Number 05b
December 2015

Should I Get My Well Water Tested?

Is my well water safe to drink?

If your drinking water comes from a private well, you should get it tested by a lab to know whether the drinking water is safe for you and your family.

Even if you are not getting sick, your well water may not be safe. Some contaminants found in well water can cause long-term health problems.

If your neighbour's well has been tested and found to be safe, this does not mean yours is safe. The safety of your well water, depends on surface and underground geology, the depth and construction of the well, and other factors. Well water quality can change seasonally, over time, or upon recharge/refilling due to drought. You need to test your well water on an ongoing basis, and keep all testing results for future reference.

What might be wrong with my well water?

Your well water may taste and look fine, however, there can be many harmful substances that you cannot taste, see or smell, such as bacteria and chemicals. These can enter well water both from the surface and ground, and can be a result of human or other activities. For example, nearby farming and agricultural activities or septic systems leakages, can lead to nitrates and fertilizers seeping into soil and contaminate your well water.

It is important to test your well water and maintain it regularly to help prevent contamination. Proper care and maintenance of your sewage disposal system (if you have one) may also protect your well water quality.

Who needs to test their water supply?

All water suppliers in B.C. are required to test their water regularly, including small private systems, such as restaurants or trailer parks, cooperatively owned systems, such as strata properties, and larger municipal systems owned by local governments. This water testing is conducted by qualified labs where costs are recovered through water billing. If you own a private well, you need to have your own well water tested to determine whether your water is safe to drink.

There are 2 categories of testing for well water:

1. Bacteriological testing
2. Chemical testing

Bacteriological Testing

Bacteriological testing should occur frequently until a good sample history has been established. Two common types of bacteria found in water are: Coliforms and *E. Coli*.

Total Coliforms
Total Coliforms include bacteria found in soil, surface water, and the intestinal tracts of animals. Finding total coliforms in a well indicates:

- the well may require improved sanitation/physical upgrades; and/or
- the well maybe subject to surface contamination.

***Escherichia coli* (*E. coli*)**
E. coli originates in the intestinal tracts of animals. The presence of *E. Coli* in your well is an indicator of recent fecal pollution. This is an immediate health concern and the water is not safe to drink.

For more information, see the Ministry of Environment's fact sheet on Total, Fecal & *E. coli* Bacteria in Groundwater www.env.gov.bc.ca/wsd/plan_protect_sustain/groundwater/library/ground_fact_sheets/pdfs/coliform(020715)_fin2.pdf (PDF 179 KB).

Chemical Testing

Chemical testing should be done annually or every 3 to 5 years depending on results. Chemicals commonly of concern in B.C. groundwater are: nitrates, fluoride, and metals such as arsenic, lead, copper.

Nitrates
High levels of nitrates have been found in a number of wells throughout B.C. Usually in areas where groundwater may be contaminated by surface activities such as intensive farming. For more information, see HealthLinkBC File #05a Nitrates in Well Water.

Metals
Since well water comes from underground, different metals in the soil and rock can leach into the water. Some metals, such as arsenic, can have serious and long-term health effects. Other metals, such as lead and copper, are not usually found in groundwater, but leach out of pipes and soldered joints. You may notice a taste or odor, and

staining of fixtures which may contribute to the growth of bacteria.

Other chemicals
Chemicals found in well water can come from human activity and/or natural sources. Most naturally occurring chemicals are found in small quantities that pose little or no risk to human health. For example, low levels of fluoride have dental benefits, but high levels can have a negative impact on the development of healthy bones and teeth in children. For more information see HealthLinkBC File #28 Water Fluoridation Facts.

If there is a history of chemical spills or known contaminants in your surrounding area, consider testing for them.

For more information, see the Safe Water Supply: Vital to Your Health report, available at your local Health Authority office or at www2.gov.bc.ca/assets/gov/environment/air-land-water/safe-water-supply-vital-health.pdf (PDF 183 KB).

How do I get my well water tested?

For information on where to get your well water tested or to report possible contaminants in your area, contact your Drinking Water Officer (DWO) and/or Environmental Health Officer (EHO) through your health authority. Visit the Ministry of Health - Drinking Water Quality for your health authority contact information www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/drinking-water-quality/health-authority-contacts.

The DWO may advise you on which approved labs can test well water. The lab will send you the necessary sample bottles and instructions. Read the instructions carefully and follow them exactly. The lab may provide information to help you understand the test results and determine if there is a problem with the water.

What if the tests show possible contamination?

If testing shows poor results, you should stop using the water until the cause of contamination is identified, corrected or treated, and water re-sampled.

Poor bacteriological test results are an immediate health concern. Where any bacteria is found, you must treat your drinking water before drinking it, using it for food preparation, and/or brushing your teeth. For short term treatment options such as boiling water, see HealthLinkBC File #49b Disinfecting Drinking Water.

If bacteria persists, the well should be shock-chlorinated and a retest conducted after a week. After shock chlorinating a well, chlorinated water should not be consumed and must be disposed of appropriately. For more information, see fact sheet 'Water Well Disinfection: Using the Simple Chlorination Method' at www.env.gov.bc.ca/wsd/plan_protect_sustain/groundwater/wells/factsheets/PFRA_simple_chlorification.pdf (PDF 3.28MB).

If tests show bacteria after shocking the well, you will need to consider a long term treatment system for your water. If you are unsure, consult your EHO.

Health Canada's Canadian Drinking Water Guidelines (www.hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index_e.html), recommend maximum allowable amounts for a wide range of possible contaminants in drinking water. Where results are well above the values in the guidelines, water should not be used unless treated appropriately.

Where results are at or near the guidelines, immediate health concerns are unlikely, however long term treatment should be considered to remove contaminants.

What is the long term treatment?

There are many types of water treatment devices that effectively remove different contaminants. Your local DWO can advise on your treatment options based on specific water quality problems. The final selection and costs associated with either treatment devices, including maintenance and follow-up sampling, are the responsibility of the private well owner.

Ongoing sampling and testing after treatment will be required to ensure the water is safe to drink. Even though there may be an absence of contaminants in one sample, it may not mean the water supply is safe.

For more information on well water, visit the Ministry of Environment – Water Protection & Sustainability Branch www.env.gov.bc.ca/wsd/plan_protect_sustain/groundwater/wells.html, or contact the DWO in your local Health Authority.