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The EPA's Study on the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources
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Natural gas plays a key role in our nation's clean energy future. The United States has vast reserves of natural gas that are commercially viable as a result of advances in horizontal drilling and hydraulic fracturing technologies, which enable greater access to gas in rock formations deep underground. These advances have spurred a significant increase in the production of both natural gas and oil across the country. However, as the use of hydraulic fracturing has increased, so have concerns about its potential human health and environmental impacts, especially for drinking water. In response to public concern, the US Congress requested that the US Environmental Protection Agency (EPA) conduct scientific research to examine the relationship between hydraulic fracturing and drinking water resources. In 2011, the EPA began research to assess the potential impacts of hydraulic fracturing on drinking water resources, if any, and to identify the driving factors that may affect the severity and frequency of such impacts. The study is organized around the five stages of the hydraulic fracturing water cycle, from water acquisition through the mixing of chemicals and the injection of fracturing fluid to post-fracturing treatment and/or disposal of wastewater. EPA scientists are using a transdisciplinary research approach involving laboratory studies, computer modeling, toxicity assessments, and case studies to answer research questions associated with each stage of the water cycle. This talk will provide an overview of the EPA's study, including a description of the hydraulic fracturing water cycle and a summary of the ongoing research projects.