

Coliform Bacteria

It is not practical to test water for every disease-causing microorganism, but it is easy to test for a group of indicator bacteria called total coliform bacteria. These bacteria are good indicators of sanitary protection of the well and water system because they are everywhere on the surface of the ground, but do not usually occur past a few feet into the soil. If they show up in a water test, they can indicate that surface contamination has gotten into the water and that disease-causing microorganisms may be present. Just as disinfection kills most disease-causing microorganisms, it also kills coliform bacteria.

Health Risks

While most coliform bacteria do not cause disease, their presence suggests there may be disease-causing microorganisms in your water. These microorganisms can cause diarrheas, dysenteries, salmonellosis, hepatitis, and giardiasis. Symptoms include diarrhea, vomiting, cramps, nausea, headaches, fever, fatigue, and even death sometimes. Infants, children, elderly people, and people with weakened immune systems are more likely to get sick or die from disease-causing microorganisms in drinking water.



Test for Coliform Bacteria Every Year

Water quality can change. The Minnesota Department of Health (MDH) recommends you test every year for coliform bacteria, even if you have not noticed any changes in your water quality. MDH also recommends you test for coliform bacteria any time your well or water system is worked on or the water changes in taste, smell, or look.

MDH recommends you use an accredited laboratory to test your water. Contact an accredited laboratory to get sample containers and instructions, or ask your county environmental or public health services if they provide well testing services.

Wells at Higher Risk

Some types of wells are at higher risk of being contaminated with harmful microorganisms. If any of the following are true about your well, contact a licensed well contractor to talk about what your best option is.

- Wells constructed before 1974 (when the Minnesota Well Code was developed).
- Dug wells with leaking walls and rotten boards for covers.
- Wells at the bottom of old frost pits.
- Wells with holes corroded through the casing.
- Wells too close to sewers, septic systems, or animal feedlots (See the “Protecting Your Well” webpage).

Prevent Bacterial Contamination

Most of Minnesota’s groundwater is free of disease-causing microorganisms. The upper layers of soil and rock filter the water as it soaks into the ground. You can do the following to help maintain this natural protection:

- Make sure your well is **located and constructed properly**. Work with a licensed well contractor to do this.
- **Inspect your well regularly** and repair any damage. Things to look for are:
 - **Damage:** Any cracks or holes in well casing, corrosion, loose wires, or soil settling?
 - **Well Cap:** Is it securely attached to the well casing? Is it broken or missing?
 - **Connections:** Are the electrical conduit and other connections watertight?
- **Mark your well** with flags or posts to avoid hitting it with vehicles.
- **Keep the well area clear of debris.**
- **Maintain minimum isolation distances** from contamination sources, such as fertilizers, pesticides, septic systems, and feedlots (see “Protecting Your Well” for guidance).
- **Do not tie animals to your well.**
- Have a licensed well contractor **seal wells that you no longer use**. A well that you no longer use can be a pathway for contaminants to get into groundwater and is a safety hazard.

What to do if Your Water Tests Positive for Coliform Bacteria

1. **Use boiled or bottled water** or water from a safe alternative source for cooking and drinking until you address the issue.

If nitrate or arsenic were also detected in your well water, boiling your water may not be the safest option. Boiling water that has these contaminants can increase their concentration and cause health problems.
2. **Disinfect your well** with a chlorine solution. Contact a licensed well contractor to disinfect your well, or use the instructions on the “Well Disinfection” webpage.
3. **Test your well water again** after disinfection to confirm there are no coliform bacteria.
4. You can use the water again, without boiling, once the well has been disinfected and the water no longer tests positive for coliform bacteria.

What to Do if All Disinfection Attempts Fail

Sometimes disinfection alone will not take care of the issue. In these cases, work with a licensed well contractor to figure out what to do. You may have to take special measures, such as bailing out debris from the well or constructing a new well. Possible causes are:

- Small animals or debris got into the well.
- Openings or cracks developed in the upper part of the well casing.
- Soil and rock may not be adequately filtering the water, and surface bacteria may be traveling deeper than usual.

Resources

- [Licensed Well and Boring Contractor Directory](http://www.health.state.mn.us/lwcsearch) (www.health.state.mn.us/lwcsearch).
- [Protecting Your Well](https://www.health.state.mn.us/communities/environment/water/wells/construction/protect.html) (https://www.health.state.mn.us/communities/environment/water/wells/construction/protect.html).
- [Search for Accredited Laboratories](http://www.health.state.mn.us/labsearch) (www.health.state.mn.us/labsearch).
- [Well Testing, Results, and Options](http://www.health.state.mn.us/welltesting) (www.health.state.mn.us/welltesting).
- [Well Disinfection](http://www.health.state.mn.us/communities/environment/water/wells/waterquality/disinfection.html) (www.health.state.mn.us/communities/environment/water/wells/waterquality/disinfection.html).

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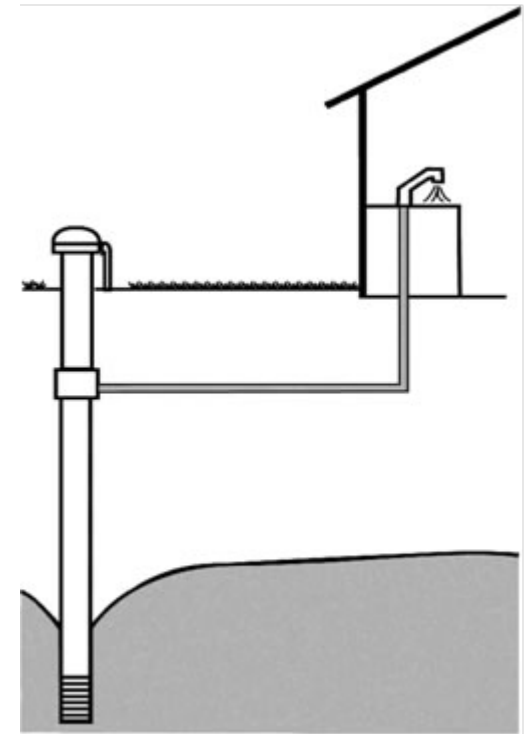
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