EXECUTIVE SUMMARY

Governor O'Malley's Executive Order 01.01.2011.11 established the Marcellus Shale Safe Drilling Initiative. An 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 State has not yet determined whether gas production can be accomplished without unacceptable risk and nothing in this report should be interpreted to imply otherwise.

The Executive Order tasks the Maryland Department of the Environment (MDE) and the Department of Natural Resources (DNR), in consultation with the Advisory Commission, with conducting a three-part study and reporting findings and recommendations. The completed study will include:

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. findings and recommendations regarding the potential impact of Marcellus Shale drilling in Maryland.

Part I of the study, a report on findings and recommendations regarding sources of revenue and standards of liability, in anticipation of gas production from the Marcellus Shale that may occur in Maryland, was completed in December 2011. The schedule was extended by one year for the second report, which is Part II of the study.

In preparation for the Part II report, MDE entered into a Memorandum of Understanding with the University of Maryland Center for Environmental Science, Appalachian Laboratory (UMCES-AL), to survey best practices from several states and other sources, and to recommend a suite of best practices appropriate for Maryland. The UMCES-AL recommendations were completed in February 2013 and made available to the Advisory Commission and the public. Those recommendations and drafts of this report were considered by the Advisory Commission at several meetings.

The Departments evaluated whether to add to, accept, reject, or modify the suggestions, based on a number of factors, including comments from the Advisory Commission. A draft of the Departments' report was made available for public comment on June 25, 2013. After consideration of the comments, the Departments submit this report on Part II of the study, Best Practices. The Departments' Best Practices recommendations are very similar to those in the UMCES-AL report. Where a UMCES-AL recommendation was rejected or modified, an explanation is provided.

The most innovative recommendation in the UMCES-AL report is to use comprehensive planning for foreseeable gas development activities in an area rather than considering each well individually. By considering the placement of well pads, roads, pipelines and other ancillary equipment for a large area, the efficiency of the operation could be maximized while the impacts on local communities, ecosystems, and other natural

resources could be avoided or minimized. The UMCES-AL report recommended that a comprehensive plan be voluntary.

The Departments agree that a Comprehensive Gas Development Plan (CGDP) designed to address the larger, landscape-level issues and cumulative effects offers significant benefits to both the industry and the public. The Departments propose to make a CGDP mandatory in Maryland and a prerequisite to an application for a well permit. The CGDP would be developed by the company through a process that allows public participation and then submitted to the State for approval. Once the CGDP is approved, applications for individual wells consistent with the approved plan could be made.

Whereas the CGDP establishes the locations for well pads, roads, pipelines and other ancillary equipment, 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 this report. These standards address activities from the initial construction of the access road and pad through closure and restoration of the site. They address sediment and erosion control, stormwater management, transportation planning, water acquisition, storage and reuse, disclosure of chemicals, drilling, casing and cement, blowout prevention, hydraulic fracturing, flowback and produced water, air emissions, wastewater treatment and disposal, leak detection, light, noise, invasive species, spill prevention control and emergency response, site security and closure and reclamation. These standards do not preclude the use of new and innovative technologies that provide greater protection of public health, the environmental and natural resources.

The report also makes recommendations relating to monitoring, recordkeeping and reporting. Appendices provide additional information on specific subjects and include comments of the Advisory Commission and a summary of and response to public comments.

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