

Title 17
DEPARTMENT OF BUDGET
AND MANAGEMENT

Subtitle 05 COUNCIL ON
MANAGEMENT AND
PRODUCTIVITY

17.05.01 Competitive Re-Engineering Pilot Program

Authority: State Finance and Procurement Article, §§18-101—18-104, Annotated Code of Maryland

Notice of Proposed Action

[15-023-P]

The Secretary of Budget and Management proposes to repeal Regulations .01 — .08 under COMAR 17.05.01 Competitive Re-Engineering Pilot Program.

Statement of Purpose

The purpose of this action is to repeal COMAR 17.05.01. These regulations were promulgated to support the statute that created the Competitive Re-Engineering Pilot Program, State Finance and Procurement Article, §§18-101 — 18-104, Annotated Code of Maryland. That statutory authority abrogated September 30, 2003.

Comparison to Federal Standards

There is no corresponding federal standard to this proposed action.

Estimate of Economic Impact

The proposed action has no economic impact.

Economic Impact on Small Businesses

The proposed action has minimal or no economic impact on small businesses.

Impact on Individuals with Disabilities

The proposed action has no impact on individuals with disabilities.

Opportunity for Public Comment

Comments may be sent to Jennifer P. Hine, Personnel Director, Department of Budget and Management, 301 W. Preston Street, Room 602, Baltimore, MD 21201, or call 410-767-4718, or email to jennifer.hine@maryland.gov, or fax to 410-333-5262. Comments will be accepted through February 9, 2015. A public hearing has not been scheduled.

T. ELOISE FOSTER
 Secretary of Budget and Management

Title 26
DEPARTMENT OF THE
ENVIRONMENT

Subtitle 19 OIL AND GAS RESOURCES

26.19.01 Oil and Gas Exploration and Production

Authority: Environment Article, §14-103, Annotated Code of Maryland

Notice of Proposed Action

[15-001-P-I]

The Secretary of the Environment proposes to repeal existing Regulations .01—.15 and adopt new Regulations .01—.58 under COMAR 26.19.01 Oil and Gas Exploration and Production.

Statement of Purpose

The purpose of this action is to update the regulations to address new technologies.

These changes will establish new oil gas exploration and production standards. The new standards for oil and gas exploration and production in Maryland are needed to provide adequate protection for public health, safety, the environment and natural resources. These standards are at least as protective, and in some cases more protective, than those in place currently in other states. The standards will provide a suite of best practices that are to be followed for oil and gas production in the Marcellus Shale in Maryland.

Background

The Marcellus Shale is a black shale, or rock formation, found throughout the northern Appalachian Basin. The Marcellus Shale formation underlies New York, Pennsylvania, Ohio, West Virginia and western Maryland. In 2009, the Department of Energy estimated 262 trillion cubic feet of natural gas exists in the Marcellus Shale, making it the largest onshore Natural Gas Reserve in the United States. In Maryland, the Marcellus Shale formation is located within western Maryland from Washington, Allegany and Garrett Counties. The only anticipated areas of gas production in the Marcellus Shale are western Allegany and Garrett Counties.

On June 6, 2011, Governor Martin O'Malley signed Executive Order 01.01.2011.11, establishing the Marcellus Shale Safe Drilling Initiative. The Executive Order directs the Maryland Department of the Environment (MDE) and the Department of Natural Resources (DNR) to assemble and consult with an Advisory Commission in the study of specific topics related to horizontal drilling and hydraulic fracturing in the Marcellus Shale. The Advisory Commission was established to assist State policymakers and regulators in determining whether and how gas production from the Marcellus Shale in Maryland can be accomplished without unacceptable risks of adverse impacts to public health, safety, the environment, and natural resources. The Advisory Commission includes a broad range of stakeholders, including elected officials from Allegany and Garrett Counties, two members of the General Assembly, representatives of the scientific community, the gas industry, business, agriculture, environmental organizations, citizens, and a State agency. A representative of the public health community was added in 2013.

Since its inception the Advisory Commission has met 35 times. Most meetings were in Allegany or Garrett Counties, but several were held in Hagerstown, Annapolis and Baltimore. The Departments provided written information and briefings to the Advisory Commission on issues relating to high volume hydraulic fracturing

(HVHF). Speakers representing the scientific community, industry and agencies from Maryland and other states presented information to the Advisory Commission and the Departments. The Commissioners were able to visit active drilling sites. The Departments consulted with the federal government and neighboring states regarding policy, programmatic issues and enforcement experiences. The Commissioners themselves shared information and brought their expertise to bear.

The Executive Order tasked MDE and DNR, in consultation with the Advisory Commission, with conducting a three-part study and reporting findings and recommendations. The completed study includes:

- i. findings and related recommendations regarding sources of revenue and standards of liability for damages caused by gas exploration and production;
- ii. recommendations for best practices for all aspects of natural gas exploration and production in the Marcellus Shale in Maryland; and
- iii. a final report with findings and recommendations relating to the impact of Marcellus Shale drilling including possible contamination of ground water, handling and disposal of wastewater, environmental and natural resources impacts, impacts to forests and important habitats, greenhouse gas emissions, and economic impact.

The completed study has informed this action to update the standards for oil and gas exploration and production. Many of the updated standards included in this regulatory action were included among the recommendations in the completed study.

Affected Sources

This action directly impacts oil and gas exploration and production companies and their contractors that work in Maryland. There will also be impacts to trucking companies engaged to work on behalf of the oil and gas companies. Additionally, there could be impacts to mineral rights owners in Garrett and Allegany Counties.

Requirements

This is a comprehensive regulatory action to address the potential impacts to public health, safety, the environment and natural resources from HVHF in the Marcellus Shale in Maryland. The updated regulatory standards included in this action will require a suite of best practices be followed for oil gas exploration and production. These best practices will provide superior results to those achieved by other methods and techniques. These best practices are as protective, or more protective, than those in place currently in other states.

The following are requirements that will be imposed on affected sources by these regulations:

- Use of a Comprehensive Development Plan (CDP) - Designed to address the larger, landscape-level issues and cumulative effects. This comprehensive planning tool will allow for gas development activities to be considered in an area rather than considering each well individually. This includes the consideration of the placement of well pads, roads, pipelines and other ancillary equipment for a large area. The CDP is mandatory except for a limited number of exploratory wells, and will be a prerequisite to an application for a well permit. Once the CDP is approved, applications for individual wells consistent with the approved plan could be made.
- Public notification and opportunity for public hearing - The application for an individual well permit includes public notice and opportunity for public hearing once the Department determines the application is complete. The Department will provide written notice of its final decision to the applicant, any participants who attended a public informational hearing, persons who commented on the application, and all landowners, royalty owners, and owners of mineral, oil, and gas rights within 1,000 feet of the proposed well.

- Environmental Assessment and baseline monitoring - An application for a permit to drill a well must include an Environmental Assessment and two years of baseline monitoring in the vicinity of the well pad.

- Location restrictions and setbacks - For wells and well pads, including restrictions based on: topography and geology; location within certain reservoirs and drinking water protection areas; proximity to certain natural features; proximity to boundary lines; and proximity to certain occupied dwellings.

- Detailed plans for individual wells - The application for an individual well permit will require detailed plans for all activities, from construction of the access road through closure and restoration of the site. The elements of the plan must meet or exceed standards for engineering, design and environmental controls that are recommended in these standards. The engineering, design, and environmental controls and standards include requirements for:

- Drilling
- Stormwater management;
- Sediment and erosion control;
- Wellpad construction;
- Access roads;
- Freshwater storage;
- Chemical use, storage, and handling;
- Chemical disclosure;
- Radioactive materials
- Transportation and truck traffic;
- Protection of Sensitive Aquatic Resources
- Protection of freshwater aquifers;
- Control and reporting of air emissions;
- Use of engines and compressors;
- Blowout prevention;
- Leak detection and repair;
- Well construction, casing, and cement;
- Integrity testing;
- Monitoring during drilling and high volume hydraulic fracturing;
- Site security;
- Management of drilling fluids, simulation fluids and produced water;
- Gathering lines and pipelines;
- Flaring;
- Noise;
- Lighting;
- Spill prevention, control and countermeasures and emergency response plan;
- Ongoing monitoring and corrective measures;
- Invasive species;
- Site reclamation; and
- Wastes and wastewater.

- Financial Assurance - These regulations also include requirements for liability insurance, environmental pollution liability insurance, and a performance bond, a blanket bond, cash, a certification of deposit, or a letter of credit relating to proper abandonment of wells.

- Plugging of oil or gas wells - These regulations include detailed requirements for plugging of an oil or gas well.

- Bond performance and release procedures - The regulations include requirements for oil and gas bond performance and release procedures.

- Statutory, Regulatory, or Permit violations - The regulations include Departmental authority and potential actions against a person who violates either statutory, regulatory, or permit provisions relating to oil and gas exploration and production.

Comparison to Federal Standards

There is no corresponding federal standard to this proposed action.

Estimate of Economic Impact

I. Summary of Economic Impact. The proposed regulations for oil and gas exploration and production will economically impact many different parties, both positively and negatively. These economic impacts cannot be quantified, but are discussed in detail below.

II. Types of Economic Impact.	Revenue (R+/R-)	Magnitude
	Expenditure (E+/E-)	
A. On issuing agency:		
(1) Program implementation	(E+)	Indeterminable
(2) Funding of program implementation	(R+)	Indeterminable
B. On other State agencies:		
(1) Department of Natural Resources	(E+)	Indeterminable
(2) Department of Natural Resources	(R+)	Indeterminable
C. On local governments:		
(1) Road improvements	(E+)	Indeterminable
(2) Road improvements and maintenance	(R+)	Indeterminable
	Benefit (+) Cost (-)	Magnitude
D. On regulated industries or trade groups:		
(1) Oil and Gas Companies—Large	(-)	Indeterminable
(2) Oil and Gas Companies—Small	(-)	Indeterminable
(3) Trucking Companies	(-)	Indeterminable
E. On other industries or trade groups:		
(1) Environmental Consultants	(+)	Indeterminable
(2) Laboratories	(+)	Indeterminable
(3) Tourism	(+)	Indeterminable
(4) Real Estate	(+)	Indeterminable
F. Direct and indirect effects on public:		
(1) Health Benefits	(+)	Indeterminable
(2) Drinking Water Protection	(+)	Indeterminable
(3) Natural Resource Protection	(+)	Indeterminable
(4) Environmental Protection	(+)	Indeterminable

III. Assumptions. (Identified by Impact Letter and Number from Section II.)

A(1). There will be an economic impact to the Department of the Environment (MDE). The regulatory and permitting requirements will require additional work by Department staff. How much additional work would vary depending on the level of drilling activity

in Maryland’s portion of the Marcellus Shale formation. Some of the additional work for the Department would include additional work reviewing: Comprehensive Development Plans (CDPs); the required two years of baseline data; and more detailed permit applications. There would also be additional work to monitor compliance with permit conditions. Any additional costs to the Department for this work cannot be estimated.

A(2). Environment Article, §14-105, Annotated Code of Maryland authorized the Department to assess permit and production fees in an amount necessary to operate the regulatory program, with a provision for annual adjustment.

B(1). There will be an economic impact to the Department of Natural Resources (DNR). How much additional work would vary depending on the level of drilling activity in Maryland’s portion of the Marcellus Shale formation. Under the proposed regulations, DNR will have responsibilities concerning evaluation of Comprehensive Development Plans. In addition, DNR has a consultative role with MDE for various activities specified in the proposed regulations. Additional costs to DNR for these activities cannot be estimated.

B(2). The proposed regulations provide for reimbursement of DNR by MDE for some expenses associated with evaluation of proposed CDPs.

C(1). There is potential for economic impacts to local jurisdictions. The regulations provide for the option for local jurisdictions to enter into agreements with drilling companies to make road improvements that are necessary as a result of drilling activity. This is voluntary for local jurisdictions, but it is likely that some of the jurisdictions will undertake this activity, which will lead to added costs. Any additional costs to local jurisdictions cannot be estimated.

C(2). There is a potential for a positive economic impact to local jurisdictions if roads are improved or maintained at the cost of the exploration or drilling company.

D(1). The largest economic impact will be to oil and gas exploration and production companies that work in Maryland. These companies will have to meet the more stringent oil and gas exploration and production regulations. These regulations are more stringent than what is currently required in Maryland regulations, and as stringent, or more stringent, than what is required in other states that were surveyed. Some of these additional requirements will result in negligible additional costs to the oil and gas companies because many of the best practices that will be required by these regulations have become fairly common industry practices among the larger companies that engage in this type of activity. The major added costs to these larger companies would be the costs related to the Comprehensive Development Plan, two years of baseline monitoring before a well can be drilled, ongoing monitoring during drilling, hydraulic fracturing, and production, and any additional testing required by the Department. Any additional costs to large companies or smaller companies from these requirements cannot be estimated.

There will also be added costs to oil and gas companies to comply with the financial assurance provisions of the regulations. These companies must have liability insurance, environmental pollution liability insurance, and a performance bond, a blanket bond, cash, a certificate of deposit, or a letter of credit. Larger companies will likely avoid the added costs associated with these requirements by meeting the alternative financial test.

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There will also be added costs to oil and gas companies to comply with the financial assurance provisions of the regulations. These companies must have liability insurance, environmental pollution liability insurance, and a performance bond, a blanket bond, cash, a certificate of deposit, or a letter of credit. It is unlikely that smaller companies will be able to pass the alternative financial test. Any additional costs to small companies from these requirements cannot be estimated.

D(3). There is also the potential for economic impacts to trucking companies that contract with oil and gas companies to transport materials to and from the well sites. All trucks transporting waste materials from the site must have a Global Positioning System (GPS) to track the transport and disposition of these materials. This will be an additional cost to trucking companies. This cost cannot be estimated, as it depends on a number of factors, including the level of drilling activity, the number of trucks in a company's fleet, and which trucks if any already have a GPS.

E(1). There will be positive economic impacts to environmental consultants and laboratories for the additional work that will be required by the regulations. It is likely that the drilling companies will hire consultants and use laboratories to do all of the necessary environmental assessments, baseline monitoring, ongoing monitoring, testing and analytical procedures, and any other environmental studies or assessments required by regulations or permit. Any additional revenues to consultants cannot be estimated.

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E(3). There will be positive economic impacts to real estate professionals and tourism related businesses in Garrett and Allegany Counties as a result of replacing the existing regulations with these more stringent regulations. The protections included in these regulations will help to minimize any negative impact to property values that may result from drilling activity, which will positively impact property owners and real estate professionals. Stronger regulations for oil and gas drilling will also benefit the tourism industry and tourism related businesses by ensuring better protection of the natural environment which is the driver for much of the tourism in these two Counties.

E(4). There will be positive economic impacts to real estate professionals and tourism related businesses in Garrett and Allegany Counties as a result of replacing the existing regulations with these more stringent regulations. The protections included in these

regulations will help to minimize any negative impact to property values that may result from drilling activity, which will positively impact property owners and real estate professionals. Stronger regulations for oil and gas drilling will also benefit the tourism industry and tourism related businesses by ensuring better protection of the natural environment which is the driver for much of the tourism in these two Counties.

F(1). There will be positive economic impacts to the residents in Garrett and Allegany Counties by enacting these more stringent regulations. The regulations will minimize the impacts from drilling to public health, safety, the environment and natural resources in these two Counties. By minimizing these impacts, the general citizenry of the two Counties will benefit from enhanced public health protection and safety, including better protections for air quality and sources of drinking water. Additionally, the natural environment of the two Counties will be better protected, including forests, rivers, streams and other water bodies, wildlife, flora and fauna.

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F(4). There will be positive economic impacts to the residents in Garrett and Allegany Counties by enacting these more stringent regulations. The regulations will minimize the impacts from drilling to public health, safety, the environment and natural resources in these two Counties. By minimizing these impacts, the general citizenry of the two Counties will benefit from enhanced public health protection and safety, including better protections for air quality and sources of drinking water. Additionally, the natural environment of the two Counties will be better protected, including forests, rivers, streams and other water bodies, wildlife, flora and fauna.

Economic Impact on Small Businesses

The proposed action has a meaningful economic impact on small business. An analysis of this economic impact follows.

Small Business Analysis Worksheet

This worksheet is designed to assist the agency in determining if and how the proposal impacts small businesses. Quantify the number of affected small businesses and estimates of costs and benefits to small businesses if possible. State Government Article §2-1505.2, includes the following definitions which are relevant to the analysis:

“Economic impact analysis” means an estimate of the cost or the economic benefit to small businesses that may be affected by a

regulation proposed by an agency pursuant to Title 10, Subtitle 1 of this article.

“Small business” means a corporation, partnership, sole proprietorship, or other business entity, including its affiliates, that: (i) is independently owned and operated; (ii) is not dominant in its field; and (iii) employs 50 or fewer full-time employees.

1a. Intended Beneficiaries: Who are the intended beneficiaries of the proposed regulation? Are these intended beneficiaries primarily households or businesses?

The intended beneficiaries of the proposed regulations are residents of and visitors to Garrett and Allegany Counties. These beneficiaries are primarily households. The proposed regulations will have some indirect benefits to environmental consultants and laboratories, as well as the real estate and tourism industries, but these are not the primary intended beneficiaries.

1b. Intended Beneficiaries: Households. If households are the primary intended beneficiaries, will the proposal affect their income or purchasing power such that the volume or patters of their consumer spending will change? If so, what directions of change would you anticipate? Will these expected spending changes have a disproportionate impact on small businesses? Can you descriptively identify the industries or types of business activities that are impacted?

The proposal should not materially affect the income or purchasing power of households and thus will not change the volume or patterns of their consumer spending.

1c. Intended Beneficiaries: Businesses. If businesses are the intended beneficiaries, identify the businesses by industry or by types of business activities. How will businesses be impacted? Are these Maryland establishments disproportionately small businesses? If so, how will these Maryland small businesses be affected? Can you identify or estimate the present number of small businesses affected? Can you estimate the present total payroll or total employment of small businesses affected?

Companies in the tourism business will benefit because the proposed regulations are much more protective of the environment and natural resources than the existing regulations. Some of these companies are small businesses. The Department does not have information on the number or proportion of small businesses in the total population of the tourism businesses.

2a. Other Direct or Indirect Impacts: Adverse. Businesses may not be the intended beneficiaries of the proposal. Instead, the proposal may direct or otherwise cause businesses to incur additional expenses of doing business in Maryland. Does this proposal require Maryland businesses to respond in such a fashion that they will incur additional work-time costs or monetary costs in order to comply? Describe how Maryland establishments may be adversely affected. Will Maryland small businesses bear a disproportionate financial burden or suffer consequences that affect their ability to compete? Can you estimate the possible number of Maryland small businesses adversely affected? (Note that small business compliance costs in the area of regulation are the sum of out-of-pocket (cash) cost plus time costs – usually expressed as payroll, akin to calculations for legislative fiscal notes. Precise compliance costs may be difficult to estimate, but the general nature of procedures that businesses must accomplish to comply can be described.)

The proposed regulations affect oil and gas exploration and production companies. Most of these companies are likely to be large businesses. However, it is possible that some companies or their contractors are small businesses. The Department does not have information on the number or proportion of small businesses in the total population of oil and gas businesses.

Oil and gas companies will have to meet the more stringent regulations when conducting drilling operations in Maryland. The regulatory requirements are more stringent than what is currently

required in Maryland regulations. Some of these additional requirements will result in negligible additional costs to large oil and gas companies because many of the requirements are already included among common industry practices. The smaller oil and gas companies will likely have larger additional costs to comply with the regulations to the extent that the additional requirements are not practices that they currently follow. Any additional costs to small oil and gas businesses from these requirements cannot be estimated.

There will also be added costs to oil and gas companies to comply with the financial assurance provisions of the regulations. Larger companies will likely avoid the added costs associated with these requirements by demonstrating that they comply with the alternative financial test. It is unlikely that smaller companies will be able to pass this alternative test, and thus will have to comply with the addition financial assurance provisions of the regulations. Any additional costs to these small businesses from these requirements cannot be estimated.

There is also potential for economic impacts to trucking companies that contract with oil and gas companies to transport materials to and from the well sites. All trucks transporting these materials must have a GPS to ensure the safe tracking and disposition of these materials. This will be an additional cost to trucking companies. These costs cannot be estimated. The Department does not have information on the number or proportion of small businesses in the total population of trucking companies.

2b. Other Direct or Indirect Impacts: Positive. Maryland businesses may positively benefit by means other than or in addition to changed consumer spending patterns. How may Maryland businesses be positively impacted by this initiative? Will Maryland small businesses share proportionately or disproportionately in these gains? Can you estimate the possible number of Maryland small businesses positively affected?

There will be positive economic impacts to environmental consultants and laboratories for the additional work that will be required by the regulations. It is likely that the drilling companies will hire consultants and use laboratories to do all of the necessary environmental assessments, baseline monitoring, ongoing monitoring, testing and analytical procedures, and any other environmental studies or assessments required by regulations or permit. Any additional revenues to consultants cannot be estimated. The Department cannot estimate the number or portion of small businesses in the total population of environmental consulting businesses likely to be positively impacted by these regulations.

There will also be positive economic impacts to real estate professionals and tourism related businesses in Garrett and Allegany Counties by enacting these more stringent regulations. The protections included in these regulations will help to minimize any negative impacts to property values that may result from drilling activity, which will positively impact property owners and real estate professionals. Stronger regulations for oil and gas drilling will also benefit the tourism industry and tourism related businesses by ensuring better protection of the natural environment which is the driver for much of the tourism in these two Counties. The Department cannot estimate the total number of portion of small businesses in the total population of either real estate businesses or tourism related businesses, although it is likely to be a large proportion of the total population of both. The Department also cannot estimate the total additional revenues to either of these types of businesses.

3. Long-Term Impacts. There are instances where the longer run economic impact effect from regulations differ significantly from immediate impact. For example, regulations may impose immediate burdens on Maryland small businesses to comply, but the overall restructuring of the industry as a consequence of monitoring and compliance may provide offsetting benefits to the affected small

businesses in subsequent years. Can you identify any long run economic impact effects on Maryland small businesses that over time (a) may compound or further aggravate the initial economic impact described above, or (b) may mitigate or offset the initial impact described above?

No.

4. Estimate of Economic Impact. State Government Article 2-1505.2 requires that an agency include estimate, as appropriate, directly relating to: (1) cost of providing goods and services; (2) effect on the work force; (3) effect on the cost of housing; (4) efficiency in production and marketing; (5) capital investment, taxation, competition, and economic development, and (6) consumer choice.

(1) Cost of providing goods and services: The Department cannot determinate the additional costs of providing the services included in the regulations.

(2) Effect on the work force: There will be better public health and safety protections for oil and gas employees in Maryland from these more stringent regulations. The Department cannot estimate this benefit in dollar terms.

(3) Effect on the cost of housing: Traditionally there is a decrease in home values when a home is located in close proximity to an oil or gas well. The added protections in these regulations should serve to limit the decrease in home values by affording homeowners better public health, safety, and environmental protections. The extent of this effect cannot be estimated.

(4) Effect on efficiency in production and marketing: None expected.

(5) Capital investment, taxation, competition, and economic development: The level of capital investment, taxation, competition, and economic development resulting from these regulations is unlikely to be significantly different than that under the current regulations. The Department cannot estimate any changes in these amounts.

(6) Consumer choice: None expected.

Impact on Individuals with Disabilities

The proposed action has no impact on individuals with disabilities.

Opportunity for Public Comment

Comments may be sent to Brigid Kenney, Senior Policy Advisor, Maryland Department of the Environment, 1800 Washington Boulevard, Baltimore, Maryland 21230-1720, or call 410-537-4187, or email to brigid.kenney@maryland.gov, or fax to 410-537-3888. Comments will be accepted through February 9, 2015. A public hearing has not been scheduled.

Editor's Note on Incorporation by Reference

Pursuant to State Government Article, §7-207, Annotated Code of Maryland, the Guidelines for Administering Oil and Gas Activity on State Forest Lands has been declared a document generally available to the public and appropriate for incorporation by reference. For this reason, it will not be printed in the Maryland Register or the Code of Maryland Regulations (COMAR). Copies of this document are filed in special public depositories located throughout the State. A list of these depositories was published in 41:1 Md. R. 9 (January 10, 2014), and is available online at www.dsd.state.md.us. The document may also be inspected at the office of the Division of State Documents, 16 Francis Street, Annapolis, Maryland 21401.

.01 Definitions.

A. In this subtitle, the following terms have the meanings indicated.

B. Terms Defined.

(1) Administratively Complete.

(a) "Administratively complete" means that the application contains the information and supporting documents requested on the application form.

(b) "Administratively complete" does not mean that the application is complete for purposes of Regulation .16C of this chapter.

(2) "Angular deviation and directional survey" means a well survey that indicates, at frequent intervals, the amount and azimuth that the hole has departed from vertical.

(3) "Annular space" means the area between the inner and outer walls of two concentric casings and the area between the outer casing and the wall of a borehole.

(4) "API" means American Petroleum Institute, a national trade association that represents the oil and natural gas industry in the United States that develops and publishes standards and other documents.

(5) "Aquatic habitat" means all streams, rivers, seeps, springs, wetlands, lakes, ponds, water reservoirs and 100 year floodplains.

(6) "Base fluid" means the continuous phase fluid used in the makeup of a well stimulation treatment fluid.

(7) "Baseline monitoring" means gathering and reporting data according to protocols developed jointly by the Departments of the Environment and Natural Resources to characterize the condition of air, ground water and surface water in the vicinity of a planned well pad before site preparation and drilling.

(8) "Blowout" means an uncontrolled flow of gas, oil, or other well fluids into the atmosphere, which may occur when formation pressure exceeds the pressure applied to it by the column of drilling fluid.

(9) "Blowout prevention equipment" means devices attached to the top of the well casing that can be closed and shut off to control pressure at the wellhead.

(10) "Brackish and salt water" means water with a total dissolved solids concentration greater than 1,000 milligrams per liter.

(11) "Bridge plug" means an expandable device used inside the casing of a well to isolate certain zones or to seal the casing to a shallower depth.

(12) "CAS" means Chemical Abstract Service.

(13) "Circulating medium" means any type of liquid, gas, or slurry used as an agent to remove drill cuttings and to cool the bit.

(14) CO₂ Equivalent Emissions (CO₂e).

(a) "CO₂ equivalent emissions (CO₂e)" means the amount of Greenhouse Gas emitted.

(b) "CO₂ equivalent emissions (CO₂e)" for methane is computed by multiplying the mass amount of emissions, in tons per year, by methane's associated global warming potential.

(15) "Commingle production" means to mix hydrocarbons from two or more pay zones in the same well.

(16) "Comprehensive Development Plan (CDP)" means a document prepared by a person holding oil or gas interests describing the person's plans for exploration and production in the Maryland portion of an oil- or gas-bearing formation for at least the succeeding five years, and submitted to the State for review and approval.

(17) "Comprehensive Development Plan applicant (CDP-applicant)" means a person submitting a Comprehensive Development Plan to the Department for approval.

(18) "Conductor pipe" means a pipe used near the surface to prevent unconsolidated material from caving or sloughing into the hole.

(19) "Coning" means the cone-shaped invasion of water underlying oil or gas in an oil or gas reservoir or invasion of gas overlying oil in a reservoir as the oil or gas is withdrawn from a well.

(20) "Critical Area" has the meaning stated in COMAR 27.01.01.01B.

(21) "Cuttings" means the fragments of rocks produced by the drill bit during the drilling process and brought to the surface in the drilling liquid.

(22) "Department" means the Department of the Environment.

(23) "Diesel fuel" means a substance with one of the following Chemical Abstract Service Registry Numbers:

- (a) 68334-30-5 Primary Name: Fuels, diesel;
- (b) 68476-34-6 Primary Name: Fuels, diesel, No. 2;
- (c) 68476-30-2 Primary Name: Fuel oil, No. 2;
- (d) 68476-31-3 Primary Name: Fuel oil, No. 4; or
- (e) 8008-20-6 Primary Name: Kerosene.

(24) "Directional drilling" means:

(a) Aiming wells at horizontally displaced bottom-hole targets; and

(b) Intentional deviation of a borehole from the path it would naturally take.

(25) "Discharge" has the meaning stated in COMAR 26.08.01.01B(20).

(26) Drilling Liquid.

(a) "Drilling liquid" means a fluid, such as mud or water, circulated in a borehole to remove the drill cuttings from the hole and to cool the drill bit.

(b) "Drilling liquid" does not include air or gas.

(27) "Dry hole" means a well that encountered no oil or gas of commercial significance.

(28) "Environmental Assessment" means a document prepared by an applicant for a gas and oil drilling and operating permit in accordance with guidance from the Department and submitted with an application for the permit and includes, at a minimum, a discussion and evaluation of the possible ecological, aesthetic, historical, cultural, economic, social, or health impacts of the planned drilling and operating.

(29) "Explosives" means any chemical compound, mixture, or device, the primary purpose of which is to function by explosion through substantially instantaneous release of gas and heat, unless the compound, mixture, or device is otherwise specifically classified by the Interstate Commerce Commission or other federal agencies.

(30) "Flowback" means well stimulation treatment fluid and formation water that comes to the surface through the borehole during the first few days after well stimulation is completed.

(31) "FracFocus" means the national hydraulic fracturing chemical registry managed by the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission.

(32) "Fresh water" means water with a total dissolved solids concentration of 1,000 milligrams per liter or less.

(33) "Gas" means all natural gas and other fluid hydrocarbons, not defined as oil, that are produced from a natural oil or gas reservoir.

(34) "Gross vehicle weight rating (GVWR)" means the value specified by the manufacturer as the maximum design loaded weight of a single vehicle, consistent with good engineering judgment.

(35) "Heavy duty engine" means any engine which the engine manufacturer could reasonably expect to be used for motive power in a heavy-duty vehicle.

(36) "Heavy duty vehicle" means any motor vehicle that:

(a) Is rated at more than 8,500 pounds gross vehicle weight rating (GVWR);

(b) Has a vehicle curb weight of more than 6,000 pounds; or

(c) Has a basic vehicle frontal area in excess of 45 square feet.

(37) "High volume hydraulic fracturing" means all stages of a stimulation treatment of a well by the pressurized application of more than 80,000 gallons per stage or more than 300,000 gallons total of hydraulic fracturing fluid and proppant to initiate or propagate fractures in a geologic formation to enhance extraction or production of oil or gas.

(38) "Hydraulic fracturing" means a stimulation treatment performed on oil and gas wells in low-permeability oil or gas reservoirs whereby specially engineered fluids are pumped at high pressure and rate into the reservoir interval to be treated, causing fractures to open.

(39) "Hydraulic fracturing fluid" means a mixture of a base fluid, proppant and chemical additives injected through a well drilled into an oil- or gas-bearing rock formation under high but controlled pressure to initiate or propagate fractures in a geologic formation to enhance extraction or production of oil or gas.

(40) "Impermeable" means that the permeability of the material is less than or equal to 1 times 10⁻⁷ centimeters per second.

(41) "Injection well" means a well used for the subsurface emplacement of fluids.

(42) "Irreplaceable Natural Area" means a site designated by the Department of Natural Resources as a Tier 1 or Tier 2 under the Biodiversity Conservation Network.

(43) "Killing the well" means overcoming downhole pressure, in a well being drilled, through the use of drilling liquid or water.

(44) "Log" means a continuous record as a function of depth, usually graphic and plotted to scale on a narrow paper strip, of observations made on the rocks and fluids of the geologic section exposed in a well bore.

(45) "Mechanical plug" means an expandable device placed in a well to act as a water-tight, oil-tight, and gas-tight seal.

(46) "Nonporous material" means bentonitic mud, cement, or equivalent materials approved by the Department which will retard the movement of fluids.

(47) "Nontidal wetland" has the meaning stated in COMAR 26.23.01.01.

(48) "Oil" means crude petroleum oil and other hydrocarbons, regardless of specific gravity, that are produced at the wellhead in liquid form, except liquid hydrocarbons known as distillate or condensate recovered or extracted from gas.

(49) "Oil or gas reservoir" means a natural underground oil or gas bearing formation.

(50) "Open-flow test" means a measurement of the rate of flow of a gas well when flowing into the air, unrestricted by any pressure other than that of the atmosphere, and usually measured in thousands of cubic feet (Mcf) per day.

(51) Operator.

(a) "Operator" means a person who, by virtue of ownership, or under the authority of a lease or any other agreement, has the right to drill, stimulate, complete, operate, maintain, or control an oil or gas well or production facility.

(b) "Operator" includes:

(i) A person who holds a permit to drill or operator a well;

(ii) A supplier; and

(iii) An owner.

(52) "Owner" means the person who has the right by deed, lease, or otherwise to drill into and produce from a pool, or to store in a pool, and appropriate the oil or gas the person produces or stores either for the person or others.

(53) "Pay zone" means an oil or gas reservoir or portion of a reservoir that contains economically producible hydrocarbons.

(54) "Perforating" means to make holes through the casing opposite the producing zone to allow the oil or gas to flow into the well.

(55) "Permittee" means the person in whose name a seismic permit or a drilling and operating permit has been issued.

(56) "Person" means the federal government, the State, a county, municipal corporation, or other political subdivision of the State, or their units, or an individual, receiver, trustee, guardian, executor, administrator, fiduciary, or representative of any kind, or a partnership, firm, association, public or private corporation, or any other entity.

(57) "Pilot hole" means a vertical boring located from land surface to the bottom of the targeted geologic formation to assist in the identification of geologic features, underground voids, gas- or water-bearing formations, geologic faults, and the lowest fresh water aquifer.

(58) "Plug" means an expandable device or cement placed in a well to prevent the movement of liquids and gas.

(59) "Pollutant" has the meaning stated in COMAR 26.08.01.01B(66).

(60) "Pool" means an underground oil or gas reservoir containing a common accumulation of oil or gas, or both.

(61) "Pooled unit" means an area within which owners of different properties in the area have voluntarily agreed to participate in a well drilled within the unit.

(62) "Pressure maintenance" means the injection of liquid or gas into an oil or gas reservoir to increase or maintain reservoir pressure in order to recover additional quantities of hydrocarbons.

(63) "Produced water" means water that is produced from a wellbore that is not flowback.

(64) "Producer" means the owner of a well capable of producing oil, gas, or both.

(65) "Producing zone" means the stratum, bed, or formation from which oil or gas enters the well.

(66) Production.

(a) "Production" means the act or process of producing oil or gas from a natural oil or gas reservoir.

(b) "Production" does not include the sale or distribution of oil or gas.

(67) "Production facility" means any equipment attendant to oil and gas production including, but not limited to, tanks, flowlines, headers, gathering lines, wellheads, heater treaters, pumps, valves, compressors, injection equipment, and intrastate pipelines.

(68) "Proppant" means material inserted or injected into the underground geologic formation that is intended to prevent fractures from closing.

(69) "Ready-reserve" means the state of an engine that may not be performing work at all times, but must be ready to take over powering all or part of an operation at any time to ensure safe operation of a process.

(70) "Recomplete a well" means to seal off one producing zone, and perforate a new producing zone.

(71) "Reduced emission completion" has the meaning stated in 40 CFR § 60.5430.

(72) "Re-enter" means to drill out the plugs of an abandoned well in a new effort to establish oil or gas production, or use the well for another purpose.

(73) "Refracturing" means a subsequent high volume hydraulic fracturing event following initial drilling and high volume hydraulic fracturing to increase gas production.

(74) "Rework" means to perform remedial measures in a well in order to restore oil or gas production that has declined substantially or stopped completely.

(75) "Royalty interest" means the right to receive royalty payments on the production of oil or gas.

(76) "Seismic operations" means the controlled application of vibratory energy from any source to determine if favorable conditions exist for the subsurface entrapment of oil or gas.

(77) "Seismic section" means a graphic, near-vertical display of waveform data processed by a computer program to facilitate interpretation of subsurface conditions.

(78) "Seismic survey" means a planned network or program of seismic operations conducted by one person, one time, under one permit.

(79) "Shotholes" means drilled holes which are subsequently loaded with explosives whose detonation generates seismic waves during a seismic survey.

(80) "Shut-in pressure" means the pressure in the well measured at the wellhead in a specified period of time after the valves are closed.

(81) "Special Conservation Areas" mean State-designated Wildlands and areas identified by the Department of Natural Resources as Irreplaceable Natural Areas.

(82) "Stimulate a zone" means to use techniques such as hydraulic fracturing and acidizing in order to increase oil or gas production from a formation.

(83) Stimulation Additive.

(a) "Stimulation additive" means a substance or combination of substances added to a base fluid for purposes of preparing well stimulation treatment fluid which includes, but is not limited to, an acid stimulation treatment fluid or a hydraulic fracturing fluid.

(b) "Stimulation additive" includes an additive that may:

(i) Serve additional purposes beyond the transmission of hydraulic pressure to a geologic formation;

(ii) Be of any phase; and

(iii) Be a proppant.

(84) "Supplier" means an entity performing drilling or a well stimulation treatment or an entity supplying an additive or proppant directly to the operator for use in drilling or a well stimulation treatment.

(85) "Surface casing" means the first casing set inside the conductor pipe, which seals off any shallow aquifers and also serves as a foundation for all subsequent drilling activity.

(86) "Surface impoundment" means a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials, although it may be lined with man-made materials, that is not an injection well.

(87) "Tidal wetlands" has the meaning stated in COMAR 26.24.01.02B.

(88) "Volatile organic compound (VOC)" has the meaning stated in COMAR 26.11.01B(53).

(89) "Waters of this State" has the meaning stated in Environment Article, §9-101, Annotated Code of Maryland.

(90) Well Pad.

(a) "Well pad" means the area extending to the limit of disturbance of the grading plan for a drilling site where a well is to be drilled and where drill rigs, pumps, engines, generators, mixers and similar equipment, fuel, pipes, and chemicals are located.

(b) "Well pad" does not include temporary worker housing and employee parking lots unless equipment, fuel, or chemicals are stored there.

(91) Well Stimulation Treatment Fluid.

(a) "Well stimulation treatment fluid" means a base fluid mixed with physical and chemical additives, which may include acid, for the purpose of a well stimulation treatment.

(b) "Well stimulation treatment fluid" includes hydraulic fracturing fluids and acid stimulation treatment fluids.

(92) Wellhead Protection Area.

(a) "Wellhead protection area" means the surface and subsurface area, determined by the Department under the Department's Water Supply Program, surrounding a water well or well field that supplies a public water system, through which

contaminants are reasonably likely to move toward and reach the water well or well field; and

(b) "Wellhead protection area" means, for a public water system that withdraws less than 10,000 gallons per day from fractured rock aquifers and for which a wellhead protection area has not been defined by the Department's Water Supply Program, a fixed radius of 1,000 feet around the one or more water wells.

(93) "Wildcat well" means an exploratory well drilled for oil or gas on a geologic feature not yet proven to be productive, or in an unproven territory, or to a zone that has never produced or is not known to be productive in the general area.

(94) "Wildlands" means areas designated by the General Assembly under Natural Resources Article, §5-1205, Annotated Code of Maryland.

(95) Workover.

(a) "Workover" means the repair or stimulation of an existing oil or gas production well for the purpose of restoring, prolonging, or enhancing the production of hydrocarbons.

(b) "Workover" includes refracturing.

(96) "Zonal isolation" means the isolation through specified cementing and casing practices of all fluid-bearing formations, whether the fluids are gaseous or liquid, along the vertical borehole.

.02 Incorporation by Reference.

In this chapter, the following documents are incorporated by reference:

A. Guidelines for Administering Oil and Gas Activity on State Forest Lands (Pennsylvania Department of Conservation and Natural Resources, Revised 2013);

B. Maryland Standards and Specifications for Soil Erosion and Sediment Control, which has been incorporated by reference in COMAR 26.17.01.11;

C. 40 CFR Part 86, as amended; and

D. 40 CFR § 60.5430, as amended.

.03 Responsibility for Compliance.

A. Where an obligation is imposed on an operator under this chapter, the permittee is responsible for assuring that the obligation is met.

B. If an obligation imposed on an operator under this chapter is not met, the operator as well as the permittee shall be liable for the noncompliance.

C. No indemnification, hold harmless, or similar agreement or conveyance shall be effective to transfer from the permittee, to any other person, the liability imposed under this chapter.

D. Nothing in this regulation shall bar any agreement to insure, hold harmless, or indemnify a party to such agreement for any liability under this chapter.

.04 Incident Notification.

A. In addition to any other notifications required by law or permit, an operator shall report any condition such as fires, breaks, blowouts, leaks, escapes, spills, overflows, or other occurrences at the well pad, at pipelines and compressors, and during transport that create a safety or pollution hazard immediately, but not later than 30 minutes after detection:

(1) To the emergency contact official of the nearest downstream water supplier if pollutants are not contained on the well pad; and

(2) To the Department.

B. The operator shall remain available until clearance to leave is given by the Department.

.05 Seismic Permit Application Procedures.

A. A person may not conduct seismic operations in the State without obtaining a seismic permit from the Department.

B. A seismic permit may not be transferred without written permission of the Department.

C. Application Procedures for a Seismic Permit Applicant.

(1) A seismic permit application shall be:

(a) On a form provided by the Department; and

(b) Completed and signed by the seismic contractor or the contractor's authorized agent.

(2) The seismic permit application shall include:

(a) The name, address, and telephone number of the applicant's resident agent;

(b) U.S. Geological Survey 7.5-minute topographic maps, hydrographic charts, or copies, showing the location of seismic lines;

(c) Certification that State and county permit and bond requirements have been met for any seismic operations;

(d) A statement, on a form provided by the Department, signed by each affected property owner providing the operator with the right of entry to conduct seismic operations;

(e) Authorization, on a form provided by the Department, signed by property owners who can grant legally binding rights of entry to the property, authorizing representatives of the Department and the Department of Natural Resources to enter their private property for the purpose of inspecting seismic operations that are ongoing or have been conducted on the property;

(f) A reclamation plan detailing how any area disturbed by the seismic operation will be restored;

(g) A certificate of insurance for personal injury and property damage liability coverage of not less than \$1,000,000 for each person injured and \$5,000,000 for each occurrence or accident; and

(h) A specific calendar schedule for the proposed operation which prohibits any in-stream work during the spawning season of anadromous fish and the spawning season for self-sustaining brook trout populations.

(3) Applications for permits to conduct seismic operations on the waters of Chesapeake Bay and its tidal tributaries shall be accompanied by a written agreement to provide the Department with processed seismic sections as soon as these sections are available, but not more than 1 year after field operations are completed.

(4) The applicant shall provide additional information considered necessary by the Department to process the permit.

D. A request for modification of the activities approved under the seismic permit shall be submitted to the Department in writing, and shall be approved by the Department before the person conducts the modified seismic operation.

E. Application Processing Procedures for the Department.

(1) The Department shall review the application to determine whether it is administratively complete.

(2) If the required information is not included, the Department shall advise the applicant by written or oral communication that the application is incomplete, and may suspend processing the permit application pending receipt of deficiencies.

(3) The Department may deny a permit if the:

(a) Applicant does not submit the information required by the Department;

(b) Proposed activity poses a substantial risk of causing environmental damage that cannot be mitigated by the applicant such as that set forth in Environment Article, §14-109(b)(6)(ii), Annotated Code of Maryland; or

(c) Proposed operation will violate this chapter.

(4) If the Department's decision is to deny the permit, a notification of denial shall state the reasons for denial, modifications, if any, necessary for approval of the application, and the hearing rights as provided in Environment Article, §5-204, Annotated Code of Maryland and State Government Article, Title 10, Subtitle 2, Annotated Code of Maryland.

(5) Information contained in the application and accompanying documents and required reports shall be available to the public, except for confidential geological and geophysical information protected under General Provisions Article, §4-335, Annotated Code of Maryland.

(6) The Department may include special provisions or modify conditions in the permit for environmental, safety, or other relevant reasons.

F. The seismic permit is valid for 12 months from the date of issuance.

G. In addition to any other remedies provided by law, after notice to the permittee and the opportunity for a hearing, the Department may revoke a seismic permit for the reasons in Regulation .58 of this chapter.

.06 Use of Explosives in Seismic Operations.

A. Persons using explosives in seismic operations shall comply with all applicable local, State, and federal laws and regulations that control the handling or detonation of explosive materials.

B. The use of explosives in seismic operations on or in the waters of the Chesapeake Bay and its tributaries is prohibited.

C. Use of explosives shall be conducted by a person licensed to handle explosives under the Public Safety Article, Title 11, Subtitle 1, Annotated Code of Maryland.

D. The use of explosives shall be conducted in a manner not to cause injury to persons, damage to public or private property, adverse impacts on an underground mine, or to bring about any change in the course, current, channel, or availability of ground water or surface waters.

E. The use of explosive charges on elevated poles as an energy source, referred to as the Poulter method, or with the charges laid on the surface of the ground, is prohibited.

F. After explosives are loaded into shotholes, the explosives handler shall keep the loaded holes under surveillance until the charges are detonated.

G. Persons using explosives in seismic operations shall comply with the following additional safety measures:

(1) Explosives in a shothole may not be detonated unless the explosives handler determines that the area is clear and safe to proceed;

(2) Explosives may not be left in a shothole overnight; and

(3) Seismic operations that use explosives shall be conducted only during daylight hours, and the Department may impose a more restrictive time period.

H. Persons using explosives in seismic operations are subject to the following additional blasting restrictions:

(1) The operator shall obtain written approval from the Department before blasting within 500 feet of any occupied dwelling, commercial building, school, church, or hospital;

(2) The Department may require a seismographic record of any blast; and

(3) The Department may prohibit blasting at specific times and in specific areas, if necessary, to protect public safety, natural resources, or the environment.

.07 Completion of Seismic Permit Operations.

Within 30 days after the completion of seismic work, the operator shall:

A. Notify the Department of the status of the operation in writing;

B. Provide the Department with the results of the seismic survey, which shall be considered public information except for confidential geological and geophysical information protected under General Provisions Article, §4-335, Annotated Code of Maryland; and

C. Complete reclamation work as required by the seismic permit.

.08 Drilling and Operating Permit Required.

A. A person proposing to conduct any of the following operations to explore for, store, produce, or increase the production of oil or gas within the State shall obtain a drilling and operating permit from the Department before the person:

(1) Prepares a well site for the operation;

(2) Drills a well for oil or gas;

(3) Redrills at a location previously permitted;

(4) Re-enters a well;

(5) Deepens an existing well drilled for oil or gas;

(6) Drills a core hole or stratigraphic test; or

(7) Drills a well for the storage of natural gas or the observation of the storage of natural gas.

B. An operator shall maintain a valid permit until the well is abandoned in accordance with the approved plan for abandoning the well.

.09 Prerequisite for Application for a Permit.

A. Except as provided in §B of this regulation, unless the new oil or gas well is included in an approved CDP, a person may not submit, and the Department may not accept or process, an application for a drilling and operating permit for an oil or gas well that will use one or more of the following techniques:

(1) Directional drilling;

(2) More than one well on a well pad;

(3) Acid stimulation, except for acid stimulation of a storage well; and

(4) High volume hydraulic fracturing.

B. A person may apply for, and the Department may accept and process, a drilling and operating permit to drill a wildcat well without first obtaining approval of a Comprehensive Development Plan in accordance with this chapter.

.10 Fees Associated with Seismic Permits and Drilling and Operating Permits.

A. The fees imposed under this regulation shall be set by the Department at the rate necessary to administer and implement programs to oversee oil and gas exploration and production, storage of oil and gas in depleted underground pools, and other requirements related to the drilling of oil and gas wells, including all costs incurred by the State to:

(1) Review, inspect, and evaluate monitoring data, applications, licenses, permits, analyses, and reports;

(2) Perform and oversee assessments, investigations, and research;

(3) Conduct permitting, inspection, and compliance activities; and

(4) Develop, adopt, and implement regulations, programs, or initiatives to address risks to public safety, human health, and the environment related to the drilling and development of oil and gas wells, including the method of hydraulic fracturing.

B. In any fiscal year, if the fee schedule established by the Department generates revenue that exceeds or falls short of the amount necessary to operate a regulatory program to oversee the drilling of oil and gas wells, the Department shall adjust the fees in the following fiscal year.

C. Until modified in accordance with §D of this regulation:

(1) An applicant for a seismic permit shall pay a fee of \$5,000 to the Department upon submission to the Department of the application for a seismic permit.

(2) An applicant for approval of a CDP shall pay a fee of \$30,000 to the Department upon submission to the Department of the draft CDP for preliminary review.

(3) An applicant for a drilling and operating permit shall pay a fee for each well to the Department of:

- (a) \$30,000 with the application for drilling a new well or reentering a well;
- (b) \$20,000 with the application for refracturing or reworking a well; and
- (c) \$25,000 for the 5-year renewal of a drilling and operating permit for an oil or gas well installed after October 1, 2010.

(4) A permittee who requests a modification or transfer of a permit shall pay a fee of \$1,000 to the Department.

D. The Department may administratively adjust its fees in accordance with §B of this regulation by:

- (1) Posting a proposed revised fee schedule on its website along with justification for the proposed fee revision at least 30 days before the new fee schedule is to take effect;
- (2) Allowing public comment for 30 days after posting;
- (3) Considering comments made during the public comment period; and
- (4) Posting the final fee revisions on its website.

E. Fees paid to the Department under this regulation are not refundable.

.11 Comprehensive Development Plan—Purpose and Scope.

A. A CDP shall:

- (1) Identify the locations for well pads, access roads, pipelines, and other ancillary facilities to be developed, and include a plan for transportation routes; and
- (2) Assure that the locations of items identified in §A(1) of this regulation and the plan for transportation routes:
 - (a) Avoid, to the extent possible, adverse site-specific and cumulative impacts to public health, the environment, the economy, and the people of Maryland;
 - (b) Minimize the adverse impacts that cannot be avoided; and
 - (c) Mitigate the remaining impacts.

B. The CDP shall address as much as possible of a CDP-applicant's planned development, but not less than the plans for the 5 years following submission of the CDP.

C. The geographic scope of the CDP shall include, at a minimum, all land on or under which the applicant expects to conduct exploration or production activities over a period of at least the succeeding 5 years.

D. The CDP may be submitted by a single person or by more than one person for an assemblage of land in which the persons hold mineral rights.

E. An approved CDP will remain in effect for 10 years, but one renewal for an additional 10 years may be granted by the Department if the resource information is updated and the locations approved in the initial CDP are not prohibited under any more stringent location restrictions or setback requirements enacted after the approval of the initial CDP.

.12 Procedure and Approval Process for Comprehensive Development Plan.

A. If a CDP is a prerequisite for applying for a permit to drill a well under Regulation .09 of this chapter, a person who seeks to obtain a permit under the Environment Article, §14-104, Annotated Code of Maryland, shall prepare a CDP that complies with location and setback restrictions under Regulation .18 of this chapter and avoids, minimizes, and mitigates adverse impacts to public health, the environment, the economy, and the people of Maryland in accordance with Regulation .11 of this chapter.

B. The CDP shall include:

- (1) A map and accompanying narrative showing the proposed location of all planned wells (vertical and horizontal portions), well

pads, gathering and transmission lines, compressor stations, separator facilities, access roads, and other supporting infrastructure;

(2) Survey data and field notes from a geological survey of the area covered by the CDP; including, at a minimum:

- (a) Locations of all gas and oil wells (abandoned and existing), current water supply wells, and springs;
- (b) Geologic map and cross section of the area;
- (c) Fracture-trace mapping, orientation and location of all joints, faults and fractures; and
- (d) Other additional geologic information as required by the Department;

(3) Identification of travel routes in Maryland for transportation of equipment and materials to and from the well pad;

(4) A water acquisition plan that:

- (a) Identifies the amount of water needed to support the CDP;
- (b) Identifies the sources of that water; and
- (c) Includes, if a water appropriation permit will be needed, a generalized water appropriation plan that identifies the proposed locations and amounts of water withdrawals; and

(5) The sequence of well drilling over the lifetime of the plan that places priority on locating the first well pads in areas removed from sensitive natural resources.

C. The CDP shall be prepared using the State's CDP planning guide and the State-provided toolbox that includes geospatial data necessary for adhering to location restrictions and setbacks and addressing additional planning criteria. The CDP-applicant shall also provide other information as needed, including a field assessment for unmapped streams, wetlands, and other sensitive areas.

D. Preliminary Review.

(1) The CDP-applicant shall submit a draft CDP, including mapping information submitted as geospatial data following the criteria specified in the CDP planning guide, to the Department.

(2) The Department shall forward the draft CDP for preliminary review and comment by appropriate State and local government agencies with responsibility for public health, natural resources and roads.

(3) The Department shall send the preliminary comments to the CDP-applicant within 45 days of receipt of the CDP by the Department.

E. Submission of CDP.

(1) Following the CDP-applicant's receipt and consideration of the preliminary comments, the CDP-applicant shall submit the CDP or a revised CDP to the Department for approval.

(2) Upon receipt of the CDP for approval, the Department will initiate the following process for review and approval of the CDP:

(a) The Department will notify the Department of Natural Resources, which shall convene a stakeholders group that includes a representative of the CDP-applicant, appropriate State agencies, local government, resource managers, non-governmental organizations, and surface owners;

(b) The expenses incurred by the Department of Natural Resources in connection with the stakeholders group, up to an amount agreed to with the Department, shall be reimbursed by the Department from the Oil and Gas Fund;

(c) The stakeholders group will meet with the assistance of a facilitator and, within 60 days after the Department's receipt of the CDP for approval, complete a discussion of how the CDP might be improved;

(d) Following completion of the stakeholders group process, the CDP-applicant may revise the CDP and will present it at a public meeting in a county where land included in the CDP is located, and the public shall be allowed to comment on the plan at the meeting or

within 5 days after the meeting, after which the comment period closes;

(e) Following closure of the comment period, the CDP-applicant may further modify the plan based on alternatives analyses and public comment and shall submit the CDP to the Department of Natural Resources; and

(f) The Department of Natural Resources shall, within 30 days of receipt of the CDP from the CDP-applicant, transmit the CDP to the Department with written advice on whether the CDP:

(i) Conforms to location and setback requirements under Regulation .18 of this chapter; and

(ii) To the maximum extent practicable, avoids adverse impacts to public health, the environment, the economy, and the people of Maryland, minimizes unavoidable impacts, and mitigates remaining impacts.

F. Approval Process.

(1) Except as otherwise provided in this subsection, within 30 days after the Department of Natural Resources provides its written advice to the Department, the Department shall, having considered that advice, approve, disapprove, or partially approve and partially disapprove the CDP.

(2) For good cause and after notice to the CDP-applicant, the Department may extend the 30-day review period under §F(1) of this regulation for an additional 30 days.

(3) If the Department disapproves, in whole or in part, a CDP, the Department shall give the CDP-applicant a written notice of disapproval that states the reasons for disapproval.

G. The disapproval, in whole or in part, of a CDP is subject to judicial review as provided by Environment Article, §14-117, Annotated Code of Maryland.

H. Modifications to the CDP.

(1) A significant modification to an approved CDP, such as a change in the location of a drilling pad that places it closer to special conservation areas, or the addition of new drilling pads, will require the submission for approval of a modified CDP in accordance with the procedures for review and approval of an initial CDP.

(2) A modification that causes no change in the surface impact in the approved CDP, such as the installation of additional wells on an existing pad or a change in the sequence of development, may be approved by the Department upon request of the applicant without the review process required for the initial CDP.

.13 Application for a Drilling and Operating Permit.

A. An application for a drilling and operating permit under Regulation .08 of this chapter shall be submitted to the Department on forms provided by the Department and shall contain the following:

(1) The names, addresses, business status, and telephone numbers of the applicant, operator, and resident agent;

(2) A plat prepared and certified by a Maryland licensed professional land surveyor or property line surveyor containing the information required in §C of this regulation;

(3) An environmental assessment, as required under Regulation .17 of this chapter;

(4) Proof that the applicant meets the Financial Assurances requirements of Regulation .53 of this chapter;

(5) A copy of the oil and gas lease that gives the operator the right to enter and drill at the location shown on the plat and if the mineral rights have been severed, a copy of the right of entry agreement with the surface owner;

(6) If a pooled unit, copies of all leases in the unit which shall accompany the application showing the right to pool interests;

(7) A copy of an agreement signed by the applicant and the landowner stating that the Department and the Department of Natural Resources may enter the land to inspect for compliance with

laws, regulations and permit conditions at any reasonable time during the term of the permit and until the performance bond is released;

(8) Certification and documentation by the applicant that the applicant has notified, in writing, each landowner and leaseholder of real property that borders or is within 2,640 feet of the boundary of the proposed drillable lease area of the applicant's intention to file an application for a permit to drill a well;

(9) Written approval by the local zoning authority that all local planning and zoning requirements have been met;

(10) A sediment and erosion control plan approved by the Department, or the appropriate soil conservation district;

(11) A reclamation plan for restoring the well site;

(12) A spill prevention, control, and countermeasure plan;

(13) A statement listing all other federal, State, county, and local permits and approvals required, and the status of each;

(14) The plan required under Regulation .21 of this chapter; and

(15) Other relevant information and documents considered necessary by the Department.

B. When an applicant seeks to directional drill, the applicant shall state the:

(1) Reason for the proposed directional drilling;

(2) Depth at which deviation from the vertical is planned;

(3) Total depth of the vertical drill; and

(4) Horizontal distance and direction of the planned objective with reference to the surface location.

C. Drilling and Operating Permit Plat.

(1) The plat or plats shall be submitted:

(a) On paper that is of appropriate quality and dimensionally-stable at a scale of 1 inch equals 600 feet; and

(b) In a digital format approved by the Department.

(2) Information Required to be Included in Plat. The plat or plats shall include the following information prepared by a Maryland licensed professional land surveyor or property line surveyor:

(a) The proposed well location;

(b) If directional drilling is proposed, the locations of the surface borehole, the proposed bottom-hole, and the lateral shall be shown;

(c) At least two permanently established property tract boundary corners, with bearings and distances to the proposed well established by an on-ground survey;

(d) Boundaries of the lease or pooled unit containing the well location, with individual lease boundaries within a pooled unit being shown by an on-ground survey, deed calls, or tax map references;

(e) Boundaries of adjoining properties with names and addresses of fee owners, surface owners, mineral owners, and oil and gas lessees; and

(f) The following information obtained from the best available sources:

(i) Active oil and gas drilling, production wells, abandoned wells, storage wells, and injection wells within 2,640 feet of the proposed well location;

(ii) Water wells and springs within 2,640 feet of the proposed well location;

(iii) Churches, schools, buildings, and occupied dwellings within 2,640 feet of the proposed well location;

(iv) Any part of the Critical Area, 100-year floodplain as established by the Federal Emergency Management Agency flood insurance rate maps, nontidal wetlands, streams, or other bodies of water within 1 mile of the proposed well;

(v) Roads, railroads, and other transportation routes within 2,640 feet of the proposed well;

(vi) Location of active and abandoned underground coal mines and workings within 1 mile of the proposed well; and

(vii) A legend identifying the different types of wells and other features shown on the plat.

(3) All plat lines actually surveyed shall be shown with solid lines, and lines taken only from deed descriptions or tax maps shall be shown by broken lines.

(4) Ownership and lease information may be based upon current tax records or land record indexes.

(5) The applicant may supply ownership and lease information on a supplemental list indexed to the tracts on the plat.

.14 Review Procedures for Drilling and Operating in the Critical Area.

A. Following receipt of a permit application for a project located in the Critical Area, the Department shall send a copy of the permit application and all accompanying documents to the Critical Area Commission for the Chesapeake and Atlantic Coastal Bays for review and recommendations.

B. The Critical Area Commission for the Chesapeake and Atlantic Coastal Bays shall submit written recommendations on the application to the Department within 150 days of receipt of the application and accompanying documents.

C. Following receipt of the recommendations by the Critical Area Commission for the Chesapeake and Atlantic Coastal Bays on the application, the Department shall adopt, to the maximum extent permitted by law, permit conditions recommended by the Critical Area Commission for the Chesapeake and Atlantic Coastal Bays.

.15 Drilling and Operating Requirements and Permit Conditions.

The Department may place in a drilling and operating permit conditions which the Department deems reasonable and appropriate to assure that the operation shall fully comply with the requirements of Environment Article, Title 14, Subtitle 1, Annotated Code of Maryland and this chapter, and provide for public safety and the protection of the State's natural resources.

.16 Departmental Review Procedures for Drilling and Operating Permit.

A. Following receipt of a drilling and operating permit application, the Department shall conduct a review to determine if the application is administratively complete and notify the applicant of deficiencies.

B. The Department may request additional information from the applicant after the application is administratively complete.

C. When the Department determines that all necessary information has been submitted in proper form, it shall notify the applicant that the application is considered complete and provide for public participation in the Department's review by the following means:

(1) The Department shall publish notice of the application once per week for 2 consecutive weeks in a newspaper of general circulation in the county where the proposed permit activity would occur;

(2) The applicant shall pay all costs associated with publishing notice of the application;

(3) The published notice of the application shall provide an opportunity to request a public informational meeting on the application;

(4) Following publication of the notice of the application, a person interested in the pending application for a drilling and operating permit may request that the Department schedule a public informational meeting; and

(5) If the Department receives a request for an informational meeting:

(a) The meeting shall be held within 45 calendar days of the date of the request, unless extenuating circumstances justify an extension of time; and

(b) The Department shall publish notice of the public informational meeting once per week for 2 consecutive weeks in a newspaper of general circulation in the county where the proposed permit activity would occur.

D. The Department shall deny a drilling and operating permit if the Department determines that the proposed activities pose a substantial threat to public safety or a risk of significant adverse environmental impact, particularly to:

(1) The Critical Area;

(2) Tidal or nontidal wetlands;

(3) Endangered or threatened species, or species in need of conservation of their habitat;

(4) Historic properties as provided for in State Finance and Procurement Article, §5A-326, Annotated Code of Maryland; or

(5) Populated areas.

E. The Department may issue a permit for directional drilling when directional drilling is:

(1) Required for proper geologic evaluation; or

(2) Necessary to protect specific features, including:

(a) A water body;

(b) The Critical Area;

(c) A park;

(d) A building; or

(e) A highway, or other developed or natural features.

F. The Department's decision to grant or deny a drilling and operating permit may be issued not later than 30 calendar days after the close of the record for the public informational meeting.

G. The Department shall mail or provide electronic written notice of the decision to grant or deny the permit to:

(1) The applicant;

(2) Participants at a public informational meeting on the application;

(3) Persons who comment on the application; and

(4) All landowners and owners of mineral, oil, and gas rights within 1,000 feet of the proposed well.

.17 Environmental Assessment and Baseline Monitoring.

A. With the application for a drilling and operating permit to drill a well, the applicant shall submit an environmental assessment and 2 years of baseline monitoring of the surface water, ground water, and air in the vicinity of the well pad.

B. Baseline monitoring required under §A of this regulation shall be completed before any site preparation or construction is begun at the site of the planned well pad.

C. The Department, in consultation with the Department of Natural Resources, shall develop guidance for the environmental assessment and the baseline monitoring that will include sampling design, monitoring protocols, quality assurance and quality control criteria, and specifications for analysis and data submission.

D. The Department shall coordinate with the Department of Natural Resources in its evaluation of the environmental assessment.

.18 Location Restrictions and Setbacks.

A. The Department may not issue a drilling and operating permit for drilling in the waters or tributaries of the Chesapeake Bay.

B. The Department may not issue a drilling and operating permit to drill in the Critical Area unless the applicant has obtained written approval from the Critical Area Commission for the Chesapeake and Atlantic Coastal Bays.

C. The Department may not issue a drilling and operating permit for a well if any part of the land within the limit of disturbance of the well pad is within 1,000 feet from the boundary of the property on which the well is to be drilled.

D. The setback restrictions for well pads in §G of this regulation also apply to all oil and gas development activities that result in permanent surface alteration that would negatively impact aquatic

habitat, special conservation areas, cultural and historical sites, State and federal parks, forests and trails, wildlife management areas, wild and scenic rivers, and scenic byways.

E. The Department may increase the setback distances in §G of this regulation if necessary due to local topography, prevailing winds, or other site-specific conditions.

F. If the pathway of a buried pipeline will be permanently maintained in a vegetated state, the pipeline will not be considered to result in permanent surface alteration.

G. The Department may not issue a drilling and operating permit if any part of the land within the limit of disturbance for the well pad, or other gas development activities that result in permanent surface alteration, including permanent roads, compressor stations, separator facilities, and other permanent infrastructure, is:

(1) On land with a slope, before grading, of greater than 15 percent;

(2) Within the watersheds of any of the following drinking water reservoirs:

- (a) Broadford Lake;
- (b) Piney Reservoir; or
- (c) Savage Reservoir;

(3) Within 450 feet from the edge of an aquatic habitat;

(4) Within 600 feet from special conservation areas;

(5) Within 300 feet from a cultural or historical site, State or federal parks, trails, wildlife management areas, wild and scenic rivers, and scenic byways;

(6) Within public lands owned or managed by the Department of Natural Resources without the approval of the Department of Natural Resources;

(7) Within 1,000 feet of known caves;

(8) Within 750 feet of the downdip side of a limestone outcrop;

(9) Within 1,000 feet from any occupied building, school or church;

(10) Within 1,000 feet from the boundary of a wellhead protection area;

(11) Within 2,000 feet from a private drinking water well; or

(12) Within an area defined as all lands at an elevation equal to or greater than the discharge of a spring used as the source of domestic drinking water by the resident(s) of the property on which the spring is located, not to exceed 2,500 feet unless the Department approves an alternative based on the delineation of recharge area of the spring.

H. Unless the applicant provides evidence satisfactory to the Department that its plan for well completions operations will control pressure and fluid movement within the target geological formation so these changes do not adversely interact with an abandoned oil or gas well or other wells, the Department may not issue a permit to drill a vertical or horizontal segment of well within 1,320 feet of an abandoned oil or gas well or an active oil or gas well.

I. Except for wells with horizontal segments drilled from vertical boreholes on a common well pad, the Department may not issue a permit to drill and complete a gas well closer than 2,000 feet to an existing gas well in the same oil or gas reservoir unless the Department is provided with credible geologic evidence of reservoir separation to warrant granting a spacing exception.

J. Except for wells with horizontal segments drilled from vertical boreholes on a common well pad, the Department may not issue a permit to drill and complete an oil well closer than 1,320 feet to an existing oil well in the same oil or gas reservoir unless the Department is provided with credible geologic evidence of reservoir separation to warrant granting a spacing exception.

.19 Prohibited Acts.

A person may not operate a well in a way that results in physical and preventable loss of oil and gas through inefficient or careless operating practices, such as:

A. Operating or producing any oil or gas well in a manner that would result in a reduction of the ultimate quantity of oil or gas to be recovered from a pool;

B. Inefficient storing or improper handling of oil causing excessive evaporative loss, spillage on the surface, or leakage into the subsurface;

C. Producing oil or gas in a manner causing unnecessary water channeling or coning;

D. Permitting gas produced from a gas well to escape into the air;

E. Flaring of gas from a well producing both oil and gas; or

F. Creating fire hazards.

.20 Wildcat Well.

A. A CDP is not a prerequisite for a permit to drill a wildcat well.

B. Except as provided in §A of this regulation, an application for a wildcat well shall meet all other substantive and procedural requirements for a drilling and operating permit, including submission of the information required for a Completion Report under Regulation .41 of this chapter.

C. A company may apply for permits for wildcat wells before submitting a CDP for approval.

D. The wildcat well shall comply with all of the location restrictions, setbacks, and other requirements for a drilling and operating permit including two years of baseline monitoring and an environmental assessment.

E. Once a permit for a wildcat well has been issued, no other well, wildcat or production, may be permitted within a 2.5 mile radius around the wildcat well until a CDP has been approved.

F. Unless the Department determines that the wildcat well can be connected to a transmission line without any adverse impact on wetlands, forest, or nearby residents, the exploratory well may not be converted to a production well until a CDP for that area is approved.

.21 Performance Standards and Minimum Requirements.

A. In an application for a drilling and operating permit to drill a well, the applicant shall submit a detailed plan for construction and operation of the well that demonstrates that the planned activity meets or exceeds the performance standards and minimum requirements of Regulations .22 through .52 of this chapter.

B. In preparing the plan, the applicant shall consider industry standards and practices as well as API standards.

C. The Department may require the applicant to use specified technology for drilling, well stimulation, production and abandonment if those methods have been demonstrated to have lower potential adverse impacts and to be as effective as the applicant's proposed technology.

D. If the Department approves the plan, it shall be incorporated by reference into the drilling and operating permit.

.22 Drilling.

A. The drilling liquid used shall be conditioned and tested daily to assure it is capable of:

(1) Sealing off each oil, gas, brackish and salt water, or fresh water zone to be encountered; and

(2) Exerting pressure in excess of those pressures anticipated by the operator in any formation to be penetrated.

B. When air is permitted as the circulating medium, sufficient liquid shall be available at the site at all times to kill any flow from the well.

C. When actual drilling begins, the operator shall:

(1) Notify the Department at least 72 hours before beginning to drill;

(2) Collect samples of drill cuttings for the Department's use as directed in the drilling and operating permit;

(3) Conduct an electrical induction and gamma ray log to determine depth of fresh water zones;

(4) Conduct any other logs required by the Department in the permit; and

(5) Run and permanently cement a string of surface casing in the hole to a depth which is at least 100 feet below the deepest known strata bearing fresh water, or the deepest known workable coal, whichever is deeper.

.23 Stormwater.

A. There may not be a discharge of stormwater from the pad as long as any fuel or chemicals are present on the pad.

B. Stormwater collected from the pad may be used for hydraulic fracturing but, prior to use, the stormwater shall be stored in tanks and not in a surface impoundment.

C. During the production phase of the wells on a pad, unless fuel or chemicals are present, the operator shall follow a stormwater management plan for the pad area approved by the Department or the authorized approval authority.

.24 Sediment and Erosion Control.

Sediment and erosion shall be controlled in accordance with State law and the approved sediment control plan for all construction, including the well pad, ponds, access roads, and pipelines.

.25 Well Pad.

A. There may not be a discharge of pollutants from the pad.

B. The pad shall be constructed with a liner and berms with a hydraulic conductivity of 10^{-7} centimeter per second or less.

C. The pad shall be capable of containing, at a minimum, the volume of the 25-year, 24-hour precipitation event.

D. The liner shall be protected from damage by decking or other material.

E. The pad design shall allow for the transfer of stormwater and other liquids that collect on the pad to storage tanks on the pad or to trucks that can safely transport the liquid for proper disposal.

.26 Access Roads.

A. Access roads shall be constructed and operated to allow safe passage of vehicles accessing the site and shall include stormwater controls and control of dust and mud.

B. The design, construction, and maintenance of unpaved roads shall be at least as protective of the environment as the standards in Guidelines for Administering Oil and Gas Activity on State Forest Lands.

.27 Freshwater Storage.

A. Only freshwater may be stored in a surface impoundment.

B. A surface impoundment shall:

(1) Have at least 2 feet of freeboard at all times;

(2) Be at least 1 foot above the ground water table;

(3) Be impermeable;

(4) Allow no liquid or solid discharge of any kind into the waters of the State; and

(5) Provide for diverting surface runoff from surface impoundments.

C. Dikes associated with surface impoundments shall be:

(1) Constructed of compacted material, free of trees and other organic material, and essentially free of rocks or any other material which could affect their structural integrity;

(2) Maintained with a slope that shall preserve their structural integrity; and

(3) Constructed and maintained in accordance with the current Maryland Standards and Specifications for Soil Erosion and Sediment Control.

.28 Chemical Use, Storage and Handling.

A. Except in an emergency, only additives for drilling and well stimulation that have been disclosed to the Department in advance may be used.

B. Diesel fuel shall not be used in hydraulic fracturing.

C. All liquids, except fresh water, shall be stored in watertight, closed tanks or containers with secondary containment capable of holding the volume of the largest tank or container.

D. All non-liquid chemicals shall be stored safely and protected from contact with precipitation or collected water.

E. If the tanks holding liquid have the potential to emit methane or VOCs and are vented to the environment, they shall be equipped with pollution control equipment to destroy or capture methane and VOCs.

.29 Disclosure of Chemicals.

A. Applicants for drilling and operating permits to drill gas wells shall provide the Department with the name, CAS number, and concentration of every chemical constituent of every commercial chemical product it intends to use on the site. Unless the applicant or supplier attests that the information is a trade secret, this information shall be public information.

B. Within 30 days after well completion, the operator shall provide to the Department a list of all chemicals used in fracturing, the weight of each used, and the concentration of the chemical in the fracturing fluid. Unless the operator attests that the information is a trade secret, this information shall be public information under General Provisions Article, §4-335, Annotated Code of Maryland.

C. Within 30 days after well completion, the operator shall provide to FracFocus a list of all chemicals used in fracturing, the weight of each used, and the concentration of the chemical in the fracturing fluid in accordance with FracFocus rules on reporting and trade secrecy.

D. If a claim is made that the concentration of a chemical in either a commercial chemical product or the fracturing fluid is a trade secret, the operator shall attest to that fact and, in addition to providing the complete list to the Department, provide a second list that includes every chemical by name and CAS number, but does not link the chemical to a specific commercial product or reveal the concentration. This list shall be public information under General Provisions Article, §4-335, Annotated Code of Maryland.

E. The Department may share trade secret information with other State and federal agencies that agree to protect the confidentiality of the information.

F. The operator shall provide the local emergency response agency with:

(1) The list of chemicals developed under §B of this regulation;

(2) The second list, developed under §D of this regulation, in the event trade secrecy is claimed; and

(3) A copy of the Safety Data for every commercial product brought to the well site that contains a substance designated as hazardous chemical by the federal Occupational Safety and Health Administration.

G. Upon request, the operator shall provide the public with the same information made available to the local emergency response agency. The operator may satisfy this requirement by providing the information to the Department in a format the Department specifies; the Department will post the information on its website until the well completion report is filed and shall maintain it in the Department's file on the well until the well is properly abandoned.

H. If a claim of trade secrecy is made, the operator shall provide to the Department contact information, including the name of the company, an authorized representative, and a telephone number answered 24 hours per day, 7 days per week by a person with the

ability and authority to provide the trade secret information in accordance with this regulation.

I. Health Care Professionals Diagnosing or Treating a Patient.

(1) An operator shall give the trade secret information immediately to a health care professional who states, orally or in writing, that the health care professional needs the trade secret information to diagnose or treat a patient.

(2) The disclosure may not be conditioned on or delayed for the execution of a confidentiality agreement.

(3) The health care professional may share the information with other persons only as medically necessary, including, but not limited to, the patient, other health professionals involved in the treatment of the patient, the patient's family members if the patient is unconscious, unable to make medical decisions, or is a minor, the Centers for Disease Control and Prevention, and other government public health agencies.

J. Public Health Professionals.

(1) Upon written request and statement of need for public health purposes, the operator shall give the trade secret information to any health professional, toxicologist, or epidemiologist who is employed in the field of public health, including such persons employed at academic institutions who conduct public health research.

(2) The disclosure may be conditioned on the signing of a confidentiality agreement before disclosure.

(3) The recipient may share the information as professionally necessary.

.30 Radioactive Sealed Sources and Other Radioactive Materials.

A. An operator shall comply with all applicable provisions of the Maryland Radiation Act, Environment Article, Title 8, Annotated Code of Maryland, and regulations promulgated under that title.

B. An operator shall disclose to the Department, before use, a radioactive material in charges used to perforate casing, cement, or both, and shall present a plan for safe handling, monitoring, and disposal for approval by the Department.

.31 Transportation and Truck Traffic.

A. Travel for all heavy truck traffic to or from the well pad or to or from centralized facilities serving the well pad shall be planned and implemented to minimize conflicts with the public. The plan at a minimum, shall:

(1) Avoid truck traffic during times of school bus transport of children to and from school locations;

(2) Ensure that truck traffic does not interfere with public events or festivals;

(3) Minimize truck traffic in residential areas; and

(4) Minimize conflict with public uses such as hunting and fishing.

B. The number of truck trips to deliver material to the well pad and remove wastes and the impact of the remaining trips shall be reduced by one or more of the following methods, if they are practicable for the specific site:

(1) Establishing a centralized water storage facility at a location that minimizes the use of roads near homes or other occupied buildings for the truck transportation of water to the centralized water storage facility;

(2) Improving the roads to be used so that damage to the roadways is minimized;

(3) Transferring water from the centralized storage facility to the well pad using aboveground temporary hoses or pipes;

(4) If it is proven to be safe and effective and to have less impact, establishing a centralized facility with all the equipment necessary for preparing and pressurizing the fracturing fluid in a location, with noise and air pollution controls that minimize impacts

to people, and deliver the water, proppant, and additives to the well pad using pipes;

(5) If they are proven to be safe and effective and to have less impact, performing fracturing using alternatives to high volume water-based fracturing fluid; and

(6) Implementing other modifications proposed by the applicant which are accepted by the Department as traffic reduction measures.

.32 Protection of Sensitive Aquatic Resources During Water Withdrawals.

A. If feasible, operators shall arrange to acquire water for drilling and hydraulic fracturing from one or more permanent or semi-permanent water supply access points with large capacity and storage options to decrease risks related to water withdrawals such as invasive species.

B. Applicants seeking water appropriation permits for water from sensitive headwater streams and Use III and Tier II waters may be required to perform additional studies, at the direction of the Department in consultation with the Department of Natural Resources, to ensure water withdrawals will not negatively impact aquatic life.

.33 Protection of Fresh Water Aquifers.

A. The operator shall protect fresh water aquifers from contamination during drilling and during the life of the well.

B. The drilling fluid used to drill intervals prior to reaching the depth 100 feet below the deepest known stratum bearing fresh water, or the deepest known workable coal, whichever is deeper:

(1) Shall be air, fresh water, a freshwater based drilling fluid, or a combination of these; and

(2) May contain only additives that the manufacturer warrants have been certified under NSF/ANSI Standard 60, Certification for Drinking Water Treatment Chemicals – Health Effects.

.34 Control and Reporting of Air Emissions.

A. Reduced emissions completion shall be achieved on all oil and gas wells that are subjected to high volume hydraulic fracturing or re-fracturing.

B. The operator shall use top-down best available technology, as determined by the Department and included as a condition of the drilling and operating permit, for the control of air emissions, including, to the extent relevant to the operations:

(1) Improved Compressor Maintenance to reduce emissions from reciprocating compressors;

(2) Low-Bleed or No-Bleed Pneumatic Controllers used to reduce emissions from control devices;

(3) Dry Seal Systems to reduce emissions from centrifugal compressor seals;

(4) Rigorous Leak Detection and Repair (LDAR) program;

(5) Zero emission or dessicant well gas dehydration;

(6) Vapor Recovery Units used to reduce emissions from storage tanks;

(7) Pipeline inspection, maintenance, and repair program; and

(8) Plunger lift systems when natural gas liquids (NGLs) are present.

C. Methane Offset.

(1) Each calendar year the operator shall estimate the methane emissions from each well pad including the emissions from the well or wells on the pad and any other equipment on the pad.

(2) If feasible, the operator shall verify the estimates by operational data and from the leak detection and repair program.

(3) By April 1 of each year, the operator shall report the methane emissions for the previous calendar year, converted to CO₂ equivalent emissions, to the Department.

(4) Upon notification from the Department that CO₂ equivalent allowances are available, the permittee shall purchase sufficient allowances to offset its methane emissions and provide documentation to the Department of the purchase.

.35 Engines and Compressors.

The operator shall ensure that:

A. All on-road and non-road vehicles and equipment using diesel fuel use Ultra-Low Sulfur Diesel fuel (maximum sulfur content of 15 ppm);

B. All on-road vehicles and equipment limit unnecessary idling to 5 minutes;

C. All trucks used to transport fresh water or wastewater meet EPA Heavy Duty Engine Standards for 2004 to 2006 engine model years in 40 CFR Part 86, as amended, which include a combined NO_x and non-methane hydrocarbon (NMHC) emission standard of 2.5 grams per brake horsepower-hour (g/bhp-hr); and

D. Except for engines necessarily kept in ready-reserve, all diesel non-road engines limit idling to 5 consecutive minutes.

.36 Blowout Prevention.

A. The well shall be equipped with blowout prevention equipment with two or more redundant mechanisms.

B. Blowout preventers shall be tested at a pressure at least 1.2 times the highest pressure expected to be experienced during the life of the well; if this highest pressure occurs during well stimulation, it shall be tested at a pressure at least 1.2 times higher than that experienced during well stimulation.

C. The blow out preventer shall be tested on a weekly basis.

.37 Leak Detection and Repair (LDAR).

A. The applicant for a drilling and operating permit shall submit to the Department for approval a written plan for methane leak detection and repair.

B. The plan shall address:

- (1) Training;
- (2) LDAR audits;
- (3) Contractor accountability;
- (4) Internal leak definition for valves and pumps;
- (5) More frequent monitoring;
- (6) Repairing leaking components;
- (7) Delay of repair compliance assurance;
- (8) Electronic monitoring and storage of LDAR data;
- (9) Quality assurance/quality control of LDAR data;
- (10) Calibration/calibration drift assessment; and
- (11) Records maintenance.

C. The plan shall address leak detection and repair from wellhead to transmission line and assure prompt repair of leaks.

D. Records of leak detection and repair shall be made available to the Department upon request.

.38 Well Construction, Casing, and Cement.

A. Wells shall be drilled, cased, and cemented to effectively isolate the borehole from the surrounding formations and prevent the migration of gas or liquids into or out of the casing and the formations.

B. Pilot Hole.

(1) The operator shall drill at least one pilot hole from a well pad before drilling any well from that pad that will include directional drilling.

(2) The pilot hole shall extend from the surface of the ground to the bottom of the targeted geologic formation.

(3) The operator shall perform open hole logging on the pilot well to determine the geologic and hydrogeologic nature of the well pad site and to assist in the identification of geologic features,

underground voids, gas- or water-bearing formations, geologic faults, and the lowest fresh water aquifer.

(4) The operator shall submit the results of tests run on the pilot hole, including the open hole logging data, to the Department within 30 days after completing the pilot hole.

C. The applicant for a drilling and operating permit shall submit a plan for the Department's approval that describes, at a minimum, how:

(1) A stable borehole will be drilled with minimal rugosity (roughness of the borehole wall);

(2) Complete removal of drilling fluid will be accomplished;

(3) The cement system design addresses challenges to zonal isolation;

(4) Other factors that could interfere with the proper placement of the cement around the casing will be addressed; and

(5) The casing and cement will assure integrity throughout the life of the well.

D. Adherence to the drilling, casing and cementing plan, as well as integrity testing shall be a condition of the permit.

E. Unless the applicant submits proof that demonstrates to the satisfaction of the Department that the applicant's plan assures isolation of the borehole from the surrounding formations and prevents the migration of gas or liquid into or out of the casing and the formation, as well or better than the minimum standards and criteria established in this section, the plan shall meet the following minimum standards and criteria:

(1) The conductor casing shall be cemented to the surface;

(2) The surface casing shall extend from the surface to at least 100 feet below the lowest fresh water and be cemented along its entire length;

(3) The intermediate casing shall be installed and cemented from its greatest depth to the bottom of the surface casing;

(4) Production casing shall be cemented along the horizontal portion of the well bore and to at least 500 feet above the highest formation where hydraulic fracturing will be performed, or to the base of the intermediate casing, whichever is shallower;

(5) A representative sample of each cement formulation shall be tested before use under conditions that are similar to those found in the well where the cement will be used;

(6) Open hole logging shall be performed and used to optimize the design and installation of the well;

(7) All casing installed in a well shall be steel alloy casing and have a minimum internal yield pressure rating designed to withstand at least 1.2 times the maximum pressure to which the casing may be subjected during drilling, production, or stimulation operations;

(8) The minimum internal yield pressure rating shall be based upon engineering calculations that shall be included in the plan;

(9) Thread and coupling designs for casing and tubing shall meet or exceed the maximum anticipated tensile, compressive, burst, and bending stress conditions for the well;

(10) Casing strings with threads should be assembled to the correct torque specifications to ensure leak-proof connections;

(11) An operator shall use a sufficient number of centralizers to properly center the casing in each borehole; and

(12) The cement shall be allowed to set at static balance or under pressure for a minimum of 12 hours and shall have reached a compressive strength of at least 500 psi before drilling the plug, or initiating any integrity testing.

F. Reconditioned casing may be permanently set in a well only after it has passed a hydrostatic pressure test with an applied pressure at least 1.2 times the maximum internal pressure to which the casing may be subjected, based upon known or anticipated subsurface pressure, or pressure that may be applied during stimulation, whichever is greater, and assuming no external pressure. The casing shall be marked to verify the test status. All hydrostatic

pressure tests shall be conducted by a method approved by the Department. The owner shall provide a copy of the test results to the Department before the casing is installed in the well.

.39 Integrity Testing.

A. Integrity testing is required to ensure proper cementing of the well casing to the geological formations.

B. An applicant for a drilling and operating permit shall provide a plan for integrity and pressure testing of the cased hole for approval by the Department.

C. Segmented radial cement bond logging (SRCBL) shall be used, supplemented by other methods that the Department may require in a permit, such as omnidirectional cement bond logging and neutron logging.

D. Before commencing hydraulic fracturing, the operator shall certify to the Department the integrity of the casing and cement, the isolation of all fluid-bearing (gas or liquid) formations, and the sufficiency of the zonal isolation with supporting data.

E. If there is evidence of inadequate casing integrity or cement integrity, the operator shall notify the Department and propose remedial action.

F. Integrity testing shall be performed periodically during the lifetime of the well using the tests and at the frequency specified by the Department in the permit.

G. An additional integrity testing will be required before a well is re-fractured.

H. All integrity test results shall be reported to the Department.

.40 Monitoring During Drilling and High Volume Hydraulic Fracturing.

A. The operator shall perform a tiltmeter or microseismic survey for the first well hydraulically fractured on each pad to provide information on the extent, geometry, and location of fracturing.

B. The Department may require that tiltmeter or microseismic surveys also be conducted for second and subsequent wells on a pad.

C. The operator shall provide the results of the tiltmeter or microseismic survey, with an accompanying narrative, to the Department with the Completion Report required by Regulation .41 of this chapter.

D. The operator shall maintain, at the site, a written record of:

(1) Each pressure test, integrity test, and mechanical test of:

- (a) Casings;
- (b) Blowout preventers;
- (c) Surface connections;
- (d) Fittings; and
- (e) Auxiliary wellhead equipment; and

(2) Daily record of:

- (a) Footage drilled;
- (b) Hole size;
- (c) Accidents; and
- (d) Spills.

.41 Completion Report.

A. Within 30 days after the drilling, stimulating, and testing of a well are completed, a completion report of the well shall be submitted to the Department.

B. Except as provided in Regulation .29 of this chapter and for confidential geological and geophysical information protected under General Provisions Article, §4-335, Annotated Code of Maryland, information contained in the completion report and accompanying documents shall be available to the public.

C. The completion report shall be on a form furnished by the Department and shall include:

- (1) Depth at which any fresh water inflow was encountered;
- (2) Lithology of penetrated strata, including color;
- (3) Total depth of the well;

(4) A record of all commercial and noncommercial oil and gas encountered, including depths, tests, and measurements;

(5) A record of all brackish and salt water inflows;

(6) A record of all casing used, including:

- (a) Size, weight, amount, and depth set;
- (b) Amount of cement used on each casing string; and
- (c) Amount of casing recovered from the hole if the well was abandoned;

(7) Generalized core descriptions, including:

- (a) The type and depth of sample;
- (b) Indications of oil, water, or gas;
- (c) Estimates of porosity and permeability; and
- (d) Percent recovery.

(8) Data recorded regarding perforating, stimulating, and testing, including open-flow tests and shut-in pressures;

(9) Data on bridge plugs set, make and type of plug, depth plug was set, whether plug was left in place or removed, and details of the plug-back operation below the bridge;

(10) Information regarding the constituents of the fracturing fluid required by Regulation .29 of this chapter;

(11) A copy of all electric, radiation, sonic, caliper, directional, and any other type of logs run in the well; and

(12) The date on which verbal approval was obtained from the Department to plug the hole as a dry hole in a continuous progression from drilling or reworking.

.42 Site Security.

A. The operator shall secure the site.

B. At a minimum, security shall include:

- (1) Perimeter fencing;
- (2) Providing local emergency responders with duplicate keys to locks;
- (3) Fencing around any surface impoundments; and
- (4) Posting appropriate signage that:
 - (a) Has letters at least 1 inch high;
 - (b) Indicates the name of the permittee, the name of the lessor or landowner, and the Department and American Petroleum Institute well identification numbers;
 - (c) Indicates phone numbers for the operator and regulatory agencies required to be contacted in the event of an emergency at the site;
 - (d) Is posted in a prominent place as directed by the Department; and
 - (e) Is kept in good condition.

.43 Management of Drilling Fluids, Stimulation Fluids and Produced Water.

A. All drilling fluids and cuttings shall be managed on the well pad in a closed loop system without the use of a surface impoundment for mud or cuttings.

B. Flowback and produced water shall be managed in a closed loop system of tanks or containers at the pad site.

C. Flowback and produced water shall be recycled to the maximum extent practicable. Unless the applicant demonstrates that it is not practicable, the permit shall require that not less than 90 percent of the flowback and produced water be recycled, and that the recycling be performed on the pad site of generation.

.44 Gathering Lines and Pipelines.

A. All necessary approvals and permits, including sediment and erosion control, permits or licenses for dredging and filling of wetlands, and stream crossing, shall be obtained prior to construction.

B. Gathering lines shall be properly constructed, installed, and operated to prevent any leaks.

C. The person that owns or operates an underground facility for the conveyance of oil or gas shall participate as an "owner-member" in the "one-call system" as those terms are defined in the Maryland Public Utilities Code, §12-101, Annotated Code of Maryland.

D. All pipelines and fittings appurtenant thereto used in the drilling, operating, or producing of an oil well, a gas well, or both, shall be designed for at least the greatest anticipated operating pressure or the maximum regulated relief pressure in accordance with the current recognized design practices of the industry.

.45 Flaring.

A. Flaring shall be allowed only if the content of flammable gas is too low to sustain combustion, or when flaring is required for safety.

B. The following circumstances shall not justify flaring:

- (1) Inadequate water disposal capacity;
- (2) Undersized flowback equipment; or
- (3) Except for wildcat wells, lack of a pipeline connection.

C. When flaring is permitted during well completion, re-completions, or workovers of any well, the operator shall adhere to the following requirements:

(1) The operator shall either use a raised/elevated flare or an engineered combustion device with a reliable continuous ignition source, which has at least a 98 percent destruction efficiency of methane.

(2) No impoundment flaring is permitted.

(3) Flaring may not be used for more than 30 days on any wildcat well, unless the operator submits proof in a form acceptable to the Department that an extension of time is necessary.

(4) Flares shall be designed for and operated with no visible emissions, except for periods not to exceed a total of five minutes during any two consecutive hours.

.46 Noise.

A. Noise shall be reduced to the lowest practicable level.

B. An applicant for a drilling and operating permit shall provide to the Department a power plan that results in the lowest practicable noise impact from the choice of energy source, including consideration of the impact of noise from on-site generators.

C. Appropriate noise reduction devices shall be used and maintained on all equipment at the pad site.

D. Noise modeling shall be conducted prior to beginning operations to demonstrate that noise standards will be met and noise sensitive areas will be protected.

E. The operator shall conduct noise monitoring at least once during drilling and once during hydraulic fracturing, to confirm that noise standards are met.

F. The Department may require the operator to perform noise monitoring in response to complaints about noise.

.47 Lighting.

A. Night lighting:

- (1) May be used only when and where necessary;
- (2) Shall be directed downward; and
- (3) Shall use low pressure sodium light sources wherever possible.

B. If drill pads are located within 1,000 feet of aquatic habitat, screens or restrictions on the hours of operation may be required to reduce light pollution.

C. Light restrictions and management protocols shall minimize conflicts with recreational activities, in addition to minimizing stress and disturbance to sensitive aquatic and terrestrial communities

.48 Spill Prevention, Control and Countermeasures and Emergency Response Plan.

A. All spills shall be entered in the record required in Regulation .40D of this chapter.

B. In addition to any other notifications required by law or permit, an operator shall report to the Department immediately, but not later than 2 hours after detection, all spills and releases that are not contained on the well pad.

C. All spills and releases shall be immediately cleaned up and the waste properly disposed.

D. Each applicant for a drilling and operating permit shall prepare and submit to the Department for approval a site-specific emergency response plan for preventing the spills of oil and hazardous substances and addressing spills that occur.

E. Before preparing the plan, the operator shall:

(1) Consult with the governing body of the local jurisdiction in which the well is located to verify that local responders have appropriate equipment and training to respond to an emergency at a well;

(2) Identify the nearest downstream water system with a surface intake, the estimated time of travel of a spill from the well site to the intake of that downstream system under low, median and high flow conditions, the emergency contact information of the nearest downstream water supplier; and

(3) notify the nearest downstream water supplier regarding the location of the planned drilling by certified mail, return receipt requested.

F. The plan shall include, at a minimum:

(1) Using drip pans and secondary containment structures to contain spills;

(2) Conducting periodic inspections;

(3) Using signs and labels;

(4) Having appropriate personal protective equipment and appropriate spill response equipment at the facility;

(5) Training employees and contractors;

(6) Establishing a communication plan for providing notification, information and updates about spills and other incidents that:

(a) Contains contact names and telephone numbers; and

(b) Describes the process for informing:

(i) The public;

(ii) Local government;

(iii) Downstream water systems;

(iv) The Department; and

(v) The media; and

G. The operator shall have at least two vacuum trucks on standby at the site during drilling, fracturing, and flowback so that any spills occurring during those stages, which could be of significant volume, could be promptly removed from the pad.

H. The operator shall identify specially trained and equipped personnel who will respond to a well blowout, fire, or other incident that personnel at the site cannot manage. These specially trained and equipped personnel shall be capable of arriving at the site within 24 hours of the incident.

.49 Ongoing Monitoring and Corrective Measures.

A. If there is evidence of inadequate casing or cement integrity or methane migration, the operator shall notify the Department immediately and propose remedial action.

B. The operator shall monitor in accordance with the Department's standard protocols for environmental assessment monitoring, recordkeeping, and reporting during drilling, hydraulic fracturing, and production, as specified in the drilling and operating permit.

C. The Department and the Department of Natural Resources shall jointly develop standard protocols for ongoing monitoring and assessment for air and water quality, terrestrial and aquatic living resources, invasive species, geophysical assessments, and such additional information as may be required by the Department.

D. All information collected at the site and within the study area shall be reported according to the protocols.

E. The Department may require more extensive testing of air, surface water, and ground water in instances where elevated levels of pollutants are suspected or have been detected.

.50 Invasive Species.

A. The applicant shall submit a plan with every drilling and operating permit application for preventing the introduction of invasive species (plants and animals) and controlling any invasive species that is introduced.

B. The invasive species management plan required under §A of this regulation shall emphasize avoidance, early detection, and rapid response.

C. The plan required under §A of this regulation shall include, at a minimum:

(1) Flora and fauna inventory surveys of sites prior to operations, including water withdrawal sites;

(2) Procedures for avoiding the transfer of species by clothing, boots, vehicles, and water transfers, including assuring that the water withdrawal equipment is free from invasive species before use and before it is removed from the withdrawal site;

(3) Interim reclamation following construction and drilling to reduce opportunities for invasion;

(4) Annual monitoring and treatment of new invasive species populations as long as the well is active; and

(5) Post-activity restoration to pre-activity community structure and composition using seed that is certified free of noxious weeds.

D. Invasive species monitoring will be required at the appropriate times of the year to identify early infestations.

.51 Site Reclamation.

A. The operator shall provide the Department with pre-development and post-development photographic documentation to ensure site closure conditions are satisfied.

B. The operator shall reclaim the site in two stages:

(1) Interim reclamation following well completion to stabilize the ground and reduce opportunities for invasive species; and

(2) Final restoration using species native to the geographic range and seed that is certified free of noxious weeds.

C. Reclamation shall address all disturbed land, including the pad, access roads, ponds, pipelines, and locations of ancillary equipment.

D. Drilling and Operating Reclamation Plan.

(1) The reclamation plan shall describe how roads, well sites, and impoundments will be reclaimed.

(2) The reclamation plan shall include a:

(a) Proposed time schedule for each major step in the reclamation plan;

(b) Description of measures to be employed to dispose of debris, acid-forming and toxic-forming materials, and materials constituting a fire hazard, and a description of the contingency plans which have been developed to preclude sustained combustion of these materials;

(c) Plan for backfilling, soil stabilization, compacting, grading, and controlling surface drainage following regrading, with contour maps at a scale of 1 inch equals 50 feet and cross sections that show the existing slope and the anticipated final surface configuration of the proposed permit area;

(d) Plan for removal, storage, and redistribution of topsoil, subsoil, or other materials, and revegetation to protect the site from erosion;

(e) Description, including appropriate cross sections and maps, of the measures to be used to plug, case, or manage wildcat wells, other wells, and other openings within the proposed permit area;

(f) Description of how contaminated materials will be disposed of in accordance with requirements of the Department;

(g) Plan for disposing of the cuttings by:

(i) Transporting to an approved disposal facility; or

(ii) Other methods of disposal as approved by the Department; and

(h) Plan for removing and reclaiming the fresh water surface impoundment.

.52 Wastes and Wastewater.

A. Wastes and wastewater shall be handled in accordance with applicable federal, State, and local laws and regulations and managed in a way that prevents pollution of the environment.

B. No drilling fluids, hydraulic fracturing fluid, flowback, produced water or other wastewater associated the exploration, development, or production of crude oil or natural gas may be delivered to a wastewater treatment facility that discharges to waters of this State unless the discharge permit for the wastewater treatment facility specifically allows it to accept that wastewater.

C. No flowback or produced brine may be applied to land or used for de-icing.

D. An operator shall keep a record of the volumes of wastes and wastewater generated on-site, the amount treated or recycled on-site, a record of each shipment off-site, and a confirmation that the amount of waste shipped was received at the designated facility.

E. All trucks, tankers, and dump trucks transporting liquid or solid wastes shall be fitted with GPS systems to track and record their travel routes and travel time.

F. Cuttings, drilling mud, flowback, produced water, residue from treatment of flowback and produced water, and any equipment where scaling is likely to occur or sludge is likely to collect shall be tested for radioactivity and disposed of in accordance with federal, State, and local laws and regulations.

G. If cuttings show no level of radioactivity beyond background, and meet other criteria established by the Department, including sulfates and salinity, the Department may permit on-site disposal of cuttings.

H. Records regarding wastes and waste shipments shall be maintained for a period of three years and shall be delivered to the Department upon request.

.53 Financial Assurances and Financial Test.

A. The applicant for a drilling and operating permit shall submit to the Department proof of financial assurance by satisfying the requirements of §B, §C, or §F of this regulation.

B. Unless the applicant submits proof in a form acceptable to the Department that the applicant meets the financial test under §C of this regulation, the applicant shall provide:

(1) A certificate of liability insurance showing personal injury and property damage liability coverage of at least \$1,000,000 for each person and \$5,000,000 for each occurrence or accident;

(2) A certificate of environmental pollution liability insurance in an amount not less than \$10,000,000 per loss for bodily injury and property damage to persons and for natural resource damage, including the costs of cleanup and remediation, caused by the sudden or nonsudden release of pollutants, including the costs and expenses incurred in the investigation, defense, or settlement of claims; and

(3) A performance bond, a blanket bond, cash, a certificate of deposit, or a letter of credit, satisfactory to the Department, of at least \$50,000 for each gas or oil well, including each well on a multiwell pad, but not less than the most recent closure cost estimate provided by the operator under the Environment Article, §14-105(a), Annotated Code of Maryland.

C. An applicant may satisfy the financial assurance requirements of this regulation by demonstrating that the applicant:

(1) Has been in continuous operation as a business entity for not less than the 5 years immediately preceding the application;

(2) Has net working capital and tangible net worth of at least \$30,000,000;

(3) Has assets located in the United States amounting to at least 90 percent of total assets or current assets of at least \$30,000,000; and

(4) Satisfies the criteria of either Test 1 as set forth in §D of this regulation or Test 2 as set forth in §E of this regulation:

D. To satisfy Test 1, the applicant shall demonstrate, based on current audited financial statements, that the applicant meets at least two of the following three ratios:

(1) A ratio of total liabilities to net worth less than 2.0;

(2) A ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1;

(3) A ratio of current assets to current liabilities greater than 1.5.

E. To satisfy Test 2, the applicant shall demonstrate, based on current audit financial statements, that the applicant has a current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard & Poor's Ratings Services or Aaa, Aa, A, or Baa as issued by Moody's Investors Services.

F. Gas Wells in Existence Before October 1, 2013.

(1) Except as provided in §F(2) of this regulation, a permittee for drilling and operating a gas well that was in existence on or before October 1, 2013, shall provide financial assurance by maintaining the same performance bond and liability insurance that is required for the holder's most recent permit or permit renewal issued on or before October 1, 2013.

(2) If a gas or oil well that was in existence on or before October 1, 2013, is modified after October 1, 2013, by recompletion, stimulation, deepening, or adding lateral extensions, the permittee shall comply with the requirements for financial assurance contained in §A of this regulation.

.54 Oil and Gas Correlative Rights.

A. Unless the drilling and operating permit provides for controlled directional drilling or estimated natural deviation, a well may not vary more than 3 degrees from the vertical.

B. If an operator needs to deviate more than 3 degrees from the vertical, the operator shall notify the Department. Deviations larger than 3 degrees from vertical may be permitted by the Department in order to straighten the hole, sidetrack impenetrables, or to correct other mechanical difficulties, if correlative rights are not in dispute.

C. The Department may require the deviation to be less than 3 degrees to protect correlative rights.

D. The Department shall have the right to require the operator to run a complete angular deviation and directional survey by a company knowledgeable about downhole surveys in directionally drilled wells at the operator's sole cost and risk.

E. If an angular deviation and directional survey verifies violations of the approved well location or spacing requirements, the Department may require the well to be redrilled or plugged and abandoned.

.55 Requirements for Plugging and Abandonment of Oil or Gas Wells.

A. An operator shall plug and abandon a well in accordance with this regulation.

B. Upon the abandonment or ending of operation of any dry hole, gas or oil well, storage well, pressure maintenance well, or stratigraphic well, the operator shall plug the hole in compliance with the plan approved by the Department.

C. The operator shall notify the Department at least 72 hours before beginning plugging operations.

D. A dry hole shall be plugged within 60 days of completion of the well or before removal of the drill or completion rig, whichever occurs first.

E. An oil or gas well shall be plugged within 60 days after primary production has stopped for 12 consecutive months.

F. The Department may grant an extension of time to begin plugging operations upon written request of the operator, if the Department determines that the request is reasonable.

G. Surface casing may not be recovered at any location, except by written approval of the Department.

H. After plugging a well, the operator shall erect a permanent marker over the plugged well which:

(1) Consists of a length of pipe with a minimum diameter of 6 inches, filled with concrete;

(2) Extends at least 30 inches above the surface;

(3) Extends at least 10 feet into the well and is set in concrete; and

(4) Has the Department and American Petroleum Institute well identification numbers stamped or welded on the marker in a permanent manner.

I. Upon written request by the operator or by the surface owner, the Department may allow an offset marker to replace the marker over a plugged well if the wellhead marker interferes with subsequent activities, such as agriculture or construction.

J. The area immediately around the surface casing and conductor pipe shall be permanently filled to the surface with nonporous material to keep surface water from entering the well bore.

K. For wells in noncoal areas, the operator shall plug the well as follows:

(1) If total depth is deeper than the cemented production casing seat, as in an open hole completion, the open hole portion of the well shall be filled with cement to a point 50 feet above the top of the uncased portion of the hole;

(2) In the cemented part of the production casing, cement plugs shall be set to extend from at least 50 feet below the base of each oil, gas, or water-bearing zone to a point at least 100 feet above the top of the zone;

(3) A mechanical plug, set at least 20 feet above the oil, gas, or water-bearing zone after filling the hole to that point with nonporous material, may be used instead of a cement plug;

(4) When multiple oil, gas, or water zones occur within 500 vertical feet of one another, they may be treated as one zone for plugging, unless one zone has greater than hydrostatic pressure;

(5) Following the plugging of the cemented portion of the production casing, the uncemented portion of the production casing may be separated from the cemented portion and recovered;

(6) A cement plug shall be set 50 feet below and 50 feet above the point of casing separation;

(7) If the uncemented portion of the production casing cannot be recovered, oil or gas zones behind the casing shall be plugged by perforating the casing and squeezing cement into the annular space;

(8) If the production casing is not set, a cement plug shall be set at least 50 feet below and 50 feet above each oil, gas, or water-bearing zone;

(9) A cement plug shall be set at least 50 feet below and 50 feet above the base of the surface casing;

(10) A cement plug of at least 50 vertical feet shall be placed in the top of the well;

(11) After placing the top plug, the operator may be required to cut the casing below plow depth to prevent interference with any subsequent agricultural activities; and

(12) Nonporous material shall be placed in all portions of the well between cement plugs.

L. If total depth cannot be reached in plugging a well with or without cemented production casing, the operator shall obtain written permission of the Department for an alternate means to plug the well.

M. If a mineable coal seam greater than 1 foot in thickness is encountered in the drilling of a well, the operator shall contact the Department to obtain additional plugging instructions.

N. The operator shall submit to the Department an affidavit, within 30 days after the plugging of the well, certifying that the well was plugged according to plans approved by the Department.

.56 Oil and Gas Bond Performance and Release Procedures.

A. The liability on the performance bond required in Regulation .53 of this chapter is conditioned on compliance with the law, regulations, permit, orders of the Department, and the regulations and approvals, if any, of the Critical Area Commission for the Chesapeake and Atlantic Coastal Bays under COMAR 27.01 and shall continue until the:

- (1) The Department approves the transfer of the drilling and operating permit and the transferee satisfies the financial assurance requirements, at which time the transferor's bond shall be released;
- (2) Department has approved the:
 - (a) Physical plugging of the well;
 - (b) Reclamation of the well site;
 - (c) Receipt of all logs, plugging records, and samples; and
 - (d) Performance of all requirements of these regulations and the drilling and operating permit; or
- (3) Drilling and operating permit terminates because drilling was not started within 18 months, and the Department approves the reclamation of the site.

B. A bond or other security shall contain a provision that it cannot be cancelled by the surety, bank, or other issuing entity except after not less than 90 days written notice to the permittee and Department. At least 45 days before the cancellation date indicated in the notice, the permittee shall file with the Department a commitment from a surety, bank, or other issuing entity, to provide a substitute bond or other security which shall be effective on the cancellation date indicated in the notice.

C. The operator may apply for bond release from the Department upon meeting all the requirements of these regulations and the drilling and operating permit.

D. Upon written request by the operator, the Department shall notify the surety and the principal by certified mail, return receipt requested, when the liability under the bond has been terminated.

E. The performance bond shall be forfeited on failure of the operator to perform in a manner set forth in the authorized drilling and operating permit and the reclamation plan, or upon revocation of the permit.

F. The Department shall notify the operator by certified mail, return receipt requested, of its intention to initiate a forfeiture proceeding.

G. Following receipt of the forfeiture notice by the operator, the operator has 30 days to show cause why the bond should not be forfeited.

H. On the operator's showing of cause, the Department shall provide sufficient time for the operator to comply with all permit conditions.

I. On failure of the operator to show cause, the bond shall be forfeited nisi, the Department shall give notice by certified mail, return receipt requested, to the operator and surety of the forfeiture.

J. If the operator fails to comply with the permit conditions following forfeiture nisi within the time period set by the Department, the bond shall be forfeited absolute.

K. On an absolute forfeiture, the Department shall use the funds made available by the forfeiture to complete abandonment

procedures and reclaim the area authorized by the drilling and operating permit.

L. On an absolute forfeiture, any funds remaining after the Department completes the abandonment procedures and reclaims the area shall be deposited in the Oil and Gas Fund.

.57 Modification, Termination, or Transfer of Drilling and Operating Permits.

A. A person holding a valid drilling and operating permit, and who proposes to conduct any of the following operations not included in the person's current drilling and operating permit, in an effort to obtain or increase the production of oil or gas within the State, shall obtain a modification of the drilling and operating permit from the Department before the person:

- (1) Recompletes a well in a different oil or gas reservoir or formation;
- (2) Recompletes a well to commingle production from two or more oil or gas reservoirs within the same formation;
- (3) Stimulates a zone that has been in production;
- (4) Deepens a well;
- (5) Skids a drill rig 75 feet or less; or
- (6) Converts from one type of well to another.

B. A drilling and operating permit terminates 18 months after the date of issuance, if the proposed drilling has not started, unless the Department approves an extension for good cause shown.

C. A drilling and operating permit may not be transferred or assigned without prior written approval by the Department, and the satisfaction of the financial assurance requirements by the transferee or assignee; prior to approval of the transfer, the permittee shall maintain the financial assurance requirements.

D. The transfer or assignment of a drilling and operating permit shall be on a form provided by the Department, signed by both the transferor or assignor and the transferee or assignee, which contains provisions that the transferee or assignee acknowledges:

- (1) Full awareness of the obligations, costs, and liabilities in performing reclamation, plugging, and other requirements of the drilling and operating permit and any other permit associated with the well; and
- (2) The obligation to fulfill all requirements of the permit, Environment Article 14, Subtitle 1, Annotated Code of Maryland, and this chapter regardless of whether the transferor or assignor started the activity, or failed to properly perform the requirements before the transfer or assignment.

.58 Violations of Statutory, Regulatory, or Permit Requirements.

A. A person who violates or causes an act which violates a provision of Environment Article, §§14-101—14-120, Annotated Code of Maryland, or this chapter, or who violates or fails to comply with a permit issued under this chapter or an order of the Department when due notice is given, is guilty of a misdemeanor, and, upon conviction, the violator is subject to a fine not exceeding \$10,000 per day for each day of the offense, not to exceed a total fine of \$50,000, with costs imposed at the discretion of the court.

B. If the Department determines that there has been a violation of a provision of Environment Article, §§14-101—14-120, Annotated Code of Maryland, and this chapter, or a violation or failure to comply with a permit issued under this chapter, the Department may cause a written complaint to be served upon the alleged violator specifying the nature of the violation.

C. After or concurrent with service of the complaint, the Department may:

- (1) Issue an administrative order requiring necessary corrective action, including stopping work and restoration, to be performed within the time prescribed, and providing the alleged violator with the opportunity to request a hearing before the Department within 10 days after receipt of the order;

(2) Require the alleged violator to file a written report regarding the alleged violation; or

(3) Require the alleged violator to appear before the Department at a time and place the Department specifies to answer the charge outlined in the complaint.

D. A written complaint or an order the Department issues shall be served on the alleged violator personally, by certified mail, return receipt requested, or by any method allowed for service of a summons under the Maryland Rules.

E. Upon failure by the alleged violator to comply with the requirements of an administrative order, a permit may be modified or suspended by the Department.

F. Modification or suspension of a permit shall be effective without stay upon appropriate notice to the alleged violator.

G. An administrative action or a permit suspension or modification may not be stayed pending a hearing.

H. Under emergency conditions, such as violation or imminent violation of an applicable State requirement, a permit may be modified or suspended.

I. The Department may inspect a permitted site at any time in order to determine whether conditions of the permit have been satisfied or whether the permit should be modified, suspended, or revoked.

J. A permit may be revoked after notice to the permittee, if the Department determines that:

(1) The permittee or operator has failed to comply with the requirements of an administrative order;

(2) False or inaccurate information was contained in the application for the permit;

(3) Conditions or requirements of the permit have been or are about to be violated;

(4) Substantial deviation from plans, specifications, or requirements has occurred;

(5) The operator has failed to allow an authorized representative of the Department or the Department of Natural Resources upon presentation of proper credentials to:

(a) Enter at any reasonable time upon the permittee's premises where pertinent operations are conducted, or where records are required to be kept under terms and conditions of the permit;

(b) Have access to and copy any records required to be kept under terms and conditions of the permit;

(c) Inspect facilities to ensure compliance with the conditions of the permit; or

(d) Inspect any monitoring equipment or method required in the permit; or

(6) A change in any condition exists that requires temporary or permanent modification or elimination of the permitted operation.

K. The permittee has 10 calendar days to request, in writing, a hearing on the permit revocation to determine if the permit shall be reinstated.

L. The provisions of this Regulation may not be construed to limit or otherwise affect the authority of the Department to proceed against violators under any applicable federal or State law.

ROBERT M. SUMMERS, Ph.D.
Secretary of the Environment

Title 31 MARYLAND INSURANCE ADMINISTRATION

Subtitle 04 INSURERS

31.04.14 Life and Health Insurance Guaranty Corporation Coverage — Notice Requirements

Authority: Insurance Article, §§2-109 and 9-414, Annotated Code of Maryland

Notice of Proposed Action

[15-006-P]

The Insurance Commissioner proposes to amend Regulation .03 under **COMAR 31.04.14 Life and Health Insurance Guaranty Corporation Coverage—Notice Requirements**.

Statement of Purpose

The purpose of this action is to update the physical address and telephone number of the Maryland Life and Health Insurance Guaranty Corporation in the notice required by Insurance Article, §9-414, Annotated Code of Maryland, and this regulation. The Maryland Life and Health Insurance Guaranty Corporation has moved locations and changed telephone numbers.

Comparison to Federal Standards

There is no corresponding federal standard to this proposed action.

Estimate of Economic Impact

The proposed action has no economic impact.

Economic Impact on Small Businesses

The proposed action has minimal or no economic impact on small businesses.

Impact on Individuals with Disabilities

The proposed action has no impact on individuals with disabilities.

Opportunity for Public Comment

Comments may be sent to Catherine Grason, Director of Regulatory Affairs, Maryland Insurance Administration, 200 Saint Paul Place, Ste. 2700, Baltimore, MD 21202, or call 410-468-2201, or email to insuranceregreview.mia@maryland.gov, or fax to 410-468-2020. Comments will be accepted through February 9, 2015. A public hearing has not been scheduled.

.03 Required Notice.

A. (text unchanged)

B. The notice required in §A of this regulation shall be in at least 12-point type and shall read as follows:

NOTICE OF PROTECTION PROVIDED BY MARYLAND LIFE AND HEALTH INSURANCE GUARANTY CORPORATION

This notice provides a brief summary of the Maryland Life and Health Insurance Guaranty Corporation (the Corporation) and the protection it provides for policyholders. This safety net was created under Maryland law, which determines who and what is covered and the amounts of coverage.

The Corporation is not a department or unit of the State of Maryland and the liabilities or debts of the Life and Health Insurance Guaranty Corporation are not liabilities or debts of the State of Maryland.

The Corporation was established to provide protection in the unlikely event that your life, annuity, or health insurance company becomes financially unable to meet its obligations and is taken over