

# **DRAFT Amendments to the Westmoreland County Comprehensive Plan Regarding Oil and Gas Drilling and Resource Extraction**

Recommended by the Planning Commission  
December 5, 2016

## **Introduction**

Draft concepts for amendments to the Comprehensive Plan and Zoning Ordinance to address resource extraction activities, particularly oil and gas extraction and hydraulic fracturing, were held for public hearings by the Planning Commission on April 4 and June 6, 2016. Based on comments received, a June 15, 2016, draft of amendments was prepared for a public hearing on Comprehensive Plan amendments to be held by the Planning Commission on December 5, 2016. Because of the complexity of the oil and gas issue, these proposed changes were kept separate from the other proposed changes to the Comprehensive Plan. After the December 5<sup>th</sup> hearing on all of the proposed plan changes, the Planning Commission moved 4-0 (one member absent) to recommend that the Board of Supervisors consider for approval of all of the Comprehensive Plan changes, including those contained in this draft.

The draft Comprehensive Plan amendments contained herein provide an overview of the many possible impacts that might be caused by resource extraction and particularly by oil and gas drilling in the Taylorsville Basin that underlies the western part of Westmoreland County and adjoining areas outside of the county from south of the City of Richmond and north into Maryland. The amendments provide the analytical and policy basis for either of these two strategic options available to the County for limiting the impacts of possible future oil and gas drilling, including the use of hydraulic fracturing. The two principal options are:

- Prohibit such activity in the County by removing such uses from the list of permitted (“by-right”) or permissible uses (by special exception) for the four zoning districts that currently allow them by special exception; or
- Amend the zoning ordinance to limit the location of drilling activities and to provide clearer standards for protection from potential negative impacts if such drilling activities do occur. Such provisions could include the creation of a new zoning district for resource extraction activities that would give the County greater legislative authority over approvals of drilling activities, while still allowing the County to approve a proposed drilling project if the location and attributes of the project meet the standards.

**Draft Amendments to the Comprehensive Plan**  
**Regarding Oil and Gas**

Planning Commission Recommendations

December 5, 2016

**Drafters' Note:** Proposed amendments are shown in underline and strike-through. Existing language, shown here for context, is shown as plain black Arial font. Parenthetical comments are shown in *italic times-new roman font*. All citations refer to Westmoreland County's Vision 2030 Comprehensive Plan, adopted December 13, 2010.

**Chapter 1. Executive Summary** *[no changes or additions]*

**Chapter 2. County & Economy**

*Page 22:*

**GOALS**

- More retail stores
- More employers, more jobs for young people, and higher-paying jobs: Encourage technology training programs within the existing educational facilities, promote the resources of the Northern Neck Technical Center, Rappahannock Community College, and state universities to local companies seeking technical and research assistance, and support the Northern Neck Tourism Commission to develop a more robust tourism industry in the region, the county, and the towns
- A better organized and expanded tourism industry that can provide jobs and income for the county and its workforce.
- Expansion or addition of existing or new industries only when the county determines that the economic and fiscal impact on the county is likely to be positive in the long term, and that the new or expanded industries will not unduly harm critical resources such as groundwater supplies, surface water quality, agricultural and forest land, and the county's rural character.
- Steady growth of employment and industry, so that the county can maintain a reasonable and affordable level of public services and facilities, without an undue burden on the average taxpayer.
- Carefully plan to avoid or minimize the "boom and bust" economic cycle that is often typical of resource extraction.

*Page 23:*

**Under section 2.5.2 add new GOALS**

- Protect the existing public waterworks that supply potable water to residents and businesses located in or around the Towns of Montross and Colonial Beach.
- Protect the water quality of individually owned wells, which provide water to the majority of the population.

*Page 25:*

**GOALS**

- Improve emergency services via additional paid fire and rescue personnel, while still enhancing volunteer services
- Support training opportunities for personnel on a regional basis
- [Maintain a level of emergency service capability that is sufficient to safely and reliably handle any expected or potential kind of residential, commercial, or industrial facility emergency event, including fire, explosion, hazardous material release, etc.](#)

*Page 28:*

**GOALS**

- Get rid of trash and abandoned buildings: Enforce zoning and ordinance laws and don't allow businesses to be run where not permitted
- A litter-free county through participation in programs such as Assign-a-Highway and cooperation with the Virginia Department of Transportation
- A better organized tourism industry that can provide jobs and income for the county: Participation in the Northern Neck Tourism Commission
- [Protect the natural and cultural resources that provide the basis for the local tourism industry.](#)

## Chapter 3. Land Use

*Page 35-36:*

The rural lands will also have scattered industrial uses. While most of these uses will be isolated (i.e. not near other such businesses), there are areas designated as Enterprise Zones—as discussed in Section 2.4.3 (Business Incentives), and shown on Map 8.26 (Enterprise Zones)—which can be expected to have several industrial businesses clustered together. Future industrial uses in the rural lands may also include those which are not resource related, but may be difficult to site in the towns or the other designated growth areas.

[The presence of the shale geologic formation known as the Taylorsville Basin beneath the aquifer in the western part of the County, may create a desire to drill for oil and gas resources in that area \(see Map 8.30\). Such activities offer potential economic benefits, but also present potential risks to the public. These land uses are addressed in Section 3.2.4.2 on commercial and industrial land uses.](#)

*Page 43:*

### **3.2.4.2 Additional Guidance for Commercial and Industrial Land Uses**

For commercial and industrial land uses, some uses under these categories may be objectionable to surrounding property owners. They include warehousing, service industries, light manufacturing plants, office uses, and public facilities.

*Page 44:*

Industrial uses generally require access to arterial roads, public water and sewer, and nearby police and fire services. Secondary uses in industrial areas may include office uses and a limited amount of commercial development, generally intended to support the needs of employees and other persons associated with an industrial development. Heavier industrial uses such as steel mills and automobile assembly plants are not envisioned or desirable for Westmoreland County. Redevelopment of existing commercial and industrial uses is especially encouraged.

[Like other heavy industries that have potential general economic benefit, some natural resource extraction activities may not be desirable for the County, due to the potential risk to groundwater supplies, and potential impacts on neighboring agricultural and residential land uses. Further, if resource extraction activities were to reach a significant size, the influx of truck traffic and workers could cause major impacts on County services and infrastructure far beyond what is now planned or expected. Any proposal for natural resource extraction needs to include rigorous protections for ground and surface water, public health and safety, fiscal impact, adjacent land uses, public services and facilities, and provisions for land, road, and groundwater reclamation.](#)

## **GOALS**

- To keep commercial and industrial uses away from residential or sensitive areas, except in the case of commercial services to the residential community (i.e. mixed use)
- Consideration of the overall impact of every new development
- Balanced growth between residential and non-residential areas
- Beautification of existing developments by the installation of buffering
- Effective and productive regulations concerning signs and advertisements
- [Protect the rural character, agricultural and rural residential land uses, and critical environmental resources such as groundwater supplies, from the potentially adverse impacts of natural resource extraction activities.](#)

## Chapter 4. Natural Resources Protection

*Page 51, Section 4.1.2 Hydrology:*

### GOAL

- [The future growth and economic vitality of the County depends on procuring and protecting long-term water resources; thus, long-term planning of water resources and short-term action on all land use issues should seek to protect those potable resources as much as possible. Carefully limit potentially adverse land uses such as mineral extraction to ensure a proper balance between costs and benefits to the public.](#)

Westmoreland County should:

- Support the development [and updating](#) of the regional water supply plan
- Support regional efforts to construct groundwater monitoring wells
- Minimize impervious cover and use design techniques such as swales
- Enforce rules that protect water quality and avoid runoff
- Continue to monitor existing and potential sources of surface and groundwater pollution and take action to prevent or control the effect of these sources
- Allow for potential water quality improvements through the reduction of pollution sources and through redevelopment efforts
- [Limit any land use that poses an undue risk to the quality and quantity of groundwater supply.](#)

*Page 53, Section 4.1.5 Air Quality:*

### GOAL

- [Limit or require appropriate mitigation for any land use that poses a risk of negative impacts to localized air quality or which might degrade air quality.](#)

*Page 58:*

### 4.2.7 Industrial Activities

Industrial pollution in the county is minor and dispersed. Potential pollution points on the edge of Nomini Creek, Machodoc Creek, and the Yeocomico River are seafood processors or boat repair facilities. Potomac Supply (forest products) is located along Route 202, near Kinsale. Cary-On Trailer (manufacturing) is located on the county's industrial park, right outside the Town of Montross.

#### *Superfund Site*

About one-half mile east of the Town of Montross, on Route 3, is the former Arrowhead Industries manufacturing plant. The plant produced cosmetic packaging, some of which was metal-plated. Its waste lagoon contained various heavy metals— cadmium, arsenic, lead—plus various hazardous chemicals. The plant closed in the mid 1980s. Because of the hazardous materials left in the waste storage lagoon, the property was designated a “Superfund” site by the Environmental Protection Agency—meaning that the Agency ordered a comprehensive cleanup, under EPA supervision, that included extensive soil removal and extensive testing of the lagoon's water integrity.

Fortunately, the soils in this region are predominantly clay, and the lagoon bottom was compacted

according to EPA standards when constructed. Eventually, the lagoon was completely removed, and a filtration ring constructed around the site. The Arrowhead Industries plant also had a well reaching into the principal aquifer. That well has been capped and replaced with the well from the County's Route 3 water system. This site illustrates the need to carefully review resource development and other development applications to provide for secondary containment and/or other safeguards for wastes produced onsite.

### Resource Extraction

Limited sand and gravel extraction activities have occurred in the county for some time. In recent years, techniques for extracting oil and gas from underground rock formations has produced a surge in the supply of natural gas, nationwide, and these techniques have emerged as a potential activity in Westmoreland County, due to the shale formation underlying a portion of the county. Although the national boom in gas drilling has subsided lately due to falling oil prices, there is potential for a resurgence of drilling activities if prices rise to past levels or other circumstances change.

The western portion of Westmoreland County lies above a shale formation called the Taylorsville Basin, which has the potential of containing significant amounts of petroleum resources. Thus, there has been some interest in the potential for conducting drilling and extraction activities, including hydraulic fracturing. Approximately 14,000 acres of land in this area of the County have or have had leases for oil and gas drilling activity (see Map 8.32). This offers a long-term potential of some economic benefit to landowners and various businesses if significant amounts of drilling activity occur.

However, experiences in other states and communities have raised concerns about potential environmental and other impacts with hydraulic fracturing activities. Possible impacts to groundwater quality in particular are concern as all residents and businesses in Westmoreland County rely on groundwater for their drinking water supplies. The groundwater comes from the aquifers within the underlying geology of the County and the region. Drilling and fracturing activities can create direct impact on groundwater supplies, particularly if there are any errors in the design, construction or operation of the drilling and fracturing procedures. Further, a variety of indirect impacts could affect the County if significant levels of drilling and extraction activity are reached, including impacts on local housing supply, public facilities and infrastructure, levels of service and service delivery including emergency services, attendant fiscal impacts, etc.

Such concerns have led some states and localities to enact new regulatory mechanisms to better protect the public health and safety, as well as the local environment and economy. Maryland, which shares the Taylorsville Basin with Virginia, adopted a moratorium on such activity after studying the issue for several years because of the scientific uncertainty and serious risks involved. New York prohibited hydraulic fracturing after concluding that there was no feasible or prudent way to adequately avoid or minimize adverse environmental impacts and address the scientific uncertainties and risks to public health from hydraulic fracturing. The Virginia Department of Mines, Minerals and Energy (DMME) and the Department of Environmental Quality (DEQ) have made a significant effort to better understand these risks and revise regulations accordingly. Westmoreland County should seek to properly balance the risks and benefits of oil and gas extraction, including hydraulic fracturing or other technologies (methodologies), for the overall benefit to the County as a whole. This means, at a minimum, establishing zoning standards and limitations that protect critical resources commensurate with the importance and risk presented to them.

Potential impacts of hydraulic fracturing activities include, but are not limited to the following:

- Potential positive impacts – these include economic benefit to the owners of leased land, and to local businesses that may sell goods and services to the new work force.
- Groundwater quality and quantity – impact of water withdrawals, chemical injection, and the migration of methane or other contaminants affecting drinking water and agricultural water use
- Surface water quality and quantity – impact of loss and fragmentation of natural vegetation, chemical and process water spills or leakages affecting stream habitat and flow and the Chesapeake Bay’s wetland hydrology and habitat; fish and other aquatic organisms; economic productivity thru aquaculture, tourism, and fisheries; and endangered threatened or rare species
- Truck traffic – issue of road surface damage, access onto main roadways, volumes of truck and other traffic, community health and safety impacts
- Noise, vibration
- Lighting, glare
- Dust, odor, air emissions from combustion equipment, well pads, pipelines, and trucks
- Visual appearance from public right-of-way and adjacent properties
- Gas flaring / fires – fumes, gases, explosion and fire risks
- Direct land use impacts – land consumption, land clearing and land fragmentation can disrupt agricultural and forestry activities
- Indirect land use impacts – related industrial, commercial, and residential spin-off development impacts on public facilities and services
- Housing and service impacts - additional workers can increase the need for housing, services, and public facilities, including hospitals, emergency services, law enforcement, and schools
- Horizontal drilling – potential impact on adjacent property
- Potential pipeline construction to serve the region
- Natural habitat impacts and fragmentation of habitats
- Possible increase in earthquake activity.
- Public health and safety risks from many of the possible impacts identified above.

Potential measures to mitigate the above impacts include, but are not limited to the following:

- Limits to size and location of drilling activities
- Setbacks/buffers of drilling activities from:
  - Groundwater wells (public and private)
  - Chesapeake Bay Resource Protection and Resource Management Areas (RPA/RMA)
  - Residential structures
  - Population centers/major subdivisions
  - Commercial and industrial structures
  - Public road rights-of-way
- Groundwater assessment and monitoring
- Spacing of well-pads
- Limits on footprint of land disturbance from well-pads and paving/grading
- Pitless or closed-loop drilling
- Use of secondary waste containment systems
- Well-casing standards (DMME)
- Fencing of well facilities
- Reclamation of sites

- [Replacement of damaged groundwater supplies](#)
- [Limits on related activities – material processing, storage, etc.](#)
- [Limits on horizontal drilling](#)
- [Limits on chemicals and other foreign materials injected into the ground](#)
- [Limits on noise levels, vibration, lighting, etc.](#)
- [Testing requirements prior to commencing of drilling activity.](#)

## **GOAL**

[Protect the county's ground and surface water resources, public facilities and infrastructure, fiscal well-being, tourism and agricultural industries, and the overall rural quality of life, from any potential impacts of resource extraction activities, including oil and gas extraction, and to provide for the restoration of the land for future usability.](#)

## **Chapter 5 – Transportation**

*Page 64:*

*Add to the end of section 5.1:*

[In light of the limited funding resources available to the County for its road system, all potential sources of impact on road capacity, safety, and maintenance must be carefully considered, and land use decisions should balance the long-term costs and benefits to the road system for the benefit of the public.](#)

*Page 68:*

*Add new language to the Goals section:*

*Related to Land Use*

- Minimizing the impact of development proposals on major roads
- Primary road intersections that maximize economic-development potential
- Connection of residential and non-residential areas with adjoining neighborhoods, via internal roads and trails
- [Locate any new industrial uses so as to keep impacts on the public road network to a minimum.](#)
- [Ensure safe road access into industrial use sites.](#)

## Chapter 6 - Implementation & Evaluation

*Insert a new section 6.2.12 under Zoning Ordinance (and renumber the sections that follow) called “Zoning for Resource Extraction” and include a discussion tying together the rationale for such a district and the key elements it would likely contain:*

### Zoning for Resource Extraction

Given the potential oil and gas resources that underlie the western part of the county, and the need to balance the potential risks and benefits of extraction activities related to those and other extractive resources, and the unique character of extractive industries, the County should amend the zoning ordinance to ensure that such resource extraction activities do not cause significant damage to the groundwater resources that all county citizens rely on or cause other significant impacts. Zoning regulations could prohibit certain types or scales of resource extraction activities, and/or could set clear standards for the location, design, and development of extractive operations, including a process for review and approval, which could include rezoning to a new district tailored for resource development.

**Page 87:**

*Insert a new row for “Development – Industrial” between “Development – Commercial” and “Development – General”:*

Category	GOAL What do we want?	ACTION How do we accomplish it?	WHO Responsibility	STATUS	✓
<u>Development - Industrial</u>	<u>Protect the county’s ground and surface water resources, public facilities and infrastructure, fiscal well-being, tourism and agricultural industries, and the overall rural quality of life, from any potential impacts of resource extraction activities, including oil and gas extraction.</u>	<u>Amend the zoning ordinance to limit the potential impacts of resource extraction industries through prohibitions and/or regulation of extraction activities. (see action under Water Quality).</u>	<u>PC, BOS</u>		

Amend the water quality goal, and add another action for zoning for extractive industries (or simply cross-reference to the same action in the land use portion of the table, page 87:

Category	GOAL What do we want?	ACTION How do we accomplish it?	WHO Responsibility	STATUS	✓
Water Quality	<a href="#">The future growth and economic vitality of the County depends on procuring and protecting long-term water resources; thus long-term planning of water resources and short-term action on all land use issues should seek to protect those potable resources as much as possible. Carefully limit potentially adverse land uses such as mineral extraction to ensure a proper balance between costs and benefits to the public.</a>	<a href="#">Amend the zoning ordinance to limit the potential impacts of resource extraction industries through prohibitions and/or regulation of extraction activities (see action under Land Use).</a>	<a href="#">PC, BOS</a>		

## Chapter 7 – Supporting Documents

Page 102:

Insert:

### [Summary of Legal Authority to Address the Impacts of Oil and Gas Extraction](#)

[A detailed analysis of Virginia localities’ authority to prohibit or regulate “fracking” \(unconventional oil and gas drilling activities\) via their zoning and land use authority was presented in an official advisory opinion by the Office of the Attorney General, May 5, 2015.](#)

[The conclusion states:](#)

[“It is my opinion that the General Assembly intended to permit localities to prohibit fracking operations through duly enacted land use or zoning ordinances, and the Code of Virginia so provides. With respect to your second inquire, localities may enact zoning restrictions on fracking only if and to the extent that the restrictions are reasonable in scope and are not inconsistent with the \[Virginia Oil and Gas\] Act or regulations properly enacted pursuant to the Act.”](#)

In the footnotes of the Opinion, the validity of a localities use of a special exception process to review oil and gas drilling projects, as follows:

<sup>32</sup> See 1993 Op. Va. Att’y Gen. 173 (discussing passage of the Act). The 1993 Opinion of this Office interpreted § 45.1-361.5 to allow a locality to require special use permits for gas drilling and made no distinction between special use permits and a locality’s power to prohibit gas wells. “The legislature is presumed to have had knowledge of the Attorney General’s interpretation of . . . statutes, and its failure to make corrective amendments evinces legislative acquiescence in the Attorney General’s view” of legislative language. *Richard L. Deal & Assocs., Inc. v. Commonwealth*, 224 Va. 618, 622 (1983) (citations omitted). Had the General Assembly disagreed with the view of this Office expressed in 1993, it has enjoyed many opportunities to amend the law. That it made no changes to the Act’s language for over 20 years may be seen as acquiescence with the 1993 Opinion.

---

Source: [http://www.oag.state.va.us/files/Opinions/2015/14-084\\_Stuart.pdf](http://www.oag.state.va.us/files/Opinions/2015/14-084_Stuart.pdf)

Based on this, any local ordinance should be limited to zoning, land use, and land development provisions so as to address and protect the local public health, safety, and welfare from adverse impacts, and to address applicable purposes authorized by statute for a zoning ordinance in a reasonable manner. Any zoning regulations should be designed to harmonize and not be inconsistent with the provisions of the Virginia Gas and Oil Act (VA Code 45.1-361.1 et seq.), the DMME regulations (4 VAC 25-150-10 et seq.), and VA Code 62.1-195.1. Chesapeake Bay; drilling for oil or gas prohibited.

Local zoning ordinances may address traffic, noise, dust, runoff, minimum lot size, setback requirements, well-pad footprints/dimensions, site plans, fencing/screening, location restrictions, hours of operation, measures to protect water quality, liner requirements for wastewater pits, related uses, etc. to minimize adverse impacts, enhance emergency preparedness and potential incident mitigation.

A local ordinance may provide for baseline environmental assessments/testing of surface water and groundwater within a defined zone surrounding a well site.

A local ordinance may also provide for bonding or other securitization to ensure proper site development and reclamation.

The Virginia Oil and Gas Act establishes limitations on local government zoning authority that are unique to this type of activity and therefore require special consideration in developing reasonable regulations. But, the Virginia Gas and Oil Act recognizes and provides for local regulation pursuant to local zoning ordinances:

#### **§ 45.1-361.5. Exclusivity of regulation and enforcement**

No county, city, town or other political subdivision of the Commonwealth shall impose any condition, or require any other local license, permit, fee or bond to perform any gas, oil, or geophysical operations which varies from or is in addition to the requirements of this chapter. **However, no provision of this chapter shall be construed to limit or supersede the jurisdiction and requirements of other state agencies, local land-use ordinances, regulations of general purpose, or §§ 58.1-3712, 58.1-3712.1, 58.1-3713, 58.1-3713.3, 58.1-3741, 58.1-3742, and 58.1-3743.** [Emphasis added]

The Virginia Code provides authority for zoning regulations related to extractive activities in several Code provisions, including but not limited to the following:

**VA Code § 15.2-2280. Zoning ordinances generally.**

Any locality may, by ordinance, classify the territory under its jurisdiction or any substantial portion thereof into districts of such number, shape and size as it may deem best suited to carry out the purposes of this article, and in each district it **may regulate, restrict, permit, prohibit, and determine** the following:

1. The use of land, buildings, structures and other premises for agricultural, business, **industrial**, residential, flood plain and other specific uses;

2. The size, height, area, bulk, location, erection, construction, reconstruction, alteration, repair, maintenance, razing, or removal of structures; .....

....4. **The excavation or mining of soil or other natural resources.** [Emphasis added]

**VA Code § 15.2-2283 Purpose of zoning ordinances.**

Zoning ordinances shall be for the general purpose of promoting the health, safety or general welfare of the public and of further accomplishing the objectives of § 15.2-2200. To these ends, such ordinances shall be designed to give reasonable consideration to each of the following purposes, where applicable: (i) to provide for adequate light, air, convenience of access, and safety from fire, flood, impounding structure failure, crime and other dangers; (ii) to reduce or prevent congestion in the public streets; (iii) to facilitate the creation of a convenient, attractive and harmonious community; (iv) to facilitate the provision of adequate police and fire protection, disaster evacuation, civil defense, transportation, water, sewerage, flood protection, schools, parks, forests, playgrounds, recreational facilities, airports and other public requirements; (v) to protect against destruction of or encroachment upon historic areas; (vi) to protect against one or more of the following: overcrowding of land, undue density of population in relation to the community facilities existing or available, obstruction of light and air, danger and congestion in travel and transportation, or loss of life, health, or property from fire, flood, impounding structure failure, panic or other dangers; (vii) to encourage economic development activities that provide desirable employment and enlarge the tax base; (viii) to provide for the preservation of agricultural and forestal lands and other lands of significance for the protection of the natural environment; (ix) to protect approach slopes and other safety areas of licensed airports, including United States government and military air facilities; (x) to promote the creation and preservation of affordable housing suitable for meeting the current and future needs of the locality as well as a reasonable proportion of the current and future needs of the planning district within which the locality is situated; and (xi) to provide reasonable protection against encroachment upon military bases, military installations, and military airports and their adjacent safety areas, excluding armories operated by the Virginia National Guard. **Such ordinance may also include reasonable provisions, not inconsistent with applicable state water quality standards, to protect surface water and ground water as defined in § 62.1-255.** [Emphasis added]

**VA Code § 62.1-255.**

“Ground water” means any water, except capillary moisture, beneath the land surface in the zone of saturation or beneath the bed of any stream, lake, reservoir or other body of surface water wholly or partially within the boundaries of this Commonwealth, whatever the subsurface geologic structure in which such water stands, flows, percolates or otherwise occurs.

**§ 62.1-195.1. Chesapeake Bay; drilling for oil or gas prohibited.**

A. Notwithstanding any other law, a person shall not drill for oil or gas in the waters of the Chesapeake Bay or any of its tributaries. In Tidewater Virginia, as defined in § 62.1-44.15:68, a person shall not drill for oil or gas in, whichever is the greater distance, as measured landward of the shoreline:

1. Those Chesapeake Bay Preservation Areas, as defined in § 62.1-44.15:68, which a local government designates as "Resource Protection Areas" and incorporates into its local comprehensive plan. "Resource Protection Areas" shall be defined according to the criteria developed by the State Water Control Board pursuant to § 62.1-44.15:72; or

2. Five hundred feet from the shoreline of the waters of the Chesapeake Bay or any of its tributaries.

B. In the event that any person desires to drill for oil or gas in any area of Tidewater Virginia where drilling is not prohibited by the provisions of subsection A, he shall submit to the Department of Mines, Minerals and Energy as part of his application for permit to drill an environmental impact assessment. The environmental impact assessment shall include:

1. The probabilities and consequences of accidental discharge of oil or gas into the environment during drilling, production, and transportation on:

a. Finfish, shellfish, and other marine or freshwater organisms;

b. Birds and other wildlife that use the air and water resources;

c. Air and water quality; and

d. Land and water resources;

2. Recommendations for minimizing any adverse economic, fiscal, or environmental impacts; and

3. An examination of the secondary environmental effects of induced economic development due to the drilling and production.

C. Upon receipt of an environmental impact assessment, the Department of Mines, Minerals and Energy shall notify the Department of Environmental Quality to coordinate a review of the environmental impact assessment. The Department of Environmental Quality shall:

1. Publish in the Virginia Register of Regulations a notice sufficient to identify the environmental impact assessment and providing an opportunity for public review of and comment on the assessment. The period for public review and comment shall not be less than 30 days from the date of publication;

2. Submit the environmental impact assessment to all appropriate state agencies to review the assessment and submit their comments to the Department of Environmental Quality; and

3. Based upon the review by all appropriate state agencies and the public comments received, submit findings and recommendations to the Department of Mines, Minerals and Energy, within

90 days after notification and receipt of the environmental impact assessment from the Department.

D. The Department of Mines, Minerals and Energy may not grant a permit under § 45.1-361.29 until it has considered the findings and recommendations of the Department of Environmental Quality.

E. The Department of Environmental Quality shall, in conjunction with other state agencies and in conformance with the Administrative Process Act (§ 2.2-4000 et seq.), develop criteria and procedures to assure the orderly preparation and evaluation of environmental impact assessments required by this section.

F. A person may drill an exploratory well or a gas well in any area of Tidewater Virginia where drilling is not prohibited by the provisions of subsection A only if:

1. For directional drilling, the person has the permission of the owners of all lands to be directionally drilled into;

2. The person files an oil discharge contingency plan and proof of financial responsibility to implement the plan, both of which have been filed with and approved by the State Water Control Board. For purposes of this section, the oil discharge contingency plan shall comply with the requirements set forth in § 62.1-44.34:15. The Board's regulations governing the amount of any financial responsibility required shall take into account the type of operation, location of the well, the risk of discharge or accidental release, the potential damage or injury to state waters or sensitive natural resource features or the impairment of their beneficial use that may result from discharge or release, the potential cost of containment and cleanup, and the nature and degree of injury or interference with general health, welfare and property that may result from discharge or accidental release;

3. All land-disturbing activities resulting from the construction and operation of the permanent facilities necessary to implement the contingency plan and the area within the berm will be located outside of those areas described in subsection A;

4. The drilling site is stabilized with boards or gravel or other materials which will result in minimal amounts of runoff;

5. Persons certified in blowout prevention are present at all times during drilling;

6. Conductor pipe is set as necessary from the surface;

7. Casing is set and pressure grouted from the surface to a point at least 2500 feet below the surface or 300 feet below the deepest known ground water, as defined in § 62.1-255, for a beneficial use, as defined in § 62.1-10, whichever is deeper;

8. Freshwater-based drilling mud is used during drilling;

9. There is no onsite disposal of drilling muds, produced contaminated fluids, waste contaminated fluids or other contaminated fluids;

10. Multiple blow-out preventers are employed; and

11. The person complies with all requirements of Chapter 22.1 (§ 45.1-361.1 et seq.) of Title 45.1 and regulations promulgated thereunder.

G. The provisions of subsection A and subdivisions F 1 and 4 through 9 shall be enforced consistent with the requirements of Chapter 22.1 (§ 45.1-361.1 et seq.) of Title 45.1.

H. In the event that exploration activities in Tidewater Virginia result in a finding by the Director of the Department of Mines, Minerals and Energy that production of commercially recoverable quantities of oil is likely and imminent, the Director of the Department of Mines, Minerals and Energy shall notify the Secretary of Commerce and Trade and the Secretary of Natural Resources. At that time, the Secretaries shall develop a joint report to the Governor and the General Assembly assessing the environmental risks and safeguards; transportation issues; state-of-the-art oil production well technology; economic impacts; regulatory initiatives; operational standards; and other matters related to the production of oil in the region. No permits for oil production wells shall be issued until (i) the Governor has had an opportunity to review the report and make recommendations, in the public interest, for legislative and regulatory changes, (ii) the General Assembly, during the next upcoming regular session, has acted on the Governor's recommendations or on its own initiatives, and (iii) any resulting legislation has become effective. The report by the Secretaries and the Governor's recommendations shall be completed within 18 months of the findings of the Director of the Department of Mines, Minerals and Energy.

1989, c. 325; 1990, c. 967; 1992, cc. 480, 887; 1993, c. 239; 1994, c. 957; 2012, cc. 785, 819; 2013, cc. 756, 793.

Source: <http://law.lis.virginia.gov/vacode/title62.1/chapter20/section62.1-195.1/>

**Page 109:**

**Insert:**

### **Documents and Sources Related to Oil and Gas Extraction**

Following are examples of relevant technical findings with broad implications for local action.

#### **“Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources”, United States Environmental Protection Agency (External Review Draft)**

This report concludes in part:

“...there are above and below ground mechanisms by which hydraulic fracturing activities have the potential to impact drinking water resources... [however] ... [w]e did not find evidence that these mechanisms have led to widespread, systemic impacts on drinking water resources... [w]e found specific instances where one or more mechanisms led to impacts on drinking water resources... “There are limiting facts to the EPA’s assessment, including “insufficient pre- and post-fracturing data on the quality of drinking water resources; the paucity of long-term systemic studies;...and the inaccessibility of some information on hydraulic fracturing activities and potential impacts.”

Source: “Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources”, United States Environmental Protection Agency, June 2015

#### **Proposed Regulations by the State of Maryland’s Secretary of the Environment in 2015:**

DEPARTMENT OF THE ENVIRONMENT, Subtitle 19 OIL AND GAS RESOURCES  
26.19.01 Oil and Gas Exploration and Production, Notice of Proposed Action [15-001-P-I]  
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:

“...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....”

Estimate of Economic Impact:

“F (4)...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.”

Source: Maryland Register, VOL 42, Issue 1, Friday, January 9, 2015

<http://www.mde.state.md.us/programs/Land/RecyclingandOperationsprogram/SpecialProjects/Documents/Oil%20and%20gas%20reg%20proposal%20-%20MD%20Register%20notice%201-9-15.pdf>

**Maryland Senate Bill 29, GA Session 2015**

Excerpt from analysis of the bill:

“...A draft of the final report of the Marcellus Shale Safe Drilling Initiative Study was released on November 25, 2014, and contained information from a risk assessment, a public health study, and an economic impact study commissioned by the departments. The final report contained all final findings and recommendations and addressed all remaining issues identified by the executive order. The report incorporated findings from the risk assessment, including several impacts that were characterized as high, moderate, or low risks.

“Impacts identified as high-risk include:

(1) road repair costs; (2) disruptive noise and vibrations from truck traffic; (3) temporary and localized air emissions during the drilling process (under a “high-extraction” development scenario only); and (4) ecosystem fragmentation from pipeline development (high-extraction scenario only).”

The report also identified several moderate risks, SB 29/ Page 8 including:

“(1) air emissions from combustion equipment, well pads, pipelines, and trucks; (2) ecological and agricultural impacts from land clearing; (3) community health and safety impacts from a significant increase in truck traffic; (4) the effect on aquatic ecosystems from large water withdrawals; (5) land fragmentation from the construction of natural gas gathering lines; and (6) exposure of dissolved methane to drinking water wells and groundwater.

The characterization of a risk as “low,” “moderate,” or “high” results from a weighing of both the probability of an event’s occurrence and its severity. Ultimately, the departments concluded that the risks to public health and the environment can be adequately managed under a stringent regulatory regime that relies on the best practices identified in their report. MDE subsequently developed such regulations, which were published in the Maryland Register on January 9, 2015.”

Source: [http://mgaleg.maryland.gov/2015RS/fnotes/bil\\_0009/sb0029.pdf](http://mgaleg.maryland.gov/2015RS/fnotes/bil_0009/sb0029.pdf)

**Maryland Institute for Applied Environmental Health School of Public Health Potential Public Health Impacts of Natural Gas Development and Production in the Marcellus Shale in Western Maryland(July 2014)**

Source:

<http://phpa.dhmh.maryland.gov/OEHFP/EH/Shared%20Documents/Reports/MDMarcellusShalePublicHealthFinalReport08.15.2014.pdf>

**New York State Department of Health, A Public Health Review of High Volume Hydraulic Fracturing for Shale Gas Development (Dec. 2014)**

Available at:

[http://www.health.ny.gov/press/reports/docs/high\\_volume\\_hydraulic\\_fracturing.pdf](http://www.health.ny.gov/press/reports/docs/high_volume_hydraulic_fracturing.pdf)

**New York Department of Environmental Conservation, Final Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program: Regulatory Program for Horizontal Drilling and High-Volume Hydraulic Fracturing to Develop the Marcellus Shale and Other Low-Permeability Gas Reservoirs (May 2015),**

Source: <http://www.dec.ny.gov/energy/75370.html>

## **Chapter 8 - Maps**

**Page 119:**

*[Insert the various relevant resource and analysis maps which show key information related to resource extraction and hydraulic fracturing activities, including:]*

- 8.29 [Planned Transportation System \(Reserved\)](#)
- 8.30 [Virginia Portion of the Taylorsville Basin](#)
- 8.31 [Cross-Section of the Taylorsville Basin](#)
- 8.32 [Parcels with Active Oil & Gas Leases](#)
- 8.33 [Location of Public Water Wells](#)
- 8.34 [Location of Resources Subject to Potential Impact from Oil and Gas Drilling \(Resource Protection Areas, existing houses, public wells, major subdivisions, schools, etc.\)](#)
- 8.35 [Areas Currently Prohibited from Oil or Gas Drilling by Existing Regulations \(state setback requirements, local zoning/land use limitations\)](#)
- 8.36 [Oil and Gas Leases Less Land within 500 feet of perennial streams and wetlands](#)
- 8.37 [Oil and Gas Leases Less Land within 500 feet of perennial streams & houses, and 1,000 feet of public water](#)
- 8.38 [Oil and Gas Leases Less Land within 500 feet of perennial streams, 750 feet of houses, and 1,000 feet of public water](#)