

COLIFORM BACTERIA AND DRINKING WATER

What are coliforms?

Coliforms are a broad class of bacteria found in our environment, including the feces of man and other warm-blooded animals. The presence of coliform bacteria in drinking water may indicate a possible presence of harmful, disease-causing organisms.

Why use coliforms to indicate water quality?

Drinking water must be free of disease-causing organisms called pathogens. Pathogens can be viruses, protozoa or bacteria. Waterborne pathogens cause diseases such as hepatitis, giardiasis, and dysentery. To actually test water for specific harmful viruses, protozoa and bacteria is very time consuming and expensive. In addition, not all water laboratories are equipped and approved to do the testing required. Therefore, testing water for specific organisms is limited to investigating specific waterborne disease outbreaks. Coliform bacteria are used as water quality indicators for two main reasons:

- Coliforms may be associated with the sources of pathogens contaminating water.
- The analysis of drinking water for coliforms is relatively simple, economical and efficient.

The presence of coliforms in drinking water indicates possible contamination and potential health risk.

Sample submission

Sample containers may be picked up from most county health department offices or requested directly from the lab. Request a bacteriological or Coliform analysis. Samples are mailed to the lab and must be received within 30 hours of sample collection. Contact the Montana Public Health Lab at 444-2642 for a list of certified labs in Montana or look in the yellow pages under "Laboratories-Analytical" or "Laboratories-Testing".

When collecting samples, take care not to contaminate the sample container. Follow the instructions from the lab when collecting water samples. Generally, go to a tap where you draw your drinking water and remove aerators, screens, or

other devices. Turn the water on to a moderate flow and let run for a minimum of 3 minutes. Without altering the flow, collect your sample. Leave a ½ inch air space at the top of the bottle. Cap the bottle and return it to the laboratory as soon as possible.

What to do if coliforms are found in your drinking water:

Drinking water analyzed for coliforms will typically be reported as SATISFACTORY (coliforms absent) or UNSATISFACTORY (coliforms present). If your drinking water tested unsatisfactory, you should disinfect the well prior to resampling. Simple well disinfection procedures can be found on page 25 of the well disinfection manual at http://www.deq.mt.gov/wqinfo/swp/pdfs/Disinfection_Manual.pdf. You may also contact your local health department for instructions on well disinfection procedures.

If your drinking water tested UNSATISFACTORY, it may be contaminated with disease-causing organisms. It is important that you do not drink the water and that appropriate action is taken until the problem is corrected. One option is to obtain bottled water from a safe source on a temporary basis. Another option is to boil the water vigorously for 3-5 minutes to render it safe from bacterial contamination. If coliform positive results persist after disinfection, additional steps should be taken to identify and remove the source. See <http://www.epa.gov/safewater/privatewells> for more information or contact your local health department for assistance.

If coliforms are not present in your drinking water samples (you received a SATISFACTORY result), it indicates that your well is probably free of disease-causing organisms at the time of the sample. Be sure to have your water tested annually; more often if you notice a change in taste or odor of the water, or if there are changes in the environment of your well control area (such as flooding).

Protecting your well from potential contamination is important.

It is recommended that your well:

- be protected from sources of contamination such as surface drainage and barnyard runoff,
- is not located within 100 feet of a septic system where an opportunity may exist for wastes to enter the well,
- has a sanitary seal specifically designed for the top of the well casing. This seal must be correctly positioned, with all openings properly sealed to disallow the entrance of any potential contaminant (including insects) into

the well casing and ultimately into the water source.

- In addition, inspect surrounding areas within a 100-foot radius of the well for sources of pollution such as garbage, animal pens, barns and agricultural areas (including your home garden).