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# Hydraulic Fracturing for Oil and Gas – Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States: U.S. Environmental Protection Agency Releases December 2016 Report

## Arkansas Environmental, Energy, and Water Law Blog

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The United States Environmental Protection Agency (“EPA”) released a 2016 report titled:

*Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources of the United States (“Report”)*

The *Report* had been undertaken at the request of the United States Congress.

EPA states the goals of the study included:

- Assessment of the potential for activities in the hydraulic fracturing water cycle to impact the quality or quantity of drinking water resources
- Identification of factors that affect the frequency or severity of these impacts

The agency states that the activities it undertook to achieve these goals included:

- Independent research
- Engagement of stakeholders through technical workshops and roundtables
- A review of approximately 1,200 cited sources of data and information

EPA notes in part that the relevant activities can impact drinking water resources under some circumstances. It further states that:

...impacts can range in frequency and severity, depending on the combination of hydraulic fracturing water cycle activities and local- or regional-scale factors.

Certain combinations of activities and factors are identified as more likely than others to result in more frequent and more severe impacts. These are stated to include:

- Water withdrawals for hydraulic fracturing in times or areas of low water availability, particularly in areas with limited or declining groundwater resources

- Spills during the management of hydraulic fracturing fluids and chemicals or produced water that result in large volumes of high concentrations of chemicals reaching groundwater resources
- Injection of hydraulic fracturing fluids into wells with inadequate mechanical integrity, allowing gases or liquids to move to groundwater resources
- Injection of hydraulic fracturing fluids directly into groundwater resources
- Discharge of inadequately treated hydraulic fracturing wastewater to surface water resources
- Disposal or storage of hydraulic fracturing wastewater in unlined pits, resulting in contamination of groundwater resources

The 600-plus page *Report* (plus 572 pages of appendices) contains chapters addressing:

- Drinking Water Resources in the United States
- Hydraulic Fracturing for Oil and Gas in the United States
- Water Acquisition
- Chemical Mixing
- Well Injection
- Produced Water Handling
- Wastewater Disposal and Reuse
- Identification and Hazard Evaluation of Chemicals Across the Hydraulic Fracturing Water Cycle
- Synthesis

[A link to the \*Report\* can be found here.](#)