Information for private well owners

Know Your Well Water Quality – Indicator Bacteria (Total Coliforms and *E. coli*)

What are indicator bacteria?

Indicator bacteria are bacteria that show contamination in drinking water during testing. Drinking water that contains bacteria can result in no physical symptoms or it can cause serious gastrointestinal illness. Symptoms can start within a few hours, days or weeks after consuming the water. Gastrointestinal illness symptoms can include some or all of the following: nausea, vomiting, cramps, diarrhea, muscle aches, headache and low-grade fever. In rare cases, drinking contaminated water may result in serious illness or death.

Anyone can get sick from drinking contaminated water, however, children, seniors and people with weak immune systems are at a higher risk of the harmful effects.

What are Total Coliforms and *E. coli*?

Total Coliforms and *Escherichia coli* (*E. coli*) are indicator bacteria. They are also referred to as target bacteria. Other bacteria that may be present in drinking water are called non-target bacteria. The sanitary quality of well water is measured by the amount of target bacteria in drinking water test samples.

Total Coliforms: Water containing Total Coliforms may be unsafe to drink
Total Coliforms are a group of bacteria commonly found in animal waste, sewage, soil and vegetation. They are also found in the intestines of animals and humans. Total Coliforms are not likely to cause illness, but their presence indicates that your water supply may have been contaminated by more harmful microorganisms.

E. coli: **Water containing *E. coli* is unsafe to drink**
E. coli is a specific member of the Coliform group of bacteria found in the intestines of animals and humans. Although most strains of *E. coli* bacteria are harmless, the presence of *E. coli* in well water indicates fecal contamination. This means there could be harmful bacteria, viruses, and parasites in your well water.

“**Overgrown”**:
On occasion, the test can be “overgrown” meaning there is a heavy load of bacteria in the sample which can make it difficult to identify or count the bacterial indicators that may be present. There are two types of overgrown conditions:

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- **NDOGN (No Data: Overgrown with non-target). Water with a NDOGN test result may be unsafe to drink.** In this situation, only "non-target" bacteria commonly found in the environment are visible during the test process. They are not usually a health hazard, but can interfere with the detection of Total Coliforms and/or *E. coli*.

- **NDOGT (No Data: Overgrown with target**). **Water with a NDOGT test result is unsafe to drink.** When there is a NDOGT result, the test has a large number of bacteria present and Total Coliforms and/or *E. coli* are visible to the analyst, but it is difficult to determine exactly how much.

What should I do if my test report shows an unacceptable level of indicator bacteria or an "Overgrown" result?

- Stop drinking your water; don't use it for cooking, washing food, brushing teeth or bathing; or
- Boil it for at least one minute and let it cool; or
- Use bottled water or a municipal supply if it is available; and
- Contact your local public health unit as soon as possible to receive professional advice on the steps you can take to address the issue.

Resample your drinking water after corrective actions have been taken. As a private well owner, you are ultimately responsible for the system maintenance, operation and quality of your water. If your drinking water quality does not improve, you may need to have your well inspected by a licensed well contractor who will be able to provide you with options to address the issue.

You could also install a treatment system to remove bacteria. For treatment options, consult with a water treatment professional.

When should I test my well water?

Test your well drinking water:

- **Frequently**. Water supply conditions can change and allow harmful bacteria into your drinking water without affecting taste or colour.
- After flooding or major rain fall or after snow has melted
- After you have disinfected your well because of a positive test result (Note: If your well is not properly sealed or the water supplying your well is contaminated, your water could become contaminated again.)
- After well maintenance
- After nearby construction, including excavation or septic system installation. For more information see Wells on your property.

Owners of a private residential drinking water system that serves a single household, such as a well may submit drinking water samples free of charge to a Public Health Ontario Laboratory for bacterial analysis.

IMPORTANT: Samples submitted for bacterial analysis are only examined for the target bacteria, Total Coliforms and *E. coli*. Even if your test results show acceptable levels of Total

Coliforms and *E. coli* it does not guarantee the water is free of other microorganisms that can make you sick. Testing your water frequently will help reduce the risk of drinking contaminated water. Contact your local public health unit if you have concerns about chemicals or radiological contaminants. There are several licensed laboratories that perform a full range of drinking water tests.

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