

Department of Legislative Services
Maryland General Assembly
2013 Session

FISCAL AND POLICY NOTE

Senate Bill 513 (Senator Montgomery, *et al.*)
Education, Health, and Environmental Affairs

Environment - Hydraulic Fracturing Wastewater - Prohibited Acts

This bill prohibits storing, treating, discharging, or disposing of “flow back” or other wastewater resulting from hydraulic fracturing. The bill defines “flow back” and “hydraulic fracturing” as it applies to the prohibition.

Fiscal Summary

State Effect: General/special fund revenues associated with general economic activity decrease, potentially beginning in FY 2015, to the extent that the bill results in less development of natural gas resources than would occur in the absence of the bill, as discussed below. The Maryland Department of the Environment (MDE) can enforce the bill with existing resources.

Local Effect: Local severance tax revenues and other revenues associated with general economic activity decrease for Allegany and Garrett counties, potentially beginning in FY 2015, to the extent that the bill’s requirements result in less development of gas resources than would occur in the absence of the bill, as discussed below.

Small Business Effect: Potential meaningful.

Analysis

Current Law/Background: According to the U.S. Environmental Protection Agency (EPA), after fracturing is completed, the internal pressure of the geologic formation causes the injected fracturing fluid to rise to the surface where it may be stored in tanks or pits prior to disposal or recycling. This recovered fluid, or flow back, can contain high levels of total dissolved solids, fracturing fluid additives, metals, and naturally occurring

radioactive materials. EPA is examining the different disposal methods used by the industry to ensure that the regulatory process sufficiently protects public health, safety, and the environment. EPA is also examining the substances contained within flow back. As of December 2012, EPA had identified over 1,000 chemicals contained in flow back but had not made any judgment about the extent of exposure to these chemicals when found in hydraulic fracturing wastewater, or their potential impacts on drinking water resources.

According to EPA, the industry generally uses the following methods to dispose of flow back resulting from hydraulic fracturing:

- wastewater discharges to treatment facilities, which is regulated by the federal Clean Water Act (CWA);
- underground injection of waste disposal fluids, which is regulated by the federal Safe Drinking Water Act (SDWA), even though hydraulic fracturing itself is exempt from SDWA underground injection requirements;
- use of surface impoundments (pits or ponds) for storage or disposal, regulated by the states; and
- recycling of wastewater.

Under CWA, effluent guidelines for oil and gas extraction prohibit the on-site direct discharge of wastewater from shale gas extraction into waters of the United States. Surface water discharges are regulated by the National Pollutant Discharge Elimination System program, which requires flow back to be treated prior to discharge into surface water.

According to EPA, because no comprehensive set of national standards exists for the disposal of wastewater discharged from natural gas extraction activities, some shale gas wastewater is transported to treatment plants, many of which are not properly equipped to treat this type of wastewater.

In response to concerns about the issue of hydraulic fracturing flow back treatment and disposal, EPA announced in 2011 that it would develop standards for disposing of wastewater from the hydraulic fracturing process.

MDE advises that it has notified publicly owned wastewater treatment plants that the acceptance of flow back will require a permit modification.

More information on the practice of hydraulic fracturing, the Marcellus Shale, and the Marcellus Shale Safe Drilling Initiative may be found in the **Appendix – High-volume Hydraulic Fracturing in the Marcellus Shale**.

State/Local Fiscal Effect: The bill does not define “store,” “treat,” “discharge,” or “dispose of.” Thus, there is significant uncertainty as to how the bill will be interpreted. For example, without a definition of the term “store,” it is unclear whether the bill prohibits the temporary placement of flow back into a container located on a gas production site for treatment and reuse, or for subsequent transportation and disposal, including for injection into wells in other states. However, to the extent that the bill is interpreted to prohibit any of the common or more cost-effective methods of handling flow back of hydraulic fracturing fluids, it may result in a significant reduction or complete elimination of future hydraulic fracturing activities in the State.

Any impact on the future extraction of shale gas resources in the State would directly affect future severance tax revenues in Allegany County, and to a greater extent, Garrett County; other sources of State and local revenue from general economic activity may also be indirectly impacted. The State does not currently impose a severance tax on gas production. Although not prohibited under current law, it is assumed that MDE will likely not issue any permits for gas well drilling in the Marcellus Shale until after the Marcellus Shale Safe Drilling Initiative releases its final report, which is due August 1, 2014. However, it is unclear whether or when any gas well drilling will be authorized even after that date.

Small Business Effect: The bill may have a meaningful adverse impact on small businesses engaged in the storage, treatment, or disposal of flow back, and to any small business engaged in providing services related to hydraulic fracturing to the extent the bill prevents, or reduces the level of, future natural gas production through hydraulic fracturing. The bill may have a meaningful beneficial impact on small businesses in Western Maryland reliant upon tourism to the extent that the development of natural gas resources would impact the levels of tourism in the area; however, any such impact is unclear.

Additional Information

Prior Introductions: HB 296 of 2012, a similar bill, received an unfavorable report from the House Environmental Matters Committee.

Cross File: HB 341 (Delegate S. Robinson, *et al.*) - Environmental Matters.

Information Source(s): Garrett County, Marcellus Shale Safe Drilling Initiative, U.S Environmental Protection Agency, Maryland Department of the Environment, American Petroleum Institute, Department of Legislative Services

Fiscal Note History: First Reader - February 24, 2013
mc/lgc

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Appendix – High-volume Hydraulic Fracturing in the Marcellus Shale

The Marcellus Shale

The Marcellus Shale formation is a geologic feature in the Appalachian Range which has recently attracted significant attention from the energy industry for its rich natural gas deposits contained within 117 counties in seven states. In Maryland, the formation is located in Allegany, Garrett, and Washington counties; however, the only anticipated areas of gas production are in Garrett and western Allegany counties. Applications for permits to produce natural gas from the Marcellus Shale in Maryland using horizontal drilling and high-volume hydraulic fracturing were first filed with the Maryland Department of the Environment (MDE) in 2010. According to MDE, however, all of the permit applications that had been filed have since been withdrawn.

Concerns Regarding High-volume Hydraulic Fracturing

As the use of hydraulic fracturing has increased, so has concern about its potential impacts. MDE has advised that, although accidents are relatively rare, exploration for and production of natural gas in nearby states have resulted in injuries, well blowouts, releases of fracturing fluids, releases of methane, spills, fires, forest fragmentation, road damage, and evidence of water contamination.

In 2010, the U.S. Environmental Protection Agency (EPA) raised several concerns regarding the impact of hydraulic fracturing on water supplies, water quality, and air quality, among other issues, and is currently examining the practice more closely. In April 2012, EPA adopted a final rule to address air emissions from hydraulic fracturing, and in December 2012, EPA released a progress report on its comprehensive study of hydraulic fracturing impacts on water resources. Other states, academic organizations, environmentalists, and the industry are also conducting research into the impacts of hydraulic fracturing on the public health, safety, and the environment.

Marcellus Shale Safe Drilling Initiative

Governor Martin O'Malley established the Marcellus Shale Safe Drilling Initiative by executive order in June 2011 to ensure that, if drilling for natural gas from the Marcellus Shale proceeds in Maryland, it is done in a way that protects public health, safety, natural resources, and the environment. The executive order directs 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. Specifically, the executive order tasks MDE and DNR, in consultation

with the advisory commission, with conducting a three-part study and reporting findings and recommendations.

Part I of the study, a report on findings and recommendations regarding sources of revenue and standards of liability for damages caused by gas exploration and production, was released in December 2011. The findings and recommendations of the report led to the introduction of several bills during the 2012 legislative session; the General Assembly passed only one of the bills, however. Chapter 703 of 2012 (HB 1123) established a presumptive impact area applicable to areas around a deep shale gas deposit well for which MDE has issued a gas exploration or production permit. In a presumptive impact area, it is presumed that contamination of a “water supply” was caused by the activities of gas exploration or production. The bills that failed would have, among other things:

- established a State-level severance tax on gas production;
- created a revenue source for the ongoing study of the Marcellus Shale Safe Drilling Initiative;
- established gas or oil lease recordation requirements to facilitate public access among the land records;
- required a landman (a person who’s responsibilities include meeting with landowners and negotiating leases on behalf of companies seeking to mine or drill on a plot of land) to register with the Department of Labor, Licensing, and Regulation; and
- increased the amount of performance bond coverage that a holder of a permit to drill for gas or oil must maintain.

The other two parts of the required study are (1) a report with recommendations for best practices for all aspects of natural gas exploration and production in the Marcellus Shale in Maryland and (2) a final report with findings and recommendations relating to the impact of Marcellus Shale drilling, including possible contamination of groundwater, handling and disposal of wastewater, environmental and natural resources impacts, impacts to forests and important habitats, greenhouse gas emissions, and economic impacts. A draft of the best practices report has been delayed twice and is currently expected to be released in spring 2013. The final best practices report is still expected to be completed by August 1, 2013, and the final report for the third part of the study is expected by August 1, 2014.

The Marcellus Shale Safe Drilling Initiative study has been hampered to some extent by a lack of funding. Legislation failed in the 2011 and 2012 sessions that would have provided the estimated funding needed to fully research all initially planned aspects of the study. To date, the failure to establish a funding source for the study has resulted in the need by MDE, DNR, and the advisory commission to identify other sources of funding and to reduce the scale of the study. However, the Governor's proposed fiscal 2014 budget includes a \$1.5 million fiscal 2013 deficiency appropriation in MDE and DNR to support research required by the executive order. The proposed general funds would be used to support stream sampling, economic analysis, a review of the potential impacts of gas extraction on public health, and the establishment of baseline data for groundwater, surface water, and air in Western Maryland.

Marcellus Shale Safe Drilling Advisory Commission Legislative Committee

In September 2012, the Marcellus Shale Safe Drilling Advisory Commission established a legislative committee to recommend legislative proposals to the advisory commission for consideration prior to the 2013 session. The commission considered 10 topics for potential legislative proposals and the legislative committee ultimately recommended four proposals: (1) a surface owner protection act; (2) financial assurance requirements, such as performance bonds or environmental impairment liability insurance; (3) the registration of landmen; and (4) the establishment of a severance tax on gas production.