

For more information

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MiRTAP Milk River Transboundary Aquifer Project

**Field Campaign
Nov. / Dec. 2012**

A Collaborative Project of



The Project

The Milk River transboundary aquifer straddles southern Alberta (Canada) and northern Montana (United States), in a semi-arid region considered water short. Since the 1960's, the aquifer fills a large role in the water supply for urban and rural residents.

The objective of MiRTAP is to better understand the dynamics of the Milk River aquifer in order to make recommendations for a sustainable management and good governance by the two international jurisdictions. (As recommended in the United Nation General Assembly Resolution 63/124 on the Law of Transboundary Aquifers).

Planned Outcomes

- Outreach activities that increase public awareness of the groundwater resource.
- A standardized groundwater database.
- A quantitative synthesis of the aquifer system
- A unified map in 2D of the transboundary aquifer.
- A unified geological 3D model of the aquifer across all borders.

Current activities

We plan to use ^{14}C , ^{36}Cl and ^3H isotopes (naturally occurring in groundwater) to assess groundwater age, fluxes and discharge in order to complete the models: **Thus, landowner support is needed so that groundwater samples can be collected for this isotope analysis.**

We will explore changes in groundwater levels by creating an updated piezometric map of the Milk River aquifer (reflecting decades of use): **we will need landowner support to measure current water levels.**

Landowners, be part of MiRTAP !

Your cooperation will help move MiRTAP forward and will be beneficial to everyone !

How:

Enrich the database of the aquifer by giving us **access to your well** (or information on the status of your well)

When:

November 2012 for water levels measuring.

December 2012 for groundwater sampling.

Who:

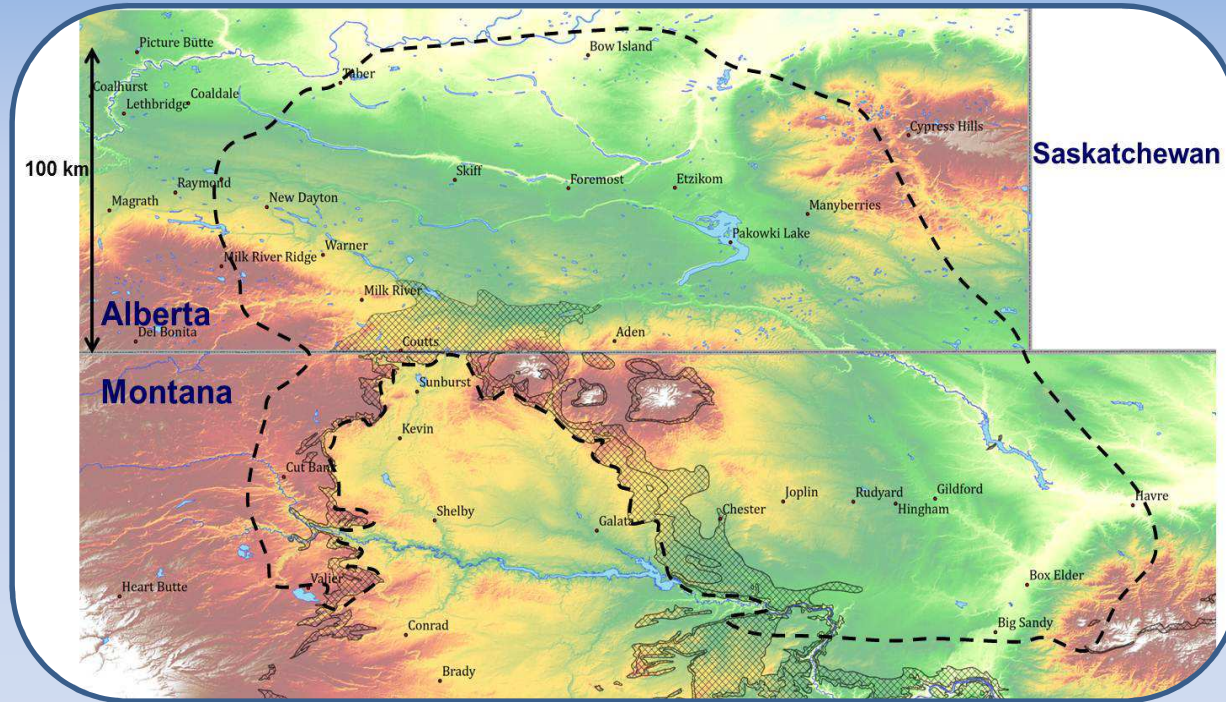
If you agree to cooperate, please contact the **Milk River Watershed Council Canada (MRWCC)** and they will visit your land to sample groundwater from your well or to measure the water level. Alternatively, someone from the MRWCC may contact you to see if you are willing to participate.

The project organisers thank all the landowners who have already participated in the project since 2010.



Milk River Transboundary Aquifer Field Campaign 2012

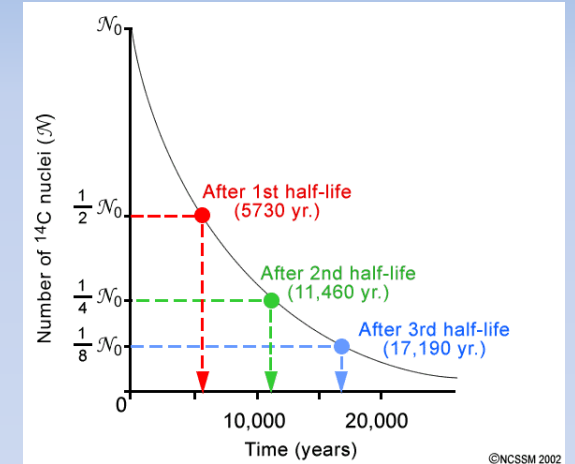
Data acquisition and groundwater sampling



Milk River aquifer's extent: The field work will be done within these natural limits

Isotopic analysis of Milk River Aquifer groundwater samples

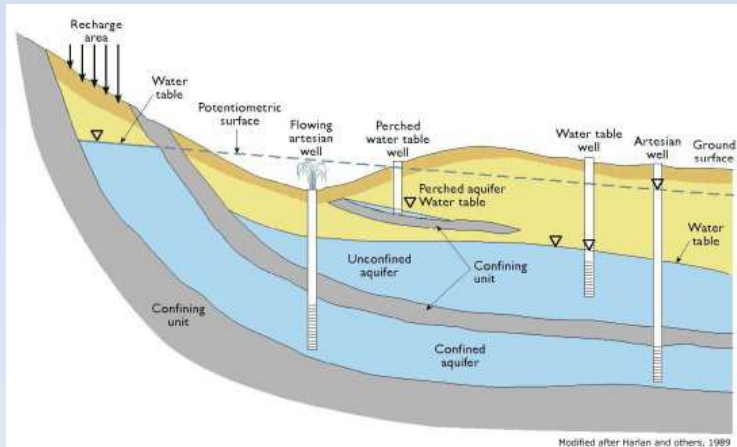
- Isotopic analysis of groundwater samples are used to determine the **age of groundwater**.
- The distribution of groundwater ages determine **groundwater flowpaths as well as recharge and discharge areas of the aquifer**.
- The **isotopes** we will sample are **naturally occurring** in groundwater.



Decay for several half-lives of the ¹⁴C isotope

Equipment for groundwater sampling and water level measuring

Measure of water well levels



- The depth of the water levels in the wells on the Milk River Aquifer reflects the **current state of the groundwater conditions**.
- This in turn provides a **better understanding of the aquifer's dynamics**.



Photo: COBARIC (Québec)



Photo: L. Tremblay(INRS)



Photo: COBARIC (Québec)

Time Requirement:

Groundwater sampling:
a few hours

Measure of water level:
about 30 min