

**TESTIMONY OF  
BOB PERCIASEPE  
DEPUTY ADMINISTRATOR  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
BEFORE THE  
SUBCOMMITTEE ON WATER AND WILDLIFE  
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS  
UNITED STATES SENATE**

**April 12, 2011**

Good morning, Madame Chairman, Mr. Chairman and Members of the Committee. I am pleased to be here today to discuss EPA's role in ensuring that public health and the environment are protected during natural gas extraction and production activities.

Natural gas can enhance our domestic energy options, reduce our dependence on foreign supplies, and serve as a bridge fuel to renewable energy sources. If produced responsibly, natural gas has the potential to improve air quality, stabilize energy prices, and provide greater certainty about future energy reserves.

While natural gas holds promise for an increased role in our energy future. EPA believes it is imperative that we access this resource in a way that protects human health and the environment.

Like you, we have heard the public's concerns about the safety of natural gas production and the potential impacts of shale gas development on American communities. As we listened to citizens at public meetings across the country last year, we heard the concerns many have for their families, their communities, the water, the air, and the land. We also heard from citizens who expressed how much their communities sorely need the income that could be gained from natural gas production.

We believe that this important resource can be – and must be – extracted responsibly, in a way that secures its promise for the benefit of all.

If improperly managed, natural gas extraction and production, including hydraulic fracturing, a technique for extracting natural gas, may potentially result in public health and environmental impacts at any time in the lifecycle of a well and its associated operations. Such impacts may include:

- stress on surface water and groundwater supplies from the withdrawal of large volumes of water used in drilling and hydraulic fracturing;
- potential contamination of drinking water aquifers resulting from faulty well construction and completion;
- compromised water quality due to challenges with managing and disposing of contaminated wastewaters, known as flowback and produced water, where contaminants could include organic chemicals, metals, salts and radionuclides; and
- impaired air quality from hazardous air pollutants such as benzene and the potent greenhouse gas methane.

Where we know problems exist, EPA will not hesitate to protect Americans whose health may be at risk, and we remain committed to working with state officials, who are on the front lines of permitting and regulating natural gas production activities.

EPA has an important role to play in ensuring environmental protection and in working with federal and state government partners to manage the benefits and risks of shale gas production. We must effectively address concerns about the consequences of shale gas development using the best science and technology. To this end, we are working in the following areas, among others, with all of our stakeholders, including other federal and state

agencies, the oil and gas industry, and the public health community to evaluate and address the potential environmental issues related to shale gas.

### **Research:**

At the direction of Congress, EPA launched a study last year to understand the relationship between hydraulic fracturing and drinking water resources-- a study that has already engaged thousands of Americans across the country who are currently living in areas where hydraulic fracturing is taking place. When complete, this peer-reviewed research study will help us better understand potential impacts of gas extraction and production on drinking water resources and factors that may lead to human exposure and risks, while reducing scientific uncertainties about environmental impacts from those processes.

As part of this effort, EPA required information from nine oil and gas service companies conducting hydraulic fracturing regarding the chemical composition of the fracturing fluids they are injecting into the ground. EPA has conducted stakeholder outreach during development of the study plan, including opportunity for public comment. The draft study plan is being reviewed by EPA's Science Advisory Board and it included an opportunity for public comment. The initial study results are expected to be available in late 2012.

### **Programmatic Activities:**

While Congress 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, these activities are still regulated under the SDWA when diesel

fuels are used in fracturing fluids. Also, flowback and produced water disposal through injection is still regulated under the SDWA.

EPA regulates waste waters from oil and gas wells under the Section 301(b) and 402 (a) of the Clean Water Act (CWA) when they are discharged into publicly owned treatment works (POTWs) and surface waters. To address public health concerns from air emissions, Clean Air Act (CAA) provisions for New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants, and Mandatory Reporting of Green House Gases apply to energy extraction.

Under several of the principal environmental statutes we administer, EPA has a number of activities underway, which I would like to outline for you.

### **CWA and SDWA**

Under the CWA and SDWA, EPA works with states to ensure that gas extraction is carried out consistent with CWA and SDWA regulations to protect water and drinking water. For example, on March 16, 2011, we released shale gas extraction Frequently Asked Questions (FAQs) 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.

As part of its effluent guidelines planning process under CWA section 304(m), EPA is considering whether to initiate a rulemaking to revise these regulations to address coal bed methane extraction flowback waters. Also, in response to public comment, EPA is considering how best to address shale gas extraction wastewater discharges to POTWs under the CWA. Similarly, under SDWA's UIC program, EPA is working expeditiously to ensure the SDWA programmatic requirements related to hydraulic fracturing when using diesel fuels are implemented appropriately. We are coordinating with our state and Tribal co-regulators to ensure proper management of flowback and produced water disposed of via underground injection.

### **Clean Air Act (CAA)**

A range of Clean Air Act (CAA) provisions apply to the oil and gas sector. Under the CAA New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants programs, EPA must review, and propose amendments, where warranted based on the reviews, to existing CAA regulations for oil and natural gas production, natural gas processing plants, and natural gas transmission and storage.

Subpart W of EPA's Greenhouse Gas Reporting Program requires companies to begin collecting methane emissions data as of January 1, 2011, and report the emissions for each year starting in 2011 by March 31 of the following year. This rule will increase the understanding of the location and magnitude of significant methane and other GHG emissions sources in the petroleum and natural gas industry. Increased information will help companies improve the efficiency of their operations and will result in cross-cutting benefits for public health, domestic energy supply, industrial efficiency and safety, and revenue generation through methane recovery and other emissions reduction efforts.

EPA's regulatory efforts will complement our Natural Gas STAR Program, a flexible, voluntary partnership between EPA and oil and natural gas operating companies which encourages companies both in the United States and internationally to adopt proven, cost-effective technologies and practices that improve operational efficiency and reduce methane emissions. Beginning in 1993, this successful voluntary program now has over 130 partner companies. Together we have identified over 80 technologies and practices that can cost-effectively reduce methane emissions from the oil and natural gas sector. (A list of these technologies is posted on the EPA Natural Gas STAR website: (<http://www.epa.gov/gasstar/tools/recommended.html>). These include methane emission reduction activities applicable to the largest natural gas industry methane sources: gas well liquid unloading, unconventional gas well completions and workovers, pneumatic devices, reciprocating and centrifugal compressors, crude oil and condensate tank vents and general fugitive emissions. Natural Gas STAR partners reported domestic emissions reductions of 86 Bcf, worth over \$344 million, in 2009 and over 900 Bcf, worth over \$4.4 billion, over the life of the program.

### **Enforcement**

Under each of these statutes I just described, EPA has tools for enforcement and investigation to assure compliance with applicable requirements, and the Agency provides support and technical assistance to state programs, which have front-line responsibility for oversight of oil and gas drilling operations.

In April 2010 EPA announced an enforcement initiative for energy extraction sector for fiscal years 2011 through 2013. The initiative has twin goals: to take appropriate enforcement

action where adverse impacts on air and water from energy extraction activities threaten human health, and to incorporate broad, company-wide injunctive relief in gas-related enforcement actions as a means of reducing human health and environmental impacts of the industry.

EPA retains authority to respond to imminent and substantial endangerments to public health or the environment under several statutes, including the Safe Drinking Water Act, the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Toxic Substances Control Act, and the Comprehensive Environmental Response, Compensation, and Liability Act.

## **Conclusion**

In conclusion, EPA is committed to using its authorities, consistent with the law and best available science, to protect communities across the nation from impacts to water quality, human health, and environment associated with natural gas production activities. We also commit to coordinating with our federal, state, and local partners as we move forward. By helping manage environmental impacts and address public concerns, natural gas production can proceed in a responsible manner, which protects public health and enhances 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 significant domestic energy resource whose use brings a range of other important national security, environmental and climate benefits.