



IOWA PRIVATE WELL PROGRAM

UNDERSTANDING YOUR WATER TESTING REPORT

ENVIRONMENTAL SERVICES DIVISION | WWW.IOWADNR.GOV

Water testing is an important part of using a private water supply well. Unless you regularly test your water supply, you will not know if the water is safe to consume. Water that looks clear and tastes great may still be unsafe to drink.

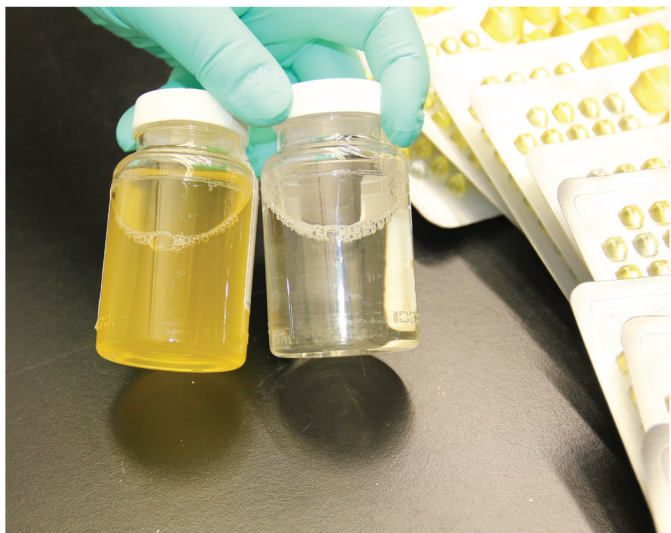
At a minimum, all well users should test their water supply at least once a year, and more often if you know your well is old, finished in a shallow aquifer, or when a previous test indicates the well has water quality problems. Once you have test results, here's how to determine your next steps.

Interpreting results

The lab often has your analysis report available a few days after receiving your sample and will usually provide you a copy of the report. Check with your lab for reporting options.

While there are no formal drinking water standards for private wells, U.S. Environmental Protection Agency (EPA) guidelines for public water supplies provide a good baseline for your water supply.

These guidelines typically use Maximum Contaminant Levels, or MCLs, as a measure. An MCL is “the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.” Although these standards are not enforceable for private water supplies, they can help determine if your water is safe. Additional information on water testing, MCLs and health effects can be found at <http://water.epa.gov/drink/contaminants>.



For **Total Coliform Bacteria** the result should be absent, or zero. If the result is present, or a number greater than zero, the lab will also test the sample for *E. coli* bacteria. The presence of *E. coli* in the water indicates fecal contamination from a human or animal source in the well water and/or water system. Microbes in these wastes can cause short-term health effects such as diarrhea, cramps, nausea, headaches and other symptoms. Microbes may pose a special health risk for infants, young children, seniors and people with severely compromised immune systems.

The presence of Total Coliform Bacteria indicates a possible problem with the well or water system. Coliforms are bacteria that occur naturally in the environment and indicate that other, more potentially harmful bacteria may also enter the water system. When you find coliforms in the water, you need to find how they entered the well. Have a certified well contractor inspect the well and water system for defects, correct those defects, shock chlorinate the well to sanitize the water system and take a second water test.

For **nitrate nitrogen**, the result should be 10 mg/L or less when tested for nitrate nitrogen (NO₃-N) or 45 mg/L or less when tested as nitrate (NO₃). The “mg/L” is a weight per volume measure, called milligrams per liter, which is also sometimes reported as parts per million, or ppm. Well water containing nitrate at levels above the MCL should never be given to infants less than six months old, as it can cause a potentially fatal disease called “blue baby syndrome.” There are also indications that nitrate levels exceeding the MCL may lead to other health issues. More research is needed.

Arsenic levels should be 0.010 mg/L, or 10 micrograms per liter (µg/L), or less. This MCL is based on the average person consuming 2 liters of water a day for a lifetime. Long term exposure to drinking water with arsenic levels higher than 10 µg/L increases your risk for chronic health issues like cancer.

Other testing. If you have your water tested for other contaminants and the lab reports a positive result in any area tested, it means that a contaminant is present. You should confirm whether the reported level is within the EPA

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www.iowadnr.gov/privatewelltesting

established safe levels as described on the EPA's website. If any of the levels exceed EPA's MCL limits, your water is not safe to drink.

Next steps

Above MCL. If your water analysis reports contamination levels above any MCLs, your water is not safe to drink. You should obtain your water from a known safe water source like a well that has been recently proven safe by water testing, a public water supply, using bottled water, or install and maintain an approved water treatment device capable of treating all of your consumable water.

Below MCLs. If your water analysis reports that you do not have any contaminants or they are below the EPA MCLs, you can keep using your water.

Bacteria positive. If your analysis reports that there is bacteria present in your water, don't drink the water. Call a certified well contractor and find an alternative safe source of consumable water.

Bacteria problems mean, at a minimum, your well and water system will need maintenance or repair, and shock chlorination to eliminate the bacteria.

Other contaminants. If you find that you have arsenic, VOCs or other types of contaminants that require water treatment, you should contact an Iowa DNR Certified Well Driller to discuss well options or your local professional water treatment systems dealer for treatment systems guidance.



ADDITIONAL RESOURCES

Iowa DNR Private Well Program Fact Sheets:
Private Wells In Karst Areas
How to Sample Your Well Water
Protecting Your Private Well

U.S. Environmental Protection Agency (EPA)
Drinking water standards
www.epa.gov/drink/contaminants/index.cfm

Human health risks of drinking water contaminants
<http://water.epa.gov/drink/info/well/health.cfm>

Private wells
<http://water.epa.gov/drink/info/well>

Iowa DNR
Private well testing
www.iowadnr.gov/privatewelltesting

Contamination in Karst
www.iowadnr.gov/karstcontamination

Private well program
www.iowadnr.gov/privatewells

Iowa DNR Certified Well Contractors

For help determining if a new well with deeper casing may provide lower nitrate levels. Check your local phone directory under "Water Well Drilling & Service" or go to www.iowadnr.gov and search "well contractor."

The State Hygienic Laboratory at the University of Iowa
www.shl.uiowa.edu/env/privatewell/ordering.xml

Drinking water contaminants and treatment systems
www.shl.uiowa.edu/env/privatewell/homewater.pdf

Iowa Department of Public Health
Potential health effects of nitrate exposure.
(515) 281-7689 or <http://idph.iowa.gov>

Iowa State University Extension and Outreach
Well ownership and drinking water resources
<http://www.extension.iastate.edu> and search "private well water quality"

Iowa Farm Bureau Farm*A*Syst
Assessing well and septic system condition
www.iowafarmbureau.com/Farmer-Resources/GovernmentPublic-Policy/Farm-Regulations-Assistance