



CanNorth



2015

# *Fond du Lac*

ATHABASCA WORKING GROUP  
ENVIRONMENTAL MONITORING PROGRAM

# ABOUT THE AWG PROGRAM

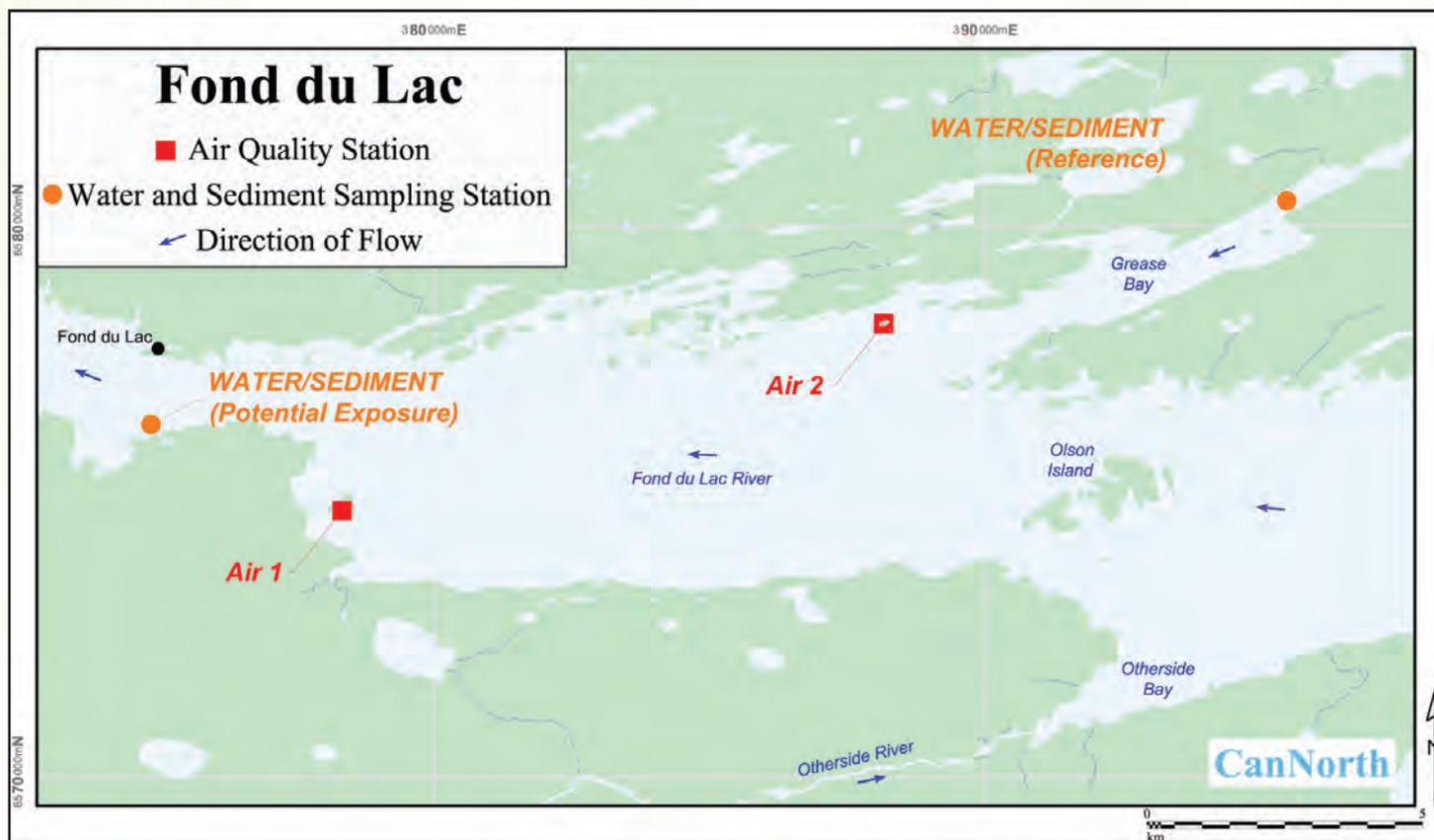


The Athabasca Working Group (AWG) environmental monitoring program began in the Athabasca region of northern Saskatchewan in 2000. The program provides residents with opportunities to test the environment around their communities for parameters that could come from uranium mining and milling operations. These parameters can potentially be spread by water flowing from lakes near the uranium operations, and small amounts may also be spread through the air. In order to address local residents' concerns, lakes, rivers, plants, wildlife, and air quality are tested each year near the northern communities of Fond du Lac, Black Lake, Camsell Portage, Stony Rapids, Uranium City, and Wollaston/Hatchet Lake.

The types of plants and animals selected, the locations chosen for sampling, and the sample collections were carried out by, or with the help of, northern community members. The purpose of this brochure is to inform the public of the results of the 2015 environmental monitoring program in the Fond du Lac area.

# STUDY AREA

Water, sediment, and fish were sampled from a reference site and a potential exposure site near Fond du Lac. Grease Bay was chosen as the reference site because it is not influenced by uranium operations. The Fond du Lac River is referred to as the potential exposure site because it is located downstream of the active uranium mines and mills in northern Saskatchewan. Air quality is also monitored at two locations near the community of Fond du Lac. Plant and wildlife flesh samples are collected each year near the community when available.



# KEY PARAMETERS

The focus of the program is to monitor certain parameters related to uranium operations that are of concern to human and environmental health. These include: copper, lead, nickel, molybdenum, zinc, radium-226, uranium, selenium, and arsenic. All of these parameters occur naturally in the environment and in parts of northern Saskatchewan they can sometimes be found in high amounts.

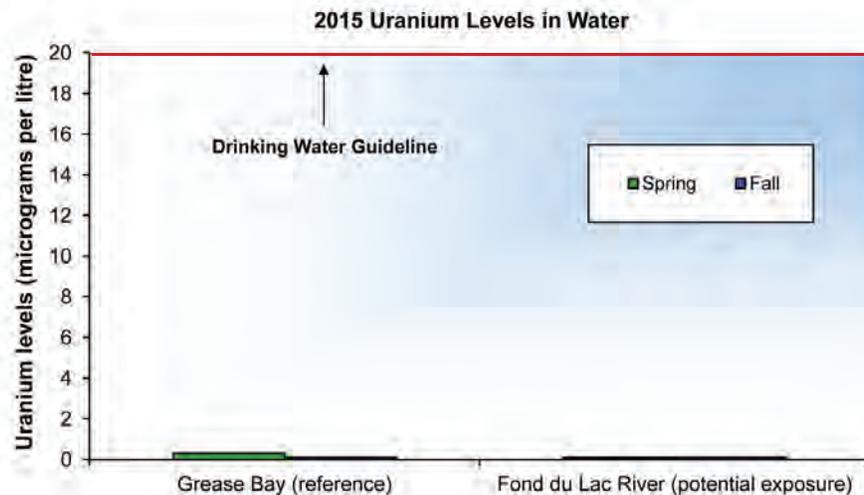
In order to help establish whether the key parameter levels found in samples are naturally occurring, whether they may be from uranium operations, and whether they pose a risk to the environment, the amounts measured are compared: 1) between reference and potential exposure sites, 2) over time, and 3) to available guidelines.



# WATER

Water samples were collected in the spring and fall in Grease Bay (reference) and the Fond du Lac River (potential exposure) in 2015. The key parameter levels were very low compared to the guidelines for the protection of aquatic life and drinking water quality, and compared to all years of AWG sampling.

The graph displays low uranium levels from the Fond du Lac area in 2015. The uranium drinking water guideline is 20 micrograms per litre, which is many times higher than any level ever found in the Fond du Lac area since AWG monitoring began in 2000.



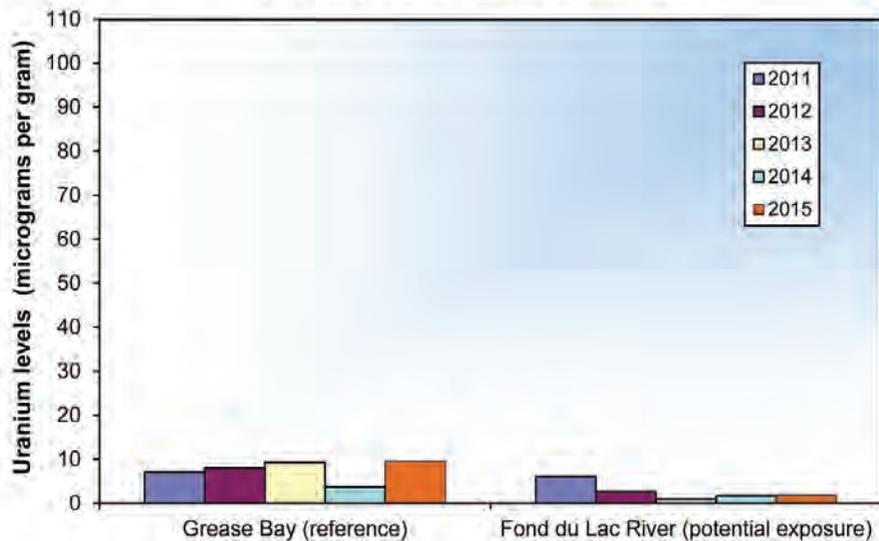
# SEDIMENT

Sediment is the mud on the lake bottom. Parameters from uranium operations may be carried by flowing water to lakes where they can be left in the sediment on the lake bottom. Sediment samples were collected from the same locations used for water sampling in the Fond du Lac area.

The levels of the key parameters were similar between the potential exposure site and the reference site in 2015. All of the key parameter levels measured in the Fond du Lac River were below the available guidelines. The graph displays sediment uranium levels in the Fond du Lac River and Grease Bay over the past five years.



2011-2015 Uranium Levels in Sediment



# FISH

Eating fish has many benefits. Fish are an excellent source of protein and high in vitamins and minerals including vitamin D. They are low in saturated fats and cholesterol and are a good source of omega-3 fatty acids<sup>1</sup>.

Northern pike and lake whitefish were tested from Grease Bay (reference site) and the Fond du Lac River (potential exposure site) in 2015. The levels of key parameters in the fish samples were often lower than the levels the laboratory could measure and were similar to previous years of monitoring in the Fond du Lac area.

Though not related to uranium mining and milling, it is recommended that the “Mercury in Saskatchewan Fish: Guidelines for Consumption” document be consulted prior to fish consumption in all areas of Saskatchewan. To view the document, go to [www.publications.gov.sk.ca](http://www.publications.gov.sk.ca) and search “mercury in fish”.



<sup>1</sup>PHU AHA 2014.

# WILDLIFE

Wild game are an important source of vitamins, minerals, and protein and are low in saturated fats<sup>1</sup>. The AWG program collects samples of meat from moose, barren-ground caribou, and lynx for testing in the AWG communities.

Moose, barren-ground caribou, and lynx flesh samples were tested from the Fond du Lac area in 2015. The levels of key parameters in all three mammal types were similar to the previous 15 years of AWG monitoring near Fond du Lac. Furthermore, the levels of key parameters in the flesh samples were often too low to be measured by the laboratory.

To prevent potentially harmful lead exposure, it is recommended that hunters always use lead-free ammunition when hunting wildlife.



<sup>1</sup>PHU AHA 2005.

# PLANTS

Plants such as blueberries, cranberries, and Labrador tea are important because they have traditionally been used for both food and medicine<sup>1</sup>. Wild plants are very good sources of Vitamin C, fibre, and carbohydrates<sup>1</sup>.

In 2015, blueberry, bog cranberry, and Labrador tea samples were collected from the Fond du Lac area. The levels of the key parameters were considered low because they were similar to previous years of AWG sampling in the Fond du Lac area, and also to the other five AWG communities in 2015.



<sup>1</sup>Johnson et al. 1995; NWT 2002.

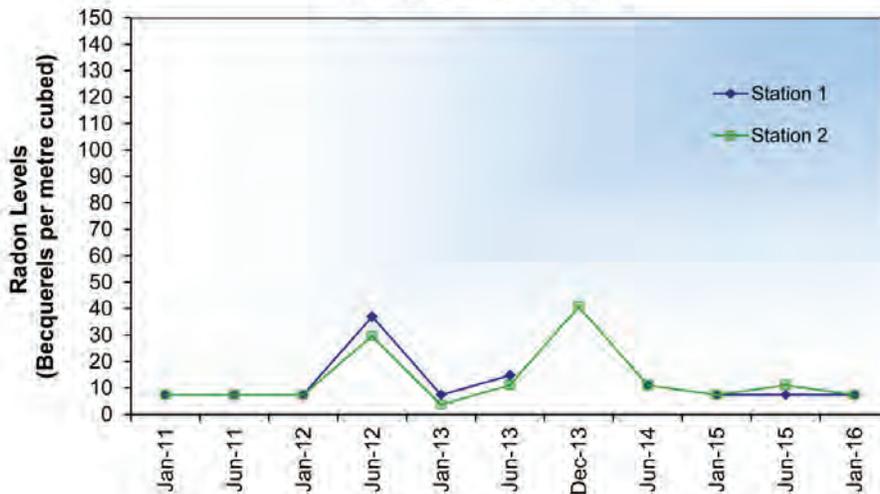
# AIR

Air quality was monitored at two locations near Fond du Lac in 2015 by measuring radon levels. Radon is an odourless and tasteless gas produced by the natural breakdown of uranium and radium-226 in the soil and water. As a result, radon levels are naturally higher in areas where uranium is found in the ground. Seasonal differences may occur because the ground thaws and releases radon gas into the air during the summer months.

The graph shows the low radon levels at both Fond du Lac stations over the past five years (2011 to 2015). Note that radon detectors are sometimes lost to fire or destroyed by animals; therefore, there are no data for the latter half of 2013 from Station 1.



2011-2015 Radon Levels





## THANK YOU

The AWG program is made possible thanks to the continued involvement of northern residents. Special thanks to Joe Marten who continues to do a great job collecting AWG samples from the Fond du Lac area. Thank you to the AWG members, including representatives from the seven northern communities and industrial partners, Cameco Corporation and AREVA Resources Canada Inc. Pictured: Joe Marten (top) and Ryan Froess, Program Manager (bottom).



If you have any questions or comments about the AWG Environmental Monitoring Program, or for a list of full citations, please contact CanNorth at 306-652-4432 or [awg@cannorth.com](mailto:awg@cannorth.com).

This project was managed by CanNorth,  
a First Nation environmental services company



211 Wheeler Street, Saskatoon, Saskatchewan, Canada S4P 0A4  
Telephone: 1-844-700-4432 or 306-652-4432  
[www.cannorth.com](http://www.cannorth.com)      [awg@cannorth.com](mailto:awg@cannorth.com)

AWG Industrial Partners:

