my iPhone

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Thursday, September 29, 2011 11:37 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8

From: Tim Ross [mailto:tross@eastham-assoc.com]
Sent: Thursday, September 29, 2011 7:51 AM
To: DEP Comments
Subject: 35CSR8

As a Registered Professional Land Surveyor in the State of West Virginia, I would like to voice my concern about statute 35CSR8. I would like to see "in accordance with plans certified by, a West Virginia registered professional engineer", changed to include, "in accordance with plans certified by, a West Virginia registered professional engineer or West Virginia licensed professional surveyor."

Thank You



Eastham & Associates

Engineers - Surveyors - Planners

Timothy N. Ross, PLS
Project Manager

3992 State Route 7
Chesapeake, OH 43619

Voice (740) 867-8369
(800) 424-5258
Fax (740) 867-8146

E-mail: tross@eastham-assoc.com
<http://www.eastham-assoc.com>

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Thursday, September 29, 2011 11:37 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8

From: Green, John L [mailto:John.Green@hatchmott.com]
Sent: Wednesday, September 28, 2011 4:17 PM
To: DEP Comments
Subject: 35CSR8

To whom it may concern,

I am professional surveyor and member of the West Virginia Society of Professional Surveyors. The WVSPS supports the WV DEP emergency rule revisions regarding horizontal (directional) drilling but we are concerned that the proposed rule does not allow for surveyors to certify erosion control plans and construction plans. I believe there are surveyors who are qualified, recognized by the WV DEP as approved persons and are currently providing these services at this time who would be adversely affected by the rule as proposed. I believe some of these individuals are currently under contracts to provide these services.

I strongly recommend revising the language in 35CSR8 section 3.1 and 3.2 to read as follows ... in accordance with plans certified by, a West Virginia registered professional engineer, or a West Virginia licensed professional surveyor, in accordance with WV DEP rules and procedures. ...

This would allow the WV DEP to use the approved persons mechanism they currently use in the coal industry, or develop unique criteria for the drilling industry for surveyors, and engineers, to meet in order to qualify, or pre-qualify, to certify these plans. This would maintain protection of the public without jeopardizing the livelihood of qualified surveyors or the fair competition for this industry market.

I would be willing to discuss this matter further if you wish.

Thank you for your consideration.

John L. Green, PS

Hatch Mott MacDonald
405 Capitol Street
Suite 906
Charleston, WV 25301
T 304.356.3002
F 304.357.9222
C 304.552.4443

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Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Thursday, September 29, 2011 3:56 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on Horizontal Well Development Rule

From: John Angiulli [mailto:john.angiulli@chk.com]
Sent: Thursday, September 29, 2011 2:40 PM
To: DEP Comments
Subject: Comments on Horizontal Well Development Rule

1. Section 3.3 requires all well work permit applications to include a water management plan. This is not a good idea for industry or the DEP. A water management plan should be its own separate approval and not tied to the well work permit or tied to any specific well. From the industry perspective, all the details of how and where you are going to get all of the water you will need to drill and stimulate a well are not always known at the time of the well work permit submittal. So, a lot of the time you will simply be given a best guess. When you get closer to actually hydraulically fracturing the well, if anything has changed, since you submitted the best guess, (which is often the case) you will have to resubmit what you actually plan to do. This will unnecessarily cause more work for the industry and the DEP reviewers. If the water management plan was its own separate approval and not attached to the well work permit, then operators would have more time to develop a more complete and accurate plan and when they submit to the DEP there would be less need for modifications later on. So, when you need to withdraw water (regardless of which well it is for) as long as you are withdrawing from an approved source at the approved withdrawal rate you would be in compliance. This is the approach that the PADEP Southwest regional office in Pittsburgh Pennsylvania uses. Also, in my discussions with WVDEP representatives, no one seems to understand what submitting a water management plan on a "watershed basis" means. This is confusing and is not explained in the proposed regulations.
2. Section 3.3.f.1 requires the identification of current designated and existing water uses, including any public water intakes within one mile downstream of the withdrawal location. In my discussions with DEP representatives, a database containing this information does not exist. So basically, there is no place to get this information. It does not make sense for these proposed regulations to become law if there is no practical way for the industry to provide the information required in the water management plan.
3. Section 3.3.f.2 requires a demonstration that sufficient in-stream flow be maintained downstream of the surface water withdrawal point. In my discussions with DEP representatives, nobody can tell me how the industry can demonstrate this in an acceptable way. There is no guidance currently available that the industry can use to determine if the proposed pass-by-flow is protective of the identified use of the stream. It does not make sense for these proposed regulations to become law if there is no practical way for the industry to provide the information required in the water management plan.
4. Section 4.2.a. requires a notification of not less than 24 hours prior to the withdrawal of water. Often the best time to withdrawal is immediately following a large rain event. If the operator is required to wait 24 hours after notifying the DEP before they can withdrawal, you could actually miss a large part of the elevated stream levels that would be the optimum time to withdrawal in order to ensure adequate pass-by flow downstream.

John M. Angiulli
Chesapeake Operating, Inc.
Regulatory Compliance Specialist
P.O. Box 1300
Jane Lew, WV 26378
(304) 517-1416 Ext. 86080 office
(304) 406-4343 mobile
(304) 471-2497 fax
john.angiulli@chk.com



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Mullen-Thaxton, Jennifer L

From: Martin, James A
Sent: Monday, October 03, 2011 8:02 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: EQT Comments on Emergency Rule Casing and Cementing Provisions
Attachments: EQT Comments to Horizontal Well Legislative Rule (9-29-11).doc

Comments.

From: Dawley, Joseph [mailto:JDawley@eqt.com]
Sent: Monday, October 03, 2011 6:53 AM
To: Smith, Gene C; Pichardo, Paul R; Martin, James A
Cc: West, Kevin; Helmick, Jim E.; Rose, James; Maddox, Bradley D.; Smith, Jeremy B.
Subject: EQT Comments on Emergency Rule Casing and Cementing Provisions

Marty, Gene and Rob,

Attached is a redline mark-up of the emergency rule provisions on casing and cementing. If it helps we are available for a meeting or a conference call to discuss the rationale underlying the comments. I may also have comments on the site construction plan provisions but need to talk to our engineer about his initial comments.

Thanks,

Joe

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EQT COMMENTS – September 29, 2011

**TITLE 35
LEGISLATIVE RULE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS**

**SERIES 8
RULES GOVERNING HORIZONTAL WELL DEVELOPMENT**

§35-8-1. General

1.1 Scope. – This rule shall govern and apply to permit application requirements, operational rules to protect water quantity and quality, and public notice procedures for oil or natural gas operators developing horizontal wells, which wells are also regulated by W. Va. Code § 22-6-1, et seq. and the Legislative Rules promulgated in Title 35 of West Virginia's Code of State Rules and entitled *Oil and Gas*.

1.2. Authority. – W. Va. Code §§ 22-1-3, 22-6-2, and 22-11-4(a)(16)

1.3. Filing Date. –

1.4. Effective Date. –

1.5. Applicability. – Applications submitted after the effective date of this rule shall be subject to the provisions of this rule.

§35-8-2. Definitions

2.1 Unless the context in which the term is used clearly requires a different meaning, the definitions set forth in W. Va. Code §§ 22-6-1 and 22-11-3 and in 35 C.S.R. 4 § 2 shall apply to this Rule.

2.2. "Horizontal well" means any well that is drilled initially on a vertical plane but eventually curved to become horizontal, or nearly horizontal, to parallel or intersect a particular geologic formation or formations, for the purpose of maximizing the length and contact of the wellbore that is exposed to the formation or formations.

§35-8-3. Permit Application Requirements for Operators Developing Horizontal Wells

3.1. Erosion and Sediment Control Plan. – Erosion and sediment control plans submitted in conjunction with applications for well work permits involving well sites that disturb three acres or more of surface, excluding pipelines, gathering lines, and roads, shall be certified by,

and constructed in accordance with plans certified by, a West Virginia registered professional engineer and in compliance with best management practices (BMPs) established by the Office of Oil and Gas (Office) and contain both a narrative and a set of drawings. The plans shall be considered conditions of the permit and be enforceable as such.

3.1.a. The narrative components of the plan shall include:

3.1.a.1. A general sequence of events that describe in relative terms how and when each construction phase (i.e. clearing and grubbing, mass grading, stabilization) will occur and when each erosion and sediment control BMP will be installed;

3.1.a.2. A description of the stabilization methods to be used, including the application rates for temporary and permanent seeding and mulching, and provide the timeframes for establishing stabilization; and

3.1.a.3. Details or specifications for the erosion and sediment control BMPs employed on the project.

3.1.b. The drawings submitted with the plan shall include:

3.1.b.1. A vicinity map locating the site in relation to the surrounding area and roads;

3.1.b.2. A plan view site map at a scale of one inch equal to one hundred feet (1" = 100') or greater, showing appropriate detail of all site features, including the identification of site access that provides for a stabilized construction entrance and exit to reduce tracking of sediment onto public or private roads; and

3.1.b.3. The location of all proposed erosion and sediment control BMPs.

3.2. Site Construction Plan. – All applications for well work permits involving well sites that will disturb three acres or more of surface, excluding pipelines, gathering lines, and roads, shall be accompanied by a site construction plan certified by, and constructed in accordance with plans certified by, a West Virginia registered professional engineer. The plan should describe the nature and purpose of the construction project and identify the procedures for construction that will be used to achieve site stability. The plan shall be considered conditions of the permit and be enforceable as such.

3.2.a. The site construction plan shall contain the following information:

3.2.a.1. A vicinity map locating the site in relation to the surrounding area and roads;

3.2.a.2. A plan view site map at a scale of one inch equal to one hundred feet (1" = 100') or greater that shows appropriate detail of all site features and:

3.2.a.2.A. Clearly identifies the limit of disturbance for the project;

3.2.a.2.B. Provides existing topographic information on a contour interval that affords sufficient detail to illustrate site terrain conditions;

3.2.a.2.C. Identifies proposed cut and fill areas with grading contours at an interval that provides sufficient detail to accurately depict slope ratios, indicating top and bottom of slopes; and

3.2.a.2.D. Identifies any existing structures, roads, water bodies, and other critical areas within the area that would most likely be affected by the construction.

3.2.a.3. A cross-section of the length and width of the location, providing cut and fill volumes; and

3.2.a.4. Any other engineering designs or drawings necessary to construct the project.

3.2.b. At a minimum, site construction shall be conducted in accordance with the following criteria:

3.2.b.1. All woody material, brush, and trees shall be cleared from the site area and kept to the minimum necessary for proper construction, including the installation of necessary sediment controls. Trees six inches in diameter and larger shall be cut and logs stacked;

3.2.b.2. Topsoil shall be removed from construction areas and stockpiled for reuse during reclamation. In woodland areas, tree stumps, large roots, large rocks, tree and leaf debris, and ground vegetation shall be removed prior to actual site construction;

3.2.b.3. No embankment fill shall be placed on frozen material;

3.2.b.4. The fill material shall be clean mineral soil, free of roots, woody vegetation, stumps, sod, large rocks, frozen soil or other objectionable material;

3.2.b.5. Embankment material shall exhibit adequate soil strength and contain the proper amount of moisture to ensure that compaction will be achieved;

3.2.b.6. Earthen fill slopes should be constructed with slopes no steeper than a ratio of two-to-one (2:1);

3.2.b.7. Fill material will be placed in lifts or layers over the length of the fill. Lift thickness of the soil shall be as thin as the suitable random excavated material will permit, typically from six to twelve (12) inches; and

3.2.b.8. The size of rock lifts shall not exceed thirty-six (36) inches. The rock shall not be greater in any dimension than thirty-six (36) inches;

3.2.b.9. Compaction shall be obtained by compaction equipment or by routing the hauling equipment over the fill so that the entire surface of each fill lift is compacted by at least one wheel or tread track of equipment or by a compactor. Each lift shall be compacted before beginning the next lift;

3.2.b.10. Surface water diversion ditches shall be constructed above the disturbed area to intercept water and to divert surface water runoff around the site; and

3.2.b.11. In areas of steep terrain, a terraced bench shall be constructed at the base of the slope where fill is to be placed, creating a toe foundation and aid in holding fill material. Additional terracing shall be constructed for each additional fifty (50) vertical feet of slope and shall be a minimum of ten (10) feet wide.

3.3. Water Management Plan. – All applications for well work permits shall include an estimation of the volume of water that will be used in conjunction with drilling, fracturing or stimulating the well for which the permit is sought and, if the drilling, fracturing or stimulating of such well will require water withdrawals from the waters of this State in amounts of two hundred ten thousand (210,000) gallons or more during any one-month period, then the applicant shall file with the Office a water management plan as part of the application for the well work permit.¹ It shall be considered conditions of the permit and be enforceable as such. The water management plan, which may be submitted either on an individual well basis or on a watershed basis, shall include the following information:

3.3.a. The type of water source, such as surface or ground water, the county in which each water source to be used for water withdrawals is located, and the latitude and longitude of each anticipated withdrawal location;

3.3.b. The anticipated volume of each water withdrawal;

3.3.c. The anticipated months when water withdrawals will be made;

3.3.d. The planned management and disposition of wastewater from fracturing, stimulation, and production activities;

3.3.e. A listing of the anticipated additives that may be used in the water used for fracturing or stimulating the well, and, upon well completion, a listing of the additives that were actually used in the fracturing or stimulating of the well shall be submitted as part of the completion report required by W. Va. Code § 22-6-22;

¹ This Rule in no way abrogates the statutory requirement that water withdrawals in excess of seven hundred fifty thousand (750,000) gallons per calendar month be registered with the Division of Water and Waste Management. See, W. Va. Code § 22-26-1, et seq.

3.3.f. For all surface water withdrawals, the water management plan shall include the following, in addition to the information required in subdivisions 3.3.a. through 3.3.e. above:

3.3.f.1. Identification of the current designated and existing water uses, including any public water intakes within one mile downstream of the withdrawal location;

3.3.f.2. A demonstration, using methods acceptable to the Secretary, that sufficient in-stream flow will be available immediately downstream of the point of withdrawal. Sufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal; and

3.3.f.3. Identification of the methods to be used to minimize significant adverse impact to aquatic life.

3.4. Well Site Safety Plan. – All applications for well work permits involving well sites that will disturb three acres or more of surface, excluding pipelines, gathering lines, and roads, shall be accompanied by a well site safety plan to address measures to be employed by the operator for the protection of persons on the site, as well as the general public and the environment. The plan shall encompass all aspects of the operation, including the actual well work for which the permit is sought, completion activities, and production activities, and shall provide an emergency point of contact and twenty-four (24)-hour contact information for the well operator. The well operator shall provide a copy of the well site safety plan to the local emergency planning committee for the emergency planning district in which the well work will occur or to the county office of emergency services at least seven days before commencement of well work or site preparation work that involves any disturbance of land. It may be modified only upon approval by the Office and shall be considered conditions of the permit and be enforceable as such.

3.4.a. The well site safety plan shall be drafted in accordance with standards developed by the Office and include, at a minimum, the following:

3.4.a.1. A plan view map showing the well location, access road, pits, flare lines, dwellings, and noting the north and prevailing wind directions;

3.4.a.2. An area topographical map showing the well site location;

3.4.a.3. An evacuation plan for the removal of personnel and residents in the surrounding area who have the potential to be affected by an emergency;

3.4.a.4. A list of telephone numbers, including twenty-four (24)-hour contact information, for the following entities (which shall also be posted at the well site): the operator, any contractors of the operator, the Department, the local oil and gas inspector, and local emergency response units;

3.4.a.5. A list of all schools and public facilities within a one-mile radius of the proposed well, including telephone numbers for the same;

3.4.a.6. Material Safety Data Sheets (MSDS) for all materials and chemicals on the well site shall be readily available and maintained at the well site; and

3.4.b. Well site safety meetings. – Safety meetings shall be held on-site weekly, at a minimum, and specifically prior to the beginning of drilling, completion, and work-over operations. Meeting attendance shall be logged, and the log shall be maintained on site. A check-in and check-out list of all personnel shall be maintained during the drilling and completion phases of the operation.

§35-8-4. Operational Rules to Protect Water Quality and Quantity

4.1. All operators are required to protect the quality and quantity of water in surface and ground water systems both during and after drilling operations and during reclamation by:

4.1.a. Withdrawing water from surface waters of the State using methods deemed appropriate by the Secretary so as to maintain sufficient in-stream flow immediately downstream of the withdrawal location;

4.1.b. Casing, sealing or otherwise managing wells to keep fluids or natural gas from entering ground or surface waters;

4.1.c. Conducting oil and gas operations using BMPs so as to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to stream flow or runoff outside the permit area, but in no event shall the contributions be in excess of requirements set by applicable State or federal law; and

4.1.d. Registering all water supply wells with the Office and constructing and plugging all such wells in accordance with applicable laws governing water well construction.

4.2. All operators who withdraw two hundred ten thousand (210,000) gallons or more of water from waters of this State during any one-month period shall adhere to the following operational and reporting requirements:

4.2.a. Within forty-eight (48) hours, but no less than twenty-four (24) hours, prior to the withdrawal of water, the operator shall identify the location of withdrawal by latitude and longitude; verify, using methods deemed acceptable by the Secretary, that sufficient flow exists to protect designated uses of the stream; and provide notice to the Office as prescribed by the Secretary;

4.2.b. All surface water withdrawal locations and facilities identified in the water management plan set forth in subsection 3.3 above shall be identified with a sign that discloses that the location is a water withdrawal point and the name and telephone number of the operator for which the water withdrawn will be utilized. When the withdrawal location is no longer being utilized, or at the direction of the Secretary, the operator shall notify the Office and remove all signage; and

4.2.c. For all water used in connection with hydraulic fracturing activities and for all produced water from production activities, operators shall comply with the following record-keeping requirements:

4.2.c.1. For production activities, the following information shall be recorded and retained by the operator:

4.2.c.1.A. The quantity of flowback water from hydraulic fracturing of the well;

4.2.c.1.B. The quantity of produced water from the well; and

4.2.c.1.C. The method of management or disposal of the flowback and produced water.

4.2.c.2. For transportation activities, the following information shall be recorded and retained by the operator:

4.2.c.2.A. The quantity of water transported;

4.2.c.2.B. The collection and delivery or disposal location(s) of the water; and

4.2.c.2.C. The name(s) of the water hauling company(ies).

4.3. All drill cuttings and associated drilling mud generated from well sites that disturb three acres or more of surface, excluding pipelines, gathering lines, and roads, or that use two hundred ten thousand (210,000) gallons or more of water during any one-month period shall be disposed of in an approved solid waste facility or managed on-site in a manner otherwise approved by the Secretary.

4.4. Casing and cementing standards. – The operator shall prudently drill through fresh groundwater zones so as to minimize any disturbance of such zones. Further, the operator shall construct the well and conduct casing and cementing activities of the vertical portions of all horizontal wells in accordance with current practices and standards developed by the Office and in a manner that will provide for control of the well at all times, prevent the migration of gas and other fluids into the fresh groundwater and coal seams, and prevent pollution of or diminution of fresh groundwater. At a minimum, the following standards shall apply:

4.4.a. Casing standards.

4.4.a.1. All casing installed in the well must be new or if used pressure tested, and have with a pressure rating that exceeds the anticipated maximum pressure to which the casing will be exposed and meet the appropriate engineering standards American Petroleum Institute (API) standards;

4.4.a.2. The casing must be of sufficient quality and condition to withstand the effects of tension and maintain its structural integrity during installation, cementing, and subsequent drilling and production operations;

4.4.a.3. Centralizers in the vertical portion of the well must be used, with the proper spacing, during the casing installation to ensure that the casing can be uniformly cemented is centered in the hole;

4.4.a.4. Casing shall not be disturbed in a manner that would adversely impact cement bond integrity for a period of at least eight hours after the completion of cementing operations; and

4.4.a.5. No gas or oil production or pressure shall exist on the surface casing or the coal protection casing.

4.4.b. Cement standards.

4.4.b.1. All ~~Cement used in the~~ for the surface, intermediate and production casing must meet the appropriate engineering and manufacturing standards, satisfy the quality control testing approved by the Secretary to well must meet the appropriate API standards and secure the casing to the wellbore, isolate the wellbore from all fluids, contain all pressures during all phases of drilling and operation of the well, and protect the casing from corrosion and degradation;

4.4.b.2. ~~The cementing process~~ Cement used in conjunction with for cementing the surface and coal protection casing must prevent gas flow in the casing annulus in excess of the permissible casing pressure, which is eighty percent of the hydrostatic pressure of the well, which is calculated by multiplying the total vertical depth of the well (TVD) by 0.433 pounds per inch per foot;

4.4.b.3. The operator shall provide notice to the Office at least twenty-four (24) hours prior to the expected commencement of any cementing operations and maintain a copy of the cementing ~~records~~ log at the well site during the drilling and completion of the well.

§35-8-5. Public Notice Procedures

5.1. Applicants for well work permits seeking to drill the first horizontal Marcellus Shale well on any particular well pad located in an area within the boundaries of any municipality, as that term is defined in W. Va. Code § 8-1-2, shall publish public notice of the filing of such well work permit application as follows: At the time that a well work permit application is filed, the applicant shall also place a Class I legal advertisement in a newspaper of general circulation in the area where the well is proposed to be located. No well work permit shall be issued to any applicant until at least thirty (30) days' notice has been provided to the public. The advertisement shall contain, at a minimum, the name of the applicant, the proposed location of

the well, the proposed date on which site preparation for the proposed well will begin, and a contact telephone number for more information.

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, October 03, 2011 10:17 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments regarding rule changes to 35CR8
Attachments: letter to wvdep rule change.pdf

From: Duane Bowers [mailto:dsunshot@aol.com]
Sent: Friday, September 30, 2011 2:12 PM
To: DEP Comments
Subject: Comments regarding rule changes to 35CR8



September 30, 2011

Public Information Office
WV Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

To whom it may concern,

I have reviewed your proposed Horizontal Well Development Rule 35CSR8, and find under section 35-8-3 that West Virginia Professional Surveyors, are excluded from any work on the "Erosion and Sediment Control Plan and the Site Construction Plan".

I have developed numerous plans under the old regulations to existing standards for nearly 27 years for companies in West Virginia and feel as a Professional Surveyor I have the qualifications to continue to prepare these plans into the future.

Please revise the wording of section 3.1 and 3.2 to include West Virginia Professional Surveyors.

Sincerely,
Duane K. Bowers
Duane K. Bowers PS

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, October 03, 2011 10:17 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Emailing: WVONGA Comments on Oil & Gas Standards .pdf
Attachments: WVONGA Comments on Oil & Gas Standards .pdf

From: Walker, Tammy L. [mailto:tlw@ramlaw.com]
Sent: Friday, September 30, 2011 4:28 PM
To: DEP Comments
Cc: Blankenship, Anne C.
Subject: Emailing: WVONGA Comments on Oil & Gas Standards .pdf

Please find attached WVONGA's Comments on Oil and Gas Standards.

Tammy L. Walker
Legal Secretary
Robinson & McElwee PLLC
P.O. Box 1791
700 Virginia Street, East
Suite 400 (25301)
Charleston, WV 25326
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West Virginia Oil and Natural Gas Association

**Comments of the
West Virginia Oil and Natural Gas Association
on the**

**West Virginia Department of Environmental Protection, Office of Oil and Gas
Cementing and Casing Standards and Well Site Safety Standards**

On August 22, 2011, the West Virginia Department of Environmental Protection's Office of Oil and Gas ("OOG") filed emergency Rules Governing Horizontal Well Development, 35 CSR 8, *et seq.* ("the rule"). The Secretary of State approved the rule on August 29, 2011, making it effective that day. On August 25, 2011, the OOG issued a notice seeking public input on its well site safety plan standards and casing and cementing standards that are referenced in the rule.

The West Virginia Oil and Natural Gas Association ("WVONGA"), chartered in 1915, is one of the oldest trade associations in the state and serves the entire oil and gas industry. WVONGA members are engaged in exploration, production, transmission, storage, sales and distribution of oil and gas. Allied members serve the industry through drilling, pipeline construction, and well service. WVONGA submits these comments on the two sets of standards for which the OOG is seeking input. We appreciate the OOG's request for comments and the opportunity to provide input on its well site safety plan standards and casing and cementing standards (collectively referred to as "the standards").

General Comments

The regulated community has had extremely short notice of the requirements under the rule and virtually no time to prepare for compliance with the rule or the OOG's standards. The rule was filed on August 22, 2011 and became effective on August 29, 2011, the day the rule was

approved by the Secretary of State. The standards are dated August 25, 2011 and were posted on the OOG's website. Under Section 1.5 of the rule, applications submitted after the effective date of the rule are subject to the provisions of the rule. Therefore, any application submitted after August 29, 2011 must be in compliance with the provisions of the rule and be drafted in accordance with the standards, before the rule and standards could be fully evaluated and operational changes made.

WVONGA requests that the OOG use its enforcement discretion to allow the regulated community until January 1, 2012 to come into full compliance with the requirements of the rule and to prepare their applications accordingly with the standards. We would also ask that the OOG make a similar allowance for time to come into compliance with any legislative rule that replaces this emergency rule.

In addition, we request that the OOG clarify that the standards are guidelines for the well site safety plan and the cementing and casing practices to which industry should adhere, and not mandatory regulatory requirements. The standards include the terms "should" and "should not" throughout and, therefore, should not be applied as mandatory requirements by the OOG. Furthermore, any mandatory requirements must be promulgated through rulemaking pursuant to the West Virginia Administrative Procedures Act, W.Va. Code §29A-1-1 et seq.

I. Well Site Safety Plan Standards

Under Section 3.4. of the rule, all applications involving sites that will disturb more than 3 acres must include a well site safety plan. Among other things, the OOG's well site safety plan standard states that the plan include a list of telephone numbers, including numbers for contractors for the operator. There are potentially hundreds of contractor employees per well pad, and many of these contractors often are not identified and/or hired until after the permit

application is submitted to the OOG. In order to keep this list manageable and pertinent, WVONGA requests that only telephone numbers for core operations contractors (i.e. drillers, mud loggers, fracking crew) should be kept. Further, we request that time be allowed to update the list as many contractors are hired along the process.

The standards also advise that a check-in and check-out list of all personnel be maintained during the drilling and completion phases of the operation. This may be extremely difficult, if not impossible, for those operators who do not have manned security at their well sites. This provision would require establishing a guard shack with a dedicated person to do nothing but track traffic in and out of the well site, adding time and expense to the process. All personnel directly involved in drilling and completion of the well should be accounted for, but during many phases there are ancillary workers, such as vendors, truck drivers and delivery persons, who visit the well site briefly and may or may not make their presence known. We request that this standard be limited to only those core personnel involved directly with the drilling and completion operations.

The plan should also include Material Safety Data Sheets ("MSDS"). We request that the MSDS be allowed to be kept and submitted in electronic format. Many of these documents are quite lengthy. Electronic format would allow for much easier and efficient submission and recordkeeping.

II. Casing and Cementing Standards

The OOG's casing and cementing standards provide that the operator must drill through fresh groundwater zones so as to minimize any disturbance of such zones. WVONGA believes that "fresh groundwater zones" needs to be defined to mean "deepest known freshwater aquifer".

In general, these standards should not be applied to "low pressure" shale formations that cannot handle the higher cement pressures. Imposing these standards on formations such as the Lower Huron play would eliminate production from the formation, since the weight of the cement itself would ruin the well. WVONGA suggests that the OOG clarify that the standards do not apply to low pressure shale formations.

Casing Standards

The casing standards state that all casing installed in the well meet the appropriate API standards. There are many casing manufacturers that manufacture casings that are designed to meet maximum pressures and standards, not just API. We request that the casings not be restricted to only API standards, but to other manufacturers that design casing to meet maximum pressures and standards.

The casing standards state that all casing installed in the well should be new. This is over restrictive and unnecessary. Used casing that meets the specifications outlined in the standards and has been pressure tested and examined for corrosion, damage, and wear should be allowed. The standard of new casing only imposes additional costs to operators and may result in the waste of potentially viable, quality casing in some instances.

The casing standards also state that centralizers should be used, with proper spacing, during the casing installation to ensure that casing is centered in the hole. WVONGA believes that this is a good practice but the provision is vague in terms of defining what is meant by "centered in the hole." We suggest that the OOG define minimum spacing requirements for the vertical surface and intermediate casing strings that protect ground water and isolate shallower formation fluids. A general provision such as the above may be applied to horizontal production casing portion of the well with supplementary requirements, if necessary, for the vertical portion

of that casing string. Horizontal wellbore centralization and isolation, while desirable to the operator to effectively complete the reservoir, is not a requirement to prevent annular fluid migration uphole.

Cement Standards

The cement standards state that all cement used in the wells should meet API standards. It is our understanding that there is no cement that meets API standards in the Appalachian Basin. The OOG should allow flexibility for cement that meets other acceptable standards, such as ASTM standards. ASTM cements have been predominately and successfully used in West Virginia and the northeast for decades and provide competent seals and protection when properly applied. Regular monitoring and testing of the cement, regardless of the standard, ensures the cement slurries meet the parameters of the standards and the performance required in the well. Allowing ASTM cement also protects the businesses of established producers of cement that operate in the state, prevents supply shortages, and will not disrupt supply chain networks.

The standards state that cement used in conjunction with surface and coal protection casing should prevent gas flow in the casing annulus. Does this standard impose the use of gas migration control additives, or is hydrostatic pressure control sufficient in gas flow control? Cement and well construction practices should be designed to prevent gas migration, with a particular focus on the issue in geographic regions where the phenomena is noted to be a frequent problem. In areas where gas migration is not found to be an issue, additional steps such as modified cement slurries with gas control additives and operational changes should not be required as long as proper isolation is verified. Good cementing practices should always be employed, however.

The cement standards state that cement used on all string casings should obtain a compressive strength of at least 500 psi within 8 hours and achieve a compressive strength of 1,200 psi within 48 hours. Compressive strength development will vary based mainly on temperature, and much less significantly on pressure. Cementing shallow casing strings with very cool temperatures make the requirement of 500 psi compressive strength development in 8 hours unreasonable. We suggest that the 8 hour requirement be eliminated from the standard in order to accommodate pumping times required for cement placement in well-bores. Or, alternative, re-word the provision as, "the casing shall not be disturbed for a minimum of 8 hrs or longer, if required, for compressive strength development to reach 500 psi." Eight hours minimum or at least 350 psi is used in other states and should provide cement sheath protection from the resumption of drilling operations. We believe that the standard of 1200 psi in 48 hrs is reasonable. The statement could be supplemented to read that the cement should develop 350 psi compressive strength at a specified temperature, say 70 or 80 degrees F, or at an estimated, actual bottom hole temperature. The compressive strength should not have to develop to a point in 8 hrs, as it limits effective cement options and imparts operational risk in the necessity of pumping fast-setting cements. As long as operations are halted until it reaches the set point, the objective should be achieved.

The cement standards state that production casing cement should be capable of withstanding the anticipated hydraulic fracturing pressure and should be sampled and tested prior to the fracturing operations to ensure its integrity. Cement compressive strength is not an effective measure of the ability to withstand fracturing pressure. Applying proper cement practices, including proper mud displacement and job design to place a competent cement sheath around the casing sheath should be employed. Zonal isolation can be effectively achieved with

even fairly low compressive strength cements. Additional cement factors, such as ductility, tensile strength, hydration volume changes, and others can be important and must be coupled with the well and casing design (size, grade, weight) and conditions to optimize system effectiveness. Some of the cement lab testing parameters are not readily or easily obtained on a well by well basis and may require specialized equipment, time delays, and high expense. We suggest the OOG remove the requirement to test the cement to ensure its integrity for withstanding fracturing pressure prior to fracturing, as this is impractical to do properly and is only one facet of the isolation process.

Conductor Casing Standards

The conductor casing standards advise that conductor casing installed through fresh groundwater zones be cemented to the surface from the bottom of the casing. We are very concerned with this provision, as cementing the conductor casing from the surface from the bottom of the casing is not a good safety practice. It is very difficult and unsafe to pump a large diameter pipe in shallow settings from the bottom up. WVONGA suggests that OOG clarify that cementing the conductor should be grouted from the surface to the bottom.

Surface, Intermediate and Coal Protection Casing Standards

The surface casing standards provide that surface casing be installed at least 50 feet and no more than 100 feet below the deepest fresh groundwater strata and be immediately and permanently cemented to the surface. There is a very small difference between 50 feet and 100 feet. WVONGA believes that this standard is too restrictive. We suggest that it be increased to 100 feet since many times groundwater levels are not known when drilling in an area with lack of groundwater wells or data.

The surface, intermediate and coal protection casing standards also state that the operator should conduct a casing pressure test at a pressure of 20% greater than any pressure expected to be exerted on the cases and conduct a cement quality log. Testing at least 20% greater on the production strings imposes operational burdens and increases the health and safety risk of the workers and the public. At that point the fracking pressures (up to 10,000 psi) have far exceeded any shut in bottom hole reservoir pressure that will be placed on the interior of the casing during shut in or production. Furthermore, potential expansion of the casing via pressure testing should be avoided during the early time of cement setting and compressive strength development. Pressure testing too early can lead to a microannulus developing between the casing and cement bond once pressure is released, which may allow fluid transmission. It is also unnecessary, as the manufacturers already certify the casing to a maximum allowable working pressure, with a safety factor built in. We suggest this be completely removed from the standards.

WVONGA also does not believe that a bond log is necessary for surface casing. Such testing will be subjective and possibly inconclusive and will add additional time and expense. Further, there are very limited, if any, services that have a special tool in the surface string for bond logs. We suggest that to ensure adequate cement integrity, cement be brought back to the surface for analysis rather than having an operator perform a bond log. If the operator does not get a good return to the surface then notification can be made to the agency. Further, we suggest that "adequate integrity" be defined so that it is clear to the operator.

Production Casing Standards

WVONGA also has concerns about the production casing standards. These standards are not tenable for southern, low pressure reservoirs (i.e. example - Lower Huron Development).

The proposed standards will significantly alter the success of the hydraulic fracturing by limiting the breakdown pressures, rate and treating pressures.

The standards state that prior to perforating and hydraulic fracturing, the operator should pressure test the production casing to an amount at least 20% greater than the pressure to be exerted during the fracturing operations. The pressure test should not exceed casing working pressure maximums. The pressure testing requirements will eliminate the potential use of hydraulically-activated completion systems integrated into the casing string or pre-perforated liners, which may reduce efficiencies on some wells. It also could erroneously indicate a casing integrity issue if some communication occurs through the casing shoe (especially in a horizontal well where this would have minimal impact, if any, on well isolation assuming the casing shoe is still in the completion zone).

In addition, the standards state that subsequent to hydraulic fracturing, the operator should pressure test for the production casing to a pressure of at least 20% greater than the expected shut-in pressure of the well. This would require additional isolation above the shallowest fractured zone which could delay the flowback and cleanup of the well, or if tested after flowback, require a shut-in of the well which may impact production with some sensitive formations. In either case, it involves the expense and time of possible additional operations. It could be complicated on wells with energized fluid fracs/displacements, may involve killing the well, surface pressure control, and additional drillout, tool, pumping or wireline operations. The added time and expense will vary depending on the type of well and completion based on the degree of additional operations required versus standard completion procedures.

We suggest that the standards reference API Standards or other applicable industry standards and not provide arbitrary testing pressures. Notably, casing is already tested to API or

other industry standards before it is brought onto location; certificate of testing could be provided if necessary.

WVONGA appreciates the opportunity to provide input on the standards developed by the OOG for the well site safety plan and casing and cementing and requests that they be considered and addressed by the agency.

Very truly yours,



Nicholas DeMarco, Executive Director
West Virginia Oil and Natural Gas Association
P.O Box 3231
Charleston, WV 25332
304-343-1609

Submitted September 30, 2011

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, October 03, 2011 10:17 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Oil and Gas Standards

From: Don Johnson [mailto:don@wvpebd.org]
Sent: Friday, September 30, 2011 6:32 PM
To: DEP Comments
Subject: Oil and Gas Standards

I am submitting this response on the behalf of the WV Board of Registration for Professional Engineers (hereinafter the PE Board) The PE Board has not formally taken action on the Oil and Gas Standards and will not have another meeting before the deadline for comment. However, we appreciate the opportunity to participate in the rule-making process and have a few general comments intended to assure that the important role of professional engineers is acknowledged and required in the regulation of the drilling of the Marcellus Shale.

The PE Board believes that professional engineers add value to a project while protecting the public's health, safety and welfare. We would encourage you to consider including professional engineer's at key technical decision points in the Oil and Gas Standards currently being developed. The points include site development and preparation, the well site safety program, well head design, blow out prevention and casing through the water bearing strata.

If you need more detail or if we can be of assistance in the future please contact us.

Don Johnson, P.E.
WV PE Board

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, October 03, 2011 10:17 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on standards for gas fracking

From: Linda Reeves [mailto:openplainsart@gmail.com]
Sent: Friday, September 30, 2011 10:45 PM
To: DEP Comments
Subject: Comments on standards for gas fracking

To Whom it may concern:

I am responding to WV DEP's asking for comments and input on the **Casing and Cementing Standards** and the **Well Site Safety Plans** concerning the gas drilling/ fracking. I have read both of these plans. In reading the plans I was wondering why the word **should** is used so much. Only in # 2 under the **Casing Standards** was the word **must** used instead of **should**. It seems that **must** is a much stronger and specific word. The word **should** seems like it is used only as a type of suggestion. The word **must** brings more accountability into play and obviously this is an industry that needs strict accountability considering the severe consequences if there are errors or a slackness in following standards. It seems like the word **should** could perpetuate such a slackness.

Even if the DEP sets up certain strong standards how will all this truly be regulated? The oil and gas industries have regulations but still there have been great catastrophes. Catastrophes have happened for many different reasons. Regulations and standards are fine in theory. But.... often there are not enough regulators to keep up with the industry or the regulators are paid off and look the other way. Sometimes the industries would rather just pay the imposed fines because it's cheaper than meeting certain standards. Also, sometimes there are catastrophes just because of human fallacies and errors. Obviously, what I said about regulations is nothing new. We all know the weakness around regulating powerful industries who come into an area and take what they can squeeze out of it and move on. West Virginia has had more than its share of exploitation and has paid for it dearly in the substandard health and welfare of its people. There are reasons people smirk when they talk about West Virginia and why WV is often referred to as a third world country. You can make all the standards you want (its better than no standards) but the hard fact is there is always going to be error and arrogance in big industry and in this gas fracking industry which puts our watersheds in jeopardy is too big a price and not worth the risk. We are talking WATER..one of the main essential elements for the planet to survive.

Also, after reading the plans and reading about all the steps and procedures involved in this new technology it flushes out (no pun intended) the risky variables and dangers concerning the health, safety and welfare of communities where this industry has a stronghold. I think you would agree with me that there are too many unanswered questions around the fracking industry ; legality issues (that's a whole Pandora's box) but more important issues surrounding the health and welfare of communities not only with the immediate presence of drill sites but possible health consequences long after the the last rig has been pulled out.

I would like to see a moratorium put on the fracking industry until more information and answers come to light. The state of Maryland felt things were going too fast with too much at stake and declared a moratorium for 3 years. The great state of West Virginia needs to do the same, we owe it to ourselves, our communities our planet It's the decent and moral thing to do.

Regards,
Linda Reeves

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, October 03, 2011 10:17 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: WV CODE REGULATING GAS WELL SET BACK FROM A DWELLING IS NON-COMPLIANT WITH HUD REQUIREMENTS

From: Letty Butcher [mailto:multiflora123@yahoo.com]
Sent: Friday, September 30, 2011 11:31 PM
To: DEP Comments
Subject: WV CODE REGULATING GAS WELL SET BACK FROM A DWELLING IS NON-COMPLIANT WITH HUD REQUIREMENTS

WV Code Regulating Gas Well Set Back from a Dwelling is Non-compliant with HUD Requirements

HUD 4150.2 pages 2-7 states "no existing dwelling may be located closer than 300 feet from an active or planned drilling site, note that this applies to the site boundary, not to the actual well site".

WV Code 22-6-21 states "no oil or gas well shall be drilled nearer than two hundred feet from an existing water well or dwelling without first obtaining the written consent of the owner of such a water well or dwelling". No mention from the edge of a gas well pad.

So, WV Code in this situation is non-compliant with the secondary mortgage market. Tompkins Trust Company in NY filed a report stating "the secondary market was established and remains one of the only consistent methods for lenders to provide affordable and consistent funding for residential mortgage lending". Since WV gas well regulations have not changed in decades, how could this inconsistency been allowed to remain on the books for so many years?

However, the HUD requirement in this instance has also been around for many, many years and was meant to address conventional gas wells, not Marcellus wells which are non-conventional. Both HUD and WV Code as it pertains to Marcellus wells are outdated and need revisions.

The WVDEP did not address in its Emergency Rules about expanding the distance between a gas well and a dwelling or private water source such as a water well, spring or surface water body. Bill Toomey, DHHR, Bureau of Public Health WV Source Water Protection, Certification and Training Program, estimated that on 6/28/11, there were 343,062 individuals in WV who do not receive public water and must rely on private sources. If you consider that in the 2010 Census, Kanawha County had a population of 193,063, the highest population of any county in WV. The number of people not served by public water is almost double that of Kanawha County. Considering this statistic, why does the WV DEP not deem these people important enough to assign a new distance requirement between a gas well and a dwelling and private water source? This is especially important because so many people not served by public water live rurally and can be more impacted by Marcellus drilling. The people served by private water sources are just as concerned about theirs as the people of Morgantown are concerned about placing Marcellus wells at the Mylan Industrial Park 3000 feet from the water treatment plant on the Mon River. There is absolutely no difference in the amount of concern both groups have in protecting their water supply and neither group should be treated differently.

As for the WV DEP not expanding the distance between a gas well and a dwelling is just as disconcerting. Accidents happen—surface/ground water/soil can become contaminated and affect those

living in the dwelling like children, babies, the sick, the elderly and pregnant women. Explosions and fires can occur. Gas emissions can be lethal, cause health problems and just make daily living nearly impossible. Add to the mix noise and lights from the pad and there can be no sane rationalization for placing a gas well pad 200 feet from a house.

If the WV DEP decides to expand the distance between a gas well pad(edge) and a dwelling and private water sources, please be aware that there could be serious consequences if the agency gets that number wrong. To operate from a vacuum and say we only look at the "environmental stuff" and that is what our decision will be based on, know that you will be going down a slippery slope. Because in the end, say after 10, 15, 20 yrs. from now, our governing bodies get it wrong and we the people are left with an irreversible mess, no finger pointing will change things. What's done will be done.

I propose that no less than 1000 feet be considered as a distance from the edge of the gas well pad and a dwelling and no less than 1000 feet be considered as a distance from the edge of the gas well pad and private water sources like a water well, spring and water surface bodies.

I have included the following information so that you can see that making distance decisions purely from an environmental position will have its consequences.

Keep scrolling down to pick up all the attachments. Tompkins Trust is particularly informative.

OVERVIEW:

- **Document dated June 29, 2011**
- **Author is an Oneida County Legislator in New York and a title insurance professional with 28 years of experience.**
- **Discusses how horizontal hydrofracking may serve to threaten a good and marketable title.**
- **Attaches a list of eleven banks that will not make loans on properties or adjoining properties that have a gas lease on them for hydrofracking purposes.**
- **Attaches a summary of informational points generated by Greg May, Vice-President of Tompkins Trust Company titled "Gas and Oil Leases Impact on Residential Lending".**
- **Attaches a letter sent to Governor Cuomo providing details why it is necessary to expand in scope the SGEIS, an environmental impact statement, to address gas leasing impacts on homeowners, real estate investors and financial institutions.**

Here is the website: <http://hydrorelief.org/uploads/2/8/8/9/2889522/20110701123459636.pdf>

In addition to a discussion of "title marketability", one should, I believe, also look at the real estate term "marketability"--the probability of selling a particular property at a specified price and specified terms within a selected period. It is one thing to find a willing seller but quite another to find a willing buyer. In spite of the implementation of any mandatory gas well setbacks required by lenders, that may not be enough to attract a willing buyer(s). What could be the deal breakers? Examples: buyer(s) doesn't want to see a Marcellus gas well from the house, concern about negative health impacts, particularly to children and the elderly, from gas emissions if a gas well is already on the property, fear of surface/groundwater/soil contamination along with fear for safety from fires and explosions if a gas well exists on the property, worried about the proximity of gas wells on adjacent properties to the property for sale, concern over the number of collective gas wells in a given area and that effect on health and the environment such as toxic air pollution or

serious water contamination; dust and road deterioration due to ongoing Marcellus well construction in the area. I'm sure you can think of more. Marcellus gas wells are not conventional gas wells—they are not the gas wells of your grandmother's and grandfather's generation. They take a much larger footprint (5 acres or more) and can have far more serious impacts to a property and its owners. So when we talk about how gas leases and Marcellus wells can affect property values, mortgage financing, homeowner's/ title insurance and financial institutions, it comes down to protecting that property and the people living on it from negative environmental, health and safety impacts, safeguards to keep the property marketable and bankable, maintaining the property value and providing incentives to insurance companies not to cancel or refuse to insure a property with a gas lease or Marcellus well on it.

Thank you for taking the time to read this email

Letty Butcher Mailing address: PO Box 732; Reedsville, WV 26547 email: multiflora123@yahoo.com

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Monday, October 03, 2011 10:18 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Public Comments - Rule 35CSR8

From: ChubnWV@aol.com [mailto:ChubnWV@aol.com]
Sent: Monday, October 03, 2011 9:23 AM
To: DEP Comments
Subject: Public Comments - Rule 35CSR8

Requiring Marcellus Gas Exploration and Production drilling waste to be taken to approved landfills. (Para. 4.3.) Emergency Rule 35CSR8

The citizens in Harrison County and other counties hosting "approved landfills" should be given an opportunity to learn why the state has determined that it is best to add thousands of tons of drilling waste in our county MSW landfills. Other citizens, watershed groups and some officials are calling this drilling waste toxic, hazardous waste and radioactive waste in an effort to stop construction of a drilling waste landfill in their backyard and will get a public hearing from the WV DEP when, and if, a new permit is sought for this proposed landfill in their county. So the citizens in the counties where these "approved landfills" are located rightfully deserve more public information from the landfill managers and more consideration from the WV DEP in approving the modified MSW landfill permits.

As a former member of the local SWA board, I recall the Meadowfill Landfill site expansion needing local SWA review and a public hearing before approval in 2007. It was stated in the expansion documents at the time that the facility (Meadowfill) proposes no changes to the amount, or type, of waste currently received. The addition of this large amounts of "Drilling Waste" in approved landfills may not increase the permitted total tonnage to any particular MSW landfill, but it is certainly a big change to the type of waste disposed at state approved landfills. And, it greatly increases the percentage of non-MSW taking up valuable landfill space that our state citizens helped to save over the past twenty years by participation in recycling and complying with legislative landfill bans of yard waste, tires, batteries and now electronics.

Drilling Waste disposal should be part of the statewide Solid Waste Management Plan and also in the county/regional Comprehensive SW Management and Litter Control plans -which still affords the local public an opportunity to review and to be heard before approval.

Paul E. Hamrick
Rt. 3 Box 352
Clarksburg, WV 26301
304-622-5664
ChubnWV@aol.com

The Law Office of Vincent Trivelli, PLLC
178 Chancery Row
Morgantown, West Virginia 26505
Phone (304) 291-5223 • Toll Free 1-866-266-5948
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RECEIVED
Office of Oil & Gas

September 29, 2011

OCT 05 2011

**WV Department of
Environmental Protection**

Public Information Office
WV Department of Environmental Protection
601 57th Street, S.E.
Charleston, WV 25304

Re: Comments – Horizontal Well Development Rule 35 CSR 8

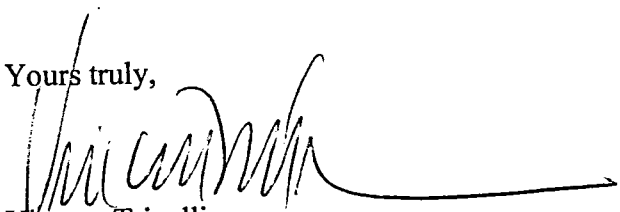
To Whom It May Concern:

Enclosed for your review are the comments prepared by Carpenter Environmental Associates, Inc. regarding the above-referenced matter. These comments are being submitted on behalf of the Affiliated Construction Trades Foundation, a division of the West Virginia Building and Construction Trades Council, AFL-CIO.

Should you have any question or comments regarding the enclosed, please feel free to contact me at (304) 291-5223.

Thank you.

Yours truly,


Vincent Trivelli

Enclosure





CARPENTER
ENVIRONMENTAL
ASSOCIATES, Inc.
CEA ENGINEERS, P.C.

307 Museum Village Road
Monroe, New York 10950

RECEIVED

Sender's Phone: 845-781-4844 EXT 309

Sender's Email: k.hosea@cea-enviro.com

Office of Oil & Gas

Phone: 845-781-4844

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OCT 05 2011

September 28, 2011

WV Department of
Environmental Protection

Mr. Vincent Trivelli
Law Offices of Vincent Trivelli
178 Chancery Row
Morgantown, West Virginia 26505

RE: Technical Review Comments – WV Title 35, Series 8, “Rules for Governing Horizontal Well Development”
CEA No. 21128

Dear Mr. Trivelli:

Carpenter Environmental Associates, Inc., (CEA) has reviewed the WV Title 35, Series 8, “Rules for Governing Horizontal Well Development,” (the Rules) prepared by the West Virginia Department of Environmental Protection (WVDEP), to govern the horizontal well drilling permit process and offer the following comments.

General Comments

The Rules provide some additional detail as to what is required to be included in the WVDEP Well Work Permit Application as compared to the WVDEP Well Work Permit Application and Addendum (Permit Application) reviewed by CEA in 2010. We included our recommendations for revisions of the Permit Application in our report *Initial Regulatory and Environmental Evaluation of the Marcellus Natural Gas Extraction and Processing in West Virginia*, (Evaluation Report) prepared for Affiliated Construction Trades Foundation, dated August 31, 2010. The Evaluation Report is attached. We set forth the following requirements necessary to protect the environment from the adverse environmental impacts of the hydraulic fracturing:

- Require an Environmental Impact Assessment of individual and cumulative impacts of the hydraulic fracturing process as part of the Well Work Permit application process – the assessment should address, at a minimum, but not limited to, individual and cumulative surface water withdrawal impacts, stormwater erosion impacts associated with the construction and operation of the well pads, air emission impacts associated with well pad operation and truck traffic.

- Require a trigger for preparing an Environmental Impact Statement should the Environmental Impact Assessment identify significant adverse impacts to determine whether the project will result in unavoidable or unmitigatable impacts.
- Include public comment/hearing/appeal requirements to the Well Work Permit application process.
- Require the applicant and the named treatment facility to identify and certify that the wastewater treatment/disposal method identified in the permit has adequate capacity to treat the flowback water in combination of all other flow received by the facility. In addition, if the facility is a Publically Owned Treatment Works (POTW), it should be required to certify that the facility is allowed to receive the flowback water in accordance with the Industrial Pretreatment Program requirements of its NPDES permit
- Require a tracking and reporting system for flowback wastewater disposal be submitted to the WVDEP for its review. Require a spill containment plan for portable chemical storage containers

The rules have not incorporated any of these processes.

Specific Comments

Section 3.1 Erosion and Sediment Control plan requires detailed information similar to but not inclusive of the detailed requirements set forth in the WV Erosion and Sediment Control Best Management Practice Manual (2006).

Required information as set forth in Section 3 of Chapter 2 of the WV Erosion and Sediment Control Best Management Practice Manual (2006) not required by the Rules that should be required are as follows:

- Project description – Describe the nature and purpose of the construction project. Include the size of the project area, any increase in existing impervious area, the area disturbed, and the volumes of grading cut and fill that are proposed.
- Existing site conditions – Describe the existing topography, vegetation, and drainage. Include a description of any structures or development on the parcel including the area of existing impervious surfaces.
- Adjacent areas – Describe adjacent areas, including streams, lakes, wetlands, residential areas, and roads that might be affected by the construction project.

- Critical areas – Describe areas on or adjacent to the site that are classified as critical areas. Describe special requirements for working near or within these areas.
- Soil – Describe the soils on the site, giving such information as soil names, mapping unit, erodibility, settleability, permeability, depth, texture, and soil structure.
- Potential erosion problem areas – Describe areas on the site that have potential erosion problems.
- Construction schedule – Provide a relative construction schedule. It is not necessary to provide exact dates but rather describe in relative terms when each construction phase will take place and how and where each planned sediment and erosion control device or practice will be installed.
- Engineering calculations – Attach any calculations made for the design of such items as sediment ponds, diversions, and waterways, as well as calculations for runoff and surface water detention design (if applicable). Engineering calculations for permanent structures must bear the signature and stamp of an Engineer licensed in the State of West Virginia. References shall be provided for all variables used.

Section 3.2 Site Construction Plan

Construction and operation of well sites and access roads disturbs large land area (most well sites are likely to be between 4 and 5 acres) and requires the use of heavy equipment and machinery (bulldozers, backhoes, drill rigs, etc.).¹

The construction and operation of well sites has the potential to alter the habitats of wildlife, including rare, threatened, and endangered species.² The cumulative impact of multiple well sites in an area will lead to the disturbance of a greater area of land and an increased impact on wildlife.^{3,4}

The Rule does not require but should require provisions in the Site Management Plan to evaluate the impacts of individual well sites or the cumulative effects of multiple proximate well sites during the construction process. Expected negative impacts to air quality, noise pollution, and energy usage are expected due to increased truck traffic and

¹ NYSDEC DGEIS, September 2009, Section 3.2.1.3.

² United States Army Corps of Engineers Chicago District, Known and Potential Environmental Effects of Oil and Gas Drilling Activity in the Great Lakes, November 2005, Section 6.3.

³ Metropolitan Conservation Alliance, Best Development Practices – Conserving Poll Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States, 2002.

⁴ United States Army Corps of Engineers Chicago District, Known and Potential Environmental Effects of Oil and Gas Drilling Activity in the Great Lakes, November 2005, Section 6.3.

the use of heavy construction equipment. A detailed evaluation of the impacts associated with these operations is contained in the Evaluation Report.

Section 3.3 Water Management Plan

Each fracturing operation for a single well is estimated to require the pumping of 2.4 million to 7.8 million gallons of water into the well over a two to five day period.⁵ The effects of multiple wells withdrawing water from the same surface water body during the same time period can potentially impact the environment adversely by depleting stream flow and groundwater, reducing groundwater aquifer storage capacity, degrading water quality, impacting fish and other aquatic wildlife including endangered, rare, or threatened species, impacting existing water users and reliability of their supplies, and impact underground infrastructure. The potential for multiple well sites in an area will multiply the adverse impacts of water withdrawal from local surface water bodies

The Rules do not require but should require evaluation of the cumulative environmental impacts of the operation of multiple wells on the same surface water body. A detailed evaluation of the impacts associated with water withdrawal is contained in the Evaluation Report.

Section 3.3.d. requires the Water Management Plan to include “The planned management and disposition of wastewater from fracturing, stimulation, and production activities”; however, no requirements are included in the Rule to provide certification that the planned disposition is realistic or available. Certification should be required. As discussed in the Evaluation Report, use of POTWs for disposal is severely limited by the lack of the necessary treatment processes to treat flowback water containing high concentrations of Total Dissolved Solids and potential radioactive materials as well as insufficient POTW capacity. As we discussed in the Evaluation Report, treatment options should be limited to Underground Injection Wells or privately owned treatment works. The applicant should be required to provide written assurances from the recipient of the wastewater that the wastewater will be properly treated and that capacity is available.

Section 3.3.e. requires the Water Management Plan to provide a list of “anticipated additives” to the fracturing fluid and only requires any changes be documented in the completion report. It will be impossible for a POTW or privately owned wastewater treatment plant to ensure adequate treatment schemes without knowing what the wastewater will contain. The applicant should be required to notify WVDEP prior to making any change to the additives and provide additional assurances that the disposal method will accommodate those changes.

Section 5.1 Public Notice Procedures states that WVDEP will issue the permit 30-days after the applicant publishes a public notice in a local newspaper. There are no provisions for public comment or appeal of the permit. The public notice provision only applies to the first horizontal well on a pad site. If any problems arise from the first well on a pad site, the public should have a mechanism for addressing those issues prior to future well

⁵ NYSDEC DGEIS, September 2009, Section 5.9.

construction. The lack of public comment and involvement, as well as the ability for public appeal of the permit, is discussed throughout the Evaluation Report.

Sincerely,
CARPENTER ENVIRONMENTAL
ASSOCIATES, INC.

A handwritten signature in black ink, reading "Kim Bell Hosea". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kim Bell Hosea
Vice-President

Attachment

**Initial Regulatory and Environmental Evaluation of the Marcellus
Natural Gas Extraction and Processing in West Virginia**

Prepared for:

Affiliated Construction Trades Foundation
600 Leon Sullivan Way
Charleston, West Virginia 25301

Prepared by:

Carpenter Environmental Associates, Inc.
307 Museum Village Road
Monroe, New York 10950

October 14, 2010

CEA No. 21021

West Virginia lacks the regulatory structure and safeguards to ensure that the exploration/development/and transmission methods for natural gas from the Marcellus Shale formation are adequate to protect human health and the environment. This report presents an initial evaluation of the regulatory structure as it applies to the extraction, processing, and transporting of natural gas from the Marcellus Shale formation, and the associated environmental impacts. Our analysis is based primarily on natural gas extraction data from the Marcellus Shale formation in West Virginia, New York, and Pennsylvania.

Introduction¹

The process of getting natural gas out of the Marcellus shale and to its final destination consists of several steps: exploration to locate natural gas reserves; extraction of the natural gas from the ground; processing of the raw product; transportation of the natural gas from areas of production via pipelines; storage of natural gas; and distribution of natural gas from the major pipelines to the end users.

Locating natural gas reserves relies upon advanced knowledge of the properties of underground natural gas deposits and the technology to locate these deposits. The exploration may consist of geological surveys, seismologic studies, and/or magnetomic studies to locate deposits of natural gas. These methods are relatively non-intrusive and have little short-term and no long-term impact on the environment.

Once a potential natural gas deposit has been located, the extraction process can begin. Extraction begins with the installation and completion of the gas well. Completion of the extraction process consists of strengthening the well bore with a casing, evaluating the pressure and temperature of the formation, and then installing the required equipment to ensure an efficient flow of natural gas from the well. Well casings are designed to strengthen the sides of the well bore to ensure that no oil or natural gas seeps out as it is extracted, and to prevent any fluids seeping into the formation through the well and to

¹ A description of the process of extracting natural gas is provided based on information supplied by the Natural Gas Supply Association at <http://www.naturalgas.org>.

prevent pockets of methane located above the Marcellus Shale from seeping into the well bore. A wellhead is mounted at the opening of the well to regulate and monitor the extraction of natural gas. The purpose of the wellhead is to prevent the gas from leaking out of the well and to prevent blowouts due to high pressures in the formation. A Well Work Permit is required from the West Virginia Department of Environmental Protection (WVDEP), Department of Oil and Gas to install an extraction well.²

Hydraulic fracturing and horizontal well drilling is one of the technological keys to economic recovery of natural gas from the Marcellus Shale formation.³ Hydraulic fracturing consists of injecting several million gallons of fresh water and “fracking fluids” into the well under high pressure, which opens up fractures already in the formation and allows for the flow of natural gas to the well head. The injected fluids consist of water and a myriad of other chemicals including diesel and other petroleum hydrocarbons, hydrochloric acid, corrosion inhibitors, gelling agents, containing up to 260 unique chemicals.^{4,5} In addition to the fracturing fluid, substances such as sand, glass beads, epoxy, or silica sand are also injected into the well to further open up the cracks formed by the fluid and to keep them open over time. The “recipe” for the fracking fluids is considered proprietary information by the drilling companies; therefore, the true volume of chemicals being injected thousands of feet below the ground surface are not disclosed to the agency or the public.

Thirty to 70% of the injected fluids are then returned to the surface as flowback water.⁶ The flowback water typically contains high concentrations of total dissolved solids

² WVDEP Office of Environmental Advocate, Citizen’s Guide, 2008.

³ US Department of Energy, Office of Fossil Energy, National Energy Technology Laboratory, *Modern Shale Gas Development in the United States: A Primer*, April 2009.

⁴ US Department of Energy, Office of Fossil Energy, National Energy Technology Laboratory, *Modern Shale Gas Development in the United States: A Primer*, April 2009.

⁵ New York State Department of Environmental Conservation, *Draft Supplemental Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program, Well Permit Issuance for Horizontal Drilling and High-Volume Hydraulic Fracturing to Develop the Marcellus Shale and Other Low-Permeability Reservoirs*, September 2009. [NYSDEC DSEIGS, 2009]

⁶ US Department of Energy, Office of Fossil Energy, National Energy Technology Laboratory, *Modern Shale Gas Development in the United States: A Primer*, April 2009.

(TDS), metals (iron, barium, etc.), chlorides, and organics requiring treatment before ultimate disposal. The approximately 216,000 to 2.7 million gallons of flowback water per well is contained on site in impoundments or tanks prior to treatment and disposal.

Treatment and disposal options for the flowback water include diluting flowback water with fresh water for reuse as fracturing fluid, on-site treatment and disposal to surface water under a National Pollution Discharge Elimination System (NPDES) permit, transport of the flowback water to publicly owned or private wastewater treatment plants, or disposal to a Class II Underground Injection Well. All of these options would require an NPDES permit.

After extraction, the natural gas must be processed to separate the various hydrocarbons and fluids that are lifted from the well in order to produce pure natural gas. Some of the common hydrocarbons that need to be removed include ethane, propane, butane, and pentane, also known as Natural Gas Liquids (NGLs). The majority of natural gas processing occurs at processing plants, though some of it can occur at or near the wellhead.

The transportation of natural gas consists of three major types of pipeline systems; gathering (intrastate) systems, the interstate pipeline system, and the distribution system. The gathering system consists of low pressure, low diameter pipelines that transport raw natural gas from the wellhead to the processing plant. The interstate natural gas pipeline network transports processed natural gas from processing plants across the nation for use and is regulated by the Federal Energy Regulatory Committee.⁷ The interstate network is comprised of pipes, compressor stations to maintain high pressure required for transmission, and metering stations to measure the flow of gas.

⁷ Federal Energy Regulatory Commission, "What FERC Does," <http://www.ferc.gov/about/ferc-does.asp>, accessed August 4, 2010.

Natural gas can be stored in depleted reservoirs, aquifers, and salt caverns.⁸

Approximately 82% of all underground storage facilities in the United States are depleted reservoirs. There are currently no aquifer or salt cavern storage facilities in West Virginia.

Environmental Impacts

Natural gas extraction, processing, and transporting have been conducted in West Virginia since the early 1900s.⁹ The processing and transportation processes have been in place for many years and are well regulated by the Clean Air Act and the Federal Energy Resource Commission. This section concentrates on the lack of regulation and potential environmental impacts associated with the use of hydraulic fracturing/horizontal well drilling to extract the natural gas from the Marcellus Shale.

Hydraulic Fracturing- Gas Extraction

The process of extracting natural gas through hydraulic fracturing creates the possibility for degradation of local water bodies, air quality, wild life habitat, as well as increased energy use, and stressing existing infrastructure. Regulatory and permit requirements aim to limit harm to the environment and allow for the public to comment on such activities that would impact quality of life. The West Virginia Department of Environmental Protection (WVDEP) has a severely limited process for evaluating environmental impacts resulting from the hydraulic fracturing/horizontal well drilling process and very few opportunities for the public to be involved in the permitting process.

The hydraulic fracturing process consists of practices that present the potential for numerous adverse environmental impacts, including:

- Unregulated Freshwater Withdrawal

⁸ "U.S. Energy Information Administration: Independent Statistics Analysis – About U.S. Natural Gas Pipelines," http://www.eia.doe.gov/pub/oil_gas/natural_gas/analysis_publications/ngpipeline/undrgrnd_storage.html, last accessed August 17, 2010.

⁹ History of WV Mineral Industries – Oil and Gas , West Virginia Geological & Economic Survey, <http://www.wvgs.wvnet.edu/www/geology/geoldvogg.htm>, August 16, 2010.

- Inadequate Wastewater (flowback) Treatment and Disposal
- Chemical And Flowback Water Spills
- Increased Stormwater Runoff
- Wildlife Impacts due to Construction/Operation of the Well Site
- Impaired Groundwater Quality
- Impaired Air Quality
- Increased Traffic
- Increased Seismic Activity

Water Withdrawal

Hydraulic fracturing is conducted in stages in order to maintain sufficient pressure to fracture the entire length of the well bore, to achieve better control of fracture placement and to allow changes from stage to stage to accommodate varying geological conditions along the well bore if necessary. It is estimated that a 4,000 foot lateral well would require 8 to 13 fracturing stages, with each stage requiring 300,000 to 600,000 gallons of water, all generated over a two to five day period. This results in the entire multi-stage fracturing operation for a single well requiring the pumping of 2.4 million to 7.8 million gallons of water into the well.¹⁰

The water used in the hydraulic fracturing processing is supplied by withdrawing water from nearby surface water bodies, a public water supply, pumping groundwater, delivery of water via trucks, or the reuse of treated flowback water.

The waters of the State of West Virginia are claimed as “valuable public resources held by the state for the use and benefit of its citizens.”¹¹

Withdrawing water from local surface water bodies or public water supplies can potentially impact the environment adversely by depleting stream flow and groundwater, reducing groundwater aquifer storage capacity, degrading water quality, impacting fish and other aquatic wildlife including endangered, rare, or threatened species, impacting existing water users and reliability of their supplies, and impacts to underground

¹⁰ NYSDEC DGEIS, September 2009, Section 5.9.

¹¹ West Virginia Code, Chapter 22, Article 26, Water Resources Protection Act, §22-26-3.(a), 2009.

infrastructure. The potential for multiple well sites in an area will multiply the adverse impacts of water withdrawal from local surface water bodies.

West Virginia requires users of water resources whose withdrawals exceed 750,000 gallons in any given month for one well to register with the WVDEP's Division of Water and Waste Management; however, there are no regulations governing the quantity of water withdrawn from streams.^{12,13} Once registered, the user must only certify annually that the water withdrawals vary no more than 10% from the user's baseline average.¹⁴ While, the WVDEP prohibits withdrawals from groundwater or surface water sources at volumes beyond which the water body can sustain and has developed a guidance tool aimed at minimizing environmental impacts associated with stream water withdrawal; the tool is not required and does not take into account the cumulative effects of upstream or downstream operations withdrawing from the same water body.¹⁵ Neither the guidance nor the gas well drilling guidance states under what conditions the withdrawal will be prohibited.¹⁶

Delivering water to the well site by truck results in a significant increase in truck traffic causing air quality degradation due to dust and additional vehicle emissions.¹⁷ Truck traffic from the development of well sites will impact the existing infrastructure, including road stress, and increased noise in the area.¹⁸ To date, the effects of the increased traffic have not been evaluated in an individual or cumulative manner. There are no mechanisms in the WVDEP regulations to conduct such an evaluation.

¹² West Virginia Code, Chapter 22, Article 26, Water Resources Protection Act, §22-26-3(c), 2009.
¹³ WVDEP, 2009 Annual Report to the Joint legislative Oversight Commission on State Water Resources, Implementation Progress: West Virginia Water Resources Protection and Management Act, November 17, 2009.

¹⁴ West Virginia Code, Chapter 22, Article 26, Water Resources Protection Act, §22-26-3(d), 2009.

¹⁵ WVDEP, Industry Guidance Gas Well Drilling/Completion Large Water Volume Fracture Treatments, January 8, 2010.

¹⁶ WVDEP, Industry Guidance Gas Well Drilling/Completion Large Water Volume Fracture Treatments, January 8, 2010.

¹⁷ WVDEP, Industry Guidance Gas Well Drilling/Completion Large Water Volume Fracture Treatments, January 8, 2010.

¹⁸ WVDEP, Industry Guidance Gas Well Drilling/Completion Large Water Volume Fracture Treatments, January 8, 2010.

The Well Work Permit requires that “surface owners” are notified of the intent to perform drilling operations and are provided a copy of the permit application form WW-2A, a location plat, and any accompanying documentation prior to submittal of the permit application.¹⁹ Surface owners then have 15 days to provide comments to the WVDEP, however, there is no general public notification or comment period associated with a Well Work Permit application and no opportunity for the public to review or comment on the anticipated water withdrawal volumes from a well site and the permits are not subject to appeal.^{20,21}

Wastewater Treatment and Disposal

As discussed in the previous section, the entire multi-stage fracturing operation for a single well requires the pumping of 2.4 million to 7.8 million gallons of water into the well. Nine to 35% of the injected fluids are returned to the surface as flowback water, resulting in flowback water volumes between approximately 216,000 gallons and 2.7 million gallons per well based on pumped fluid estimates. This volume is normally recovered within two to eight weeks, and then the well’s water production sharply declines and levels off at a few barrels per day for the remainder of the well’s producing life.²² Between 2004 and November 3, 2009, over 2,800 Marcellus Shale wells have been permitted in West Virginia.²³

Flowback water typically contains pollutants such as dissolved solids (chlorides, sulfates, and calcium), metals (magnesium, barium, and strontium), suspended solids, mineral scales (calcium carbonate and barium sulfate), bacteria (acid producing bacteria and sulfate reducing bacteria), friction reducers, iron solids (iron oxide and iron sulfide), dispersed clay fines, colloids and silts, and acid gases (carbon dioxide, hydrogen

¹⁹ WVDEP Office of Oil and Gas, Well Work Permit Application, August 2009.

²⁰ WVDEP Office of Oil and Gas, Well Work Permit Application, August 2009.

²¹ CEA Phone Log of Conversation with Jamie Petersen of the WVDEP, RE: Well Work Permit Public Comment Requirement, August 3, 2010.

²² NYSDEC DGEIS, September 2009, Section 5.9.

²³ West Virginia Geological & Economic Survey, Selected References about Devonian Shales, <http://www.wvgs.wvnet.edu/www/datastat/devshales.htm>, last accessed August 25, 2010.

sulfide).²⁴ The water needs to be handled, transported (if necessary), and treated properly, to reduce the potential for adverse environmental impacts due to the contaminants present in the flowback water.

Flowback water can also contain naturally occurring radioactive material (NORM).²⁵ The Marcellus Shale formation is considered “highly radioactive” with actual levels varying regionally.²⁶ Little or no data exists as to the NORM concentrations in West Virginia.²⁷ The presence of radioactive material may further limit the available treatment alternatives for flowback water.

West Virginia guidance suggests that flowback water disposal be performed by underground injection control (UIC) and/or treatment at publicly owned treatment works (POTWs).²⁸ Other possible options for dealing with the large volumes of flowback water produced include treatment at private wastewater treatment plants (WWTP) and onsite treatment for reuse in future hydraulic fracturing operations or discharge under a NPDES permit to the water body from which it was withdrawn.

UIC is the preferred option available to dispose of flowback water and is generally recognized as environmentally sound; however, it is unclear how many UIC wells are available to receive the flowback water.²⁹ According to Mr. James Peterson, WVDEP Department of Oil and Gas, there are 10 permitted commercial UIC wells, and 56 non-commercial wells available in West Virginia to receive flowback water.^{30,31} In an article

²⁴ NYSDEC DGEIS, September 2009, Section 5.11.3.

²⁵ Kargbo, David M., Wilhelm, Ron G., Campbell, David J., “Natural Gas Plays in the Marcellus Shale: Challenges and Opportunities,” *Environmental Science & Technology*, 2010, 144I, 5679-5684, Published on Web June 6, 2010.

²⁶ Sumi, L., *Shale Gas: Focus on the Marcellus Shale*, Oil and Gas Accountability Project, June 2008.

²⁷ USGS, “Naturally Occurring Radioactive Materials (NORM) in Produced Water and Oil-Field Equipment – An Issue for the Energy Industry,” USGS Fact Sheet FS-142-99, September 1999.

²⁸ WVDEP, Industry Guidance Gas Well Drilling/Completion Large Water Volume Fracture Treatments, January 8, 2010.

²⁹ WVDEP, Industry Guidance Gas Well Drilling/Completion Large Water Volume Fracture Treatments, January 8, 2010.

³⁰ “Commercial Injection Wells” are defined by the USEPA as “A single or multiple well facility that is specifically engaged in the business of underground injection of brine generated by third

in the Charleston Gazette, Mr. Gene Smith, WVDEP Regulatory Compliance Manager, stated that there are 70 permitted wells available to handle flowback.³² Only eight permits were available during a visit to the WVDEP offices in Charleston, West Virginia in response to our request for all UIC permits.³³ WVDEP acknowledges many additional wells will need to be permitted, drilled, or converted to handle the expected volume of flowback water resulting from hydraulic fracturing operations.^{34,35} The permits do not limit the volume of water that can be injected and the WVDEP is unsure how many of these wells actually receive flowback water additionally it is uncertain whether there is adequate capacity for all of the anticipated flowback water.³⁶ UIC Class II wells are common and the permitting process is well established. A UIC Class II permit requires that a public notice is published as a Class I legal advertisement in the newspaper servicing the area of the proposed injection well and a 30 day public comment period before final approval by the WVDEP.³⁷ The permit can be appealed within 30 days of the decision regarding the permit.³⁸

The WVDEP regulates pollution control permits, such as National Pollutant Disposal Elimination System (NPDES) permits for Publicly Owned Treatment Works (POTWs) as well as private wastewater treatment plants.³⁹ The NPDES is a well established program with many opportunities for public comment, review, public hearings, and permit appeals.^{40,41}

party producers for a fee or compensation, such as lease concessions, production sharing arrangements, or the right to salvage residual oil. In addition, the produced brine must originate off-site as a result of oil & gas production operations, only, and be transported to the facility by tank truck," <http://www.epa.gov/r5water/uic/glossary.htm>, last accessed August 31, 2010.

³¹ CEA Email Correspondence with James Peterson, WVDEP, August 6, 2010.

³² Steelhammer, R., "In Braxton, there's a whole lotta shakin' going on," The Charleston Gazette, August 28, 2010.

³³ CEA Email Correspondence with Lesly Messina, ACT, August 12, 2010.

³⁴ CEA Email Correspondence with James Peterson, WVDEP, August 6, 2010.

³⁵ WVDEP, Industry Guidance Gas Well Drilling/Completion Large Water Volume Fracture Treatments, January 8, 2010.

³⁶ CEA Email Correspondence with James Peterson, WVDEP, August 6, 2010.

³⁷ WVDEP, Underground Injection Control Permit Application Package, undated.

³⁸ WVDEP Permit Hearings and Appeals Guide – Office of the Environmental Advocate, undated.

³⁹ WVDEP, Permit Hearings and Appeals Guide – Office of Environmental Advocate, undated.

⁴⁰ WVDEP, Permit Hearings and Appeals Guide – Office of Environmental Advocate, undated.

⁴¹ CEA Phone Log of Conversation with Ann Baldwin of the WVDEP, RE: Public Comment Requirement for WWTP NPDES Discharge Permits. August 5, 2010.

The ability of POTWs or conventional private WWTPs to effectively treat flowback water is limited due to the high concentration of TDS, the potential presence of radioactive materials, and the presence of individual constituents in the flowback water that the treatment systems at the plants are not designed to treat.⁴² POTWs under federal industrial pretreatment programs are prohibited from receiving wastewaters that would interfere with the operation of the plant, pass through the plant causing a violation of effluent limits, or prevent the beneficial reuse of biosolids.⁴³

The capacity limitations of POTWs may reduce their availability as an option for treating and disposing of the flowback water due to the large volumes that can be anticipated as a result of hydraulic fracturing operations. Treatment capacity for both flow and pollutant loading for POTWs are designed based on anticipated population and industrial growth in the areas these POTWs service.⁴⁴ The excess capacity of these POTWs is essential for future population and economic growth in those regions.⁴⁵ A POTW's acceptance of flowback water limits its capacity to serve future municipal and industrial/commercial wastewater treatment needs of its service area. West Virginia currently has no process to guarantee that the disposal facility named in the well permit application has sufficient treatment capacity and processes to properly treat and dispose of the anticipated wastewater volume from the fracking process.

A privately owned treatment plant was constructed in Fairmont, West Virginia by the Appalachian Oil Purchasers to exclusively treat waters from the gas drilling process.⁴⁶ The plant uses a patent pending proprietary distillation/crystallization process to remove oil, metals and salts, the clean water is reused in the drilling process and the salts are

⁴² USEPA Model Pretreatment Ordinance, Office of Wastewater Management/Permits Division, January 2007.

⁴³ USEPA Model Pretreatment Ordinance, Office of Wastewater Management/Permits Division, January 2007.

⁴⁴ Water Environment Federation, American Society of Civil Engineers, *Design Manual of Municipal Wastewater Treatment Plants, Fourth Edition, MOP 8*, 1998.

⁴⁵ Water Environment Federation, American Society of Civil Engineers, *Design Manual of Municipal Wastewater Treatment Plants, Fourth Edition, MOP 8*, 1998.

⁴⁶ New Fairmont plant treats Marcellus water, Emily Corio, West Virginia Public Broadcasting, November 19, 2009.

stored for use in treating roads.^{47,48} The plant can treat up to 210,000 gallons a day and is already close to capacity with only four clients and AOP Clearwater has stated that they can increase their operations to accept 420,000 gallons per day.⁴⁹ Natural gas well installation in West Virginia is expected to increase from 299 natural gas wells in 2002, to an anticipated 900 natural gas wells by 2020.^{50,51} It is unlikely that this one plant will be able to handle the increased wastewater volume; therefore, additional plants will need to be built resulting in additional adverse environmental impacts in addition to those resulting from well pad construction and operation.

On-site treatment and reuse of flowback water can serve as a means of supplying a portion of the large volumes of water required for hydraulic fracturing operations and reduces local surface water withdrawal or water delivery requirements. Technologies that can be used to perform on-site treatment of total dissolved solids (TDS) and its constituents include reverse osmosis, thermal distillation, electrodialysis, and ion exchange.⁵² Each of these technologies produces liquids and solid waste streams containing concentrated amounts of all the pollutants removed from the flowback water. These concentrated wastes require off-site transport and disposal.

The cumulative effect of operating multiple well sites increases the volume of flowback water requiring treatment and disposal and all of the difficulties associated with it. It also increases the potential to adversely impact the environment, as well as the potential magnitude of these adverse impacts. Current West Virginia regulations include no mechanism to evaluate and control cumulative impacts and provide no mechanism for

⁴⁷ AOP Clearwater, Water Recycling, http://aopclearwater.com/Home_Page.html, last accessed August 17, 2010.

⁴⁸ New Fairmont plant treats Marcellus water, Emily Corio, West Virginia Public Broadcasting, November 19, 2009.

⁴⁹ New Fairmont plant treats Marcellus water, Emily Corio, West Virginia Public Broadcasting, November 19, 2009.

⁵⁰ West Virginia Public Broadcasting, "Marcellus drilling's economic impact is growing," August 9, 2010.

⁵¹ National Energy Technology Laboratory, *Projecting the Economic Impact of Marcellus Shale Gas Development in West Virginia: A Preliminary Analysis Using Publicly Available Data*, March 31, 2010.

⁵² NYSDEC DGEIS, September 2009, Section 5.12.2.

public review, comment, and appeal. Once the permit is issued, there are no regulatory mechanisms to ensure that the named treatment process or facility will actually be used.

When a well operator applies for a well work permit, WVDEP requires that the flowback water disposal method(s) are stated, and, if the fluid volumes to be used or disposed of may be greater than 5,000 barrels, it requires an estimate of the percentage of the anticipated volume of flowback water each method will account for.^{53,54} There is no public notification or comment period associated with a Well Work Permit that would allow the public to review the well site's proposed methods of treating wastewater. Also, no mechanism currently exists to confirm that the operators are disposing of the flowback water in the manner described in the application.

Stormwater

Stormwater has been identified as one of the leading sources of pollution for all water body types in the United States.⁵⁵ The addition of impervious surfaces, soil compaction, and tree and vegetation removal as required for the construction of the well pad, access roads, and support services results in alterations to the surface movement of water through the environment. In developing the average multiple well site, an area likely to be between four and five acres in size of previously undeveloped, pervious, vegetated land will be replaced with impervious surfaces through clearing, grubbing, compaction, service road construction, well pad construction, and other site preparation activities.⁵⁶ Additionally, large areas of soils will be exposed during the construction process. These changes to the site area will lead to the creation of increased volumes of stormwater runoff, increased peak discharge rates of stormwater from the site, and the potential for erosion of onsite soils to occur.

⁵³ WVDEP, Office of Oil and Gas, Well Work Permit Application Addendum, undated.

⁵⁴ WVDEP, Office of Oil and Gas, Construction and Reclamation Plan and Site Registration Application Form General Permit for Oil and Gas Pit Waste Discharge, Form WW-9, May 2010.

⁵⁵ United States Environmental Protection Agency (USEPA), Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices, December 2007.

⁵⁶ NYSDEC DGEIS, September 2009, Section 5.1.2

Construction projects of this magnitude are typically covered by the General NPDES Water Pollution Control Permit for Construction Activities as amended on January 15, 2010, however, the WVDEP specifically exempts oil and gas related land disturbance activities.^{57,58} Additionally, oil and gas activities are exempt from the multi-sector general water pollution control permit for stormwater associated with industrial activities.⁵⁹

The increased volume and rate of stormwater that results from the creation of a well site has the potential to impact receiving waters. The increased volume of water and the increased rate at which the water is discharged can lead to an increase in soil erosion, in-stream erosion, and stream bank erosion. These increases in erosion result in a higher in-stream TSS and turbidity which has been shown to have a negative effect on fish species (i.e. trout, bass, etc.) and other aquatic life.^{60,61,62} In addition, construction of access roads in remote, mountainous areas pose a threat of exacerbating flooding in the hollows already impacted by the stormwater runoff from timbering and mountaintop mining.

The potential for receiving waters to be polluted due to spills of industrial fluids or chemicals on the well site is enhanced, as stormwater that travels off the site may contain these hazardous substances. Receiving waters may also experience eutrophication, the accelerated production of organic matter, particularly algae, in a water body that is usually caused by an increase in the amount of nutrients being discharged into the water body.⁶³ Eutrophication of a water body can result in a decrease in water quality through

⁵⁷ WVDEP National Pollutant Discharge Elimination System Water Pollution Control Permit, Permit No. WV0115924, November 5, 2007.

⁵⁸ General WV/NPDES Water Pollution Control Permit, Stormwater Associated with Construction Activities, WV/NPDES Permit No. WV0115924, Modification, January 15, 2010.
WV/NPDES Water Pollution Discharge Elimination System, Multi-Sector General Water Pollution Control Permit, Permit No. WV0111457, April 1, 2009.

⁶⁰ NYSDEC, *New York State Storm Water Management Design Manual*, August 2003.

⁶¹ Barrett, Jeffrey C., et. al. *Turbidity-Induced Changes in Reactive Distance of Rainbow Trout*. Transactions of American Fisheries Society, 1992.

⁶² Shoup, Daniel E., and David H. Wahl. *The Effects of Turbidity on Prey Selection by Piscivorous Largemouth Bass*. Transactions of American Fisheries Society, 2009.

⁶³ U.S. Department of Commerce, National Oceanic and Atmospheric Administration National Ocean Service, *National Estuarine Eutrophication Assessment: Effects of Nutrient Enrichment in the Nation's Estuaries*, September 1999.

nuisance and toxic algal blooms, depleted dissolved oxygen, and a loss of submerged aquatic vegetation.⁶⁴ The impacts of multiple well sites discharging stormwater to the same receiving streams will multiply these effects (increased stream velocities, TSS, and pollutant loads) and increase the degree of environmental degradation resulting from drilling operations.

WVDEP requires the issuance of a well work permit for the hydraulic fracturing process that requires a sediment and erosion control plan as part of the application.⁶⁵ As long as the operator's erosion and sediment control plan properly adheres to the WVDEP Erosion and Sediment Control Field Manual, the operator is exempt from any further stormwater permitting requirements such as the preparation of Stormwater Pollution Prevention and Groundwater Protection Plans required by the general stormwater permit for construction activities.^{66,67}

The well work permit application process does not evaluate the environmental impacts due to increased stormwater runoff from individual well sites or the cumulative impacts of the increased stormwater runoff from upstream extraction wells. At this time, there is no mechanism for the public to review or comment upon the adequacy of the soil and erosion control plan for controlling runoff and its impacts or to appeal the permit once issued.

Chemical and Flowback Water Spills

Spills of fluids associated with hydraulic fracturing operations, including fracturing chemicals, flowback water, and brine, are unavoidable, since accidents resulting from human error or equipment failure are inevitable events for any major construction project.

⁶⁴ U.S. Department of Commerce, National Oceanic and Atmospheric Administration National Ocean Service, National Estuarine Eutrophication Assessment: Effects of Nutrient Enrichment in the Nation's Estuaries, September 1999.

⁶⁵ CEA Phone Log of Conversation with Gene Smith of the WVDEP, RE: Well Operator Stormwater Permit Requirements, August 2, 2010.

⁶⁶ CEA Phone Log of Conversation with Gene Smith of the WVDEP, RE: Well Operator Stormwater Permit Requirements, August 2, 2010.

⁶⁷ National Pollutant Discharge Elimination System Water Pollution Control Permit, Stormwater Associated with Construction Activities, November 5, 2007.

Such spills have the potential to adversely impact the environment by entering surface water bodies or groundwater through either direct discharge or in stormwater discharges.

The chemicals in spills at hydraulic fracturing drilling sites have the potential to harm aquatic life. In September 2009, a spill in Pennsylvania of 8,000 gallons of fracking fluids into a nearby creek resulted in fish kills.⁶⁸ The drilling fluids discharged to the creek contained a liquid gel concentrate consisting of chemicals listed as possible human carcinogens.⁶⁹ The September 2009 discharge of chemicals to receiving waters was one of several spills from facilities operated by the same company, including an 800-gallon diesel spill from an overturned truck.⁷⁰

Though spills are inevitable at well sites, the only requirement in place is for gas well operators utilizing storage pits with a capacity greater than 5,000 barrels to prepare an emergency response plan.⁷¹ The well work permit does not require an emergency response plan in the event of a hazardous spill (unless the spill is from a storage pit at the well site).^{72,73,74} The public does not have a forum to provide comments on the potential for adverse environmental impacts associated with the potential for spills at drilling sites.⁷⁵

Flowback Water Storage

The volume of water required for hydraulic fracturing operations may require that flowback water be stored on site (most commonly in large pits) before being treated and

⁶⁸ Lustgarten, A., "Frack Fluid Spill in Dimock Contaminates Stream, Killing Fish," ProPublica, September 22, 2009.

⁶⁹ Lustgarten, A., "Frack Fluid Spill in Dimock Contaminates Stream, Killing Fish," ProPublica, September 22, 2009.

⁷⁰ Lustgarten, A., "Frack Fluid Spill in Dimock Contaminates Stream, Killing Fish," ProPublica, September 22, 2009.

⁷¹ WVDEP Memorandum, RE: Large Volume Pits/Ponds (capacity greater than 5000 bbl), December 16, 2008.

⁷² WVDEP, Office of Oil and Gas, Well Work Permit Application Addendum, undated.

⁷³ WVDEP Office of Oil and Gas, Well Work Permit Application, August 2009.

⁷⁴ WVDEP, Memorandum RE Large Volume Pits/Ponds (capacity greater than 5,000 bbl.), December 16, 2008.

⁷⁵ CEA Phone Log of Conversation with Jamie Petersen of the WVDEP, RE: Well Work Permit Public Comment Requirement, August 3, 2010.

disposed of or reused. Impoundments that contain flowback water are analogous to chemical storage sites not protected from the elements.⁷⁶ The presence of wastewater impoundments of up to five acres on well sites provide the potential for adverse environmental impacts including spills of flowback water that discharge to groundwater or surface water bodies and the use of storage pits by migratory birds or water fowl.

The WVDEP allows for the on-site storage of flowback water in pits that are designed and installed in such a manner as to provide structural integrity for the life of the pit, which is imperative to the objective of preventing a failure or improper discharge that could result in significant adverse impacts.^{77,78} As of April 2010, WVDEP has required all storage pits and impoundments to have a synthetic impermeable liner and be certified by a professional engineer.⁷⁹

Construction/Operation of the Well Site

Construction and operation of well sites and access roads disturbs large land area (most well sites are likely to be between 4 and 5 acres) and requires the use of heavy equipment and machinery (bulldozers, backhoes, drill rigs, etc.).⁸⁰

The construction and operation of well sites has the potential to alter the habitats of wildlife, including rare, threatened, and endangered species.⁸¹ The cumulative impact of multiple well sites in an area will lead to the disturbance of a greater area of land and an increased impact on wildlife.^{82,83}

⁷⁶ NYSDEC DGEIS, September 2009, Section 7.1.12.1.

⁷⁷ WVDEP, Industry Guidance Gas Well Drilling/Completion Large Water Volume Fracture Treatments, January 8, 2010.

⁷⁸ Title 35 Legislative Rule, Department of Environmental Protection, Oil and Gas, Series 4 – Oil and Gas Wells and Other Wells, 35CSR4, April 15, 2010.

⁷⁹ Title 35 Legislative Rule, Department of Environmental Protection, Oil and Gas, Series 4 – Oil and Gas Wells and Other Wells, 35CSR4, April 15, 2010.

⁸⁰ NYSDEC DGEIS, September 2009, Section 3.2.1.3.

⁸¹ United States Army Corps of Engineers Chicago District, Known and Potential Environmental Effects of Oil and Gas Drilling Activity in the Great Lakes, November 2005, Section 6.3.

⁸² Metropolitan Conservation Alliance, Best Development Practices – Conserving Poll Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States, 2002.

No environmental assessments of the impacts of individual well sites or the cumulative effects of multiple proximate well sites are required by the WVDEP as part of the well work permit application process and no mechanism exists for the public to review the protectiveness of the construction activities.^{84,85,86,87}

Groundwater Impacts

Contamination of groundwater sources during hydraulic fracturing could occur as a result of a failure to maintain stormwater controls, and subsurface fluid containment practices, poor casing construction, or accidental spills and releases. Hydraulic fracturing fluids contain proprietary products whose MSDS may not contain complete chemical compositional information, which raises the hazard of the discharge of unknown chemicals into the groundwater. Chemical or biological substances present in the fluids injected into a well bore that are inadvertently released either through spills on the surface or faults in the well casing may lead to the contamination of groundwater sources that are designated for drinking water supplies, either public or private. Impoundments that contain flowback water are analogous to chemical storage sites not protected from the elements. The potential for multiple well sites to be developed increases the volume of fluid being transported to the sites, used in the fracturing process, and stored on site, thus increasing the potential for an accidental spill, pit leak, or pit failure and subsequent groundwater contamination.

Air Quality Impacts

There is no evaluation of the cumulative impacts of construction and operation of hydraulic fracturing well sites on area air quality at the well site and surrounding areas in the WVDEP well permit process. Construction operations such as grubbing, grading, pit

⁸³ United States Army Corps of Engineers Chicago District, Known and Potential Environmental Effects of Oil and Gas Drilling Activity in the Great Lakes, November 2005, Section 6.3.

⁸⁴ WVDEP, Office of Oil and Gas, Well Work Permit Application Addendum, undated.

⁸⁵ WVDEP Office of Oil and Gas, Well Work Permit Application, August 2009.

⁸⁶ WVDEP, Industry Guidance Gas Well Drilling/Completion Large Water Volume Fracture Treatments, January 8, 2010.

⁸⁷ CEA Phone Log of Conversation with Jamie Petersen of the WVDEP, RE: Well Work Permit Public Comment Requirement, August 3, 2010.

excavation and access road construction create large quantities of dust that has the potential to travel away from the site in wind currents and spread dust and contaminants.⁸⁸ The diesel fuel emissions from construction equipment, truck or generators onsite contain air toxics (such as carbon monoxide and carbon dioxide), hydrocarbons, particulate matter (soot) and nitrogen oxides, which contribute to the production of ground-level ozone (smog) and acid rain.^{89,90} Atmospheric releases from wells and the storage of flowback water and other fluids can lead to the release of harmful chemicals into the atmosphere.⁹¹

The construction and operation of multiple well sites in an area and the types of air pollutants commonly generated at these sites (PM₁₀, PM_{2.5}, carbon monoxide, ozone, smog, etc.) raise the risk that these impacted areas may be deemed nonattainment areas.^{92,93} In Wyoming natural gas development has worsened air quality and led to nonattainment for ozone.⁹⁴

West Virginia does not require a permit for well pad operation and construction air emissions.⁹⁵ There is no process for the evaluation of individual or cumulative environmental impacts due to the air emissions generated during the construction of the well drilling/extraction facilities. The air emissions from well processing facilities are regulated under the Clean Air Act which includes mechanisms for public notice, permit review and comment, and appeal of an issued permit.

⁸⁸ Washington State Department of Ecology, Focus on Air Quality and Construction Projects, August 2005.

⁸⁹ Energy Justice.net, Fact Sheet: Natural Gas, October 2009.

⁹⁰ "United States Environmental Protection Agency National Clean Diesel Campaign: Working Together for Cleaner Air," <http://www.epa.gov/diesel/>, last accessed August 10, 2010.

⁹¹ United States Army Corps of Engineers Chicago District, Known and Potential Environmental Effects of Oil and Gas Drilling Activity in the Great Lakes, November 2005, Section 6.2.1.1.3.

⁹² "Scorecard: The Pollution Information Site – Pollution Locator: Nonattainment Areas," http://www.scorecard.org/env-releases/def/cap_naa.html, 2005.

⁹³ "United States Environmental Protection Agency: The Green Book Nonattainment Areas for Criteria Pollutants" <http://www.epa.gov/oar/oaqps/greenbk/>, June 16, 2010.

⁹⁴ "Sublette Examiner: Sublette nonattainment recommended" http://www.subletteexaminer.com/V2_news_articles.php?heading=0&page=72&story_id=1089, March 18, 2009.

⁹⁵ CEA Phone Log of Conversation with Gene Smith of the WVDEP, RE Public Comments and Air Quality Permitting, August 5, 2010.

Processing

The processing of the natural gas increase the environmental impacts those resulting from the gas extraction process including:

- Impaired air quality due to sulfur and carbon dioxide emissions and greenhouse emissions from compressors and condensate tanks
- Increased stormwater runoff
- Impacted wildlife habitat
- Contamination of soils, groundwater, and surface water due to chemical spills
- Increased energy demand
- Increased noise from compressor stations.

The impacts of site development on wildlife habitat, surface water, and potential contamination due to spills have been discussed in the previous section. The natural gas processing stage only exasperates the previously discussed impacts.

The major emission sources in the natural gas processing phase includes compressor engines, acid gas wastes, fugitive emissions from leaking process equipment, and glycol dehydrator vent streams.⁹⁶ The Clean Air Act regulates emissions from the construction, modification, relocation, administrative update, and operation of natural gas compressor states with glycol units, flares and other specified control devices.⁹⁷

Acid gas, sulfur dioxide (SO₂) and hydrogen sulfide (H₂S) are produced as a result of the acid waste gas from the “sweetening” of sour gas if flared or incinerated.⁹⁸ Emissions of hydrocarbons, PM, and H₂S will occur when combustion of the acid gas is incomplete. Sour gas is an issue because the sulfur compounds are dangerous to breathe and are corrosive to pipes.

⁹⁶ USEPA, Office of Air Quality Planning and Standards, *Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources*, AP-42, Fifth Edition, January 1995. [AP-42]

⁹⁷ WVDEP Division of Air Quality Class II General Permit, G35-A, Issued April 17, 2008

⁹⁸ AP-42.

The WVDEP permitting process to mitigate air quality impacts associated with the gas processing is developed to be protective of human health and the environment .Air quality is regulated by the WVDEP Division of Air Quality Class II General Permit G35-A which allows for a 30 day public comment and review of the permit application as well as avenues to appeal issued permits.⁹⁹ The permit provides specific siting, monitoring, testing, recordkeeping, and reporting requirements but does not take into account the cumulative effects of multiple gas processing emissions.

Transportation

Once the raw gas has been converted to pipeline quality dry gas, the gas is transported from the well site to a final processing plant by a series of small diameter, low pressure pipes.¹⁰⁰ Intermittent processing may be done during the gas transport at “straddle extraction plants.” These plants remove any Natural Gas Liquids (NGL) that can form in the pipeline during transport.

Interstate Pipelines

Natural gas traveling through interstate pipelines is regulated by The Federal Energy Regulatory Commission (FERC); operational lines are then regulated by the Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA). The regulatory framework for the siting and operations of the pipelines and associated compressor stations is rigorous and proven. FERC issues environmental assessments (EA) and environmental impact statements (EIS) for most projects and makes these reports available for public review on their website and in their Public Reference Room.¹⁰¹ In addition there are public notification periods including mailing lists to residents, local and state government, and environmental and historical advocacy groups

⁹⁹ WVDEP, Division of Air Quality, Application Instructions and Forms for General Permit G30-D, revised April 23, 2008.

¹⁰⁰ NaturalGas.org – Processing Natural Gas - http://naturalgas.org/naturalgas/processing_ng.asp, last accessed August 6, 2010.

¹⁰¹ Federal Energy Regulatory Commission (FERC) Natural Gas – Environment - <http://www.ferc.gov/industries/gas/enviro.asp>, last accessed August 6, 2010.

and public meetings.¹⁰² FERC also provides environmental guidelines for pipe repairs, erosion control, revegetation and construction and mitigation procedures for wetlands and water bodies.¹⁰³

Intrastate Pipelines

While there are strict guidelines and regulations for the mitigation of environmental impacts for the construction of interstate pipelines, there is little oversight required for intrastate pipeline construction.

The WVDEP Office of Oil and Gas regulates natural gas production and gathering pipelines (not including transmission lines) with the focus on tariffs and right of ways and do not require any environmental assessment or impact study.¹⁰⁴

Regulatory Structure Effectiveness, Opportunities, and Recommendations.

The entire process of extracting natural gas by hydraulic fracturing, from well site development through the transport and delivery of natural gas, has the potential to adversely impact the environment. In general, the well-established gas processing, interstate transport, and storage phases of the work are well-regulated and offer multiple opportunities for public review and comment. It is during the hydraulic fracturing/gas extraction phase and intrastate transmission of the natural gas where regulatory protections are severely lacking.

Under the current regulatory program, the following permits are applicable to the Marcellus Shale natural gas drilling, extraction, processing, and transmission process:

- WVDEP Well Work Permit (WW-2B)

¹⁰² CEA Phone Log of Conversation with Sara McKinley of FERC, RE Environmental Impact Statements and Public Involvement for Building Natural Gas Pipelines, August 6, 2010.

¹⁰³ Federal Energy Regulatory Commission (FERC) Natural Gas – Environment - <http://www.ferc.gov/industries/gas/enviro.asp>, last accessed August 6, 2010.

¹⁰⁴ State of West Virginia, Title 150 Legislative Rule, Public Service Commission, Series 16, Rules Governing the Transportation of Natural Gas, undated

- WVDEP General Water Pollution Control Permit (GP-WV-1-88)
- WVDEP Class II UIC Permit
- WVDEP Class II General Permit G30-D for Natural Gas Compressor Stations
- WVDEP NPDES Water Pollution Control Permit (privately owned or on-site)
- NPDES Permit Revision (for existing plants proposing to accept industrial waste)

The permitting process for the General Air Permit, the UIC Permit, and the NPDES permits for wastewater treatment plants, contain provisions for public notice/comment, public hearings, and permit appeals. These programs are well established and have been a part of the oil and gas drilling programs since their inception.

The WVDEP Well Work Permit is the primary permit for the Marcellus Shale hydraulic fracturing and gas extraction and fails to address the critical environmental impacts of the hydraulic fracturing process including:

- The individual and cumulative effect of millions of gallons of surface water withdrawal from single and multiple proximate well sites
- The lack of information as to the availability of flowback treatment capacity at wastewater treatment plants
- The lack of information as to the availability of flowback disposal capacity in Underground Injection Wells
- The individual and cumulative impacts of chemical spills to the soils, groundwater, and surface water
- The individual and cumulative effects of stormwater runoff and subsequent erosion due to construction of the well pads, access roads in mountainous areas, and the gas extraction operations on surface waters and flooding potential
- The individual and cumulative impacts of construction and operation activities from increased truck traffic and equipment operations (noise).

To address the gaps in the current regulatory process, we believe a significant overhaul of the Well Work Permit requirements should include:

- Requiring an Environmental Impact Assessment of individual and cumulative impacts of the hydraulic fracturing process as part of the Well Work Permit application process – the evaluation should address, at a minimum, but not limited to, individual and cumulative surface water withdrawal impacts, stormwater erosion impacts associated with the construction and operation of the well pads, air emission impacts associated with well pad operation and truck traffic.
- Requiring a trigger for preparing an Environmental Impact Statement should the Environmental Impact Assessment identify significant adverse impacts to determine whether the project will result in unavoidable or unmitigatable impacts.
- Include public comment/hearing/appeal requirements to the Well Work Permit application process.
- Require the applicant and the named treatment facility to identify and certify that the wastewater treatment/disposal method identified in the permit has adequate capacity to treat the flowback water in combination of all other flow received by the facility and that the facility, if a POTW, may certify that the facility is allowed to receive the flowback water in accordance with its IPP permit
- Require a tracking and reporting system for flowback wastewater disposal for submittal and review to the WVDEP. Require a spill containment plan for portable chemical storage containers

Implementing the environmental impact assessment/environmental impact statement in a meaningful way would require WVDEP to review/comment/and evaluate these assessments to make a determination whether the impact would be too great to allow the project to go forward. Legislation would have to be enacted requiring these assessments and WVDEP's determination and should include mechanisms for public review, comment, and appeal.

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:53 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Marcellus shale drilling

From: D & L Wright [mailto:hillhiker@copper.net]
Sent: Tuesday, October 11, 2011 10:25 AM
To: DEP Comments
Subject: Marcellus shale drilling

Talking Points on the Rule:

- The rules are of limited applicability and apply only to horizontal wells. The rule does not apply to vertical Marcellus Shale wells (like the one shown on the WV-SORO website) that use the amount of water and disturb the amount of land that the rule would otherwise cover and there are no improvements for the many conventional wells that are still drilled.
- The rule does not give surface owners notice of plans to drill the wells until the permit is actually filed, and then there is only 15 days to file comments, no hearing on the permit application, and no power for the State to help a surface owner whose future home site is now going to be a well site.
- The rule continues to allow gas wells to be drilled within 200 feet of peoples' homes. This close proximity is of particular concern for Marcellus Shale operations, given their duration, the air, noise, light and other pollution from the sites. In addition, there is the potential for more serious accidents such as the fires and explosions that occurred last year in the Northern Panhandle.
- The DEP's press release was misleading when it said that the rule, "stipulates that all drill cuttings and drilling mud be disposed of in an approved solid waste facility." In Section 4.3 the Rule also states, "or managed on-site in a manner otherwise approved by the Secretary," and there is no indication of what the Secretary may approve. A scientific study of the problems associated with on-site burial of pit waste from a conventional well drilled in Fernow Experimental Forest documented seeps and leaching into surrounding soils. Marcellus Shale wells contain more potential contaminants (including naturally occurring radioactive materials (NORMs) than conventional wells and at much greater volumes.
- The requirement that an engineer must design the well pad if it is more than 3 acres is a good thing. However, having an engineer supervise the construction and reclamation would help ensure that soil erosion and sediment control plans are followed since there are too few inspectors to oversee these activities. The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves.
- Many of the provisions related to the water management plans had already been implemented in practice under the Manchin administration, although the requirement that operators disclose the chemicals added to water used to fracturing or stimulate a well is new and appreciated.
- Many of the new casing and cementing requirements are too vague. The rule sets standards that would allow the State to cite the driller if something went wrong, as opposed to standards that could prevent problems from occurring in the first place. For example, the rules state that all cement used must "secure the casing to the well bore..." but do not require the driller to run a bond log to make sure that it actually does.
- With regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies.
- Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.
- The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown. Thank you....D.Wright....Lost Creek

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:53 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Horizontal Drilling Rules

From: Gibbins [mailto:gibbins@frontier.com]
Sent: Tuesday, October 11, 2011 9:35 AM
To: DEP Comments
Subject: Horizontal Drilling Rules

LEAGUE OF WOMEN VOTERS OF WEST VIRGINIA
309 Mount View Drive, Charleston, WV 25314

To: Office of Oil and Gas, WV Department of Environmental Protection

From: The League of Women Voters of West Virginia; contacts – Susan Watkins, President, 309 Mount View Drive, Charleston, WV 25314; Marilyn McGeorge, 129 Virginia Street East, Charleston, WV 25311; Helen Gibbins, 6128 Gideon Rd., Huntington, WV 25705;

Re: Comments on Horizontal Drilling Rules (35CSR8)

The League of Women Voters of West Virginia is concerned about the following issues related to fracking/horizontal drilling for natural gas. We believe the rules should be applied to vertical Marcellus Shale wells as well as to horizontal drilling.

Water Pollution

To protect our water supplies drillers must be required to test for all chemicals used in fracturing. Testing flowback for naturally occurring radioactive materials, or NORMS, must be part of the program.

As to sediment control we are pleased that the emergency rules provide that there be an engineer designed well pad of over 3 acres. But West Virginia must provide enough inspectors to see that the plan is implemented during construction, drilling process, and reclamation so that erosion and sedimentation are controlled. We also are concerned about erosion from access roads. If the present erosion/sediment control program for roads is not fully staffed, then there should be provisions to require extra inspectors for erosion/sediment control for the access roads to well pads. Complaints by neighbors about the roads have been considerable.

We are pleased that the emergency rules include provisions to control reduction in our water supply. Gas drillers must be limited in how much water they can take from surface water. The streams must maintain a healthy environment and healthy fish and bug populations and environment and nearby wells must have the capacity to meet domestic and commercial needs. Determining what is adequate downstream flow should be determined by independent scientists rather than by the Secretary of the DEP, a political appointee.

The disposal of wastewater must be in facilities with the ability to treat the water. Municipal treatment plants do not have the capability to treat wastewater from fracking/drilling for natural gas. The rules must clearly state what is necessary for safe disposal rather than leave it up to the Secretary of the DEP.

Strict regulations must be imposed on the disposal of pit waste. The components of this waste are toxic and can not be allowed to leach into adjoining soils and water.

Air Pollution.

Measures must be established that will prevent the release of methane and other air pollutants from the fracking/drilling process. Methane is a strong component of climate changing gas as well as the cause of flash burnings in our water, even in some homes. Many say that burning natural gas is a good alternative to burning coal because of the release of less climate gas; but if methane is released into the air during the drilling process, we will end up with more climate change gases. Also other air pollution from fracking has been found to harm public health.

Landowners Protection

Public Notice – All landowners must be notified well in advance of drillers' applications for permits and be given the opportunity to negotiate well and road locations. After a driller applies for a permit, the public must have a reasonable amount of time to review the permit. There must be provisions for a public hearing, if the nearby landowners request one.

Gas well drilling must not be allowed so close to nearby homes that it will make living in these homes untenable. Drilling causes air, noise, and other pollution and the possibility of accidents.

In conclusion fracking for natural gas should not leave West Virginia with legacy problems. The current taxes and monetary benefits for the drillers and some landowners should not come at the expense of other landowners, the environment, and West Virginia's future.

Permit fees must be adequate so that the DEP can administer the permitting and inspecting program thoroughly. We agree on proposals to set fees at \$10,000 for a first well permit and \$5,000 for each following well. These fees are reasonable for the cost of doing business in an industry that gains considerable remuneration from its drilling processes. Without sufficient funds to administer the program, West Virginia can not hope to regulate fracking/horizontal drilling to a level that will protect our people and the environment.

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:53 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: marcellus shale drilling

From: Harriet Parsons [mailto:harrietgroton@gmail.com]
Sent: Tuesday, October 11, 2011 7:24 AM
To: DEP Comments
Subject: marcellus shale drilling

It's more important to preserve public safety and the planet earth than to create jobs. Please impose strictest limits and fees on drilling.

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:54 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: DEP Proposed Emergency Rules Governing Horizontal Well Development

From: Vivian Parsons [mailto:dixie304@yahoo.com]
Sent: Tuesday, October 11, 2011 12:30 AM
To: DEP Comments
Cc: Cindy Pyles; Don Mason; Bernie Kazienko; Bernie Fazzini; Janice LaRue; Mike Taylor; Pat Boyle; J.R. Keplinger; Donnie Tenney; Nancy Cartmill; Mickey Brown; Denise Scalp; Chuck Armentrout; Ron Watson; Tim McCormick; Jerry Linkinoggor; Scott Lemley; Willie Parker; jackdavidwoodrum@yahoo.com; Danny Greathouse; Al Halstead; Gordon Lambert; commissionerbartz@stratuswave.net; wvtree@frontier.com; Vivian Parsons
Subject: DEP Proposed Emergency Rules Governing Horizontal Well Development

To: James A. Martin, Chief, WV DEP Oil & Gas Division

Re: Proposed Emergency Rules Governing Horizontal Well Development

From: County Commissioners' Association of West Virginia

On behalf of the County Commissioners' Association of West Virginia (CCAWV), we've created a committee to follow the development of the "Proposed Emergency Rules Governing Horizontal Well Development," and would like to offer the following comments:

Under WV Code 35-8-5. Public Notice Procedures, rule 5.1, it is required that any permit requests located within the boundaries of any municipalities must publish public notice of the filing of a well work permit application, as a class I legal advertisement in the local newspaper.

While CCAWV is not suggesting that such process be required when the well is located in the unincorporated area of the county, it is our request that electronic notification of all well work permit applications be sent to the county commission where the well is located. This electronic notification could be achieved at a minimal cost, and would allow county commissions to be aware of possible well activity in their county.

Those counties that have been leaders in the Marcellus Shale Development, have formed a county task force made up industry, emergency management personnel, county commission, law enforcement, and state DEP and DOT representatives. This approach has opened lines

of
communication and allowed many contentious issues to be resolved at the local level. We believe that adding a requirement to electronically notify county commissions when a permit for well work application has been applied for, will facilitate this best management practice.

Thank you for the opportunity to submit these written comments on behalf of County Commissioners in West Virginia. CCAWV Committee Members: Don Mason, Marshall County Commissioner, Chair Scot Lemley, Wetzel County Commissioner

Vivian Parsons
Executive Director
County commissioners' Association of WV
2309 Washington Street East
Charleston, WV. 25311
304-345-4639 (phone)
304-346-3512 (fax)
304-415-1608

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:54 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: facebook

From: Laurine Yates [mailto:laurinecyates@frontier.com]
Sent: Monday, October 10, 2011 8:46 PM
To: DEP Comments
Subject: facebook

I would like to suggest that the DEP and the Legislature look at Facebook site savethewatertable.org there are so many entries about the problems with drilling. Please don't allow these problems to come to West Virginia. Here the people love family and land. We do NOT want our land ruined.

Thank you.

Barry and Laurine Yates

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:54 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Marcellus Gas Drilling Rules Inadequate-STOP THE DRILLING!

From: Deirdra Scanlon [mailto:dscan123@yahoo.com]
Sent: Monday, October 10, 2011 6:26 PM
To: DEP Comments
Subject: Marcellus Gas Drilling Rules Inadequate-STOP THE DRILLING!

Dear Sir,

Please do not allow gas drilling in our state. The prooposed rules are woefully inadequate and I believe they are not in the best interest of the people of WV. Yes it will provide some (low-paying jobs) but in the long run it will ruin our enviroment and homes. The taxpayer will foot the bill of the clean up (if a clean up is even possible) and furthur bankrupt our nation. The few folks at these big companies will make out and the rest of us holding the bag.

I intend to keep abreast of this issue and tell anyone and everyone to do the same. I vote and I will do everything I can to get my fellow citizens to vote also.

I realize the enormous pressure you must be under. In this day and age it seems like the only American value we live by is MONEY. Please do what you can to aspire to other values. I, too, in my life, will do the same.

May God bless you as you do your job.

Sincerely,

Deirdra Scanlon,
Not a rich person but a concerned citizen
Lewisburg, WV

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:54 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: MARCELLUS SHALE HYDROFRACTURING; POOLING

Categories: Complete

From: linda foster [mailto:lindafoster2011@gmail.com]
Sent: Monday, October 10, 2011 5:06 PM
To: DEP Comments
Subject: MARCELLUS SHALE HYDROFRACTURING; POOLING

We are extremely concerned regarding the destruction that threatens our water, air and land as a result of gas hydrofracturing (fracking). The millions of gallons of waste from this process, as testified in a Senate hearing, contain 596 chemicals, plus heavy metals and high levels of radioactivity; most of which cause cancer and/or brain damage. This waste is known to be being discharged into the rivers from which we get our water, injected into porous holes in the ground, or just evaporated into the air we breathe with the residue, containing the metals and radioactive material, placed in regular landfills. Besides the toxic waste, we are told that fracking requires one- to eight-million gallons of water per well, and that there are at least twelve wells in a drilling pad. This water is coming from WV rivers and streams. Can they sustain this level of use and still yield the water we need? Meanwhile, fracking will add thousands of heavily-laden, air polluting truck trips onto our fragile, dangerous, taxpayer-maintained highways. It will also, it appears, destroy many tourism-generating areas which currently give this state its name; "Wild and Wonderful". The Wall Street Journal has stated that up to 50% of this gas will go to Europe and Asia, not the U.S.. While, ispr according to H.U.D. Handbook 4150.2, pg. 27, banks are not lending against frac-drilled and adjoining properties, nor is property with a gas or oil leaseeligible for FHA financing. Clean water and usable land are more valuable than gas, it seems. Might letting the fracking companies do as they please now, create widespread poverty in this state long into the future? Please rein in the fracking companies; or ban the process altogether in West Virginia. Please, at the very least, consider your constituents and do not force fracking on them by making it a public utility. Sincerely, Linda Foster 304 613 5825

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:55 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: RULE 35CSR8

Categories: Complete

From: T Higgins [mailto:thiggins134@hotmail.com]
Sent: Monday, October 10, 2011 4:59 PM
To: DEP Comments
Subject: RULE 35CSR8

I am writing about the proposed rule 35CSR8 that the DEP has asked for public comment on.

I have carefully read the rule and, while applauding the required reporting of chemicals that may be used and is used in the fracking process, there isn't a whole lot of change to benefit your citizens in that rule. It is mostly demanding more reporting and not demanding more accountability in the industry. For example:

1. There are no limitations on the maximum amount of fresh water that can be taken from our lakes, streams and reservoirs. We need limitations for the whole stream and not just per permit. The average well in WV takes 5.5 million gallons of water.
2. Greater regulation of the hazardous by products including the "produced" water needs to be addressed. If they can't find a more ecologically safer way to dispose of both mud and produced water then there needs to be moratorium on drilling until science has caught up with drilling. Sticking down a hole solves nothing and leaves future generations in jeopardy.
3. Flaring and excess discharges from gas well frack sites should meet the Clean Air Act standards and should be filtered or avoided altogether.
4. Sewer permits for onsite worker habitation should be left in local government hands and they should be responsible for compliance. There are too few inspectors to manage all aspects of the permit regulations.
5. Cementing should be extended to a 24 hour not eight hour period. Anyone who has poured a sidewalk in front of their house or a patio is always advised to wait 24 to 48 hours before using it. API standards are not always in our best interest.
6. We need stronger and clearer language in the identification of methods used to minimize adverse effect on aquatic life. The ruling is too vague.
7. The distance from drinking water sources (private water wells) should be increased to at least 1500 feet.
8. At no place in this proposed rule is there any mention of protecting aquifers and drinking water. This needs to be taken care of FIRST not made another report for the drillers to fill out. It needs intense and strict regulation.
9. The last section on Public Notice Procedures has a good point in requiring 30 day public notice. However, not every one reads the local small town paper. Gas well permits should include *written* notification to adjacent landowners as well as surface owners where wells are being placed. It also should be a 30 day notice.
10. National Forests and environmentally fragile areas should ban all gas well development. We have spent millions cleaning up places like Cranberry River and protecting unique habitats like the Cranberry Glades. Don't frack it over now!

Thank you for taking the time to read these comments. I hope you will listen.

Theresa Higgins

Co-Founder of STand Up Now

5733 Fenwick Road
Richwood, WV 26261
304-846-2879

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:55 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: see the following points re: Marcellus Shale

From: Daniel Romm [mailto:danromm@gmail.com]
Sent: Monday, October 10, 2011 4:43 PM
To: DEP Comments
Subject: see the following points re: Marcellus Shale

Dear Sirs:

Below are key points that need to be addressed with Marcellus shale legislation:

- The rules are of limited applicability and apply only to horizontal wells. **The rule does not apply to vertical Marcellus Shale wells** (like the one shown on the WV-SORO website) that use the amount of water and disturb the amount of land that the rule would otherwise cover and there are no improvements for the many conventional wells that are still drilled.
- The rule does not give surface owners notice of plans to drill the wells until the permit is actually filed, and then there **are only 15 days to file comments**, no hearing on the permit application, and no power for the State to help a surface owner whose future home site is now going to be a well site.
- The rule continues to allow gas wells to be **drilled within 200 feet of peoples' homes**. This close proximity is of particular concern for Marcellus Shale operations, given their duration, the air, noise, light and other pollution from the sites. In addition, there is the potential for more serious accidents such as the fires and explosions that occurred last year in the Northern Panhandle.

The DEP's press release was misleading when it said that the rule, "stipulates that all drill cuttings and drilling mud be disposed of in an approved solid waste facility."

Section 4.3 also states, "or managed on-site in a manner otherwise approved by the Secretary," *There is no indication of what the Secretary may approve. "Approved solid waste facility" is a complete mystery, and "or managed on-site in a manner otherwise approved by the Secretary" means pit burial. "Approved by the Secretary" is not acceptable. The secretary is a political appointee who takes orders from elected politicians who depend on campaign donations.*

A scientific study of the problems associated with on-site burial of pit waste from a conventional well drilled in Fernow Experimental Forest documented seeps and leaching into surrounding soils. Marcellus Shale wells contain more potential contaminants, toxins and carcinogens (including naturally occurring radioactive materials (NORMs) than conventional wells and at much greater volumes.

In Section 4.1.a. Withdrawing water from surface waters of the State using methods **deemed appropriate by the Secretary** so as to maintain sufficient in-stream flow immediately downstream of the withdrawal location;

Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists.

4.2.a. Within forty-eight (48) hours, but no less than twenty-four (24) hours, prior to the withdrawal of water, the operator shall identify the location of withdrawal by latitude and longitude; verify, using methods deemed acceptable by the Secretary, that sufficient flow exists to protect designated uses of the stream; and provide notice to the Office as prescribed by the Secretary; ***“using methods acceptable to the Secretary” is not acceptable***

3.3.f.2. A demonstration, using methods acceptable to the Secretary (***there's that unacceptable phrase again***), that sufficient in-stream flow will be available immediately downstream of the point of withdrawal. Sufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal.

- The requirement that an engineer must design the well pad if it is more than 3 acres is a good thing. However, having an **engineer supervise the construction and reclamation** would help ensure that soil erosion and sediment control plans are followed **since there are too few inspectors to oversee these activities**. The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves.
- Many of the provisions related to the water management plans had already been implemented in practice under the Manchin administration, although the requirement that operators disclose the chemicals added to water used to fracturing or stimulate a well is new and appreciated.
- Many of the new casing and cementing requirements are too vague. The rule sets standards that would allow the State to cite the driller if something went wrong, as opposed to standards that could prevent problems from occurring in the first place. For example, the rules state that all cement used must "secure the casing to the well bore..." but do not require the driller to run a bond log to make sure that it actually does.
- With regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies.
- Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.

The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown. Language should cover public notice for all wells, not just within municipalities.

3.3.d. The planned management and disposition of wastewater from fracturing, stimulation, and production activities;

The specific place of wastewater disposal should also be in the water management plan. They are going to run out of places to put this waste fluid (which obviously is NOT just “wastewater”). Restrictions should be tightened.

3.4.b. Well site safety meetings. – Safety meetings shall be held on-site weekly, at a minimum, and specifically prior to the beginning of drilling, completion, and work-over operations. Meeting attendance shall be logged, and the log shall be maintained on site. A check-in and check-out list of all personnel shall be maintained during the drilling and completion phases of the operation.

Personnel attending well site safety meetings should include subcontractors and truckers (or some other provision for training truckers must be found). At each well site safety meeting all workers, including truck drivers, should be provided with and keep in their possession the up-to-date phone numbers to call in case of any emergency. Spills from trucks, whether on the site or in transit, are emergencies.

4.1.b. Casing, sealing or otherwise managing wells to keep fluids or natural gas from entering ground or surface waters;

“or otherwise managing wells” – does this phrase open the door to anything? Drillers that continue to use hay bales to stop sediment of chemical spills are not to be trusted to decide how to manage fluids.

4.1.c. Conducting oil and gas operations using BMPs (Best Management Practices) so as to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to stream flow or runoff outside the permit area, but in no event shall the contributions be in excess of requirements set by applicable State or federal law.

“to the extent practicable” is an unacceptable loophole.

4.4.a.4. Casing shall not be disturbed for a period of at least eight hours after the completion of cementing operations

This is the most critical function in protecting groundwater. An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured. Is there not a test to determine when the cement has set

Please make the needed corrections in the legislation. Our health depends on it.

Thanks.

Daniel S. Romm
PO Box 557
Beckley, WV
25802

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:55 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: comments

From: Laurine Yates [mailto:laurinecyates@frontier.com]
Sent: Monday, October 10, 2011 2:45 PM
To: DEP Comments
Subject: comments

We feel that there are some serious inadequacies in the rules that the DEP has come up with. For instance, wells being drilled within 200 feet of someone's house is not fair. Where the frac fluid full of toxic chemicals goes needs to be seriously addressed. And also the cement casings are at the route of a lot of the problems. This issue needs attention.

However, we feel that no drilling should be allowed until there are inspectors to monitor what goes on. We do not have enough inspectors and we don't see a plan to get more. If there is no way to enforce these rules, then it becomes unimportant what the rules are. Furthermore, in PA, they have a lot of inspectors and LOTS of environmental problems.

It seems there is no safe way to do this kind of drilling. PLEASE let us ban this hydro fracking from our state and our nation. This drilling has caused untold problems and is only allowed because of the Halliburton Loophole. Someone needs to tell the truth and make this kind of drilling illegal. The citizens and their land and the water table should not be "collateral damage". There could be a revolution is nothing is done. The American citizen deserves to be protected from hydro fracking by a ruling that it is banned and illegal. This would be a proper action for the legislature to take.

Thank you for your consideration of our point of view.

Barry and Laurine Yates

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:55 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Natural Gas Drilling

Categories: Complete

From: . Kaia [mailto:sweetkaia@hotmail.com]
Sent: Monday, October 10, 2011 12:58 PM
To: DEP Comments
Subject: Natural Gas Drilling

Please register my comments about the new rules regarding natural gas drilling in the Marcellus Shale. I moved to West Virginia 30 years ago for the quiet, peace, clean air, and clean water. These rules allow a new well within 200 feet of a dwelling. At this time, I live with a well that is about a quarter mile from my house. Not only is it incredibly difficult to live through the time when the machinery and trucks are going in and out to drill the location, but I must breathe the toxic fumes and now my groundwater is neither pure nor plentiful. Please write rules to control this industry that protect our rights as citizens and homeowners in West Virginia instead of pleasing the mega-corporations that stand to make mega-bucks off our resources.

Thank you for considering my comments,
Ms. Kaia
2621 Keith Fork Road
Weston, WV 26452.
304-269-4207

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:55 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: My Comments for your meeting on Horizontal Drilling Rules (35CSR8) You need to push for a rule that states no Marcellus Wells within 2,000 ft of a dwelling and we need a progressive tax on each well...As stated below by me...John Cobb

Categories: Complete

From: John Cobb [mailto:jcobbjr@earthlink.net]

Sent: Monday, October 10, 2011 10:01 AM

To: DEP Comments

Subject: My Comments for your meeting on Horizontal Drilling Rules (35CSR8) You need to push for a rule that states no Marcellus Wells within 2,000 ft of a dwelling and we need a progressive tax on each well...As stated below by me...John Cobb

An Industrial zone in your back yard in Lewis County?

We have a serious problem coming to Lewis and other counties in West Virginia unless our Select Committee on Marcellus Shale Legislation can come up with a strong bill to control and create a benefit from Marcellus Drilling in our area.

Can you imagine a large industrial complex within 200 ft of your home's front door. This is possible with the current law on the West Virginia Books, Consider what has happened in Marion County.

Casey and Stacie Griffith built their dream home at the back of a Marion County hollow in 2005.

In 2009, their hollow turned into an industrial zone. On the hill next to and just above their home is a Marcellus well pad permitted for six wells.

At the front edge of their yard on what once was field, is a freshwater impoundment and what will be a graveled staging area for heavy equipment.

“There’s just no escape,” Stacie said. “You just can’t stand to view it and hear it every day. It’s every day, it’s all day. It just consumes you.”

Well spacing is currently being debated by our legislature’s Select Committee and they are, among other things, discussing that no well pad should be located within 1,000 feet of an occupied dwelling.

The Griffiths’ story illustrates why this is being debated. State Code now requires wells –not pads- to be 200 feet from dwellings.

From my standpoint Marcellus Wells should be a minimum of 2,000 ft from dwellings-which is under 40% of one mile.

What happened to being “Neighborly”? Common decency would dictate a fairness in regard to placement of Marcellus Wells in West Virginia.

Please call on your local elected officials to push the Select Committee to act on the side of our neighbors.

The current track record of the Select Committee has not been good.

Here in West Virginia our the Select Committee on Marcellus Shale Legislation has recently proposed new legislation that only calls for a \$10,000 fee for the first well and \$5,000 for each additional well.

But in Pennsylvania Gov. Tom Corbett recently held a press conference in Pittsburgh to unveil his Marcellus Shale proposals stemming from the Marcellus Shale Advisory Commission's report.

Regarding the impact fee in his proposal, the governor said the fee will be adopted by counties where the drilling impact is and will be used by those counties, local governments, and state agencies to waylay the impacts of Marcellus Shale exploration.

He said the fee will be \$40,000 in the first year; \$30,000 in the second year; \$20,000 in the third year; and \$10,000 in years four through ten.

He also said counties can provide a for a fee credit of up to ten percent if the gas company invests in public, local infrastructure.

He anticipates the fee will bring in \$120 million in the first year and \$200 million within six years.

This amounts to a fee per Marcellus Well of \$160,000 each!—The Select Committee in WV only offered up \$10,000 pre well?

We need some serious legislation from our folks in Charleston.

Please ask our Select Committee to get to work this next week and get us some protection with Spacing of Wells at 2,000 feet from dwellings and let's have a larger severance tax on each well that will put some money aside for the future of our infrastructure in West Virginia.

We all need to do what is right for West Virginia.

John W. Cobb, Jr.
260 Hickory Farm Road
P. O. Box 13
Ireland, West Virginia 26376

304-452-9634
Cell 240-321-1227
Jcobbjr@earthlink.net

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:56 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: MARCELLUS SHALE HEARINGS

From: cash [mailto:cashvan@aol.com]
Sent: Monday, October 10, 2011 8:25 AM
To: DEP Comments
Subject: FW: MARCELLUS SHALE HEARINGS

I will try to be succinct.

1. The 200 foot rule from dwelling to well pad is completely inadequate. The lives of children and young families, retirees are at risk. This should be at least 500 -1000 feet. Even that will not protect people from noise and air pollution but it will provide a bit of a barrier.
2. So many companies are involved in the drilling process that it is absolutely certain the lawyers have permanent employment; the goal will always be to not accept responsibility and pay out as little as possible. Clearly the people who live in the vicinity of well pads are the most at risk. Water supplies adjacent to drilling sites are also vulnerable and the tendency for waste haulers to dump their loads in the closest spot means that all of WV creeks, rivers and streams are at risk. Inspectors need to have authority over this as well and be vigilant.
3. Right now everyone has their eye on the money and the jobs – you need to attend to the downside.
4. Do not assume that because the technology is good the processes are flawless or that there is very low risk. Optimism is fun and joyful. But real people experience real suffering as their wells become contaminated and their livestock die off and children become sick. Do not discount the “stories” you hear. These “stories” will not get better as drilling proliferates. The few who realize great wealth will speak out in ever loud voices about the glories of the work and the jobs and the money. Do not be swayed by this siren song – it does not represent the “people” of the state.
5. Inspectors need to be trained specifically to deal with this process; to know whether or not cement casing has cured; to determine if correct processes have been followed and they need to be independent of the energy companies.
6. Energy companies must pay permit fees commensurate with the potential wealth they are extracting; fees that will allow for the hiring, training and development of a sufficient number of inspectors.
7. The jobs coming in from this will not last forever. The environmental footprint will. Think future and think legacy.
8. Finally, don’t be so eager to roll over for the companies. We (the state) have the resource. We act as if we must beg them to extract it. I do not understand that. Slow this bullet train down. We can only gain from learning over time. The companies want to tie up every bit of land and mineral right they can as fast as they can before we experience indisputable and overwhelming damage; before we can provide reasonable regulation. WV has always given power over to men in suits. We have an opportunity to exercise some control over our destiny. Let’s not blow it.

Thank you,

Cindy Ashworth
852 Vandalia Road
Morgantown, WV 26501

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:56 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: WV Resident's Comments on Horizontal Drilling Rules (35CSR8)

From: Steven Runfola [mailto:stevenrunfola@yahoo.com]
Sent: Monday, October 10, 2011 6:29 AM
To: DEP Comments
Subject: WV Resident's Comments on Horizontal Drilling Rules (35CSR8)

Hello. My name is Steve Runfola and I am a voting West Virginia Resident. I have included my comments on Horizontal Drilling Rules (35CSR8) below. Thank you.

Steve Runfola
45 Park Ridge Drive
Morgantown, WV. 26508
304-291-0770

- The rules are of limited applicability and apply only to horizontal wells. **The rule does not apply to vertical Marcellus Shale wells** that use the amount of water and disturb the amount of land that the rule would otherwise cover and there are no improvements for the many conventional wells that are still drilled.
- The rule does not give surface owners notice of plans to drill the wells until the permit is actually filed, and then there **are only 15 days to file comments**, no hearing on the permit application, and no power for the State to help a surface owner whose future home site is now going to be a well site.
- The rule continues to allow gas wells to be **drilled within 200 feet of peoples' homes**. This close proximity is of particular concern for Marcellus Shale operations, given their duration, the air, noise, light and other pollution from the sites. In addition, there is the potential for more serious accidents such as the fires and explosions that occurred last year in the Northern Panhandle.

Section 4.3 also states, "or managed on-site in a manner otherwise approved by the Secretary," *There is no indication of what the Secretary may approve. "Approved solid waste facility" is a complete mystery, and "or managed on-site in a manner otherwise approved by the Secretary" means pit burial. "Approved by the Secretary" is not acceptable. The secretary is a political appointee who takes orders from elected politicians who depend on campaign donations.*

A scientific study of the problems associated with on-site burial of pit waste from a conventional well drilled in Fernow Experimental Forest documented seeps and leaching into surrounding soils. Marcellus Shale wells contain more potential contaminants, toxins and carcinogens (including naturally occurring radioactive materials (NORMs) than conventional wells and at much greater volumes.

In Section 4.1.a. Withdrawing water from surface waters of the State using methods deemed appropriate by the Secretary so as to maintain sufficient in-stream flow immediately downstream of the withdrawal location;

Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists.

4.2.a. Within forty-eight (48) hours, but no less than twenty-four (24) hours, prior to the withdrawal of water, the operator shall identify the location of withdrawal by latitude and longitude; verify, using methods deemed acceptable by the Secretary, that sufficient flow exists to protect designated uses of the stream; and provide notice to the Office as prescribed by the Secretary; ***“using methods acceptable to the Secretary” is not acceptable***

3.3.f.2. A demonstration, using methods acceptable to the Secretary ***(there’s that unacceptable phrase again)***, that sufficient in-stream flow will be available immediately downstream of the point of withdrawal. Sufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal.

- The requirement that an engineer must design the well pad if it is more than 3 acres is a good thing. However, having an **engineer supervise the construction and reclamation** would help ensure that soil erosion and sediment control plans are followed **since there are too few inspectors to oversee these activities**. The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves.
- Many of the provisions related to the water management plans had already been implemented in practice under the Manchin administration, although the requirement that operators disclose the chemicals added to water used to fracturing or stimulate a well is new and appreciated.
- Many of the new casing and cementing requirements are too vague. The rule sets standards that would allow the State to cite the driller if something went wrong, as opposed to standards that could prevent problems from occurring in the first place. For example, the rules state that all cement used must "secure the casing to the well bore..." but do not require the driller to run a bond log to make sure that it actually does.
- With regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies.
- Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.

The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown. Language should cover public notice for all wells, not just within municipalities.

3.3.d. The planned management and disposition of wastewater from fracturing, stimulation, and production activities;

The specific place of wastewater disposal should also be in the water management plan. They are going to run out of places to put this waste fluid (which obviously is NOT just “wastewater”). Restrictions should be tightened.

3.4.b. Well site safety meetings. – Safety meetings shall be held on-site weekly, at a minimum, and specifically prior to the beginning of drilling, completion, and work-over operations. Meeting attendance shall be logged, and the log shall be maintained on site. A check-in and check-out list of all personnel shall be maintained during the drilling and completion phases of the operation.

Personnel attending well site safety meetings should include subcontractors and truckers (or some other provision for training truckers must be found). At each well site safety meeting all workers, including truck drivers, should be provided with and keep in their possession the up-to-date phone

numbers to call in case of any emergency. Spills from trucks, whether on the site or in transit, are emergencies.

4.1.b. Casing, sealing or otherwise managing wells to keep fluids or natural gas from entering ground or surface waters;

“or otherwise managing wells” – does this phrase open the door to anything? Drillers that continue to use hay bales to stop sediment of chemical spills are not to be trusted to decide how to manage fluids.

4.1.c. Conducting oil and gas operations using BMPs (Best Management Practices) so as to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to stream flow or runoff outside the permit area, but in no event shall the contributions be in excess of requirements set by applicable State or federal law.

“to the extent practicable” is an unacceptable loophole.

4.4.a.4. Casing shall not be disturbed for a period of at least eight hours after the completion of cementing operations

This is the most critical function in protecting groundwater. An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured. Is there not a test to determine when the cement has set?

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:56 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Horizontal Drilling Rules (35CSR8)

Categories: Complete

From: L DADISMAN [mailto:ldadisman@yahoo.com]
Sent: Monday, October 10, 2011 1:54 AM
To: DEP Comments
Subject: Horizontal Drilling Rules (35CSR8)

WVD E P Headquarters
601 57th Street, S E
Charleston, WV

Re: Horizontal Drilling Rules (
35CSR8)

Dear DEP Representatives,

The rules pertaining to the drilling of all natural gas wells in West Virginia as presently presented does not protect citizens from harm as currently written. One of the major requirements of government are to protect its citizens properties and their pursuit of happiness.

1. Allowing a gas well within 200 ft of a house or school is dangerous and reckless. These needs

to be lengthened to a safe distance or in some cases not allowed in the area at all.

2. Drinking water is precious and to allow undocumented fluids to expand into the underground

aquifers is a criminal act. These fluids need to be of a safe chemical makeup to humans. These

methods need to be tested and studied to be safe before permanately destroying life supporting

water. The casings for wells have been shown to leak and should not be permitted near rivers

and streams. The elk river, a major supplier of water should be protected from drilling along

its banks and borders.

4. Wastewater should be treated and all harmful chemicals removed before any reintroduction into

water supplies. The amount of water withdrawal should be halted if effecting neighboring citizens.

Notices of water withdrawal should be given to citizens within a large area around withdrawal

sites. Pits holding wastewater should be of a flood resistant form protecting surrounding areas.

5. Air monitoring at well sites and automatic shut off valves need to be implemented against harmful gases.

6. Surrounding area monitoring of gas seepage through fissures and faults in the earth endangering schools, houses, and citizens through build up of gases inside these structures.

7. Citizens rights to inspect areas within 100ft of wells, pits, etc. constructed on their land. A citizens right to stop access on their land until a major problem with safety or pollution has been reconciled.

8. Landowners right to approve detailed plans for the site setup. Landowner's right to approve the road entrance to the well site.

9. Landowners remediation rights and final approval of well site setup plans by landowners.

10. Notification within a reasonable amount of time to landowners of any immediate danger both during and after the process of drilling.

11. Trucks hauling materials to sites must not convoy within 300ft of each other and must not transfer mud and rock onto roadways.

12. Drilling under schools, houses, and enclosed structures should be prohibited.

I believe the best process would be to wait and see how surrounding states handle their processes and take the best practices and rules from each of them, thus implementing a moratorium for now.

LBD
WV

The back side of the mountain does not see as much sunshine but just enough!

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:56 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on 35CSR8

From: marilyn mcgeorge [mailto:mandw@suddenlink.net]
Sent: Sunday, October 09, 2011 11:00 PM
To: DEP Comments
Subject: Comments on 35CSR8

Thank you for the opportunity to comment on the Legislative Rules governing horizontal well development. The comments below point out the number of items in the rules that are not acceptable.

1.1 The rules should apply to vertical Marcellus Shale wells that use the amount of water and disturb the amount of land that the rule would otherwise cover.

3.3.d The specific place of wastewater disposal should also be in the water management plan. If there is a shortage of places to dispose of wastewater there should be a way to check that the plan is being followed.

3.3.f.2 "using methods acceptable to the Secretary" is not acceptable. The secretary is a political appointee who takes orders from elected politicians who depend on campaign donations. Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists.

3.4.b Personnel attending well site safety meetings should include subcontractors and truckers (or some other provision for training truckers must be found). At each well site safety meeting all workers, including truck drivers, should be provided with and keep in their possession the up-to-date phone numbers to call in case of any emergency. Spills from trucks, whether on the site or in transit, are emergencies.

4.1.a "using methods acceptable to the Secretary" is not acceptable (see 3.3.f.2 above).

4.1.b "or otherwise managing wells" is not acceptable. Methods for managing fluids should be specified. Drillers who continue to use hay bales to stop sediment of chemical spills are not to be trusted to decide how to manage fluids.

4.1.c "to the extent practicable" is an unacceptably vague phrase opening the door to sloppy use of, or ignoring, BMPs to control runoff. It should be eliminated.

4.2.a "using methods acceptable to the Secretary" is not acceptable (see 3.3.f.2 above).

4.3 This is the most objectionable item in these rules. "approved solid waste facility" is a complete mystery, and "or managed on-site in a manner otherwise approved by the Secretary" means continued pit burial. Drill cuttings and drilling mud are likely to contain toxins and radioactive materials. They should be tested, and if they contain hazardous materials, they should be disposed of in a hazardous waste facility. In no case, should they be buried on-site.

4.4.a.4 Proper curing of casing cement is the most critical function in protecting groundwater). An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured.

5.1 Public notice should be provided for all wells, not just within municipalities.

Marilyn McGeorge

1529 Virginia St East

Charleston WV 25311

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:57 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments 35CSR8 - Horizontal Drilling Rules

From: patnjake@sprynet.com [mailto:patnjake@sprynet.com]
Sent: Sunday, October 09, 2011 9:12 AM
To: DEP Comments
Subject: Comments 35CSR8 - Horizontal Drilling Rules

Patricia Jacobson
20 Fairfax Drive
Wheeling, WV 26003
October 9, 2011

WV Department of Environmental Protection
601 57th Street, SE,
Charleston, WV

I would like this letter to be added to comments on 35CSR8 - Horizontal Drilling Rules.

I am gratified that you are developing "emergency rules" to regulate Marcellus Shale gas drilling.

I have several concerns about the Rules as developed so far. I am exceedingly concerned about water quality and air quality. These are our most valuable assets. We seem to forget that without clean water and air, there is no life.

With regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies. This needs to be addressed.

I am also quite concerned about air quality. There is nothing in the rule to require a study of the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.

The rule devalues those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. The rule should cover public notice for all wells, not just within municipalities.

Sincerely,

Patricia Jacobson

Patricia Jacobson
patnjake@sprynet.com

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:57 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Proposed Marcellus Drilling Rules

Categories: Complete

From: Donna M Martin [mailto:dmmartin@zoominternet.net]
Sent: Sunday, October 09, 2011 7:34 PM
To: DEP Comments
Subject: Proposed Marcellus Drilling Rules

Dear Sir,

After a quick perusal of a summary of the possible problematic areas with the proposed Marcellus Drilling Rules, it appears to me that the rules have loopholes big enough to drill through! Using "soft" language and providing multiples alternatives certainly is advantageous to the gas drillers; unfortunately, it doesn't help the health of our citizens and the environment (especially the groundwater near the drilling sites). Why can't we learn from past mistakes with resource extraction? We should have learned from past natural gas and coal extraction and not make the same mistakes – those that harm our health and the environment. As long as we rely on unsustainable resource extraction, our mountains and water table will continue to be mangled beyond repair and our citizens mired down in poverty. Thank you for your consideration, Donna Martin, Lincoln County

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:57 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comment on Horizontal Drilling Rules (35CSR8)

Categories: Complete

From: Sally Wilts [mailto:sallywilts@yahoo.com]
Sent: Sunday, October 09, 2011 7:14 PM
To: DEP Comments
Subject: Comment on Horizontal Drilling Rules (35CSR8)

I would like to submit a comment on the emergency rules. I would like to see stronger protections for communities and the environment from disposal of the drilling waste. Currently it is being dumped in sanitary landfills. I am concerned that this waste can contain arsenic, benzene, lead and radioactive materials and that it should be treated as hazardous waste. Just because Cheney was able to get an exemption for oil and gas industry years ago, the citizens of WV and the rest of the US shouldn't be poisoned.

Please use good judgement and make all possible efforts to regulate the disposal of these wastes so that living beings and the environment are protected.

Sara Wilts
PO Box 184
Bruceton Mills, WV 26525

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:57 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Marcellus rules concerns

Categories: Complete

From: pjdawson999@aol.com [mailto:pdawson999@aol.com]
Sent: Sunday, October 09, 2011 5:52 PM
To: DEP Comments
Subject: Marcellus rules concerns

The following corrections need to be made to current rule recommendations regarding Marcellus shale drilling:

1. Marcellus rules need to apply to all wells - horizontal and vertical.
2. Surface owners should be given a minimum of three (3) months notice of plans to drill wells. These are their homes that will forever be impacted, for pity's sake! Give them some time to try to come up with a plan!
3. Wells should NOT be near a home. Current rules allow closer than one football field. Problems with air, noise, light, and other pollution mean that this is way too close. Even 1/4 mile is too close, but that is a better suggestion!
4. In no way should any provision be subject to "Secretary approval". Politically independent scientists should be making these decisions.
5. Well sites, access roads, and pipelines should all be inspected and supervised by engineers, not just the well sites.
6. Water supplies need to be tested for chemicals and chemical compounds used in hydraulic fracturing. Air quality studies need to be included and implemented.
7. All people, whether within city limits or in rural areas, should be publicly notified of the siting of industrial drill sites prior to drilling.
8. Wastewater disposal of all wells should be specifically stated.
9. Remove any statements of "to the extent practicable." This is a completely unenforceable and unacceptable loophole.
10. Require inspectors to be onsite during the entire time cement is curing for the casing. This needs to be strictly supervised.

Please add my comments to the discussion to be held this week.

Thank you,
Peggy Dawson
48 Murphy Ct.
Berkeley Springs, WV 25411
pdawson999@aol.com

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:57 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on Horizontal Drilling Rules (35CSR8)-regulating marcellus shale wells

From: Hedda Haning [mailto:hedda.l.haning@gmail.com]
Sent: Sunday, October 09, 2011 4:06 PM
To: DEP Comments
Subject: Comments on Horizontal Drilling Rules (35CSR8)-regulating marcellus shale wells

I am going to use information sent to me by my colleagues in the surface owners rights group, because they are well stated and represent my understanding and feelings exactly. But Most Important we must always remember that WATER IS OUR MOST IMPORTANT RESOURCE, AND THAT WE MUST PROTECT THE FUTURE FOR OUR CHILDREN. There is no value whatsoever to our gas (or other energy resources) if we destroy our water, and the land is made unlivable for our children.

Specific comments follow:

- The rules are of limited applicability and apply only to horizontal wells. **The rule does not apply to vertical Marcellus Shale wells** (like the one shown on the WV-SORO website) that use the amount of water and disturb the amount of land that the rule would otherwise cover and there are no improvements for the many conventional wells that are still drilled.
- The rule does not give surface owners notice of plans to drill the wells until the permit is actually filed, and then there **are only 15 days to file comments**, no hearing on the permit application, and no power for the State to help a surface owner whose future home site is now going to be a well site.
- The rule continues to allow gas wells to be **drilled within 200 feet of peoples' homes**. This close proximity is of particular concern for Marcellus Shale operations, given their duration, the air, noise, light and other pollution from the sites. In addition, there is the potential for more serious accidents such as the fires and explosions that occurred last year in the Northern Panhandle.

The DEP's press release was misleading when it said that the rule, "stipulates that all drill cuttings and drilling mud be disposed of in an approved solid waste facility."

Section 4.3 also states, "or managed on-site in a manner otherwise approved by the Secretary," *There is no indication of what the Secretary may approve. "Approved solid waste facility" is a complete mystery, and "or managed on-site in a manner otherwise approved by the Secretary" means pit burial. "Approved by the Secretary" is not acceptable. The secretary is a political appointee who takes orders from elected politicians who depend on campaign donations.*

A scientific study of the problems associated with on-site burial of pit waste from a conventional well drilled in Fernow Experimental Forest documented seeps and leaching into surrounding soils. Marcellus Shale wells contain more potential contaminates, toxins and carcinogens (including naturally occurring radioactive materials (NORMs) than conventional wells and at much greater volumes.

In Section 4.1.a. Withdrawing water from surface waters of the State using methods deemed appropriate by the Secretary so as to maintain sufficient in-stream flow immediately downstream of the withdrawal location;

Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists.

4.2.a. Within forty-eight (48) hours, but no less than twenty-four (24) hours, prior to the withdrawal of water, the operator shall identify the location of withdrawal by latitude and longitude; verify, using methods deemed acceptable by the Secretary, that sufficient flow exists to protect designated uses of the stream; and provide notice to the Office as prescribed by the Secretary; *“using methods acceptable to the Secretary” is not acceptable*

3.3.f.2. A demonstration, using methods acceptable to the Secretary (*there's that unacceptable phrase again*), that sufficient in-stream flow will be available immediately downstream of the point of withdrawal. Sufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal.

- The requirement that an engineer must design the well pad if it is more than 3 acres is a good thing. However, having an **engineer supervise the construction and reclamation** would help ensure that soil erosion and sediment control plans are followed **since there are too few inspectors to oversee these activities**. The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves.
- Many of the provisions related to the water management plans had already been implemented in practice under the Manchin administration, although the requirement that operators disclose the chemicals added to water used to fracturing or stimulate a well is new and appreciated.
- Many of the new casing and cementing requirements are too vague. The rule sets standards that would allow the State to cite the driller if something went wrong, as opposed to standards that could prevent problems from occurring in the first place. For example, the rules state that all cement used must "secure the casing to the well bore..." but do not require the driller to run a bond log to make sure that it actually does.
- With regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies.
- Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.

The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown. Language should cover public notice for all wells, not just within municipalities.

3.3.d. The planned management and disposition of wastewater from fracturing, stimulation, and production activities;

The specific place of wastewater disposal should also be in the water management plan. They are going to run out of places to put this waste fluid (which obviously is NOT just “wastewater”). Restrictions should be tightened.

3.4.b. Well site safety meetings. – Safety meetings shall be held on-site weekly, at a minimum, and specifically prior to the beginning of drilling, completion, and work-over operations. Meeting attendance shall be logged, and the log shall be maintained on site. A check-in and check-out list of all personnel shall be maintained during the drilling and completion phases of the operation.

Personnel attending well site safety meetings should include subcontractors and truckers (or some other provision for training truckers must be found). At each well site safety meeting all workers, including truck drivers, should be provided with and keep in their possession the up-to-date phone numbers to call in case of any emergency. Spills from trucks, whether on the site or in transit, are emergencies.

4.1.b. Casing, sealing or otherwise managing wells to keep fluids or natural gas from entering ground or surface waters;

“or otherwise managing wells” – does this phrase open the door to anything? Drillers that continue to use hay bales to stop sediment of chemical spills are not to be trusted to decide how to manage fluids.

4.1.c. Conducting oil and gas operations using BMPs (Best Management Practices) so as to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to stream flow or runoff outside the permit area, but in no event shall the contributions be in excess of requirements set by applicable State or federal law. ***“to the extent practicable” is an unacceptable loophole.***

4.4.a.4. Casing shall not be disturbed for a period of at least eight hours after the completion of cementing operations

This is the most critical function in protecting groundwater. An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured. Is there not a test to determine when the cement has set?

I will say again: 1) WATER IS OUR MOST IMPORTANT RESOURCE, AND 2) THAT WE MUST PROTECT OUR LAND FOR THE FUTURE. There is no value whatsoever to our gas (or any other energy resource) if we destroy our water, and the land is made unlivable for our children.

Thank you,

Hedda L. Haning, M.D.

1031 Forest Rd

Charleston, WV 25314

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:57 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: comments for 35scr8
Attachments: monk_35csr8_comments.pdf

Categories: Complete

From: George Monk [mailto:gmonk@citynet.net]
Sent: Sunday, October 09, 2011 3:23 PM
To: DEP Comments
Subject: comments for 35scr8

Hi!

I'm attaching our comments for 35CSR8 and the Office of Oil and Gas' two guidances that the rule requires for support.

If there are any questions or problems with the document, please let us know.

Thanks,

George Monk
(304) 993-8491

Comments for 35CSR8 Rules Governing Horizontal Well Development



Vertical Marcellus well in Kanawha county not covered by the proposed regulation. The operator received a number of violations for this well but not for contaminating an aquifer used for domestic water supply, allowing fracture flowback to contaminate the stream below the site, nor for widespread surface contamination. The tipped tank is floating in a dike filled with water and cattails.

George Monk & Molly Schaffnit
199 Bronco Lane
Poca, West Virginia 25159

Comments for 35CSR8, Rules Governing Horizontal Well Development

We're commenting on this proposed regulation and two associated Office of Oil and Gas guidance documents, *Well Site Safety Plan Standards* and *Casing and Cementing Standards*.

Introduction

In our area we've noted a grave need for a complete revision of the state's oil and gas regulatory program. We've found low levels of compliance with the state's laws at well sites in Putnam and Kanawha counties. We've found wells that are polluting the state's ground water.¹

We've learned of other instances throughout the state where wells that are polluting groundwater have not been repaired or plugged.²

In the face of these problems and the pressing need for an overhaul of the state's regulatory program, not just new regulations but also their administration, we are severely disappointed with the Department's new regulation.

We believe that the Department and Office are not unaware of the problems across this state. We are surprised, therefore, to see a regulation that so handily plays into the stated desires of state industry spokespersons.³

We'll be commenting on the rule according to section. In the past we've offered suggestions for improvement or changes. This regulation is so flawed that improvement by slight change is not possible.

General Comment

We take issue with the new regulation's exclusivity to horizontal wells and limitation to those sites of 3.5 acres or more. While we believe that these larger sites and horizontal wells require specific regulatory attention, the way this rule

¹ George Monk and Molly Schaffnit, 2011, *Thirty Wells*.

² We know of incidents in Monroe, Wetzel, Putnam and Kanawha counties. See <http://wvgazette.com/News/marcellus/201108221527> for a description of contaminated drinking water source in Jackson county.

³ Corky DeMarco of the West Virginia Oil and Natural Gas Association stated in February 2011: "We strongly feel that horizontal drilling needs some regulation. We equally feel as strong about leaving the conventional development regulations alone and hold that type of exploration and production harmless." West Virginia Public Radio, 2011, <http://www.wvpubcast.org/newsarticle.aspx?id=18971>.

is written excludes vertical wells or those sites with smaller footprints, which are of equal concern.

The Department's oil and gas regulations, on the whole, are ill-conceived, poorly written, and fragmented. This new regulation readily demonstrates all three flaws.

Section 3 – Permit Application Requirements

This section requires an erosion and sediment control plan using the so-called Best Management Practices of the Office's obsolete *Erosion and Sediment Control Field Manual* (cited hereafter as Field Manual).⁴ If the Office and Department are concerned about erosion and sedimentation of the state's waters, then the DEP's Division of Water's erosion and sediment control manual should be used.⁵ The Office of Oil and Gas has a somewhat better revision of the Field Manual, but that is not linked to on the Oil and Gas forms page on the Office's website.

The oil and gas industry has created its own RAPPS manual which is excellent for sites with less than 15% grade. For sites on steeper grades, the RAPPS manual, along with the DEP Division of Water's manual, augmented with RUSLE2 modeling would provide the erosion and sediment control required.⁶

Nowhere in the regulation is there a limitation as to the relation of the edge of the pad to surface water. This is a serious fault.

Nowhere in the regulation is there a requirement for a well-vegetated buffer zone between disturbed areas and surface water. This is another serious fault.

Nowhere in the regulation is there a requirement for a berm around the perimeter above downslope grades. This is required to limit the extent of spills. Site drainage must be to an area that can be sequestered in the case of a spill.

⁴ West Virginia Division of Environmental Protection, [1992], *West Virginia Erosion and Sediment Control Field Manual*.

⁵ West Virginia Department of Environmental Protection, 2007, *West Virginia Erosion and Sediment Control Best Management Practice Manual*.

⁶ Terracon, [2009], *Reasonable and Prudent Practices for Stabilization (RAPPS) of Oil and Gas Construction Sites*, cited in the text as RAPPS. RUSLE2 is a modeling program created by the Natural Resource Conservation Service, U.S. Department of Agriculture, Agricultural Research Service, and the University of Tennessee. It is available to the public without charge.

Nowhere in this regulation or the *Well Site Safety Plan* is there rule or guidance regarding the proper storage of chemicals on site, their handling, and state and federal secondary containment requirements.

3.1: Certification by a professional engineer for larger sites is a good requirement but if the Office's guidance is the Field Manual then little good can come from the provision. Construction of roads and pipelines is a serious concern that is ignored by this regulation.

3.1.b: The drawings submitted to the Office must include both plan and elevation, not plan alone. The elevation drawing is important for those sites, especially, where water storage for hydraulic fracturing is at a different location above the pad where the well is sited. The professional engineer must consider the hydraulic factors in these situations, so that, if necessary, different couplings and valves be specified in the water delivery system.⁷

3.2.b.2: The requirement of topsoil stockpiling is excellent.

3.2.b.6: Both fill and cut slopes must have the proper slopes. We've noted that cut slopes are often nearly vertical, collapsing during drilling or later. While fill slope integrity is an important issue, cut slope integrity is just as important.

3.2.b.10: The requirement for a diversion ditch above the cut slope exists already in the obsolete Field Manual. It is a necessary requirement that has been ignored at every site we've examined. There is no reason to expect operators to behave any differently due to its regulated requirement for large sites.

3.3: The regulation doesn't cover dewatering structures and should. Dewatering structures must have the approval of the Division of Water.

3.3.e: The listing of products used for fracturing a well must include the quantities per 1,000 gallons of water. There are certain products such as glutaraldehyde which, by Federal regulation, require that personal safety

⁷ See Urs Corporation, 2009, *Engineering Study in Response to Order Dated September 24, 2009, Prepared for Cabot Oil and Gas Corporation, for Submittal to Pennsylvania Department of Environmental Protection*.

equipment be worn during use.⁸ There are other products which require special handling to prevent environmental contamination such as dipropylene glycol monomethyl ether.⁹ The state's allowing the burial of wastes on site must be forbidden when these and other chemicals are present.¹⁰

The *Well Site Safety Plan Standards* prepared by the Office has shortcomings. These include a lack of a specific period of time within which emergency calls must be made and the lack of a stated perimeter within which local residents are covered (it should be a mile, the same as schools).

The well control section has serious lapses. Blowout preventers require hydraulic pressure to work. In a loss of control situation, power to the drill rig's hydraulic system must be shut off to prevent explosion. All wells, therefore, require a separate auxiliary hydraulic system for the blowout preventer placed a distance from the well (at least 50 feet).

In this state operators have lost control of wells while drilling out fracture plugs. A snubbing unit should be used in this process. Some operators/crew members are not aware that a blowout preventer's stripper rubber is unable to take pressure. A stripper rubber cannot be used to control a well.¹¹

Section 4 - Rules to Protect Water Quality and Quantity

4.1.c: It is extremely troubling to read that the Office and DEP condones sediment in the state's waters. Constructed properly and with the right sediment control, no sediment (or pollution) should leave a construction site.

⁸ J. Routt Reisart & James R. Roberts, 1999, *Recognition and Management of Pesticide Poisonings*, page 197. For glutaraldehyde, 29CFR1910.132-134 requires skin and eye protection and the wearing of a respirator. Ingested, glutaraldehyde causes severe health effects.

⁹ This chemical is used as a solvent for some slickwater fracture fluids, e.g., Halliburton's LGC-HEC, LGC HEC 3.45, LGC-16, LGC-37UC. The EPA has determined that this chemical will travel through soil to groundwater and that a surface application of 1 pound per acre is safe (Keri Grinstead & Brenda May, 9 May 2006, *Memorandum*, EPA, Office of Prevention, Pesticides and Toxic Substances, page 12).

¹⁰ See our comments for section 4.3.

¹¹ See John Vittitow, Sr., 2010, *Well Control Incident Analysis*, EOG Resources, Inc., *Punxsutawney Hunting Club 36H, Clearfield County, Pennsylvania*. The use of a snubbing unit while drilling out fracture plugs in horizontal wells is essential.

Operators for years have ignored the provisions of the existing Field Manual, which is one reason the state's waters run muddy. We saw, last January at a well site on the Pocatalico River in Kanawha county, a bulldozer push overburden over the bank and into the River. There was, of course, no sediment control at the site.

4.2.c.1: Flowback/produced water volume, along with products used for fracturing individual wells, must be given to the Office and made public on the Office's website.

4.2.c.1.A and B: The Office in a conference call with the EPA in 2008 stated that fracture flowback was produced water.¹² It is confusing, therefore, to see this section in the regulation separating the two. If there is a meaningful difference, the regulation must specify this difference, otherwise fracture flowback is produced water.

4.2.c.2: The disposal of solid and liquid waste must be reported to the Office, both volume and name and location of the disposal site.

4.3: There are a number of reasons to prohibit the burial of solid waste on a well site. If this waste has been contaminated by fracture flowback, it must be disposed of otherwise. The state's General Water Pollution Control Permit (cited hereafter as General Permit) doesn't require sequestration of the waste,¹³ nor does the state have limitations of the waste's location in relation to groundwater (it must be at least 5 feet above seasonally high groundwater according to the Argonne National Laboratory) or surface water (it must be at least 100 feet distant). As it is now, unencapsulated waste is buried in some locations near or in ground water. Additionally, the General Permit's requirement for proper cover is, as is typical with regulation and guidance for oil and gas, not specific. Exposed pit waste has been found at 27% of the sites we've visited in Putnam and Kanawha counties, in violation of the General Permit and its concern for surface water.¹⁴

¹² EPA Marcellus Shale Conference Call on 21 October 2008 where Gene Smith, of the Office of Oil and Gas, stated: "... when does frac water become produced water? Ans. When it comes back to the surface."

¹³ West Virginia Office of Oil and Gas, *General Water Pollution Control Permit*. GP-WV-1-88.

¹⁴ Surface waste has been found at 8 of 30 sites in Kanawha and Putnam counties. See Monk and Schaffnit, 2011, *Thirty Wells*.

Unless the operator can show by laboratory analysis that the waste is not hazardous (RCRA TCLP test for metals, along with TPH GRO and DRO, and test for radioactive materials such as radium 226 and 228) waste should not be buried at well sites. The current General Permit's parameters are demonstrably deficient to protect ground and surface water.

Section 4.4 – Casing and Cementing Standards

The well integrity section of this regulation and Office's guidance is loosely adapted from API's HF1, *Hydraulic Fracturing Operations – Well Construction and Integrity Guidelines*.¹⁵ API's guidance is written for all wells being hydraulically fractured, vertical and horizontal, shale and non-shale. The fact that the DEP is applying some of these recommendations only to horizontal Marcellus wells is arbitrary and capricious. The glaring absence of well integrity requirements for all wells shows the weakness of the DEP's regulatory program.

Without, as a minimum, incorporation of all the requirements in API's HF1, this section of the regulation and the Office's *Casing and Cementing Standards* are not protective of the environment.

If the DEP really desires to prevent the migration of pollution from oil and gas wells to fresh water aquifers and surface water it needs to publicly acknowledge that even if operators follow this regulation's requirements and the Office's *Casing and Cementing Standards* a certain percentage of wells will leak. The documented percentage of offshore wells using similar standards that leak after completion is 5%.¹⁶ That number increases to 50% over time as wells deteriorate. The DEP needs to institute regulations covering well integrity including remedial actions to be taken for leaking wells and, if repair isn't possible, then the well must be plugged. Remedial action must take place within a reasonable time frame after discovery – 30 days. The presence of methane alone in ground or surface water is an indicator of a leaking well. A poorly cased and cemented well may leak methane from formations other than the producing formation(s). This means that industry's requirement for fingerprinting to determine the source of methane is a denial of what is actually happening underground. If an operator cannot show satisfactory casing pressure and formation pressure integrity test results for surface/freshwater, coal/intermediate, and production casing and

¹⁵ API, 2009, *Hydraulic Fracturing Operations – Well Construction and Integrity Guidelines*.

¹⁶ Tony Ingraffea, Dwight C. Baum Professor of Engineering and Weiss Presidential Teaching Fellow at Cornell, presentation in Ithaca, NY on 25 July 2011, <http://www.youtube.com/watch?v=eaivKGwoTgU>.

cement bond logging that demonstrates the well's integrity, that is *a priori* evidence of a leak taking place.¹⁷

In West Virginia when a natural gas well leaks and contaminates ground water, the state steps aside and forces the surface owner to sue the operator for replacement water supply. Wells in this state are currently polluting ground water without any attempt at remediation or requirement for plugging.

The well inspection program that currently exists is self-regulated.¹⁸ Even when a complaint has been made, wells obviously lacking integrity have not been required by the office to be remediated.¹⁹ Without a serious program of well monitoring for integrity, this regulation does nothing to protect the state's waters.²⁰ Quantitative monitoring should be frequent (quarterly), submitted to the Office, and available for public scrutiny.

The Office's new permit application form requires the grade and weight of casing to be stated by the operator. Nowhere on the form is the expected maximum pressure stated. This regulation requires centralizers during cementing, but the number of centralizers expected to be used is not stated on the form. Pennsylvania requires a centralizer at least every 150 feet.²¹ West Virginia's application form, regulation and standard give no assurance that the

¹⁷ For some reason the Office's *Casing and Cementing Standards* only requires a shoe or formation pressure integrity test for surface casing. According to the API's HF1 both types of pressure tests (casing and formation) are required for all casing strings except conductor, and the production string which requires only a casing pressure test.

¹⁸ Operator's inspection reports are not filed with the Office. Instead the Operator files a form WR-99 which requires that the operator report evidence of "significant leakage or other indications of casing integrity failure [our emphasis]." In inspection report (OP-13) for each well besides well integrity, the operator is also examining secondary containment for condensate storage tanks and erosion and sediment controls. We've found that 68% of wells examined in our area do not have satisfactory secondary containment. See Monk and Schaffnit, 2011, *Thirty Wells*. It's hard to tell the usefulness of OP-13, since the results are not tabulated in any manner in WR-99.

¹⁹ See for example, <http://www.youtube.com/watch?v=GXv99lDyL4k>.

²⁰ The Norwegian Oil Industry Association's, 117 – *OLF Recommended Guidelines for Well Integrity* describes a well barrier schematic which includes data from tests and cement bond logging for baseline comparison (see Chapter 3, page 14 and following). Monitoring would require use of this schematic, making changes due to corrosion, leaks, and alterations in wellhead equipment. Copies of the schematic would be kept by both the operator and regulating agency.

²¹ §78.83.(c).

operator is aware of the proper number needed.²² Inspectors, even if they are using specialized software or have a degree in petroleum engineering, will not be able to determine if the regulation's requirements are being met for casing and cementing when they review the application form.

The Office's WR-35 well completion form does not require the grade and weight of casing actually used to be stated, nor the number of centralizers. There is no requirement on the form to present casing pressure and formation pressure integrity test results or whether or not a cement bond logging was performed and its results.

The Office's *Casing and Cementing Standards* are a wish list of desired results without providing guidance on how to achieve these results, especially when it comes to cementing. Proper cementing is essential for gas wells and is problematic for horizontal wells where water channeling on the top side of the bore hole is common. "Appendix C: Best Cementing Practices" in *A Review of Sustained Casing Pressure Occurring in the OCS* offers a beginning point for constructing such guidance. Fracturing causes micro-annuli between production casing and cement, left over mud in annulus hampers proper cementing, and other problems must be dealt with in considered well design and construction. Frequent monitoring of annular pressures, remediation and possible plugging must be incorporated in regulation and guidance.

The API HF1 recommendation for protection of USDW, municipal water supply aquifers, is not present in the regulation or standards. API recommends freshwater casing depth at least 100 feet below the aquifer (page 11).

Neither the regulation or standard requires that the casing string be of grade and weight to withstand compression and tension pressures. Unless software is used or the inspector is a petroleum engineer, this cannot be easily determined using the data provided by the operator on the application form.

Section 5 – Public Notice Requirements

A public notice is one of the requirements that must be made of operators.

²² British Petroleum's Macondo well in the Gulf had centralizers. A factor in the blowout was a cascade of bad management decisions by BP, including the decision to ignore the need for the *proper* number of centralizers to prevent channeling cement. The regulation assumes the operator will install the proper number.

Operators must provide notice (public and specific) when a well is drilled through or near (for instance, 5 miles) an underground municipal drinking water source. Specific notice must be given to governing official (mayor) and municipal water manager. Daily monitoring for, at a minimum, metals, TDS, uranium, radium 226 and 228, and volatile organics (including benzene, ethelbenzene, toluene, xylenes, acrylonitrile, and methane) must be performed at the operator's expense until 6 months after completion of the well and quarterly thereafter.

Operators must provide notice (public and specific) when a well is drilled within a municipal water supply's surface water intake's watershed. Specific notice must be given to governing official (mayor) and municipal water manager. Daily monitoring for, at a minimum, metals, TDS, uranium, radium 226 and 228, and volatile organics (including benzene, ethelbenzene, toluene, xylenes, acrylonitrile, and methane) must be performed at the operator's expense if the well is within 1 mile of intake, weekly otherwise, until 6 months after completion of the well and quarterly thereafter.

Operators drilling within 1 mile of schools, hospitals and business districts must provide public notice and specific notice to school boards and other administrating officials affected.

Summary

We believe the proposed regulation is irreparably flawed. The Office's two standards, *Well Site Safety* and *Casing and Cementing* need revision.

Well integrity, casing and cementing standards deserve a regulation all their own, for all wells, with additions dealing with specific issues pertaining to horizontal wells. The Office's existing well permit application and well completion forms along with operator's well inspection report do not support the requirements of this regulation or the Office's standards. The Office's lack of a working well inspection program and the Department's lack of a program for remediation or plugging of leaking wells imperils the state's precious ground and surface water.

A cynic would think that the state finds its 5% severance tax more important.

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Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:58 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comment on Horizontal Drilling Rules 35CSR8

Categories: Complete

-----Original Message-----

From: Colleen Anderson [mailto:motherwit@suddenlink.net]
Sent: Sunday, October 09, 2011 1:53 PM
To: DEP Comments
Subject: Comment on Horizontal Drilling Rules 35CSR8

To whom it may concern:

I am concerned that the proposed rules for regulating Marcellus Shale gas drilling are woefully inadequate and will not protect the health and safety of West Virginia citizens.

It seems to me that water and air are our most precious resources: more precious than all the coal, oil, gas, or any other resource that can be extracted from our lands. Improper or irresponsible drilling practices can and will ruin our water.

We have already seen the tragic consequences of inadequate regulation (and lax enforcement) of mountaintop removal coal mining: devastated streams, dirty air, high cancer rates, and poverty. Why would we consider compounding the problem by inadequately regulating or enforcing Marcellus Shale gas drilling?

There's only one reason: somebody's planning to make a lot of money.

Make them protect us. That is your job. Nothing else.

Sincerely,
Colleen Anderson

304-342-1213
motherwit@suddenlink.net
www.motherwitdesign.com

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:58 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on Horizontal Drilling Rules (35CSR8)

From: Danette Condon [mailto:danettecondon@yahoo.com]
Sent: Sunday, October 09, 2011 1:07 PM
To: DEP Comments
Subject: Comments on Horizontal Drilling Rules (35CSR8)

Dear People,

as a landowner who owns mineral rights I am deeply concerned about marcellus shale drilling practices. I have seen up close the changes in counties who have drilling going on. I do not want this for my county. I am an organic homesteader and I value the water and air that others are willing to trade for dollars. I ask you to come up with better safe guards for our resources. As a Sierra Club member here are our concerns.

Comments on Horizontal Drilling Rules (35CSR8)

- The rules are of limited applicability and apply only to horizontal wells. **The rule does not apply to vertical Marcellus Shale wells** (like the one shown on the WV-SORO website) that use the amount of water and disturb the amount of land that the rule would otherwise cover and there are no improvements for the many conventional wells that are still drilled.
- The rule does not give surface owners notice of plans to drill the wells until the permit is actually filed, and then there **are only 15 days to file comments**, no hearing on the permit application, and no power for the State to help a surface owner whose future home site is now going to be a well site.
- The rule continues to allow gas wells to be **drilled within 200 feet of peoples' homes**. This close proximity is of particular concern for Marcellus Shale operations, given their duration, the air, noise, light and other pollution from the sites. In addition, there is the potential for more serious accidents such as the fires and explosions that occurred last year in the Northern Panhandle.

The DEP's press release was misleading when it said that the rule, "stipulates that all drill cuttings and drilling mud be disposed of in an approved solid waste facility."

Section 4.3 also states, "or managed on-site in a manner otherwise approved by the Secretary," *There is no indication of what the Secretary may approve. "Approved solid waste facility" is a complete mystery, and "or managed on-site in a manner otherwise approved by the Secretary" means pit burial. "Approved by the Secretary" is not acceptable. The secretary is a political appointee who takes orders from elected politicians who depend on campaign donations.*

A scientific study of the problems associated with on-site burial of pit waste from a conventional well drilled in Fernow Experimental Forest documented seeps and leaching into surrounding soils. Marcellus Shale wells contain more potential contaminants, toxins and carcinogens (including naturally occurring radioactive materials (NORMs) than conventional wells and at much greater volumes.

In Section 4.1.a. Withdrawing water from surface waters of the State using methods deemed appropriate by the Secretary so as to maintain sufficient in-stream flow immediately downstream of the withdrawal location; *Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists.*

4.2.a. Within forty-eight (48) hours, but no less than twenty-four (24) hours, prior to the withdrawal of water, the operator shall identify the location of withdrawal by latitude and longitude; verify, using methods deemed acceptable by the Secretary, that sufficient flow exists to protect designated uses of the stream; and provide notice to the Office as prescribed by the Secretary; ***“using methods acceptable to the Secretary” is not acceptable***

3.3.f.2. A demonstration, using methods acceptable to the Secretary (***there’s that unacceptable phrase again***), that sufficient in-stream flow will be available immediately downstream of the point of withdrawal. Sufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal.

- The requirement that an engineer must design the well pad if it is more than 3 acres is a good thing. However, having an **engineer supervise the construction and reclamation** would help ensure that soil erosion and sediment control plans are followed **since there are too few inspectors to oversee these activities**. The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves.
- Many of the provisions related to the water management plans had already been implemented in practice under the Manchin administration, although the requirement that operators disclose the chemicals added to water used to fracturing or stimulate a well is new and appreciated.
- Many of the new casing and cementing requirements are too vague. The rule sets standards that would allow the State to cite the driller if something went wrong, as opposed to standards that could prevent problems from occurring in the first place. For example, the rules state that all cement used must “secure the casing to the well bore...” but do not require the driller to run a bond log to make sure that it actually does.
- With regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies.
- Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.

The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown. Language should cover public notice for all wells, not just within municipalities.

3.3.d. The planned management and disposition of wastewater from fracturing, stimulation, and production activities;

The specific place of wastewater disposal should also be in the water management plan. They are going to run out of places to put this waste fluid (which obviously is NOT just “wastewater”). Restrictions should be tightened.

3.4.b. Well site safety meetings. – Safety meetings shall be held on-site weekly, at a minimum, and specifically prior to the beginning of drilling, completion, and work-over operations. Meeting attendance shall be logged, and the log shall be maintained on site. A check-in and check-out list of all personnel shall be maintained during the drilling and completion phases of the operation.

Personnel attending well site safety meetings should include subcontractors and truckers (or some other provision for training truckers must be found). At each well site safety meeting all workers, including truck drivers, should be provided with and keep in their possession the up-to-date phone numbers to call in case of any emergency. Spills from trucks, whether on the site or in transit, are emergencies.

4.1.b. Casing, sealing or otherwise managing wells to keep fluids or natural gas from entering ground or surface waters;

“or otherwise managing wells” – does this phrase open the door to anything? Drillers that continue to use hay bales to stop sediment of chemical spills are not to be trusted to decide how to manage fluids.

4.1.c. Conducting oil and gas operations using BMPs (Best Management Practices) so as to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to stream flow or runoff outside the permit area, but in no event shall the contributions be in excess of requirements set by applicable State or federal law.

"to the extent practicable" is an unacceptable loophole.

4.4.a.4. Casing shall not be disturbed for a period of at least eight hours after the completion of cementing operations

This is the most critical function in protecting groundwater. An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured. Is there not a test to determine when the cement has set? Hoping for better safe guards for our water, air and land from corporate greed.

Danette Condon
HC 64 Box 291
Hillsboro, WV 24946
304-653-4601

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:58 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Marcellus shale waste disposal

Categories: Complete

From: carolc84@aol.com [mailto:carolc84@aol.com]
Sent: Sunday, October 09, 2011 10:37 AM
To: DEP Comments
Subject: Marcellus shale waste disposal

Please put some regulation on the disposal of the remains (call it fill or waste) in public landfills. This idea that if this were called "waste", it would be hazardous; but change the name to "fill" and its not harardoud? Too many people are affected by this "fill" not to have some regulations placed on it as the hazardous stuuf that it is! Carol Clevenger, 98 Maple Lake, Bridgeport, WV 26330.

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:58 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: opinion on shale drilling

From: Linda Kjeldgaard [mailto:lindak@kjeldgaard.com]
Sent: Sunday, October 09, 2011 9:28 AM
To: DEP Comments
Subject: opinion on shale drilling

Hello,

The following is a list of my feelings on the proposed regulation on drilling in WV at this time.

- The rules are of limited applicability and apply only to horizontal wells. **The rule does not apply to vertical Marcellus Shale wells** (like the one shown on the WV-SORO website) that use the amount of water and disturb the amount of land that the rule would otherwise cover and there are no improvements for the many conventional wells that are still drilled.
- The rule does not give surface owners notice of plans to drill the wells until the permit is actually filed, and then there **are only 15 days to file comments**, no hearing on the permit application, and no power for the State to help a surface owner whose future home site is now going to be a well site.
- The rule continues to allow gas wells to be **drilled within 200 feet of peoples' homes**. This close proximity is of particular concern for Marcellus Shale operations, given their duration, the air, noise, light and other pollution from the sites. In addition, there is the potential for more serious accidents such as the fires and explosions that occurred last year in the Northern Panhandle.

The DEP's press release was misleading when it said that the rule, "stipulates that all drill cuttings and drilling mud be disposed of in an approved solid waste facility."

Section 4.3 also states, "or managed on-site in a manner otherwise approved by the Secretary," *There is no indication of what the Secretary may approve. "Approved solid waste facility" is a complete mystery, and "or managed on-site in a manner otherwise approved by the Secretary" means pit burial. "Approved by the Secretary" is not acceptable. The secretary is a political appointee who takes orders from elected politicians who depend on campaign donations.*

A scientific study of the problems associated with on-site burial of pit waste from a conventional well drilled in Fernow Experimental Forest documented seeps and leaching into surrounding soils. Marcellus Shale wells contain more potential contaminates, toxins and carcinogens (including naturally occurring radioactive materials (NORMs) than conventional wells and at much greater volumes.

In Section 4.1.a. Withdrawing water from surface waters of the State using methods deemed appropriate by the Secretary so as to maintain sufficient in-stream flow immediately downstream of the withdrawal location; *Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists.*

4.2.a. Within forty-eight (48) hours, but no less than twenty-four (24) hours, prior to the withdrawal of water, the operator shall identify the location of withdrawal by latitude and longitude; verify, using methods deemed acceptable by the Secretary, that sufficient flow exists to protect designated uses of the stream; and provide notice to the Office as prescribed by the Secretary; *“using methods acceptable to the Secretary” is not acceptable*

3.3.f.2. A demonstration, using methods acceptable to the Secretary (*there's that unacceptable phrase again*), that sufficient in-stream flow will be available immediately downstream of the point of withdrawal. Sufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal.

- The requirement that an engineer must design the well pad if it is more than 3 acres is a good thing. However, having an **engineer supervise the construction and reclamation** would help ensure that soil erosion and sediment control plans are followed **since there are too few inspectors to oversee these activities**. The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves.
- Many of the provisions related to the water management plans had already been implemented in practice under the Manchin administration, although the requirement that operators disclose the chemicals added to water used to fracturing or stimulate a well is new and appreciated.
- Many of the new casing and cementing requirements are too vague. The rule sets standards that would allow the State to cite the driller if something went wrong, as opposed to standards that could prevent problems from occurring in the first place. For example, the rules state that all cement used must "secure the casing to the well bore..." but do not require the driller to run a bond log to make sure that it actually does.
- With regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies.
- Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.

The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown. Language should cover public notice for all wells, not just within municipalities.

3.3.d. The planned management and disposition of wastewater from fracturing, stimulation, and production activities;

The specific place of wastewater disposal should also be in the water management plan. They are going to run out of places to put this waste fluid (which obviously is NOT just “wastewater”). Restrictions should be tightened.

3.4.b. Well site safety meetings. – Safety meetings shall be held on-site weekly, at a minimum, and specifically prior to the beginning of drilling, completion, and work-over operations. Meeting attendance shall be logged, and the log

shall be maintained on site. A check-in and check-out list of all personnel shall be maintained during the drilling and completion phases of the operation.

Personnel attending well site safety meetings should include subcontractors and truckers (or some other provision for training truckers must be found). At each well site safety meeting all workers, including truck drivers, should be provided with and keep in their possession the up-to-date phone numbers to call in case of any emergency. Spills from trucks, whether on the site or in transit, are emergencies.

4.1.b. Casing, sealing or otherwise managing wells to keep fluids or natural gas from entering ground or surface waters;

“or otherwise managing wells” – does this phrase open the door to anything? Drillers that continue to use hay bales to stop sediment of chemical spills are not to be trusted to decide how to manage fluids.

4.1.c. Conducting oil and gas operations using BMPs (Best Management Practices) so as to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to stream flow or runoff outside the permit area, but in no event shall the contributions be in excess of requirements set by applicable State or federal law.

“to the extent practicable” is an unacceptable loophole.

4.4.a.4. Casing shall not be disturbed for a period of at least eight hours after the completion of cementing operations

This is the most critical function in protecting groundwater. An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured. Is there not a test to determine when the cement has set?

I am a member of the Morgan County Marcellus Shale Committee that was set up by the Morgan County Commissioners to investigate and advise on drilling.

This is my opinion and not necessarily that of the other members of the Committee.

Linda Kjeldgaard

1631 Pioneer Trail

Great Cacapon, WV 25422

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:58 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Ban Fracking

Categories: Complete

-----Original Message-----

From: Art Glick [mailto:omb00900@mail.wvnet.edu]
Sent: Sunday, October 09, 2011 9:08 AM
To: DEP Comments
Subject: Ban Fracking

Dear DEP,

Nothing but an all out ban on fracking will safeguard our environment for our children and our children's children.

Fracking threatens the water supply of over 100 million Americans. It is a pending disaster that will make the recent Gulf spill look like a hiccup. It could ruin the ground water across large swaths of America, including most of our fair state - a disaster that would be permanent on a human scale.

The frackers claim that their wells are much deeper than the aquifer, but all it takes is a problem with the casing going down into the well, or a problem with their catchment pond, their waste disposal methods, etc. for their poisons and natural gas to leach into the water table. They can't promise that it won't happen, and it's almost guaranteed that it will, over and over again, as it already has happened many times.

Please base your decisions on what you must know in your heart is best for the people and environment of West Virginia.

Respectfully,

Art Glick
HC 67 Box 539 BB
Renick WV 24966
Phone/Fax 304-497-2610

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:59 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on Horizontal Drilling Rules (35CSR8)

From: Robert A. Mertz [mailto:ramertz@mountain.net]
Sent: Sunday, October 09, 2011 8:41 AM
To: DEP Comments
Subject: Comments on Horizontal Drilling Rules (35CSR8)

WV Department of Environmental Protection,

As a Biology, Wildlife Management and Environmental Earth Science teacher working in the public school systems of several states, for thirty one years, 29 in West Virginia, I have been teaching students as well as our two sons, the importance of a sustainable life style. I want them to learn to live within the ecological budget of Earth. The quality of life for the present and future generations depends on keeping the life sustaining diversity of our complex life systems healthy. Although there are some impressive self-maintaining dynamics at work to stabilize these systems, there are limits to their ability to correct for continued stress. The geological record is full of evidence showing sudden drastic upheavals and ecological disasters. We have no valid reason to believe that we humans with our huge powers to alter the climate and ecosystems will not trigger another watershed shift in the world's balance that will result in condition that renders the Earth unsuitable for human life, or that degrades the quality of our existence to a much lower level. It is our duty as the most powerful species to exist on this planet to use our might to protect the integrity of our life support systems for the benefit of all living things, to do anything is the extreme in narrow minded, short sighted self indulgent stupidity.

Our sons, and our beautiful two year old granddaughter, are the most important and joyful parts of my life. Although both my wife and I have spent the greater part of our adult lives interacting with young people as teachers, nothing comes close to the emotional intensity of raising your own children. They are grown and mostly independent of us now, but our commitment to them continues. Today the growth of the human population and the selfish consumerism that is spreading over the Earth is endangering the future of all humans. Will we be able to both save ourselves from self-destruction and maintain our freedom and individuality? I have been teaching students the value of developing a sustainable culture and personal life style for 31 years as a Biology and Environmental Earth Science teacher. I hope that the knowledge I have gained from my masters degree in Biology as well as my extensive reading have been delivered with the passion that I feel for the welfare of our planet. Teaching is a powerful way to have a positive influence on the future, but many issues are too important and too immediate to wait for the future. I am writing today about one of these issues.

I am much concerned by a number of short comings in the Horizontal Drilling Rules (35CSR8). There are many areas that need work to provide good protection for the welfare of individuals and the larger environment. I am most concerned to extent of which the regulations are at

the discretion of the Secretary. There are many regulations left to be "approved by the Secretary". This is not an acceptable. The secretary is a political appointee who takes orders from elected politicians who depend on campaign donations. There is also too much vague language. For example "Approved solid waste facility" is not well defined. Who approved, What? It is very important that the many other holes are also addressed but until politics is taken out of the equation and replaced with sound independent science, we will suffer from the effects of bad decisions. The health and welfare of everyone is at stake. There is much to be done to correct the shortcomings of these rules. We must hold off development of the new drilling frenzy until adequate rules are in place. The gas is not going anywhere. It will wait for us to get the rules right.

Sincerely,

Robert A. Mertz

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:59 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on Horizontal Drilling Rules (35CSR8)

Categories: Complete

From: Mark Blumenstein [mailto:markb@mountain.net]
Sent: Sunday, October 09, 2011 6:49 AM
To: DEP Comments
Subject: Comments on Horizontal Drilling Rules (35CSR8)

The “emergency rules” to regulate Marcellus Shale gas drilling should be considered with these additions

- 1 Drilling within 200 ft of a dwelling or out buildings is unacceptable . Any well sight must be out of sight of a residence and farm buildings. Also sighting must take into account sound from such sights
Residence of an area must NOT be subjected to the unpleasant sounds of drilling , drilling vehicles with there loud backing up alerts. Pumps etc
- 2 Drill rules must be subject to any well being drilled no matter if its a vertical Marcellus or a horizontal well for both require the same amount of safety procedures and cause the same amount of noise and disturbance of soils overburden and contamination issues
- 3 There should be more than a 15 day comment period and more notice when a permit is planned and a site is selected to comment
- 4 All drill by products , ie mud, tailings , liquids MUST to disposed of in a licensed facility !
- 5 Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists before any water is taken from a river or a stream

6 An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured. Is there not a test to determine when the cement has set?

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:59 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on 35CSR8
Attachments: Comments on emergency rules.pdf

From: Carol Warren [mailto:peacelovemom@gmail.com]
Sent: Thursday, October 06, 2011 3:27 PM
To: DEP Comments
Subject: Comments on 35CSR8

Dear friends,

Attached are comments on 35CSR8, Horizontal Well Development Rule, from the Ohio Valley Environmental Coalition

Thank you for the opportunity to comment.

Carol Warren
Ohio Valley Environmental Coalition
P.O. Box 6753
Huntington, WV 25773
(304) 522-0246



Ohio Valley Environmental Coalition

P.O Box 6753
Huntington, WV 25773-6753
Fax 304-522-4079
Ph. 304-522-0246
www.ohvec.org

Comments to West Virginia Department of Environmental Protection on 35CSR8

The following comments apply to the section of 35CSR8 as indicated.

3.3.d – The location of disposal should be specified in the plan. There are not an infinite number of suitable disposal sites, and care must be taken not to overwhelm any one area.

3.3.e – The list of chemicals actually used should be submitted upon beginning the fracturing operation. Such knowledge is extremely important to emergency responders responsible for the health of local citizens in event of an explosion or spill.

3.3.f.2 – “Using methods acceptable to the Secretary” is not sufficient. The Secretary is a political appointee. Decisions about water withdrawal and other aspects of the drilling operation should be made on the basis of independent science, and in a standard, clearly specified manner, with no opportunity for politics or the appearance of politics to be involved.

3.4.a.6 – A list of chemicals actually being used in the drilling operation should be provided as soon as possible (as 3.3.e above). A list of all the chemicals that are present on the site is not sufficient. Emergency responders need to know what has been used in each case.

3.4.b – Safety instruction and emergency contact information must somehow be made compulsory for truckers as well. Spills of the materials during transport can qualify as emergencies.

4.1.a – “Methods deemed appropriate by the Secretary” is insufficient. (see 3.3.f.2)

4.1.b – “Otherwise managing wells” is very much open to interpretation. Acceptable practices should be spelled out, or the loophole language removed.

4.1.c – “to the extent practicable” is very much open to interpretation. Acceptable practices should be spelled out, or the loophole language removed.

4.2.a – “Methods deemed appropriate by the Secretary” is insufficient. (see 3.3.f.2)

4.3 – Drill cuttings and mud waste should under no circumstances be permitted to be “managed on site.” Specific criteria for solid waste facilities to handle these products safely and securely

should be specified – certainly not left to “a manner otherwise approved by the Secretary.” This is a huge loophole in the handling of waste that can potentially be toxic or radioactive.

4.4.a.4 – “casing shall not be disturbed for a period of at least eight hours” – the casing should not be disturbed until the cement is dry. A time period is inadequate specification as there are always exceptions – it could rain, etc. Is there a reliable test to determine if the cement is set? If so, it should be required.

Thank you for the opportunity to comment.

Carol Warren
Ohio Valley Environmental Coalition
P.O. Box 6753
Huntington, WV 25773-6753
(304) 522-0246

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:59 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on 35CSR8
Attachments: WVSC comments on Emergency Rules 2011.doc

Categories: Complete

From: Beth Little [mailto:blittle@citynet.net]
Sent: Saturday, October 08, 2011 3:38 PM
To: DEP Comments
Subject: Comments on 35CSR8

Please see attached comment letter from the WV Sierra Club.



**SIERRA
CLUB**
FOUNDED 1892

Sierra Club
West Virginia Chapter
P.O. Box 4142
Morgantown, WV 26504

October 9, 2011

Public Information Office
WV Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

Comments on 35CSR8

Thank you for the opportunity to comment on the Legislative Rules governing horizontal well development. The comments below pertain to the numbered item in the rules.

1.1 The rules should apply to vertical Marcellus Shale wells that use the amount of water and disturb the amount of land that the rule would otherwise cover.

3.3.d The specific place of wastewater disposal should also be in the water management plan. If there is a shortage of places to dispose of wastewater there should be a way to check that the plan is being followed.

3.3.f.2 "using methods acceptable to the Secretary" is not acceptable. The secretary is a political appointee who takes orders from elected politicians who depend on campaign donations. Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists.

3.4.b Personnel attending well site safety meetings should include subcontractors and truckers (or some other provision for training truckers must be found). At each well site safety meeting all workers, including truck drivers, should be provided with and keep in their possession the up-to-date phone numbers to call in case of any emergency. Spills from trucks, whether on the site or in transit, are emergencies.

4.1.a "using methods acceptable to the Secretary" is not acceptable (see 3.3.f.2 above).

4.1.b "or otherwise managing wells" is not acceptable. Methods for managing fluids should be specified. Drillers who continue to use hay bales to stop sediment of chemical spills are not to be trusted to decide how to manage fluids.

4.1.c "to the extent practicable" is an unacceptably vague phrase opening the door to sloppy use of, or ignoring, BMPs to control runoff. It should be eliminated.

4.2.a "using methods acceptable to the Secretary" is not acceptable (see 3.3.f.2 above).

4.3 This is the most objectionable item in these rules. "approved solid waste facility" is a complete mystery, and "or managed on-site in a manner otherwise approved by the Secretary" means continued pit burial. Drill cuttings and drilling mud are likely to contain toxins and radioactive materials. They should be tested, and if they contain hazardous materials, they should be disposed of in a hazardous waste facility. In no case, should they be buried on-site.

4.4.a.4 Proper curing of casing cement is the most critical function in protecting groundwater). An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured.

5.1 Public notice should be provided for all wells, not just within municipalities.

Beth Little
WV Sierra Club
HC 64 Box 281
Hillsboro, WV 24946

Mullen-Thaxton, Jennifer L

From: Vivian Parsons <vivian@ccawv.org>
Sent: Tuesday, October 11, 2011 12:41 PM
To: Mullen-Thaxton, Jennifer L
Subject: Fw: Proposed Emergency Rules Governing Horizontal Well Development

-----Original Message-----

From: Vivian Parsons
Date: 10/11/2011 12:37:25 PM
To: dep.comments@wv.gov
Subject: Proposed Emergency Rules Governing Horizontal Well Development

To: James A. Martin, Chief, WV DEP Oil & Gas Division
Re: Proposed Emergency Rules Governing Horizontal Well Development
From: County Commissioners' Association of West Virginia

On behalf of the County Commissioners' Association of West Virginia (CCAWV), we've created a committee to follow the development of the "Proposed Emergency Rules Governing Horizontal Well Development," and would like to offer the following comments:

Under WV Code 35-8-5. Public Notice Procedures, rule 5.1, it is required that any permit requests located within the boundaries of any municipalities must publish public notice of the filing of a well work permit application, as a class I legal advertisement in the local newspaper.

While CCAWV is not suggesting that such process be required when the well is located in the unincorporated area of the county, **it is our request that electronic notification of all well work permit applications be sent to the county commission where the well is located. This electronic notification could be achieved at a minimal cost, and would allow county commissions to be aware of possible well activity in their county.**

Those counties that have been leaders in the Marcellus Shale Development, have formed a county task force made up industry, emergency management personnel, county commission, law enforcement, and state DEP and DOT representatives. **This approach has opened lines of communication and allowed many contentious issues to be resolved at the local level. We believe that adding a requirement to electronically notify county commissions when a permit for well work application has been applied for, will facilitate this best management practice.**

Thank you for the opportunity to submit these written comments on behalf of County Commissioners in West Virginia.

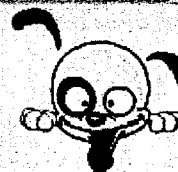
CCAWV Committee Members:

Don Mason, Marshall County Commissioner, Chair
Scot Lemley, Wetzel County Commissioner
Pat Boyle, Lewis County Commissioner
Bernie Kazenkio, Brooke County Commissioner
William Parker, Administrator Upshur County Commission

Vivian Parsons
Executive Director
County commissioners' Association of WV
2309 Washington Street East Charleston, WV. 25311
304-345-4639 (phone)
304-346-3512 (fax)
304-415-1608 (cell)

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Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Thursday, October 06, 2011 9:22 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CRS8

From: Ajsmithinc@cs.com [mailto:Ajsmithinc@cs.com]
Sent: Tuesday, October 04, 2011 10:46 AM
To: DEP Comments
Subject: 35CRS8

Hello,

I am responding with the WV Assoc. of Professional Land Surveyors in regards to proposed revisions to said law as it pertains to preparing maps and plans for oil & gas well permits. I can remember this same senario taking place in the mid 70's regarding the coal mining industry. The company I worked for, along with many other land surveyors, worked closely with Senator Byrd on the issue. The law was revised to include land surveyors' certification of such. So, I believe the presidence has been made that this is the proper thing to do. Any map or plan containing measurements of the earth's surface must be certified by a licensed professional land surveyor.

Thank you very much for your concern in this matter.

Allen J. Smith

WV Professional Land Surveyor No. 809

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Tuesday, October 11, 2011 10:54 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on Horizontal Drilling Rules (35CSR8)

Categories: Complete

From: mtbikewv@comcast.net [mailto:mtbikewv@comcast.net]
Sent: Monday, October 10, 2011 10:31 PM
To: DEP Comments
Subject: Comments on Horizontal Drilling Rules (35CSR8)

Ladies and Gentlemen

Area of particular concern: Casings and Cementing Standards

A standard is defined as a limit or rule approved and monitored for compliance and is enforced by law. Please replace the word "**should**" with "**must**". For example, under casings standards, section 3, "centralizers should be used". This is only one example, should is used throughout the document. In these instances, none of the rules set forth can be enforced, they become mere guidelines. The governor explicitly instructed the agency to develop "emergency rules", these articles as written do not comply with that instruction.

The emphasis here is to develop "preventative actions". I can think of no more important section in the document that has the potential to prevent environmental damage than the construction of well casings. Please consider making this change. Otherwise this document will be set aside and ignored by those who do the actual work.

Thanks for your consideration of this matter

David W. Cassell
Po Box 1879
Fairmont, WV
26555
304-366-7248

OIL & GAS REGULATIONS

RULE HF-1 Disclosure of Hydraulic Fracturing Fluids

(a) **Definitions.** The following words and terms, when used in this section, shall have the following meanings, unless the context clearly indicates otherwise:

(1) “Additive” means any substance or combination of substances found in a hydraulic fracturing fluid, including a proppant, that is added to a base fluid in the context of a hydraulic fracturing treatment, whether or not the function of any such substance or combination of substances is to create fractures in a formation.

(2) “Base fluid” means the base fluid type used in a particular hydraulic fracturing treatment, such as water, including fresh water and recycled water, nitrogen gas and foam fluids, and hydrocarbon gas.

(3) “Chemical Abstracts Service” or “CAS” means the chemical registry that is the authoritative collection of disclosed chemical substance information.

(4) “Chemical Abstracts Service registry number” or “CAS number” means the unique identification number assigned by the Chemical Abstracts Service to a chemical ingredient.

(5) “Chemical ingredient” means a discrete chemical constituent with its own specific name or identity, such as a CAS number, that is contained in an additive.

(6) “Fracturing Additive System” means a specific combination of additives that is made available as a total system that is designed to serve multiple purposes and is added to a base fluid in the context of a hydraulic fracturing treatment.

(7) “GWPC website” means the publicly accessible Internet website of the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission, or its successor.

(8) “Health professional” means a physician, industrial hygienist, toxicologist, epidemiologist, nurse or emergency responder providing medical or other health services to a person exposed to a chemical ingredient.

(9) “Hydraulic fracturing fluid” means the fluid used to perform a particular hydraulic fracturing treatment and includes the applicable base fluid and all additives.

(10) “Hydraulic fracturing treatment” means the action of stimulating a well by the application of hydraulic fracturing fluid under pressure to create fractures in a formation in order to enhance production of hydrocarbons.

(11) “Master List” means a list of all chemical ingredients, and their associated CAS numbers, that are to be used by a service company, or supplied by a supplier, during the following calendar year in connection with any hydraulic fracturing treatments conducted in the state.

(12) “Operator” has the meaning assigned by *[Insert State Code Reference]*.

(13) “Proppant” means sand or another natural or man-made material that is used in a hydraulic fracturing treatment to prevent artificially created or enhanced fractures from closing once the treatment is completed.

(14) “Purpose” means a brief descriptor of the intended use or function of an additive, or the intended uses or functions of a fracturing additive system, such as acid, biocide, breaker, corrosion inhibitor, crosslinker, demulsifier, friction reducer, gel, iron control, oxygen scavenger, ph adjusting agent, proppant, scale inhibitor or surfactant.

(15) “Service company” means a person that performs hydraulic fracturing treatments in this state for an operator.

(16) “Supplier” means a person, including an operator but excluding a service company, that provides an additive or a fracturing additive system to an operator for use in connection with a hydraulic fracturing treatment.

(17) “Trade name” means the name under which an additive or a fracturing additive system is sold or marketed.

(18) “Trade secret” means any confidential formula, pattern, process, device, information, or compilation of information that is used in a person's business and that gives the person an opportunity to obtain an advantage over competitors that do not know or use it.

(19) “Well” has the meaning assigned by *[Insert State Code Reference]*.

(20) “Well completion report” means the report an operator is required to file with the commission following the completion or recompletion of a well, if applicable.

(b) Public Information; Posting On GWPC Website; Master List.

(1) Notwithstanding any other law, unless the information is entitled to be withheld as a trade secret under Subsection (i), information submitted to the commission under Subsection (e) and Subdivision (b)(3) is public information.

(2) An operator shall post public information that it submits to the commission under Subsection (e), including public information submitted to the operator under Subsections (c) and (d), on a well-by-well basis on the GWPC website on or before the date such information is submitted to the commission. If the GWPC website ceases to exist, an operator

shall post the information required under Subsection (e) on another publicly accessible Internet website specified by the commission.

(3) A service company performing hydraulic fracturing treatments in this state shall (i) submit a Master List to the commission no later than November 1 of each year, (ii) submit an updated Master List to the commission within thirty (30) days of obtaining information that its then current Master List is inaccurate or incomplete, and (iii) report to the commission no later than November 1 of each year the total quantity of each chemical ingredient (identified by name and CAS number) used for hydraulic fracturing treatments in the state during the previous twelve (12) months. A supplier providing additives or fracturing additive systems for hydraulic fracturing treatments in this state shall (i) submit a Master List to the commission no later than November 1 of each year, (ii) submit an updated Master List to the commission within thirty (30) days of obtaining information that its then current Master List is inaccurate or incomplete and (iii) report to the commission no later than November 1 of each year the total quantity of each chemical ingredient (identified by name and CAS number) provided to an operator for use in connection with hydraulic fracturing treatments in the state during the previous twelve (12) months. On or before February 1 of each year, the commission shall compile a publicly-available comprehensive list of chemical ingredients and quantities used aggregated from all the information submitted to the commission pursuant to the immediately preceding sentence. If the specific identity of any chemical ingredient is entitled to be withheld as a trade secret under Subsection (i), then (i) the party submitting the Master List and other information to the commission shall supply both the identity of such chemical ingredient and the chemical family associated with such chemical ingredient, (ii) the commission shall protect and hold confidential the identity of such chemical ingredient and its associated CAS number and (iii) the commission shall instead note that the identity of such chemical ingredient has been withheld as a trade secret and disclose the chemical family associated with such chemical ingredient on the publicly-available list described above.

(c) **Service Company Disclosures.** Not later than the 30th day after the date a hydraulic fracturing treatment in this state is completed, the service company that performed the hydraulic fracturing treatment shall provide the following information to the operator of the well on which the treatment was performed:

(1) the type and volume of base fluid used in the hydraulic fracturing treatment, expressed in gallons or other units approved by the commission;

(2) the trade name and supplier of each additive or the trade name and supplier of the fracturing additive system, as applicable, that was used by the service company in the hydraulic fracturing fluid;

(3) the purpose of each additive or the purposes of the fracturing additive system, as applicable;

(4) a list of all chemical ingredients contained in each additive or in the fracturing additive system, as applicable, described under Subdivision (c)(2), and their associated

CAS numbers, excluding any chemical ingredients entitled to trade secret protection under Subsection (i);

(5) the actual or maximum concentration of each chemical ingredient listed under Subdivision (c)(4), expressed as a percent by mass of the total volume of hydraulic fracturing fluid used; and

(6) the information required under Subsection (h), if applicable.

The service company shall not be responsible for inaccuracies in the information that is provided to the service company by any third party manufacturer of the additives described under Subdivision (c)(2).

(d) **Supplier Disclosures.** Not later than the 30th day after the date a hydraulic fracturing treatment in this state is completed, the supplier of any additives used in connection with the hydraulic fracturing treatment shall provide the following information to the operator of the well on which the treatment was performed, and if the operator is the supplier, the operator shall prepare:

(1) the trade name of each additive or the trade name of the fracturing additive system, as applicable, provided by the supplier;

(2) the purpose of each additive or the purposes of the fracturing additive system, as applicable, provided by the supplier;

(3) a list of all chemical ingredients contained in each additive or in the fracturing additive system, as applicable, that is provided by the supplier, and their associated CAS numbers, excluding any chemical ingredients entitled to trade secret protection under Subsection (i);

(4) the actual or maximum concentration of each chemical ingredient listed under Subdivision (d)(3), expressed as a percent by mass of the total volume of each additive provided; and

(5) the information required under Subsection (h), if applicable.

The supplier shall not be responsible for inaccuracies in the information that is provided to the supplier by any third party manufacturer of the additives described under Subdivision (d)(1).

(e) **Operator Disclosures.** Not later than the 60th day after the date a hydraulic fracturing treatment on a well is completed, the operator shall include in the well completion report the following information:

(1) the type and volume of base fluid used in the hydraulic fracturing treatment, expressed in gallons or other units approved by the commission;

(2) the trade name and supplier of each additive or the trade name and supplier of the fracturing additive system, as applicable, used in the hydraulic fracturing fluid;

(3) the purpose of each additive or the purposes of the fracturing additive system, as applicable; and

(4) the information provided to the operator under Subdivisions (c)(4), (5) and (6) and (d)(3), (4) and (5).

The operator shall not be responsible for inaccuracies in the information that is provided to the operator by any service company, supplier or third party manufacturer of the additives described under Subdivision (e)(2).

(f) **Medical Emergencies.** This rule does not authorize a person to withhold information that state or federal law, including this rule, requires to be provided to any health professional who needs the information for diagnostic or treatment purposes. A service company, supplier or operator shall provide directly to a health professional, all information in the person's possession that is required by the health professional, whether or not the information may qualify for trade secret protection under Subsection (i). In a case that is a medical emergency, the information shall be provided immediately on request. In a case that is not a medical emergency, the information shall be provided upon receipt of a written statement of need from the health professional stating that (a) the health professional has a reasonable basis to believe the information is needed for diagnosis or treatment of an individual, (b) the individual being diagnosed or treated may have been exposed to the chemical ingredient, and (c) knowledge of the specific chemical ingredient identity is likely to assist in diagnosis or treatment. In a medical emergency, the health professional must provide to the person disclosing the information a written statement of need for the information as soon as circumstances permit. The person disclosing information to a health professional under this Subsection (f) shall include with the disclosure, or in a medical emergency, as soon as circumstances permit, a statement of the health professional's confidentiality obligation pursuant to Subsection (g).

(g) **Confidentiality.** A health professional to whom information is disclosed under Subsection (f) shall hold the information confidential, except that the health professional may, for diagnostic or treatment purposes, disclose information provided under that subsection to another health professional or accredited laboratory, as defined in *[Insert State Code Reference]*. A health professional or accredited laboratory to which information is disclosed by another health professional under this subsection shall hold the information confidential and the disclosing health professional shall include with the disclosure, or in a medical emergency, as soon as circumstances permit, a statement of the recipient's confidentiality obligation pursuant to this Subsection (g).

(h) **Trade Secret Claims.** If the specific identity of a chemical ingredient and the chemical ingredient's associated CAS number are claimed or have been finally determined to be entitled to protection as a trade secret under Subsection (i), the service company or supplier, as applicable, may withhold the specific identity of the chemical ingredient and the chemical

ingredient's associated CAS number from the information provided to the operator. If the service company or supplier, as applicable, elects to withhold that information, the information provided to the operator must:

- (1) disclose the chemical family associated with the chemical ingredient; and
- (2) state that the specific identity of the chemical ingredient and the chemical ingredient's associated CAS number are entitled to protection as a trade secret.

(i) **Trade Secret Protection.**

(1) To receive trade secret protection under this Section, a person must provide to the commission (i) the specific identity of the relevant chemical ingredient and its associated CAS number, and (ii) a written claim that such chemical ingredient, and its associated CAS number, are entitled to that protection. The commission shall protect and hold confidential the identity of the chemical ingredient and the chemical ingredient's associated CAS number unless and until the chemical ingredient and its associated CAS number are determined not to be entitled to trade secret protection under Subsection (i)(6). A claim of entitlement to trade secret protection must include substantiating facts in the form of the information required by 40 C.F.R. Section 350.7(a). If requested by the trade secret claimant, the commission shall treat any such substantiating facts as confidential and may not disclose them to any third party or the public for any purpose. A claim of entitlement to trade secret protection must be submitted to the commission on or before the date the claimant is otherwise required to provide the identity of the relevant chemical ingredient to the operator under Subsection (c) or (d), as applicable. A claimant may not submit a claim of entitlement to trade secret protection for a chemical ingredient that has been determined not to be entitled to trade secret protection under Subdivision (i)(6) below unless the claim of entitlement to trade secret protection for such chemical ingredient is made with respect to the use of the chemical ingredient in a different additive. Subject to the requirements of Subsection (h), a claimant may withhold from an operator the specific identity and associated CAS number of the chemical ingredient described in the claim of entitlement to trade secret protection until such claim is successfully challenged under this Subsection (i).

(2) A person may challenge a claim of entitlement to trade secret protection under this Subsection (i) if the person is:

- (i) the landowner on whose property a well is located that has undergone a hydraulic fracturing treatment that used one or more chemical ingredients subject to the claim;
- (ii) a landowner who owns property adjacent to property described by Subparagraph (i)(2)(i);
- (iii) a department or agency of this state that has regulatory authority over the trade secret claimant or any of its activities in the state; or

(iv) otherwise entitled by law to challenge the trade secret claim.

(3) A person entitled to challenge a claim of entitlement to trade secret protection may do so by filing with the commission a challenge petition, on a form designated or approved by the commission, not later than the second anniversary of the date the chemical that is the subject of the challenge is used in a hydraulic fracturing treatment in the state; provided, however, if the commission is the person challenging the trade secret claim, no such petition shall be required. Not later than the 10th day after the date the commission receives a challenge petition or the date the commission elects to institute its own challenge, as applicable, the commission shall submit a written request for decision to the office of the attorney general and shall notify the trade secret claimant of the challenge and the request for decision. If the party notified of a challenge by the commission is not the owner of the trade secret and is not the proper party to respond to the challenge, that party shall promptly notify the commission of the identity of the owner of the trade secret and the commission shall notify the owner of the trade secret of the challenge and provide such owner an opportunity to substantiate its trade secret claim. The office of the attorney general shall process a request for decision in accordance with the procedures provided by *[Insert State Code Reference]*.

(4) The office of the attorney general shall uphold a claim of entitlement to trade secret protection against a challenge of the claim if the office determines that the claim satisfies the requirements for trade secret protection under the exception for trade secrets provided by *[Insert State Code Reference]*. Except as provided by Subdivision (i)(5) below, once such a determination is made by the office of the attorney general, the trade secret status of the specific identity of the chemical ingredient and the chemical ingredient's associated CAS number may not be challenged under this section until the fifth anniversary of the date the determination is made.

(5) A trade secret claimant or a person challenging a trade secret claim under Subdivision (i)(3) may appeal a determination by the office of the attorney general with regard to a claim of entitlement to trade secret protection in the manner provided by *[Insert State Code Reference]*.

(6) If the office of the attorney general or, in the event of an appeal of the decision of the office of attorney general, a court, determines that the specific identity of the chemical ingredient and the chemical ingredient's associated CAS number are not entitled to trade secret protection, the commission shall require the claimant to disclose the specific identity of the chemical ingredient and the chemical ingredient's associated CAS number.

(7) Notwithstanding any other provision of this section, the commission may:

(i) disclose information otherwise subject to trade secret protection under this section to an accredited laboratory in connection with the investigation of a claim of contamination of surface water or groundwater if the laboratory agrees in writing to keep the information confidential; and

(ii) use the results of a test conducted by an accredited laboratory in connection with an investigation of surface water or groundwater in any manner the commission considers necessary to protect public health and the environment.

(j) **Effective Date.** This rule shall apply to a hydraulic fracturing treatment performed on a well for which an initial drilling permit is issued on or after the effective date of this rule. A hydraulic fracturing treatment performed on a well for which an initial drilling permit is issued before the effective date of this rule shall be governed by the rules that existed immediately before the effective date of this rule.



**DRAFT MODEL REGULATORY
FRAMEWORK
FOR
HYDRAULICALLY FRACTURED
~~ONSHORE~~ HYDROCARBON EXPLORATION
~~AND~~ PRODUCTION WELLS**

For Discussion

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INTRODUCTION

ARTICLE I – Utilizing the Model Regulatory Framework

1-1. Scope of Model Regulatory Framework. This Model Regulatory Framework for Hydraulically Fractured Hydrocarbon Production Wells (the “Model Framework”) is intended to be utilized by state governments in implementing a distinct regulatory regime governing the drilling, completion and production of onshore hydrocarbon exploration and production wells that are stimulated by hydraulic fracturing. The Model Framework applies to all hydraulically fractured hydrocarbon exploration and production wells, regardless of depth or trajectory, but is not intended to govern any aspect of injection wells, storage wells or any other type of wells that may also be stimulated by hydraulic fracturing. The Model Framework addresses ~~all critical~~those regulatory and operational issues ~~pertaining to wellhead control and subsurface wells that are critical to ensuring the integrity of a hydraulically fractured hydrocarbon production well throughout its full life-cycle,~~ beginning with the permitting process and ending with plugging and abandonment. The Model Framework does not address surface issues such as impoundment construction standards, spill control, release notification, interagency coordination, surface containment of any well return fluids (including flowback, swabbing or other produced fluids), off-site transport, recycling or disposal of well return fluids. In addition, the Model Framework is not intended to address or affect other regulatory or common law issues such as well spacing, correlative rights of mineral owners or lease rights.

2-2. Purpose of Model Regulatory Framework. The Model Framework is based on numerous “best-in-class” state rules and regulations, and incorporates industry “best practices” with regard to safety, efficiency and environmental protection. The Model Framework is meant to give state governments a road-map to implement hydraulic fracturing regulation that (i) utilizes the structure of effective state laws and regulations, (ii) makes effective operational industry practices mandatory, (iii) encourages technological advances and innovation to continually improve industry practices and (iv) ensures the protection of human health and safety and the environment. Articles III through VIII of the Model Framework contain the substance of the Model Framework’s requirements, and are chronologically organized based on the life-cycle of a hydraulically fractured hydrocarbon production well. These are:

(a) ARTICLE I - Definitions

~~a.~~ (b) ARTICLE II – Definitions Well Planning (Permitting);

~~b.~~ ARTICLE III – Well Planning (Permitting);

~~c.~~ ARTICLE IV – Well Planning (c) ARTICLE III – Well Planning (Financial Security Requirements);

(d) ARTICLE IV – Well Construction (Drilling);

~~d. (e)~~ ARTICLE V – Well Construction (~~Drilling~~Completion);

~~e. —~~ ARTICLE VI – Well Construction (Completion);

~~f. (f)~~ ARTICLE ~~VHVI~~ – Production and Well Monitoring; and

~~g. (g)~~ ARTICLE ~~VHHVII~~ – Well Abandonment and Plugging.

~~3. —~~ How to Utilize the Model Regulatory Framework.

~~(h)~~ ARTICLE VIII – Additional Requirements

~~a. —~~ General. 3. Utilizing the Model Regulatory Framework. It is important to note that while the Model Framework is written in statutory form, it is not meant to be an exhaustive statutory scheme that can be adopted directly, but instead is a working structure that sets forth key substantive components for effective regulation. The reason for this is to allow state governments and regulators adequate flexibility in the manner in which they are able to integrate the substantive provisions of the Model Framework into existing state law. Accordingly, it is expected that in implementing the Model Framework, state regulators may utilize different terminology, add or expound upon certain procedural requirements, or otherwise deviate from the Model Framework in certain non-substantive aspects. However, a state should address all substantive requirements of the Model Framework. Deviations shall be considered to be “non-substantive” in nature if such deviation is merely procedural or stylistic in nature. A deviation would also be deemed acceptable if it is an additional requirement that (i) is in excess of what the Model Framework requires, or (ii) otherwise does not conflict with the Model Framework. On the other hand, a deviation shall be considered to be unacceptable to the extent that it conflicts with a provision of the Model Framework that is integral to (a) protection and maintenance of well bore integrity, (b) protection of natural resources (including sources of protected water), and (c) the ability of the operator and the applicable state regulatory authority to adequately monitor hydraulic fracturing activities so as to achieve the objectives of (a) and (b). As a practical matter, deviations from the well construction, production/well monitoring and well abandonment and plugging provisions of the Model Framework (~~Articles IV through VII~~) shall be the most likely to be deemed as substantive. In implementing the Model Framework, due consideration should be given to encouraging operators to pursue technological advancements and innovative solutions to better achieve the goals of the Model Framework.

ARTICLE II – Definitions I - DEFINITIONS

~~a. —~~ Use of Certain Terms. As used in the Model Framework, the following terms shall have the meanings ascribed to them below, unless the context clearly indicates otherwise:

~~i. (1)~~ “Active operation” — Regular shall mean regular and continuing activities related to the exploration, development or production of hydrocarbons for which the operator has all necessary permits.

(2) “Additive” shall mean any substance or combination of substances found in a hydraulic fracturing fluid, including a proppant, that is added to a base fluid in the context of a hydraulic fracturing treatment, whether or not the function of any such substance or combination of substances is to create fractures in a formation.

~~ii. (3) “Annular overpressurization”~~ Annular overpressurization shall mean the wellbore condition that occurs when (i) fluids in the annulus between the surface casing and the intermediate/production casing are pressurized to such an extent so as to potentially allow for the migration of confined fluids or gases at the surface casing shoe or (ii) fluids in the annulus between any intermediate casing (if intermediate casing is set) and the production casing are pressurized to such an extent so as to potentially allow for the migration of confined fluids or gases at the intermediate casing shoe.

~~iii. “Application”~~ A formal request by an operator made with [STATE REGULATOR] for a permit to drill, deepen, plug back, reenter, fracture or refracture any well for the purpose of exploring for, developing and producing hydrocarbons through the use of hydraulic fracturing operations.

(4) “Base Fluid” shall mean the base fluid type, such as water, including fresh water and recycled water, or nitrogen foam, used in a particular hydraulic fracturing treatment.

~~i. (5) “Bond”~~ A shall mean a surety instrument issued:

~~(1) (i)~~ on a [STATE REGULATOR]- approved form;

~~(2) (ii)~~ by and drawn on a third party corporate surety authorized under [STATE] law to issue surety bonds in [STATE]; and

~~(3) (iii)~~ renewed and continued in effect until the conditions of the bond have been met or its release is approved by [STATE REGULATOR].

~~iv. (6) “Chemical Abstract Abstracts Service”~~ or “CAS” shall mean the chemical registry that is the most authoritative collection of disclosed chemical substance information, containing more than 52 million organic and inorganic substances and 61 million sequences.

(7) “Chemical ingredient” shall mean a discrete chemical constituent with its own specific name or identity, such as a CAS number, that is contained in an additive.

~~v. (8) “Close proximity well”~~ shall refer to a hydrocarbon production mean a well that will be completed with a hydraulic fracture stimulation fracturing treatment in a productive horizon that (i) has less than 500 vertical feet of intervening zone, or (ii) has more than 500 vertical feet of intervening zone, but which [STATE REGULATOR] determines should nevertheless be classified as a close proximity well because the intervening zone does not contain an adequate confining layer. Notwithstanding the foregoing, an operator may be granted an exemption from the “close proximity well”

classification when there is less than 500 vertical feet of intervening zone if the [STATE REGULATOR] determines that such intervening zone contains an adequate confining layer.

vi. ~~(9)~~ “Completion” shall refer to mean the collective operational actions taken and methods employed activities that are conducted following drilling operations to prepare a well for production, unless the context clearly indicates otherwise. Completion activities include, but are including, but not limited to, installation of surface and downhole equipment in the wellbore, perforating, testing and well stimulation and testing to facilitate hydrocarbon production.

vii. ~~(10)~~ “Conductor casing” is that shall mean the pipe ordinarily used for the purpose of supporting to support unconsolidated surface deposits and to prevent the subsurface infiltration of surface water or fluids into the wellbore.

viii. ~~(11)~~ “Confining layer” shall refer to mean that portion of an intervening zone that acts as an effective barrier to the vertical migration of fluids into one or more strata or zones that contain protected water. In determining whether an intervening zone contains an adequate confining layer, the [STATE REGULATOR] shall review the operator’s analysis of the intervening zone, which shall include an assessment of the mechanical rock properties (including permeability, relative hardness (using Young’s Modulus), and relative elasticity (using Poisson’s Ratio)) and other relevant characteristics of the formation(s) that comprise the intervening zone to determine whether such intervening zone contains one or more formation(s) that will have sufficient areal extent and integrity to ensure proper containment of the hydraulically induced fracture and act as an effective barrier to the vertical migration of fluids into one or more strata or zones that contain protected water.

ix. ~~(12)~~ “Delinquent inactive well” — shall mean an unplugged well that has had no reported production, disposal, injection, or other permitted activity for a period of greater than 12 months and for which, after notice and opportunity for hearing, [STATE REGULATOR] has not extended the plugging deadline.

x. ~~(13)~~ “Financial security” — shall mean an individual performance bond, blanket performance bond, letter of credit, or cash deposit filed with [STATE REGULATOR].

xi. ~~(14)~~ “Funnel viscosity” — Viscosity shall mean viscosity as measured by the Marsh funnel, based on the number of seconds required for 1,000 cubic centimeters of fluid to flow through the funnel.

xii. ~~(16)~~ “Good faith claim” — shall mean a factually supported claim based on a recognized legal theory to a continuing possessory right in a mineral estate, such as evidence of a currently valid hydrocarbon lease or a recorded deed conveying a fee interest in the mineral estate.

xiii. ~~(16)~~ “Hydraulic fracturing” or “Hydraulic fracturing treatment” shall refer to mean the stimulation action of stimulating a well by the application of fluids (which

may contain proppant such as sand or man-made inert material) with force in order to create artificial fractures in the formation for the purpose of improving the capacity to produce the flow of hydrocarbons up the well; provided, however, the term “hydraulic fracturing” shall not include any activities or operations that are not designed to generate new fractures in the zone(s) of interest.

~~xiv. “Hydraulic fracturing treatment” — the action of stimulating a well by the application of fluids with force in order to create artificial fractures in the formation for the purpose of improving the capacity to produce the flow of hydrocarbons up the well. The fluids may contain proppant (such as sand or man-made inert material) for the purpose of preventing the artificially created fractures from closing once the~~(17)

“Hydraulic fracturing fluid” shall mean the fluid used to perform a particular hydraulic fracturing treatment is complete) and includes the applicable base fluid and all additives.

~~xv. (18)~~ “Hydrocarbon” shall mean a naturally occurring organic compound comprised of hydrogen and carbon and may include oil, gas and other liquid and gaseous hydrocarbons. [4-28-11]

~~xvi. (19)~~ “Hydrocarbon strata” shall refer to any stratum encountered in a well that is known to contain hydrocarbons.

~~xvii. (20)~~ “Intervening zone” shall refer to those geological formations (or part of a formation) located between the top boundary of the productive horizon that is being hydraulically fractured and the base of the deepest stratum or zone that contains protected water.

~~xviii. (21)~~ “Letter of credit” — An shall mean an irrevocable letter of credit issued:

(~~1~~i) on a [STATE REGULATOR]- approved form;

(~~2~~ii) by and drawn on a third party bank authorized under state or federal law to do business in [STATE]; and

(~~3~~iii) renewed and continued in effect until the conditions of the letter of credit have been met or its release is approved by [STATE REGULATOR].

~~xix. (22)~~ “Logging” — shall mean to run any of a number of various measurement instruments into a well to measure the mechanical or physical properties of the well casing and/or cement, or the mechanical or petrophysical properties within of the wellbore, or rock geological formations immediately adjacent to the wellbore.

~~xx. (23)~~ “MSDS” — shall mean a standardized Material Safety Data Sheet, which that contains key information regarding its applicable subject the substance(s) described therein, including the chemical make-up of the subjects such substance(s) and certain other relevant health, safety and environmental data.

~~xxi.~~ (24) “Operator” shall refer to an operator of a hydraulically fractured well that mean the party designated to conduct operations on a well and is subject to state regulation as an operator, unless the context clearly indicates otherwise.

~~xxii.~~ (25) “Perforating” –shall mean to penetrate the casing wall and cement of a wellbore in order to provide holes through which formation fluids may enter or to provide holes in the casing so that hydraulic fracturing treatments may be introduced into the formation fluids may enter the formation and formation fluids may enter the wellbore.

(26) “Permit Application” shall mean a formal request by an operator made with [STATE REGULATOR] for a permit to drill, deepen, plug back, reenter, or refracture any well for the purpose of exploring for, developing and producing hydrocarbons through the use of hydraulic fracturing operations.

~~xxiii.~~ (27) “Productive horizon” shall mean any hydrocarbon strata determined to contain commercial quantities of hydrocarbons.

(28) “Proppant” shall mean sand or another natural or man-made material that is used in a hydraulic fracturing treatment to prevent artificially created or enhanced fractures from closing once the treatment is completed.

~~xxiv.~~ (29) “Protected water” shall refer to mean water that is classified as either (i) usable-quality water or (ii) treatable-quality water that (a) is currently being used as a supply of drinking water for human consumption or (b) the [STATE REGULATOR] has determined is sourced from an aquifer or portion thereof that is reasonably expected to supply any public water system and does not meet exemption standards as listed in 40 CFR 146 of the UIC Program.

~~xxv.~~ (30) “Protection depth” —Theshall mean the depth to which protected water must be protected, as determined by [STATE REGULATOR], which may include zones that contain brackish or saltwater if such zones are correlative and/or hydrologically connected to zones that contain protected water.

(31) “Purpose” shall mean a brief descriptor of the intended use or function of an additive in a hydraulic fracturing fluid, such as acid, biocide, breaker, corrosion inhibitor, crosslinker, demulsifier, friction reducer, gel, iron control, oxygen scavenger, ph adjusting agent, proppant, scale inhibitor or surfactant.

(32) “Refracture” shall mean the action of restimulating a well through a hydraulic fracturing treatment at a later date after the initial hydraulic fracturing treatment and some period of producing the well.

~~xxvi.~~ (33) “Related piping” —Theshall mean the surface piping and subsurface piping that is less than three feet beneath the ground surface between pieces of equipment located at any collection or treatment facility. Such piping would include piping between and among headers, manifolds, separators, storage tanks, gun barrels, heater treaters, dehydrators, and any other equipment located at a collection or treatment facility. The term is not intended to refer to “related piping” does not include lines, such as flowlines,

gathering lines, and injection lines that lead up to and away from any such collection or treatment facility.

~~xxvii.~~ (34) “Reported production” — ~~Production of hydrocarbons, excluding~~ shall mean those quantities of hydrocarbon production that are reported to [STATE REGULATOR] and specifically excludes hydrocarbon production attributable to well tests, that is accurately reported to [STATE REGULATOR] and flow back operations.

~~xxviii.~~ (35) “Serve notice” — ~~To serve notice on~~ with respect to the notification of a surface owner or resident pursuant to this Article ~~is to hand deliver~~ of plugging operations, shall mean (i) the hand delivery of a written notice identifying the well or wells to be plugged, and the projected date the well or wells will be plugged, to the surface owner (or resident if the owner is absent) at least three days prior to the day of plugging, or to mail (ii) the mailing of such notice by first class mail, postage pre-paid, to the last known address of the surface owner or resident at least seven days prior to the day of plugging.

(36) “Service company” shall mean a person that performs hydraulic fracturing treatments in this state for an operator.

~~xxix.~~ (37) “Source of protected water” shall refer to mean any water well or surface water which is used as a source of usable-quality water

~~xxx.~~ (38) “Stand under pressure” — ~~To~~ shall mean to leave the hydrostatic column pressure in a well acting as the natural force without adding any external pump pressure. The provisions are complied with if float equipment is used and found to be holding at the completion of the cement job.

~~xxxi.~~ “[STATE REGULATOR]” shall not have fixed meaning, but instead shall be a “place holder” that refers to the applicable state regulatory body, authority, office or duly authorized person, given the context.

(39) “Supplier” shall mean a person, including an operator but excluding a service company, that sells or otherwise provides an additive used in hydraulic fracturing treatments.

~~xxxii.~~ (40) “Surface Casing” shall refer to mean a steel or steel alloy string of pipe set and cemented, or otherwise anchored, in the well to a depth sufficient to isolate and seal off all zones containing protected waters water, and which supports the installation of well control equipment that can be fully shut in and otherwise maintain proper pressure control of the well while drilling to a deeper depth.

(41) “Trade name” shall mean the name under which an additive is sold or marketed.

(42) “Trade secret” shall mean any confidential formula, pattern, process, device, information, or compilation of information that is used in a person’s business and that gives the person an opportunity to obtain an advantage over competitors that do not know or use it.

~~xxxiii.~~ (43) “Treatable-quality water” shall refer to mean water with more than 3,000 ppm and up to 10,000 ppm of total dissolved solids (TDS), provided that if the [STATE REGULATOR] determines that an aquifer or portion thereof contains water with greater than 10,000 ppm of TDS and such aquifer or portion thereof is reasonably determined to be likely to supply any public water system based on the technical and economic viability thereof, then such water may be classified by the [STATE REGULATOR] as treatable-quality water.

~~xxxiv.~~ (44) “Usable-quality water” shall refer to mean water with a maximum of 3,000 ppm total dissolved solids (TDS).

~~xxxv.~~ (45) “Well” shall refer to mean a hydrocarbon production well that will be or has been hydraulically fractured, unless the context clearly indicates otherwise.

~~xxxvi.~~ (46) “Zone of critical cement” — ~~For~~ shall mean (i) for surface casing strings greater than 300 feet in length, the zone of critical cement shall be the bottom 20% of the casing string, but in no event shall it be more than 1,000 feet or less than 300 feet. ~~For~~ and (ii) for surface casing strings of 300 feet or less in length, the zone of critical cement ~~extends~~ shall extend to the land surface.

[Note: Sections 5, 6 and 7 were moved to new Article VIII.]

ARTICLE III—Well Planning (PermittingII – WELL PLANNING (PERMITTING))

1. ~~General~~ 1. Scope of Article. This Article governs the process whereby an operator must apply for and obtain from [STATE REGULATOR] a permit to drill, deepen, plug back, reenter, fracture or refracture a well for the purpose of exploring for, developing and producing hydrocarbons from oil and gas bearing strata through the use of hydraulic fracturing operations.

2. Permitting Process.

a. ~~An application for a permit to drill, deepen, plug back, reenter, fracture or refracture any well for the purpose of exploring for, developing and producing hydrocarbons through the use of hydraulic fracturing operations~~ (a) A permit application shall be made pursuant to and in accordance with any and all applicable laws, rules and regulations of [STATE REGULATOR] governing the permitting of hydrocarbon wells in the state of [STATE], and filed with [STATE REGULATOR] on a form approved by [STATE REGULATOR]. Each permit application must ~~shall~~ be accompanied by all applicable information, forms, and certifications more particularly described in this Section ~~2.3~~ below.

b. ~~(b)~~ Operations for the drilling, deepening, plugging back, reentering, fracturing or refracturing of a well for the purpose of exploring for, developing and producing hydrocarbons through the use of hydraulic fracturing operations shall not be commenced until the relevant permit or other authorization has been granted by [STATE REGULATOR] and the waiting period to commence such operations, if any, has terminated.

3. Permit Application Requirements.

~~e. — An(a) A permit~~ application to drill, deepen, plug back, reenter, fracture or refracture shall contain the following information:

~~i. (i)~~ the operator name;

~~ii. (ii)~~ the lease, pooled unit or unitized tract name;

~~iii. (iii)~~ the lease, pooled unit or unitized tract number or gas identification number;

~~iv. (iv)~~ well number;

~~v. (v)~~ county, parish or other appropriate geographic subdivision;

~~vi. (vi)~~ field name;

~~vii. (vii)~~ a list of all productive horizon(s) intended to be tested;

~~viii. (viii)~~ the planned casing setting depth(s), cement top(s) and the anticipated depth of the deepest productive horizon intended to be tested;

(ix) a statement whether or not the well is to be completed as a Close Proximity Well.

~~ix. (x)~~ a plat showing the well location;

~~x. (xi)~~ a statement as to how the well location would comply with any applicable spacing rule of [STATE REGULATOR] if completed. and how the surface location would comply with any applicable set-back rules to structures and public sites such as schools and hospitals.

~~xi. (xii)~~ a statement indicating that the well will be hydraulically fractured;

~~xii. (xiii)~~ the identification and anticipated true vertical depth(s) of the formation(s) to be hydraulically fractured and the anticipated surface treating pressure range for the proposed hydraulic fracturing treatment(s); and

~~xiii. (xiv)~~ an explanation of the steps to be taken to comply with the requirements for close proximity wells in Article V.6.e and Article VI.3.c;

~~xiv. (xv)~~ identification of the source(s) type of all waterbase fluid to be used for hydraulic fracturing operations; and

~~xv. (xvi)~~ a statement that recorded existing or permitted wells of record within a specified radius of the proposed well that is the subject of the permit application have been evaluated to determine whether the any such well may be a conduit for movement of fluids into a source of protected water; and

~~xvi. (xvii)~~ such other information as [STATE REGULATOR] shall require.

~~d. (b)~~ With each permit application or materially amended permit application, the applicant shall submit to [STATE REGULATOR] a refundable fee as determined by the applicable financial security requirements of [STATE REGULATOR].

~~e. —~~ Any permit to drill, deepen, plug back, reenter, fracture or refracture granted by [STATE REGULATOR] shall expire no later than two years after the date of original approval.

~~f. —~~ An (c) A permit application to drill, deepen, plug back, reenter, fracture or refracture shall be accompanied by a legible, accurate plat, with a scale of one inch equals 500 feet or such other scale as determined by [STATE REGULATOR]. The plat for the initial well on the lease, pooled unit, or unitized tract shall show the entire lease, pooled unit, or unitized tract, including all tracts being pooled or unitized. The boundary of the lease, pooled unit or unitized tract shall be outlined on the plat using either a heavy line or crosshatching. If necessary to show the entire lease, pooled unit or unitized tract, the scale may be one inch equals 2,000 feet or such other scale as determined by [STATE REGULATOR]. Plats for subsequent wells on a lease, pooled unit or unitized tract shall show at least the lease, pooled unit or unitized tract boundary line nearest the proposed location and the nearest permanent geographic subdivision boundary. [STATE REGULATOR] may approve plats with other scales upon request. The plat shall include the following:

~~i. —~~ The boundary of the lease, pooled unit or unitized tract shall be outlined on the plat using either a heavy line or crosshatching.

~~ii. —~~ The plat is to include the following:

~~(1) (i)~~ the surface location of the proposed drilling site, the proposed horizontal well and the proposed path, penetration point and terminus location for the well;

~~(2) (ii)~~ perpendicular lines providing the distance in feet from the two nearest non-parallel permanent geographic subdivision boundaries to the surface location;

~~(3) (iii)~~ perpendicular lines providing the distance in feet from two nearest non-parallel lease or unit boundary lines to the surface location;

~~(4) (iv)~~ a line providing the distance in feet from the surface location to the nearest point on the lease or unit line, pooled unit line, or unitized tract line. If there is an unleased interest in a tract of the pooled unit that is nearer than the pooled unit line, the nearest point on that unleased tract boundary shall be used;

~~(5)-(v)~~ a line providing the distance in feet from the surface location to the nearest well identified by number either applied for, permitted, or completed in the same lease, pooled unit, or unitized tract and in the same field and reservoir;

~~(6)-(vi)~~ the geographic location information in plane coordinates meeting [STATE] GPS standards;

~~(7)-(vii)~~ a labeled scale bar; and

~~(8)-(viii)~~ northerly direction.

(d) For directional or horizontal wells, the plat attached to the permit application shall contain the following additional information:

(i) the lease, pooled unit, or unitized tract, showing the acreage assigned to the drilling unit for the proposed well and the acreage assigned to the drilling units for all current applied for, permitted, or completed oil, gas, or oil and gas wells on the lease, pooled unit, or unitized tract;

(ii) the surface location of the proposed well, and the proposed path, penetration points, and terminus locations of all wells to be drilled in the wellbore;

(iii) two perpendicular lines from the nearest point on the lease line, pooled unit line, or any unleased interest in a tract of the pooled unit, depicting the distance(s) to:

(1) the penetration point(s); and

(2) the terminus location(s);

(iv) perpendicular lines providing the distance in feet from the two nearest non-parallel survey lines to the terminus location(s);

(v) a line providing the distance in feet from the closest point along the course(s) of the well(s) to the nearest point on the lease line, pooled unit line, or unitized tract line. If there is an unleased interest in a tract of the pooled unit that is nearer than the pooled unit line, the nearest point on that unleased tract boundary shall be used; and

(vi) lines from the nearest oil, gas, or oil and gas well, applied for, permitted or completed in the same lease or pooled unit and in the same field and reservoir depicting the distance to:

(1) the penetration point(s);

(2) the closest point along the course(s) of the well(s); and

(3) the terminus location(s).

4. Term of Permit. Any permit to drill, deepen, plug back, reenter, or refracture granted by [STATE REGULATOR] shall expire no later than two years after the date of original approval.

iii. ~~Other applicable requirements of [STATE REGULATOR] governing plats may supplement or replace the plat requirements set out above.~~

5. Well Database.

~~g.~~(a) [STATE REGULATOR] shall be responsible for the creation and maintenance of a public database that depicts the official surface and bottom-hole locations of all hydrocarbon, disposal, injection and geothermal wells, and all sources of protected water constructed within [STATE].

~~h.~~(b) [STATE REGULATOR] shall determine or approve the location-specific surface casing depth for the permitted well based upon a review of its database(s) or based upon a contour map showing the basal elevation of the lowermost aquifer containing protected water.

ARTICLE IV – Well Planning (Financial Security Requirements)

ARTICLE III – WELL PLANNING (FINANCIAL SECURITY REQUIREMENTS)

~~2. General~~1. Scope of Article. This Article governs the process whereby ~~sets forth the provisions that require~~ an operator ~~must~~to provide the state [STATE REGULATOR] with financial security in connection with ~~the operator's~~ hydraulic fracturing activities ~~such. The purpose of the financial security requirements is to ensure~~ that the state is adequately protected against certain costs the state ~~it~~ might incur as a result of (i) the ~~improper~~ abandonment of one or more wells ~~drilled~~ by the operator, or (ii) ~~pollution or other~~any environmental ~~damaged~~damages stemming from the operator's hydraulic fracturing activities. Except as otherwise provided in Section ~~4.3(a)-(i)-(3)~~ below with respect to close proximity wells, nothing in this Article shall be construed to require additional financial security from an operator for any wells or activity to the extent that the operator has already posted adequate security with [STATE REGULATOR] for its other operations.

~~3.~~ 2. Form of Financial Security Required.

~~a.~~(a) All operators undertaking hydraulic fracturing operations in [STATE] must, in addition to any other applicable filing obligations, file financial security with [STATE REGULATOR] in one of the following forms:

i. ~~(i)~~ an individual performance bond;

ii. ~~(ii)~~ a blanket performance bond; or

iii. ~~(iii)~~ a letter of credit or cash deposit in the same amount as required for an individual performance bond or blanket performance bond.

~~b. (b)~~ Operators shall submit bonds and letters of credit on forms prescribed by [STATE REGULATOR] subject to any applicable deadlines and procedures governing such submissions.

4.3. Required Amount and Conditions of Financial Security.

~~a. (a)~~ An operator required to file financial security shall ~~file financial security as described in this Section 4.a. hereunder shall meet the following requirements:~~

~~i. (i)~~ Types and amounts of financial security required.

~~(1) — A person operating one or more wells (1)~~ An operator may file an individual performance bond, letter of credit, or cash deposit in an amount equal to the sum of \$_____ per foot for each foot of total true vertical depth for each well operated ~~the operator operates.~~

~~(2) — A person operating one or more wells (2)~~ An operator may file a blanket bond, letter of credit, or cash deposit to cover all wells for which a bond, letter of credit, or cash deposit is required in an amount equal to the greater of (i) the base amount determined in accordance with the last sentence of this Section ~~4.3(a)(i)(2)~~ or (ii) \$_____. The base amount is determined as follows: (i) the base amount for a person operating 10 or fewer wells or performing other operations shall be \$_____; (ii) the base amount for a person operating more than 10 but fewer than 100 wells shall be \$_____; (iii) the base amount for a person operating 100 or more wells shall be \$_____.

~~(3) (3)~~ In addition to the financial security required under subparagraphs (1) and (2) of this Section ~~4.3(a)(i)~~, ~~a person~~ an operator operating one or more close proximity wells shall be required to file an individual performance bond, letter of credit or cash deposit in an amount equal to the sum of \$_____ for each foot of total true vertical depth for each such well operated. In lieu of providing an individual performance bond, letter of credit or cash deposit for each such close proximity well, the operator may increase the amount of any blanket bond, letter of credit or cash deposit under Section ~~4.3(a)(i)(2)~~ by an amount determined in accordance with the immediately preceding sentence.

~~ii. (ii)~~ If a person is engaged in more than one activity or operation, including well operation, for which financial security is required, the person ~~is~~ shall not ~~be~~ required to file financial security for each activity or operation in which the person is engaged. The person ~~is~~ shall be required to file financial security only in the greatest amount required for any activity or operation in which the person engages. ~~The and the~~ financial security filed covers by such person shall cover all of the activities and operations for which financial security is required.

~~iii. (iii)~~ Financial security amounts required herein are the minimum amounts required to be filed. A person may file a greater amount if desired.

~~b. (b)~~ Any bond, letter of credit, or cash deposit required under this Article is subject to the conditions that the operator will plug and abandon all wells and control, abate, and clean up

pollution associated with the surface oil and gas operations and activities covered under the required financial security in accordance with applicable state law and permits, rules, and orders of [STATE REGULATOR].

~~e.~~ (c) Operators shall tender cash deposits in United States currency or certified cashiers check only, and shall make such deposit in accordance with any and all applicable rules and regulations governing such cash deposits. [STATE REGULATOR] will not refund a cash deposit until either financial security is accepted by [STATE REGULATOR] as provided hereunder or an operator ceases all activity.

5. 4. Well or Lease Transfer.

a. (a) [STATE REGULATOR] shall not approve a transfer of operatorship submitted for any well or lease unless the operator acquiring the well or lease has on file with [STATE REGULATOR] financial security in an amount sufficient to cover both its current operations and the wells or leases being transferred.

b. (b) Any existing financial security covering the well or lease proposed for transfer shall remain in effect and the prior operator of the well ~~remains~~ shall remain responsible for compliance with all laws and [STATE REGULATOR] rules covering the transferred well until [STATE REGULATOR] approves the transfer.

e. ~~—~~ A(c) The transfer of a well or lease from one entity to another entity under common ownership ~~is~~ shall be deemed a transfer for the purposes of this Article.

ARTICLE V—Well Construction (DrillingIV – WELL CONSTRUCTION (DRILLING)

~~1. —~~ General1. **Scope of Article.** It is the intent of all provisions of this Article that (i) all well casing shall meet appropriate API standards and be sufficiently cemented or otherwise anchored in the hole in order to effectively control the well at all times, (ii) all zones containing protected water zones ~~shall~~ be isolated and sealed off to effectively prevent contamination or harm to any water therein, and (iii) all potentially productive zones, zones capable of over-pressurizing the surface casing annulus ~~causing annular overpressurization,~~ or corrosive zones shall be isolated and sealed off to the extent that such isolation is necessary to prevent vertical migration of fluids or gases behind the casing. When this Article does not detail specific methods to achieve these objectives, the operator shall make every effort to follow the intent of this Article, using good engineering and effective industry practices.

2. 2. General Requirements.

a. (a) All casing cemented in any well shall be steel or steel alloy casing that has been hydrostatically pressure tested with an applied pressure that exceeds by a minimum safety factor approved by [STATE REGULATOR] the maximum pressure to which the pipe will be subjected in the well ~~and meet API 5C as determined by electromagnetic, ultrasonic or thickness measurements.~~ For new pipe, the mill test pressure may be used to fulfill this requirement. All

such pressure tests shall be conducted pursuant to applicable. Any casing that will be utilized by the operator in conducting hydraulic fracturing operations shall meet API standards, including but not limited to, API 5CT, API Spec 5CT, and API casing specifications and recommended practices shall govern the design, manufacturing, testing and transportation of such casing. Casing manufactured to API specifications must meet strict requirements for compression, tension, collapse and burst resistance. All casing used in a well should be designed to withstand the anticipated hydraulic fracturing pressure to which it will be subjected, production pressures, corrosive conditions and all other conditions that may be reasonably anticipated. If used or reconditioned casing is installed, it shall be tested to ensure that it meets API performance requirements for new casing.

b. (b) Wellhead assemblies shall be used on all wells to maintain surface control of the well. Each component of the wellhead shall have a pressure rating that exceeds by a minimum safety factor approved by [STATE REGULATOR] greater than the anticipated pressure to which that particular component might be exposed during the course of drilling, testing, completing or producing the well. All wellhead connections shall be assembled and tested prior to installation by a pressure equal to the test pressure of the fitting employed.

e. (c) A blowout preventer or control head and other connections to keep the well under control at all times shall be installed and tested as soon as practicable, but no later than prior to drilling out of the surface casing. This All such well control equipment shall be of such construction and capable of such operation as to satisfy any reasonable test which may be required by [STATE REGULATOR] or its duly accredited agent. All blowout prevention equipment shall be installed, operated, tested and maintained in accordance with API RP 53: Recommended Practices for Blowout Prevention Equipment Systems. The required working pressure rating of all blowout preventers and related equipment shall be based on known or anticipated subsurface pressure, geologic conditions, or accepted engineering practices, and shall exceed by a minimum safety factor approved by [STATE REGULATOR] the maximum anticipated pressure to be contained at the surface. In the absence of better data, the maximum anticipated surface pressure shall be determined by using a normal pressure gradient of 0.44 psi per foot and assuming a partially evacuated hole. During drilling operations, the ram-type blowout preventers shall be tested by closing at least once each trip and the annular-type preventer shall be tested by closing on the drill pipe at least once each week.

(d) For balanced and overbalanced operations the characteristics, use, and testing of drilling mud and related drilling procedures shall be designed to maintain control of the well. Adequate supplies of mud of sufficient weight and other acceptable characteristics shall be maintained at the well location. Mud tests shall be made at least once per day. The wellbore shall be kept full of mud at all times. When pulling drill pipe, the mud volume required to keep the wellbore full shall be measured to assure that it corresponds with the displacement of pipe pulled. A careful watch for swabbing action shall be maintained when pulling out of the hole.

d. (e) All drilling fluids shall be properly conditioned so that the fluid properties are the most advantageous, as reasonably possible, to effect proper cement isolation. The wellbore shall be stable with respect to formation influx prior to placing the cement, and shall be kept stable after the cement is placed. When cementing any string of casing more than 200 feet

long, before drilling the cement plug the operator shall test the casing ~~at to~~ a pump surface pressure, in pounds per square inch (psi) ~~calculated by multiplying the length of the casing string by 0.2. The, of at least the maximum anticipated pressure to be contained at the surface by the casing string, as calculated by the method in c. above; provided, however, the maximum test pressure required, however, unless otherwise ordered by [STATE REGULATOR], shall not exceed 1,500 psi.~~ 80% of API rated minimum internal yield of the casing. If, at the end of 30 minutes of such testing, the pressure shows a drop of 10% or more from the original test pressure, the applicable casing shall be condemned until the condition is corrected. For purposes of the foregoing sentence, a pressure test demonstrating less than a 10% pressure drop after 30 minutes is evidence that the condition has been corrected.

~~e.~~ (f) To allow for air drilling or underbalanced drilling, all wells being drilled to formations where the expected reservoir pressure exceeds the weight of the drilling fluid column shall be equipped to divert any wellbore fluids away from the rig floor to a flare pit a safe distance from the well. All diverter systems shall be maintained in an ~~effective~~ working condition and shall be function tested when installed and at regular intervals during drilling operations. No well shall continue drilling operations if a test or other information indicates the diverter system is unable to function or operate as designed.

(g) Minimum requirements for accumulator testing shall include precharge of accumulator bottle, accumulator response time and the capability of closing on the minimum size drill pipe being used.

~~f.~~ (h) All hole intervals drilled prior to reaching the base of the protection depth must be drilled with air, fresh water or a fresh water based drilling fluid ~~and without toxic additives.~~ The [STATE REGULATOR] may exclude particular drilling fluid constituents based on regional knowledge of protected water conditions.

~~g.~~ (i) Operator must notify [STATE REGULATOR] at least 24 hours prior to commencing any casing cementing operations pursuant to this Article IV.

~~h.~~ (j) Upon completion of ~~the each~~ well, a casing and cementing report ~~must~~ shall be filed with [STATE REGULATOR] furnishing complete data concerning the casing string(s) set and the cementing of all casing in the well, as specified on a form furnished by [STATE REGULATOR]. The operator ~~of the well or his~~ its duly authorized agent having personal knowledge of the facts, and representatives of the cementing company performing the cementing job, ~~must~~ shall sign the form attesting to compliance with the cementing requirements of [STATE REGULATOR].

~~3. Conductor casing.~~

~~a.~~ **3. Conductor Casing.** An operator shall drive or set and cement conductor casing to the surface as necessary to maintain a stable borehole or to divert gas and include a mechanical or cement seal to prevent the subsurface infiltration of surface water or fluids into the well.

4.4. Surface Casing.

~~a.-(a)~~ An operator shall set and cement sufficient surface casing, using new pipe casing, to a minimum depth of at least 100 feet below the base of the ~~lowest~~deepest strata containing protected water strata, but above any hydrocarbon strata, or at an alternative depth determined by [STATE REGULATOR]. Before drilling ~~any~~a well in any field or area in which no rules regarding the protection of protected water supplies (with regard to drilling depth) are in effect, or in which surface casing requirements are not specified in the applicable field rules, an operator shall obtain a letter from [STATE REGULATOR] stating the applicable protection depth. ~~The outside diameter of the surface casing coupling shall be at least one inch less than the drilled diameter of the borehole.~~

~~b.-(b)~~ Cementing shall be by the pump and plug method. The outside diameter of the surface casing coupling shall be at least one inch less than the drilled diameter of the borehole. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. If cement is not circulated to the ground surface or the bottom of the cellar, the operator shall run a temperature survey, cement bond log or other appropriate evaluation tools to identify the top of cement. [STATE REGULATOR] shall be notified prior to running the required temperature survey, cement bond log or other appropriate evaluation tool. After the top of cement outside the casing is determined, the operator shall contact [STATE REGULATOR] and obtain approval for the procedures to be used to perform any required additional cementing operations.

~~c.-(c)~~ Surface casing shall not be used as the production string in the well in which it is installed. An additional casing string shall be used as the production casing.

~~d.-(d)~~ Cement quality.

~~i.-(i)~~ Surface casing strings must be allowed to stand under pressure until the cement has reached a 24-hour compressive strength of at least 500 psi in the zone of critical cement before drilling out the plug, or initiating a test. The cement mixture in the zone of critical cement shall have a 72-hour compressive strength of at least 1,200 psi.

~~ii.-(ii)~~ An operator may use cement with volume extenders above the zone of critical cement to cement the casing from that point to the ground surface, but in no case shall the cement have a compressive strength of less than 100 psi at the time of drill out nor less than 250 psi 24 hours after being placed. If the surface casing string is not set on the bottom of the well, then the casing string shall remain undisturbed ~~for a period of~~until the earlier to occur of (i) 24 hours after the cement is in place or (ii) the point in time when the compressive strength in the zone of critical cement has reached at least 500 psi, whichever occurs soonest.

~~iii.-(iii)~~ In addition to the minimum compressive strength of the cement, the API free water separation shall average no more than six milliliters per 250 milliliters of cement tested in accordance with the current API RP 10B within the zone of critical cement.

~~iv.~~ (iv) [STATE REGULATOR] may require a better quality of cement mixture to be used in any well or any area if evidence of local conditions indicates a better quality of cement is necessary to prevent pollution, prevent vertical migration of fluids in the wellbore, or to provide safer conditions in the well or area.

~~v.~~ (v) An operator shall ensure that the cement mix water chemistry is proper for the cement slurry designs. An operator's representative shall be on site observing the cement mixing equipment for the entire duration of the cement mixing and placement to ensure that cement slurry design parameters are followed as close as possible.

~~vi.~~ (vi) Unless [STATE REGULATOR] determines, based on depth and site-specific circumstances, to waive this requirement, [STATE REGULATOR] shall require a formation integrity test after drilling out below the surface casing shoe in order to verify the integrity of the cement in the surface casing annulus at the surface casing shoe. If test results are inadequate to verify the following, remedial measures may be required:

(1) Pressure containment to ensure that no flow path exists to formations above the casing shoe; or

(2) The casing shoe is competent to handle an influx of formation fluid or gas without breaking down.

e. (e) Compressive strength test requirements.

~~i.~~ (i) Cement mixtures for which published performance data are not available must be tested by the operator or service ~~the~~ company providing the cementing services. Tests shall be made on representative samples of the basic mixture of cement and additives used, using distilled water or potable tap water for preparing the slurry. The tests must be conducted using the equipment and procedures adopted by the American Petroleum Institute, as published in the current API RP 10B. Test data showing competency of a proposed cement mixture to meet the above requirements must be furnished [STATE REGULATOR] prior to the cementing operation. To determine that the minimum compressive strength has been obtained, operators shall use the typical performance data for the particular cement used in the well (containing all the additives, including any accelerators used in the slurry) at the following temperatures and at atmospheric pressure:

~~(1)~~ (1) For the cement in the zone of critical cement, the test temperature shall be within 10 degrees Fahrenheit of the formation equilibrium temperature at the top of the zone of critical cement; and

~~(2)~~ (2) For the filler cement, the test temperature shall be the temperature found 100 feet below the ground surface level, or 60 degrees Fahrenheit, whichever is greater.

~~f. —~~ Surface(f) Centralizers. At a minimum, surface casing shall be at a minimum centralized at the top, at the shoe, above and below a stage collar or diverting tool, if run, and through all protected water zones. In nondeviated holes, pipe centralization as follows is required: a centralizer shall be placed every fourth joint from the cement shoe to the ground surface or to the bottom of the cellar. All centralizers shall meet API spec 10D specifications. In deviated holes, [STATE REGULATOR] may require the operator shall to provide additional centralization. All centralizers shall meet API spec 10D specifications.

~~g. (g)~~ Alternative surface casing depth requirements.

~~i. (i)~~ An alternative method of fresh water protection for protecting strata containing protected water may be approved upon written application to [STATE REGULATOR]. The operator shall outline the alternate program for casing and cementing through the protection depth for strata containing protected water, and shall demonstrate to the satisfaction of [STATE REGULATOR] the need (economics, well control, etc.) for, and how protection of protected water will be achieved by, the alternative fresh water protection method. Alternative programs for setting more than specified amounts of surface casing for well control purposes may be requested on a field or area basis. Alternative programs for setting less than specified amounts of surface casing will be authorized on an individual well basis only. [STATE REGULATOR] may approve, modify, or reject the proposed program. If the proposal is modified or rejected, the operator may request a review by [STATE REGULATOR]. If the proposal is not approved administratively, the operator may request a hearing in the appropriate forum, as determined by the [STATE REGULATOR]. An operator shall obtain approval of any alternative program before commencing operations.

~~ii. (ii)~~ Any alternate casing program shall require the first string of casing set through the protection depth to be cemented in a manner that will effectively prevent the migration of any fluid to or from any stratum exposed to the wellbore outside this the string of casing. The casing shall be cemented from the shoe to ground surface in a single stage, if feasible, or by a multi-stage process with the stage tool set at least 50 feet below the protection depth.

~~iii. (iii)~~ Any alternate casing program shall include pumping sufficient cement to fill the annular space from the shoe or multi-stage tool to the ground surface. If cement is not circulated to the ground surface or the bottom of the cellar, the operator shall run a temperature survey, cement bond log or other appropriate evaluation tools to identify the top of cement. [STATE REGULATOR] shall be notified prior to running the required temperature survey, cement bond log or other appropriate evaluation tools. After the top of cement outside the casing is determined, the operator or his representative shall contact [STATE REGULATOR] and obtain approval for the procedures to be used to perform any required additional cementing operations. Upon completion of the well, a cementing report shall be filed with [STATE REGULATOR] on the prescribed form.

~~iv.~~ (iv) Before parallel (nonconcentric) strings of production casing are cemented in a well, surface or intermediate casing must be set and cemented through the protection depth.

~~h.~~ Additional Requirements for Wells Adjacent to Sources of Protected Water.

(h) Additional Requirements for Wells Adjacent to Sources of Protected Water.

When an operator is conducting well construction operations on wells located within the following distances of a source of protected water (including public and permitted private sources): (i) 1,000 radial feet from the edge of the pad for wells that are not classified as a close proximity well, (ii) 2,650 radial feet for close proximity wells, or (iii) such other distance as determined by [STATE REGULATOR], ~~[STATE REGULATOR] may require that operator~~ shall:

~~(1)~~ (i) Through an independent third party contractor, obtain and test the composition of water samples from the relevant source of protected water sufficient to establish representative baseline characteristics for the area. Such testing will comply with any applicable requirements set forth by [STATE REGULATOR], and the third party contractor shall be certified by or otherwise approved as being acceptable to [STATE REGULATOR]. After representative baseline characteristics have been established for the area, additional testing may be required by [STATE REGULATOR]; and

~~(2)~~ (ii) Evaluate the necessity of an additional string of casing to be set no more than 100 subsea depth adjusted feet below the deepest water well within the applicable distance set forth above.

~~5.~~ 5. Intermediate Casing.

~~a.~~ (a) Each intermediate string of casing that is less than 1,000 feet in depth shall be cemented to surface. All other intermediate casing strings shall be cemented from the shoe to a point at least 600 true vertical feet above the shoe. If any productive horizon, any hydrocarbon strata or any strata containing protected water is open to the wellbore above the casing shoe, the casing shall be cemented from the shoe up to a point at least 600 true vertical feet above the top of the shallowest such productive horizon, hydrocarbon strata or strata containing protected water-strata, or to a point at least 200 feet above the shoe of the next shallower casing string that was set and cemented in the well. Liners may be set and cemented as intermediate casing provided that the cemented liner has a minimum of 200 true vertical depth feet of cemented lap within the next larger casing, and the liner top is pressure tested to a level equal to or higher than the maximum anticipated pressure to be encountered in the interval to be drilled below the liner. The intermediate casing string or liner must be centralized in a manner that will provide for proper zonal isolation by the cement. All centralizers shall meet API spec 10D specifications.

(b) An operator shall ensure that the cement mixture for the intermediate casing shall achieve a minimum compressive strength of 500 psi after 24 hours and 1200 psi after 72 hours.

(c) Prior to drilling out below the intermediate casing shoe, the intermediate casing shall be pressure tested to a minimum of 1,500 psi and/or at a pressure that will determine if the casing integrity is adequate to meet the well design and construction objectives.

(d) Immediately after drilling out below the intermediate casing shoe, a formation pressure integrity test shall be performed to determine that formation integrity at the casing shoe is adequate to meet the maximum anticipated well bore pressure at total depth.

~~b-~~ (e) In the event the distance from the casing shoe to the top of the shallowest such productive horizon, hydrocarbon strata or strata containing protected water strata, makes cementing, as specified above, impossible or impractical, the multi-stage process cementing operations may be used to cement the casing in a manner that will effectively seal off all such possible horizons or strata and prevent fluid migration to or from such horizons or strata within the wellbore.

~~e-~~ (f) If operations indicate (e.g. fluid returns, lift pressure) and displacement indicate inadequate coverage of any productive horizon, any hydrocarbon strata or any strata containing protected water, operator shall obtain approval of [STATE REGULATOR] for operator's proposed plan for determining top of cement and/or performing additional cementing operations prior to continuing drilling operations.

~~d. — If during the setting and cementing of production and/or any intermediate casings the cement program does not occur as submitted in the application, and would cause a reasonably prudent operator to question the integrity of the cementing program with respect to isolating the zone of hydraulic fracturing treatment from movement of fracture fluids up-hole into the various casing or well bore annuli, the operator shall immediately notify the [STATE REGULATOR] in writing as soon as practicable, but not more than twenty-four (24) hours after the event. In reviewing the report, the [STATE REGULATOR] may require a bond log or other cement evaluation tool to document cement integrity and require additional cementing operations or other appropriate well workover efforts necessary to correct any cement deficiencies prior to initiating any hydraulic fracturing treatments in the well.~~

6-6. Production Casing.

~~a-~~ (a) The producing string of casing shall be cemented by the pump and plug method, or another method approved by [STATE REGULATOR], with sufficient cement to fill the annular space back of the casing to the surface, or to a point at least 600 true vertical feet above (i) the production casing shoe or the uppermost perforation in a vertical well (whichever is higher), or (ii) the heel of point where a horizontal well first penetrates the zone to be hydraulically fractured. If any productive horizons or hydrocarbon strata are open to the wellbore above the production casing shoe, the production casing shall be cemented in a manner that effectively seals off all such horizons or strata by one of the methods specified for intermediate casing in Section 5 of this Article. Liners may be set and cemented as production casing provided that the cemented liner has a minimum of 200 true vertical depth feet of cemented lap within the next larger casing, and the liner top is pressure tested to a level that is at least 500 psi higher than the maximum anticipated pressure to be encountered by the wellbore during completion and production operations. The production casing string or liner must be centralized in a manner that will provide for proper zonal isolation by the cement. All centralizers shall meet API spec 10D specifications.

(b) Prior to cementing the production casing, the operator shall circulate and condition the drilling fluid with a minimum of two hole volumes and shall adjust drilling fluid rheology to optimize conditions for displacement of the drilling fluid and to ensure that the wellbore is static.

(c) Throughout the cementing process operator shall monitor cement mixing in accordance with cement design and cement densities during the mixing and pumping. During placement of the cement, operator shall monitor pump rates to verify they are within design parameters so as to ensure proper displacement efficiency.

(d) An operator shall ensure that the cement mixture for the production casing shall achieve a minimum compressive strength of 500 psi after 24 hours and 1200 psi after 72 hours.

~~b.-(e)~~ The identification of the productive horizon(s) shall be determined by coring, electric log, mud-logging, testing or sufficient regional knowledge. For cemented non-horizontal well completions, the producing string shall be landed and cemented into or below the productive horizon(s). For open-hole well completions, the producing string shall be landed and cemented into or above the productive horizon(s).

~~e.-(f)~~ If operations indicate ~~-(e.g. fluid returns, lift pressure)-~~ inadequate coverage, operator shall obtain approval of [STATE REGULATOR] for procedures to determine TOC and/or perform and displacement) indicate inadequate cement coverage and would cause a reasonably prudent operator to question the integrity of the cementing program with respect to the isolation of the zone to be hydraulically fractured so as to prevent the movement of hydraulic fracturing fluids up the wellbore into the various casing or wellbore annuli, the operator shall notify [STATE REGULATOR] in writing as soon as practicable, but not more than twenty-four (24) hours after the event. In reviewing the notification from the operator, [STATE REGULATOR] may require a bond log or other cement evaluation tool to document cement integrity and require additional cementing operations or other appropriate well workover efforts necessary to correct any cement deficiencies prior to initiating any hydraulic fracturing operations on the well.,

~~d.-(g)~~ Open hole, open hole packer or other non-cemented completions may be used in the place of cemented completions. If intermediate casing is run with this type of completion, the cementing of the intermediate casing-cementing must meet the cementing guidelines set forth in Section 6.5.(a.) hereof. If intermediate casing is not run, a multi-stage cementing tool must be run above the top external packer and cemented to fill the annular space back of outside the casing to the surface or to a point at least 600 feet above the packer or casing shoe. Alternatively, when no zones containing protected water exist in the open hole, two additional open hole packers may be installed in the casing string above the production zone.

~~e.-(h)~~ Close proximity wells.

~~i.-(i)~~ Close proximity wells may not utilize open hole, open hole packer or other non-cemented completions.

~~ii-~~ (ii) Cementing of the producing string of casing for a close proximity well shall be by the pump and plug method. Sufficient cement shall be used to fill the annular space outside the casing from the casing shoe to the ground surface or to the bottom of the cellar. If cement is not circulated to the ground surface or the bottom of the cellar, the operator shall run a temperature survey, cement bond log or other appropriate evaluation tools to identify the top of cement. [STATE REGULATOR] shall be notified prior to running the required temperature survey, cement bond log or other appropriate evaluation tools. After the top of cement outside the casing is determined, the operator or his representative shall contact [STATE REGULATOR] and obtain approval for the procedures to be used to perform any required additional cementing operations.

~~iii-~~ (iii) The producing string of casing for any close proximity well shall not be disturbed for a minimum of 4 hours after cement is in place.

~~7-~~ 7. Approved Cementers Only.

~~a-~~ (a) In order to comply with the provisions of this Article, when conducting well construction operations which require cementing, operators shall utilize only those cementers approved by [STATE REGULATOR]. Cementing companies, service companies, or operators may apply with [STATE REGULATOR] for designation as approved cementers. Such approval will be granted by [STATE REGULATOR] upon a showing by the applicant of its ability to mix and pump cement or other alternate materials as approved by [STATE REGULATOR] in compliance with this rule.

~~i-~~ (b) A cementing company, service company, or operator seeking designation as an approved cementer by [STATE REGULATOR] shall file a request of such designation with [STATE REGULATOR] in accordance with all applicable procedures governing such requests. The request shall contain such information as the [STATE REGULATOR] shall reasonably require to assess the applicant's ability to competently perform cementing operations in compliance with this rule.

~~ii-~~ (c) [STATE REGULATOR] shall either approve or deny the application to be designated as an approved cementer. If [STATE REGULATOR] does not recommend approval, or denies the application, the applicant may request a hearing on its application.

~~8-~~ 8. Inclination and Directional Surveys Required.

~~a-~~ (a) Nothing in this Section 8 shall be construed to permit the drilling of any well in such a manner that the wellbore crosses lease, unit boundary and/or property lines without special permission from [STATE REGULATOR].

~~b-~~ (b) Certain inclination survey requirements are as follows:

~~i-~~ (i) An inclination survey made by persons or concerns approved by [STATE REGULATOR] shall be filed on a form prescribed by [STATE REGULATOR] for each

well drilled or deepened with rotary tools, except as hereinafter provided, or when, as a result of any operation, the course of the well is changed. The first shot point of such inclination survey shall be made at a depth not greater than 500 feet below the surface of the ground, and succeeding shot points shall be made either at 500-foot intervals or at the nearest drill bit change thereto, but not to exceed 1,000 feet apart.

~~ii.~~ (ii) Inclination surveys conforming to these requirements may be made either during the normal course of drilling or after the well has reached total depth. Acceptable directional surveys may be filed in lieu of inclination surveys.

~~iii.~~ (iii) Copies of all directional or inclination surveys, regardless of the reason for which they are run, shall be filed as a part of or in addition to the inclination surveys otherwise required. If computations are made from dipmeter surveys to determine the course of the wellbore in any portion of the surveyed interval, a report of such computations shall be required.

~~iv.~~ (iv) Inclination surveys shall not be required in any well drilled to a total depth of 2,000 feet or less on a regular location at least 150 feet from the nearest lease or unit line, provided the well is not intentionally deviated from the vertical in any manner whatsoever.

~~v.~~ (v) Inclination surveys shall not be required on wells deepened with rotary tools if the well is deepened no more than 300 feet or the distance from the surface location to the nearest lease or boundary line, whichever is the lesser, and provided that the well was not intentionally deviated from the vertical at any time before or after the beginning of deepening operations.

~~vi.~~ (vi) Inclination surveys will not be required on wells that are drilled as dry holes and are permanently plugged and abandoned. If such wells are reentered at a later date and completed as producers or injection or disposal wells, inclination reports will be required and must be filed with the appropriate completion form for the well.

~~vii.~~ (vii) Inclination survey filings will not be required on wells that are reentries within casing of previously producing wells if inclination data are already on file with [STATE REGULATOR]. If such data are not on file with [STATE REGULATOR], the results of an inclination survey must be reported on the appropriate form and filed pursuant to the applicable rules of [STATE REGULATOR], except as otherwise provided in this Section 8.

~~e.~~ (c) Certain survey report requirements are as follows:

~~i.~~ (i) The report form shall be signed and certified by a party having personal knowledge of the facts therein contained. The report shall include a tabulation of the maximum drifts which could occur between the surface and the first shot point, and each two successive shot points, assuming that all of the unsurveyed hole between any two shot points has the same inclination as that measured at the lowest shot point, and the total possible accumulative drift, assuming that all measured angles of inclination are in the same direction.

~~ii.~~ (ii) In addition, the report shall be accompanied by a certified statement of the operator, or of someone acting at his direction on his behalf, either:

~~(1)~~ (1) that the well was not intentionally deviated from vertical; or

~~(2)~~ (2) that the well was deviated at random, with an explanation of the circumstances.

~~iii.~~ (iii) The report shall be filed with [STATE REGULATOR] by attaching one copy to each appropriate completion form for the well. [STATE REGULATOR] may require the submittal of the original charts, graphs, or discs resulting from the surveys.

~~d.~~ (d) Certain requirements governing directional surveys are as follows:

~~i.~~ (i) When the maximum displacement indicated by an inclination survey is greater than the actual distance from the surface location to the nearest lease line or unit boundary, it will be considered to be a violating well subject to plugging and to penalty action. However, an operator may submit a directional survey, run at his own expense by an approved surveying company, to show the true bottom hole location of the well to be within the prescribed limits. When such directional survey shows the well to be bottomed within the confines of the lease, but nearer to a well or lease line or unit boundary than allowed by applicable rules, or by the permit for the well if the well has been granted an exception to applicable statewide spacing rules, a new permit will be required if it is established that the bottom hole location or completion location is not a reasonable location.

~~ii.~~ (ii) Directional surveys shall be required on each well drilled under the directional deviation provisions of this Section 8.

~~iii.~~ (iii) No hydrocarbon allowable shall be assigned any well on which a directional survey is required until a directional survey has been filed with and accepted by [STATE REGULATOR].

~~iv.~~ (iv) Directional surveys shall be required for each horizontal drainhole, from the surface to the farthest point drilled in the applicable horizontal drainhole.

~~e.~~ (e) Directional surveys required under this Section 8 must be run by competent surveying companies, approved by [STATE REGULATOR], signed and certified by a person having actual knowledge of the facts, in the manner prescribed by [STATE REGULATOR].

~~f.~~ (f) All directional surveys, unless otherwise specified by [STATE REGULATOR], shall be either single shot surveys or multi-shot surveys with the shot points not more than 200 feet apart, beginning within 200 feet of the surface, and the bottom hole location must be oriented both to the surface location and to the lease or unit lines.

~~g.~~ (g) If more than 200 feet of surface casing has been run, the operator may begin the directional survey immediately below the surface casing depth. However, if such method is used, the inclination drifts from the surface of the ground to the surface casing depth must be added

cumulatively and reported on the appropriate form. This total shall be assumed to be in the direction least favorable to the operator, and such point shall be considered the starting point of the directional survey.

h. (h) Intentional deviation of wells.

i. (i) Definitions.

~~(1)~~ (1) “Directional deviation” -- The intentional deviation of a well from vertical in a predetermined compass direction.

~~(2)~~ (2) “Random deviation” -- The intentional deviation of a well without regard to compass direction for one of the following reasons:

~~(a)~~ (A) to straighten a hole which has become crooked in the normal course of drilling; or

~~(b)~~ (B) to sidetrack a portion of a hole because of mechanical difficulty in drilling.

ii. (ii) A permit for directionally deviating a well may be granted:

~~(1)~~ (1) for the purpose of seeking to reach and control another well which is out of control or threatens to evade control;

~~(2)~~ (2) where conditions on the surface of the ground prevent or unduly complicate the drilling of a well at a regular location;

~~(3)~~ (3) where conditions are encountered underground which prevent or unduly hinder the normal completion of the well;

~~(4)~~ (4) where it can be shown to be advantageous from the standpoint of mechanical operation to drill more than one well from the same surface location to reach the productive horizon at essentially the same positions as would be reached if the several wells were normally drilled from regular locations prescribed by the well spacing rules in effect;

~~(5)~~ (5) for the purpose of drilling a horizontal well-bore; or

~~(6)~~ (6) for other reasons found by [STATE REGULATOR] to be sufficient after notice and hearing.

iii. (iii) Permission for the random deviation of a well may be granted whenever the necessity for such deviation is shown, as prescribed in this Section 8.

iv. (iv) Applications for deviation.

~~(1)~~ (1) Applications for wells to be directionally deviated must specify on the application to drill both the surface location of the well and the projected bottom

hole location of the well. On the plat, in addition to the plat requirements provided for in the applicable permitting rules, the following shall be included:

~~(a)~~ (A) two perpendicular lines providing the distance in feet from the projected bottomhole location, rather than the surface location, to the nearest points on the lease, pooled unit, or unitized tract line. If there is an unleased interest in a tract of the pooled unit or unitized tract that is nearer than the pooled unit or unitized tract line, the nearest point on that unleased tract boundary shall be used;

~~(b)~~ (B) a line providing the distance in feet from the projected bottomhole location to the nearest point on the lease line, pooled unit line, or unitized tract line. If there is an unleased interest in a tract of the pooled unit that is nearer than the pooled unit line, the nearest point on that unleased tract boundary shall be used;

~~(c)~~ (C) a line providing the distance in feet from the projected bottomhole location, rather than the surface location, to the nearest oil, gas, or oil and gas well, identified by number, applied for, permitted, or completed in the same lease, pooled unit, or unitized tract and in the same field and reservoir; and

~~(d)~~ (D) perpendicular lines providing the distance in feet from the two nearest non-parallel survey/section lines to the projected bottomhole location.

~~(2)~~ (2) If the necessity for directional deviation arises unexpectedly after drilling has begun, the operator shall give written notice of such necessity to [STATE REGULATOR], and upon giving such notice, the operator may proceed with the directional deviation. If the operator proceeds with the drilling of a deviated well under such circumstances, he proceeds at his own risk. Before any allowable shall be assigned to such well, a permit for the subsurface location of each completion interval shall be obtained from [STATE REGULATOR] under the applicable rules governing such permits. However, should the operator fail to show good and sufficient cause for such deviation, no permit will be granted for the well.

~~(3)~~ (3) If the necessity for random deviation arises unexpectedly after the drilling has begun, the operator shall give written notice of such necessity to [STATE REGULATOR], and, upon giving such notice, the operator may proceed with the random deviation, subject to compliance with the provisions of this Section 8 on inclination surveys.

~~i-~~ (i) [STATE REGULATOR], at the written request of any operator in a field, shall determine whether a directional survey, an inclination survey, or any other type of approved survey, shall be made in regard to a well complained of in the same field.

~~i-~~ (i) The complaining party must show probable cause to suspect that the well complained of is not bottomed within its own lease or unit boundary lines.

ii. (ii) The complaining party must agree to pay all costs and expenses of such survey, shall assume all liability, and shall be required to post bond in a sufficient sum as determined by [STATE REGULATOR] as security against all costs and risks associated with the survey.

iii. (iii) The complaining party and [STATE REGULATOR] shall agree upon the selection of the well surveying company to conduct the survey, which shall be a surveying company approved by [STATE REGULATOR].

iv. (iv) The survey shall be witnessed by [STATE REGULATOR], and may be witnessed by any party, or his agent, who has an interest in the field.

v. (v) Nothing in these rules shall be construed to prevent or limit [STATE REGULATOR], acting on its own authority, from conducting spot checks and surveys at any time and place for the purpose of determining compliance with applicable rules and regulations.

j. (j) Directional Survey Company Report - For each well drilled for hydrocarbons for which a directional survey report is required by rule, regulation, or order, the surveying company shall prepare and file the following information. The information shall be certified by the person having personal knowledge of the facts, by execution and dating of the data compiled:

i. (i) the name of the surveying company;

ii. (ii) the name of the individual performing the survey for the surveying company;

iii. (iii) the title or position the individual holds with the surveying company;

iv. (iv) the date on which the individual performed the survey;

v. (v) the type of survey conducted and whether the survey was multishot;

vi. (vi) complete identification of the well, including any applicable indentifying information required by [STATE REGULATOR];

vii. (vii) a notation that the survey was conducted from a depth of ____ feet to ____ feet; and

viii. (viii) For each well drilled a directional survey, with its accompanying certification and a certified plat on which the bottom hole location is oriented both to the surface location and to the lease or unit boundary lines shall be mailed by registered, certified, or overnight mail direct to [STATE REGULATOR] by the surveying company making the survey.

ARTICLE VI—Well Construction (Completion)
(COMPLETION)

~~1. General~~ **1. Scope of Article.** It is the intent of all provisions of this Article that, during initial completion, recompletion, reentry, or refracturing, (i) the well shall be stimulated in such a manner that all injected fluids be directed into the zone(s) of interest to be hydraulically fractured, which ~~includes~~ shall include an evaluation of the intervening layers zone and transmissive faults, (ii) the wellbore's mechanical integrity shall be positively assessed, tested and maintained, (iii) ~~the chemicals~~ all chemical additives injected into the wellbore ~~are~~ shall be of known quantity and description, and (iv) operator ~~conducts~~ shall conduct and ~~monitors~~ monitor completion operations in accordance with this rule so as to ensure that the objectives described in sub-clauses (i), (ii) and (iii) if this paragraph are achieved. When this Article does not detail specific methods to achieve these objectives, the operator shall make every effort to follow the intent of this Article, using good engineering and effective industry practices.

~~2.~~ **2. Before Hydraulic Fracturing Treatment.**

~~a. (a)~~ Prior to beginning a formation's completion operations, all cemented casing strings and all tubing strings to be utilized by an operator in hydraulic fracturing operations shall be tested to a pressure not less than 500 psi greater than the anticipated maximum surface pressure to be experienced during either the completion operations or the life of the completion. If, at the end of 30 minutes of such testing, the pressure shows a drop of 10% or more from the original test pressure, the well shall be taken out of service until the relevant condition is corrected. The condition of a casing removed from service in accordance with the preceding sentence shall be deemed to be corrected once the casing demonstrates less than a 10% drop in pressure after being subjected to a 30 minute pressure test of the type described in this Section ~~3.2(a)~~ 2(a). Non-cemented production completions shall be tested to a minimum of (i) 70% of the lowest activating pressure for pressure actuated sleeve completions or (ii) 70% of formation integrity for open hole completions, as determined by a formation integrity test.

~~b. (b)~~ Prior to beginning a formation's completion operations, all cemented casing strings shall have cement integrity verified by cement records ~~and documentation of prior logging and testing~~ or by ~~conducting~~ running a cement integrity evaluation log ~~or test~~.

~~c. (c)~~ Prior to beginning a hydraulic fracturing treatment, any surface equipment to be utilized by operator in such hydraulic fracturing treatment must be rigged up as designed. At a minimum, the downhole pressure pump and all equipment downstream of same shall be tested to 110% of the maximum allowable surface treating pressure to ensure appropriate safety factor and to prevent fluid losses.

~~d. (d)~~ Additionally, ~~prior~~ (d) Prior to beginning a hydraulic fracturing treatment on a close proximity well, an operator must perform the following additional actions and provide the results thereof to the [STATE REGULATOR]:

~~i. (i)~~ The operator shall undertake an analysis of the intervening zone to determine the

ability of the intervening zone to contain the hydraulic fracturing treatment and prevent the vertical migration of the fracturing fluids or hydrocarbons to a strata that contains protected water. In performing its analysis of the intervening zone, the operator shall utilize a 3D model approved by [STATE REGULATOR] that will simulate the projected frac height growth within the design limits submitted to the [STATE REGULATOR]. The operator's analysis of the intervening zone must include a review of abandoned hydrocarbon production wells, water wells and known geologic faults and natural fracture zones in the area of the close proximity well to verify that such wells, faults and natural fracture zones will not permit the vertical migration of the fracturing fluids or hydrocarbons into a strata that contains protected water;

ii- (ii) Using the results of the analysis described in i. above, the operator shall design the hydraulic fracturing treatment so as to ensure that the fracturing fluids or hydrocarbons do not migrate vertically and come in contact with any strata that contains protected water;

iii- (iii) The operator shall run a radial cement evaluation log or such other cement evaluation tool capable of identifying a cement channel as may be approved by the [STATE REGULATOR] to determine the quality of the cement outside of the production casing. If the quality of the cement outside of the production casing is not sufficient to isolate strata containing protected water, then the operator must develop a plan of remediation and receive approval from the [STATE REGULATOR] for the plan of remediation before the operator may proceed; and

iv- (iv) In the event that (a) the productive horizon to be hydraulically fractured is within a protected water interval, or (b) the results of the analysis in Section 3.e.i.2(d)(i) above indicate that the intervening zone does not contain an adequate confining layer, the operator shall take measures to ensure that all fluids and materials pumped outside of the casing during the relevant completion operations are not of a nature or composition that could endanger an underground source of protected water by introducing chemical additives that may result in the presence of contaminants that exceed national primary drinking water standards, or may otherwise adversely affect the health of persons.

e- (e) At least 24 hours prior to commencing a hydraulic fracturing treatment, an operator must notify [STATE REGULATOR] that operator is going to begin such hydraulic fracturing treatment.

~~3.~~ **3. During Hydraulic Fracturing Treatment.**

a- (a) The operator must monitor all wellbore annuli during the hydraulic fracturing treatment ~~of a well~~, and must report (i) any surface casing change that is 20% or greater than the calculated pressure increase due to pressure and/or temperature expansion; or (ii) a pressure that exceeds 80% of API rated minimum internal yield on any casing string in communication with the hydraulic fracturing treatment.

b. ~~(b)~~ The operator must continuously monitor the following parameters during each stage of any hydraulic fracturing treatment:

- i. ~~(i)~~ surface injection pressure (psi);
- ii. ~~(ii)~~ slurry rate (bpm);
- iii. ~~(iii)~~ proppant concentration (ppa);
- iv. ~~(iv)~~ fluid rate (bpm); and
- v. ~~(v)~~ all annuli pressures.

With regard to the monitoring of the surface casing annulus, when possible, the surface casing annulus should be open to atmospheric pressure and visually monitored throughout the hydraulic fracturing treatment. The hydraulic fracturing treatment should be terminated if a volume of fluid circulates to surface that is in excess of a volume that could reasonably be expected due to pressure and/or temperature expansion. If the fracturing treatment design does not allow the surface casing annulus to be open to atmospheric pressure, then the surface casing pressures shall be monitored with a gauge and pressure relief device. The maximum set pressure on the relief device shall be the lower of (i) a pressure equal to: 0.70 times 0.433 times the true vertical depth of the surface casing shoe (expressed in feet), (ii) 70% of the API rated minimum internal yield for the surface casing or (iii) a pressure change that is 20% or greater than the calculated pressure increase due to pressure and/or temperature expansion. The hydraulic fracturing treatment shall be terminated if any of these excessive pressures are observed in the surface casing annulus. Pressures on any casing string other than the surface casing should not be allowed to exceed 80% of the API rated minimum internal yield pressure for such casing string throughout the hydraulic fracturing treatment.

e. ~~(c)~~ If during a hydraulic fracturing treatment, an operator has reason to suspect any potential breach in failure of the production casing, the production casing cement, or the isolation of any sources of protected water due to excessive fracture height growth or the intersection of the hydraulically induced fracture with a transmissive conduits, such as faults, fractures or wellbores fault or offset wellbore, then the operator must immediately discontinue the hydraulic fracturing treatment and, notify [STATE REGULATOR] within 24 hours of the occurrence of any such event and perform diagnostic testing on the well as is necessary to determine whether such a breach/failure has actually occurred. ~~Such~~ The diagnostic testing shall be done as soon as is reasonably practical after operator has reasonable cause to suspect a ~~breach~~ any such failure, and if the testing reveals that a ~~breach~~ failure has occurred, then operator shall shut-in the well and isolate the perforated interval as soon as is reasonably practical and notify [STATE REGULATOR] of same.

4. ~~Approved Hydraulic Fracturing, Perforation and/or Logging Contractors.~~

a. ~~4. Approved Hydraulic Fracturing, Perforation and/or Logging Contractors.~~ In order to comply with this Article, when utilizing a service company or other contractors to perform hydraulic fracturing, perforation and/or logging services in connection with the

completion of a well, operators shall utilize only those contractors approved by [STATE REGULATOR]. ~~Contractors~~ Service companies or contractors who seek to perform hydraulic fracturing, perforation and/or logging services or operators may apply with [STATE REGULATOR] for designation as approved contractors. Such approval will be granted by [STATE REGULATOR] upon a showing by the applicant of its ability to perform hydraulic fracturing, perforating and/or logging services (as the case may be) in accordance with the standards required by [STATE REGULATOR] in compliance with this rule. The list of approved contractors will be reviewed by ~~(state)~~ [STATE REGULATOR] on a regular basis, but in no event less frequently than once per year, to ~~insure~~ ensure said contractors remain capable of competently performing the required work involved with completion operations.

i. (i) A contractor, service company, or operator seeking designation as an approved contractor by [STATE REGULATOR] shall file a request of such designation with [STATE REGULATOR] in accordance with all applicable procedures governing such requests. The request shall contain such information as the [STATE REGULATOR] shall reasonably require to assess the applicant's ability to competently perform such hydraulic fracturing, perforating and/or logging services in compliance with this rule.

ii. (ii) In addition to the other requirements of this Section 5.4, ~~if the contractor,~~ a service company or operator seeking designation as an approved contractor by [STATE REGULATOR] seeks to perform hydraulic fracturing services, ~~treatments in the contractor,~~ state, the service company or operator (as the case may be) shall submit to [STATE REGULATOR], along with its request for approved contractor designation, ~~a full list of the chemical components of all hydraulic fracturing fluids it would utilize in performing the relevant hydraulic fracturing services, along with a corresponding Material Safety Data Sheet and Chemical Abstract Service information for each such chemical to [STATE REGULATOR],~~ the following additional information:

(1) A list of all base fluids that are to be used in any hydraulic fracturing treatment performed in the state;

(2) A list of all additives that are to be used in any hydraulic fracturing treatment performed in the state; and

(3) A list of all chemical ingredients, and their associated CAS numbers, that are to be used in any hydraulic fracturing treatment performed in the state; provided, however, in those limited situations where the identity of any such chemical ingredient, and its associated CAS number, is entitled to be withheld as a trade secret under the criteria set forth in 40 C.F.R. Section 350.13(a), then (i) the requesting party shall supply both the identity of such chemical ingredient and the chemical family associated with such chemical ingredient, (ii) [STATE REGULATOR] shall protect and hold confidential the identity of such chemical ingredient and its associated CAS number and (iii) [STATE REGULATOR] shall disclose the chemical family associated with such chemical ingredient on any report or list that [STATE REGULATOR] makes available to the public.

~~iii. (iii)~~ [STATE REGULATOR] shall either approve or deny the application to be designated as an approved contractor. If [STATE REGULATOR] does not recommend approval, or denies the application, the applicant may request a hearing on its application.

5.5. Post-Completion Report.

a. ~~(a)~~ Within 30 days of completion activities on a well, the operator must prepare and submit to [STATE REGULATOR] a report, in accordance with the rules and requirements of [STATE REGULATOR], containing:

~~i. (i)~~ The casing and cement report described in ~~section 3-h~~ Section 2(j) of Article IV, that shall include the determined depth of the top of cement for each casing string, hole size, the amount and location of centralizers and the method used to make the determinations;

~~ii. (ii)~~ Inclination and directional surveys;

~~iii. (iii)~~ Applicable depths and thicknesses of the geologic formations penetrated, complete with the relevant well log, mud log and/or other data known about the intervening zone above the stimulated-reservoir zone(s) that received the hydraulic fracturing treatment;

~~iv. (iv)~~ A perforation report;

~~v. (v)~~ A hydraulic fracturing treatment report prepared by each applicable [STATE REGULATOR] approved contractor who performed a hydraulic fracturing treatment on the well that includes the following:

(1) — ~~By stage, the~~ (1) The treatment data required to be monitored in subsection 3(b) of referenced in this section;

(2) — ~~Total~~ (2) The total hydraulic fracturing fluid and proppant volumes used in each stage the well, expressed in gallons and pounds or other units approved by [STATE REGULATOR] and the maximum surface treating pressure observed during the hydraulic fracturing treatment; and

(3) — ~~Chemical disclosure for each stage:~~ (3) Chemical disclosure

(A) The type of base fluid used in the hydraulic fracturing treatment;

(B) The trade name and supplier of each additive used in the hydraulic fracturing fluid;

(C) The purpose of each additive described in Subdivision (3)(B) above, provided that if the additives used in the hydraulic fracturing

fluid are commercially available as a total system fluid, the operator may satisfy the requirements of this Subdivision (3)(C) by briefly describing the intended purposes of the fluid additive system;

~~(a) — Base hydraulic fracturing fluid type; and~~

(D) A list of all chemical ingredients that are contained in the additives described in Subdivision (3)(B) and their associated CAS numbers, excluding any chemical ingredients entitled to trade secret protection under the criteria set forth in 40 C.F.R. Section 350.13(a); and

~~±~~

~~(b) — Chemical additives used in hydraulic fracturing fluids utilized by contractor, and the relevant concentration, including the main chemical component.~~(E) The actual or maximum concentration of each chemical ingredient listed under Subdivision (3)(D), expressed as a percent by mass of the total volume of hydraulic fracturing fluid used.

(4) The estimated maximum fracture height and estimated true vertical depth to the top of the fracture achieved during the hydraulic fracturing treatment, as determined by a three dimensional model approved by [STATE REGULATOR];

A copy of the contractor's hydraulic fracturing treatment field ticket or the operator representative's hydraulic fracture treatment job log providing the above required information by stage is acceptable;±

~~vi. — (vi) Initial well test information recording daily gas, oil and water rate, tubing and casing pressure;±~~

~~vii. — (vii) Initial gas and water analysis, performed by a lab approved by [STATE REGULATOR] for such purpose;± and~~

~~viii. — A post hydraulic fracture treatment analysis using the same realistic model as used under Section 3.e.ii of this Article V and actual data from the hydraulic fracturing treatment, including the calculated fracture length and fracture height for the hydraulic fracture treatment.~~

(viii) The results of the water testing described in Article IV.4.(h).

~~b. — (b) In addition to the information provided in Section 6.5(a)-(i)-(viii) above, for close proximity wells, the operator shall also submit:~~

~~(i.) The results of the intervening zone analysis undertaken pursuant to Section 3.e.i.2(d)(i) of this Article V;±~~

~~(ii.) The results of the hydraulic fracture treatment design analysis undertaken pursuant to Section 3.e.2(d)(ii.) of this Article V;±~~

(iii-) A post hydraulic ~~fracture~~fracturing treatment analysis using the same realistic model as used under Section ~~3-e-ii~~2(d)(i) of this Article V and actual data from the hydraulic fracturing treatment, including the calculated fracture length and fracture height for the hydraulic fracture treatment-;

(iv-) If the operator is required to take the measures described in Section ~~3-e-2(d)(iv-)~~ of this Article V, an affidavit signed by an authorized representative of operator that certifies that no fluids or materials pumped outside of the casing during the completion operations were of a nature or composition that could endanger an underground source of protected water by introducing chemical additives that may result in the presence of contaminants that exceed national primary drinking water standards or that may otherwise adversely affect the health of persons-; and

(v-) Results of the cement evaluation log run pursuant to Section ~~3-e-2(d)(iii)~~ of this Article V.

ARTICLE VII—Production and Well Monitoring **VI – PRODUCTION AND WELL MONITORING**

~~1. — General~~ **1. Scope of Article.** It is the intent of all provisions of this Article that an operator monitor each producing well to the degree necessary to enable operator to identify any potential problems with a well which could endanger any underground source of protected water. When this Article does not detail specific methods to achieve these objectives, the operator shall make every effort to follow the intent of this Article, using good engineering and effective industry practices.

~~2. —~~ **2. Production and Well Monitoring.**

~~a. — General Requirements.~~

i- ~~(a)~~ An operator shall be obligated to monitor each producing well and measure the performance of same to the extent necessary to produce regular monthly and annual production reports. [For the first thirty days of operation, the operator shall monitor each producing well on a daily basis.] Such reports shall include the amount of gas, oil and water produced and all pressures from the applicable well for the relevant monthly or annual period, as the case may be, and shall be submitted to [STATE REGULATOR] as required. Operator shall keep these records for a minimum of five (5) years after they are produced.

ii- ~~(b)~~ An operator shall conduct regular periodic tests of each producing well. Such tests ~~will~~shall record daily gas produced, the applicable oil and water rate, and tubing and casing pressures.

~~iii. (c)~~ An operator shall report annular pressures to [STATE REGULATOR] on an annual basis, and upon observation shall report as soon as reasonably practical (i) any annular pressures in excess of 70% of the API rated minimum internal yield or collapse strength of casing ~~or, and~~ (ii) any surface casing pressures that exceed a pressure equal to: 0.70 times 0.433 times the true vertical depth of the surface casing shoe (expressed in feet). All annular valves shall be accessible from the surface or shall be left open and be plumbed to the surface with working pressure gauges. [STATE REGULATOR] shall require installation of a properly functioning pressure relief device on any casing annulus [unless the operator can demonstrate, or [STATE REGULATOR] ~~determined~~determines, that this is unnecessary based on {objective} evidence and/or operating experience in the area]. The maximum set pressure of a surface casing pressure relief device shall be determined in accordance with Article V.4.3(b-) above. The operator shall report all pressure releases from required pressure relief devices to [STATE REGULATOR] within 24 hours of detection.

~~iv. (d)~~ An operator ~~is obligated to~~shall monitor its producing wells for any abnormal corrosion, equipment deterioration, or changes in well characteristics that could potentially indicate a deficiency in the production casing, intermediate casing, surface casing, cement, packers or any other aspect of well integrity necessary to ensure isolation of any underground sources of protected water. If operator has cause to suspect such a deficiency, then operator must ~~immediately perform, to the extent possible, such diagnostic testing on the well as is necessary to determine whether a deficiency has actually occurred and must notify [STATE REGULATOR] of the~~as soon as reasonably practical of any deficiency ~~unless the testing shows that no deficiency has occurred. If~~Such testing shall be done as soon as is reasonably practical after operator has cause to suspect a deficiency, and if the testing reveals that a deficiency has occurred then operator shall (i) promptly take all appropriate measures to prevent contamination of protected water and otherwise protect the environment, and (ii) promptly commence remedial operations that are designed to repair the deficiency. If the operator is not able to effectively repair the deficiency so as to ensure the protection of all underground sources of protected water and the environment, the operator shall be required to plug and abandon the well in accordance with the requirements of Article VII below.

ARTICLE VIII—Plugging and Well Abandonment VII – PLUGGING AND WELL ABANDONMENT

~~1. General~~ 1. Scope of Article. This Article governs the process of plugging and abandoning hydraulically fractured wells, with the intent of this Article being to ensure that operators plug wells in an effective manner that adequately protects groundwater and other natural resources.

2. Application to Plug an Abandoned Well.

~~a. (a)~~ The operator shall give [STATE REGULATOR] notice, in the form appropriate in the state of [STATE], of its intention to plug any well or wells drilled for hydrocarbons or for any other purpose over which [STATE REGULATOR] has jurisdiction prior to plugging. The

operator's notice shall be delivered to [STATE REGULATOR] prior to the beginning of plugging operations, in accordance with applicable [STATE] laws, rule and procedures governing such plugging operations. The notice must set out the proposed plugging procedure as well as the complete casing record. The operator shall not commence the work of plugging the well or wells until the proposed procedure has been approved by [STATE REGULATOR], and then shall proceed in accordance with applicable [STATE REGULATOR] notice and other requirements governing such plugging operations. Operations shall not be suspended prior to plugging the well unless the hole is cased and the casing is cemented in place in compliance with all the requirements of [STATE REGULATOR].

i. (i) The duty of the operator to properly plug ends only when:

(1) (1) the operator has properly plugged the well in accordance with [STATE REGULATOR] requirements up to the base of the protected water stratum;

(2) (2) the surface owner has registered the well, or has obtained appropriate permitting for, the relevant groundwater protection or similar program, if applicable; and

(3) (3) [STATE REGULATOR] has approved the application of surface owner to condition an abandoned well for fresh water production.

b. (b) The operator of a well shall serve notice on the surface owner of the well site tract, or the resident if the owner is absent, before the scheduled date for beginning the plugging operations, and a representative of the surface owner may be present to witness the plugging of the well. Plugging shall not be delayed because of the lack of actual notice to the surface owner or resident if the operator has served notice as required by this paragraph.

3. Commencement of Plugging Operations, Extensions, and Testing.

a. (a) The operator shall complete and file with [STATE REGULATOR] a duly verified plugging record, in duplicate, on the appropriate form within 30 days after plugging operations are completed. A cementing report made by the party cementing the well shall be attached to, or made a part of, the plugging report. If the well the operator is plugging is a dry hole, an electric log status report shall be filed with the plugging record.

b. (b) Plugging operations on each dry or inactive well shall be commenced within a period of one year after drilling or operations cease and shall proceed with due diligence until completed. Plugging operations on delinquent inactive wells shall be commenced immediately, unless the well is restored to active operation.

i. (i) Plugging of inactive wells. An operator will be granted a one-year plugging extension for each well it operates that has been inactive for 12 months or more at the time its [annual organizational report or other similar state report] is approved by [STATE REGULATOR] if the following criteria are met:

~~(1)- (1)~~ The well and associated facilities are in compliance with all laws and [STATE REGULATOR] rules; and,

~~(2)- (2)~~ The operator has and can evidence a good faith claim to a continuing right to operate the well.

ii- ~~(ii)~~ Revocation or denial of plugging extension.

~~(1)- (1)~~ [STATE REGULATOR] may revoke a plugging extension if the operator of the well that is the subject of the extension fails to maintain the well and all associated facilities in compliance with applicable rules of [STATE REGULATOR]; fails to maintain a current and accurate organizational report or other similar filing on file with [STATE REGULATOR]; fails to provide [STATE REGULATOR], upon request, with evidence of a continuing good faith claim to operate the well; or fails to obtain or maintain required financial security as required by [STATE REGULATOR].

~~(2)- (2)~~ If [STATE REGULATOR] or its delegate declines to grant or continue a plugging extension or revokes a previously granted extension, the operator shall either return the well to active operation or, within 30 days, plug the well or request a hearing on the matter.

e- ~~(c)~~ [STATE REGULATOR] may plug or replug any dry or inactive well as follows:

i- ~~(i)~~ After notice and hearing, if the well is causing or is likely to cause the pollution of surface or subsurface water or if liquid or gaseous hydrocarbons or other formation fluid is leaking from the well, and:

~~(1)- (1)~~ Neither the operator nor any other entity responsible for plugging the well can be found; or

~~(2)- (2)~~ Neither the operator nor any other entity responsible for plugging the well has assets with which to plug the well.

ii- ~~(ii)~~ Without a hearing if the well is a delinquent inactive well and:

~~(1)- (1)~~ [STATE REGULATOR] has sent notice of its intention to plug the well as may be required; and

~~(2)- (2)~~ the operator did not request a hearing within the applicable period specified in the notice.

iii- ~~(iii)~~ Without notice or hearing, if:

~~(1)- (1)~~ [STATE REGULATOR] has issued a final order requiring that the operator plug the well and the order has not been complied with; or

~~(2)~~ (2) The well poses an immediate threat of pollution of surface or subsurface waters or of injury to the public health and the operator has failed to timely remediate the problem.

~~d.~~ (d) [STATE REGULATOR] may seek reimbursement from the operator and any other entity responsible for plugging the well for state funds expended pursuant to section 4.c. of this Article.

4. ~~4.~~ **Designated Operator Responsible for Proper Plugging.** The entity that is the most recent [STATE REGULATOR]-approved operator of a well is presumed to be responsible for properly plugging the well. An operator may rebut this presumption of responsibility at a hearing called by [STATE REGULATOR] for purposes of determining plugging responsibility.

5. ~~5.~~ **General Plugging Requirements.**

~~a.~~ (a) Wells shall be plugged to insure that all formations bearing protected water, hydrocarbons, or geothermal resources are protected. All cementing operations during plugging shall be performed under the direct supervision of the operator or his authorized representative, who shall be independent of the applicable service or cementing company hired to plug the well. The operator and the cementer are both responsible for complying with general plugging requirements and for plugging the well in conformity with the procedure set forth in the approved notice of intention to plug and abandon for the well being plugged.

~~b.~~ (b) Cement plugs shall be set to isolate each hydrocarbon strata and the lowermost protected water strata. Plugs shall be set as necessary to separate multiple protected water strata by placing the required plug at each depth as determined by [STATE REGULATOR]. The operator shall verify the placement of the plug required at the base of the deepest protected water stratum by tagging with tubing or drill pipe or by an alternate method approved by [STATE REGULATOR].

~~c.~~ (c) Cement plugs shall be placed by the circulation or squeeze method through tubing or drill pipe, subject to approved exceptions by [STATE REGULATOR].

~~d.~~ (d) All cement used for plugging shall be of a composition approved by [STATE REGULATOR], and [STATE REGULATOR] may require that specific cement compositions be used in certain situations. [STATE REGULATOR] may approve the use of alternate materials if [STATE REGULATOR] deems it appropriate, but [STATE REGULATOR] shall approve a request to use alternate materials only if the proposed alternate material and plugging method will ensure that the well does not pose a potential threat of harm to natural resources.

~~e.~~ (e) [STATE REGULATOR] may require additional cement plugs to cover and contain any hydrocarbon stratum or to separate any water stratum from any other water stratum if the water qualities or hydrostatic pressures differ sufficiently to justify separation. The tagging and/or pressure testing of any such plugs, or any other plugs, and respotting may be required if necessary to ensure that the well does not pose a potential threat of harm to natural resources.

~~f.-(f)~~ A 50-foot cement plug shall be placed in the top of the well, and casing shall be cut off at least three feet below the ground surface or at such other depth as required by [STATE REGULATOR].

~~g.-(g)~~ Mud-laden fluid of at least 9-1/2 pounds per gallon with a minimum funnel viscosity of 40 seconds shall be placed in all portions of the well not filled with cement or other alternate material as approved by [STATE REGULATOR]. The hole shall be in static condition at the time the cement plugs are placed. [STATE REGULATOR] may grant exceptions to the requirements of this paragraph if a deviation from the prescribed minimums for fluid weight or viscosity will insure that the well does not pose a potential threat of harm to natural resources. [STATE REGULATOR] may approve the use of alternate fluid if [STATE REGULATOR] deems it appropriate, but [STATE REGULATOR] shall approve a request to use alternate materials only if the proposed alternate material and plugging method will ensure that the well does not pose a potential threat of harm to natural resources.

~~h.-(h)~~ Non-drillable material that would hamper or prevent reentry of a well shall not be placed in any wellbore during plugging operations, except as may be otherwise expressly permitted under law. Pipe and unretrievable junk shall not be cemented in the hole during plugging operations without prior approval by [STATE REGULATOR].

~~i.-(i)~~ All cement plugs, except the top plug, shall have sufficient slurry volume to fill 100 feet of hole, plus 10% for each 1,000 feet of depth from the ground surface to the bottom of the plug.

~~j.-(j)~~ The operator shall fill the rathole, mouse hole, and cellar, and shall empty all tanks, vessels, related piping and flowlines that will not be actively used in the continuing operation of the lease within 120 days after plugging work is completed. Within the same 120 day period, the operator shall remove all such tanks, vessels, and related piping, re-move all loose junk and trash from the location, and contour the location to discourage pooling of surface water at or around the facility site. The operator shall close all pits as is appropriate. [STATE REGULATOR] may grant a reasonable extension of time of not more than an additional 120 days for the removal of tanks, vessels and related piping.

~~k.-(k)~~ Operator must notify [STATE REGULATOR] at least 24 hours prior to commencing plugging and well abandonment operations.

6.6. Plugging Requirements for Wells with Surface Casing.

~~a.-(a)~~ When insufficient surface casing is set to protect all protected water strata and all hydrocarbon strata, and such strata are exposed to the wellbore when production or intermediate casing is pulled from the well or as a result of such casing not being run, a cement plug or plugs shall be placed centered opposite the top of each hydrocarbon stratum and the base of the deepest protected water stratum. Each plug shall be a minimum of 200 feet in length and shall extend at least 100 feet below and 100 feet above the top of each hydrocarbon stratum and the base of the deepest protected water stratum. The plug across the deepest protected water stratum shall be

evidenced by tagging with tubing or drill pipe. The plug shall be resotted if it has not been properly placed. In addition, a cement plug or plugs shall be set across the shoe of the surface casing and any multi-stage cementing tool. Each such plug shall be a minimum of 200 feet in length and shall extend at least 100 feet above and below the shoe or multi-stage cementing tool.

~~b.~~ (b) When sufficient surface casing has been set and cemented to protect all hydrocarbon strata and all protected water strata, a cement plug shall be placed across the shoe of the surface casing and across any multi-stage cementing tool. Each plug shall be a minimum of 200 feet in length and shall extend at least 100 feet above the shoe and at least 100 feet below the shoe.

~~e.~~ (c) If surface casing has been set deeper than 200 feet below the base of the deepest protected water stratum, an additional cement plug shall be placed inside the surface casing across the base of the deepest protected water stratum. This plug shall be a minimum of 200 feet in length and shall extend at least 100 feet below and 100 feet above the base of the deepest protected water stratum.

~~d.~~ (d) Plugs shall be set as necessary to separate multiple protected quality water strata by placing the required plug at each depth as determined by [STATE REGULATOR].

7.7. Plugging Requirements for Wells with Intermediate Casing.

~~a.~~ (a) For wells in which the intermediate casing has been cemented through all protected water strata and all hydrocarbon strata, a cement plug or plugs meeting the requirements of Section 5.6.i. of this Article shall be placed inside the casing and centered opposite the base of the deepest protected quality water stratum, but extend no less than 50 feet above and below the base of the deepest protected water stratum. Each plug shall be a minimum of 100 feet in length and shall extend at least 50 feet below and 50 feet above the base of the deepest protected water stratum. In addition, a cement plug or plugs shall be set across the shoe of the intermediate casing, if it is open to the wellbore, and any multi-stage cementing tool. Each plug shall be a minimum of 100 feet in length and shall extend at least 50 feet above and below the shoe or multi-stage cementing tool, as applicable.

~~b.~~ (b) For wells in which intermediate casing is not cemented through all protected water strata and all hydrocarbon strata, and if the casing will not be pulled, the intermediate casing shall be perforated at the required depths as described in 8.a. above to place cement outside of the casing by squeeze cementing through casing perforations.

~~e.~~ (c) Additionally, plugs shall be set as necessary to separate multiple protected water strata by placing the required plug at each depth as determined by [STATE REGULATOR].

8.8. Plugging Requirements for Wells with Production Casing.

~~a.~~ (a) For wells in which the production casing has been cemented through all protected water strata and all hydrocarbon strata, a cement plug meeting the requirements of Section 6.i. of this Article VII shall be placed inside the casing and centered opposite the top or the uppermost

hydrocarbon stratum and the base of the deepest protected water stratum and across any multi-stage cementing tool. Each plug shall be a minimum of 100 feet in length and shall extend at least 50 feet below and 50 feet above the top of the uppermost hydrocarbon stratum and the base of the deepest protected water stratum.

~~b.~~(b) For wells in which the production casing has not been cemented through all protected water strata and all hydrocarbon strata and if the casing will not be pulled, the production casing shall be perforated at the required depths as described in Section 9.a. above to place cement outside of the casing by squeeze cementing through the casing perforations.

~~e.~~(c) [STATE REGULATOR] may approve a cast iron bridge plug to be placed immediately above each perforated interval, provided at least 20 feet of cement is placed on top of each bridge plug. A bridge plug shall not be set in any well at a depth where the pressure or temperature exceeds the ratings recommended by the bridge plug manufacturer.

~~d.~~(d) Additionally, plugs shall be set as necessary to separate multiple protected water strata by placing the required plug at each depth as determined by [STATE REGULATOR].

9.9. Plugging Requirements for Wells with Screen or Liner.

~~a.~~(a) If practical, the screen or liner shall be removed from the well.

~~b.~~(b) If the screen or liner is not removed, a cement plug in accordance with Section 6.i. of this Article shall be placed at the top of the screen or liner.

10.10. Plugging Requirements for Wells Without Production Casing and Open-Hole Completions.

~~a.~~(a) Any productive horizon or any formation in which a pressure or formation water problem is known to exist shall be isolated by cement plugs centered at the top and bottom of the formation. Each cement plug shall have sufficient slurry volume to fill a calculated height as specified in Section 6.i. of this Article.

~~b.~~(b) If the gross thickness of any such formation is less than 100 feet, the tubing or drill pipe shall be suspended 50 feet below the base of the formation. Sufficient slurry volume shall be pumped to fill the calculated height from the bottom of the tubing or drill pipe up to a point at least 50 feet above the top of the formation, plus 10% for each 1,000 feet of depth from the ground surface to the bottom of the plug.

~~11.~~11. Review of Plugging Applications. [STATE REGULATOR] shall review and approve the notification of intention to plug in a manner so as to accomplish the purposes of this Article. [STATE REGULATOR] may approve, modify, or reject the operator's notification of intention to plug. If the proposal is modified or rejected, the operator may request a review by [STATE REGULATOR]. If the proposal is not administratively approved, the operator may request a hearing on the matter. After hearing, the [STATE REGULATOR] shall recommend final action by [STATE REGULATOR].

~~12.~~ **12. Plugging Horizontal Wells.** All plugs in horizontal wells shall be set in accordance with Section 5.6.i. of this Article. The productive horizon isolation plug shall be set from a depth of 50 feet (measured depth) below the top of the productive horizon to a depth of either (i) 50 true vertical feet above the top of the productive horizon, or (ii) if the production casing is set above the top of the productive horizon, 50 true vertical feet above the production casing shoe. In accordance with Section 6.e. of this Article, [STATE REGULATOR] may require additional plugs.

~~13.~~ **13. Plugging of Close Proximity Wells.** In addition to the plugging requirements for wells that are not classified as close proximity wells, for close proximity wells a plug must be set extending 50 feet below the top of the productive horizon to 50 true vertical feet above the top of the intervening zone. The plug shall be evidenced by tagging with tubing or drill pipe.

~~14.~~ **14. Approved Cementers Only.**

~~a.~~ **(a)** In order to comply with this Article, when conducting plugging operations which require cementing, operators shall utilize only those cementers approved by [STATE REGULATOR]. Cementing companies, service companies, or operators may apply with [STATE REGULATOR] for designation as approved cementers. Such approval will be granted by [STATE REGULATOR] upon a showing by the applicant of its ability to mix and pump cement or other alternate materials as approved by [STATE REGULATOR] in compliance with this rule.

~~i.~~ **(b)** A cementing company, service company, or operator seeking designation as an approved cementer by [STATE REGULATOR] shall file a request of such designation with [STATE REGULATOR] in accordance with all applicable procedures governing such requests. The request shall contain such information as the [STATE REGULATOR] shall reasonably require to assess the applicant's ability to competently perform cementing operations in compliance with this rule, which may include, but not limited to, the following:

(i) A list of the applicant's qualifications, including qualifications of the personnel that will supervise the mixing and pumping operations; and

(ii) An inventory of the type of equipment to be used to mix and pump cement.

~~ii.~~ **(c)** [STATE REGULATOR] shall either approve or deny the application to be designated as an approved cementer. If [STATE REGULATOR] does not recommend approval, or denies the application, the applicant may request a hearing on its application.

ARTICLE VIII – ADDITIONAL REQUIREMENTS

1. Health, Safety and Environmental Management System. Each operator shall have a structured system and approach for managing health, safety, environmental and regulatory

responsibilities to improve overall health, safety and environmental performance and stewardship.

2. Emergency Response Plan. Each operator shall have a functioning emergency response plan that provides for the efficient management of emergency situations in operations covered by this regulation. At a minimum, emergency situations addressed shall include: spills, natural disasters, uncontrolled wells, explosion or fires, fatalities or serious injuries, and threats or acts of terrorism.

3. [STATE REGULATOR] Audit and Enforcement. [STATE REGULATOR] shall have the right to audit operator's activities and compliance with these regulations upon sixty (60) days prior written notice to operator. [STATE REGULATOR] shall have the right to visit and inspect operator's well sites and operations in order to enforce these regulations. Should operator be found not to be in compliance with these regulations, [STATE REGULATOR] may issue a Notice of Violation to operator, and may issue a fine related to said violation(s). Operator shall have the right to a hearing to contest any such Notice of Violation and/or fine(s).

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~~(5) Operators shall use only cementers approved by the director or the director's delegate, except when plugging is conducted in accordance with subparagraph (B)(ii) of this paragraph or paragraph (6) of this subsection. Cementing companies, service companies, or operators may apply for designation as approved cementers. Approval will be granted on a showing by the applicant of the ability to mix and pump cement or other alternate materials as approved by the director or the director's delegate in compliance with this rule. An approved cementer is authorized to conduct plugging operations in accordance with Commission rules in each Commission district.~~

~~(A) A cementing company, service company, or operator seeking designation as an approved cementer shall file a request in writing with the district director of the district in which it proposes to conduct its initial plugging operations. The request shall contain the following information:~~

- ~~(i) the name of the organization as shown on its most recent approved organizational report;~~
- ~~(ii) a list of qualifications including personnel who will supervise mixing and pumping operations;~~
- ~~(iii) length of time the organization has been in the business of cementing oil and gas wells;~~
- ~~(iv) an inventory of the type of equipment to be used to mix and pump cement or other alternate materials as approved by the director or the director's delegate; and~~
- ~~(v) a statement certifying that the organization will comply with all Commission rules.~~

~~(B) No request for designation as an approved cementer will be approved until after the district director or the director's delegate has:~~

- ~~(i) inspected all equipment to be used for mixing and pumping cement or other alternate materials as approved by the director or the director's delegate; and~~
- ~~(ii) witnessed at least one plugging operation to determine if the cementing company, service company, or operator can properly mix and pump cement or other alternate materials as approved by the director or the director's delegate according to the specifications required by this rule.~~

~~(C) The district director or the director's delegate shall file a letter with the director or the director's delegate recommending that the application to be designated as an approved cementer be approved or denied. If the district director or the director's delegate does not recommend approval, or the director or the director's delegate denies the application, the applicant may request a hearing on its application.~~

~~(D) Designation as an approved cementer may be suspended or revoked for violations of Commission rules. The designation may be revoked or suspended administratively by the director or the director's delegate for violations of Commission rules if:~~

- ~~(i) the cementer has been given written notice by personal service or by registered or certified mail informing the cementer of the proposed action, the facts or conduct alleged to warrant the proposed action, and of its right to request a hearing within 10 days to demonstrate compliance with Commission rules and all requirements for retention of designation as an approved cementer; and~~

~~(ii) the cementer did not file a written request for a hearing within 10 days of receipt of the notice.~~

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:14 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Horizontal Drilling Rules (35CSR8)

From: Barbara Harvey [mailto:cranky@wildblue.net]
Sent: Tuesday, October 11, 2011 1:23 PM
To: DEP Comments
Subject: Horizontal Drilling Rules (35CSR8)

To: WV Department of Environmental Protection

Re: Horizontal Drilling Rules (35CSR8)

These Emergency Rules are inadequate to ensure safe and responsible development of the Marcellus Shale and soon to be the Utica Shale. After living in Maryland and Pennsylvania, I find the DEP in West Virginia to be very lacks in its job of protecting the environment and the people of this state.

* Your new rules are of limited applicability and apply only to horizontal wells; this Rule also needs to apply **to Marcellus Vertical Wells**. These Wells use the same amount of water and disturb the same amount of land that the rule would not otherwise cover and there are no improvements for the many conventional wells that are still drilled.

* The Rule still allows drillers to **sneak out onto landowners' property** and survey well sites and well roads without contacting the Surface Owners first. *It does not* give Surface Owners notice of plans to drill the wells until the permit is actually filed, and then there is only 15 days to file comments (**this 15 days includes the time it is still in Charleston and then the time the Permit is in the mail to the Surface Owner**). There is **no** hearing on the permit application, and **no** power for the State to help a surface owner whose home or future home site is now going to be a well site. The Rule also continues to allow gas wells to be drilled within 200 feet of peoples' homes. This close proximity is of particular concern for Marcellus Shale operations, given their duration, the air, noise, light, diesel fumes and other pollution from the sites, in addition to the potential for more serious accidents like the fires and explosions that occurred last year in the Northern Panhandle. **There should be a notice to Surface Owner when the Permit Application is filed. This Permit time needs to be 45 days from the time the Surface Owner receives it to allow for them to file comments.** The Well Pads and Wells should be a minimum of 2500 feet from a home; this Marcellus Shale contains Radon Gas (Radium 226).

* Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.

* Additionally, with regard to drinking water supplies, there are no expanded set backs or testing parameters included in the Rule. Currently drillers are required to test for constituents in drilling muds and fluids, **but not for chemicals or chemical compounds commonly used in hydraulic fracturing**. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies. **Wells and Pads should stay 1500 feet from Water Wells and 500 feet from ponds, streams, springs, etc.**

* Many of the other new requirements are too vague. "The [metal] casing must be of sufficient quality and condition . . ." "Centralizers must be used with proper spacing . . ." Would the Rule say that practices do not have to be sufficient or proper? These standards would only allow the State to cite the driller if something went wrong, but do not implement standards that could be enforced, even if there were enough inspectors, to prevent problems from occurring in the first place. **Why is there not an Outside Engineer or an Inspector present at this time. The State requires an Engineer or Inspector on the job when concrete is poured to build a bridge or roadway – WHY NOT HERE!**

The rule does say that cement should meet American Petroleum Institute standards, but then only

sets a goal to "secure the casing to the well bore" *It does not require the driller to run a bond log to make sure that it actually does!* Similarly, the rule only says that cement should "contain all pressures during all phases of drilling and operation", but still allows bare casing pipe in most of the vertical part of the hole. It does not require that the entire casing be cemented from the Marcellus Shale all the way to the surface -- so that intermediate gas bearing formations could create pressures in the open annuluses that, in places like Dimock, Pennsylvania, allowed gas to migrate via bad surface cement jobs into peoples' water wells. ***Why isn't there Concrete Test Molds taken and send to a Lab for testing of the concrete strength and density.***

Section 4.3 also states, "or managed on-site in a manner otherwise approved by the Secretary," ***THERE is no indication of what the Secretary may approve. "Approved solid waste facility" is a complete mystery, and "or managed on-site in a manner otherwise approve by the Secretary" Sounds like it means "burial Pit". "Approved by the Secretary" is not acceptable. The Secretary is a political appointee who takes orders from elected politicians who depend on campaign donations. This material needs to be hauled away and treated!!***
A scientific study of the problems associated with on-site burial of pit waste from a conventional well drilled in Fernow Experimental Forest documented seeps and leaching into surrounding soils. Marcellus Shale wells contain more potential contaminates, toxins and carcinogens (including naturally occurring radioactive materials (NORMs) than conventional wells and at much greater volumes.

Section 4.1.a. Withdrawing water from surface waters of the State using methods deemed appropriate by the Secretary, so as to maintain sufficient in-stream flow immediately downstream of the withdrawal location;
Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists. This should be limited to 1500 gallons per day per stream.

Section 4.2.a. Within forty-eight (48) hours, but no less than twenty-four (24) hours, prior to the withdrawal of water, the operator shall identify the location of withdrawal by latitude and longitude; verify, using methods deemed acceptable by the Secretary, that sufficient flow exists to protect designated uses of the stream; and provide notice to the Office as prescribed by the Secretary; ***"using methods acceptable to the Secretary" This is not acceptable ! This should be limited to 1500 gallons per day per stream.***

Section 3.3.f.2. A demonstration, using methods acceptable to the Secretary (***there's that unacceptable phrase again***); that sufficient in-stream flow will be available immediately downstream of the point of withdrawal. Sufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal.

- The requirement that an engineer must design the well pad if it is more than 3 acres is a good thing. However, having an **engineer supervise the construction and reclamation** would help ensure that soil erosion and sediment control plans are followed **since there are too few inspectors to oversee these activities**. The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves.
- Many of the provisions related to the water management plans had already been implemented in practice under the Manchin administration, although the requirement that operators disclose the chemicals added to water used to fracturing or stimulate a well is new and appreciated.
- Many of the new casing and cementing requirements are too vague. The rule sets standards that would allow the State to cite the driller if something went wrong, as opposed to standards that could prevent problems from occurring in the first place. For example, the rules state that all cement used must "secure the casing to the well bore..." but do not require the driller to run a bond log to make sure that it actually does.
- With regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies.
- Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations. **The EPA is limiting our use of Aerosol Cans and Freon BUT the Gas Companies can release all these gases into the air without penalties.**

The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown. Language should cover public notice for all wells, not just within municipalities.

Section 3.3.d. The planned management and disposition of wastewater from fracturing, stimulation, and production activities;

The specific place of wastewater disposal should also be in the water management plan. They are going to run out of places to put this waste fluid (which obviously is NOT just "wastewater"). Restrictions should be tightened.

Section 3.4.b. Well site safety meetings. – Safety meetings shall be held on-site weekly, at a minimum, and specifically prior to the beginning of drilling, completion, and work-over operations. Meeting attendance shall be logged, and the log shall be maintained on site. A check-in and check-out list of all personnel shall be maintained during the drilling and completion phases of the operation. ***Personnel attending well site safety meetings should include subcontractors and truckers (or some other provision for training truckers must be found). At each well site safety meeting all workers, including truck drivers, should be provided with and keep in their possession the up-to-date phone numbers to call in case of any emergency. Spills from trucks, whether on the site or in transit, are emergencies.***

Section 4.1.b. Casing, sealing or otherwise managing wells to keep fluids or natural gas from entering ground or surface waters; ***"or otherwise managing wells" – does this phrase open the door to anything? Drillers that continue to use hay bales to stop sediment of chemical spills are not to be trusted to decide how to manage fluids.***

Section 4.1.c. Conducting oil and gas operations using BMPs (Best Management Practices) so as to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to stream flow or runoff outside the permit area, but in no event shall the contributions be in excess of requirements set by applicable State or federal law. ***"to the extent practicable" is an unacceptable loophole.***

Section 4.4.a.4. Casing shall not be disturbed for a period of at least eight hours after the completion of cementing operations

This is the most critical function in protecting groundwater. An inspector or NON GAS EMPLOYEE ENGINEER should be required on-site to sign off on the log verifying that casing cement was properly cured. Is there not a test to determine when the cement has set? There should be Concrete Test Molds taken and send to a Lab for testing of the concrete strength and density, just like is done with every State Highway or Building job !!

Thank you,

Barbara Harvey
Rt. 1 Box 396
Moatsville, WV 26405

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:14 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on Horizontal Drilling Rules (35CSR8)

From: Mchrisw40@aol.com [mailto:Mchrisw40@aol.com]
Sent: Tuesday, October 11, 2011 1:50 PM
To: DEP Comments
Subject: Comments on Horizontal Drilling Rules (35CSR8)

Good Afternoon:

I live in the middle of Marcellus Shale development and it is a complete nightmare. I have quite a few comments on 35CSR8 and would like them to be considered:

-
- The rules are of limited applicability and apply only to horizontal wells. **The rule does not apply to vertical Marcellus Shale wells**
- The rule does not give surface owners notice of plans to drill the wells until the permit is actually filed, and then there **are only 15 days to file comments**, no hearing on the permit application, and no power for the State to help a surface owner whose future home site is now going to be a well site.
- The rule continues to allow gas wells to be **drilled within 200 feet of peoples' homes**. This close proximity is of particular concern for Marcellus Shale operations, given their duration, the air, noise, light and other pollution from the sites. In addition, there is the potential for more serious accidents such as the fires and explosions that occurred last year in the Northern Panhandle.

Section 4.3 also states, "or managed on-site in a manner otherwise approved by the Secretary," ***There is no indication of what the Secretary may approve. "Approved solid waste facility" is a complete mystery, and "or managed on-site in a manner otherwise approved by the Secretary" means pit burial. "Approved by the Secretary" is not acceptable. The secretary is a political appointee who takes orders from elected politicians who depend on campaign donations.***

A scientific study of the problems associated with on-site burial of pit waste from a conventional well drilled in Fernow Experimental Forest documented seeps and leaching into surrounding soils. Marcellus Shale wells contain more potential contaminants, toxins and carcinogens (including naturally occurring radioactive materials (NORMs) than conventional wells and at much greater volumes.

In Section 4.1.a. Withdrawing water from surface waters of the State using methods deemed appropriate by the Secretary so as to maintain sufficient in-stream flow immediately downstream of the withdrawal location; ***Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists.***

4.2.a. Within forty-eight (48) hours, but no less than twenty-four (24) hours, prior to the withdrawal of water, the operator shall identify the location of withdrawal by latitude and longitude; verify, using methods deemed acceptable by the Secretary, that sufficient flow exists to protect designated uses of the stream; and provide notice to the Office as prescribed by the Secretary; ***"using methods acceptable to the Secretary" is not acceptable***

3.3.f.2. A demonstration, using methods acceptable to the Secretary (*there's that unacceptable phrase again*), that sufficient in-stream flow will be available immediately downstream of the point of withdrawal. Sufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal.

- The requirement that an engineer must design the well pad if it is more than 3 acres is a good thing. However, having an **engineer supervise the construction and reclamation** would help ensure that soil erosion and sediment control plans are followed **since there are too few inspectors to oversee these activities**. The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves.
- Many of the provisions related to the water management plans had already been implemented in practice under the Manchin administration, although the requirement that operators disclose the chemicals added to water used to fracturing or stimulate a well is new and appreciated.
- Many of the new casing and cementing requirements are too vague. The rule sets standards that would allow the State to cite the driller if something went wrong, as opposed to standards that could prevent problems from occurring in the first place. For example, the rules state that all cement used must "secure the casing to the well bore..." but do not require the driller to run a bond log to make sure that it actually does.
- With regard to drinking water supplies, there are no expanded set backs or testing parameters included in the rule. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies.
- Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.

The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown. Language should cover public notice for all wells, not just within municipalities.

3.3.d. The planned management and disposition of wastewater from fracturing, stimulation, and production activities;

The specific place of wastewater disposal should also be in the water management plan. They are going to run out of places to put this waste fluid (which obviously is NOT just "wastewater"). Restrictions should be tightened.

3.4.b. Well site safety meetings. – Safety meetings shall be held on-site weekly, at a minimum, and specifically prior to the beginning of drilling, completion, and work-over operations. Meeting attendance shall be logged, and the log shall be maintained on site. A check-in and check-out list of all personnel shall be maintained during the drilling and completion phases of the operation.

Personnel attending well site safety meetings should include subcontractors and truckers (or some other provision for training truckers must be found). At each well site safety meeting all workers, including truck drivers, should be provided with and keep in their possession the up-to-date phone numbers to call in case of any emergency. Spills from trucks, whether on the site or in transit, are emergencies.

4.1.b. Casing, sealing or otherwise managing wells to keep fluids or natural gas from entering ground or surface waters;

“or otherwise managing wells” – does this phrase open the door to anything? Drillers that continue to use hay bales to stop sediment of chemical spills are not to be trusted to decide how to manage fluids.

4.1.c. Conducting oil and gas operations using BMPs (Best Management Practices) so as to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to stream flow or runoff outside the permit area, but in no event shall the contributions be in excess of requirements set by applicable State or federal law.

“to the extent practicable” is an unacceptable loophole.

4.4.a.4. Casing shall not be disturbed for a period of at least eight hours after the completion of cementing operations

This is the most critical function in protecting groundwater. An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured. Is there not a test to determine when the cement has set?

Thank You,

Christina Woods

1585 Broad Run Road

Center Point, WV 26339

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:14 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Proposed Emergency Rules Governing Horizontal Well Development

From: Vivian Parsons [mailto:vivian@ccawv.org]
Sent: Tuesday, October 11, 2011 12:37 PM
To: DEP Comments
Subject: Proposed Emergency Rules Governing Horizontal Well Development

To: James A. Martin, Chief, WV DEP Oil & Gas Division
Re: Proposed Emergency Rules Governing Horizontal Well Development
From: County Commissioners' Association of West Virginia

On behalf of the County Commissioners' Association of West Virginia (CCAWV), we've created a committee to follow the development of the "Proposed Emergency Rules Governing Horizontal Well Development," and would like to offer the following comments:

Under WV Code 35-8-5. Public Notice Procedures, rule 5.1, it is required that any permit requests located within the boundaries of any municipalities must publish public notice of the filing of a well work permit application, as a class I legal advertisement in the local newspaper.

While CCAWV is not suggesting that such process be required when the well is located in the unincorporated area of the county, **it is our request that electronic notification of all well work permit applications be sent to the county commission where the well is located. This electronic notification could be achieved at a minimal cost, and would allow county commissions to be aware of possible well activity in their county.**

Those counties that have been leaders in the Marcellus Shale Development, have formed a county task force made up industry, emergency management personnel, county commission, law enforcement, and state DEP and DOT representatives. **This approach has opened lines of communication and allowed many contentious issues to be resolved at the local level. We believe that adding a requirement to electronically notify county commissions when a permit for well work application has been applied for, will facilitate this best management practice.**

Thank you for the opportunity to submit these written comments on behalf of County Commissioners in West Virginia.

CCAWV Committee Members:

Don Mason, Marshall County Commissioner, Chair
Scot Lemley, Wetzel County Commissioner

Pat Boyle, Lewis County Commissioner
Bernie Kazenkio, Brooke County Commissioner
William Parker, Administrator Upshur County Commission

Vivian Parsons
Executive Director
County commissioners' Association of WV
2309 Washington Street East Charleston, WV. 25311
304-345-4639 (phone)
304-346-3512 (fax)
304-415-1608 (cell)

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Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:14 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Marcellus Select Committee Comment

-----Original Message-----

From: Tim Wigton [mailto:tim@loomislawoffice.com]
Sent: Tuesday, October 11, 2011 11:38 AM
To: DEP Comments
Subject: Marcellus Select Committee Comment

Hello,

In regard to the management of runoff in the following Emergency Rule:

"4.1.c. Conducting oil and gas operations using BMPs (Best Management Practices) so as to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to stream flow or runoff outside the permit area, but in no event shall the contributions be in excess of requirements set by applicable State or federal law."

"to the extent practicable" is in there to placate Energy Lobbyists.
Please take it out.

Generally, letting companies bend/break/ignore the rules for some "greater good" only transfers the costs they save onto someone/something downstream. We've trusted for-profit organizations to do their "Best" to look out for us time and again, when obviously they're going to choose quarterly earnings over all else. It's not until voters start suffering directly, that government steps in to protect us. Even ignoring obvious environmental impact like fish-kills, wasting diseases in deer, etc., the downstream municipalities must clean these additional toxins out of water to comply with EPA regulations for safe drinking water.

—
Tim Wigton
Loomis Law Office
(304) 873-4350

The writer of this message is not an attorney. No attorney-client relationship is implied.

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:14 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on Rule 35CSR8 Governing Horizontal Well Development
Attachments: WVSORO_Comments_ProposedRulesGoverning HorizontalWellsFinal.pdf

-----Original Message-----

From: Julie Archer [mailto:julie@wvcag.org]
Sent: Tuesday, October 11, 2011 12:19 PM
To: DEP Comments
Cc: Dave McMahon
Subject: Comments on Rule 35CSR8 Governing Horizontal Well Development

Our comments on Rule 35CSR8 Governing Horizontal Well Development are attached.

--
Julie Archer
WV Citizen Action Group
1500 Dixie Street
Charleston, WV 25311
(304) 346-5891
(304) 346-8981 FAX
www.wvcag.org



West Virginia Surface Owners' Rights Organization

1500 Dixie Street, Charleston, WV 25311

(304) 346-5891 - FAX: (304) 346-8981

www.wvsoro.org

October 11, 2011

DEP Public Information Office
601 57th Street, SE
Charleston, WV 25304-2345

Re: Comments on Rule 35CSR8 Governing Horizontal Well Development

Although the proposed rule is a first step, it is lacking in a number of critical areas and is inadequate to ensure safe, responsible development of the Marcellus Shale. Therefore, we urge the DEP to strengthen this rule to provide better protections for surface owners, their land and their water resources. We expand on these comments below.

GENERAL COMMENTS:

The limited applicability of the rules to horizontal wells is disappointing. While most Marcellus Shale wells are drilled horizontally, some vertical Marcellus wells are still drilled. Vertical Marcellus well sites are huge — generally 3-5 acres. They also use tremendous amount of water — four times more than the trigger under the rule for horizontal wells, yet the rule does not apply to them. In addition, there are no improvements for the many conventional wells that are still being drilled. The applicability of the rule should be based on the amount of land disturbed and the amount of water used.

It is also disappointing that the does not give surface owners notice of plans to drill the wells until the permit is actually filed, and then there is only 15 days to file comments, no hearing on the permit application, and no power for the State to help a surface owner whose future home site is now going to be a well site.

With regard to drinking water supplies, there are no expanded set backs, testing distances or testing parameters included in the rule. Water testing is still only required for water wells 1,000 feet or less from where the well enters the ground. But the horizontal well bore can go 3,000, 5,000 or even 10,000 feet horizontally past thousands of old wells that need to be plugged, and others that are still producing, all with uncemented annuli between the bottom of the surface/intermediate well casing and the formation cement job. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing, or naturally occurring radioactive materials (NORMs) known to exist in the Marcellus Shale, or for the other fluids and materials that will be used on the well pads, the spills from which have been known to leach down into groundwater. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies, even though the current testing parameters and groundwater remediation are in rule (35CSR4, Sections 19 and 20) not statute.

Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.

SECTION SPECIFIC COMMENTS:

Permit Application Requirements – Section 3

- **Erosion and Sediment Control Plan, Site Construction Plan (Sections 3.1 and 3.2)** - The requirement that an engineer must design the well pad if it is more than 3 acres is a good thing. However, having an engineer supervise the construction and reclamation would help ensure that soil erosion and sediment control plans are followed since there are too few inspectors to oversee these activities. The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves.
- **Water Management Plan (Section 3.3)** - Many of the provisions related to the water management plans had already been implemented in practice under the Manchinn administration, although the requirement that operators disclose the chemicals added to water used to fracturing or stimulate a well is new and appreciated.
- **Well Site Safety Plan (Section 3.4)** - In response to the fires and explosions that occurred last year in the Northern Panhandle, the rule appropriately requires operators to have a well site safety plan, yet continues to allow gas wells to be drilled within 200 feet of peoples' homes. In addition to the potential for serious accidents, this close proximity is of particular concern for Marcellus Shale operations, given their duration, the air, noise, light and other pollution from the sites.

Operational Rules to Protect Water Quantity and Quality – Section 4

- **Reporting and Record Keeping Requirements (Section 4.2)** – The information collected regarding the amount of water actually used or withdrawn, and the quantity of flowback and produced water from a well (and how it is disposed of) only has to be kept by the operator and is not reported to the state. This information should be collected to help the State make informed decisions on future regulations and to monitor whether wastewater is being disposed of properly.
- **Disposal of Pit Waste (Section 4.3)** – The DEP's press release was misleading when it said that the rule, "stipulates that all drill cuttings and drilling mud be disposed of in an approved solid waste facility." In Section 4.3 the rule also states, "or managed on-site in a manner otherwise approved by the Secretary," and there is no indication of what the Secretary may approve. A scientific study of the problems associated with on-site burial of pit waste from a conventional well drilled in Fernow Experimental Forest documented seeps and leaching into surrounding soils. Marcellus Shale wells contain more potential contaminants (including naturally occurring radioactive materials (NORMs) than conventional wells and at much greater volumes.
- **Casing and Cementing Standards - (Section 4.4)** - Many of the new casing and cementing requirements are too vague. "The [metal] casing must be of sufficient quality and condition . . ." (Section 4.4.a.2) "Centralizers must be used with proper spacing . . ." (Section 4.4.a.3) (Would the rule say that practices do not have to be sufficient or proper?) The rule sets standards that would allow the

State to cite the driller if something went wrong, as opposed to standards that could be enforced to prevent problems from occurring in the first place. For example, the rule states that all cement used must "secure the casing to the well bore..." (Section 4.4.b.1), but does not require the driller to run a bond log to make sure that it actually does. Similarly, the rule only says that cement should "contain all pressures during all phases of drilling and operation" (Section 4.4.b.1), but still allows bare casing pipe in most of the vertical part of the hole. It does not require that the entire casing be cemented from the Marcellus Shale all the way to the surface -- so that intermediate gas bearing formations could create pressures in the open annuli -- or require operators to monitor annulus pressure. These requirements would greatly improve safety and decrease the likelihood of methane migration and other incidents related to faulty cementing and casing from occurring.

Public Notice Procedures - Section 5

The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. Rural citizens have more trouble than city residents with roads and some of the other impacts of the industrialization of rural West Virginia caused by Marcellus Shale development. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown.

Sincerely,

/s/Julie Archer (Intended as a signature)

Julie Archer, Project Manager
1500 Dixie Street
Charleston, WV 25311
(304) 346-5891
julie@wvsoro.org

/s/David McMahon (Intended as a signature)

David McMahon, J.D., Co-Founder
1624 Kenwood Road
Charleston, WV 25314
(304) 343-6101
wvdavid@wvdavid.net



City of Welch

Welch Municipal Building ● 88 Howard St. ● Welch, WV 24801 ● (304) 436-3113 ● Fax (304) 436-2546

October 7, 2011

RECEIVED
Office of Oil & Gas

OCT 11 2011

Mr. Randy Huffman, Cabinet Secretary
c/o DEP- Public Information Office
601 57th Street, SE
Charleston, WV 25304

WV Department of
Environmental Protection

Re: Rules Governing Horizontal Well Development Title 35-8

Dear Secretary Huffman:

Thank you for the opportunity to provide comment for the City of Welch, West Virginia regarding the proposed Legislative Rule-Title 35 Series 8. The City of Welch has three areas of concern regarding the regulation of Horizontal Well Development.

First, the City of Welch may have opportunities to sell potable water and also effluent water the drilling industry from our municipal plants when feasible. We would request that any regulations allow a reasonable opportunity for these purchases. It occurs to us that the use of municipal water, whether potable or treated effluent, may be more environmental friendly than a straight withdrawal from the surface and ground water systems of this state especially during low flow months and the issue appears to be omitted in the rule.

Second in 35-8-5, we agree and appreciate the mandate of public hearings especially when the permits are being considered in municipal limits, and would add that it would be proper to mandate a hearing if the permit is for an operation within one half mile of the municipal intake for a drinking water resource. The City of Welch must be able to assess the potential impact on the quantity and quality of water production caused by this development.

Finally, the City of Welch is in an area where there is extensive drilling for natural gas including coal bed methane. Local growth and planning, transportation, emergency services, housing, courts, and tourism components will be affected and possibly overburdened with current local staffing and funding. We believe an increase in the severance tax, a higher category for the horizontal drilling, or a local impact fee would be more sustainable than the current proposal of simple permit fee increases.

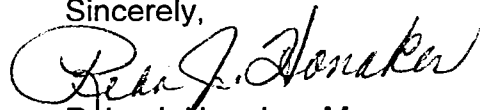
Page 2

Municipal League/Rules Governing Horizontal Well Development

The permit fee dollars are dedicated to the DEP with no distribution to municipalities to offset additional expenses or losses. Local impact should be compensated at the local level the state should not make the mistake of overlooking the seriousness of these components.

Again, thank you for the opportunity and your attention to my comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Reba J. Honaker". The signature is written in a cursive style with a large, looping initial "R".

Reba J. Honaker, Mayor
City of Welch

RJH/dwb

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, September 14, 2011 8:55 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: shale

From: mdbruns@verizon.net [mailto:mdbruns@verizon.net]
Sent: Sunday, September 11, 2011 6:47 PM
To: DEP Comments
Subject: shale

Dear Friends,

I am a regular visitor to many scenic areas of West Virginia. I come to experience the natural beauty of your state. I don't come to see once beautiful areas now turned into waste lands, an unfortunate habit in some parts of your state. Please tighten up regulations regarding the protection of natural resources during extractive processes.

Thanks,

Mark Bruns

Mullen-Thaxton, Jennifer L

From: Aluise, Thomas J
Sent: Tuesday, September 20, 2011 8:18 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: DEP on Marcellus Shale. Comments.

From: Young, Stephen A
Sent: Tuesday, September 20, 2011 8:14 AM
To: Aluise, Thomas J
Subject: FW: DEP on Marcellus Shale. Comments.

Not sure how or why I got this, but figured I would pass it on.

From: Dok Bailey [mailto:bhsrich@yahoo.com]
Sent: Monday, September 19, 2011 4:50 PM
To: Young, Stephen A
Subject: DEP on Marcellus Shale. Comments.

Dear Mr. Young, DEP Official,

We need to protect the Marcellus industry from harmful regulations. But, it is more important to protect citizens from polluted water and abuse by the industry. Good common sense is needed in the regulation. Our good clean drinking water is of the most importance and will continue to be more important as time goes on. Laws to protect surface owners are very important to keep from abuse. We cant let this industry hurt our citizens. This is the main thing. We are a government of laws, not men. Our laws must be fair and not drawn up by powerful lobbyists.

Sincerely,

Richard S. Bailey
Rt. 3
Bridgeport, WV 26330

Mullen-Thaxton, Jennifer L

From: Martin, James A
Sent: Tuesday, October 11, 2011 4:42 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Triana Comments on Emergency Rules
Attachments: Triana Emergency Rules Comments.pdf

From: Trip Showen [mailto:tshowen@trianaenergy.com]
Sent: Tuesday, October 11, 2011 3:28 PM
To: Martin, James A
Cc: Adkins, Laura L; Rachelle King; Eddy Grey
Subject: Triana Comments on Emergency Rules

Mr. Martin,
Attached please find Triana Energy's comments on the recently promulgated Emergency Rules for Horizontal Well Development. We would welcome the opportunity to discuss our concerns with you. Please feel free to contact us if you have any questions or need further information.

Thank you,

Trip Showen
Manager, Permitting
Triana Energy, LLC
900 Virginia Street East
Charleston, WV 25301
(304) 205-8503 Office
(304) 982-9865 Cell





October 11, 2011

Mr. James Martin, Chief
Office of Oil and Gas
West Virginia Department of
Environmental Protection
601 57th Street SE
Charleston, WV 25304

Re: Triana Energy, LLC Comments on Emergency Rules

Dear Mr. Martin:

Triana Energy respectfully submits herewith comments and concerns we have relative to Title 35, Series 8, Rules Governing Horizontal Well Development (Emergency Rules) recently promulgated by the West Virginia Department of Environmental Protection, Office of Oil and Gas. We appreciate the opportunity to submit our comments and urge you to consider our concerns regarding the safety and economic impacts the rules will have on the Oil and Gas Industry.

We are available at your convenience to discuss these issues. We look forward to the opportunity to work with you.

Sincerely,

Walter C. Showen, III
Manager, Permitting

WV Office of Oil and Gas Emergency Rules
Comments and Concerns



- General Questions –

- *Can we assume each of the components will be reviewed separately?*
- *How will the department administer the overall permit approval process?*
- *What is the expected timeframe for receiving approval?*
- *Also, for items requiring demonstration of sufficiency, does the Department have default methods acceptable to the Secretary?*

- E&S Plans –

- *Can the plan be incorporated into the design drawings as note, along with detail of BMPs, or must this be a separate document/manual?*
- *Does the existing O&G E&S Manual still apply, or are we to propose individual specifications?*
- *What is the anticipated review and approval time? Will this fit into the 30 legal notice timeline?*

- New WMP/Water Sourcing Requirements:

- Identification of current designated & existing water uses –
 - *Does this include other Operators Water Withdrawals? If so will the DEP provide us with that information since most Operators do not share this information?*
- Demonstration of flow maintenance and determinations of beneficial use –
What is an acceptable demonstration to the Department?
- Demonstration of sufficient in-stream flow remains unaffected immediately downstream (using methods acceptable to the Secretary)
 - *What is an acceptable demonstration to the Department?*
 - *Does this mean that Water Resources will step in and require permitting for each withdrawal*
- Acceptable identification of methods to minimize significant adverse impacts to aquatic life – *again what is an acceptable method, is it the guidance tool that we know has issues with it?*
 - *Assume the notification prior to withdrawal of water is for the initial withdrawal for a particular source*

WV Office of Oil and Gas Emergency Rules
Comments and Concerns



- Tracking & Reporting Fluid Requirements –
 - Maintain records of the quantity of flow back water from hydraulic fracturing –
 - *When is the Department considering the water flow back vs. produced water, is there a time frame? Will it be 30 days after the well has been completed or if there is some % recovered?*
 - Quantity of water produced from the well –
 - *How long does the Department want this information tracked for?*
 - *Does this information get reported or just kept on file at Operators Headquarters?*
 - Method of management or disposal of the flow back and produced waters;
 - *How will the Department handle the sharing of Operators recycled waters?*
 - *Is sharing recycled water between Operators an acceptable method of management or disposal?*
- Management of Drill Cuttings/Solid Waste –
 - Managed on-site in a manner otherwise approved by the Secretary (not specific) – *What is acceptable?*

Note: Landfills throughout WV have received a new memo from appropriate DEP Section concerning a new requirement of bi-monthly leachate testing if they want to accept drill cuttings from Operators -
 - *DEP will be limiting the disposal facilities for drill cuttings disposal when these cuttings can still be encapsulated on site in a drill pit?*
 - *Keep in mind the Landfills are telling Operators that these tests will cost the Landfill approximately \$75,000.00 and they are in fact requiring Operators to share some of that cost, which will then make disposal of cuttings very high as a result.*
 - *Can top hole cuttings be incorporated into the site for grading, etc.?*
 - *Is there any way for us to determine a beneficial reuse for this material?*

WV Office of Oil and Gas Emergency Rules
Comments and Concerns



- *Will there be a distinction between Marcellus and other cuttings or requirement for segregation on site?*
- **Public Notice to Municipalities –**
 - *Is the notice good for a 2 Year term like the Drill Permits are?*
 - *Will the Department require a hearing or something of that sort if there are comments/issues brought up by the public that would not allow the Department to issue the drill permit to the Operator?*

to dep.comments@wv.gov

Public Information Office
WV Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

Comments on 35CSR8

Thank you for the opportunity to comment on the Legislative Rules governing horizontal well development. The comments below pertain to the numbered item in the rules.

1.1 The rules should apply to vertical Marcellus Shale wells that use the amount of water and disturb the amount of land that the rule would otherwise cover.

3.3.d The specific place of wastewater disposal should also be in the water management plan. If there is a shortage of places to dispose of wastewater there should be a way to check that the plan is being followed.

3.3.f.2 "using methods acceptable to the Secretary" is not acceptable. The secretary is a political appointee who takes orders from elected politicians who depend on campaign donations. Acceptable methods for determining sufficient in-stream flow should be made by politically independent scientists.

3.4.b Personnel attending well site safety meetings should include subcontractors and truckers (or some other provision for training truckers must be found). At each well site safety meeting all workers, including truck drivers, should be provided with and keep in their possession the up-to-date phone numbers to call in case of any emergency. Spills from trucks, whether on the site or in transit, are emergencies.

4.1.a "using methods acceptable to the Secretary" is not acceptable (see 3.3.f.2 above).

4.1.b "or otherwise managing wells" is not acceptable. Methods for managing fluids should be specified. Drillers who continue to use hay bales to stop sediment of chemical spills are not to be trusted to decide how to manage fluids.

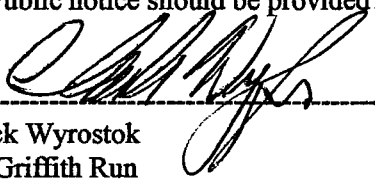
4.1.c "to the extent practicable" is an unacceptably vague phrase opening the door to sloppy use of, or ignoring, BMPs to control runoff. It should be eliminated.

4.2.a "using methods acceptable to the Secretary" is not acceptable (see 3.3.f.2 above).

4.3 This is the most objectionable item in these rules. "approved solid waste facility" is a complete mystery, and "or managed on-site in a manner otherwise approved by the Secretary" means continued pit burial. Drill cuttings and drilling mud are likely to contain toxins and radioactive materials. They should be tested, and if they contain hazardous materials, they should be disposed of in a hazardous waste facility. In no case, should they be buried on-site.

4.4.a.4 Proper curing of casing cement is the most critical function in protecting groundwater). An inspector should be required on-site to sign off on the log verifying that casing cement was properly cured.

5.1 Public notice should be provided for all wells, not just within municipalities.



Chuck Wyrostok
230 Griffith Run
Spencer, WV 25276
304 927 2978



Comments to West Virginia Department of Environmental Protection on 35CSR8

The following comments apply to the section of 35CSR8 as indicated.

3.3.d – The location of disposal should be specified in the plan. Care must be taken to not overwhelm any one area.

3.3.e – The list of chemicals actually used should be submitted upon beginning the fracturing operation. Such knowledge is extremely important to emergency responders responsible for the health of workers and local citizens in event of an accident.

3.3.f.2 – Decisions about water withdrawal and other aspects of the drilling operation should be made on the basis of independent science and in a standard, clearly specified manner, with no opportunity for politics or the appearance of politics to be involved.

3.4.a.6 – A complete list of chemicals being used for the drilling operation should be provided as early as possible (as 3.3.e above). A list of all the chemicals that are present on the site is not sufficient. Emergency responders need to know what has been used in each case.

3.4.b – Safety instruction and emergency contact information must be made compulsory for truckers as well. Spills of the materials during transport can qualify as emergencies.

4.1.a – “Methods deemed appropriate by the Secretary” is insufficient. (see 3.3.f.2)

4.1.b – “Otherwise managing wells” is quite open to interpretation. Acceptable practices should be spelled out, or the loophole language removed.

4.1.c – . . . “to the extent practicable” is open to interpretation. Acceptable practices should be spelled out, or the loophole language removed.

4.2.a - “Methods deemed appropriate by the Secretary” is insufficient. (see 3.3.f.2)

4.3 – Drill cuttings and mud waste should never be permitted to be “managed on site.” Specific criteria for solid waste facilities to handle these products safely and securely should be specified, not left to “a manner otherwise approved by the Secretary.” This loophole in the handling of potentially toxic or radioactive waste leaves the Department and companies open to litigation.

4.4.a.4 – “casing shall not be disturbed for a period of at least eight hours” is not adequate to ensure safety. The casing should not be disturbed until cement is dry. A reliable test to ensure the readiness of the cement should be required.

Thank you for the opportunity to comment.

Rev. Mr. Todd Garland

Rev. Mr. Todd Garland
Department of Social Ministries
Diocese of Wheeling-Charleston
1116 Kanawha Boulevard East
Charleston, WV 25301



West Virginia Surface Owners' Rights Organization

1500 Dixie Street, Charleston, WV 25311

(304) 346-5891 - FAX: (304) 346-8981

www.wvsoro.org

October 11, 2011

DEP Public Information Office
601 57th Street, SE
Charleston, WV 25304-2345

Re: Comments on Rule 35CSR8 Governing Horizontal Well Development

Although the proposed rule is a first step, it is lacking in a number of critical areas and is inadequate to ensure safe, responsible development of the Marcellus Shale. Therefore, we urge the DEP to strengthen this rule to provide better protections for surface owners, their land and their water resources. We expand on these comments below.

GENERAL COMMENTS:

The limited applicability of the rules to horizontal wells is disappointing. While most Marcellus Shale wells are drilled horizontally, some vertical Marcellus wells are still drilled. Vertical Marcellus well sites are huge — generally 3-5 acres. They also use tremendous amount of water — four times more than the trigger under the rule for horizontal wells, yet the rule does not apply to them. In addition, there are no improvements for the many conventional wells that are still being drilled. The applicability of the rule should be based on the amount of land disturbed and the amount of water used.

It is also disappointing that the does not give surface owners notice of plans to drill the wells until the permit is actually filed, and then there is only 15 days to file comments, no hearing on the permit application, and no power for the State to help a surface owner whose future home site is now going to be a well site.

With regard to drinking water supplies, there are no expanded set backs, testing distances or testing parameters included in the rule. Water testing is still only required for water wells 1,000 feet or less from where the well enters the ground. But the horizontal well bore can go 3,000, 5,000 or even 10,000 feet horizontally past thousands of old wells that need to be plugged, and others that are still producing, all with uncemented annuli between the bottom of the surface/intermediate well casing and the formation cement job. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing, or naturally occurring radioactive materials (NORMs) known to exist in the Marcellus Shale, or for the other fluids and materials that will be used on the well pads, the spills from which have been known to leach down into groundwater. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies, even though the current testing parameters and groundwater remediation are in rule (35CSR4, Sections 19 and 20) not statute.

Nothing is done to even study the air quality from flaring methane into the atmosphere and the many releases of methane, nitrogen oxide (NOx), and volatile organic compounds (VOCs) from well sites and compressor stations.

SECTION SPECIFIC COMMENTS:

Permit Application Requirements – Section 3

- **Erosion and Sediment Control Plan, Site Construction Plan (Sections 3.1 and 3.2)** - The requirement that an engineer must design the well pad if it is more than 3 acres is a good thing. However, having an engineer supervise the construction and reclamation would help ensure that soil erosion and sediment control plans are followed since there are too few inspectors to oversee these activities. The engineering requirement does not apply to the well access roads or pipelines, which are frequently more of a problem than the well sites themselves.
- **Water Management Plan (Section 3.3)** - Many of the provisions related to the water management plans had already been implemented in practice under the Manchin administration, although the requirement that operators disclose the chemicals added to water used to fracturing or stimulate a well is new and appreciated.
- **Well Site Safety Plan (Section 3.4)** - In response to the fires and explosions that occurred last year in the Northern Panhandle, the rule appropriately requires operators to have a well site safety plan, yet continues to allow gas wells to be drilled within 200 feet of peoples' homes. In addition to the potential for serious accidents, this close proximity is of particular concern for Marcellus Shale operations, given their duration, the air, noise, light and other pollution from the sites.

Operational Rules to Protect Water Quantity and Quality – Section 4

- **Reporting and Record Keeping Requirements (Section 4.2)** – The information collected regarding the amount of water actually used or withdrawn, and the quantity of flowback and produced water from a well (and how it is disposed of) only has to be kept by the operator and is not reported to the state. This information should be collected to help the State make informed decisions on future regulations and to monitor whether wastewater is being disposed of properly.
- **Disposal of Pit Waste (Section 4.3)** – The DEP's press release was misleading when it said that the rule, "stipulates that all drill cuttings and drilling mud be disposed of in an approved solid waste facility." In Section 4.3 the rule also states, "or managed on-site in a manner otherwise approved by the Secretary," and there is no indication of what the Secretary may approve. A scientific study of the problems associated with on-site burial of pit waste from a conventional well drilled in Fernow Experimental Forest documented seeps and leaching into surrounding soils. Marcellus Shale wells contain more potential contaminants (including naturally occurring radioactive materials (NORMs) than conventional wells and at much greater volumes.
- **Casing and Cementing Standards - (Section 4.4)** - Many of the new casing and cementing requirements are too vague. "The [metal] casing must be of sufficient quality and condition . . ." (Section 4.4.a.2) "Centralizers must be used with proper spacing . . ." (Section 4.4.a.3) (Would the rule say that practices do not have to be sufficient or proper?) The rule sets standards that would allow the

State to cite the driller if something went wrong, as opposed to standards that could be enforced to prevent problems from occurring in the first place. For example, the rule states that all cement used must "secure the casing to the well bore..." (Section 4.4.b.1), but does not require the driller to run a bond log to make sure that it actually does. Similarly, the rule only says that cement should "contain all pressures during all phases of drilling and operation" (Section 4.4.b.1), but still allows bare casing pipe in most of the vertical part of the hole. It does not require that the entire casing be cemented from the Marcellus Shale all the way to the surface -- so that intermediate gas bearing formations could create pressures in the open annuli -- or require operators to monitor annulus pressure. These requirements would greatly improve safety and decrease the likelihood of methane migration and other incidents related to faulty cementing and casing from occurring.

Public Notice Procedures - Section 5

The rule insults those living in rural areas by only requiring published notice of the siting of these industrial drill sites if a well will be drilled inside the city limits. Rural citizens have more trouble than city residents with roads and some of the other impacts of the industrialization of rural West Virginia caused by Marcellus Shale development. The rule would not even have required public notice of the controversial well drilled just outside the city limits of Morgantown.

Sincerely,

/s/Julie Archer (Intended as a signature)

Julie Archer, Project Manager
1500 Dixie Street
Charleston, WV 25311
(304) 346-5891
julie@wvsoro.org

/s/David McMahon (Intended as a signature)

David McMahon, J.D., Co-Founder
1624 Kenwood Road
Charleston, WV 25314
(304) 343-6101
wvdavid@wvdavid.net

Mullen-Thaxton, Jennifer L

From: Martin, James A
Sent: Tuesday, October 11, 2011 5:35 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: IOGA Comments to Proposed Rule 35 CSR 8 [STB-WORKSITE.FID161967]
Attachments: Cover Letter to Comments of IOGA to Proposed Rule 35 CSR 8.pdf; Comments of IOGA to Proposed Rule 35 CSR 8.pdf

Rule comments.

From: Mark D. Clark [mailto:MClark@spilmanlaw.com]
Sent: Tuesday, October 11, 2011 5:33 PM
To: DEP Comments; Martin, James A
Cc: M. Ann Bradley; M. Katherine Crockett; 'Charlie Burd'
Subject: IOGA Comments to Proposed Rule 35 CSR 8 [STB-WORKSITE.FID161967]

Mr. Martin,

For your consideration, attached in pdf format are (i) a cover letter from Charlie Burd submitting the comments of the Independent Oil and Gas Association of West Virginia and (ii) the comments of IOGAWV.

Please let me know if you have any problems opening the attachments. Unless you direct otherwise, the attached comments are not being separately mailed to your offices.

Thank you for your consideration of IOGA's comments.

Mark D. Clark
304.340.3876 - office
304.550.0278 - mobile
mclark@spilmanlaw.com

This email has been scanned for all viruses by the MessageLabs Email Security System.

October 11, 2011

VIA E-MAIL

Mr. James Martin, Chief
Office of Oil and Gas
West Virginia Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

Re: Comments on the Proposed Rule 35-08 Governing Horizontal Well Development

Dear Chief Martin,

The attached comments are filed on behalf of the Independent Oil and Gas Association of West Virginia, Inc. ("IOGAWV"). Formed in 1959, IOGA-WV is a statewide nonprofit trade association that represents companies engaged in the extraction and production of natural gas and oil in West Virginia and the companies that support these extraction and production activities. IOGAWV was formed to promote and protect a strong, competitive and capable independent natural gas and oil producing industry in West Virginia, as well as the natural environment of our state.

IOGAWV appreciates the opportunity to provide comments on the Proposed Rule 35-08 Governing Horizontal Well Development. The Proposed Rule 35-08 can have an enormous impact on the ability of oil and gas operators in West Virginia to efficiently and economically develop the natural gas resource in shale and other formations. Developing this resource using new and constantly evolving technology in a manner that yields great benefits for our state and is protective of the environment presents challenges both to the operators and to the regulators of our industry. Therefore, we urge that you give careful consideration to the comments provided. We, of course, stand ready to provide any additional information that would assist the agency in addressing the comments and concerns raised in the attachment.

Again, IOGAWV appreciates the opportunity to provide these comments and respectfully requests that they be given deliberate consideration.

Very truly yours,

Charlie Burd

Charlie Burd
Executive Director

COMMENTS OF IOGAWV ON THE PROPOSED RULE GOVERNING HORIZONTAL WELL DEVELOPMENT - 35 C.S.R. 8

These comments are filed on behalf of the Independent Oil and Gas Association of West Virginia, Inc. ("IOGA") on the "Horizontal Well Development Rule 35 C.S.R. 8 (the "Proposed Rule"). Formed in 1959, IOGA is a statewide nonprofit trade association that represents companies engaged in the extraction and production of natural gas and oil in West Virginia and the companies that support these extraction and production activities. IOGA was formed to promote and protect a strong, competitive and capable independent natural gas and oil producing industry in West Virginia, as well as the natural environment of our state. IOGA has been in existence during times of boom and bust and its members have a long history of driving innovation in exploration and development of West Virginia's oil and gas reserves. Our members also have a longstanding tradition of working with WVDEP and its predecessor agencies to help regulators understand these innovations and how to regulate new techniques in a manner that protects the environment while promoting the economic development so crucial to West Virginia. It is in this spirit of innovation and partnership that IOGA offers these comments.

An Emergency Rule which mirrors the Proposed Rule was filed with the West Virginia Secretary of State's ("WVSOS") office on August 22, 2011, and became effective on August 29, 2011. On September 8, 2011, the West Virginia Department of Environmental Protection Office of Oil and Gas ("DEP") filed the Proposed Rule with the WVSOS along with a notice of public hearing on the Proposed Rule to be held on October 11, 2011, at 6:00 p.m.

IOGA appreciates the opportunity to provide these comments on the Proposed Rule. Recognizing that the Emergency Rule is identical to the Proposed Rule, any of the comments provided below which reference the Proposed Rule would apply equally to the Emergency Rule.

A. General Comments

The Importance of Appropriate Rules Governing Marcellus Shale Wells Drilled Using Horizontal Technology

As an initial matter, IOGA would like to emphasize that its members recognize the critical importance of safe and effective exploration, drilling and operation of oil and gas wells, including wells drilled using horizontal technology to develop the shale formation generally referred to as Marcellus. IOGA appreciates and supports the stated scope of the Rule which is to "govern and apply to permit application requirements, operational rules to protect water quantity and quality, and public notice procedures for oil or natural gas operators developing horizontal wells." Decades of experience in developing oil and gas resources in West Virginia and across the United States have demonstrated that wells can be drilled in a safe and efficient manner that will not adversely impact valuable water resources.

Independent of all regulatory requirements, oil and gas operators are motivated to safely and efficiently drill and operate wells. Well drilling operations that reflect best management practices and insure the physical integrity of the well yield multiple benefits including protecting

worker safety, avoiding adverse impacts to water resources and the environment, and securing the significant financial investment that has been made in the well.

IOGA supports reasoned and focused regulation of permitting and operation of Marcellus shale drilling, fracturing and production activities, including the use of horizontal well technology and in the comments, recommendations and requests for clarification that follow offer the expertise and experience of our member companies in assessing the effectiveness of the Proposed Rule.

Subsequent to the initiation of Marcellus shale development activities in West Virginia, the DEP has issued a number of directives and guidance documents targeting those activities. Both the Emergency Rule and the Proposed Rule fail to address the effect of this rulemaking initiative on these prior actions by the agency. IOGA requests that DEP identify any and all directives and/or guidance issued and effective prior to the Emergency Rule and indicate whether they are superseded or modified, in whole or in part, by these rulemaking activities.

As to the Emergency Rule, Section 35-8-1.5 states that applications submitted after the effective date of that rule shall be subject to the provisions of that rule. IOGA seeks clarification that for all well work applications filed prior to August 29, 2011, the rules and requirements in existence at the time of the application will govern, including modifications or amendments of such applications that may occur after August 29, 2011.

B. Specific Comments

1. The Definition of Horizontal Well – All Horizontal Wells Are Not the Same - § 35-8-2

It is apparent from the stated scope of the Proposed Rule and issues raised by various stakeholders that the impetus for this rulemaking was and is gas exploration and drilling activities that can have greater impacts with regard to surface disturbance, the use of water resources and local roadways. However, this is not the case for all horizontal well drilling activities. Certain under-pressured formations, like the Lower Huron, are drilled horizontally, but are not hydraulically fractured, and therefore require much less water and surface area to drill and complete. Thus, IOGA recommends that the Proposed Rule be targeted specifically at the exploration and drilling activities that can have these greater impacts. To this end, IOGA suggests incorporating into the definition of “Horizontal Well” (§ 35-8-2.2) the anticipated or actual use of 210,000 gallons or more of water from West Virginia sources in drilling or fracturing activities. Through the adoption of this definitional change, the Rule would address those operations that have been the impetus for this rulemaking and will avoid imposing requirements that may be unnecessary or inappropriate for other horizontal drilling operations that do not use water resources in excess of more conventional drilling completion techniques and, consequently, involve less surface disturbance as well. Indeed, imposing inappropriate or unnecessary requirements may impede or discourage the development of other formations which may yield benefits to our State that will be as great or greater than the benefits of the development of the Marcellus Shale.

For these reasons, IOGA urges DEP to adopt the following definition: “‘Horizontal well’ means any well, other than a coalbed methane well, which is drilled using a horizontal drilling method and the drilling, fracturing or stimulating of which requires the use of water obtained by withdrawals from waters of this state in amounts that exceed 210,000 gallons during any month.”

2. Permit Application Requirements for Operators Developing Horizontal Wells -
§ 35-8-3

This section establishes more detailed requirements for the erosion and sediment control (“ESC”) plan and adds requirements for a site construction (“SC”) plan, water management (“WM”) plan and well site safety (“WSS”) plan (collectively, the “Plans”) if certain threshold conditions exist. Preliminary questions include:

- (i) How will DEP administer the overall well work permit review and approval process?
- (ii) Will each of the required Plans submitted with the application be separately reviewed and evaluated?
- (iii) How promptly does DEP anticipate being able to review and approve applications containing the additional Plans being required?
- (iv) Does the undated 42 page document titled “West Virginia Erosion and Sediment Control Field Manual, West Virginia Division of Environmental Protection Office of Oil and Gas, Charleston, West Virginia” which appears on DEP’s website at <http://www.dep.wv.gov/oil-and-gas/GI/Forms/Documents/Erosion%20and%20Sediment%20Control%20Field%20Manual2.pdf> represent the current “best management practices for alleviating soil disturbing activities during oil and gas industry activities”? Can operators rely upon that Field Manual to aid in the development of approvable ESC plans?

a. Making the Plans conditions of the well work permit without flexibility to revise them in the field is impractical and unrealistic

IOGA has great concerns with the language of the Proposed Rule stating that the required Plans “shall be considered conditions of the permit and enforceable as such.” The well work permit application and related Plans are necessarily based upon projections and estimates of work to be performed up to 24 months following the application date. Because the Plans can only reflect projections and estimates based upon the operator’s experience, enforcing such projections and estimates as literal conditions of the well work permit is unrealistic. There must be a mechanism for making adjustments in the field to the specifications in the Plans. The prior permitting process has necessarily allowed operators to adjust their operations to the circumstances in existence when work begins. For example, requiring an operator to include in the ESC plan a general sequence of events that describe in relative terms how and when each construction phase will occur and when each erosion and sediment control best management practice (“BMP”) will be installed, or requiring an operator to include in the WM plan the latitude and longitude of each anticipated water withdrawal location, anticipated volume of each water withdrawal and anticipated months when water withdrawals will be made may arguably

result in multiple amendments or modifications of the permit if such estimates are not completely accurate.

In the alternative, IOGA requests that the Rule expressly authorize reasonable and practical modifications of the Plans subject to approval by the oil and gas inspector, based upon conditions existing in the field at the time work is being performed, without creating the enormous delays and added expense that would result if work had to be halted while an amendment or modification to the well work permit is pursued. This revision to the Proposed Rule is supremely practical and would conform to current practice and reduce administrative burdens for both the DEP and operators while still requiring DEP approval of the field adjustments by participation of the oil and gas inspectors. IOGA and its member operators understand that a verbal notification requirement of such field adjustments set forth in the Proposed Rule would be an acceptable alternative.

b. Requiring review and approval of a Water Management Plan constitutes an unauthorized regulation of water withdrawals

While IOGA recognizes that requiring some amount of information reporting to DEP may be authorized and appropriate under existing statutes, the requirement of review and approval of a WM plan regulating the withdrawal of water from the waters of this State exceeds the DEP's authority under the State Water Pollution Control Act, W. Va. Code §§ 22-11-1 et seq., and the Oil and Gas Act, W. Va. Code §§ 22-6-1 et seq., and under certain circumstances is contrary to the common law riparian rights doctrine. Does DEP believe it has the same authority to regulate all users of waters in West Virginia? Will farmers, golf course owners, coal operations, electric power plants and other industrial operations have the same requirements applied to their water withdrawals? While the Legislature has given the DEP the authority to collect information regarding water withdrawals and water uses under the Water Resources Management and Protection Act, W. Va. Code §§ 22-26-1 et seq., it has not been given the authority to regulate or control water withdrawals and water uses.

Without conceding that DEP has the authority to regulate water withdrawals by oil and gas operators, IOGA has identified several issues and questions regarding the water management plan portion of the Proposed Rule.

c. Water Management Plan Issues

Sections 3.3.b and 3.3.c. require operators to include "anticipated volume" and "anticipated months," respectively, as part of the WM plan. IOGA suggests that "reasonable estimate of" be substituted for "anticipated" to clarify that the volume and months are simply estimates at the time the application and WM plan are filed.

Section 3.3.f.1. requires the "identification of current designated and existing water uses, including any public water intakes within one mile of the withdrawal location." Does this requirement include seasonal recreational uses that may or may not be known or apparent to the operator? Does this requirement include other oil and gas operators whose activity may not be known or apparent? Will DEP make information available about designated and existing uses of

waters of the State? These issues can be addressed by inserting at the end of the subsection the following: “, which uses are known to the applicant at the time the well work permit application is submitted.”

Section 3.3.f.2. requires a “demonstration, using methods acceptable to the Secretary, that sufficient in-stream flow will be available immediately downstream of the point of withdrawal” and that “[s]ufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal.” Please identify and explain the “methods acceptable to the Secretary” for making the required “demonstration.” Please clarify or confirm that use of the United States Geological Survey real time database which includes data on current levels of stream flow, which can be found at http://waterwatch.usgs.gov/new/?state=vv&map_type=real, is an approved basis for making the “sufficient in-stream flow” demonstration.

Section 3.3.f.3. requires “[i]dentification of the methods to be used to minimize significant adverse impact to aquatic life.” Similarly, please identify and explain the methods acceptable “to minimize significant adverse impact to aquatic life.”

3. Operational Rules to Protect Water Quality and Quantity - § 35-8-4

Comments regarding DEP’s authority to regulate water withdrawal at B.2.b. above are incorporated by reference in this section B.3.

Section 4.1.a. is duplicative of § 3.3.f.2. One of these provisions should be eliminated.

Section 4.1.c. requires that operators conduct “oil and gas operations using BMPs so as to prevent to the extent practical” The word “prevent” is an unattainable standard and the more practical word “minimize” should be inserted instead of “prevent.”

Section 4.2.a. requires, as a condition to water withdrawal, notice to the Office as described by the Secretary within 48 hours but no less than 24 hours prior to withdrawal. IOGA requests that DEP provide for notification by calling a telephone number designated for the purpose of receiving such notices. Moreover, the section can be read to mean that notice to the Office is required each time that water is withdrawn regardless of volume which is an undue administrative burden when the first notification should be adequate at least for the month period during which 210,000 gallons or more of water is to be withdrawn.

Section 4.2.b. requires that surface water withdrawal locations and facilities be identified by a sign disclosing the location as a water withdrawal point and the name and telephone number of the operator. IOGA suggests that the signs be required during periods of active use of the withdrawal point only.

Sections 4.2.c.1.A and B require the operator to record and retain records of the quantity of flowback water from hydraulic fracturing and the quantity of produced water from the well. IOGA requests both definitions of terms and clarification of the time period that the operator is required to record this information. For “flowback water,” IOGA recommends that this term be

defined as all water returned from the well within 30 days of completion of fracturing. All water returned from the well thereafter would be deemed “produced water.” With regard to the period during which the operator is required to track and record the production of returned waters, IOGA recommends that this tracking and recording obligation for produced water be limited to 12 months and that all document retention be limited to 3 years.

Section 4.2.c.1.C requires the operator to record and retain the “method of management or disposal of the flowback and produced water.” IOGA recommends that DEP encourage reuse and recycling of flowback and produced water by expressly authorizing the reuse of these waters by the operator and others in ongoing drilling operations. This waste management practice would maximize the value of the State’s water resources and ultimately reduce the quantity of water that would require disposal.

Section 4.3 requires that “[a]ll drill cuttings and associated drilling mud” from well sites that disturb 3 acres or more of surface or use 210,000 gallons or more of water during any one-month period “shall be disposed of in an approved solid waste facility or managed on-site in a manner otherwise approved by the Secretary.” By memorandum dated March 23, 2010 regarding Drilling Pit Reclamation, Office of Oil and Gas Chief James Martin authorized the disposal of Marcellus shale drill cuttings by solidification and use of liners on the well site. We assume and seek confirmation that the disposal method referenced in Chief Martin’s memorandum is a “manner otherwise approved by the Secretary” for purposes of the Proposed Rule. Furthermore, IOGA asks that the DEP provide its factual and scientific basis for requiring special handling of drilling cuttings as defined in this Section.

Section 4.4, titled “Casing and Cementing Standards,” incorporates in part the language contained in the Casing and Cementing Standards issued on August 25, 2011, to which IOGA submitted comments to DEP on September 30, 2011. IOGA incorporates those comments herein by reference, as applicable.

4. Public Notice Procedures – § 35-8-5

Section 35-8-5 requires a well work applicant for a well located within a municipality to place a Class I legal advertisement in a newspaper of general circulation in the area where the well is proposed to be located at the time the well work application is filed. This section also prohibits the issuance of a well work permit until at least 30 days after notice has been provided to the public. DEP has no statutory predicate for requiring notice by applicants beyond that required by statute, *See* W. Va. Code §§ 22-6-9 and -12. Of course, DEP may publish notice of well work permits in appropriate newspapers if it so chooses. Furthermore, this section doubles the minimum waiting time before DEP may issue a permit which is inconsistent with current W. Va. Code § 22-6-11.

C. Conclusion

Because the Proposed Rule will have an enormous impact on the development of the Marcellus shale play and other plays where horizontal wells will be employed, we believe it is critical that DEP immediately initiate an open dialog with operators and service companies with

the goal of modifying and developing regulations that are effective and practical, and do not unnecessarily impede the development of the incredibly valuable resource that the Marcellus shale play represents for all West Virginians. Moreover, rather than use the "one size fits all" approach for horizontal well development, we recommend that DEP develop regulations that will be applied to horizontal wells completed using hydraulic fracturing techniques separately from standards that apply in other, especially non-shale, formations.

We appreciate the opportunity to provide these comments to DEP and are hopeful that they will be given due consideration by DEP.

INDEPENDENT OIL AND GAS ASSOCIATION
OF WEST VIRGINIA

3154100

Mullen-Thaxton, Jennifer L

From: Martin, James A
Sent: Friday, October 07, 2011 2:12 PM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Invoice #13771
Attachments: SCAN0001.PDF

FYI

From: DBrannon@csiofwv.com [mailto:DBrannon@csiofwv.com]
Sent: Thursday, October 06, 2011 3:44 PM
To: Martin, James A
Cc: Smith, Gene C
Subject: Invoice #13771

Attached is invoice #13771 for the Pinch (Black Crow) Response.

I will mail the original today.

Contractor Services, Inc.

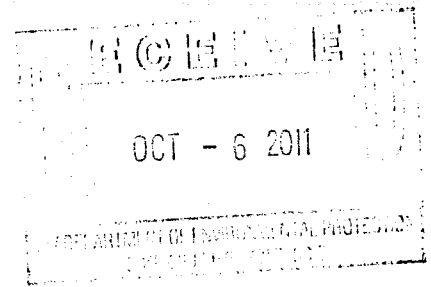
Dave Brannon
Office Manager
929 Charleston Road
Spencer, WV 25276
(304) 927-5033 - office
(304) 927-5068 - Fax
Email: dbrannon@csiofwv.com
Web Address: www.csiofwv.com



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MAYOR JIM MANILLA
Morgantown
MAYOR ANDY MCKENZIE
Wheeling
MAYOR WILLIAM BURDICK
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MAYOR LINDA WHALEN
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MAYOR MICHAEL MARTIN
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MAYOR PATRICIA WILSON
Princeton
MAYOR JACK YEAGER
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MAYOR JIM TWIGG
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Huntington
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COUNCILOR SHARYN TALLMAN
Parkersburg
CLERK KANDI MILLER
Barboursville
CLERK SONDRA HEWITT
Moundsville
CITY MANAGER MARTIN HOWE
Clarksburg
CITY MANAGER BILL HANNABASS
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COUNCILOR TOM OXLEY
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COUNCILOR MARY JEAN DAVIS
Audit/Finance, Charleston
LISA DOOLEY
Executive Director
CLERK JANICE JONES
Chaplain, Wheeling
MAYOR ROBERT NEWELL
Immediate Past President, Parkersburg
Past Presidents
MAYOR SUSAN WEBSTER
Bath
MAYOR DANNY JONES
Charleston
MAYOR JESSE CORLEY
White Hall
MAYOR EMMETT PUGH, III
Beckley
COUNCILOR JAMES HUNT
Clarksburg
MAYOR LYDIA MAIN
Masontown
MAYOR DAVE HAMILL
Ranson

October 5, 2011

Mr. Randy Huffman, Cabinet Secretary
c/o DEP- Public Information Office
601 57th Street, SE
Charleston, WV 25304



Re: Rules Governing Horizontal Well Development Title 35-8

Dear Secretary Huffman:

Thank you for the opportunity to provide comment for the WV Municipal League regarding the proposed Legislative Rule-Title 35 Series 8. We will rely on our dual members in the WV Rural Water Association to talk about the technical aspects of the rule and focus only on three main points from our group.

First, the Municipal League would like to assure the continuation of water purchases being made by the industry from our municipal plants when feasible as well as a provision of accepting the effluent from our municipal treatment plants as part of those water purchases, again when feasible. It occurs to us that the use of municipal water, whether potable or treated effluent, may be more environmental friendly than a straight withdrawal from the surface and ground water systems of this state especially during low flow months and the issue appears to be omitted in the rule.

Second in 35-8-5, we agree and appreciate the mandate of public hearings especially when the permits are being considered in municipal limits, and would add that it would be proper to mandate a hearing if the permit is for an operation within one half mile of the municipal intake for a drinking water resource.

Finally, when looking at the expense of assuring compliance, safety, and the impact to municipalities, there are several local components that should be examined and funded. Local growth and planning, transportation, emergency services, housing, courts, and tourism components will be affected and possibly overburdened with current local staffing and funding. We believe an increase in the severance tax, a higher category for the horizontal drilling, or a local impact fee would be more sustainable than the current proposal of simple permit fee increases.

2020 Kanawha Boulevard East
Charleston, WV 25311
PH: 304-342-5564 ★ FAX: 304-342-5586
1-800-344-7702 ★ www.wvml.org

The permit fee dollars are dedicated to the DEP with no distribution to municipalities to offset additional expenses or losses. As an example of the tourism component, there is a significant impact on tourism dollars being lost to the municipality as the reduction in the hotel motel taxes collected in the area of the drilling are being seen. First, the traditional tourist is displaced with limited or no rooms available for visits to local attractions. Adding insult to injury, hotel stays of 30 days or more are exempt from the local tax delivering a double whammy to the city. To argue that the increase in production will help reduce the loss is of little consolation for cities already struggling to provide services at current levels. Municipalities should not be forced to fight to remain stagnant. Local impact should be compensated at the local level the state should not make the mistake of overlooking the seriousness of these components. As we continue to demonstrate, Strong Cities make a Strong West Virginia.

Again, thank you for the opportunity and your attention to my comments. We are happy to work with you and the committee and should you require additional information, please contact me at 304-342-5564

Sincerely,



Lisa Dooley

cc: Legislative Rule-Making Review Committee
Select Committee on Marcellus Shale

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:10 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8

From: Green, John L [mailto:John.Green@hatchmott.com]
Sent: Wednesday, October 12, 2011 7:40 AM
To: DEP Comments
Subject: 35CSR8

I am a professional surveyor and member of the West Virginia Society of Professional Surveyors. I attended the public hearing last night on 10/11/2011 as a representative of the WVSPS and did not speak at that time. However, after some reflection I would like to offer the following comment, in my own right, concerning the requirement for the certification of a West Virginia licensed professional engineer in sections §35-8-3.1 and §35-8-3.2 of the subject rule.

Often when we are passionate about something and focused on doing the right thing with regards to one issue we tend to be blinded to the obvious.

NPDES plans and construction plans are made up of a combination of both engineering products, as adeptly pointed out by Mrs. Jennifer Casey at the hearing, as well as surveying products.

Products that are maps or plans showing topographic mapping, existing terrain modeling and depictions or representations of boundary lines of real property or rights and interests in real property both on the surface and below ground already, by West Virginia state law, clearly require certification by a West Virginia licensed professional surveyor. These products are part of both NPDES and construction plans.

I recommend that the WVDEP revise §35-8-3.1 and §35-8-3.2 of the subject rule to **require that these plans be certified by both a West Virginia licensed professional engineer and a West Virginia licensed professional surveyor**, each certifying their respective product contained in the plans.

This would not only protect the legal interests of the WVDEP, the landowners, mineral owners and the contractors involved but would also protect the legal interests of the both the engineers and surveyors involved.

Thank you for your consideration.

John L. Green, PS

Hatch Mott MacDonald
405 Capitol Street
Suite 906
Charleston, WV 25301
T 304.356.3002
F 304.357.9222
C 304.552.4443

Attention:

This e-mail and any files transmitted with it from Hatch Mott MacDonald are confidential and intended solely for use of the individual or entity to whom they are addressed. If you have received this e-mail in error please

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:11 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments regarding Title 35 CSR 8

From: Thomas Meeks [mailto:tmeeks@slssurveys.com]
Sent: Tuesday, October 11, 2011 7:21 PM
To: DEP Comments
Cc: Greg Smith; Vic Moyers
Subject: Comments regarding Title 35 CSR 8

To DEP whomever this may concern,

Hello, my name is Thomas Meeks; I am currently the surveying manager with Smith Land Surveying. Smith Land Surveying has been in business for the past 35 years and has approximately fifty employees working on or with the oil and gas industries development. My predecessors Greg Smith and Vic Moyers (both licensed professional surveyors and both past presidents of the West Virginia Society of Professional Surveyors) have worked in the West Virginia oil and gas industry for the past thirty-five years and have submitted thousands of well plats and Reclamation Plans. We believe we have played a vital role in progress and the production throughout years for the oil and gas industry.

I am writing to you express my concerns with the wording in 35-8-3.1 and 35-8-3.2 "in accordance with plans certified by, a West Virginia registered professional engineer". We feel that it is unjust that the Professional Surveyors are being left out of this rule. Also, we believe we have the qualifications to work on and design the necessary Erosion and Sedimentation Control Plans and Site Construction Plans. Surveyors have been working with the oil and gas industry since the Surveyors licensing law in 1969, to let this rule go into law would be detrimental to the Professional Surveyors role in the industry.

We suggest that the phrase 35-8-3.1 and 35-8-3.2 "in accordance with plans certified by, a West Virginia registered professional engineer" be amended to read "in accordance with plans certified by, a West Virginia Registered Professional Engineer or West Virginia Registered Professional Surveyor."

In closing please reconsider the wording mentioned above and please keep the Professional Surveyors in mind, whose livelihood would be affected tremendously.

Thank you for your time.

Sincerely,
Thomas Meeks and Vic Moyers
304-462-5634
226 W. Main St.
Glenville, W.V.

Please make note of our new domain name slssurveys.com as we are phasing out our email addresses ending in rtol.net

To contact any member of our staff, please use the following format:

first initial last name @ slssurveys.com

Example: gsmith@slssurveys.com

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:11 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: COMMENTS ON WV DEP EMERGENCY RULES

From: Letty Butcher [mailto:multiflora123@yahoo.com]
Sent: Tuesday, October 11, 2011 6:48 PM
To: DEP Comments
Subject: COMMENTS ON WV DEP EMERGENCY RULES

COMMENT ON WV DEP EMERGENCY RULES:

Vertical Marcellus gas wells:

- Rules do not include vertical Marcellus gas wells.
- Vertical Marcellus well can displace on average 3-5 acres of land
- Both horizontal and vertical marcellus wells require hydrofracking
- Both are subject to a specific sequence of fluid additives, each with its own engineered purpose to facilitate the production of gas from a well.
- A vertical Marcellus well can use an approximate million gallons of water, maybe more.
- Some fracking fluids and by-products, as a result of Marcellus drilling, can affect health
- THE GUIDELINES IN THE FREDDIE MAC GUIDE 39.4 (m) WOULD PERTAIN TO VERTICAL MARCELLUS WELLS, HORIZONTAL MARCELLUS WELLS, CONVENTIONAL GAS WELLS AND GAS LEASES.
- VERTICAL MARCELLUS WELLS SHOULD BE INCLUDED IN THIS AGREEMENT

1. **No new setback distance requirements from a gas well pad to a dwelling and private water source (water well, springs and surface water bodies) .**

- Marcellus drilling has the potential to contaminate surface, soil and groundwater
- Accidents happen—leaks, spills, explosions, fires
- Gas emissions—can have a negative effect on those people living in the dwelling particularly babies, children, the sick, the elderly and pregnant women. Plus it can make daily living impossible.
- On going construction of the gas well creates noise, dust and light from the site and can make daily living and sleeping very difficult. If there are multiple wells permitted on a given pad the duration of construction only compounds the negative impacts.
NO LESS THAN 1000 FEET SHOULD BE CONSIDERED BETWEEN A GAS WELL PAD (FROM THE EDGE OF THE PAD), PRIVATE WATER SOURCES (WATER WELLS, SPRINGS, SURFACE WATER BODIES) AND STRUCTURES HOUSING LIVESTOCK.

1000 FEET SET BACK WOULD:

- Protect the environment, health and safety of the dwelling, private water sources, livestock structures of the people and animals living on the property.
- Help preserve the property value
- Help maintain marketability (ability to attract buyers to the property)

- Help keep the property bankable (banks would still want to finance a mortgage on the property)
 - Help preserve title marketability
 - Help preserve incentive that a homeowners' insurance company would want to continue to insure the property now and into the future if a gas lease or Marcellus well is on the property.
2. Surface owners are not given notice of plans to drill the gas wells until the permit is actually filed. and then is only given 15 days to comment to the WV DEP. **SURFACE OWNERS SHOULD SEE PLANS BEFORE THE PERMIT IS FILED. COMMENT TIME NEEDS CHANGED TO 60 DAYS.**
 - The drilling operator has had the benefit of professionals to draw up planned drilling operations. The average landowner may not be able to discern the plans without help of a professional's input. Getting that input may take more than 30 days.
 - What is the big hurry considering the Marcellus Shale has been entombed for millions of years? My gut is telling me that this is part of the driller's sneak attack mentality—catch the surface owner off guard, put impossible response restrictions on that surface owner so that the owner who is now under duress, goes along with whatever the driller offers. There is no place for these kinds of tactics in a democracy.
 - No hearing on permit applications
 - No power to the state to help a surface owner whose future home site is now going to be a well site. **THIS IS NON-COMPLIANT WITH FREDDIE MAC GUIDE 39.4 (m).**
 3. The Rules appear to stipulate that all drill cuttings and drilling mud be disposed of in an approved solid waste facility but then appears to provide a waiver in Section 4.3 stating that they can be managed on site in a manner otherwise approved by the Secretary with no clarification just what that would be.
 4. Having an engineer design the well pad if it is over 3 acres is a good start but just as importantly, an engineer onsite could monitor the construction and reclamation phase to ensure that there are in place the proper soil erosion and sediment controls. This is particularly important if there are not enough inspectors to do this. Also the Rules do not apply the engineering requirement to access roads and pipelines which should have been included. The gas drilling companies are apparently balking at the added expense of having an engineer on board for a more extended period of time but reclamation needs to be done right and the only way that might happen is under the watchful eye of a skilled professional.
 5. The casing and cementing requirements are not specific enough and need to be more proactive than reactive, meaning putting the standards in place to prevent problems from happening instead of just going after the driller after they do.
 6. Water testing needs to include testing the chemicals used in the fracturing process.
 7. Needs to be precise guidelines that need to be required of drillers who pollute or diminish groundwater or surface water and how those waters will be replaced.
 - If the property in question is not served by public water, the water will have to be trucked in--- from where and what source?
 - Will the truck carrying the public water be a dedicated one and not one used on the gas well pad, contaminated with who knows what?

How can the property owners trust the driller to provide clean and safe water when the driller is the one who ruined the water in the first place? Needs to be provision n to let the property owner take care of how and by whom the water will be replaced and the driller must pay for it indefinitely.

- How would the water be stored on the property—would a tank have to be submerged in the yard in order to keep the water from freezing in the winter?

- What happens if snow is so deep that the truck hauling the water can't make it through and the property owners and family are without water for an indeterminate number of days or weeks? I've been snowed in for 2 weeks.

Will the driller pay for hook up from the tank to the house and all expenses?

- What happens if the driller is negligent in getting the property owners water in a timely manner?

- Who wants to live like this? Who can live like this?

- POLLUTING AND/OR DIMINISHING THE PRIVATE WATER SUPPLY ON THE PROPERTY WOULD AFFECT EVERY REQUIREMENT OF FREDDIE MAC 39.4 (m). THE LOSS OF SAFE AND CLEAN WATER ON THE PROPERTY WOULD DENY THE USE AND ENJOYMENT OF THE PROPERTY AND DRAMATICALLY REDUCE THE VALUE OF IT, NO ONE WOULD WANT TO BUY THE PROPERTY, BANKS WOULDN'T FINANCE A MORTGAGE ON IT, A MARKETABLE TITLE WOULD NO LONGER EXIST AND INSURANCE COMPANIES MIGHT CANCEL THE HOMEOWNERS' INSURANCE CONSIDERING IT TOO RISKY TO INSURE. IT WOULD BE A DEVASTATING FINANCIAL LOSS. ANY FUTURE PLANS THE HOMEOWNERS HAD FOR THE PROPERTY WOULD HAVE TO TABLED INDEFINITELY.

- THE OPERATOR SHOULD NOT BE PERMITTED TO PROVIDE A SUBSTITUTE FOR POLLUTED OR DIMINISHED PRIVATE WATER SUPPLY WITHOUT WV PUBLIC HEALTH GUIDELINES. POSSIBLY THE LOCAL PUBLIC SERVICE DISTRICT IN THE AREA SHOULD BE CONSULTED TOO.

- IF THE OPERATOR DOES NOT COMPLY WITH THE GUIDELINES, THEN A SUBSTANTIAL FINE SHOULD BE LEVIED AGAINST THE OPERATOR.

THIS IS EXACTLY WHY NO LESS THAN 1000 FEET SHOULD BE PERMITTED FROM THE EDGE OF A GAS WELL PAD AND A PRIVATE AND PUBLIC WATER SUPPLY/SOURCE. NO WAVERS, NO VARIANCES, EVER.

8. No mention of any air quality studies to detect methane, nitrogen oxide, volatile organic compounds from well sites and compressor stations. These compounds are particularly concerning when gas well pads are placed close to each other. The WVSORO states on its website that pads 40 acres apart are not acceptable. There needs to be a ruling on the distance restrictions between gas well pads.
9. Rules are a slap in the face to only require a published notice of the siting of a gas well site if it is within city limits but no requirement if the well site is in a rural area. This is discriminatory.

Letty Butcher

PO Box 732; Reedsville, WV 26547

Email: multiflora123@yahoo.com

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:11 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: IOGA Comments to Proposed Rule 35 CSR 8 [STB-WORKSITE.FID161967]
Attachments: Cover Letter to Comments of IOGA to Proposed Rule 35 CSR 8.pdf; Comments of IOGA to Proposed Rule 35 CSR 8.pdf

From: Mark D. Clark [mailto:MClark@spilmanlaw.com]
Sent: Tuesday, October 11, 2011 5:33 PM
To: DEP Comments; Martin, James A
Cc: M. Ann Bradley; M. Katherine Crockett; 'Charlie Burd'
Subject: IOGA Comments to Proposed Rule 35 CSR 8 [STB-WORKSITE.FID161967]

Mr. Martin,

For your consideration, attached in pdf format are (i) a cover letter from Charlie Burd submitting the comments of the Independent Oil and Gas Association of West Virginia and (ii) the comments of IOGA WV.

Please let me know if you have any problems opening the attachments. Unless you direct otherwise, the attached comments are not being separately mailed to your offices.

Thank you for your consideration of IOGA's comments.

Mark D. Clark
304.340.3876 - office
304.550.0278 - mobile
mclark@spilmanlaw.com

This email has been scanned for all viruses by the MessageLabs Email Security System.

October 11, 2011

VIA E-MAIL

Mr. James Martin, Chief
Office of Oil and Gas
West Virginia Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

Re: Comments on the Proposed Rule 35-08 Governing Horizontal Well Development

Dear Chief Martin,

The attached comments are filed on behalf of the Independent Oil and Gas Association of West Virginia, Inc. ("IOGAWV"). Formed in 1959, IOGA-WV is a statewide nonprofit trade association that represents companies engaged in the extraction and production of natural gas and oil in West Virginia and the companies that support these extraction and production activities. IOGAWV was formed to promote and protect a strong, competitive and capable independent natural gas and oil producing industry in West Virginia, as well as the natural environment of our state.

IOGAWV appreciates the opportunity to provide comments on the Proposed Rule 35-08 Governing Horizontal Well Development. The Proposed Rule 35-08 can have an enormous impact on the ability of oil and gas operators in West Virginia to efficiently and economically develop the natural gas resource in shale and other formations. Developing this resource using new and constantly evolving technology in a manner that yields great benefits for our state and is protective of the environment presents challenges both to the operators and to the regulators of our industry. Therefore, we urge that you give careful consideration to the comments provided. We, of course, stand ready to provide any additional information that would assist the agency in addressing the comments and concerns raised in the attachment.

Again, IOGAWV appreciates the opportunity to provide these comments and respectfully requests that they be given deliberate consideration.

Very truly yours,

Charlie Burd

Charlie Burd
Executive Director

COMMENTS OF IOGAWV ON THE PROPOSED RULE GOVERNING HORIZONTAL WELL DEVELOPMENT - 35 C.S.R. 8

These comments are filed on behalf of the Independent Oil and Gas Association of West Virginia, Inc. ("IOGA") on the "Horizontal Well Development Rule 35 C.S.R. 8 (the "Proposed Rule"). Formed in 1959, IOGA is a statewide nonprofit trade association that represents companies engaged in the extraction and production of natural gas and oil in West Virginia and the companies that support these extraction and production activities. IOGA was formed to promote and protect a strong, competitive and capable independent natural gas and oil producing industry in West Virginia, as well as the natural environment of our state. IOGA has been in existence during times of boom and bust and its members have a long history of driving innovation in exploration and development of West Virginia's oil and gas reserves. Our members also have a longstanding tradition of working with WVDEP and its predecessor agencies to help regulators understand these innovations and how to regulate new techniques in a manner that protects the environment while promoting the economic development so crucial to West Virginia. It is in this spirit of innovation and partnership that IOGA offers these comments.

An Emergency Rule which mirrors the Proposed Rule was filed with the West Virginia Secretary of State's ("WVSOS") office on August 22, 2011, and became effective on August 29, 2011. On September 8, 2011, the West Virginia Department of Environmental Protection Office of Oil and Gas ("DEP") filed the Proposed Rule with the WVSOS along with a notice of public hearing on the Proposed Rule to be held on October 11, 2011, at 6:00 p.m.

IOGA appreciates the opportunity to provide these comments on the Proposed Rule. Recognizing that the Emergency Rule is identical to the Proposed Rule, any of the comments provided below which reference the Proposed Rule would apply equally to the Emergency Rule.

A. General Comments

The Importance of Appropriate Rules Governing Marcellus Shale Wells Drilled Using Horizontal Technology

As an initial matter, IOGA would like to emphasize that its members recognize the critical importance of safe and effective exploration, drilling and operation of oil and gas wells, including wells drilled using horizontal technology to develop the shale formation generally referred to as Marcellus. IOGA appreciates and supports the stated scope of the Rule which is to "govern and apply to permit application requirements, operational rules to protect water quantity and quality, and public notice procedures for oil or natural gas operators developing horizontal wells." Decades of experience in developing oil and gas resources in West Virginia and across the United States have demonstrated that wells can be drilled in a safe and efficient manner that will not adversely impact valuable water resources.

Independent of all regulatory requirements, oil and gas operators are motivated to safely and efficiently drill and operate wells. Well drilling operations that reflect best management practices and insure the physical integrity of the well yield multiple benefits including protecting

worker safety, avoiding adverse impacts to water resources and the environment, and securing the significant financial investment that has been made in the well.

IOGA supports reasoned and focused regulation of permitting and operation of Marcellus shale drilling, fracturing and production activities, including the use of horizontal well technology and in the comments, recommendations and requests for clarification that follow offer the expertise and experience of our member companies in assessing the effectiveness of the Proposed Rule.

Subsequent to the initiation of Marcellus shale development activities in West Virginia, the DEP has issued a number of directives and guidance documents targeting those activities. Both the Emergency Rule and the Proposed Rule fail to address the effect of this rulemaking initiative on these prior actions by the agency. IOGA requests that DEP identify any and all directives and/or guidance issued and effective prior to the Emergency Rule and indicate whether they are superseded or modified, in whole or in part, by these rulemaking activities.

As to the Emergency Rule, Section 35-8-1.5 states that applications submitted after the effective date of that rule shall be subject to the provisions of that rule. IOGA seeks clarification that for all well work applications filed prior to August 29, 2011, the rules and requirements in existence at the time of the application will govern, including modifications or amendments of such applications that may occur after August 29, 2011.

B. Specific Comments

1. The Definition of Horizontal Well – All Horizontal Wells Are Not the Same - § 35-8-2

It is apparent from the stated scope of the Proposed Rule and issues raised by various stakeholders that the impetus for this rulemaking was and is gas exploration and drilling activities that can have greater impacts with regard to surface disturbance, the use of water resources and local roadways. However, this is not the case for all horizontal well drilling activities. Certain under-pressured formations, like the Lower Huron, are drilled horizontally, but are not hydraulically fractured, and therefore require much less water and surface area to drill and complete. Thus, IOGA recommends that the Proposed Rule be targeted specifically at the exploration and drilling activities that can have these greater impacts. To this end, IOGA suggests incorporating into the definition of "Horizontal Well" (§ 35-8-2.2) the anticipated or actual use of 210,000 gallons or more of water from West Virginia sources in drilling or fracturing activities. Through the adoption of this definitional change, the Rule would address those operations that have been the impetus for this rulemaking and will avoid imposing requirements that may be unnecessary or inappropriate for other horizontal drilling operations that do not use water resources in excess of more conventional drilling completion techniques and, consequently, involve less surface disturbance as well. Indeed, imposing inappropriate or unnecessary requirements may impede or discourage the development of other formations which may yield benefits to our State that will be as great or greater than the benefits of the development of the Marcellus Shale.

For these reasons, IOGA urges DEP to adopt the following definition: “‘Horizontal well’ means any well, other than a coalbed methane well, which is drilled using a horizontal drilling method and the drilling, fracturing or stimulating of which requires the use of water obtained by withdrawals from waters of this state in amounts that exceed 210,000 gallons during any month.”

2. Permit Application Requirements for Operators Developing Horizontal Wells -
§ 35-8-3

This section establishes more detailed requirements for the erosion and sediment control (“ESC”) plan and adds requirements for a site construction (“SC”) plan, water management (“WM”) plan and well site safety (“WSS”) plan (collectively, the “Plans”) if certain threshold conditions exist. Preliminary questions include:

- (i) How will DEP administer the overall well work permit review and approval process?
- (ii) Will each of the required Plans submitted with the application be separately reviewed and evaluated?
- (iii) How promptly does DEP anticipate being able to review and approve applications containing the additional Plans being required?
- (iv) Does the undated 42 page document titled “West Virginia Erosion and Sediment Control Field Manual, West Virginia Division of Environmental Protection Office of Oil and Gas, Charleston, West Virginia” which appears on DEP’s website at <http://www.dep.wv.gov/oil-and-gas/GI/Forms/Documents/Erosion%20and%20Sediment%20Control%20Field%20Manual2.pdf> represent the current “best management practices for alleviating soil disturbing activities during oil and gas industry activities”? Can operators rely upon that Field Manual to aid in the development of approvable ESC plans?

a. Making the Plans conditions of the well work permit without flexibility to revise them in the field is impractical and unrealistic

IOGA has great concerns with the language of the Proposed Rule stating that the required Plans “shall be considered conditions of the permit and enforceable as such.” The well work permit application and related Plans are necessarily based upon projections and estimates of work to be performed up to 24 months following the application date. Because the Plans can only reflect projections and estimates based upon the operator’s experience, enforcing such projections and estimates as literal conditions of the well work permit is unrealistic. There must be a mechanism for making adjustments in the field to the specifications in the Plans. The prior permitting process has necessarily allowed operators to adjust their operations to the circumstances in existence when work begins. For example, requiring an operator to include in the ESC plan a general sequence of events that describe in relative terms how and when each construction phase will occur and when each erosion and sediment control best management practice (“BMP”) will be installed, or requiring an operator to include in the WM plan the latitude and longitude of each anticipated water withdrawal location, anticipated volume of each water withdrawal and anticipated months when water withdrawals will be made may arguably

result in multiple amendments or modifications of the permit if such estimates are not completely accurate.

In the alternative, IOGA requests that the Rule expressly authorize reasonable and practical modifications of the Plans subject to approval by the oil and gas inspector, based upon conditions existing in the field at the time work is being performed, without creating the enormous delays and added expense that would result if work had to be halted while an amendment or modification to the well work permit is pursued. This revision to the Proposed Rule is supremely practical and would conform to current practice and reduce administrative burdens for both the DEP and operators while still requiring DEP approval of the field adjustments by participation of the oil and gas inspectors. IOGA and its member operators understand that a verbal notification requirement of such field adjustments set forth in the Proposed Rule would be an acceptable alternative.

b. Requiring review and approval of a Water Management Plan constitutes an unauthorized regulation of water withdrawals

While IOGA recognizes that requiring some amount of information reporting to DEP may be authorized and appropriate under existing statutes, the requirement of review and approval of a WM plan regulating the withdrawal of water from the waters of this State exceeds the DEP's authority under the State Water Pollution Control Act, W. Va. Code §§ 22-11-1 et seq., and the Oil and Gas Act, W. Va. Code §§ 22-6-1 et seq., and under certain circumstances is contrary to the common law riparian rights doctrine. Does DEP believe it has the same authority to regulate all users of waters in West Virginia? Will farmers, golf course owners, coal operations, electric power plants and other industrial operations have the same requirements applied to their water withdrawals? While the Legislature has given the DEP the authority to collect information regarding water withdrawals and water uses under the Water Resources Management and Protection Act, W. Va. Code §§ 22-26-1 et seq., it has not been given the authority to regulate or control water withdrawals and water uses.

Without conceding that DEP has the authority to regulate water withdrawals by oil and gas operators, IOGA has identified several issues and questions regarding the water management plan portion of the Proposed Rule.

c. Water Management Plan Issues

Sections 3.3.b and 3.3.c. require operators to include "anticipated volume" and "anticipated months," respectively, as part of the WM plan. IOGA suggests that "reasonable estimate of" be substituted for "anticipated" to clarify that the volume and months are simply estimates at the time the application and WM plan are filed.

Section 3.3.f.1. requires the "identification of current designated and existing water uses, including any public water intakes within one mile of the withdrawal location." Does this requirement include seasonal recreational uses that may or may not be known or apparent to the operator? Does this requirement include other oil and gas operators whose activity may not be known or apparent? Will DEP make information available about designated and existing uses of

waters of the State? These issues can be addressed by inserting at the end of the subsection the following: “, which uses are known to the applicant at the time the well work permit application is submitted.”

Section 3.3.f.2. requires a “demonstration, using methods acceptable to the Secretary, that sufficient in-stream flow will be available immediately downstream of the point of withdrawal” and that “[s]ufficient in-stream flow is maintained when pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal.” Please identify and explain the “methods acceptable to the Secretary” for making the required “demonstration.” Please clarify or confirm that use of the United States Geological Survey real time database which includes data on current levels of stream flow, which can be found at http://waterwatch.usgs.gov/new/?state=wy&map_type=real, is an approved basis for making the “sufficient in-stream flow” demonstration.

Section 3.3.f.3. requires “[i]dentification of the methods to be used to minimize significant adverse impact to aquatic life.” Similarly, please identify and explain the methods acceptable “to minimize significant adverse impact to aquatic life.”

3. Operational Rules to Protect Water Quality and Quantity - § 35-8-4

Comments regarding DEP’s authority to regulate water withdrawal at B.2.b. above are incorporated by reference in this section B.3.

Section 4.1.a. is duplicative of § 3.3.f.2. One of these provisions should be eliminated.

Section 4.1.c. requires that operators conduct “oil and gas operations using BMPs so as to prevent to the extent practical” The word “prevent” is an unattainable standard and the more practical word “minimize” should be inserted instead of “prevent.”

Section 4.2.a. requires, as a condition to water withdrawal, notice to the Office as described by the Secretary within 48 hours but no less than 24 hours prior to withdrawal. IOGA requests that DEP provide for notification by calling a telephone number designated for the purpose of receiving such notices. Moreover, the section can be read to mean that notice to the Office is required each time that water is withdrawn regardless of volume which is an undue administrative burden when the first notification should be adequate at least for the month period during which 210,000 gallons or more of water is to be withdrawn.

Section 4.2.b. requires that surface water withdrawal locations and facilities be identified by a sign disclosing the location as a water withdrawal point and the name and telephone number of the operator. IOGA suggests that the signs be required during periods of active use of the withdrawal point only.

Sections 4.2.c.1.A and B require the operator to record and retain records of the quantity of flowback water from hydraulic fracturing and the quantity of produced water from the well. IOGA requests both definitions of terms and clarification of the time period that the operator is required to record this information. For “flowback water,” IOGA recommends that this term be

defined as all water returned from the well within 30 days of completion of fracturing. All water returned from the well thereafter would be deemed “produced water.” With regard to the period during which the operator is required to track and record the production of returned waters, IOGA recommends that this tracking and recording obligation for produced water be limited to 12 months and that all document retention be limited to 3 years.

Section 4.2.c.1.C requires the operator to record and retain the “method of management or disposal of the flowback and produced water.” IOGA recommends that DEP encourage reuse and recycling of flowback and produced water by expressly authorizing the reuse of these waters by the operator and others in ongoing drilling operations. This waste management practice would maximize the value of the State’s water resources and ultimately reduce the quantity of water that would require disposal.

Section 4.3 requires that “[a]ll drill cuttings and associated drilling mud” from well sites that disturb 3 acres or more of surface or use 210,000 gallons or more of water during any one-month period “shall be disposed of in an approved solid waste facility or managed on-site in a manner otherwise approved by the Secretary.” By memorandum dated March 23, 2010 regarding Drilling Pit Reclamation, Office of Oil and Gas Chief James Martin authorized the disposal of Marcellus shale drill cuttings by solidification and use of liners on the well site. We assume and seek confirmation that the disposal method referenced in Chief Martin’s memorandum is a “manner otherwise approved by the Secretary” for purposes of the Proposed Rule. Furthermore, IOGA asks that the DEP provide its factual and scientific basis for requiring special handling of drilling cuttings as defined in this Section.

Section 4.4, titled “Casing and Cementing Standards,” incorporates in part the language contained in the Casing and Cementing Standards issued on August 25, 2011, to which IOGA submitted comments to DEP on September 30, 2011. IOGA incorporates those comments herein by reference, as applicable.

4. Public Notice Procedures – § 35-8-5

Section 35-8-5 requires a well work applicant for a well located within a municipality to place a Class I legal advertisement in a newspaper of general circulation in the area where the well is proposed to be located at the time the well work application is filed. This section also prohibits the issuance of a well work permit until at least 30 days after notice has been provided to the public. DEP has no statutory predicate for requiring notice by applicants beyond that required by statute, *See* W. Va. Code §§ 22-6-9 and -12. Of course, DEP may publish notice of well work permits in appropriate newspapers if it so chooses. Furthermore, this section doubles the minimum waiting time before DEP may issue a permit which is inconsistent with current W. Va. Code § 22-6-11.

C. Conclusion

Because the Proposed Rule will have an enormous impact on the development of the Marcellus shale play and other plays where horizontal wells will be employed, we believe it is critical that DEP immediately initiate an open dialog with operators and service companies with

the goal of modifying and developing regulations that are effective and practical, and do not unnecessarily impede the development of the incredibly valuable resource that the Marcellus shale play represents for all West Virginians. Moreover, rather than use the “one size fits all” approach for horizontal well development, we recommend that DEP develop regulations that will be applied to horizontal wells completed using hydraulic fracturing techniques separately from standards that apply in other, especially non-shale, formations.

We appreciate the opportunity to provide these comments to DEP and are hopeful that they will be given due consideration by DEP.

INDEPENDENT OIL AND GAS ASSOCIATION
OF WEST VIRGINIA

3154100

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:11 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on Horizontal Drilling Rules Pursuant To 35CSR8
Attachments: DEP DOT FRACK WASTE AGREEMENT.pdf

From: One Citizen [mailto:01citizen@gmail.com]
Sent: Tuesday, October 11, 2011 5:21 PM
To: DEP Comments
Subject: Comments on Horizontal Drilling Rules Pursuant To 35CSR8

WV Department of Environmental Protection

601 57th Street East

Charleston, WV 25304

(304) 926-0925

Jesse Johnson

3826 New Hope Rd

Elkview Wv 27071

Oct 11, 2011

**Comments on Horizontal Drilling Rules Pursuant To 35CSR8 As
Currently Proposed.**

**This purpose of this paper is to demonstrate why the WV
Department of Environmental Protection should immediately revoke
all hydrofracking permits. It is also to show why the DEP should
strongly recommend that the WV legislature the need to impose an**

emergency rule requiring an immediate moratorium on the DEP's issuance of all new hydrofracking permits.

Under current state law as well as the new rules which have currently been proposed, the use of hydrofracking technology in West Virginia poses an ever growing threat to our drinking water. This threat is due to the ongoing unmitigated imposition of waste fluids known to contain radiation levels of as much as 2,000 to 3,000 times the normally accepted amount for drinking water, not to mention other extremely hazardous contaminants.

According to its mandate the DEP has no other choice but to immediately shut down all hydrofracking in WV until proper regulations are passed and enough DEP field inspectors are hired to adequately protect the public from this substantial health hazard.

According to its own "Citizen's Guide", the mission of the West Virginia Department of Environmental Protection is to "promote a healthy environment". In that handbook, the DEP also proclaims its responsibility *to use all available resources to protect and restore our environment*. Until and unless the DEP at the very least warns the public of this growing threat, and does its level best to properly inform each and every state lawmaker of the ongoing risk they've taken thus far by not diligently regulating this industry, the WV DEP will once again have miserably failed to carry out its mandate, *in essentially the same fashion as when the DEP and state lawmakers failed to form and implement adequate policy regarding coal slurry injection*.

I am specifically referring to the disposal of industrial wastewater and this State's established history of permitting extraction industries to poison WV communities. The DEP's miserable failures regarding coal industry's waste disposal by slurry injection has now for years been paralleled by its lack of diligence by never quite getting around to properly regulating our oil and gas industry.

Just how bad is it?

According to a recently published study by West Virginia University and the Oil and Natural Gas Association, ***between 2002 and 2008, West Virginia led the nation in the number of gas drilling permits issued.*** More than 2,800 permits were issued for new drilling in 45 of the state's 55 counties. But how can that be when state legislators have publicly admitted that there aren't even enough Department of Environmental Protection inspectors to properly certify that our existing wells are safe, much less inspect all the new drill sites?

As of February this year, the DEP had only 17 field inspectors to cover this new drilling activity in addition to WV's 57,000 wells which already produce gas.

BY comparison, in 2009 the Pennsylvania Water Resources Research Center determined in its report that the wastewater from Marcellus drilling operations was so hazardous to Pennsylvania's Monongahelia and Susquehanna combined watershed area that the background radiation from dumped wastewater filtering into that state's own publicly-owned treatment works that the study recommended that ***their watershed could support no more than 16 hydrofracking operations per year. ONLY SIXTEEN!***

Since that watershed study covered more area than all of the Marcellus region in West Virginia, would it not be at least be prudent to take a time out to rethink the DEP's blanket licensing of over 2,800 new drill sites?

Our legislators are apparently simply relying on the self-serving assurances of industry advocates voiced during last year's legislative session that since drilling began in the 1950s *"there's not been one proven case of groundwater contamination from fracking."*

I cannot find one instance where the DEP has at least notified lawmakers or their public that “proof” of contamination has been actively obscured by the standard strategy which extraction industry lawyers typically require their victims to forfeit their cash settlement if they talk about their poisoned wells after agreeing to not go to trial. I also have never seen any reports by the DEP that there have been instances of contamination, either proven or alleged.

Despite the use of what I call “***hush money***” by industry lawyers, proof of just such damage has recently surfaced.

On September 15 of this year the environmental group Riverkeeper released a report to EPA summarizing more than 100 cases of contamination related to natural gas drilling around the country. That report cites cases where federal and state regulators identified gas drilling operations as the known or suspected cause of groundwater, drinking water, and surface water contamination. That report includes more than 30 investigations of stray gas migration from new and abandoned wells in Pennsylvania and five explosions between 2006 and 2010 that contaminated ground or surface water.

Craig Michaels, one author of the report stated, “Despite industry rhetoric to the contrary, the environmental impacts of hydraulic fracturing are real.”

Also included are details of a lawsuit filed in Susquehanna County claiming that water wells became contaminated with high levels of barium, manganese and strontium in 2008. Those contaminated water wells are less than 2,000 feet from the gas well. The suit claimed that the child who has been sickened has shown neurological symptoms “consistent with toxic exposure to heavy metals.” It's a statement which should sound far too familiar to anyone whose even casually witnessed

the horrifyingly inept actions of the WV DEP regarding coal slurry injection.

Between March, 2009, and September, 2010, Chesapeake Energy reportedly injected more than 10.6 million gallons of brine and hydraulic fracturing fluid into a holding well. Although Chesapeake isn't sure what caused the series of 8 earthquakes in Braxton County, where earth tremors prior to Chesapeake's operation were extremely rare, the company did voluntarily agree to reduce the volume of fluid it's injecting. That underground injection site near Frametown, WV, has been a DEP-permitted disposal well since 2008. Geologists suspect that high pressure and wastewater from fracking lubricated old fault lines at that containment well site. Meanwhile, in a statement to the press in Pennsylvania in reaction to growing concerns over radiation levels rising at alarming rates in local streams, Chesapeake Energy publicly volunteered to reduce the amount of drilling waste fluids by claiming their intention to "recycle" it.

We may never know whether Frametown's permitted dump site contains fracking fluids from Pennsylvania. However, apparently Chesapeake's effort to relieve Pennsylvania's concerns over their citizens' health included trucking it down to Clarksburg, WV, to be processed through that city's municipal waste treatment plant. The problem with that "solution" is that few, if any, city waste treatment plants, whether in West Virginia or Pennsylvania, have any way to even measure radiation, much less any equipment to abate it.

So not only did the Pennsylvania DEP fail to take steps to ascertain exactly what Chesapeake intended to do with its frackwater, West Virginia's current proposal apparently will continue to let Chesapeake and others get by basically with whatever they please, as long as they contain it on within rural drill sites. Apparently the city of Morgantown has raised enough awareness that poisoning municipalities may now be ruled out by the new proposed regulations.

As it now stands, the WV DEP has long been in the business of issuing permits to poison the people of West Virginia in essentially the same

fashion that it still grants coal operators the right to inject slurry into coal mines that have been mined out.

How can the WV Department of Environmental Protection or Chesapeake Energy or, for that matter, Frametown's area residents who rely on well water be certain that they're not already drinking dangerous levels of irradiated water?

There's a reason why Marcellus shale drillers in Pennsylvania sent their fluids to wastewater treatment plants in West Virginia and dispose of the dewatered drill cuttings in West Virginia landfills.

There is a reason that both New York and New Jersey banned the practice of hydraulic fracking for natural gas reserves.

There is a reason why over 250+ physicians and other health care professionals recently sent a letter to New York Gov. Andrew Cuomo requesting more study of shale gas drilling's affects on health before approving new regulations and issuing permits to drill.

There can be no doubt that hydrofracking is dangerous when tests conducted on behalf of a concerned group of citizens living near a municipal landfill in Elmira, New York revealed that ***the produced water from these wells contain as much as 15,000 pCi/L (picoCuries per liter) of radium. The drinking water standard for radium is 5 pCi/L.***

Within the industry, it's been long known that the entire Marcellus Shell emits a relatively high level of radiation. That high radiation "signature" is how geologists can easily identify its location. Hydrofracking has actually been around for some forty years now. That state lawmakers are just now getting around to seriously attempting regulate this very toxic industry speaks volumes about the power that the oil and gas lobby has over our political system. Those of us who have lived here long enough realize that the state of West Virginia has historically dealt with the problem of frack

waste fluids by simply imposing a slap-on-the-wrist fine if companies are caught dumping them into rural streams.

The Radioactive Waste Management Associates Report on Radioactivity in the Marcellus Shale, commissioned by the lawyer representing a coalition of concerned citizens in New York provides all the details anyone might need to see why a moratorium on drilling should be imposed in West Virginia ***as soon as possible.***

Under Section 4.3, the proposed rule allows for waste fluids to be "managed on-site in a manner otherwise approved by the Secretary," There is no limitation to what the Secretary may approve. "Approved solid waste facility" is a complete mystery, and "or managed on-site in a manner otherwise approved by the Secretary" means pit burial. "Approved by the Secretary" is not acceptable. The secretary is a political appointee who takes orders from elected politicians who depend on campaign donations.

If pumping 3,000 times the maximum safe amount of radioactivity in our drinking water is unacceptable, then spraying it onto our roads, as the attached memo* from our DEP to our DOT apparently was meant to allow, is downright heinous. Rule 3.3.d. conspicuously **does not require companies to specify its intended place of wastewater disposal in the water management plan.** So where will they pump this waste fluid? Apparently our DEP thought it would be fine to spray on our highways as a de-icing plan, without regard for any effect that irradiated vapor from that brilliant plan might have on school children along our many rural bus routes

The proposed rule has no requirement for site operators to state the specific place or method of wastewater disposal in their required water management plan. The huge volumes that they're forced to deal with indicates a very high likelihood that, as we all know they have in the past, when they run out of containment spaces to secure this waste fluid, they'll simply find a spot along

any rural stream to dump it, hoping that the locals don't report them but moving on to another spot if they do.

What can our state leaders be thinking by leaving us so unprotected? Surely they realize that there are no Federal protections since "Hydraulic fracturing" was exempted from the Clear Water Act and other environmental laws with the passage of the Energy Policy Act of 2002.

On second thought, why should we expect our state legislature or our governor to act any differently from the way they did over the Coal Association's crazy proposal to inject toxic sludge into abandoned coal mines several years ago? The result of that experiment is still being played out in the courts even as entire communities were poisoned.

Similar to the possibility of implementing regulations requiring the safe handling of waste from coal operations, there have long been methods developed for the safe mitigation of frack fluids. Yet here in West Virginia no one seems to want to talk about them, **EVEN THOUGH INSTITUTING THEM MEANS MORE JOBS FOR WEST VIRGINIANS.**

The EPA generally recommends building public and private treatment facilities specifically designed to handle the waste, noting that because of its hazardous nature and longevity of contaminants, such facilities will need to install tertiary treatment (e.g. reverse osmosis or evaporation/crystallization).

With regard to drinking water supplies, in Rule 3.3.f.2 there are no expanded set backs from homes, nor are testing parameters proposed. Currently drillers are required to test for constituents in drilling muds and fluids, but not for chemicals or chemical compounds commonly used in hydraulic fracturing. Also, since a single hydrofracking operation often uses up to 5 million gallons of fresh water from our local streams, there should be a clarification of replacement requirements for damaged or lost groundwater/ surface water. In light of recent reports from Louisiana of 13 head of cattle being wiped out from a spill so small that it didn't meet the minimum reporting requirement to that state's agency, the importance of properly expanding setbacks and requiring proper and complete tests can't be underestimated.

Sincerely,

Jesse Johnson

Charleston, WV

attached: Memo dated July 20, 2010 from DEP to DOT

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:11 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: My comments
Attachments: TU_final_comments_WV_DEP_proposed_legislative_rule_10112011.pdf
Categories: Complete

From: Jeff [mailto:motrout@aol.com]
Sent: Tuesday, October 11, 2011 5:06 PM
To: DEP Comments
Subject: My comments

My comments are attached.

JB Witten
Rt 1 box 113
Elkins, WV 26241

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:12 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Trout Unlimited comments on WV DEP Proposed Rule Changes for Horizontal Drilling
Attachments: TU final comments WV DEP proposed legislative rule_10112011.pdf

From: Katy Dunlap [mailto:KDunlap@tu.org]
Sent: Tuesday, October 11, 2011 2:54 PM
To: DEP Comments
Cc: Elizabeth Maclin; rkesling@ma.rr.com
Subject: Trout Unlimited comments on WV DEP Proposed Rule Changes for Horizontal Drilling

To Whom It May Concern:

Please find attached comments from Trout Unlimited (TU) and the West Virginia Council of TU on the West Virginia Department of Environmental Protection proposed Legislative Rule, SERIES 8, *Rules Governing Horizontal Well Development*. Please confirm receipt of this email and the attached comments. Do not hesitate to contact me if you should have any questions.

Regards,
Katy Dunlap

Katy Dunlap, Esq.
Eastern Water Project Director
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Elizabeth Maclin
Vice President for Eastern Conservation

Randy Kesling
Chair of the Marcellus Shale Committee for the West Virginia Council of TU

October 11, 2011

Public Information Office
WV Department of Environmental Protection
Office of Oil and Gas
601 57th St., S.E.
Charleston, WV 25304
DEP.comments@wv.gov

RE: Trout Unlimited Comments on West Virginia Department of Environmental Protection's Legislative Rule, SERIES 8, Rules Governing Horizontal Well Development

To Whom It May Concern:

Trout Unlimited (TU) and the West Virginia Council of TU are encouraged that the West Virginia Department of Environmental Protection (DEP) has taken measures to improve the state's management of horizontal well development through its proposed legislative rule.¹ Although definitely a step in the right direction, the proposed legislative rule falls far short of providing an adequate level of protection for West Virginia's streams, rivers and other water resources.

Specifically, the rule adds language to the DEP's Office of Oil and Gas permitting program that requires well operators to include in their permit applications: an erosion and sediment control plan, a well site safety plan, and an engineer-certified site construction plan. These are critical planning components that are necessary for effective and efficient resource management.

The rule requires permit applicants to submit a water management plan if they intend to use more than 210,000 gallons of water during any one-month period—a significant

¹ W. Va. CSR 35-8-1 et seq. (August 22, 2011)

improvement over the current requirement that drilling companies merely report withdrawals through a web-based reporting system if they intend to use at least 750,000 gallons to hydraulically fracture a well in any given month. Water management plans will provide useful information about the gas companies' water sources, including: whether the source is surface or ground water; the specific location each anticipated withdrawal; anticipated volume of each withdrawal and anticipated months withdrawals will be made; and planned management and disposition of wastewater from fracturing and production activities. TU supports the enhanced planning requirements for surface water withdrawals—including identification of designated and existing water uses, and of the methods to be used to minimize significant adverse impact to aquatic life. In particular, TU commends the requirement that applicants demonstrate, prior to withdrawing water from a stream or river, that sufficient in-stream flow will be available immediately downstream of the point of withdrawal.

Further, TU is also encouraged by the requirement that a well operator disclose the chemicals it anticipates using in the fracturing process and, upon well completion, the listing of actual additives it used. However, the rule fails to establish a clear timeframe for the ex post disclosure. The rule requires only that the list be included in the completion report, pursuant to W. Va. Code § 22-6-22, within a "reasonable time" after the completion of the drilling. To provide necessary information to emergency personnel and conservation officers in the event of a spill or accident, this rule should set a firm 24-hour deadline for submission of a well completion report.

TU supports the proposed new operational language that instructs companies to protect the quality and quantity of surface and ground water systems both during and after drilling operations and during reclamation.² Specifically, the rule requires the use of best management practices (BMPs) during oil and gas development operations to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to stream flow or runoff outside the permit area. Additionally, TU commends the requirement that operators must "verify, using methods deemed acceptable to the Secretary, that sufficient flow exists to protect designated uses of the stream" within 24 to 48 hours *prior* to withdrawing water.

TU further supports rule 4.4, which requires the operator to construct "all horizontal wells in a manner that will provide for control of the well at all times, prevent the migration of gas and other fluids into the fresh groundwater and coal seams, and prevent pollution of or diminution of fresh groundwater." The heightened casing and cementing standards are a critical first step to reducing the likelihood of the migration of gas and fluids into our state's fresh ground water and coal seams.

Importantly, the rule also adds some basic disclosure requirements that are necessary for the protection of West Virginia's water resources and trout populations. In particular, TU agrees that thorough and accurate record-keeping is integral to ensuring that the health of our

² Proposed Rule 4.1

state's rivers and streams are not compromised by irresponsible gas development. To that end, operators must provide detailed records of flowback quantities, and methods of management and disposal of wastewater. Proper record-keeping will help to ensure that drill cuttings and drilling mud are disposed of in an approved solid waste facility.

The requirement that well pads larger than three acres in size be designed by a professional engineer is important—as well pad sites of this size often involve clearing of forests and can lead to increased erosion and sedimentation.

Despite the aforementioned significant improvements, the emergency rule fails to address many critical areas and thus does not provide the necessary protections for West Virginia's natural resources from gas drilling. First and foremost, the water plan requirement provides no limitations on the sources, quantities, methods, location, or timing of withdrawals for drilling operations. There is no requirement that water be used in basin, or that wastewater must be recycled or reused. Perhaps more importantly, there is no requirement that the DEP consider the cumulative impacts of proposed withdrawals when it makes permitting decisions. The rule does not require well operators to use water in a responsible manner, and therefore fails to provide the necessary substantive protection of West Virginia's water resource.

Second, the requirement that an engineer must oversee actual construction of the well—initially included in the Governor's Executive Order—was unfortunately omitted from this rule. As there are too few state inspectors to oversee well site construction, this omission is a serious flaw. Second, the engineering design requirement is specific to well pads and fails to cover well access roads, storage areas or pipelines, which are frequently as problematic as well pad sites.

Third, the rule creates regulatory uncertainty by leaving too much to agency discretion. For example, rule 3.3.f.2. requires the water management plan to demonstrate the use of “methods acceptable to the Secretary, that sufficient in-stream flow will be available immediately downstream of the point of withdrawal.” Yet, there is no guidance as to what methods the Secretary may or may not find acceptable. The rule indicates that sufficient flow exists when a “pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal.” However, the rule fails to address what may or may not qualify as “protective,” and provides no instruction as to how or when flows are to be measured. The omission of specific criteria for instream flow measures and practices is a critical flaw, suggesting a lack of commitment to DEP's mission to protecting West Virginia waterways.

Additionally, the discretion reserved to the agency in rule 4.3 weakens the new waste management standards. That rule calls for all drill cuttings and drilling mud to be disposed of in an approved solid waste facility – or “managed on-site in a manner otherwise approved by the Secretary.” There is no indication of what the Secretary may or may not approve—leaving the public in the dark about how drilling waste will be treated and disposed of. On a related issue, the Executive Order authorizing this rulemaking reaffirmed the DEP's policy of

prohibiting land application of any return fluids from Marcellus fracking operations. Yet, land application of these fluids is still allowed for conventional vertical shallow wells.

With regard to drinking water supplies and streams, there are no expanded set backs or testing parameters included in the rule. And there is no clarification of replacement requirements for damaged or lost groundwater or surface water supplies. It is important for West Virginia's water resources that both of these issues are addressed.

In summary, the proposed rules add some needed protections for water resources in West Virginia. However, the changes do not go far enough and in fact allow the continuation of irresponsible practices, such as allowing drill pits to be buried on site and allowing public waste water treatment plants to accept fracking wastewater at the DEP's discretion. These are areas of critical regulatory concern and should be addressed.

TU encourages the DEP to utilize this opportunity to strengthen all currently inadequate areas of the state's gas drilling regulations. Thank you for consideration of our comments and please do not hesitate to contact me at emaclin@tu.org or (703) 284-9437, if you have any questions.

Sincerely,



Elizabeth Maclin
Vice President for Eastern Conservation

Randy Kesling

Randy Kesling
Chair of the Marcellus Shale Committee
West Virginia Council of Trout Unlimited

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:11 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: WVDEP Horizontal Drilling Rules(35CSR8)

From: Robert Uhler [mailto:r.uhler@yahoo.com]
Sent: Tuesday, October 11, 2011 4:58 PM
To: DEP Comments
Subject: WVDEP Horizontal Drilling Rules(35CSR8)

While this plan is a positive first step it is inadequate to ensure safe, responsible development of Marcellus Shale. I am concerned as a citizen of West Virginia not only for my own welfare but the future of my state. As regulations and the ability to enforce them now stand, there is the strong potential for desecration of our land and waters over a period of time. Despite their many "feel good" commercials, the primary aim of multi billion dollar energy companies is PROFIT with as little expenditure as possible. They will be long gone in the future leaving us with the problems. Already many residents have suffered severe damage to their property, lifestyle, and health. We must keep in mind that the responsibility of WVDEP is to protect the environment and citizens of this state despite pressure from out of state corporations and special interest groups.

Some areas of concern follow:

- * Why do rules apply only to horizontal wells and not vertical Marcellus wells that use copious amounts of water and large areas? Also, no improvement on conventional wells.
 - * Surface owners are not notified until permits are filed with no hearing on permit application. There is no power for state to help surface owner who has lifetime investment in home that will become a gas well even though pays taxes, mortgage, insurance, etc.. After permit is granted only 15 days allowed to file comments (minus delivery times).
 - * Drilling allowed within 200 feet of a home is ridiculous ! I have been told to expect a 2 year duration of air, noise, light, and other pollution in addition to possible fires and explosions that have already occurred in the recent past. Restriction should be at least 2,000 feet.
 - * Methods for withdrawing water from surface waters should not be determined by the Secretary, but by politically independent scientists.
 - * The Secretary is a political appointee, therefore subject to political pressure in his/her decisions. Determination of withdrawal locations, disposal of drill cuttings, etc. should be made by non political experts.
 - * There are no expanded setbacks or testing parameters for drinking water supplies and drillers are not required to test for chemicals used in hydraulic fracturing.
 - * No studies of air quality for releasing of methane, nitric oxide and other volatile compounds from wells and compressors.
 - * No published notice required of proposed well sites outside of city limits. WHY?
 - * An inspector should be required on-site to sign off, verifying casing cement is properly cured.
- These are but a few of important concerns. I hope all involved will work to defend the rights, health and living standards of West Virginia citizens.

Sincerely,
(Mr. and Mrs.) Robert H. Uhler

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:12 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments on Horizontal Drilling Rules (35CSR8)
Attachments: Comments on Horizontal Drilling Rules, 35CSR8.doc

-----Original Message-----

From: Art and Pam Dodds [mailto:pamelart@hughes.net]
Sent: Tuesday, October 11, 2011 4:45 PM
To: DEP Comments
Subject: Comments on Horizontal Drilling Rules (35CSR8)

Please include our attached comments for the WVDEP Hearing on Horizontal Drilling Rules (35CSR8):

Marcellus shale contains radioactive elements and pyrite (iron sulfide) and can contain other toxic materials that, along with radioactive elements, are parameters listed in Appendix E, Table 1 of Title 47, Legislative Rule for the DEP Water Resources, Series 2 Requirement Governing Water Quality Standards. At the very least, drillers and associated workers should be wearing badges that enable them to know how much radiation they are absorbing cumulatively.

WVDEP currently requires that all industrial/commercial facilities as well as kennels and facilities with kitchens and/or multiple bedrooms (other than single family dwellings) submit an Underground Injection Control (UIC) application for septic fields. The UIC program is the only instrument in place that requires surface and groundwater monitoring to help protect WV water resources as well as a water resource inventory (residential wells, springs) surrounding the UIC area.

Federal law, "119 Statute 694 Public Law 109-58 Subtitle C - Production, Section 322", exempts underground injection of fracking fluids from the UIC program. However, West Virginia State laws can require more strict controls for regulations for West Virginia.

To protect our water resources, all gas drilling associated with fracking should be required to submit an Underground Injection Control (UIC) program application, which includes a notarized signature of the owner or company stating responsibility for any contamination of water resources caused by the drilling operations, including the fracking fluids as well as contaminants released by the Marcellus shale drill cuttings and gas.

Respectfully Submitted by:

Pamela C. Dodds, Ph.D., R.P.G. and Arthur W. Dodds, Jr.

Montrose, WV

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:12 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Marcellus gas drilling regulation

From: Daniel Musick [mailto:dmusick50@hotmail.com]
Sent: Tuesday, October 11, 2011 4:13 PM
To: DEP Comments
Subject: Marcellus gas drilling regulation

I can't understand why it isn't blindingly obvious to everyone. Gas drilling has been going on for years and years, up to and including the deep shale drilling just begun in Monongalia County and having wrought such terrible destruction in Wetzel County and elsewhere across the country. Property values have plummeted. People whose families have lived in one place for generations have been forced to sell their land and found they cannot do so, because no one will buy real estate that has been killed, where those already there must depend on outside sources of water because their own is permanently contaminated. And the industry and its supporters are still chanting that drilling will create local jobs, as if the companies don't already have trained personnel to bring in from out of state. That using more natural gas will make us less dependent on other countries for oil, as though oil and gasoline were used for the same purposes that natural gas is. Heating, yes. Cooking, yes -- but how many oil stoves have you ever seen? I've read about them and that's all. Same with oil heaters. The claim is that this natural gas will be of vital importance for maybe twenty years. And then? The gas is gone. We've kept on using gas and are desperate for more, even when we've used up all that the earth has. If we all would promote the development of solar and wind power to the extent some of us are trying to force gas drilling on the rest of us -- with all of the terrible consequences it can have for everyone -- we could all have power that was far cleaner and safer than any other sort developed so far.

As far as enacting new regulations about drilling is concerned, the people who know how to do things safely or can figure it out are the ones who should do them. It doesn't make sense to entrust lives, health, and resources to people who don't know how to protect them -- or whose interest is in making money instead of in protecting anybody.

Daniel Musick, Morgantown

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:12 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: comments on marcellus regulations
Attachments: Comments on gas drilling regulations.docx

From: Linda Ireland [mailto:irelandlinda@yahoo.com]
Sent: Tuesday, October 11, 2011 3:54 PM
To: DEP Comments
Subject: comments on marcellus regulations

Please consider the comments I have attached (and copied below)
Thank you,
Linda Ireland

Comments on gas drilling regulations

In developing Marcellus drilling regulations, we have the opportunity to lead the way in protecting our wild and wonderful hills, streams and groundwater. I recommend that we **require closed-loop systems** on large (horizontal) drilling operations. This system uses tanks and separates solids on site, and fracking fluid can be reused on the next operation. The benefits of this system include:

Benefits of Pitless Drilling:

- it eliminates unsightly and hazardous pits
- it reduces the time, energy and expense of building, fencing and reclaiming reserve pits
- it decreases the need for cuts in sensitive and hilly areas
- total surface disturbance associated with a well pad is reduced
- it eliminates risk of waterfowl and wildlife mortality related to pits
- it eliminates risk of damaging underground pipelines and utilities
- it allows drilling in areas with a high ground water table
- it virtually eliminates drilling waste

- rigs use less water per well - it can reduce water consumption by as much as 80%
- the US Environmental Protection Agency (EPA) has estimated that "closed loop systems" can reduce the volume of drilling fluids by as much as 90%
- it eliminates soil segregation, which reduces wind erosion problems
- it reduces truck traffic associated with transporting drilling wastes by as much as 75%
- it may improve relationship with surface owners
- it greatly reduced waste tracking and need for land farming operations
- drill cuttings may be put to beneficial use, e.g., if not contaminated they may provide a source of finely-ground clay for berm construction around tank batteries or other uses
- the tanks can be re-used

Source: Earthworks Oil and Gas Accountability Project
<http://www.earthworksaction.org/alternativestopits.cfm>

Not only does this process significantly reduce harm to the environment, it also provides cost savings and other benefits to the drillers. I hope you will take advantage of this unusual convergence of business interest with community and environmental interest and either require or provide incentives for closed-loop/pitless drilling.

We should also require disclosure of chemical components of fracking fluid so that waters can be tested for contamination. **Chemicals that pose serious health risks should not be allowed to be used.**

Sediment control plans should be part of the permitting process and enforced.

The amount of water used for hydrofracking operations is on an industrial scale. Withdrawal of such large quantities of water from local creeks can have a devastating effect on fish and other creek life as well as drinking water quality and quantity. **Water withdrawals on the scale used in hydrofracking should be limited to major rivers and to periods of adequate rainfall.**

Emergency plans should also be part of the permitting process. All workers should be familiar with the plan.

The **number of well site inspectors** needs to be increased so that all well sites can be inspected often. A

permit fee of \$10,000 should be instituted to fund this.

The practice of **burn-off** should be **prohibited** to protect air quality.

Compressor stations should be required to install the latest **emission reduction technology** to protect air quality.

I also agree with the following recommendations (and apologize for a few redundancies):

Here are just a few of the essential elements WVEC believes are needed in a Marcellus regulatory bill. We are sure you can think of others.

1. Public notice and comment period prior to issuing drilling permits
2. Adequate permit fees and bonding amounts
3. Increased funding for more inspectors, and elimination of the industry-dominated Oil and Gas Examiners Board
4. An actual water withdrawal permit system to protect streams and rivers
5. Full protection of all water wells, with adequate setbacks and testing
6. Disclosure of frack fluid contents, and tracking of all wastewater disposal, including GPS tracking of wastewater transport trucks
7. Removal and proper disposal of drilling pits
8. Enhanced inspection of casing/cementing as critical for groundwater protection
9. Monitoring and regulation of air quality on drilling sites
10. Special protections for drilling on public lands and near high-quality streams
11. Protection of surface owners' property and rights

The economic benefits of gas drilling are important, but human and environmental health are essential. Gas drilling regulations need to protect our health, our communities and our environment.

Sincerely,

Linda Ireland

Rt 1 Box 418

Salem WV 26426

304-782-4187

Comments on gas drilling regulations

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Source: Earthworks Oil and Gas Accountability Project
(<http://www.earthworksaction.org/alternativestopits.cfm>)

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Compressor stations should be required to install the latest **emission reduction technology** to protect air quality.

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Here are just a few of the essential elements WVEC believes are needed in a Marcellus regulatory bill. We are sure you can think of others.

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7. Removal and proper disposal of drilling pits
8. Enhanced inspection of casing/cementing as critical for groundwater protection
9. Monitoring and regulation of air quality on drilling sites
10. Special protections for drilling on public lands and near high-quality streams
11. Protection of surface owners' property and rights

The economic benefits of gas drilling are important, but human and environmental health are essential. Gas drilling regulations need to protect our health, our communities and our environment.

Sincerely,
Linda Ireland
Rt 1 Box 418
Salem WV 26426
304-782-4187

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:12 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Marcellus Shale

From: Mandie Simpson [mailto:sadmb41@hotmail.com]
Sent: Tuesday, October 11, 2011 3:36 PM
To: DEP Comments
Subject: Marcellus Shale

Hello,

I would like my comments to be on record regarding Marcellus Shale regulations in WV. My first hope is that there will be a ban on the devastating practice of fracking in the state. Please look at what is happening in Texas, Pennsylvania, in the western states, where the air and water ARE being polluted, the water IS catching on fire, "fracidents" ARE occurring, and people ARE getting sick. Jobs are not more important than clean water, no matter how you cut it. Did anyone feel bad for Hitler's army when they were out of jobs? Jobs that harm people are not jobs WV needs. Please keep this in mind.

However, I am aware that greed and corporate influence over government will prevent this ban from occurring. And so, I would like to demand that all rules regulating this harmful drilling practice be written with only the best interests of the landowners in mind. They should have the right to refuse to allow frackers onto their land, the land that they OWN. They should have plenty of notice that frackers are interested in drilling on their land. There should be MANDATORY predrilling tests done on air and water quality within a mile of each site by state laboratories, free of outside influence. The fees for permitting should be \$40,000 as Dr. Bob Henry Baber has suggested in order to pay for inspectors. There should be a reasonable amount of wells per inspector such that each well could and would be inspected in the very least, yearly. The drilling should not be allowed to occur in such close proximity to homes, would you want a well head 200 feet from your home? The waste should not be kept in a pit, which is a ridiculous method of storing such hazardous materials. Drillers should have to invest in frack fluid recycling technology, which is available. Independent scientists should be a part of all possible stream disturbances that may result. Roads should be kept in as well a condition as they were previous to drilling. All fracking fluid ingredients must be disclosed.

There are just so many things that can, and will, go wrong with fracking in WV. Please protect the people and the environment, as your job is designed to do. Otherwise, change our state slogan from "Wild and Wonderful West Virginia" to "Water water everywhere, not a drop to drink."

Fearful of our future,
Mandie Simpson

October 11, 2011

Public Information Office
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304

Submitted by email to dep.comments@wv.gov

To the Department:

Environmental Defense Fund (EDF) appreciates the opportunity to comment on the proposed Horizontal Well Development Rule 35CSR8.

In brief, EDF's comments are that DEP should include within this rulemaking: (1) robust requirements for the public disclosure of all chemicals used in hydraulic fracturing other than those chemicals that are legitimate trade secrets; and (2) state of the art requirements regarding well construction and operation. If DEP deals adequately with these two issues, West Virginia can help bolster public confidence in natural gas development and can minimize some of the environmental impacts caused by such development.

In order to assist DEP, we are attaching two documents for consideration.

The first document, dated 9/30/11 and titled "Rule HF-1 Disclosure of Hydraulic Fracturing Fluids," is being distributed nationally by EDF and Southwestern Energy Company as a proposed resolution of the debate regarding frac chemical disclosure. It builds on lessons learned during discussions of this issue in Arkansas, Texas and elsewhere.

The second document, also dated September 30, 2011, is titled "Deliberative Draft, Draft Model Regulatory Framework for Hydraulically Fractured Hydrocarbon Production Wells." The draft is subject to revision, but EDF believes DEP will find it useful when considering rules for well construction and operation. The draft is currently being considered by a multi-stakeholder group that includes EDF, Southwest Energy Company, and several other gas companies and environmental NGOs. Several regulators in other states are also reviewing this material.

EDF commends DEP for its willingness to update the rules governing oil and gas operations. We look forward to working with DEP and other West Virginia policymakers on these and other environmental issues raised by today's oil and gas exploration and production practices.

Respectfully submitted,



Scott Anderson, Senior Policy Advisor, Environmental Defense Fund, 44 East Avenue, Austin, Texas 78701 512-691-3410 sanderson@edf.org

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:14 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Comments of Environmental Defense Fund (EDF) on proposed Horizontal Development Rule 35CSR8
Attachments: Gas West Virginia EDF Rule Comments Oct 11 2011.pdf; Gas HF Chemical Disclosure Model Language 9-30-11 as submitted to WV.docx; Gas MRF Deliberative Draft - 30 Sep 2011 as submitted to WV.docx

From: Scott Anderson [mailto:SAnderson@edf.org]
Sent: Tuesday, October 11, 2011 2:14 PM
To: DEP Comments
Subject: Comments of Environmental Defense Fund (EDF) on proposed Horizontal Development Rule 35CSR8

Attached in three component parts please find EDF's comments:

1. Cover letter signed by Scott Anderson dated 10/11/11, incorporating by reference the other two documents
2. "Rule HF-1 Disclosure of Hydraulic Fracturing Fluids" (9/30/11)
3. "Deliberative Draft, Draft Model Regulatory Framework for Hydraulically Fractured Hydrocarbon Production Wells" (September 30, 2011)

Thank you.

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:13 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: Oil and Gas Industry Regulations

From: Ms Lois Jenkins [mailto:loisjewv@yahoo.com]
Sent: Tuesday, October 11, 2011 2:44 PM
To: DEP Comments
Subject: Oil and Gas Industry Regulations

109 Kelly Drive
Bridgeport, WV 26330
Phone: (304)842-6553
Email: loisjewv@yahoo.com

October 11, 2011

Re: Regulations for Oil & Gas Industry

You have the ultimate opportunity of a lifetime, specifically regulating the oil and gas industry before it has decades of dire consequences on our state like the coal industry before it was regulated. Action now with responsible regulations and enforcement of Marcellus and other gas well development would minimize the negative impact.

I would like to see you maintain the \$10,000 permit fee and at least a \$5,000 fee for each well drilled. This would provide funding for additional inspectors for the numerous well sites being developed.

I believe that a lease should be subject to a time limit of not more than five years. Also it should be necessary for modification of leases signed decades ago, as the oil and gas industry has obviously changed.

Another issue I would like to see addressed is the right of way factor that is a major issue for me and I'm sure for many others. You may consider this a legal issue; however I would still like to stress the importance of this matter. In the past, a right of way was between two parties and provided a private access to an adjoining property. Fast forward to 2011 and landowners find themselves faced with the company, who has the original lease, now selling or out-sourcing various aspects of the activities of a gas well to two or three other companies and providing these companies with a "piggyback" right of way. Multiply this by the number of companies that can be involved when you have three wells on one property and the additional traffic impact on a private farm road. Then add a company who has purchased the marcellus shale rights and consider the truck traffic. The right of way agreements signed years ago were done so with the understanding of certain restrictions as to the mode and purpose of the use of the right of way. Excessive use, such as a multitude of truck traffic and oversized equipment, was not granted under these agreements as the individuals who signed these agreements could not possibly have envisioned the present concept.

Respectfully submitted,

Lois Yates Jenkins

Additionally absent from these regulations is the requirement of adequate set backs to ensure the safety and integrity of drinking water supplies and stream health.

Finally, WVRC objects to the wide ranging agency discretion given in overseeing a variety of issues including determination of a protective level of flow and the discretion over management and disposal of solid waste.

Thank you for consideration of our comments.

Sincerely,

Shanda Minney
Executive Director
West Virginia Rivers Coalition
329 Davis Ave., Suite 7
Elkins, WV 2614
(304) 637-7201
sminney@wvrivers.org



WEST VIRGINIA RIVERS COALITION

329 Davis Avenue, Suite 7 • Elkins, WV 26241 • (304) 637-7201 • www.wvrivers.org

October 11, 2011

James Martin
Chief, Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304-2345

Re: 35CSR8 Proposed Rules Governing Horizontal Well Development

West Virginia Rivers Coalition submits these comments on behalf of its 2,200 members. As the states leading fresh water advocacy voice we have a vested interest in the quality of West Virginia's waters, and believe that strengthening standards are critical to the future health of our water resources. We welcome the opportunity for input and request that the WVDEP act on behalf of the citizens of West Virginia by moving to further protect their water quality.

West Virginia Rivers Coalition would like to applaud the WV Department of Environmental Protection for proposing a legislative rule that moves to improve the state's protection of all environmental resources with increased regulatory management of the horizontal well development process. WVRC believes that there is much in this legislation that will improve protections afforded to our state waters, but also believes that in several areas the proposal falls short of that goal.

We applaud the addition of a requirement for a water management plan for volume uses over 210,000 a month, however, we would recommend that this reporting and planning requirement be a required portion of the permitting process and that the applicant be required to demonstrate that this withdrawal would still allow for adequate flow immediately downstream.

WVRC is encouraged to see additional regulations governing the construction of well pads, but disappointed to see that these additional regulations do not cover access roads and pipelines, and will not mitigate the potential aquatic damage associated with the additional sedimentation resulting from these large scale constructions.

Mullen-Thaxton, Jennifer L

From: DEP Comments
Sent: Wednesday, October 12, 2011 10:13 AM
To: Mullen-Thaxton, Jennifer L
Subject: FW: 35CSR8 Proposed Rules Governing Horizontal Well Development
Attachments: DEPproposed rule 2011 comments.docx.pdf

From: shandaminney@gmail.com [mailto:shandaminney@gmail.com] **On Behalf Of** Shanda Minney
Sent: Tuesday, October 11, 2011 2:48 PM
To: DEP Comments
Subject: 35CSR8 Proposed Rules Governing Horizontal Well Development

Please find attached comments from WVRC on the proposed rule.

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