

Small Drinking Water Systems: Sampling and Testing

Working Together to Safeguard our Health

What are my responsibilities to monitor, sample and test my small drinking water system (SDWS)?

Did you know that effective December 1, 2008, the Ministry of Health and Long-Term Care (MOHLTC) has oversight of small drinking water systems (SDWS) in Ontario? The MOHLTC has prepared a brochure – *An Introduction to Operating a Small Drinking Water System* to help you to become familiar with the changes to Ontario’s drinking water legislation. Reading this brochure is a good beginning.

Under the Health Protection and Promotion Act, Ontario Regulation 318/08 (*Transitional – Small Drinking Water Systems*) and Ontario Regulation 319/08 (*Small Drinking Water Systems*) as an owner or operator of a SDWS, you are required to provide users with safe drinking water at all times and to know your responsibilities for the type of system that you operate. A public health inspector will conduct a site-specific risk assessment and issue a “directive” for each SDWS, in accordance with section 7 of Ontario Regulation 319/08, that outlines the operational requirements that must be carried out by the owner/operator.

Sampling and testing is the only way to know if your SDWS contains contaminants from microbiological, chemical, physical or radiological parameters. Samples from your SDWS must be tested at a laboratory (lab) that is licensed or approved by the Ministry of the Environment (MOE).

To find out more about the regulatory requirements for your SDWS, including the sampling frequency, sample location and type of tests required for your SDWS, contact the local public health unit where your SDWS is located to consult with a public health inspector, obtain fact sheets or other SDWS information.

Do you plan to open or are you currently operating a SDWS?

If yes, you should know that it is your responsibility to:

- Notify your local medical officer of health (MOH) in writing of your intention to operate a SDWS following construction, installation, alteration or extension of your SDWS. The MOH will:
 - Provide you with a unique identification number that is specific to your SDWS. This number will be used for all your lab sample submissions and other correspondence related to your SDWS.
 - Arrange for a public health inspector (PHI) to conduct a site-specific risk assessment of your SDWS and issue a directive including any sampling frequency and testing requirements.

- Choose a commercial lab that is licensed by the MOE for testing your drinking water samples.
 - Provide the lab with the unique identification number for your SDWS when submitting your samples to the lab using their Chain of Custody form.
 - Provide both the lab and the local public health unit with your current contact information.
 - Provide the name and contact information for the designated operator responsible for your SDWS.
- You may be required to test daily or several times per week to ensure the drinking water is adequately treated.
 - You may also be required to collect samples from several locations (plumbing or distribution system) depending on the complexity of the system.
- The presence of chemical, physical or radio-nuclide parameters:
 - You may also be required to test your drinking water for the presence of chemical (nitrate or lead), physical (turbidity) or radionuclide (uranium) parameters in specific circumstances.

What types of tests will I have to perform for my SDWS?

The owner and operator of each SDWS must ensure that at least one sample is taken every three months for *Escherichia coli* (*E. coli*) and total coliforms.

The frequency, number and type of additional tests that you may be required to perform, as outlined in the customized directive issued for your system, will depend on several factors such as:

- The source and quality of the water supply to your SDWS. If your SDWS uses water from a surface water source (e.g., lake or river) or from a non-secure groundwater source (e.g., dug or bored well), more frequent sampling will be required.
- The type of treatment methods used in your SDWS:

Monitor your SDWS to keep it operating properly at all times

To know whether your treatment methods and maintenance practices are effective, you will be required to develop and implement a monitoring program for your SDWS. You should monitor routinely to ensure the drinking water provided to users is safe to drink and, where required, is effectively treated.

Steps to include in your monitoring program

1. Develop a check sheet

- List all of the items to be monitored, the frequency of monitoring and the sampling location(s), consistent with the directive issued for your SDWS

2. Record the activity

- Keep records of all operational activities in accordance with the regulations and any directive issued for your system.
- It is important to keep records such as:
 - Treatment residual results, lab test results, equipment maintenance and other operational requirements, including any adverse results or observations and corrective actions taken.

Choosing an MOE licensed laboratory

Select a commercial laboratory that is licensed by the MOE to test for E. coli and total coliforms. For a current list of laboratories licensed to perform tests of drinking water samples, please visit MOE's website at: <http://www.ene.gov.on.ca/en/water/sdwa/licensedlabs.php> or call the MOE's Public Information Centre at: 1-800-565-4923

Preparing a sample for testing at an MOE licensed laboratory

Take the drinking water sample from any tap after the water has entered the distribution or plumbing system – preferably from a cold-water tap used by the public for drinking purposes.

Before you collect your samples, contact the laboratory that you will be sending your samples to for testing. Follow the sampling instructions provided by the laboratory.

What should I know about collecting water samples?

1. Collect samples in appropriate bottles given to you by the laboratory. These bacteriological sampling bottles have tamper-proof seals. Don't use if the seal has been broken; ask the laboratory for a new one.
 - Remove any aerators, tap screens, hoses, or filters on the tap;
 - Wash your hands or use disposable gloves;
 - Use an alcohol swab to clean the mouth of the tap before collecting the sample. Do not flame the tap;
 - Let the water run cold for at least two minutes before collecting the sample;
 - Don't rinse the sampling bottle before using (or you will remove some or all of its preservative);
 - Don't touch the inside or lip of the sampling bottle and its cap (otherwise you may contaminate your sample);
 - The inside of the cap and container should only come into contact with the air and the collected sample of drinking water;
 - Fill the sampling bottle to the shoulder, leaving an air space. Don't allow the water to overflow.
2. Submit to laboratory shortly after collecting
 - Drinking water samples should be submitted to the licensed laboratory within 24 hours. If this is not possible, check with the lab to discuss any alternate arrangement that might be appropriate.

- The earlier the laboratory gets your drinking water sample, the quicker it can be tested and the more accurate your test results will be.
 - Ship early in the week to avoid having your sample sit in the laboratory over the weekend before testing.
3. Keep sample cold (e.g. refrigerate but do not freeze)
- If you are delivering the sample yourself, make sure it is packed in ice as soon as it is collected.
 - If you are using a courier service, make sure you ship your sample bottles or containers to the laboratory in coolers, or in foam pack containers with ice or ice packs.
 - Don't pack the bottles with loose ice as this may contaminate the sample. If you only have loose ice, encase it in waterproof packaging or a sealed container.
 - Don't allow samples to freeze. In winter, you may want to take advantage of heated shipping offered by some courier companies.
 - Complete the laboratory's Chain of Custody form and send it to the laboratory along with the collected sample. If sending it inside the cooler containing the sample, ensure that the form is enclosed inside a waterproof package (e.g., a new zip-lock bag).

Note:

- The reliability of your drinking water test results depends on the proper collection, storage and transportation of the sample.
- You must control all factors that will affect the accuracy of test results so that that the drinking water sample to be tested is representative of your SDWS.

Interpreting your sample test results

The laboratory report should provide detailed information on the type and levels of contamination in your drinking water. It should also identify any contaminants that exceed the *Ontario Drinking-Water Quality Standards (O. Reg. 169/03)*.

If your drinking water sample is an adverse water quality test result, the lab will notify you and the local public health unit immediately by phone. This will allow you to take the necessary action to address the issue that caused the adverse condition. In addition, the lab will fax the Adverse Water Quality Incident (AWQI) notification form to the appropriate contact at the SDWS and the local public health unit.

For assistance in dealing with adverse results (or exceedences), please contact the PHI at your local health unit. The contact information for local health units can be found on the MOHLTC website at: www.health.gov.on.ca/english/public/contact/phu/phuloc_mn.html

Where can I find additional information?

Please remember...

This fact sheet is only a summary of your responsibilities as the owner or operator of a SDWS and is not a substitute for legal advice. For a more complete understanding of your legal responsibilities as an owner or operator, refer to Ontario Regulation 318/08 and Ontario Regulation 319/08 or any directives issued on your system.

In addition, you should become familiar with the procedure documents produced to help you efficiently operate a SDWS:



- Procedure for Disinfection of Drinking Water in Ontario.
- Procedure for Corrective Action for Small Drinking Water Systems that are Not Currently Using Chlorine.

For general information about well water safety, ask your health unit staff for a copy of:

- Keeping Your Well Water Safe to Drink: An information kit to help you care for your well.

You may also find additional information on the following Ontario ministry websites:

Acts and Regulations:

www.e-laws.gov.on.ca/index.html

Ministry of Health and Long-Term Care (MOHLTC):

www.health.gov.on.ca

- Current list of local public health units:

www.health.gov.on.ca/english/public/contact/phu/phuloc_mn.html

Ministry of the Environment (MOE):

www.ene.gov.on.ca/en/index.php

- Current list of licensed private laboratories:

www.ene.gov.on.ca/en/water/sdwa/licensedlabs.php

Ministry of Agriculture, Food and Rural Affairs (OMAFRA):

www.omafra.gov.on.ca/english/

