



Shale Gas and Groundwater:

When Isotopes get together and tell their story

Geneviève Bordeleau, Ph.D,

Assistant Professor with Institut national de la recherche scientifique (INRS)



Passionate about the environment, Geneviève Bordeleau completed a B.Sc. in agricultural science at McGill, a M.Sc. in Earth sciences at Institut national de la recherche scientifique (INRS), and a Ph.D in water sciences at INRS, before doing a post-doc at the Geological Survey of Canada. Now a mother of three little ones and an assistant professor at INRS, her expertise is centered around groundwater quality, and contaminant tracing through multi-isotopic approaches. She has worked on several contaminant types, including explosives and propellants, chlorinated solvents, and methane from unconventional hydrocarbon production.

Since the mid-2000's, shale gas production has tremendously increased in North America. However, this development was often achieved without proper knowledge of baseline groundwater quality. Consequently, claims of contamination in drinking water wells could hardly be confirmed, and population concerns and protests led to a halt in activities in many jurisdictions (including Quebec and New Brunswick), until scientific data is available to better assess the risk that hydraulic fracturing poses to drinking water sources. In this context, proper risk assessments call for a concerted effort between several disciplines, like geology, hydrogeology, geochemistry, geomechanics, and geophysics. Through examples from two major Canadian research projects, this presentation aims to illustrate how groundwater geochemistry, and particularly isotopic geochemistry, can bring a major contribution to resolving this issue.

Thursday, **February 27** – 12pm – University of Ottawa
Thursday, **March 12** – 12:00pm – St. Francis Xavier University
Thursday, **March 12** – 5pm – Dalhousie University
Friday, **March 13** – 12:30pm – Acadia University