

SAFE AND RESPONSIBLE NATURAL GAS AND OIL PRODUCTION



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The combination of widespread and systemic application of proven engineering technologies and industry risk management practices and standards have enabled the natural gas and oil industry to achieve new milestones in energy efficiency, public safety and environmental protection. Coupled with a complex web of federal and state regulatory regimes, recommended practices for production ensure that the industry manages operations safely and responsibly.

BACKGROUND:

The oil and natural gas industry carries out operations for safe and environmentally responsible exploration and production of natural gas, crude oil, and associated liquids on lands administered by state and federal authorities, including production via the use of hydraulic fracturing and horizontal drilling in unconventional plays.

REGULATIONS

A comprehensive set of state, local and federal laws address nearly every aspect of exploration and production. These include well design, water use, waste management and disposal, air emissions, surface impacts, health, safety, location, spacing and operations. States also regulate this activity, and in many ways are best positioned to tailor laws precisely for the local geology and hydrology while also addressing and preventing surface impacts. State regulators continually review their regulations through collaborative efforts with industry.^{1,2,3}

STANDARDS

Industry standards and practices work in combination with federal and state regulations to provide a third layer of environmental protection. Formulated by the industry's standard-setting program, these recommended practices cover all aspects of the industry's work and are consistently updated as a part of the industry's ongoing effort toward continued improvement of operations.



FAST FACTS:

- According to the U.S. Department of Energy, more than 4 million oil and gas related wells have been drilled in the United States since development of these energy resources began nearly 150 years ago. At least 2 million of these have been hydraulically fracture-treated, and 95 percent of new wells drilled today are hydraulically fractured.
- The average unconventional well uses 3 million pounds of redundant steel and cement to isolate energy production from groundwater.

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- A three year study completed in February of 2016 by the University of Cincinnati examined water samples three to four times per year from 23 wells in the Utica shale region and found no evidence linking fracking to groundwater contamination, according to Dr. Amy Townsend-Small, a geologist involved with the study.
- A peer-reviewed Lawrence Berkeley National Laboratory (Berkeley Lab) “found no documented instances of hydraulic fracturing or acid stimulations directly causing groundwater contamination in California.”
- A final 2021 report to EPA on an agency funded study titled The Drinking Water Vulnerability and Neonatal Health Outcomes in Relation to Oil and Gas Production in the Appalachian Basin analyzed 300 households and found chemical concentrations in water samples were generally below federal and state standards and guidelines. Instances in which concentrations of one or more chemicals exceeded available health-based or aesthetic standards were rare and these exceedences were associated with analytes that have natural sources.

REFERENCES:

1. FracFocus is web-based voluntary chemical disclosure registry led by the Ground Water Protection Council (GWPC) and Interstate Oil and Gas Compact Commission (IOGCC). Launched in April of 2011, FracFocus, now in its fourth generation, allows operators to post data describing the chemical composition of hydraulic fracturing fluids at one web site, using a simple, informative, and consistent format. The web site provides information on a well specific basis to the public and serves as the reporting mechanism for 26 states (<https://fracfocus.org/>).
2. From 2013 to January 2016, according to the Groundwater Protection Council, over 100 groundwater-related rulemakings affecting upstream oil and gas operations were finalized across the United States with many more rulemakings currently ongoing and proposed.
https://www.gwpc.org/sites/gwpc/uploads/documents/publications/State_Regulations_Report_2017_Final.pdf
3. The State Oil and Gas Regulatory Exchange is a STATE led initiative aimed at facilitating multi-state collaboration and innovative regulatory solutions for oil and natural gas producing states (<https://www.stateoilandgasregulatoryexchange.com/>).

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