

Arsenic in Oak Lake Aquifer groundwater

Does arsenic occur in your well water?

The only way to know for sure is to test your well water.

Is my well water safe to drink?

The quality of groundwater in the Oak Lake Aquifer is typically good. However, it is variable and influenced by both natural conditions and man-made sources. One element which has been found in well water in some areas of the Oak Lake Aquifer is arsenic. Long-term consumption of well water containing arsenic may cause health effects.

What is arsenic?

Arsenic is a naturally-occurring trace element found in the sand and gravel soils comprising the Oak Lake Aquifer. It is present in small amounts in all living matter. Arsenic compounds are also used for a wide variety of commercial and industrial purposes.

Where is the Oak Lake Aquifer?

Refer to map on flip side of this information sheet.

How arsenic gets into well water

Most of the arsenic found in Manitoba well water occurs naturally. It is a result of groundwater coming into contact with rocks or soils containing arsenic. The concentration of arsenic in well water depends on a number of factors, such as the amount of arsenic present in the rock or soil through which the groundwater has passed and whether the water chemistry is favourable for arsenic to remain dissolved.

Less commonly, arsenic in groundwater may be caused by waste from commercial or industrial operations, or through the use or disposal of arsenic-containing products.

Drinking water guideline for arsenic

Health Canada has established a maximum acceptable concentration (MAC) of 0.01 milligrams per litre (mg/l), or 10 micrograms per litre ($\mu\text{g/l}$), for arsenic in drinking water. Private well owners are not legally required to meet this guideline but, where levels are high, a treatment device or other corrective action is recommended.

Health effects of arsenic

Arsenic's effects on human health depend on factors such as the concentration and length of exposure. Drinking well water with elevated concentrations of arsenic over a lifetime may increase the risk for some cancers such as bladder, liver, kidney, lung and skin cancer.

For health related questions, call Health Links/Info Santé at 204-788-8200 or toll free at 1-888-315-9257 or your local public health office.

How to test well water for arsenic

Arsenic does not create a taste or odour in water. The only way to know if well water contains arsenic is to have a water sample tested by an accredited laboratory. Three laboratories that offer arsenic analysis of water are:

ALS Environmental
12-1329 Niakwa Road E.
Winnipeg, MB R2J 3T4
Phone: 204-255-9720
Toll Free: 1-800-607-7555
Fax: 204-255-9721

Horizon Lab Ltd.
4055 Portage Avenue
Winnipeg, MB R3K 2E8
Phone: 204-488-2035
Fax: 204-488-4772

Bureau Veritas Canada Inc.
Unit D, 675 Berry Street
Winnipeg, MB R3H 1A7
Phone: 204-772-7276
Fax: 204-772-2386

All wells should be tested to ensure there are no arsenic concerns. In general, well water should be tested for arsenic every three to five years in areas known to have elevated levels.

Private well owners should ask for the Manitoba Trace Elements Package. Test costs will vary from year to year, and well owners should contact the laboratories directly for an estimate.

What to do if arsenic is found in your well water

If the arsenic in the well water is above the drinking water quality standard guideline of 0.01 mg/L, private well owners should consider how they are using this water and may wish to discuss health risks with their doctor, who can consult with the regional medical officer of health for more information.

Private well owners may also wish to consider options to increase the safety of water used for drinking or food preparation (such as for beverages, baby formula, soup and coffee). For options, refer to Manitoba's Trace Elements in Well Water Fact Sheet "Arsenic in Manitoba Well Water" or contact the Office of Drinking Water at 204-948-1351.

Sharing your laboratory test results

If you would like to share your laboratory test results to help improve the understanding of arsenic in well water in the Oak Lake Aquifer, please contact the Office of Drinking Water at 204-948-1351.



Additional water quality analyses that well owners should consider

Uranium and barium are two other naturally-occurring trace elements that are sometimes found in Oak Lake Aquifer well water, although they have not been shown to occur as frequently above the drinking water maximum acceptable concentration as arsenic. Uranium and barium too can have potential adverse health effects associated with long-term exposure. It is recommended that Oak Lake Aquifer private well owners also test for uranium and barium. For more information, please see the section on “Private Well Fact Sheets” located at www.manitoba.ca/drinkingwater under the “Public Information” bullet.

Private well owners are also reminded to test their well water for bacteria (total coliforms and *E. coli*) on an annual basis. Testing is recommended every spring after the snow melt and spring run-off. You should also test for bacteria

if you see any changes in the water (ex: change in taste, clarity, colour or odour). A sample for nitrate should also be collected every three to five years. For more information on well water sampling, please refer to the links located under “Public Information” at www.manitoba.ca/drinkingwater.