

Bacteria in Your Water

What You Need to Know

As a private well owner, you are in a unique position: You control your own water supply. With this benefit come some responsibilities. You are responsible for protecting your valuable groundwater resource as well as your family's health.

Occasionally, based on a news report or the color or smell of your water, you may wonder about the safety of your water supply. What do you do? Testing your water for the most common well contaminants is the best course of action. Answers to some questions you may have follow.

How common are water problems?

"Pure" water does not exist—all natural water contains some gases and minerals and is likely to contain some microbial organisms. Most water bacteria are harmless and many are actually beneficial.

I've heard about coliform bacteria. What are they?

Coliform bacteria originate as organisms in soil or vegetation and in the intestinal tract of warm-blooded animals (fecal coli). The many sources of bacterial pollution include runoff from woodlands, pastures, and feedlots; septic tanks and sewage plants; and animals (wild or domestic).

Will coliform bacteria make us sick?

Maybe, maybe not. Most coliforms are harmless residents of soil and will not make people sick. Some strains of *E. coli*, the most common fecal coliform bacterium, may be pathogens. Some found in food have been lethal. Their presence should be taken very seriously.

If my water is clear and smells okay, is it safe?

You cannot really directly smell unsafe bacteria or protozoa. They can only be detected using tests designed for that purpose. You should check your water quality regularly. Some sources of odors are bacteria or septic, or the presence of chemicals. It is a good idea to take your nose seriously. Have the water tested.

What is the "iron bacteria" problem?

Better described as iron biofouling, the problem popularly known as "iron bacteria" is both complex and widespread. Iron and other biofouling consists of biofilms, which include living and dead bacteria, their sheaths, stalks, secretions and other

leavings, and embedded metal hydroxide particles. "Iron bacteria" is one type of biofouling among several, including the characteristic white sulfur slime of sulfur springs. Manganese and even aluminum biofouling is also found in groundwater systems. These biofilms are natural and usually harmless. Natural iron biofouling often acts as a preliminary iron filter in wells and therefore can serve a positive function as well. Biofouling can be a nuisance, however. Generally, iron biofouling is the cause of iron buildup in wells and pipes.

If I have bacteria in my well, where do they come from?

Many types of bacteria are native or adapted to saturated sediments and rock, and are present in significant numbers in most water supply aquifers, even deep formations. Given time and a route (soil and rock provide plenty of both), bacteria will migrate into and take up housekeeping in an aquifer. "Non-native" coliform bacteria or "protozoa" of potential health concern, such as *Giardia* and *Cryptosporidium*, are most likely introduced from the surface.

What do we do about this problem?

If possible, do whatever it takes to correct the problem in your existing system. If necessary, install a new well and water inlet system away from the source of contamination.

What's the best way to maintain my good water supply?

You should have your water tested annually for radon, bacteria, and anything else of concern to you, even if you do not perceive a change in your water. Have your water tested by a qualified laboratory. They are listed in your phone book under "Water Testing" or "Laboratories."

The question of whether or not to have your water tested is a serious one that concerns the health of you and your family. If you obtain drinking water from your own well, you alone are responsible for assuring that it is safe.

Where can I get more information?

For more information, contact your local groundwater contractor, the U.S. EPA Safe Drinking Water Hotline at (800) 426-4791; the National Radon Hotline at (800) 767-7236; or the National Ground Water Association at (800) 551-7379. More information on these topics can be found at the website for well owners, maintained by the National Ground Water Association, at www.wellowner.org.