



At a Glance

Why We Did This Review

We initiated this review to determine whether the U.S. Environmental Protection Agency (EPA) has the data needed to make key decisions regarding air emissions from oil and natural gas production. Key decisions include the need for regulations, enforcement and permitting decisions, and risk assessment, among others. Gas production in the United States has grown significantly in recent years. Between 1992 and 2010, about 210,000 new gas wells were drilled. The U.S. Department of Energy projects that onshore crude oil and natural gas production will increase 30 and 18 percent, respectively, from 2009 to 2025. The oil and gas production sector and its various production processes emit large amounts of harmful pollutants that impact air quality on local, regional, and global levels.

This report addresses the following EPA Goal or Cross-Cutting Strategy:

- *Taking action on climate change and improving air quality.*

For further information, contact our Office of Congressional and Public Affairs at (202) 566-2391.

The full report is at:
www.epa.gov/oig/reports/2013/20130220-13-P-0161.pdf

EPA Needs to Improve Air Emissions Data for the Oil and Natural Gas Production Sector

What We Found

High levels of growth in the oil and natural gas (gas) production sector, coupled with harmful pollutants emitted, have underscored the need for EPA to gain a better understanding of emissions and potential risks from the production of oil and gas. However, EPA has limited directly-measured air emissions data for air toxics and criteria pollutants for several important oil and gas production processes and sources, including well completions and evaporative ponds. Also, EPA does not have a comprehensive strategy for improving air emissions data for the oil and gas production sector; the Agency did not anticipate the tremendous growth of the sector, and previously only allocated limited resources to the issue.

In addition to their use in making a variety of key decisions, EPA uses air emissions data to develop emission factors. These are representative values that relate the quantity of a pollutant released with an activity associated with its release. States use EPA's emission factors to develop emission inventories, issue permits for facilities, and take enforcement actions. Limitations in EPA's air emissions data for a number of oil and gas production pollutants have contributed to emission factors of questionable quality. About half of EPA's Web Factor and Information Retrieval System oil and gas production emission factors are rated below average or unrated because they are based on insufficient or low quality data.

EPA uses its National Emissions Inventory (NEI) to assess risks, track trends, and analyze envisioned regulatory controls. However, oil and gas production emissions data in the 2008 NEI are incomplete for a number of key air pollutants. For example, only nine states submitted criteria pollutant emissions data for small stationary sources. Because so few states submitted data for this sector, we believe the NEI likely underestimates oil and gas emissions. This hampers EPA's ability to accurately assess risks and air quality impacts from oil and gas production activities.

Recommendations and Planned Agency Corrective Actions

We recommend that EPA develop and implement a comprehensive strategy for improving air emissions data for the oil and gas production sector, prioritize which oil and gas production emission factors need to be improved, develop additional emission factors as appropriate, and ensure the NEI data for this industry sector are complete. EPA concurred with our recommendations to develop a comprehensive strategy, improve and prioritize emission factors, and develop default nonpoint emission estimates. The Agency did not concur with our recommendations to ensure that states submit required data and develop default calculation guidance. These recommendations are unresolved pending the Agency's final report response.

Noteworthy Achievements

EPA is conducting field studies to develop new methods to measure emissions and investing in a new Emissions Inventory System.