

## Energy Development and Water Needs in the Williston basin

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Energy development within the Williston structural basin, an important source of oil and gas for the Nation, provides a critical opportunity to study the water-energy nexus within a groundwater context. Thousands of oil and gas wells are drilled annually within the Williston basin. Unconventional oil and gas development generally requires between a half and 10 million gallons of fresh water per well to hydraulically fracture the Bakken and Three Forks Formations. Fresh water resources to be used for development will be obtained from streams, ponds, and/or wells completed in glacial and bedrock aquifers.

The Montana Bureau of Mines and Geology, the North Dakota State Water Commission, the Idaho National Laboratory, and the U.S. Geological Survey are working collaboratively to quantify current groundwater resources in the bedrock aquifers most frequently used within the basin as potable water sources and to provide tools to better understand groundwater system response to future demands and stresses. This collaboration will yield new information on aquifer properties, baseline conditions, and support regional aquifer models.