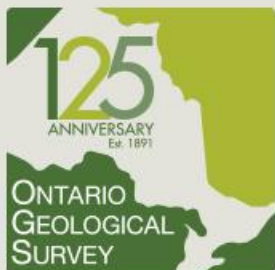


# Exploration Activity in the Greenstone to Ring of Fire Area 2016



PRESENTATION BY:

Gerry White and  
Robert Cundari  
Resident Geologist Program  
OGS Thunder Bay  
Ministry of Northern  
Development and Mines

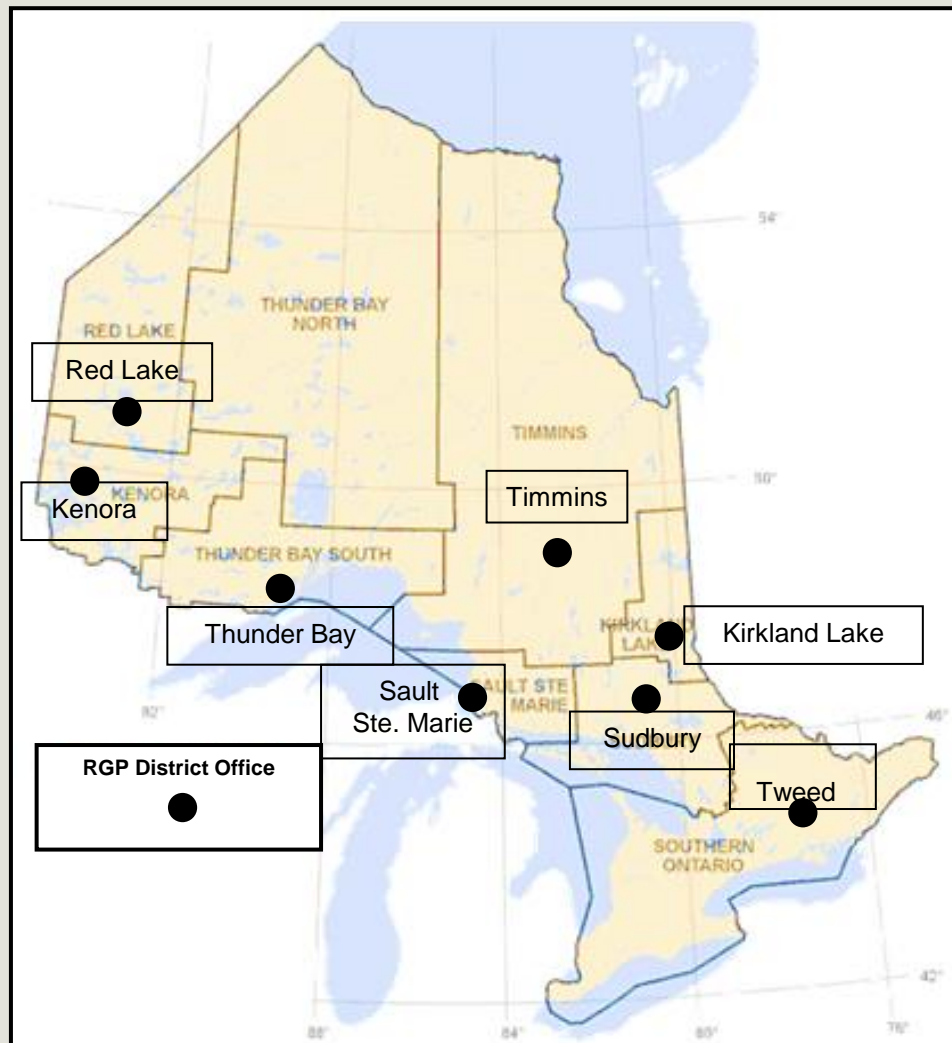


**GEDC Mining Update**  
**November 24, 2016**

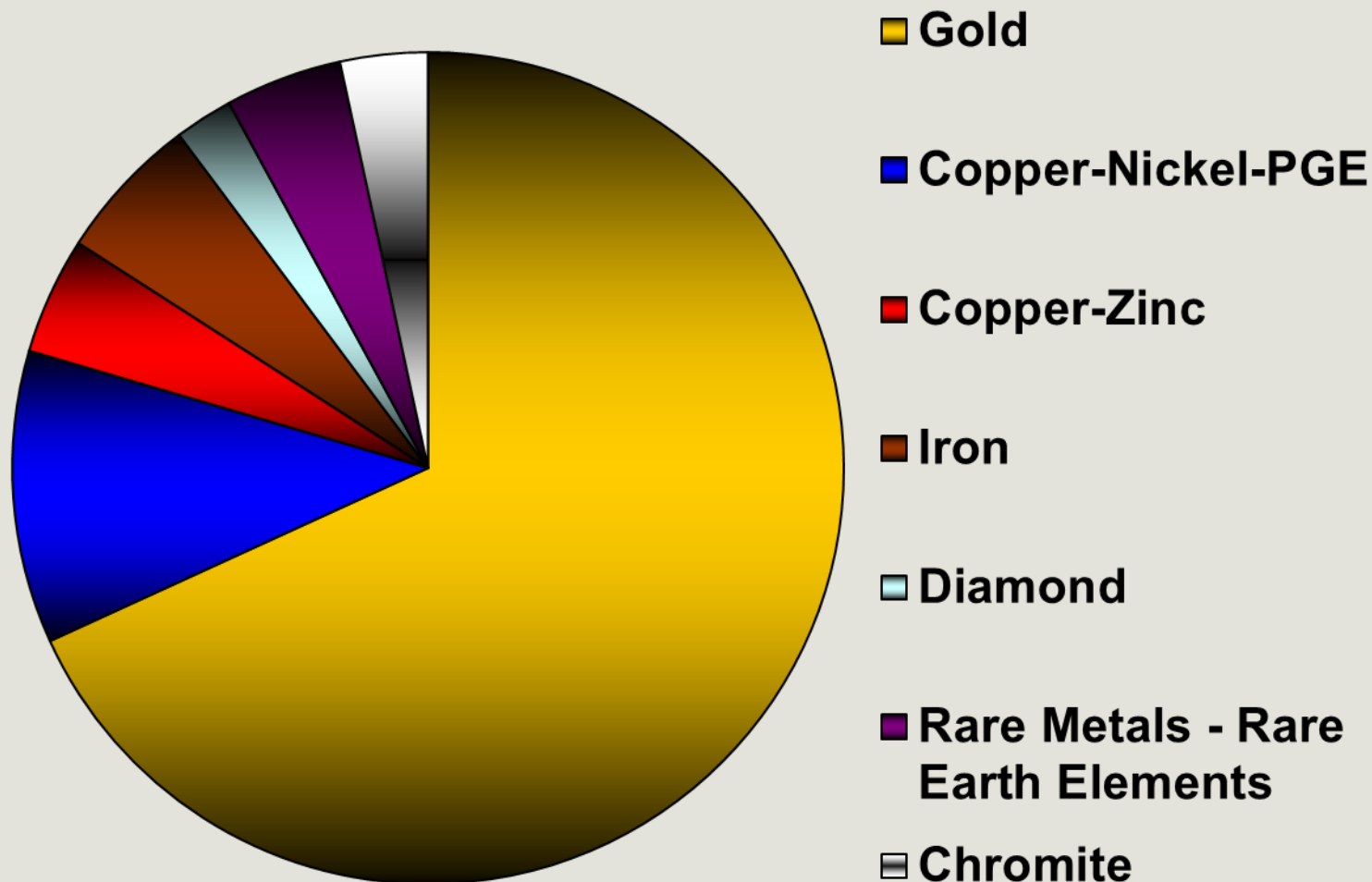


# Resident Geologist's Program

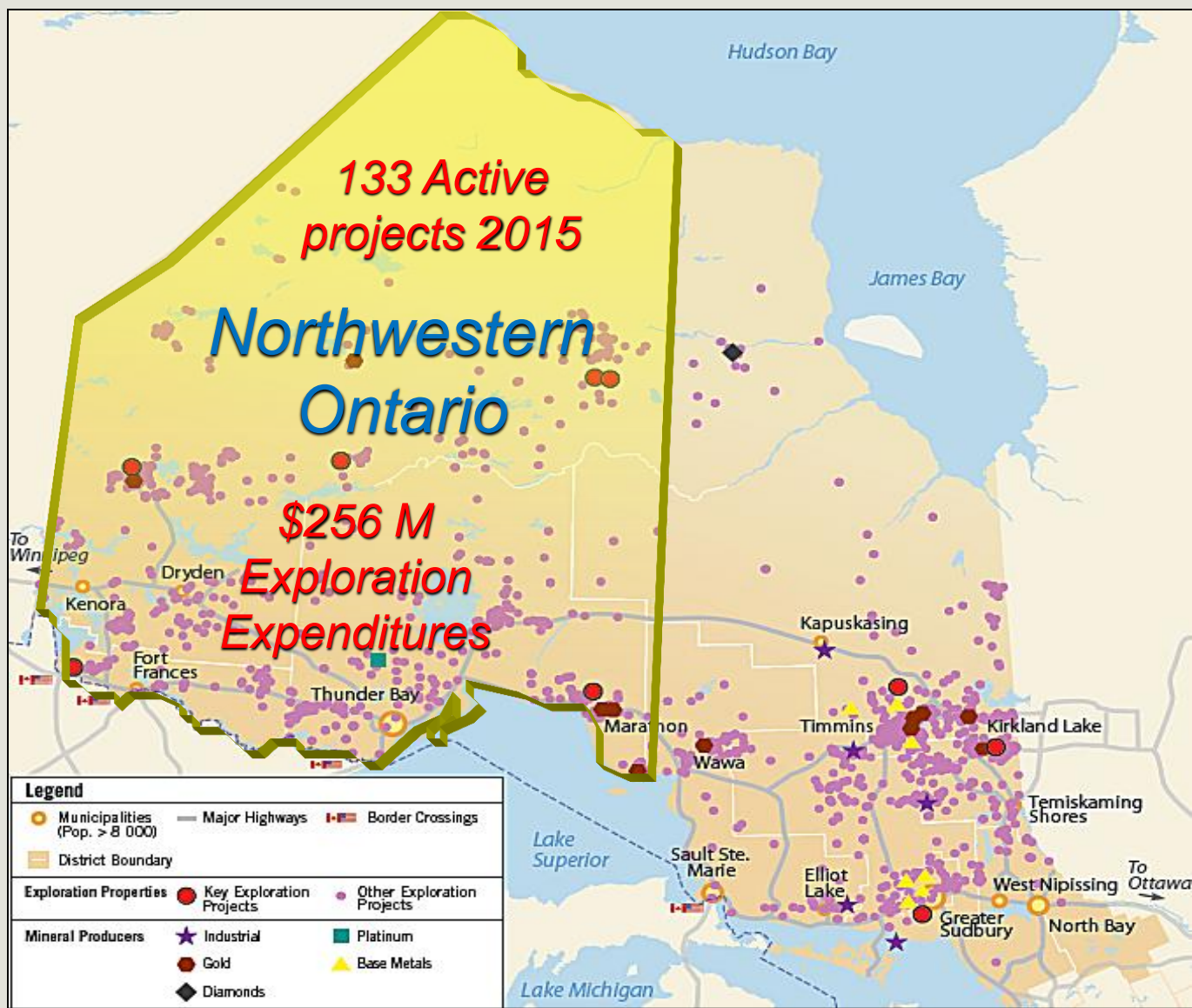
- Geographically dispersed component of the Ontario Geological Survey (OGS) with 8 district offices across Ontario
- Monitor and stimulate the economically and environmentally sound development of the province's geology and mineral resources
- Provide expert geological consultation and advisory services including input into land use planning issues and initiatives



# Exploration by Commodity – Northwestern Ontario 2015

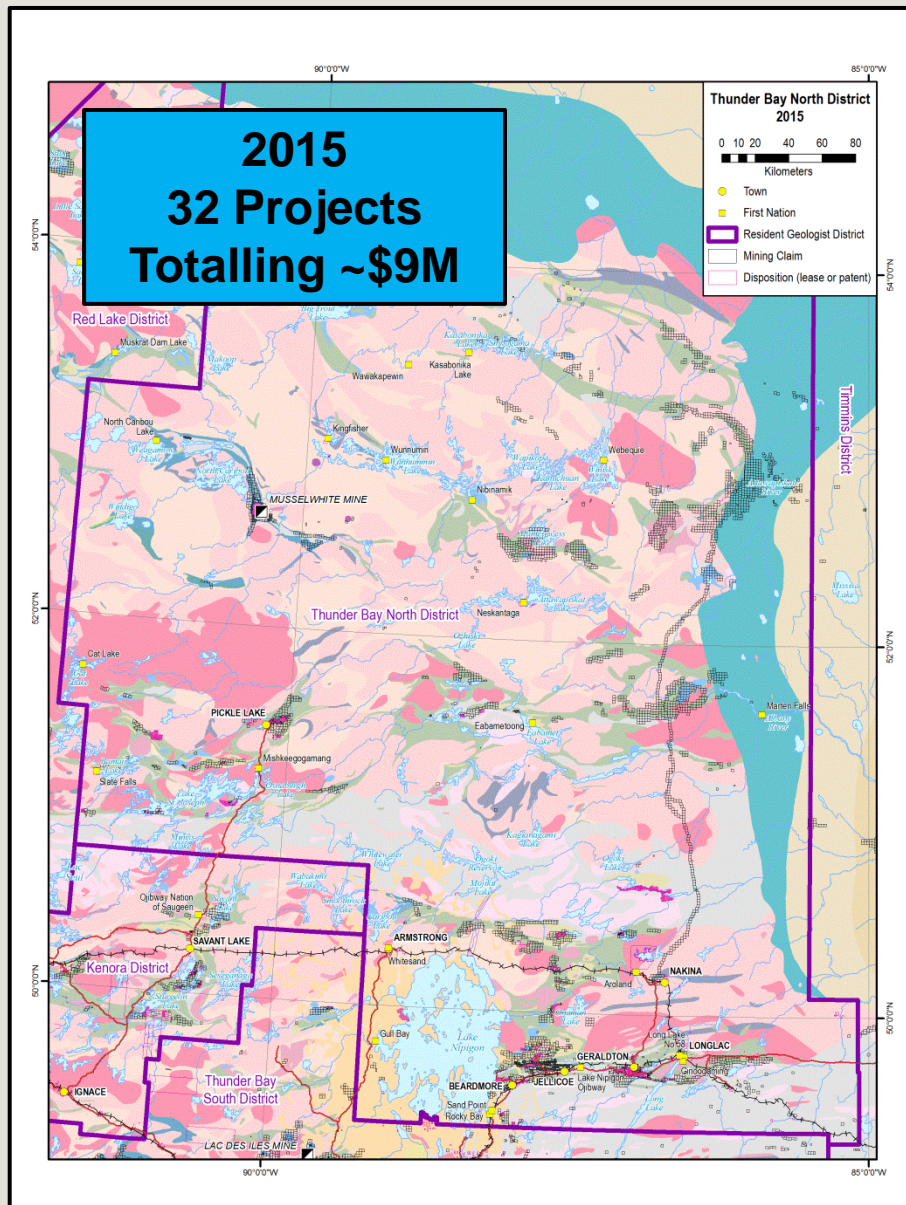


# Exploration Northwestern Ontario 2015



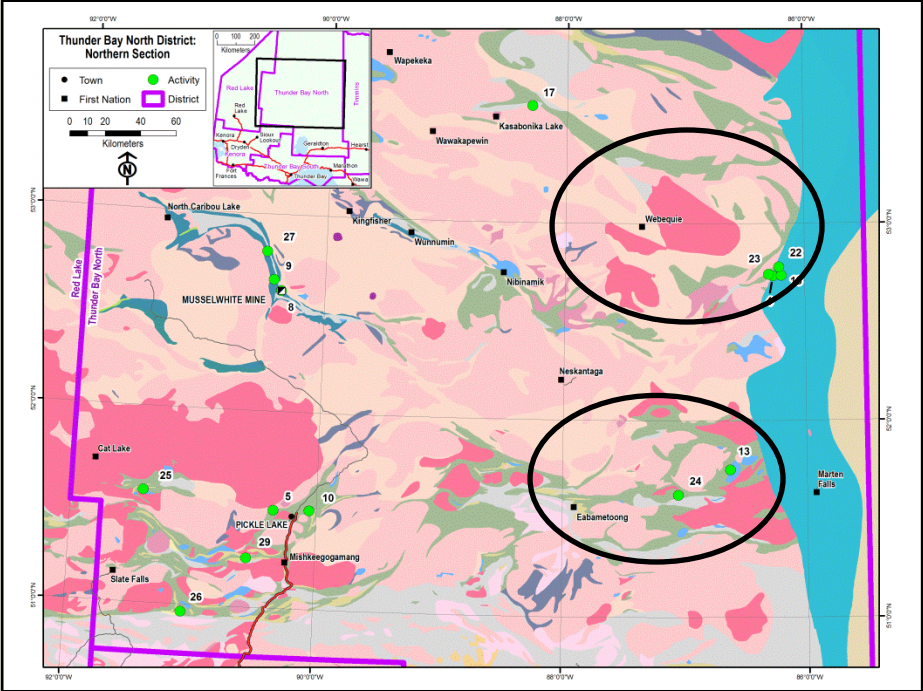


# Thunder Bay North District 2016



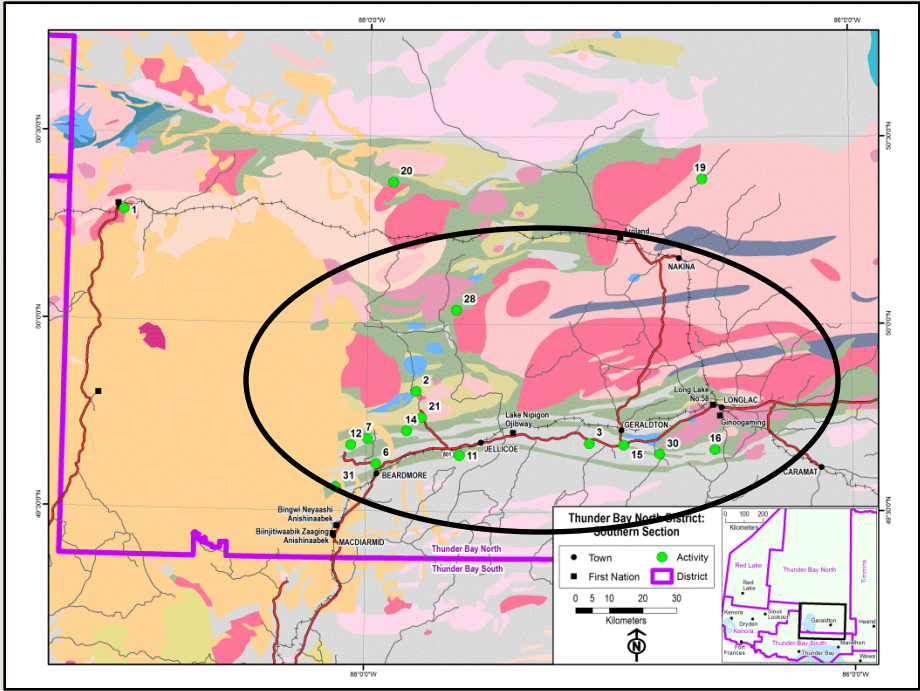


# Exploration Activity 2016



**Eastern Uchi**

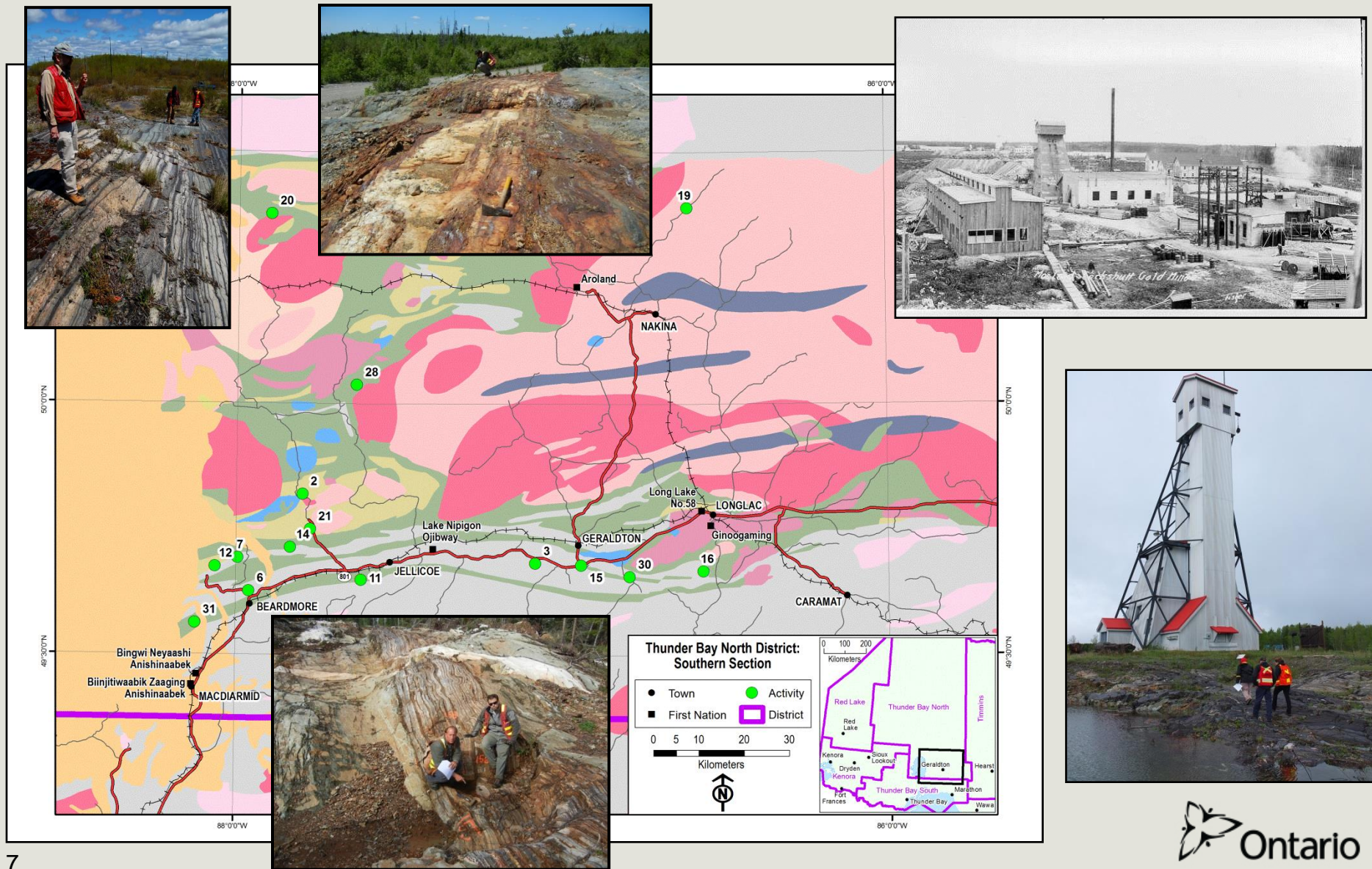
**Oxford-Stull Domain**



**Eastern Wabigoon Domain**



# Gold Exploration: Greenstone Area





# **Hardrock Project**

## ***(Greenstone Gold Mines GP Inc.)***

- **Property located south of Geraldton**
- **Greenstone Gold Mines est. (March 2015) as the operating company for the joint venture partnership between Premier Gold Mines Limited and Centerra Gold Inc.**
- **Trans-Canada property / Hardrock, Brookbank and Viper properties**

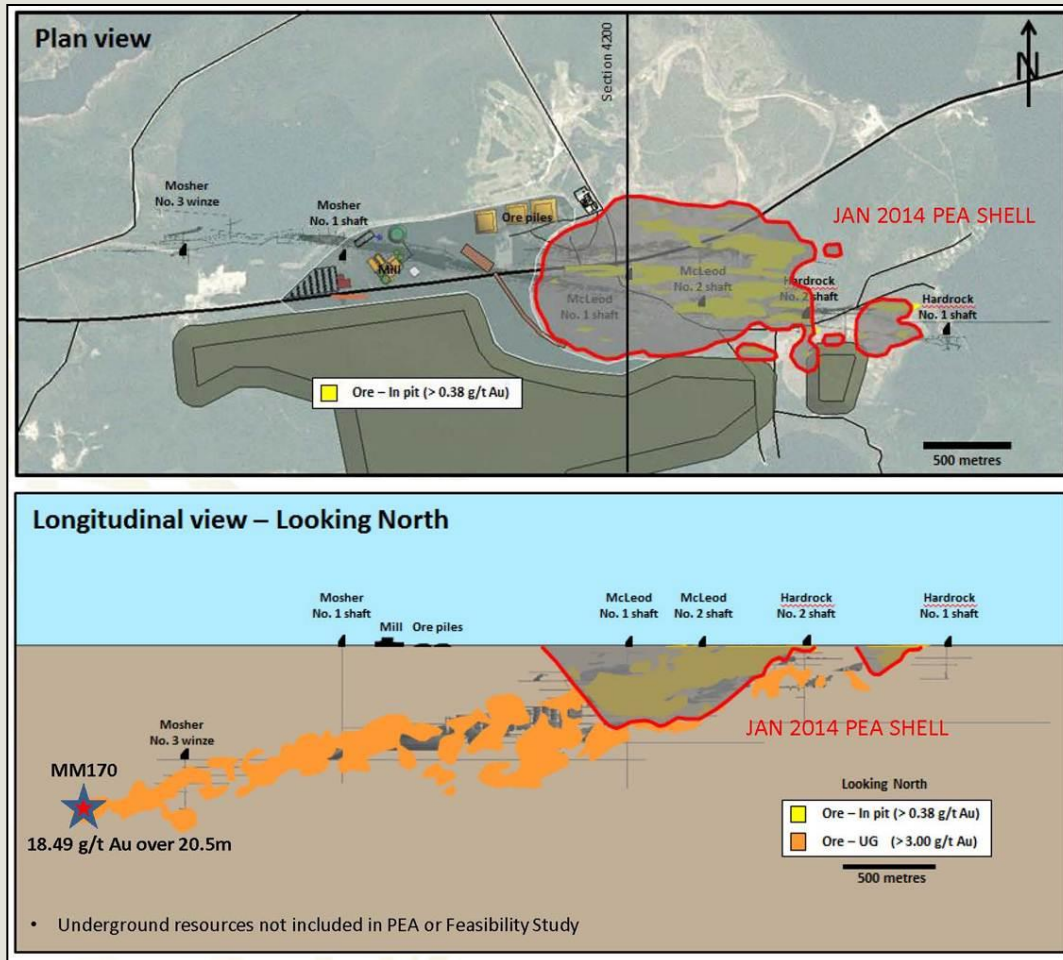


- **2015: Completed 62 holes for a total of 17,428 m / definition drilling to upgrade Inferred Resource**
- **2016: Technical and economic Feasibility Study released Nov. 16**
- **Permitting and baseline environmental assessment work ongoing**





# Hardrock Project (Greenstone Gold Mines GP Inc.)



- 2016: Completed an extensive regional IP geophysical survey
- ongoing comprehensive review of historical geological, geophysical and geochemical datasets

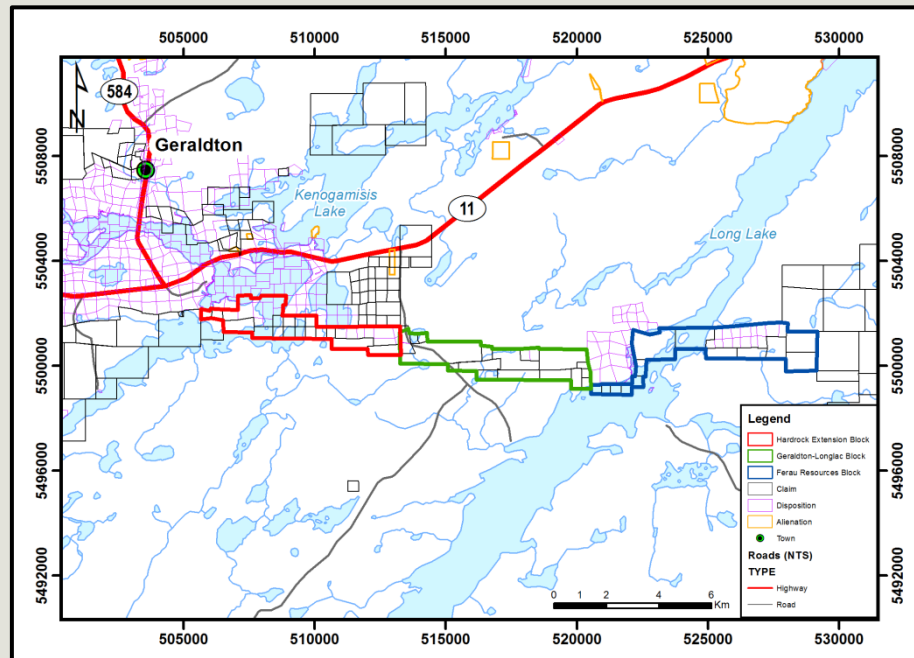
## Hardrock Mineral Resource Estimate

(Updated July 8, 2014)

# 7.6 Moz Gold

- Indicated: 89.0 Mt @ 1.70 g/t Au for 4.87 M ozs
- Inferred: 23.1 Mt @ 3.69 g/t Au for 2.74 M ozs

# Hardrock Extension Property (Hardrock Extension Inc., M. Malouf)



- Contiguous with Greenstone Gold Mines Hardrock property SE of Geraldton
- Property trends east to Long Lake south of Longlac for 24 km
- Tracts the southern IF and lithotectonic zone that hosts gold mineralization on the Hardrock

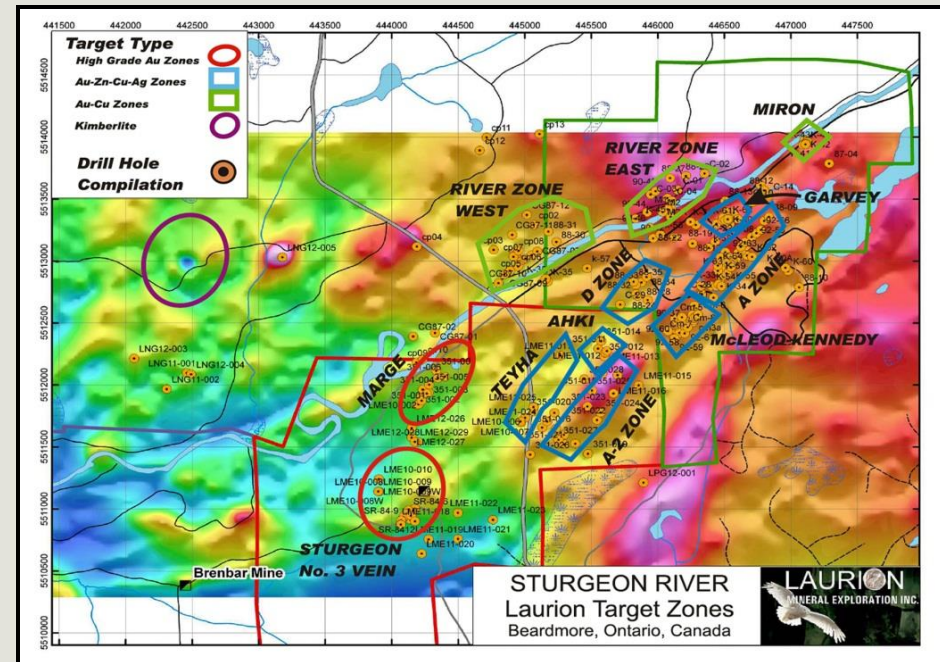
- Hosts numerous historical and recently discovered gold occ.
- Past drilling by Hardrock Extension:  
11.7 m of 4.98 g/t Au (HH-72) and 5.4 m of 23.64 g/t Au (HH-10)
- Grab samples collected from Hardrock Peninsula / 0.32 to 5.08 g/t Au (OGS 2015)
- Available for option





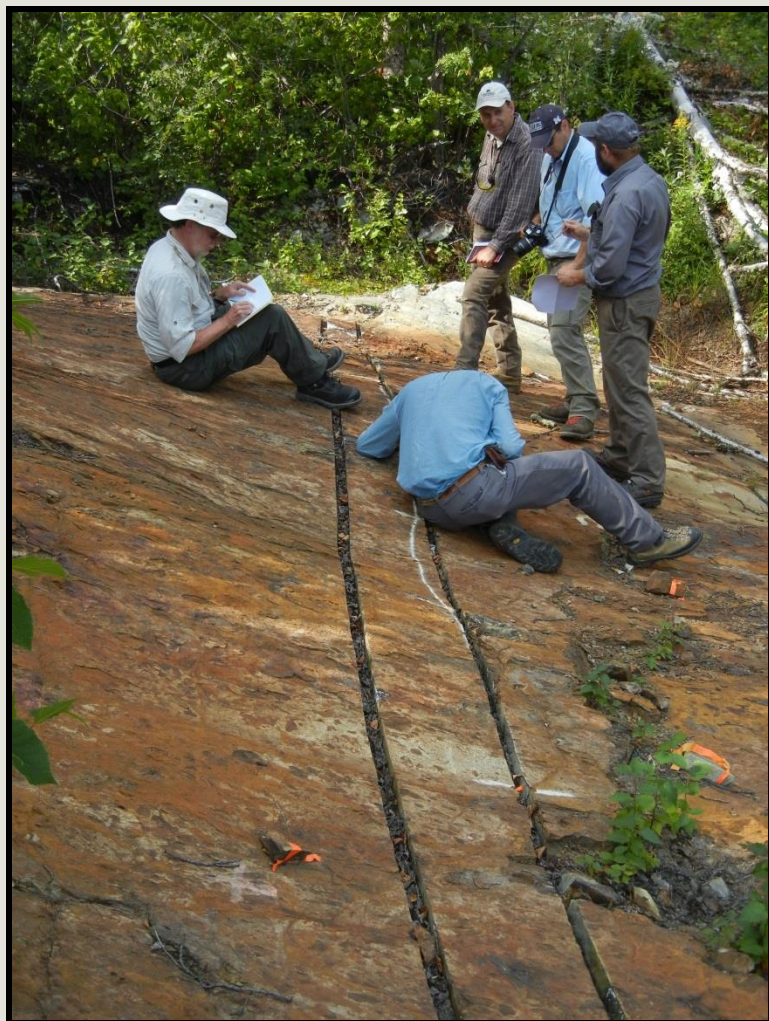
**Ishkoday Property**  
***(Laurion Mineral Exploration Inc.)***

- **Located 25 km NE Beardmore**
- **Incl. past producers / Sturgeon River and Brenbar mines**
- **Focus on a 4 km long NE structural corridor hosting gold and base metal mineralization**



- **A 2015 IP survey defined several very strong anomalies below the current drilling depth of 200 m**
- **Company has raised funds and plans to continue exploration in 2017**

# Miner Lake Property (Alto Ventures Ltd.)



- Located in Pifher Twp. NE of Beardmore
- Gold occurs in shear zones and in chlorite-altered breccia zones within feldspar porphyry (2011 DD program: 1.78 g/t Au & 0.1% Cu over 19.0 m)
- 2015: company completed a till sampling program which identified additional gold targets
- 2016: Continued an extensive prospecting and sampling program



# Lynx-Onaman Property (Sage Gold Inc.)



- Located 45 km NE of Beardmore west of Onaman Lake
- Hosts a NI 43-101 Cu resource (Inferred): 1.94 Mt @ 1.44% Cu, 39.6 g/t Ag and 0.58 g/t Au (News Release, March 31, 2009)

- 2015: A comprehensive compilation of all past exploration work and a limited exploration program targeting VMS mineralization
- 2016: Completed a detailed mapping, sampling and prospecting program covering the entire property





# Goodman Sturgeon River Property (*H. Goodman Jr., M. Goodman*)



- Located 12 km NW of Beardmore in Dorothea Twp. / east shore of Lake Nipigon
- Property held by Beardmore prospectors H. Goodman Jr. and M. Goodman (7 claims- 28 units)

- Property hosts Au-Mo mineralization in stockwork qtz veining / contact zone, altered granodiorite and sheared metavolcanics (py, aspy)
- Grab samples ranged from .04 to 28.5 g/t Au and up to 79.9 g/t Au (OGS 2015)





# Prospecting – Greenstone Area

## Golden Heart Property (*R. and R. Cote*)

- Grab Samples up to 8.27 g/t Au (OGS 2013)



## Clist Lake Gold Property (*H. Goodman Jr. & T. Nelson*)

- Grab samples up to 28.9 g/t Au (OGS 2011)

# Vent Au-VMS Property



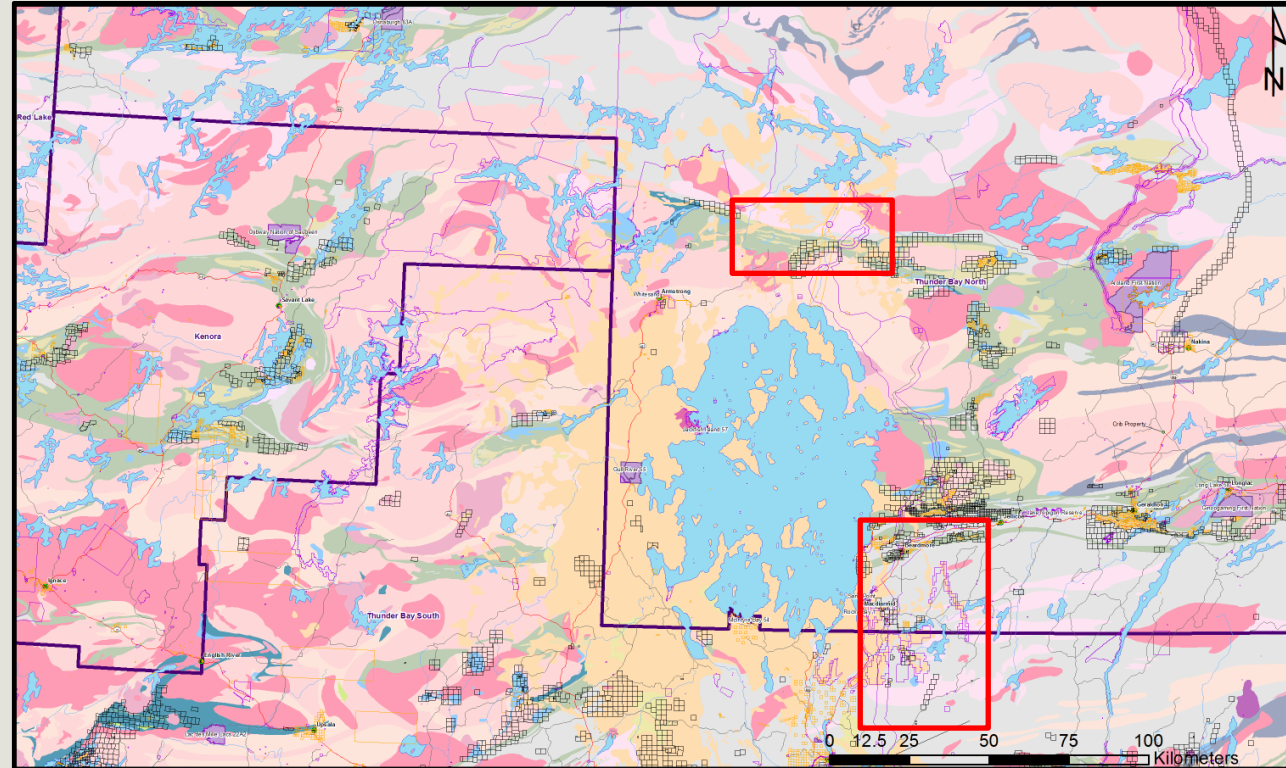
- **Located Oboshkegan Twp. North of Onaman Lake**
  - **Held by partners S. Roach and Greenstone prospectors M. Nelson & J. Savage**
  - **Available for option**
- 
- **2004 – 2006: Kodiak Exploration / \$3M multi-phase program ID a 2.5 km x 500 m wide gold-bearing alteration zone**
  - **3 significant untested Titan 24 anomalies in an area of prominent sodium depletion and Fe-carbonate alteration within felsic volcanic pkg.**
  - **Channel assays avg. 0.2 to 7 g/t Au over 2 to 11 m, range up to 11.88 g/t Au**



# High-Potential Areas for Lithium Greenstone Region

Recent option agreements, Caribou Lake Greenstone Belt:

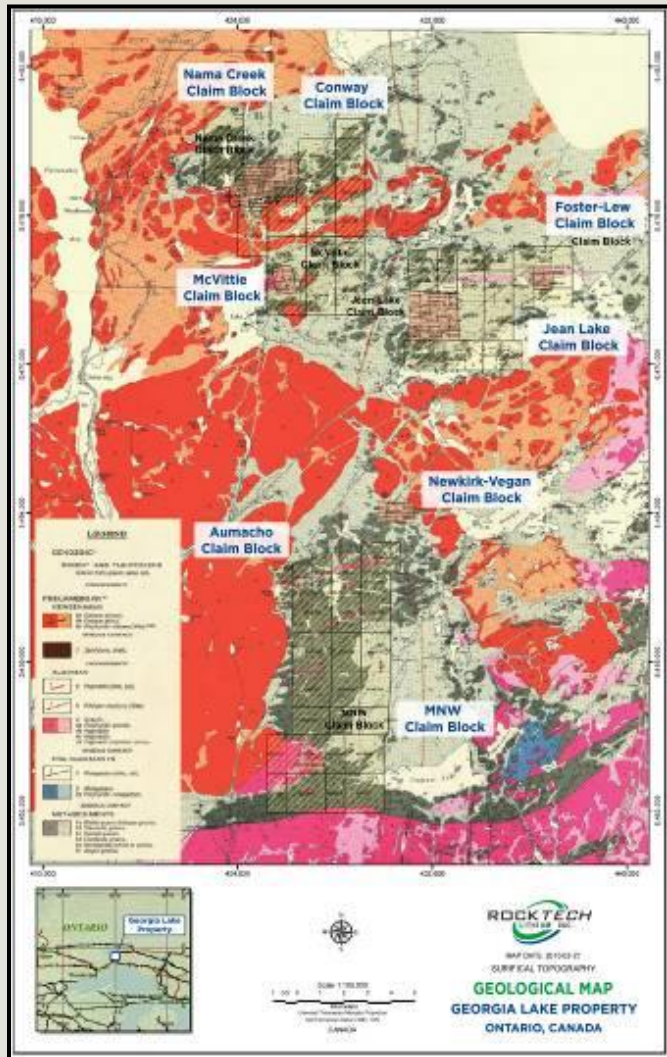
- Seymour Lake (Ardiden from Stockport)
- Zig Zag and Falcon (Argonaut from Canadian Orebodies)



- Easily accessible areas with high potential for new discovery:
  - Seymour/Crescent Lake area
  - Georgia Lake area

# Georgia Lake Property (Rock Tech Lithium Inc.)

**NI 43-101 Resource**  
**Ind. 3.19 Mt @ 1.10% Li<sub>2</sub>O**  
**Inf. 6.31 Mt @ 1.00% Li<sub>2</sub>O**



- Loc. 35 km south of Beardmore
- 2016: Extensive prospecting, stripping and sampling program / recently completed
- Assay results grading up to 2.89% Li<sub>2</sub>O (Jean Lake), 2.24% Li<sub>2</sub>O (McVittie Occ.) and 2.82% Li<sub>2</sub>O (Nama Creek)
- Additional claims staked to cover new occurrences / Total land pkg. 293 claim units and 81 mining leases – 9282 ha



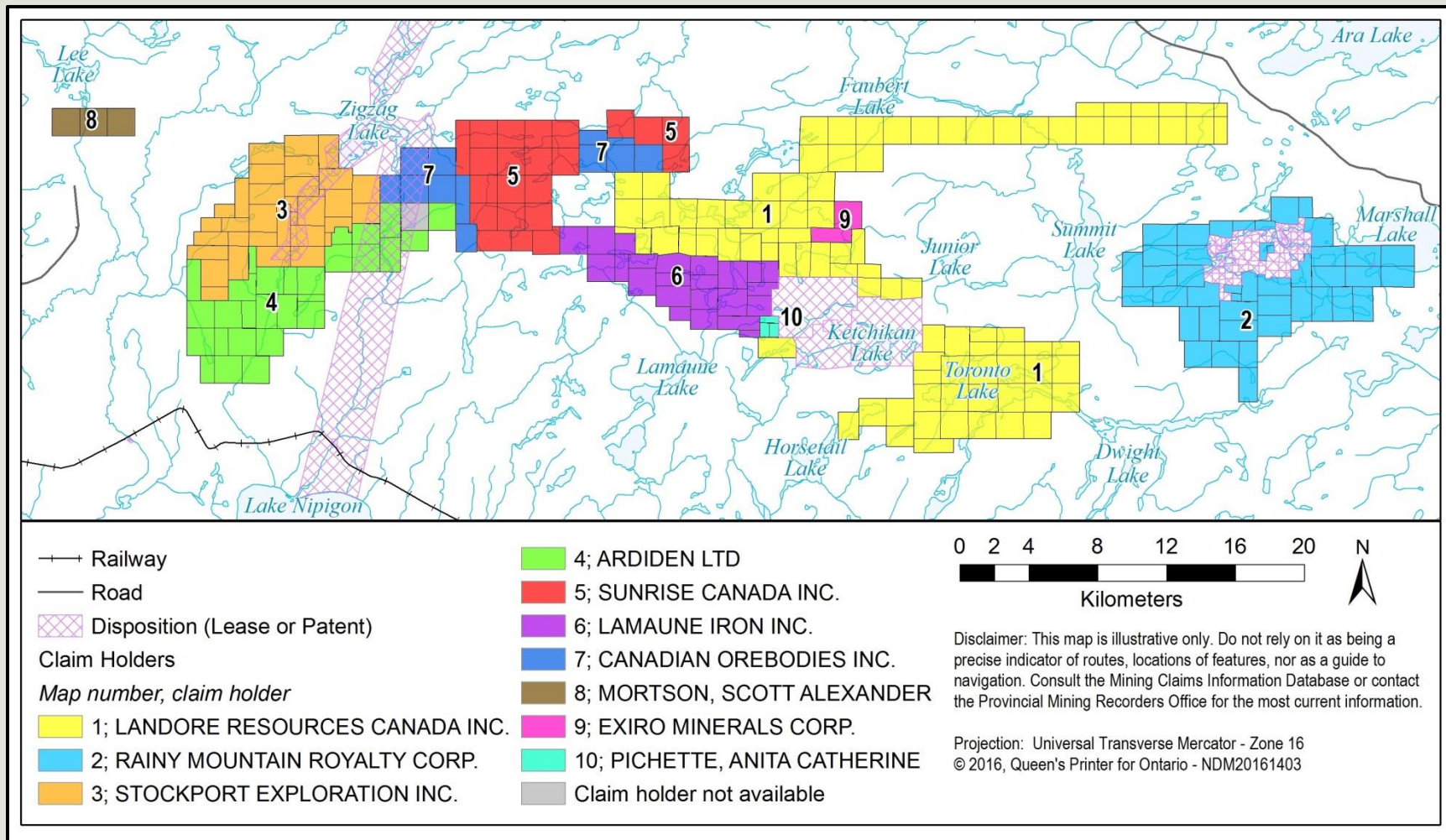


# Georgia Lake Lithium Project (*Ultra Lithium Inc.*)

- Claims located adjacent to Rock Tech Lithium's property in the Georgia – Barbara Lake area
- 2016: Completed a prospecting and sampling program – Jean Lake, Vegan, Lucky Lake and Swanson Beryl Pegmatites
- Assay results up to 2.73%  $\text{Li}_2\text{O}$



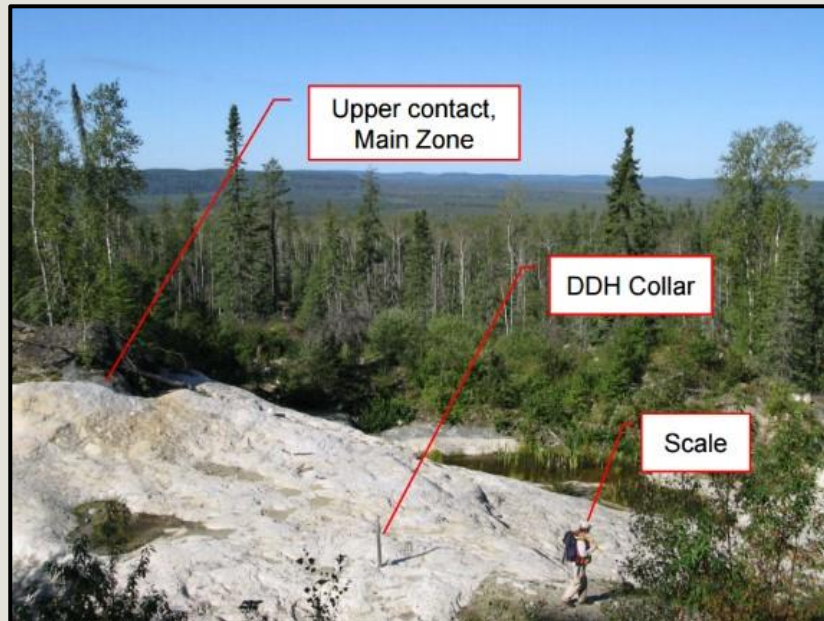
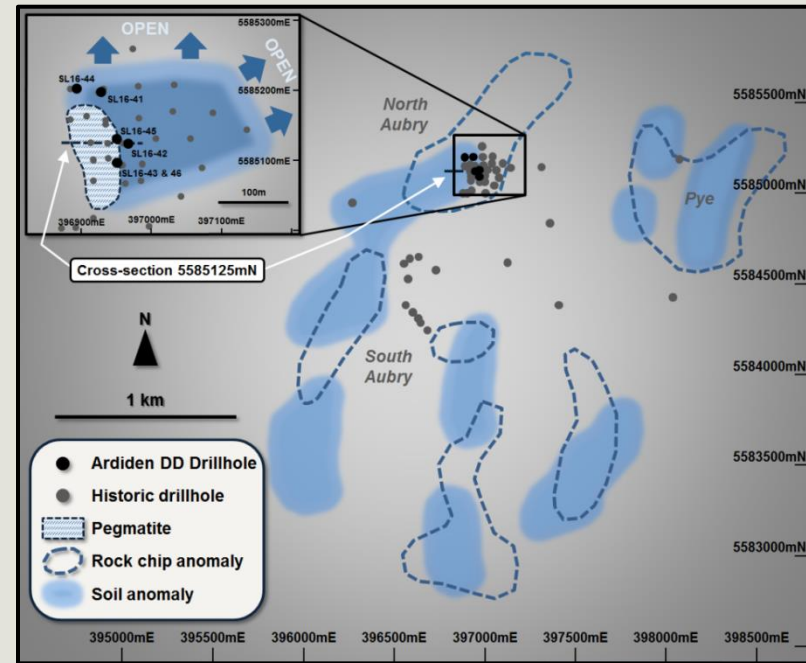
# Lithium Exploration: Caribou Lake Greenstone Belt





# Seymour Lake (*Ardiden Ltd.*)

- Contains the Aubry North and Aubry South occurrences
- Completed 15-hole diamond drill program with mineralized intervals up to 26 m in width and grades up to 2.37%  $\text{Li}_2\text{O}$
- Phase 1 Mineral Resource estimate expected Q2 2017 / North Aubry

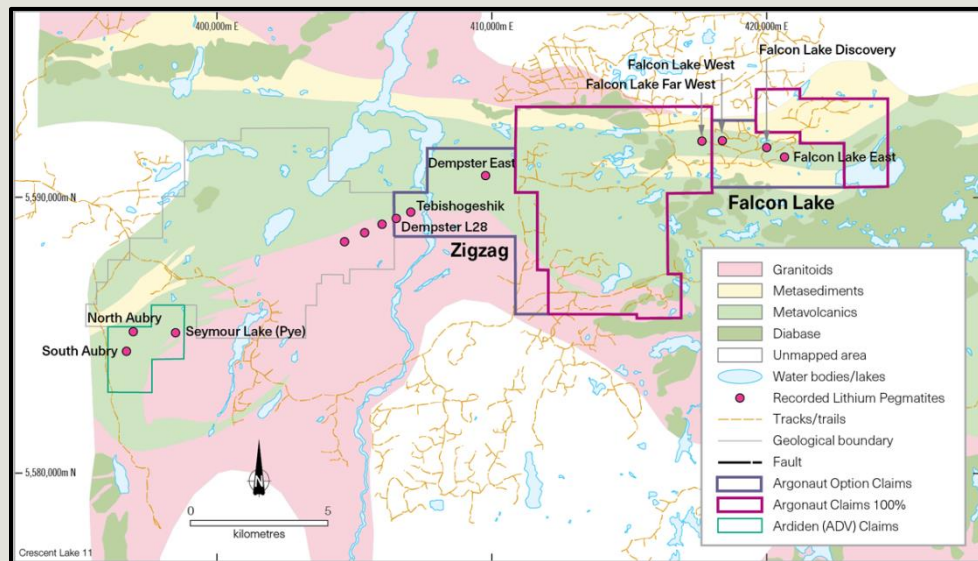


- Phase 2 and 3 delineation drilling will expand the resource to include the South Aubry and Pye

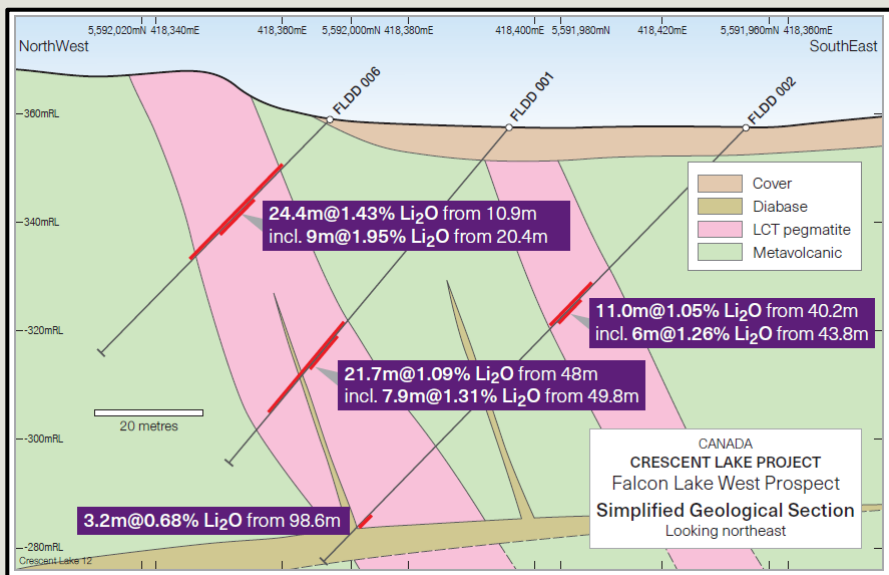


# Crescent Lake (Argonaut Resources NL)

- Option to acquire 100% of Zigzag and Falcon Lake properties
- Staked 22 additional claims adjoining Zigzag and Falcon Lake
- Targeting spodumene-bearing pegmatites



- Completed 6 holes at Falcon Lake West targeting two pegmatite units
- Intercepts up to 24.4 m @ 1.43%  $\text{Li}_2\text{O}$





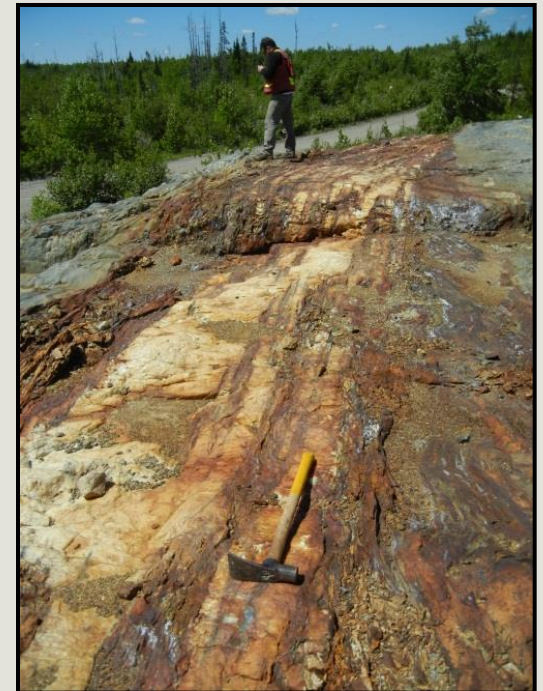
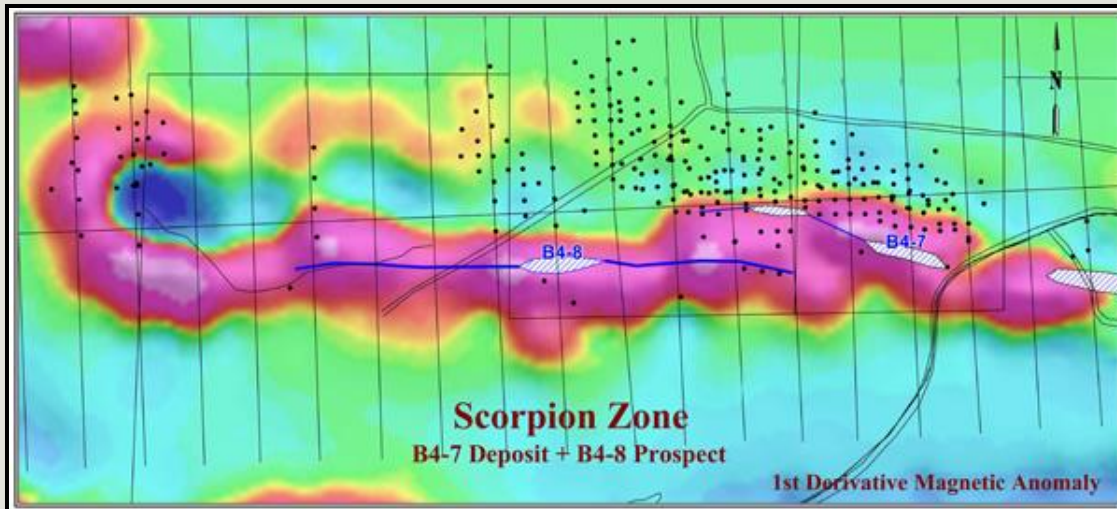
# **Crescent Lake (Sovereign Gold Company Ltd.)**

- **Optioned 28 claims (317 units, 5072 ha) between Ardiden's Seymour Lake property and Argonaut's Zigzag claims south of Crescent Lake / June 2016**
- **Prospecting, stripping and sampling / Chappais Lake, Dempster L61, L40, L28 occ. / grab samples up to 1.81%  $\text{Li}_2\text{O}$  (Dempster L61) and 1.84%  $\text{Li}_2\text{O}$  (Dempster L40) (Sept. 2016)**
- **Chappais Lake Pegmatite hosts 4 to 5 m wide exposures**
- **Completed an 11 hole, 800 m DD program along the 2 km NE trend hosting the 4 Li-bearing pegmatite occ. / 2.07%  $\text{Li}_2\text{O}$  over 22.5 m and 1.17%  $\text{Li}_2\text{O}$  over 49.5 m (CI-16-06, Dempster L61)**

# Junior Lake (*Landore Resources Ltd.*)

- Property located NE of Lake Nipigon
- Targeting Cu-Ni-PGE's and gold (since 1999)
- 2015: Completed 8 drill holes - 2,590 m on the B4-7 deposit:  
8.5 m @ 0.33% Ni, 0.14% Cu, 0.03% Co, 0.61 g/t Pt and 2.46 g/t Pd

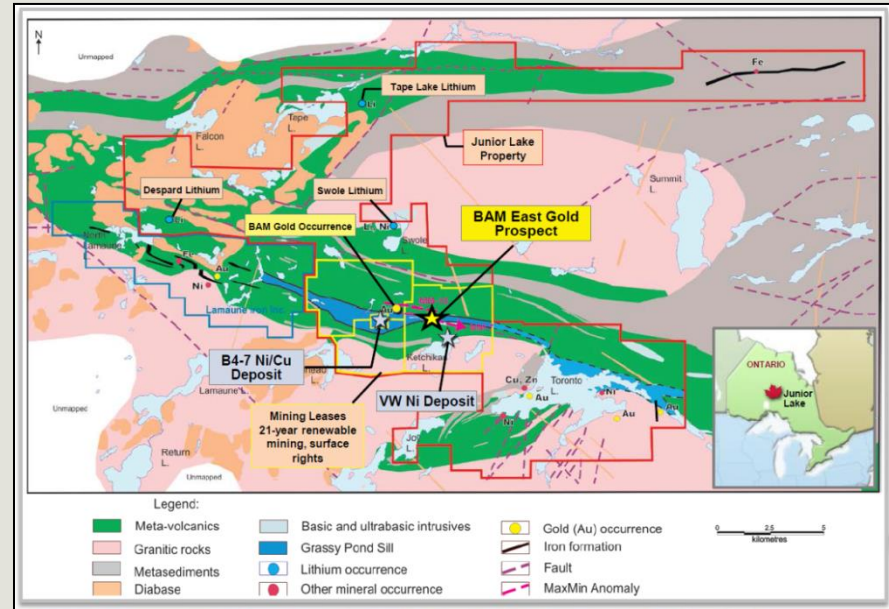
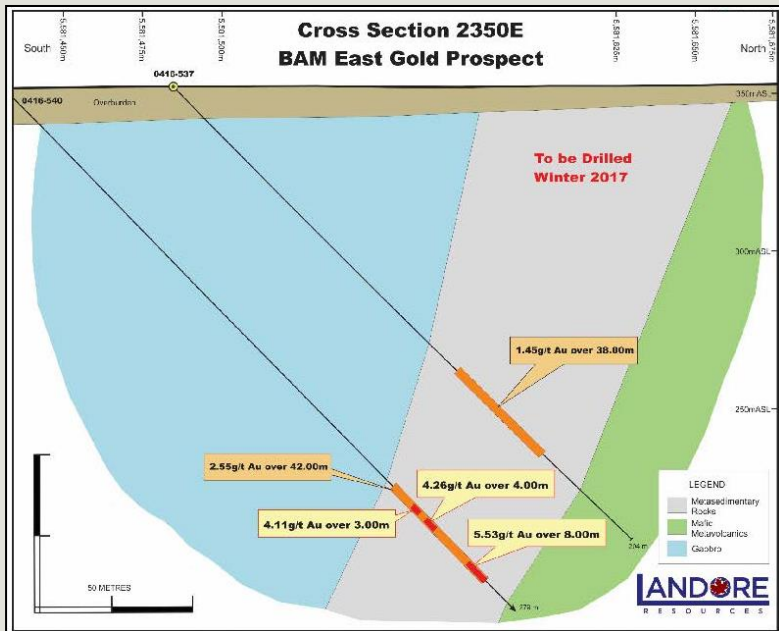
**B4-7 Deposit** (NI 43-101 Resource)  
2.7 Mt of 1.24% Ni Eq (O/P + U/G) (Indicated)



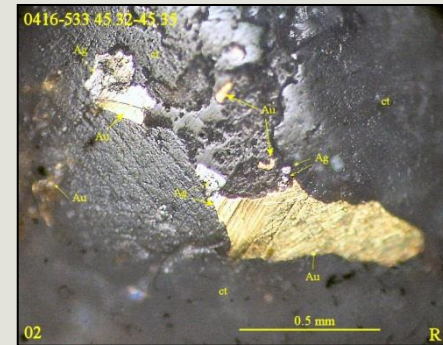


**Junior Lake – BAM East**  
***(Landore Resources Ltd.)***

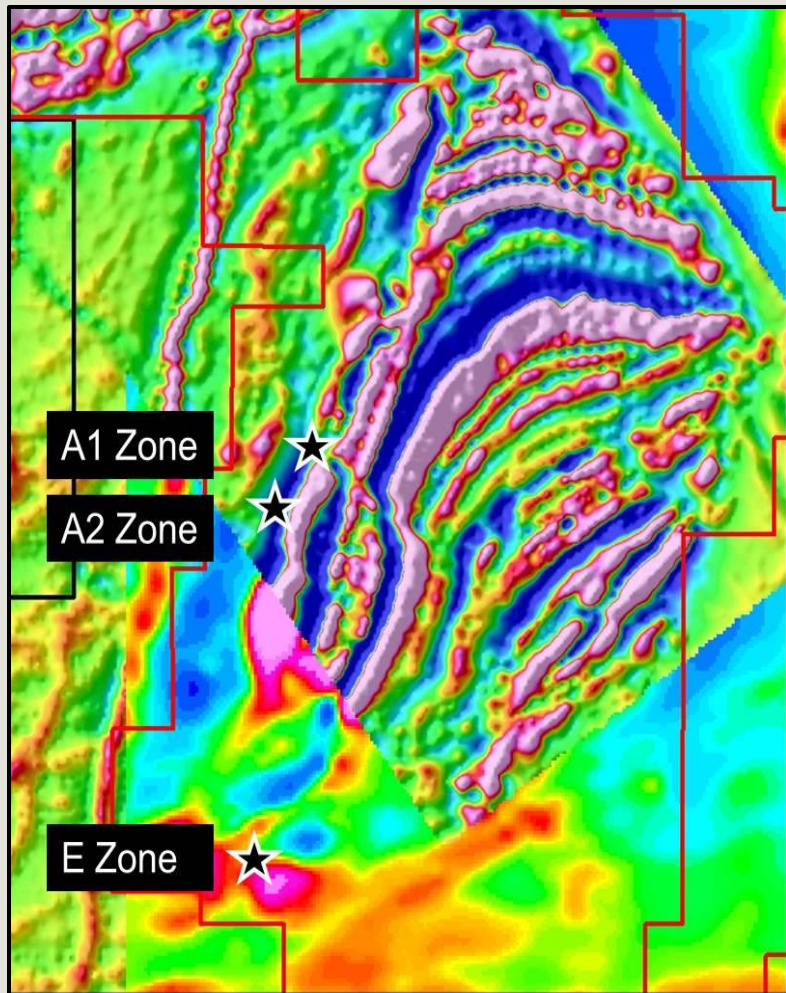
- **Discovered 2000 m east of B4-7 testing a conductor in December 2015**
- **30 DDH totaling 4850 m completed to-date / 40.75 m @ 1.82 g/t Au (up to 5.74 g/t Au over 3.0 m) (NR, April 4, 2016)**



- **Trenched surface expressions of BAM East mineralization**
- **Currently completing a 17 hole, 4000 m program testing the central part of the BAM East zone**



# Wabassi (*Wabassi Resources ULC*)



- Located East of Fort Hope
- Targeting zinc, copper, nickel and platinum group elements and gold
- Great Lake Resources LLC (now Wabassi Resources ULC) purchased the remaining 51% interest in the Wabassi property from Discovery Harbour Resources Corp. for a US\$1,000,000 cash payment
- Recently released a NI 43-101 resource estimate for gold and base metal mineralization
- Completed a Phase 1 DD program in 2016 / 5 hole, 1650 m

Inferred Resource	Cu %	Zn %	Ag g/t	Au g/t	Cu Eq %	NSR Cut-off
1 041 000	1.10	4.21	29.8	0.14	2.78	CAD\$55
1 784 884	0.92	2.67	24.1	0.10	2.04	CAD\$20

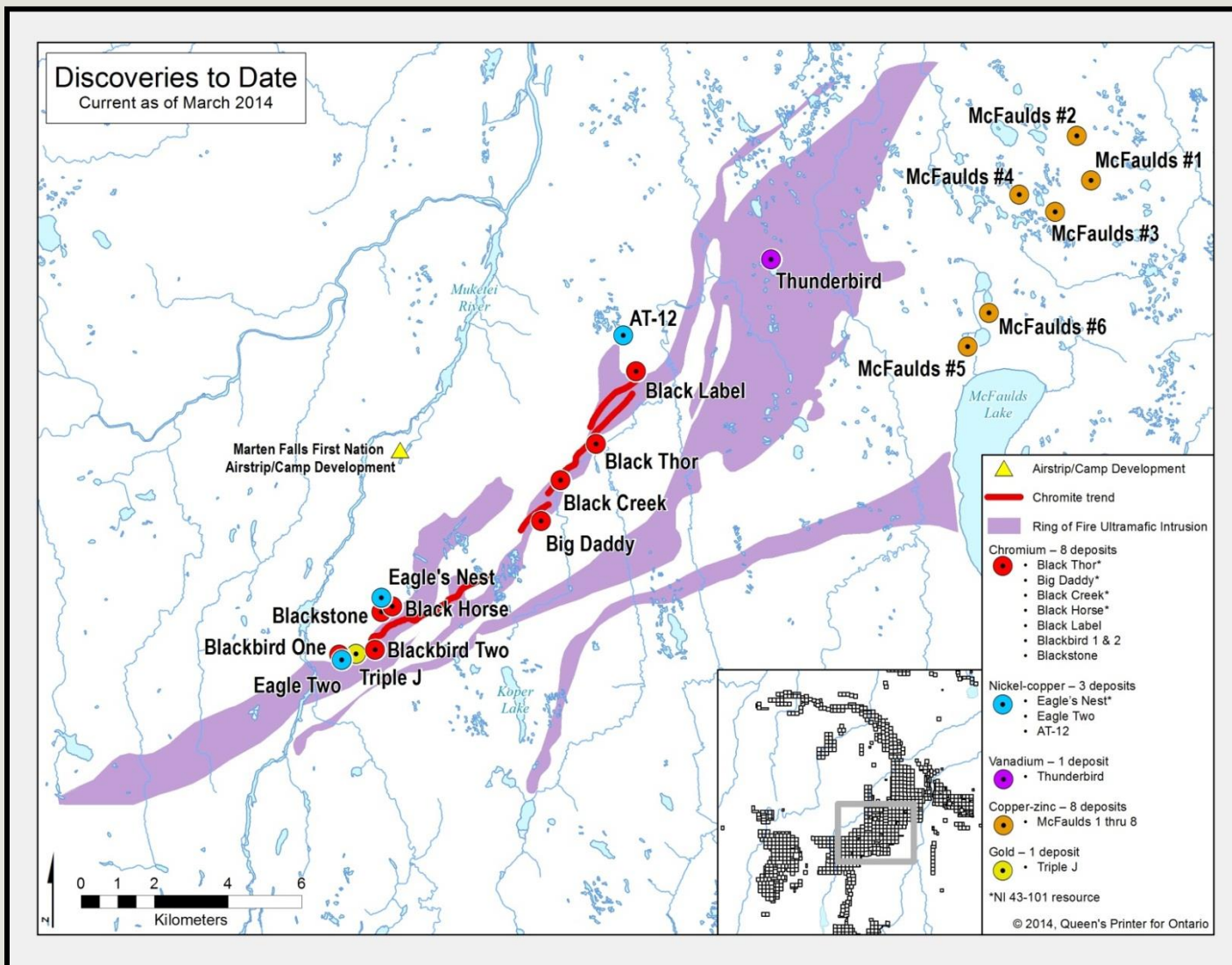


# Ring of Fire Regional Geological Setting

The map illustrates the geological setting of the Ring of Fire region, showing various terranes, basins, and domains. Key features include:

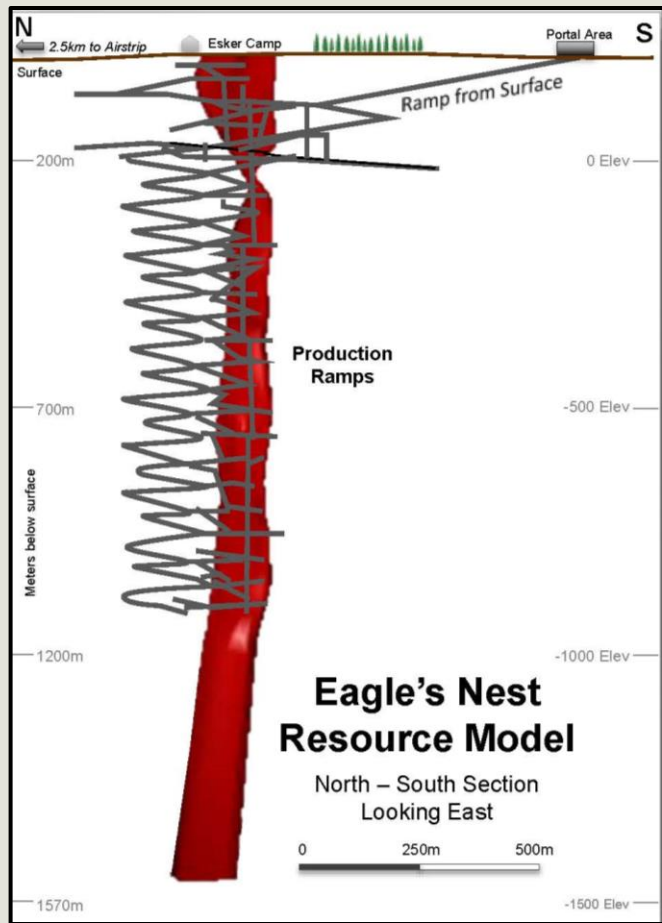
- Terranes and Basins:** Hudson Bay Terrane, North Caribou Terrane, English River Basin, Wawa Abitibi Terrane, Pontiac Basin, and others.
- Domains:** Island Lake Domain, North Caribou Core, Oxford-Stull Domain, Uchi Domain, and others.
- Greenstone Belts:** Indicated by green shaded areas.
- Mineral Deposits/Occurrences:**
  - Chromite Deposits/Occurrences:** Marked with black stars.
  - Ni-Cu-PGE Deposits/Occurrences:** Marked with red stars.
  - Fe-Ti-V Deposits/Occurrences:** Marked with yellow squares.
- Geographic Features:** Lake Winnipeg, Lake Superior, and various rivers and lakes.
- Scale and Orientation:** A scale bar indicates distances up to 250 Kilometres. A north arrow is present in the top right corner.

# Ring of Fire Deposits





# Eagle's Nest (*Noront Resources Ltd.*)



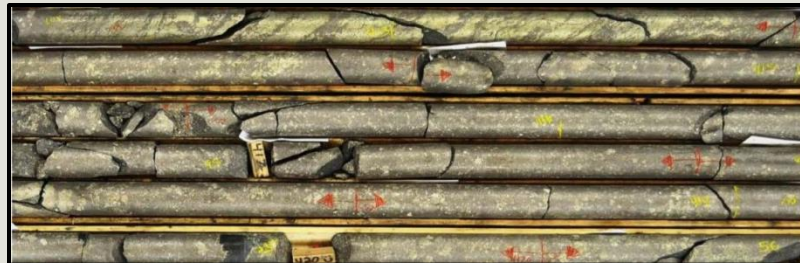
**Proven & Probable Reserve  
11Mt @ 1.7 % Ni, 0.9% Cu,  
4 g/t Pt+Pd**

## 2015:

- Terms of Reference approved by the Federal Ministry of Environment and Climate Change, allowing Noront to proceed with the environmental assessment process
- Acquired Cliff's Ring of Fire properties
- Completed ground IP and UTEM 5 EM surveys

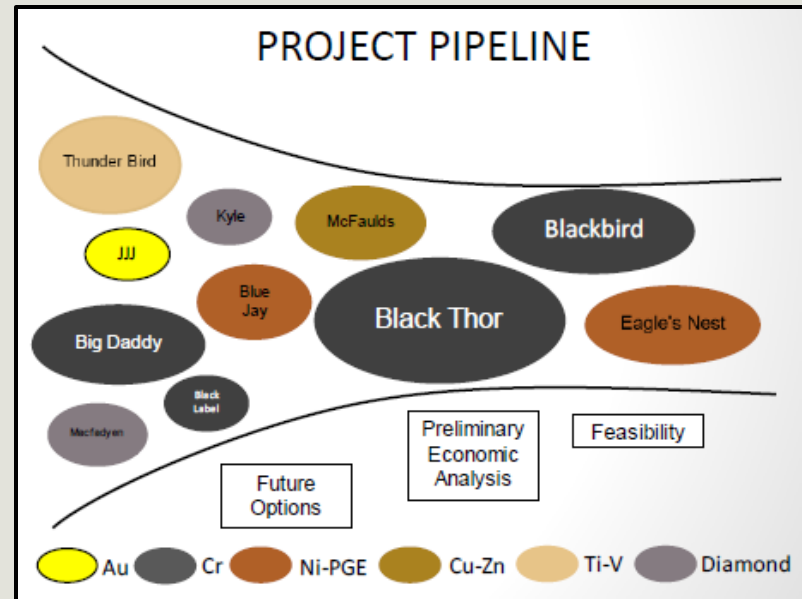
## 2016:

- DD testing of high priority geophysical targets 3 to 10 km from the Eagle's Nest deposit / AT-5, Blue Jay, Eagle Two (along Footwall contact zone)
- Acquired 75% of MacDonald Mines Ring of Fire Properties / Butler (VMS) and Sanderson (Cu. Ni)
- Ongoing discussions with Provincial Government and First Nation communities / shared use access road (Eagle's Nest Mine construction planned for 2018)



# Chromite Assets (Noront Resources Ltd.)

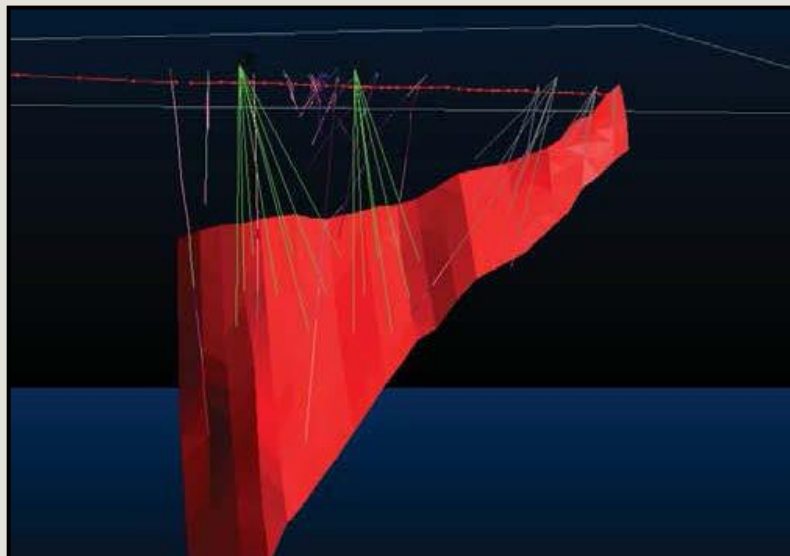
- Noront's chromite assets now include (Cliffs acquisition): **Blackbird (100%), Black Thor (100%), Black Label (100%) and Big Daddy (70%) + McFaulds Lake 1 and 3 deposits (85%)**
- Noront is conducting a strategic analysis of its chromite assets (Blackbird, Black Thor, Black Label and Big Daddy) to evaluate the preferred option for a preliminary economic assessment (PEA)



	Category	Tonnes	Cr <sub>2</sub> O <sub>3</sub> (%)	Cut-off
<b>Black Thor</b>	Measured and Indicated	137 700 000	31.5	20% Cr <sub>2</sub> O <sub>3</sub>
	Inferred	26 800 000	29.3	20% Cr <sub>2</sub> O <sub>3</sub>
<b>Black Label</b>	Measured and Indicated	5 400 000	25.3	20% Cr <sub>2</sub> O <sub>3</sub>
	Inferred	900 000	22.8	20% Cr <sub>2</sub> O <sub>3</sub>
<b>Big Daddy</b>	Measured and Indicated	29 100 000	31.7	20% Cr <sub>2</sub> O <sub>3</sub>
	Inferred	3 400 000	28.1	20% Cr <sub>2</sub> O <sub>3</sub>
<b>Blackbird</b>	Inferred	23 500 000	33.1	30% Cr <sub>2</sub> O <sub>3</sub>
	Measured and Indicated	20 500 000	35.76	30% Cr <sub>2</sub> O <sub>3</sub>



# Koper Lake (Black Horse Project) (*Bold Ventures Inc. / KWG Resources Inc. / Fancamp Exploration Ltd.*)

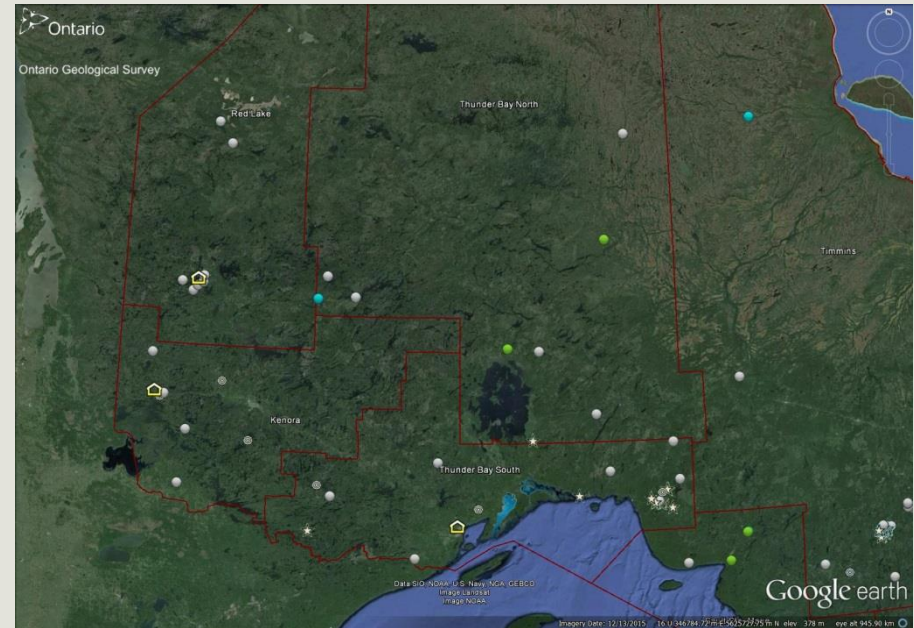


- 2015: KWG acquired the Hornby claims from MacDonald Mines / underlain by the 'Ring of Fire' intrusion, host rock for the chromite deposits
- 2016: KWG and China Railway Group agreement leading to a bankable Feasibility Study / N-S access corridor

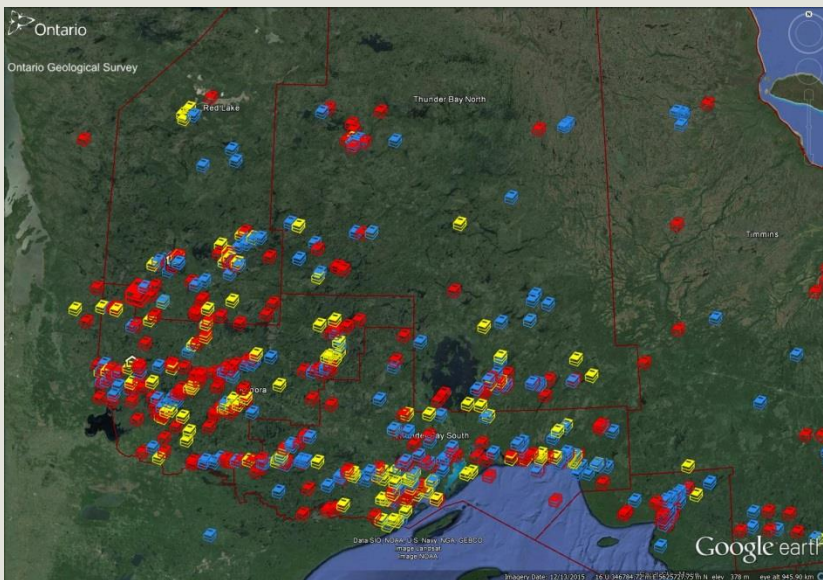
	Category	Tonnes	Cr <sub>2</sub> O <sub>3</sub> (%)	Cut-off
Black Horse	Inferred	85 900 000	34.5	20% Cr <sub>2</sub> O <sub>3</sub>

# OGSEarth – RGP Monthly Reports and Data Holdings

- Monthly activity reports available spatially through OGSEarth
- Assessment file updates
- MDI updates
- Property visit updates



- RGP-OGS theses collection compiled and displayed spatially
- Thesis holdings available in RGP offices (by district)





# Resident Geologist Program Thunder Bay (807) 475-1331

## Information / Questions?



Robert Cundari –  
District Geologist  
Thunder Bay North

Gerry White –  
Regional Resident Geologist  
Thunder Bay North

