

Getting Your Drinking Water Tested - Good Advice for Private Well Owners

Why should you get your drinking water tested?

Water for drinking, cooking, brushing teeth, washing dishes and other domestic uses should be from a safe water supply. This means that the water from your well should be free from microorganisms, like bacteria, viruses and protozoa (e.g., Giardia) that may cause disease. As well, chemicals should not be present at levels that may pose a health risk. Testing your well water gives you a better picture of your water quality, and tells you whether or not it is safe to drink.

Just because your neighbour's well water is safe does not mean your water is also safe. Sometimes, wells that are a few meters apart have totally different water quality. Differences in local surface and underground geology (e.g., bedrock croppings), the depth of the well (e.g., shallow wells are more susceptible to surface water run-off), and well construction (e.g., casing may not be sealed) may mean that the quality of the drinking water from your well is not the same as that of your neighbour's.

What tests should be done and how often?

Bacteriological testing

Testing your drinking water for the presence of bacteria (i.e., total coliforms, *E.coli*) lets you know if your well is contaminated by disease-causing microorganisms. Contamination can come from many sources including the soil, farming, feces of warm-blooded animals (e.g., humans, dogs) or a malfunctioning septic system. A satisfactory test result means that evidence of contamination was not found in your water sample.

New wells should be tested for bacteria and chemicals prior to use.

Well water should be tested for the presence of bacteria at least once a year.

Chemical testing

Testing for the most common chemical and physical parameters likely to be found in drinking water in Yukon will give a good indication of the quality of your drinking water.

Good quality water should meet the *Guidelines for Canadian Drinking Water Quality* for each parameter. A summary of these guidelines is available on the Health Canada web site – *Water Quality and Health* at <http://www.hc-sc.gc.ca/hecs-sesc/water>.

Testing for the following 30 chemical and physical parameters is recommended:

Physical Tests	Dissolved Anions	Total Metals		
		Aluminum	Chromium	Mercury
Colour	Alkalinity	Arsenic	Copper	Potassium
Conductivity	Chloride	Barium	Iron	Selenium
Dissolved Solids	Fluoride	Boron	Lead	Sodium
Total Hardness	Sulfate	Cadmium	Magnesium	Uranium
pH	Nitrate Nitrogen	Calcium	Manganese	Zinc
Turbidity	Nitrite Nitrogen			

You may want to include additional parameters if you suspect other chemicals may have contaminated your well. For example, hydrocarbons may be present as a result of a fuel spill.

Initially, well water should be tested for common chemical and physical parameters over two consecutive years. If there are no concerns and there is no significant change in water chemistry from one year to the next, then tests can be done at five-year intervals.

This handout will be available in French.

Where can you get your drinking water tested?

Water can be tested for bacteria, specifically total coliforms and *E.coli*, at the Environmental Health Services Water Laboratory located at # 2 Hospital Road in Whitehorse. There is no cost for this service. You will need to make arrangements to obtain a proper sampling bottle and form with sampling instructions. This can be done by stopping by the office or calling (867) 667-8391 (toll-free 1-800-661-0408).

Samples for bacteriological analysis must be kept cool (less than 10°C) but not frozen during storage and transit to the water laboratory, and delivered within 24 hours of collection!

No Yukon laboratory tests for the chemical, physical and radiological parameters found in drinking water. Water can be tested for these parameters, in addition to bacteria, at accredited laboratories in British Columbia and Alberta, some of which are listed in the yellow pages under *Laboratories – Analytical and Testing*. The water laboratory you select will provide you with the appropriate sample bottle(s), form(s) and sampling instructions. You will incur costs for shipping and testing. The cost of testing for the 30 common parameters has been about \$200 plus shipping.

You may wish to hire a local business to collect your drinking water sample and have it tested. Environmental consulting and engineering firms are examples of the type of businesses that offer this service - most are listed in the yellow pages.

What should you do if there is a problem with your drinking water?

Total Coliforms and E.coli

Total coliforms are bacteria that can be found everywhere in the environment. Their presence in a drinking water sample may be a result of problems in the well (e.g., cracked casing, improper seal around wellhead) or distribution system, or improper collection of the sample. Next steps include re-sampling to confirm results and checking for the possible source of contamination. Often disinfection of the well will address the problem. Information on disinfection is available from Environmental Health Services. In some cases, remedial work on the well or installation of a water treatment system* may be required.

The presence of *E. coli* indicates recent contamination of your drinking water from human or animal feces, which in turn may cause serious acute (e.g., diarrhea) and long-term health problems. When *E.coli* is present, you are advised to boil your water prior to drinking, brushing teeth, food preparation, etc., or use an alternate supply, such as bottled water.

Although your drinking water may look, taste and smell fine, it may still have bacteria or chemicals that can cause health problems.

Arsenic and Uranium

Long-term consumption of well water with an excess of arsenic or uranium can cause health problems. Therefore you should consider measures to remove or reduce these levels to acceptable concentrations (i.e., water treatment system*) or use an alternate drinking water supply (e.g., trucked water delivery, bottled water, a new well).

Yukon is rich in mineral deposits, so it is not surprising that our ground water may contain chemicals, such as arsenic and uranium, that exceed the Guidelines for Canadian Drinking Water Quality.

*Where appropriate, treatment options should be explored with a reputable water system supplier. Water treatment system components should be certified (e.g., CSA, NSF, UL). Costs will vary with the type of treatment technology needed. Some suppliers are listed in the yellow pages under *Water Purification & Filtration Equipment*.

What Can I Do if I Have More Questions?

Contact Environmental Health Services at # 2 Hospital Road, Whitehorse, Yukon Y1A 3H8
Phone 867-667-8391 • Toll Free at 1-800-661-0408 ext.8391 • Fax: 867-667-8322
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