U.S. Geological Survey projects in the Williston Basin. December 2012

Year	Project Title	USGS contact(s)	Published paper, data source, on-going study, etc.	Link	What information is relevant?	Keywords
2003-present	Delineation of brine contamination in and near the East Poplar oil field, Fort Peck Indian Reservation, northeastern Montana	•Joanna Thamke, Montana Water Science Center •Zell Peterman, Crustal Geophysics and Geochemistry Center •Bruce Smith, Crustal Geophysics and Geochemistry Center •Todd Preston, Northern Rocky Mountain Science Center	USGS WRIR 2003-4214; USGS OFR 2006-1216; USGS OFR 2010-1326	http://mt.water.usgs.gov/projects/east_poplar/index.html	Project assesses brine contamination to the shallow aquifers and surface water.	Energy Development, Williston Basin, Brine contamination, Groundwater, Surface Water, East Poplar oil field, Fort Peck Indian Reservation
2008-present	Brine Contamination to Prairie Potholes from Energy Development in the Williston Basin	•Robert Gleason, Northern Prairie Wildlife Research Center •Joanna Thamke, Montana Water Science Center •Brian Tangen, Northern Prairie Wildlife Research Center •Todd Preston, Northern Rocky Mountain Science Center •Tara Chesley-Preston, Northern Rocky Mountain Science Center •Bruce Smith, Crustal Geophysics and Geochemistry Center	USGS FS 2011-3047; Applied Geochemistry August 24, 2012; USGS OFR 2012-1149; Montana State University Thesis 2011	http://steppe.cr.usgs.gov/ http://pubs.usgs.gov/of/2012/1149/	Water quality impacts of brine spills, spatial data on wells, decision analysis findings	Energy Development, Williston Basin, Brine Contamination, Prairie Potholes, Wetlands, Groundwater
2010-present	Water Balances for Energy Resource Production	•Seth Haines, Central Energy Resources Science Center •Joanna Thamke, Montana Water Science Center	On-going study	http://energy.usgs.gov/HealthEnvironment/EnergyProductionUse/ProducedWaters.aspx	Water availability	Energy Development, Williston Basin, Groundwater, Surface Water
2011-2012	A GIS-Based Vulnerability Assessment of Brine Contamination to Aquatic Resources from Oil and Gas Development in Eastern Sheridan County, MT	•Todd M. Preston, Northern Rocky Mountain Science Center •Tara L. Chesley-Preston, Northern Rocky Mountain Science Center •Joanna N. Thamke, Montana Water Science Center	publication in preparation	http://steppe.cr.usgs.gov/pdf/AWRA_2012_poster_Final.pdf	Vulnerability assessment methods	Energy Development, Williston Basin, Brine Contamination, Vulnerability Assessment
2012-2015	Williston and Powder River basins groundwater availability	•Joanna N. Thamke, Montana Water Science Center •Andrew Long, South Dakota Water Science Center •Gary LeCain, Office of Groundwater •Derek Ryter, Oklahoma Water Science Center •Tim Bartos, Wyoming Water Science Center	On-going study	http://mt.water.usgs.gov/projects/WaPR/	Groundwater availability determined for current and projected energy development	Energy Development, Williston Basin, Powder River Basin, Groundwater Availability
2012-present	Investigating the biological impacts of brine contamination on wetlands of the Prairie Pothole Region: Developing maps depicting conditions in the ecosystems	•Andrew Ray, Northern Rocky Mountain Science Center •Todd M. Preston, Northern Rocky Mountain Science Center •Tara L. Chesley-Preston, Northern Rocky Mountain Science Center	On-going study		Biological impacts of brine contamination	Energy Development, Williston Basin, Brine Contamination, Biological Impacts, Prairie Potholes, Wetlands
2012-present	Spatial characterization of wetland surface water contamination risk from oil development in the Prairie Pothole Region of North Dakota	•Max Post van der Burg, Northern Prairie Wildlife Research Center •Brian Tangen, Northern Prairie Wildlife Research Center •Robert Gleason, Northern Prairie Wildlife Research Center •Jill Frankforter, Montana Water Science Center	On-going study		Impacts of brines on wetland surface water chemistry	Energy Development, Williston Basin, Brine Contamination, Prairie Potholes, Wetlands
2012-present	Baseline Chemical and Isotopic Data for Produced Water from the Bakken Formation, Williston Basin	•Zell Peterman, Crustal Geophysics and Geochemistry Science Center •Rod Caldwell, Montana Water Science Center •Joel Galloway, North Dakota Water Science Center	On-going study		Characterize Bakken Formation water	Energy Development, Williston Basin, Bakken Formation, Strontium Isotopes