TESTIMONY OF
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Good morning, Mr. Chairman and Members of the Committee. I thank you for the opportunity to share information on EPA's role in ensuring that public health and the environment are protected during natural gas extraction and production activities.

EPA strongly believes that domestic natural gas production is critical to our nation's energy future. The natural gas resulting from well designed and managed extraction from shale formations has the potential to improve air quality, reduce greenhouse gas emissions, stabilize energy prices, and provide greater certainty about future energy reserves. Advancements in technology have increased the number of economically accessible gas reserves in the U.S. which has in turn benefited energy security and jobs. While this increase in activity and resources is beneficial, it is important that it be conducted in a way that ensures protection of drinking water supplies and water quality as well as adequate availability of waste disposal.

Natural gas holds promise for an increasing role in our energy future. As outlined in the President's Blueprint for a Secure Energy Future, the Administration is committed to addressing concerns about the potential for adverse environmental and health impacts of natural gas development and ensuring that production proceeds in a safe and responsible manner. We firmly believe that we can protect the health of American families and communities while reaping the

benefits of our expanded reserves of natural gas. Access to energy resources and clean water are not mutually exclusive. Both states and federal agencies have critical, complementary roles in ensuring that shale gas extraction occurs safely. States have important responsibilities deriving from their delegated authority under federal environmental laws as well as separate state authorities relating to oil and gas production. EPA likewise plays a central role because the Agency has oversight responsibilities when states are implementing federal laws and in some cases direct authority under federal statutes such as the Safe Drinking Water Act and the Clean Water Act.

I would like to discuss a few recent and upcoming actions by EPA related to shale gas extraction. EPA's current activities include: development of treatment standards for wastewater discharges, a research study on the potential impacts of hydraulic fracturing on drinking water resources, guidance for permitting when diesel fuel is used in hydraulic fracturing, and guidance on water quality permitting and pretreatment.

On October 20, 2011, EPA announced that it was beginning a rulemaking to set technology-based treatment pre-treatment standards to regulate discharges to publicly owned treatment works (POTWs) produced by natural gas extraction from underground shale formations. We will pursue the rulemaking process in coordination with our federal partners, and- informed by the input of industry experts, states, and public health organizations- we will work to ensure the needs of our energy future are met safely and responsibly.

We know that shale gas extraction in some instances can generate large volumes of wastewater and that this wastewater can potentially contain high concentrations of salts, radionuclides, heavy metals, and other materials that are potentially harmful to human health and the environment. Current rules prohibit direct discharges of this wastewater to surface waters,

and most of the wastewater is reused or re-injected underground. However, a significant amount is delivered to POTWs or commercial treatment facilities, where it is discharged to surface waters after treatment. EPA has heard concerns that those facilities may not employ treatment technologies that are effective at removing the contaminants in this type of wastewater, and we will be investigating both the constituents of the wastewater and available treatment technologies as part of the rule making process. Because of these concerns over potentially high amounts of pollutants in the wastewater from shale gas extraction and the fact that shale gas production is projected to grow significantly nationwide, EPA believes the initiation of a rulemaking, including the data collection necessary to better understand environmental impacts and available treatment option in support of such a rule, is an appropriate step. A call for data and information on the pollutants generated by the shale gas extraction industry is included in the October 20, 2011 announcement. In particular, EPA will be soliciting data and information on the types and characteristics of pollutants in shale gas wastewaters, the volumes and concentrations of pollutants, the fate and transport of pollutants to ground or surface waters, and any known instances of pass-through of pollutants or upsets related to shale gas wastewaters at POTWs. EPA is also seeking information on documented impacts of these pollutants on aquatic life and human health. EPA will also reach out to affected stakeholders and collect information to better characterize shale gas wastewaters and the efficiency of various treatment, re-use, and disposal technologies that will reduce shale gas wastewater pollutant discharges, including those technologies currently used in public and private treatment plants. Finally, EPA plans to collect cost data on treatment technologies to determine the cost and affordability of treatment. EPA's current plan is to issue the proposed rule for shale gas wastewater treatment standards in 2014. Although the number of treatment plants accepting shale gas extraction wastewater is small

relative to the number of disposal wells, we believe the issuance of national technology standards will help to ensure regulatory certainty, national consistency and a level playing field for industry. Under the Clean Water Act, EPA must adopt standards that reflect the best available technology economically achievable. EPA will propose regulations that are affordable. In the coming months, EPA will carefully consider the impact of regulatory costs to the industry and to special subsets of stakeholders such as small businesses, state and local governments, and communities. EPA will also consider potential impacts on jobs and on local economies.

At the request of Congress, EPA launched a research project last year to study the relationship between hydraulic fracturing and drinking water resources. The study plan was released on November 3, 2011. The research will consider the entire lifecycle of water use in hydraulic fracturing. EPA's study, which is being conducted by our Office of Research and Development, will look at the five stages of water use, including: water acquisition, the mixing of chemicals, injection at the well, flowback and produced water, and the disposal of wastewater. EPA will release the first report on the study in 2012 which will include analysis of data collected from multiple sources, results of the modeling of potential impacts of various aspects of hydraulic fracturing, studies of the formation of disinfection by-products during the treatment of hydraulic fracturing waste waters, portions of the retrospective case studies that have been completed, and an environmental justice assessment. A second report, scheduled to be released in 2014, will provide additional scientific results on these topics and report on prospective case studies and toxicological analysis.

While Congress has specifically exempted selected oil and gas production activities from several environmental laws, a number of environmental protections continue to apply. For example, while the Energy Policy Act of 2005 excluded hydraulic fracturing for oil and gas

production from permitting under the Safe Drinking Water Act's (SDWA) Underground Injection Control (UIC) Program, the exclusion does not extend to those activities when diesel fuels are used in fracturing fluids or propping agents. Hydraulic fracturing flowback and produced water disposal through underground injection is still regulated under the SDWA. Injection is the primary method of disposal in all areas except the Marcellus Shale region.

In addition to EPA's oversight role for state permitting authorities under the Clean Water Act and Safe Drinking Water Act, the Agency also acts in an advisory role to state permitting authorities. One example of this is the Frequently Asked Questions (FAQs) document we released in March of 2011. The FAQs are intended to serve as CWA guidance to state and federal permitting authorities within the Marcellus Shale region in addressing treatment and disposal of wastewater from shale gas extraction. The FAQs discuss the wastewater issues and pollutants associated with shale gas extraction and how they can be addressed under existing regulations. Relevant regulations that are discussed cover oil and gas extraction, centralized waste treatment, acceptance and notification requirements for publicly owned treatment works, pretreatment, and storm water. The FAQs should assist EPA and state personnel as they work with the regulated community to address shale gas extraction wastewater.

EPA is currently working on water quality permitting and pretreatment guidance as well as guidance on permitting the use of diesel fuel in hydraulic fracturing. Those documents will provide technical information and recommendations for permit writers to consider, based on current statutes and regulations, and will not be binding requirements. These actions are related to programs where states are implementing Federal programs and EPA has an oversight role under the statutes, or where EPA is the permitting authority. They do not apply to activities that are solely governed by state law.

Conclusion

In conclusion, EPA is committed to supporting the safe and responsible development of natural gas resources to create jobs, promote energy security, and reduce energy impacts associated with energy production and use. In doing so, we will use our authorities, consistent with the law and best available science, to protect communities across the nation from potential impacts to water quality, human health, and environment that may be associated with natural gas production activities. We expect to continue to coordinate our actions with our federal, state, and local partners as we move forward. By addressing potential adverse environmental impacts, we can ensure that natural gas production proceeds in a responsible manner to enhance our domestic energy options. We believe that by doing so, as a nation, together we can establish a sound framework that allows for the safe and responsible development of a domestic energy resource.

Thank you for the opportunity to testify today, I look forward to any questions you may have.