ISSUE 12

Taking Water Samples

Taking water samples and testing your water regularly will keep you informed about the safety of your drinking water supply.

Why should I test my water?

Landowners who rely on private water wells for their drinking water supply are responsible for ensuring the water remains safe. The best way to do this is to test regularly. Over time, land use changes or structural degradation of an aging well can change or affect water quality. Drinking groundwater that is contaminated with bacteria, viruses, disease-causing organisms, or other substances can cause illness. Testing ensures you know your water remains safe to drink. If you have reason to believe your drinking water is unsafe, test your well water and review your lab test results before assuming the water is safe to drink.

What should I test for?

There are two types of tests you should routinely do on your well water – a bacteriological analysis and a chemical analysis:

- A bacteriological analysis determines the microbiological quality of the water supply by looking for the presence of certain bacteria that are indicative of fecal (sewage or manure) contamination.
- A chemical analysis determines the concentration of naturally occurring chemicals or minerals in your well water supply. Most of these substances only affect the aesthetic quality of the water (taste, odour and color) however there are some that can, with repeated exposure, adversely affect human health.

When should I test my well water?

Generally, the best time to test your well water supply is in the spring and fall. However, testing can be done at any time throughout the year. Also test your well water under any of the following conditions:

- If you have never had the water tested before.
- If you experience a dramatic change in the clarity, colour, odour or taste of your water.
- After an extended dry spell or following heavy rainfall or flooding.
- After lengthy periods of non-use (usually more than a year).
- After any repairs i.e. pump repair or replacement.
- After any changes in land use on your property.
- If you are new to the house/property.
- If you are expecting a newborn in the house.
- If household members experience recurrent incidents of gastrointestinal illness.

How often should I test?

If your well is shallow (i.e. <50 feet) test your water for bacteria four times a year. If your well is deeper (i.e. >50 feet) test your water for bacteria twice per year. Because the composition of groundwater does not typically change quickly you only need to test for chemistry every two to five years. Test your water even if it seems fine because you cannot always taste, smell or see bacteria or other contaminants.

Where do I get my water tested?

Pick up water sample bottles and instructions from your local Community Health Centre (Public Health Unit). The instructions explain how to properly collect the sample and transport it back to the Health Unit.

All water samples must be submitted through your local Health Unit. For a list of local Health Units visit: https://myhealth.alberta.ca

Water from private drinking water wells is analyzed for bacteria at the Alberta Provincial Laboratory for Public Health, the approved laboratory for public health in Alberta. Chemical composition is analyzed at the Alberta Centre for Toxicology.

Does it cost money to test my water?

Some Health Units may charge a small fee to offset the cost of shipping your sample to the laboratory. Contact your local Health Unit to discuss the charges.

Health Units will not accept samples collected for real estate transactions, mortgages, research, agricultural (i.e. livestock use, irrigation, etc.) or other commercial purposes. Private accredited laboratories should be used for those situations (see the Yellow Pages – Environmental Laboratories). Private labs will charge a fee for their services.

When will I get my results?

Test results will be mailed to you – within 7-10 business days for the bacteriological analysis and 8-10 weeks for the chemical analysis. All results are sent from the laboratory directly to the Community Health Centres and then mailed to the person identified on the requisition form. If total coliform bacteria or E. coli are found in your sample, a Public Health Inspector will notify you right away by telephone.

WORKING WELL
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How do I collect a water sample?

Collecting a water sample is a simple process but the accuracy of your test result depends on it being done properly so follow the instructions very carefully. Use the following steps to collect your water sample:

- Use only the bottle included in the drinking water sample collection kit.
- Wash your hands with soap and water.
- Remove any aerator, screen or other attachments from the kitchen faucet. If that isn't possible, take the sample from another inside tap with no aerator such as the bathtub. Do not take the sample from an outside faucet or garden hose.
- Swab the end of the faucet with an alcohol prep pad or diluted bleach solution (1 part household bleach to 10 parts water) to remove debris or bacteria.
- For the Chemical Analysis, collect your sample before the water passes through any water treatment device such as a water softener, iron or carbon filter.
- Turn on the cold water and let it run for 5 minutes at a controlled, steady flow to permit filling the sample bottle without splashing. Do not adjust the tap until after the sample is collected.
- When collecting the sample do not touch the underside of the cap or the lip of the sample bottle and do not place the cap on any surface.
- Do not rinse the sample bottle or lose any of the powder from inside the bottle and do not touch the mouth of the bottle.
- Hold the bottle near the base of the water flow and fill it to halfway between the marked fill line and the top of the bottle. Do not allow the bottle to overflow or allow water to splash down the sides of the bottle.
- Immediately place the cap on the bottle and close the lid firmly.
- Attach the identification label from the front page of the requisition form to the sample bottle. If you do not, your sample will not be accepted.
- Fill out the requisition form completely and return it to the Health Unit with your water sample. If the form is incomplete they will not accept your sample.
- Place the sample bottle and the completed requisition form in the plastic bag provided.
- Keep your samples cool using a cooler and ice packs.
- Return your sample to the Health Unit the same day it is collected.

How do I interpret the test results?

You will receive information with your results that will assist you in interpreting them. A Public Health Inspector can also help you interpret the results of both bacteriological and chemical analyses and talk to you about treatment options, if needed.

If any amount of E. coli is found in your sample it is not safe to drink your well water. This means the groundwater has been recently contaminated with human or animal feces. You need to determine the source of contamination, fix the problem and re-sample the water to show there is no E. coli present before resuming consumption of the water.

If your water contains total coliform, contamination is likely but this does not confirm if it is from a fecal or non-fecal source. Contaminated surface water may be getting into your well. There may be a problem with your well such as a cracked casing, an ill-fitted cap, poor sealing around the outside of the casing or issues with your water distribution system. If total coliform are present and E. coli are absent this is often due to improper sampling technique or poor choice of sample collection point. Resampling is recommended.

Changes in water chemistry may indicate problems with your well or local groundwater. Having a chemical analysis done regularly will provide you with the data you need to recognize when changes occur.

A sample collected for bacteriological analysis must be returned to the Health Unit the same day it is collected to allow for it to be shipped to the laboratory. It must be analyzed at the lab within 24 hours of collection.

FOR MORE INFORMATION:

Working Well
www.workingwell.alberta.ca

Canadian Drinking Water Guidelines
Health Canada has developed guidelines that set out the maximum acceptable concentrations of naturally occurring chemicals or minerals in drinking water. Learn more at: http://www.hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php

Rural Water Quality Information Tool
An on-line tool to help you assess the quality and suitability of raw water sources for privately owned and operated water supplies http://www.agric.gov.ab.ca/app84/rwqit

CONTACT US:

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