IOWA DEPARTMENT OF NATURAL RESOURCES

LEADING IOWANS IN CARING FOR OUR NATURAL RESOURCES

Iowa Private Well Program

Private Wells in Karst Areas

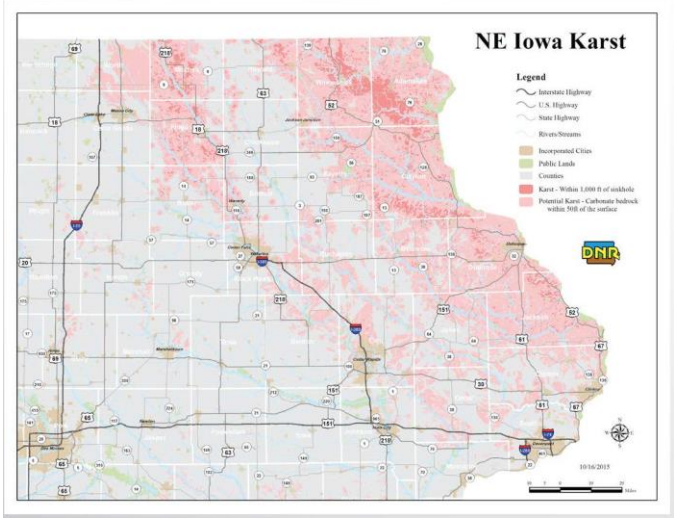
All well owners should be aware of and understand the quality of the water coming out of their tap. Owners of private wells have the responsibility of testing their water to make sure it's safe to drink and use.

Even though the water may look clear and taste good, it may not be safe to drink because it contains one or more contaminants at levels above the U.S. Environmental Protection Agency maximum contaminant levels. Consuming unsafe water can lead to illness and disease. The only way private well users know their water is safe to drink is by sending a sample of the well water to a certified drinking water laboratory for drinking water analysis.

Karst explained

"Karst" refers to geologic landforms characterized by the presence of easily dissolved bedrock (limestone and dolomite) near the ground surface. Because water easily dissolves this bedrock, karst areas often have sinkholes at the land surface, springs that flow from rocky hillsides, and streams that disappear into the ground. When it rains, water from the surface easily enters karst bedrock and becomes part of shallow aquifers that often serve as water sources for wells. When water from the land surface enters the ground through karst geologic features, like sinkholes, contaminants from the land surface can reach shallow aquifers.

Northeast Iowa's unique karst topography can create special situations for private well owners there, as contaminants can move into aquifers more easily than in other areas of the state. If you live in this part of Iowa (shaded on the map) and your private well draws from a shallow bedrock aquifer, you should test your water regularly. Aquifers that test above the Environmental Protection Agency maximum contaminant level for any contaminant should not be used for drinking water or any other consumable purpose unless the water is properly and continuously treated and proven safe by routine testing.



Wells affected

Not all wells in or near karst geological features will be affected by poor quality groundwater. A well with a casing placed deeper into bedrock and sealed with grout helps protect the well from contamination. The risk for potential exposure to contamination is substantially reduced or eliminated when a well uses a deep aquifer, has casing set deeply into the rock, is properly grouted, and is maintained in good condition.

Test drinking water regularly

All well owners should test their water at least once a year, and more often if you know your well is in shallow bedrock or when a test indicates water quality problems. Be sure to test for coliform bacteria and nitrate nitrogen, both of which can have immediate or acute health affects to certain individuals. Water testing can also look for additional contaminants with long-term or chronic health effects. This can include metals like lead and arsenic, chemicals like atrazine, and other pesticides that have been found in shallow aquifers in Iowa.

County environmental health specialists, the State Hygienic Laboratory at the University of Iowa, and other certified Iowa drinking water laboratories can assist with water testing. Additional information on water testing can be found at www.iowadnr.gov/privatewelltesting. County environmental health specialists and certified drinking water laboratories can also suggest other likely contaminants to test for, depending on the depth of your well, land use in your area, and the location of the nearest karst geologic features. For additional information on your water testing options, contact your local county environmental health specialist or the State Hygienic Laboratory at 800-421-4692.

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