

Coliform Bacteria

Background/Overview

Coliform bacteria make up a large group of bacteria that are found in soils, on plants, and in surface water. Certain coliform bacteria live in the intestines of humans and animals. Coliforms are not harmful themselves, but when present in drinking water, disease-causing microorganisms such as bacteria, viruses, and parasites may have gotten into the water supply by the same route as the coliforms. These disease-causing organisms thrive in the intestines of warm-blooded animals. They are easily transmitted to drinking water if the feces of an animal contaminates a water supply for which there is not suitable disinfection. Potential sources of contamination include sewers, septic systems, feedlots, and animal yards.

Total Coliform analysis performed by Green Analytical Laboratories tests for both Total Coliforms and E.Coli (fecal coliforms) present in the water.

What are the health risks of drinking water positive for E.Coli?

If a water test for E.Coli or fecal coliforms is positive, the water is not safe to drink! The water should first be boiled for at least one minute or disinfected. Consuming water containing E.Coli and fecal coliforms can cause intestinal upset as well as diseases such as dysentery, hepatitis, and giardiasis.

What are the health risks of drinking water positive for Total Coliform but not E.Coli?

Total Coliform bacteria are common in the environment (such as in soil) and the intestines of animals and are generally not harmful.

What are the possible sources of contamination?

Most bacteria in wells or springs come from surface water directly entering the well. The water may be contaminated by bacteria that are naturally in the soil, decayed animal waste or human activities. As surface water seeps downward through the soil to the water table, these bacteria may be naturally removed by the soil. The extent of removal depends on the depth and characteristics of the soil. In general, shallow wells and springs are more likely to be contaminated than deep wells. Wells and springs must be properly located, constructed, and maintained in order to prevent surface water from entering the well or spring.

Presence of coliform bacteria in wells or springs can result from:

1. Well or spring covers that allow dust, rain, bird droppings, insects, etc. to enter.
2. Wells or springs located in areas where surface water covers the source during the wet periods of the year.
3. Defective steel well-casing seals.
4. Shallow wells or rock lined springs/wells.

5. Recent changes or repairs to the well or spring, pumps, piping, etc.
6. Improper well location and/or construction.

If you have one or more of the problems described above, it should be corrected. If it is not corrected, the problem may reoccur, even after repeated disinfection.

How can drinking water be disinfected?

Water containing coliform bacteria should be disinfected, as a precaution, by applying chlorine bleach as described below. If you have a water treatment system, check with the installer or manufacturer of your system to be certain the disinfection process will not harm your system.

The water system may be disinfected by mixing chlorine bleach (Clorox, etc.) with the water in the well or spring in the following dosages:

Dug Well

Depth*	5 ft	10 ft	15 ft	20 ft
Dosage	½ gal	1 gal	1 ½ gal	2 gal

*Approximate amount of water in the bottom of the well and not the total depth of the well. For a surface SPRING, use 2 gallons.

Drilled Well

Depth	50 ft	100 ft	150 ft	200 ft	250 ft	300 ft
Dosage*	2 ½ cup	1 ½ qt	2 qt	2 ½ qt	3 qt	3 ½ qt

*Note: A greater amount of chlorine may be needed to disinfect the water depending on the degree of contamination.

Once the chlorine has been mixed with the water, open all faucets, sillcocks and similar outlets individually until you smell chlorine in each outlet.

Allow the mixture to stand in the system for 6-12 hours, then flush the chlorine mixture from the system using an outside faucet and garden hose. **Do not flush the mixture into your septic system.** Since the chlorine may kill the grass, be careful where you run the water outside.

After disinfection you may start consuming the water, **only if it tested positive for Total Coliform. If the water tested positive for E. Coli the water should be tested again to ensure the disinfection worked.** You should wait at least 3 or 4 days after the chlorine odor has disappeared before collecting another test.

Where can I find more information?

Colorado Drinking Water Program: <https://cdphe.colorado.gov/drinking-water-private-wells>