



Ontario Geological Survey

Sedimentary Geoscience Section

Project Activities and Highlights
2011-2012

OEGS November 8, 2011

Derek Armstrong





Presentation Outline

- Overview of main program areas
- Selected projects and field activities for 2011-12
 - Far North projects
 - Northern projects
 - Southern projects
- Recent publications & products





SGS Program Areas

- Surficial geochemistry
- Surficial mapping and sampling
- Aggregates & Industrial Minerals
- Groundwater
- Energy



Far North SGS Projects

- Far North Terrain Mapping (Barnett)
- Ring of Fire:
 - Surficial geology and sampling (Gao)
 - Lake sediment & water geochemistry pilot study (Dyer)
- GEM Hudson Platform Project
 - Paleozoic mapping (Armstrong)
 - Aeromagnetic survey (Rainsford)

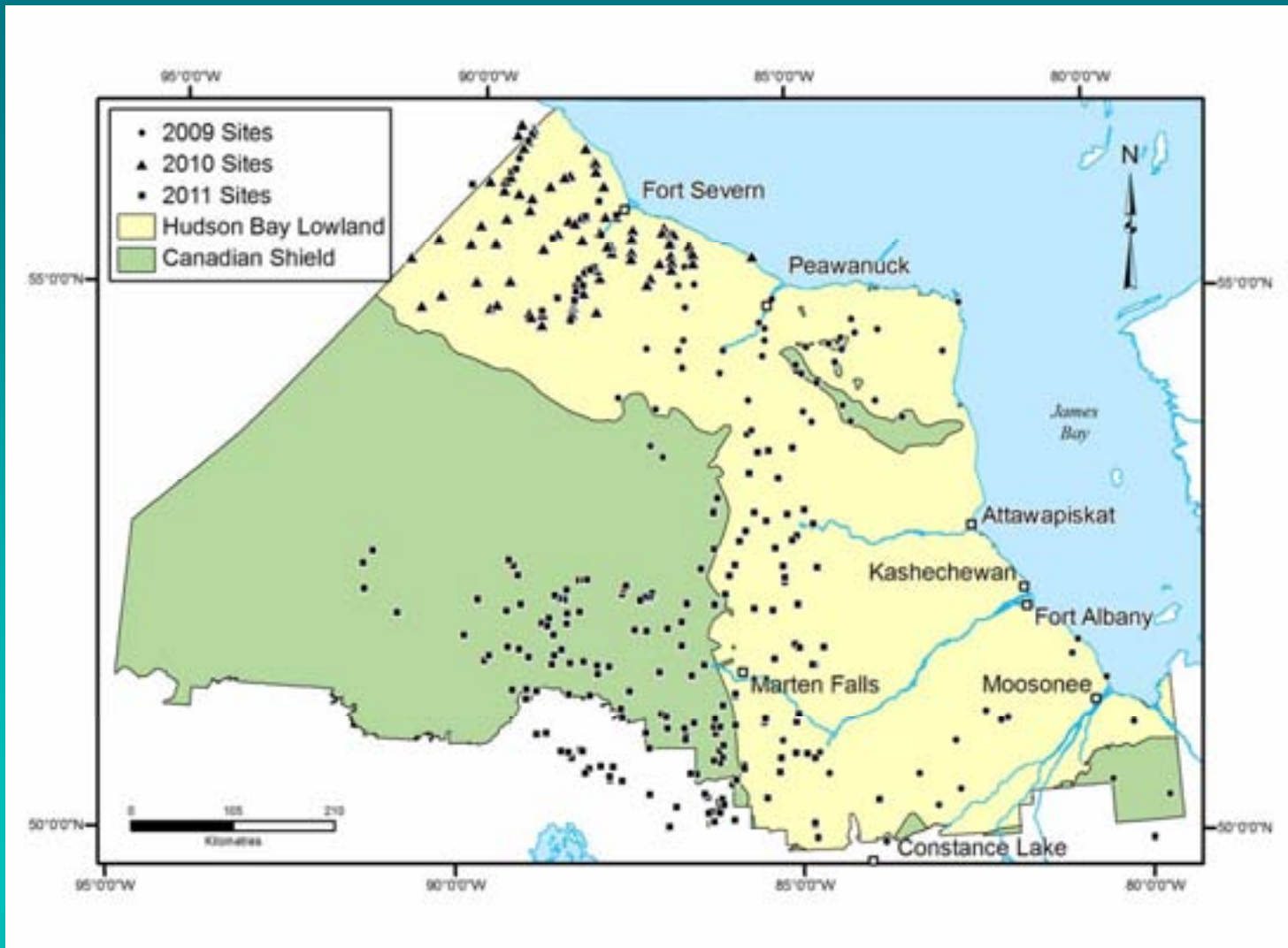


Far North Terrain Mapping

- Predictive mapping
- Remote sensing
- Far North land use planning
- Materials mapping for Ring of Fire infrastructure

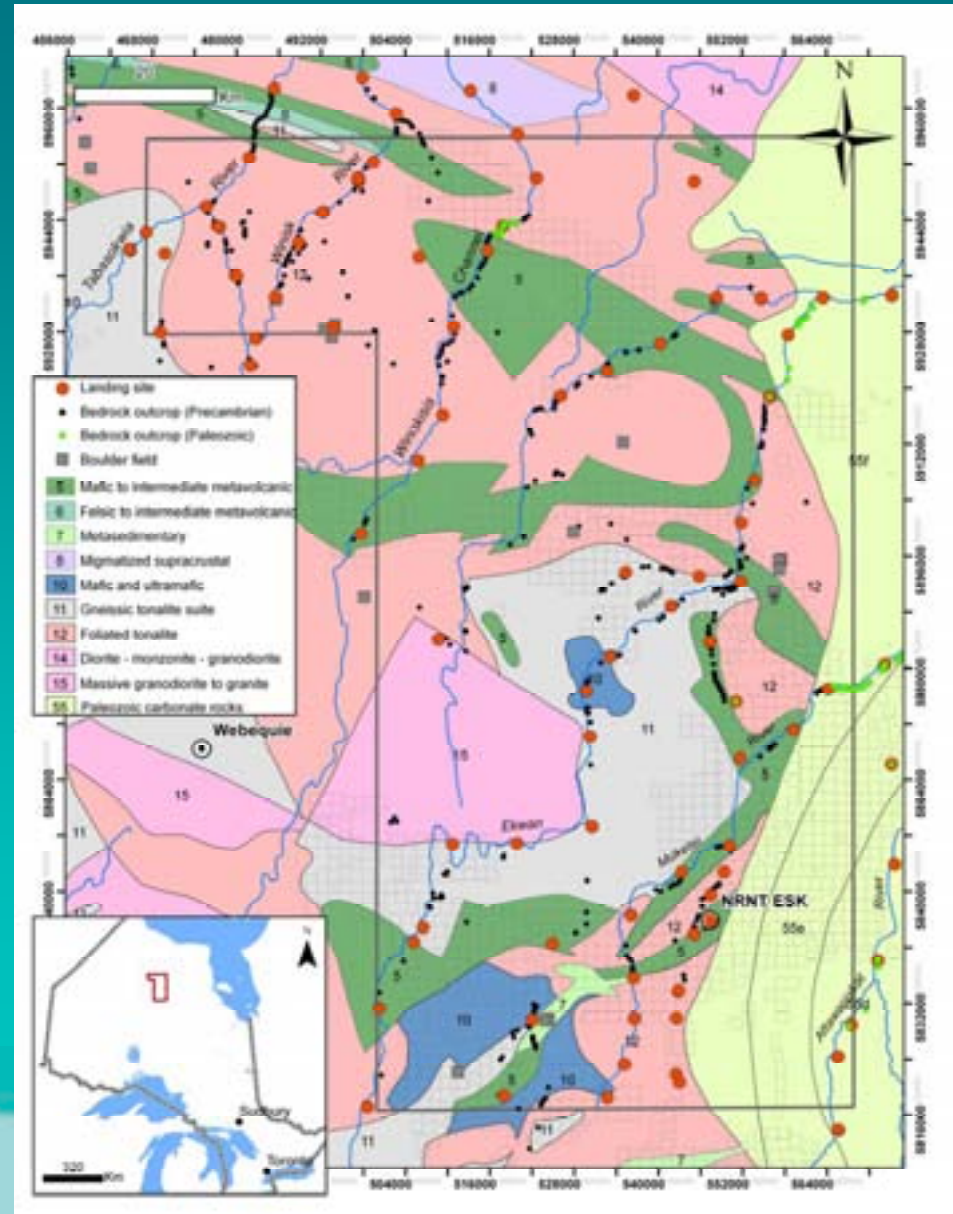


Far North Terrain Mapping



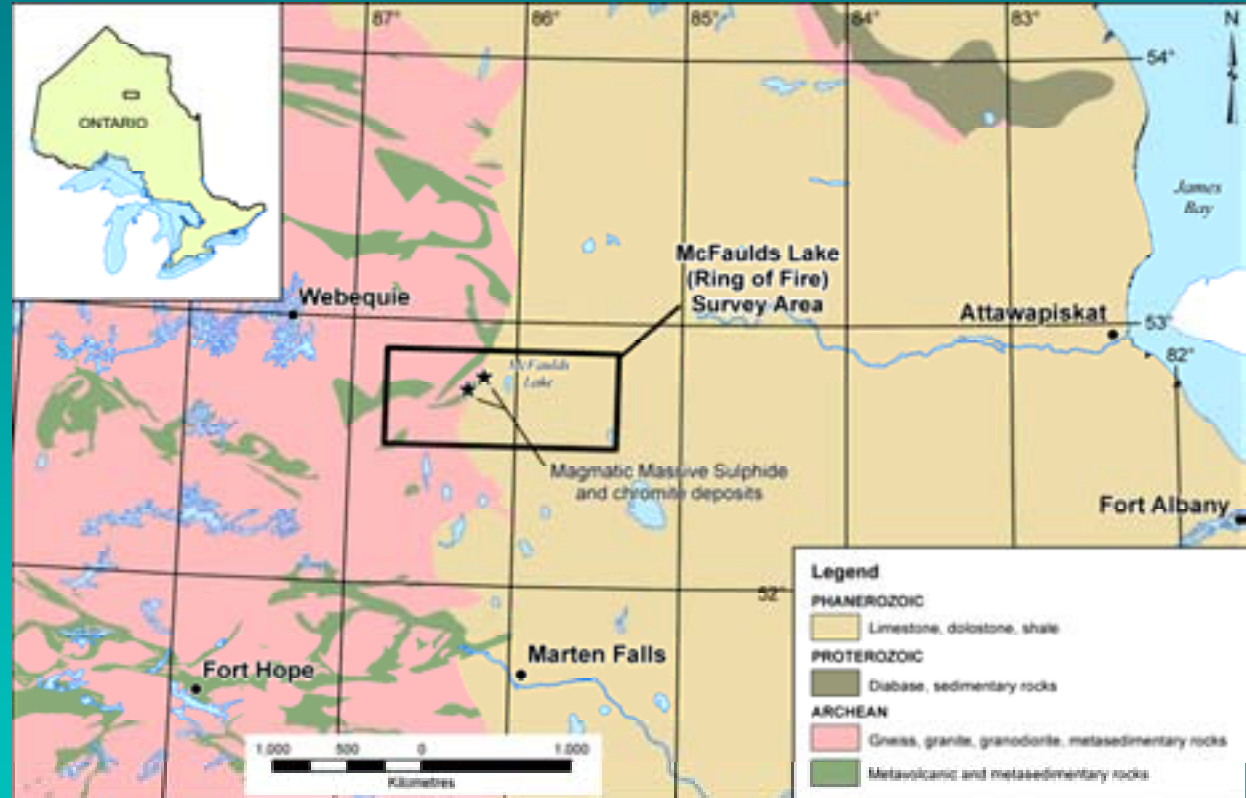
Ring of Fire – Surficial Geology & Sampling

- East & North arms of Ring of Fire
- Overburden drift sampling
- Indicator minerals
- Quaternary history



Ring of Fire – Lake Sediment & Water Geochemistry Pilot Study

- Feasibility for use in mineral exploration in lowlands
- Environmental baseline geochemistry (Laurentian Univ. - Living with Lakes Centre)

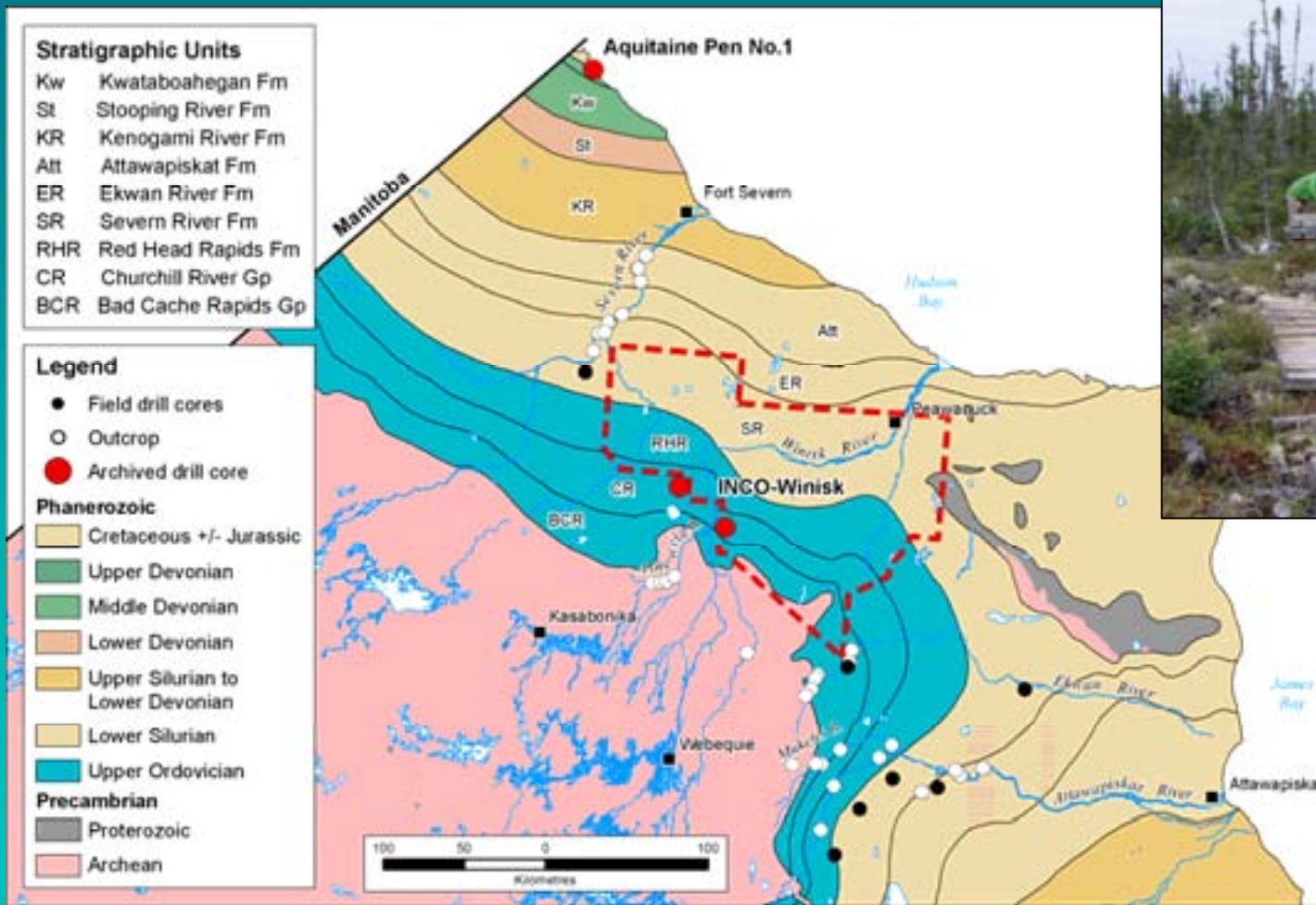


GEM Hudson Platform Project

- Geoscience Mapping for Energy and Minerals – NRCan program
- GSC + Nunavut, Manitoba, Ontario
- Hydrocarbon resource potential assessment
- Ontario 2011
 - Paleozoic mapping
 - Aeromagnetic survey



GEM Hudson Platform Project



Northern SGS Projects

- **Surficial mapping and sampling**
 - Mowe Lake area (Marich)
 - Chapleau area (Gao)
- **Lake sediment and water geochemistry**
 - Greenstone area (Dyer)



Southern SGS Projects

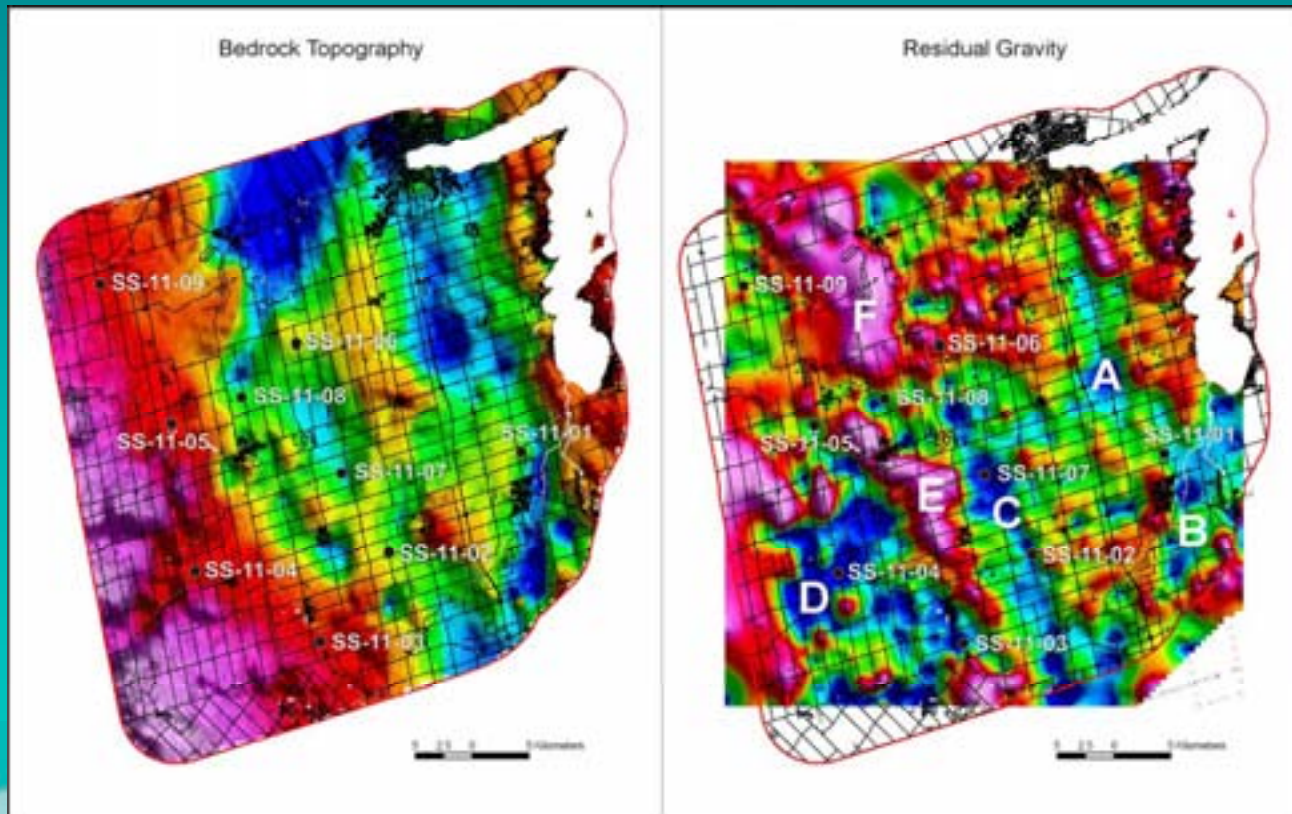
- **Aggregate studies**
 - Ottawa (Lee & Bumstead)
 - Bruce County (Rowell)
- **Groundwater**
 - 3D surficial mapping Simcoe County (Bajc)
 - 3D surficial mapping Orangeville Moraine (Burt)
 - Silurian bedrock aquifer mapping (Brunton & Priebe/Lee)
 - Ambient Groundwater (Hamilton)
- **Energy**
 - Shale gas study (Béland-Otis)



Groundwater Program

Simcoe County 3D Surficial Mapping

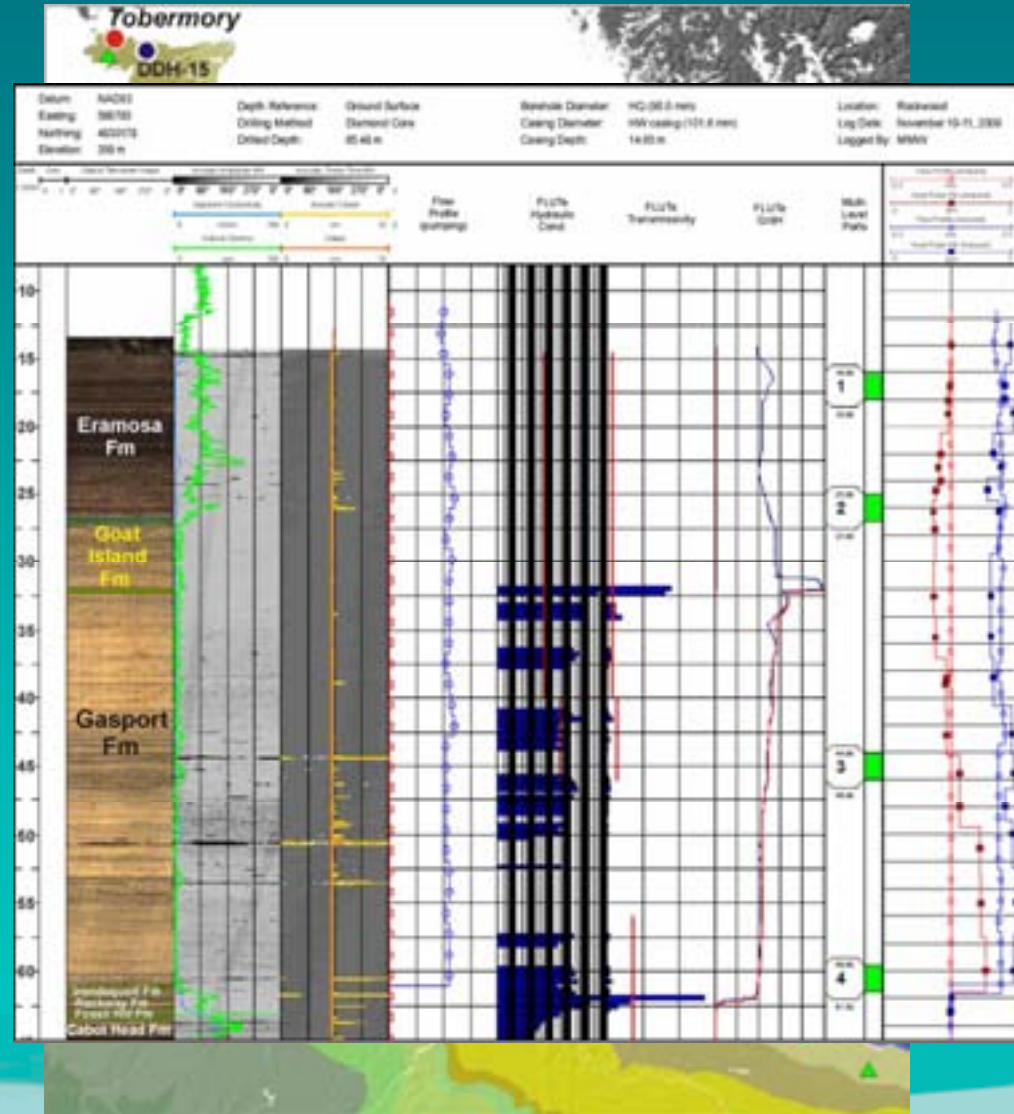
- Aquifer mapping: drilling & ground gravity survey
- Airborne EM survey (upcoming)



Groundwater Program

Silurian Bedrock Aquifer Mapping

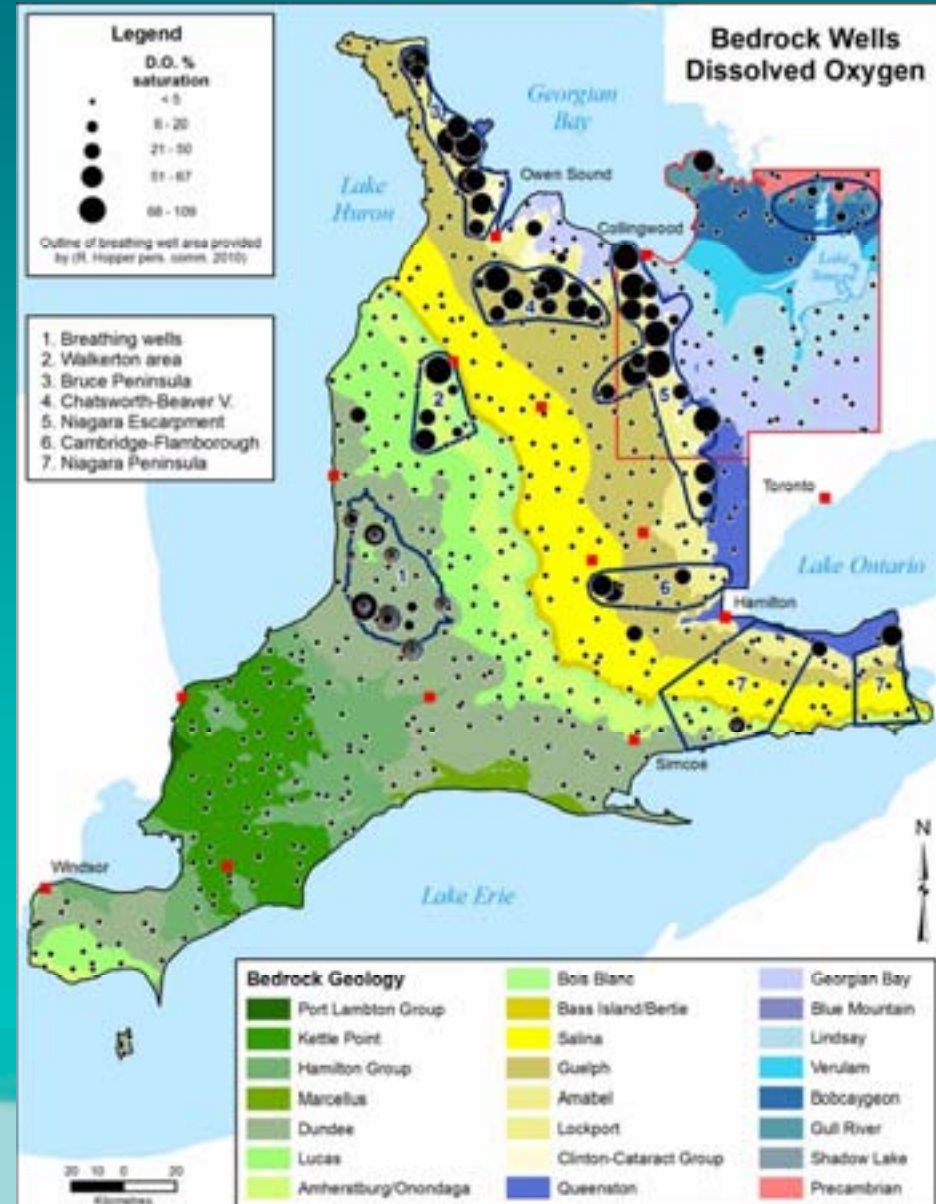
- Initially Guelph area
- Regional scale
- Updated stratigraphy & hydrostratigraphy
- Rock and water chemistry
- FLUTE study



Groundwater Program

Ambient Groundwater Chemistry

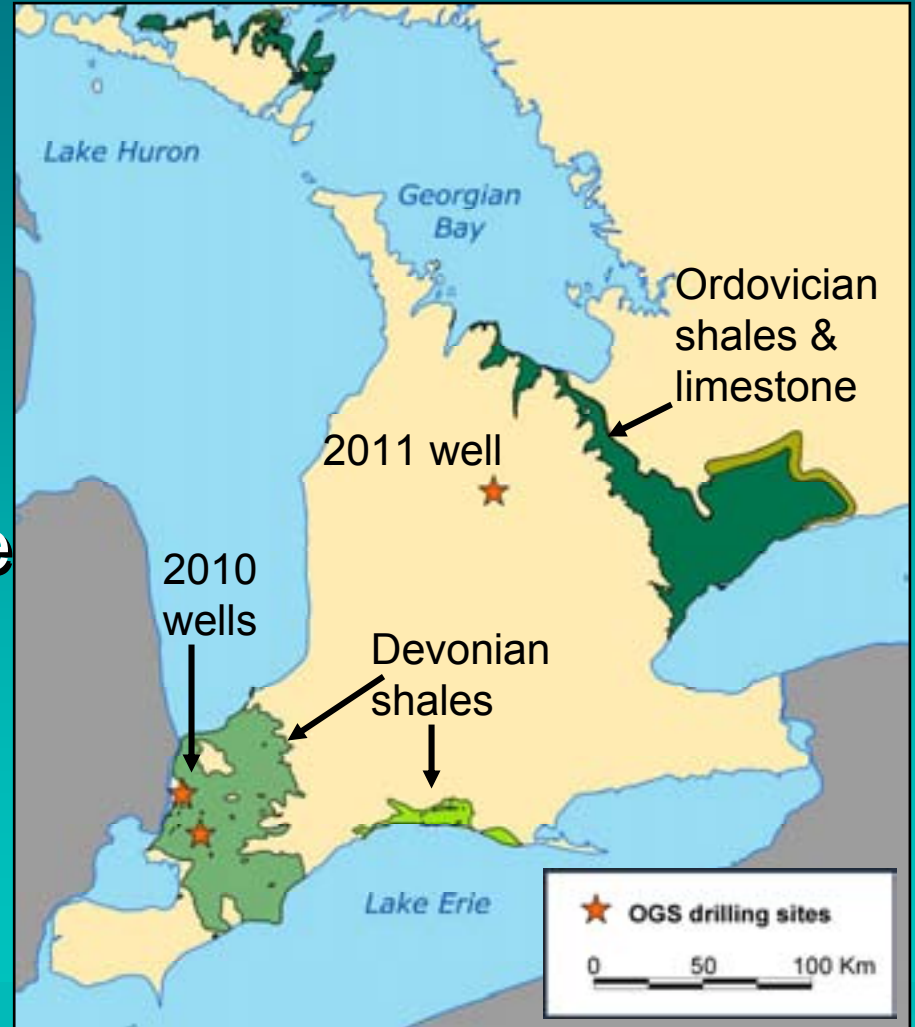
- Multi-year since 2007
- Residential water wells
- Multi-parameter
- CH₄ over shallow organic-rich bedrock
- Dissolved O₂ in karstic terrains
- Thermal anomalies
- **MRD 283 released**



Energy Program

Shale Gas Study

- **Devonian** Kettle Point Formation black shale
- Drilled & sampled two wells in 2010
- **Ordovician** black shale & limestone
- Drilled & sampled one well in 2011



OGS Earth

Selected data releases, maps and indexes are being converted to kml for viewing on Google Earth format. (Dodge)



For More Information

Derek Armstrong
Acting Manager, Sedimentary Geoscience Section
Ontario Geological Survey

705-670-5913

derek.armstrong@ontario.ca



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