

**WEST VIRGINIA
SECRETARY OF STATE
NATALIE E. TENNANT
ADMINISTRATIVE LAW DIVISION**

Form #7

Do Not Mark In This Box
Filing Date

2011 AUG 22 PM 2: 07

OFFICE OF THE WEST VIRGINIA
SECRETARY OF STATE

Effective Date

NOTICE OF AN EMERGENCY RULE

AGENCY: Department of Environmental Protection - Office of Oil and Gas TITLE NUMBER: 35

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

EMERGENCY AMENDMENT TO AN EXISTING RULE: YES ☐ NO ☒

IF YES, SERIES NUMBER OF RULE BEING AMENDED: _____

TITLE OF RULE BEING AMENDED: _____

IF NO, SERIES NUMBER OF RULE BEING PROPOSED: 8

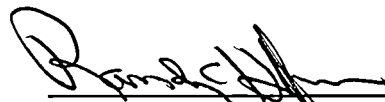
TITLE OF RULE BEING PROPOSED: Rules Governing Horizontal Well Development

THE ABOVE RULE IS BEING FILED AS AN EMERGENCY RULE TO BECOME
EFFECTIVE AFTER APPROVAL BY SECRETARY OF STATE OR 42ND DAY AFTER
FILING, WHICHEVER OCCURS FIRST.

THE FACTS AND CIRCUMSTANCES CONSTITUTING THE EMERGENCY ARE
AS FOLLOWS:

Please see attached.

Use additional sheets if necessary


Authorized Signature

While there are rules in place regulating the oil and gas industry, at the time those rules were enacted, they did not contemplate the scope, magnitude, and extent of the current developments in the industry, which involve large volume hydraulic fracturing and large area surface disturbance. The rate at which these developments have occurred and are continuing to occur has made it challenging for the State to fulfill its statutory obligation to maintain and protect the environment for our citizens while also fostering and promoting exploration for and development and production of the State's oil and gas resources.

Specifically, this rule is necessary to protect the public's interest in preserving its land and water resources and in giving the citizenry notice of permit applications. With regard to protecting the State's water resources, DEP's data shows that the average horizontal development uses approximately five million (5,000,000) gallons of water per well, although operators have reported using upwards of nine million (9,000,000) gallons of water to fracture a well. DEP proposes this rule to ensure that these water withdrawals and disposals occur in a manner that protects water quality, aquatic life, and uses of the State's waters by requiring 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. The rule also requires enhanced erosion and sediment control plans and site construction plans to protect both land (soil and ecosystems) and water resources by reducing, to the extent practicable, the wearing away of soil into the State's waters or onto contiguous property.

Further, hydraulic fracturing consists of a large volume of water, mixed with sand and other chemical additives, being pumped through well casings at high pressure. This increases the risk of blowouts, fires, and other significant environmental incidents. Moreover, accidental spills of fluids used in the drilling and completion of horizontally drilled/hydraulically fractured wells, improper construction of drilling and production related infrastructure, and other possible environmental incidents – while rare – can have significant, harmful effects on the public, streams and rivers, and wildlife. Therefore, DEP proposes this rule to ensure the health and safety of our citizens by requiring a well site safety plan that addresses specific measures the well operator will take to protect employees on the well site, as well as the general public and the environment. To this end, this rule also requires strengthened casing and cementing standards on horizontally drilled wells in order to reduce the potential for migration of contaminants and to stabilize surface soils in the vicinity of the drilling rig, which provides support during drilling activity.

Finally, this rule proposes a public notice requirement for horizontal wells intended to be drilled in municipal limits. This protects the public's interest in affording notification to the citizens that a horizontal well is proposed to be drilled in their area, which will help ensure that proper protections are in place when a permit is issued.



EMERGENCY RULE QUESTIONNAIRE

DATE: August 11, 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

EMERGENCY RULE TITLE: Rules Governing Horizontal Well Development

1. Date of filing August 11, 2011
2. Statutory authority for promulgating emergency rule:
W. Va. Code §§ 22-1-3, 22-6-2, and 22-11-4(a)(16)
3. Date of filing of proposed legislative rule: September 8, 2011
4. Does the emergency rule adopt new language or does it amend or appeal a current legislative rule? The emergency rule adopts new language.
5. Has the same or similar emergency rule previously been filed and expired?
No
6. State, with particularity, those facts and circumstances which make the emergency rule necessary for the **immediate** preservation of public peace, health, safety or welfare.
N/A

7. If the emergency rule was promulgated in order to comply with a time limit established by the Code or federal statute or regulation, cite the Code provision, federal statute or regulation and time limit established therein.

N/A

8. State, with particularity, those facts and circumstances which make the emergency rule necessary to prevent substantial harm to the public interest.

Please see attached.

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Specifically, this rule is necessary to protect the public's interest in preserving its land and water resources and in giving the citizenry notice of permit applications. With regard to protecting the State's water resources, DEP's data shows that the average horizontal development uses approximately five million (5,000,000) gallons of water per well, although operators have reported using upwards of nine million (9,000,000) gallons of water to fracture a well. DEP proposes this rule to ensure that these water withdrawals and disposals occur in a manner that protects water quality, aquatic life, and uses of the State's waters by requiring 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. The rule also requires enhanced erosion and sediment control plans and site construction plans to protect both land (soil and ecosystems) and water resources by reducing, to the extent practicable, the wearing away of soil into the State's waters or onto contiguous property.

Further, hydraulic fracturing consists of a large volume of water, mixed with sand and other chemical additives, being pumped through well casings at high pressure. This increases the risk of blowouts, fires, and other significant environmental incidents. Moreover, accidental spills of fluids used in the drilling and completion of horizontally drilled/hydraulically fractured wells, improper construction of drilling and production related infrastructure, and other possible environmental incidents – while rare – can have significant, harmful effects on the public, streams and rivers, and wildlife. Therefore, DEP proposes this rule to ensure the health and safety of our citizens by requiring a well site safety plan that addresses specific measures the well operator will take to protect employees on the well site, as well as the general public and the environment. To this end, this rule also requires strengthened casing and cementing standards on horizontally drilled wells in order to reduce the potential for migration of contaminants and to stabilize surface soils in the vicinity of the drilling rig, which provides support during drilling activity.

Finally, this rule proposes a public notice requirement for horizontal wells intended to be drilled in municipal limits. This protects the public's interest in affording notification to the citizens that a horizontal well is proposed to be drilled in their area, which will help ensure that proper protections are in place when a permit is issued.

**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. For more detail on the necessity of this rule, please see the Emergency Rule Questionnaire filed contemporaneously herewith.

APPENDIX B
FISCAL NOTE FOR PROPOSED RULES

Rule Title: Rules Governing Horizontal Well Development

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

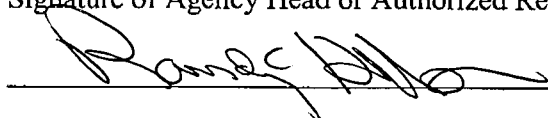
Please identify any areas of vagueness, technical defects, reasons the proposed rule **would not** have a fiscal impact, and/or any special issues **not** captured elsewhere on this form.

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



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

2011 AUG 22 PM 2:08

OFFICE OF 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 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;

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 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 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 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 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 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 commencement of any cementing operations and maintain a copy of the cementing 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.