

Pilot Project –

Assessing Lead Levels in Tap Water

What is the purpose of the project?

The province conducted the study in partnership with four Manitoba communities - Winnipeg, Brandon, Portage la Prairie, and Steinbach - in an attempt to understand current sources of lead exposure from tap water.

Because of the recent studies, there is significant work going on at the national level related to lead in drinking water. In July 2011, Health Canada released a draft document for public consultation titled "Lead - State of the Science Report and Risk Management Strategy". The strategy concludes that additional measures to further reduce lead exposures are warranted and advised that Health Canada would be reviewing the national drinking water quality guideline for lead.

Manitoba's project was conducted, in part, to help inform future revisions of the national guideline for lead in drinking water.

The study targeted homes in communities that were likely to have lead service connections and therefore, higher levels of lead in the tap water. Lead exposure was a common problem in the past. The amount of lead in the environment has declined significantly over time. Still, people can be exposed to trace amounts of lead from many sources including air, food, soil, deteriorating lead-based paint, dust and tap water and even at low levels, can have health effects.

How were homes selected for the study?

The homes selected for the pilot project were those most likely to have lead service connections.

In the past, lead was commonly used in pipes that supplied water to Canadian homes. Homes built before 1950 often have lead pipes, known as service connections or service lines, that connect the water main under the street to the pipes in the home. Homes constructed after 1950 likely have a service connection made of other materials.

How does lead get into tap water?

Lead levels are extremely low in Manitoba's public drinking water systems. Water treatment plants test for lead after treatment, and all public water systems are in compliance with the provincial standard of 0.01 mg/L lead in drinking water.

Lead typically gets into drinking water as it passes through distribution systems, service connections and plumbing pipes in the home. The highest lead levels in tap water are linked to leaching from lead service connections. The levels of lead leached into tap water increase with the amount of time the water sits in contact with materials that contain lead.

How do I know if my tap water quality is affected by lead?

Homes built before 1950 may have a lead service connection. This can be verified by checking the service line, which should be exposed where it attaches to the water meter. If the service line is greyish-silver (as opposed to copper-coloured), it most likely contains lead. You can also contact your water provider to see if they have information on lead service connections. In Winnipeg, you may call 311 to determine this.

In houses built before 1990, lead solder was used to connect pipes. Some plumbing fittings also contained higher levels of lead than are allowed today. Lead solder and older plumbing fittings can leach lead. However, this is much less of a concern.

Will lead in my water affect my family's health?

People are exposed to trace amounts of lead through air, soil, household dust, food, various consumer products and drinking water. Research has shown that lead may have subtle effects on human health even in small amounts, especially for young children and fetuses. Low level exposure can reduce intellectual development and impact the behaviour of children. Other health effects, such as cardiovascular effects (slight increases in blood pressure and slight reductions in kidney function) have also been found with low levels of lead exposure.

Please see the Manitoba Health fact sheet for more information by visiting: www.manitoba.ca/health/publichealth/environmentalhealth/lead.html.

Everyone is exposed to low levels of lead. Lead exposure was a common problem in the past but the amount of lead in the environment has declined significantly over time. Reducing lead levels in your drinking water provides an opportunity to further reduce some of your lead exposure. Blood lead tests show that people are exposed to much less lead now than in the past.

Are there measures that I can take to reduce exposure to lead from tap water?

Yes, there are a number of ways that homeowners with low levels of lead in their tap water can reduce exposure. Some of these are relatively easy and can be implemented immediately. Measures include:

- Install a water filtration unit certified to NSF International standards for removal of lead (available at local hardware stores) and follow manufacturer's instructions for maintenance.
- Avoid drinking tap water that has been sitting in the plumbing system for a long time, such as overnight or during the workday. Flush water that has been sitting in the plumbing system by taking a shower, starting a load of laundry or running the water for three to five minutes before using it for drinking or cooking.
- Use only cold tap water (after flushing the plumbing system) for drinking and cooking.
- Clean the aerator screen on your kitchen tap every few months.
- Replace your lead service connection as recommended by Health Canada (regardless of test results).

The preferred method for dealing with this issue over the long run is to replace the lead service line. The plumbing and the part of the service line from the property line to the house is the homeowner's responsibility. The city will normally replace its portion of a lead service line (from the water main to the property line) whenever they replace the water main or when their portion of the lead service line fails.

Are there measures available to water utilities?

Yes, there are a number of measures that utilities can implement where older homes contain lead service lines or lead plumbing and some have been implemented in communities in Manitoba. These measures are generally unique to each community and need to be properly designed and engineered. Measures include for example, the systematic replacement of older lead-based service lines to the additional of chemicals to reduce the ability of the water to dissolve lead from lines.

What can I do to reduce lead levels in my tap water?

The best way to reduce exposure to lead is to replace the lead service line that brings water from the water main into the house but this can be expensive. The municipality is responsible for the water distribution system until it reaches the homeowner's property. The portion of the lead service line from the curb stop to the house is the homeowner's responsibility.

Avoid drinking tap water that has been sitting in the plumbing system for a long time, such as overnight or during the workday. Flush the toilet, take a shower or start a load of laundry first thing in the morning or after work to clear the water from the service connection. Then run the tap until the water turns cold to clear the water that has been sitting in the plumbing. Then fill a container and keep it in the fridge for drinking or cooking. Flush the pipes whenever water has been sitting in the plumbing system for several hours by running the water for three to five minutes before taking water for cooking or drinking. Water drawn off initially may be used for other purposes, such as watering plants or washing dishes.

Use cold tap water for drinking and cooking, since hot water increases the leaching of lead. Household water filters and treatment devices may also be installed at the kitchen tap, which is the tap most commonly used for drinking water. The treatment device should be certified to meet the NSF International (NSF)/ American National Standards Institute (ANSI) standard for removal of lead.

Accredited certification organizations include:

- NSF International (NSF)
- Canadian Standards Association (CSA)
- Underwriters Laboratories Incorporated (UL)
- Quality Auditing Institute
- International Association of Plumbing and Mechanical Officials (IAPMO)
- Water Quality Association (WQA)

Certified devices are tested to ensure the safety of materials used in the devices and to ensure they perform as claimed. Quotes should be obtained from reputable water treatment equipment suppliers. The supplier should provide information on how much lead will be removed, maintenance requirements and costs.

Once installed, manufacturer's instructions on the use and maintenance of treatment devices and disposal of filter media should be followed. The water supply and treated drinking water should be tested annually for lead to confirm that the treatment system is working properly.

Who is responsible for replacing lead service lines?

It is homeowner's responsibility to replace the portion of the lead service line on their property, from the curb stop or property line to their house. The portion of the service line on the street right of way, from the water main to the curb stop, is the water system owner's responsibility.

In Manitoba, the City of Winnipeg has a lead service line replacement program in place. They replace the city portion of the lead service line whenever they are replacing the water main. They will also replace their portion of the lead service line if the line fails or when the homeowner replaces the portion on their property. The cities of Brandon and Portage la Prairie also have arrangements in place to facilitate lead service line replacements.

What if I live in an apartment or condo?

Just like houses, apartment buildings and condos may also have lead-based solder and other lead-containing plumbing materials if they were built before 1990. Larger buildings do not typically have lead service connections. The diameter of pipe required to supply the building was generally larger and made of other materials for practical reasons even before 1950.

Is it safe to shower or wash clothes in tap water with higher lead levels?

Yes, it is safe to shower, bathe, wash dishes and clean clothes using tap water with higher lead levels. The primary means of lead absorption is by drinking the water or consuming food made with the water.

How can I get my tap water tested?

To test tap water, Manitobans can contact a certified lab to arrange for samples to be analyzed. There are two labs in the province that test water for lead, all of which charge for such testing. Contact them directly for cost estimates and scheduling.

ALS Environmental

12-1329 Niakwa Road East, Winnipeg, Manitoba R2J 3T4

Phone: 204-255-9720 (After Hours: 204-784-6677);

Fax: 204-255-9721

Link: <http://www.alsglobal.com/en/Our-Company/Global-Locations>

Maxxam Analytics

Unit D, 675 Berry Street, Winnipeg, Manitoba R3H 1A7

Phone: 204-772-7276 (Toll Free: 1-866-800-6208);

Fax: 204-772-2386

Link: <http://maxxam.ca/about-maxxam/contact-us/manitoba>

If you live in Winnipeg, the city has a program in place to test the lead samples free of charge and give you the results. Call 311 to arrange for this service.

For more information on lead in drinking water, please see:

- Health Canada's fact sheet on minimizing exposure to lead from drinking water at www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/lead-plomb/index-eng.php or
- Manitoba Health's fact sheet on lead at www.manitoba.ca/health/publichealth/environmentalhealth/lead.html

For health-related questions on lead, call Health Links – Info Santé at 204-788-8200 or toll free at 1-888-315-9257.

For information on the lead study pilot project or on lead treatment devices, call 204-945-7058.