# EPA's Study of Potential Impacts of Hydraulic Fracturing on Drinking Water Resources

## *Scientific Integrity*

In 2010, the US Congress recognized growing public concern about drinking water in areas with hydraulic fracturing (HF) activity. In response to these concerns, Congress requested that EPA conduct a study examining the relationship between HF and drinking water resources.

EPA's study, "The Potential Impacts of Hydraulic Fracturing on Drinking Water Resources," will provide new information and help to answer questions for decision makers at local, state, tribal and federal levels as they relate to the potential impacts of HF activities on drinking water resources.

### Scientific Integrity

EPA is committed to ensuring scientific integrity in its research, and is conducting this study in line with the Agency's Scientific Integrity Policy and with the principles laid out in Congress' request that EPA conduct the study. To that end, all stages of the study are characterized by six principles, outlined below, that work to ensure scientific integrity.

1. **Using the best available science**
   EPA scientists are conducting impartial research using state-of-the-art laboratories and cutting-edge methodologies.

2. **Incorporating independent sources of information**
   In addition to conducting original research, EPA scientists are gathering and analyzing existing data from a wide variety of sources to ensure a thorough understanding of current information on HF activities and to provide better context for the study findings. This includes:

   - Data from state agencies, federal agencies, industry, and public sources that will help researchers understand the potential impacts of HF on drinking water resources at each step of the HF water cycle.
   - Existing data regarding the toxicity and potential human health effects associated with chemicals that have been used in the HF process or found in wastewaters associated with HF.
   - Existing studies that provide insight on the potential impact of HF on drinking water resources.

3. **Following rigorous quality assurance procedures**
   All research associated with this study is conducted in accordance with EPA's Quality Assurance Program for environmental data and is meeting the Office of Research and Development's requirements for the highest level of quality assurance. This means that:

   - Before any new data collection can begin, each research project must have an approved quality assurance project plan, which outlines the necessary quality assurance procedures, quality control activities, and other technical activities that will ensure the collection of accurate data.

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- Results from every project will undergo a comprehensive quality assurance review before being released for peer review.

4. **Consulting with stakeholders at every level**
   The Agency is working in consultation with the public, industry, non-governmental organizations, tribal governments, and state, inter-state, and federal agencies, in designing and carrying out the study. To fulfill this objective:

   - Case study sites were nominated by the public for inclusion in the study. Learn more about site selection.
   - Federal, state, and tribal partner consultations were held to discuss the study scope, gaps in data, opportunities for sharing data and conducting joint studies, and current policies and practices for protecting drinking water resources. Learn more about public outreach.
   - Consultations with representatives from industry and non-governmental organizations were held to discuss the public engagement process, the scope of the study, and other key issues. Learn more about public outreach.
   - Technical workshops with experts from industry, agencies, and other organizations were held in 2011, and the results are informing EPA research. Learn more about the technical workshops.

5. **Conducting the study in a transparent fashion**
   EPA is communicating research procedures, status, and findings to the public, discussing underlying assumptions and any uncertainties associated with final conclusions. EPA has supported full transparency by:

   - Holding public information sessions during both the development and completion of the study plan. Get a status update.
   - Posting all quality assurance project plans online, allowing replication and verification of EPA's research approach and methods. Read the quality assurance project plans.

6. **Undergoing thorough peer review**
   The study scope, draft study plan and the final report undergo review by experts:

   - The EPA Science Advisory Board, a federal advisory committee that provides an independent, expert assessment of scientific matters relevant to EPA, assembled a panel of experts to review the draft study plan, and provided recommendations for improvement of the final version.
   - A first progress report is planned for late 2012. A final draft report is expected to be released for public comment and peer review in 2014. Learn more about the reports.

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**REFERENCES:**

**www.epa.gov/hfstudy**

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