

**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.<sup>1</sup> 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:

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<sup>1</sup> 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.