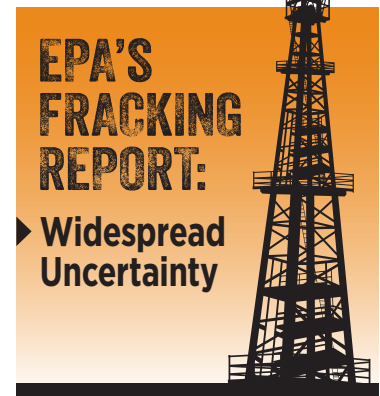


Widespread Uncertainty

Calls to Revise EPA's Draft Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources



Persistent lack of available data limits EPA's ability to offer any firm conclusions on the frequency or severity of impacts to drinking water from hydraulic fracturing. Caveats and admission of uncertainty is rampant throughout the draft Assessment. In EPA's own words:

“There are several uncertainties inherent in our assessment of hydraulic fracturing water use and potential effects on drinking water quantity or quality. The largest stem from the lack of literature and data on this subject at local scales, and the question of whether any impacts would be documented in the types of literature we reviewed.”
(p. 4-50)

“Due to a lack of data, we generally could not assess future cumulative water use and the potential for impacts in most areas of the country, nor could we examine these in combination with other relevant factors (e.g., climate change, population growth).” (p. 4-51)

“However, **due to a lack of available data, little is known** about the prevalence and severity of actual drinking water impacts.”
(p. 5-42)

“The data contain few post-spill analyses, so ground water contamination may have occurred but have not been identified.”
p. 5-46)

“There was no reported sampling of soil or ground water to determine whether or not chemicals migrated into the soil.” (p. 5-69)

“The lack of information regarding the composition of chemical additives and fracturing fluids, containment and mitigation measures in use, and the fate and transport of spilled fluids greatly limits our ability to assess potential impacts to drinking water resources.” (p. 5-73)

“There are documented chemical spills at fracturing sites, but **a lack of available data** limits our ability to determine impacts.”
(p. 5-74)

“There is a lack of baseline surface water and ground water quality data. This **lack of data** limits our ability to assess the relative change to water quality from a spill or attribute the presence of a contaminant to a specific source.” (p. 5-74)

“There are other cases in which production wells associated with hydraulic fracturing are alleged to have caused drinking water contamination. **Data limitations** in most of those cases (including the unavailability of information in litigation settlements resulting in sealed documents) **make it impossible to definitively assess whether or not hydraulic fracturing was a cause of the contamination in these cases.**” (p. 6-53)

“**Subsurface monitoring data** (i.e., data that characterize the presence, migration, or transformation of fluids in the subsurface related to hydraulic fracturing operations) **are scarce** relative to the tens of thousands of oil and gas wells that are estimated to be hydraulically fractured across the country each year (see Chapter 2).” (p. 6-56)

“These **limitations on hydraulic fracturing-specific information make it difficult to provide definitive estimates** of the rate at which wells used in hydraulic fracturing operations experience the types of integrity problems that can contribute to fluid movement.” (p. 6-56)

“Although it is collected in some cases, **there is also no systematic collection, reporting, or publishing of empirical baseline (pre-drilling and/or pre-fracturing) and post-fracturing monitoring data** that could indicate the presence or absence of hydraulic fracturing-related fluids in shallow zones and whether or not migration of those fluids has occurred.” (p. 6-56)

“Given the surge in the number of modern high-pressure hydraulic fracturing operations dating from the early 2000s, **evidence of any fracturing-related fluid migration affecting a drinking water resource** (as well as the information necessary to connect specific well operation practices to a drinking water impact) **could take years to discover.**” (p. 6-56)

“Because some components of hydraulic fracturing fluid are proprietary chemicals, and subsurface reaction products may be unknown, prior knowledge of the identity of analytes may not be available. Consequently, **studies may be limited in their ability to determine the presence of either unknown or proprietary constituents** contained in flowback or produced water simply because of the lack of knowledge of the identities of the constituents.” (p. 7-14)

“Of the volume of spilled flowback and produced water, 16% was recovered for on-site use or disposal, 76% was reported as unrecovered, and 8% was unknown. **The potential impact of the unknown and unrecovered volume on drinking water resources is unknown.**” (p. 7-33)

“**A key parameter that is unknown is the number of crashes which impact drinking water resources**, so definitive estimates of impacts to drinking water resources cannot be made.” (p. 7-39)

“Despite various studies, the total number of spills occurring in the United States, their release volumes and associated concentrations, can only be roughly estimated because of **underlying data limitations.**” (p. 7-45)

“**Extensive characterization of produced water is typically not part of spill response**, and therefore the chemicals, and their concentrations, potentially impacting drinking water resources are not usually known.” (p. 7-46)

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