

NORTHERN SUPERIOR RESOURCES
TPK Project: Evidence Suggesting A New Gold Camp For Ontario

CIM- THUNDER BAY, FEBRUARY 10<sup>TH</sup>, 2016

T.F. Morris, PhD., FGAC, ICD.D, P.Geo.

TSX.V: SUP WWW.NSUPERIOR.COM



#### SAFE HARBOUR STATEMENT

This presentation includes certain "forward looking statements". Where Northern Superior expresses an expectation or belief as to future events or results, including management plans and objectives, and projections of exploration results, such expectation or belief is expressed in good faith and is believed to have a reasonable basis. While these statements represent our best current judgment, they are subject to risks and uncertainties that could cause actual results to vary, including the risk factors listed in Superior's Annual Information Forms available on the SEDAR website www.sedar.com. Superior does not assume the obligation to update any forward looking statements.

#### **PRESENTATION**



- Who is Northern Superior Resources, the Ti-pa-haa-kaa-ning (TPK) mineral property, its history?
  - **✓** TPK
  - ✓ New Growth
  - ✓ Annex
- Geological/ Structural Settings
- **Exploration:** 
  - ✓ TPK- Gold grain-in-till dispersal aprons

**Gold mineralized boulder trains** 

**Reverse Circulation Drilling and target definition** 

**Core Drilling** 

✓ New Growth- Extension, gold grain-in-till dispersal apron

Mineralized boulders

**Target definition** 

✓ Annex- Gold grain dispersal corridor

**Mineralized boulders** 

**Core drilling** 



# WHO IS NSR (?): Exploring for Gold on the Canadian Shield



- ✓ Junior explorer for Gold, Canadian Shield;
- ✓ Trades on the TSX-V: SUP;
- ✓ Exploration currently focussed on its, Lac Surprise and Wapistan gold properties, Québec;
- ✓ Requires partner(s) to advance the Company's 100% owned Croteau Est, TPK, and Ville Marie properties; and
- ✓ Rapson Bay, Thorne Lake and Meston Lake properties currently involved in litigation with the Ontario Government.

# WHO IS NSR (?): Management



# > Board

- ✓ Alan Moon (Chairman. Audit; Compensation)
- ✓ Arnold Klassen (Audit\*; Corporate Governance and Nominating)
- ✓ Wayne Livingstone (Environment, Health, Safety and CSR\*; Corporate Governance and Nominating)
- ✓ Fred Lecoq (Corporate Governance and Nominating Committee\*, Audit)
- ✓ John Pollesel (Compensation; Environment, Health, Safety and CSR)
- √ Thomas Morris (Management)

\*Denotes Committee Chair

# > Management

- ✓ Thomas Morris PhD, FGAC, PGeo , ICD.D (President and CEO)
- ✓ Dan Rothberg (Corporate Secretary)

# WHO IS NSR (?): Managed Responsibly



As of February 1st, 2016

Share Price: \$ 0.020

Market Cap: \$ 3,791,559

Working Capital (approximate): \$ 1,300,000

Debt: None

Issued and Outstanding Shares: 188,654,889

Options Outstanding: 12,194,567

Warrants Outstanding: 0

Compensation Options Outstanding:

Fully Diluted: 200,849,456

SUP-TSX.V

#### TSX Ven ure 50 Company

Northern Superior Resources was recognized as a TSX Venture 50° company in 2011. TSX Venture 50 is a trade-mark of TSX Inc. and is used under license.



Northern Superior Resources Inc. Awarded The Ontario Business Achievement Award, Icao Award For Corporate Governance, 2011.



Prospector of the Year - 2012

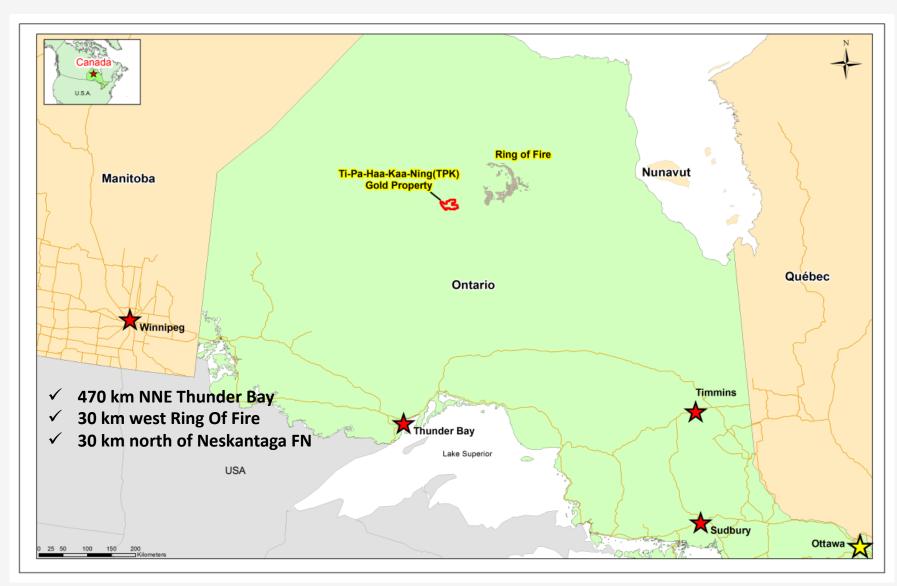






# TI-PA-HAA-KAA-NING (TPK): Mineral Property

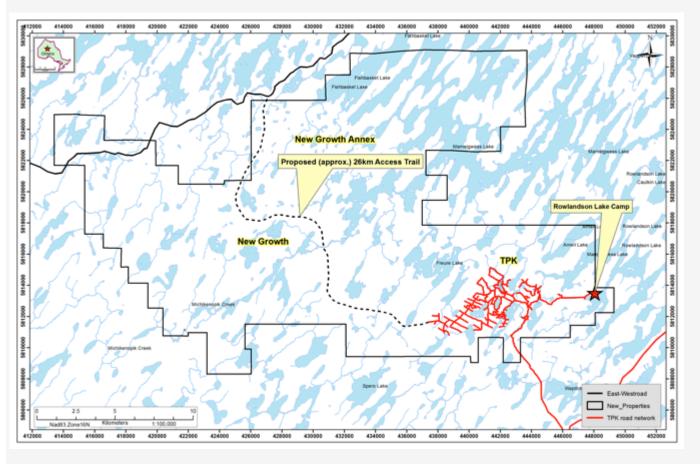




#### **TPK: General Attributes**



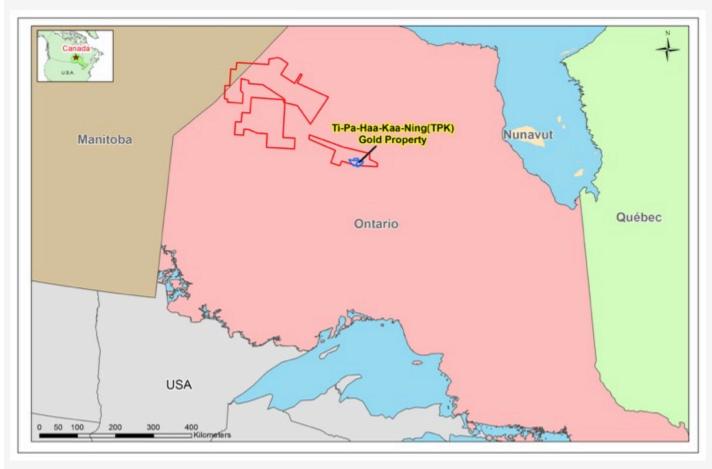
✓ Very large, district- scale, gold-bearing system;



- ✓ New gold- copper- silver greenstone belt;
- Managed under an EEBA with Local First Nation;
- ✓ Established year round camp;
- ✓ Established trail system from camp to TPK part of property;
- ✓ Technical report completed; and
- ✓ Property components?

#### **TPK History: 2002**





- **✓** NSR formerly Superior Diamonds Inc.
- ✓ Regional overburden sampling programs
- ✓ Complete suite of heavy minerals collected -KIMs, Base Metals, Gold
- ✓ Overburden Drilling **Management Limited**importance of continuity/ relationship with an excellent lab

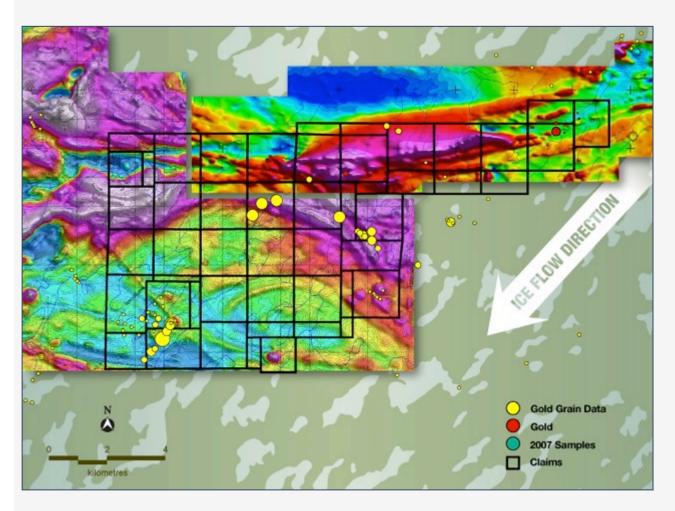
#### **TPK History: The Tool Kit**

- ✓ Overburden sampling (primarily till)
- √ Gold grain morphology
- ✓ ICP/ INA geochemistry
- ✓ Regional, airborne geophysics
- ✓ Ground mag/ IP surveys
- **✓**MMI
- ✓ Prospecting
- ✓ RC Drilling
- ✓ Core drilling



#### **TPK History: 2007**





- ✓ First crack at consolidating the property.
- ✓ This was the precursor to discovery of the "apron."
- ✓ Started building a property around sampling associated with diamond exploration.
- ✓ From this original sampling, something significant had to exist within the area, from gold grains recovered from materials (glaciofluvial) associated with the regional sub-glacial drainage system.

#### **TPK History: 2009- NSR and Neskantaga First Nation**



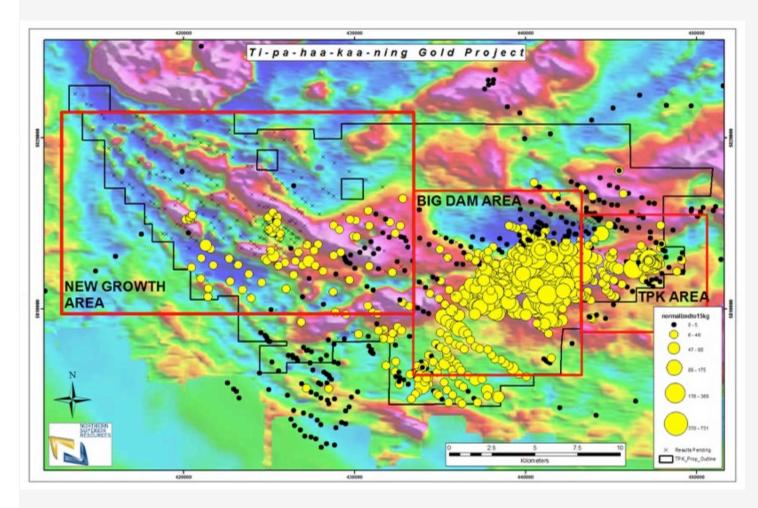
- Program has operated under an Early Economic Development Agreement with Neskantaga since 2009
  - ✓ Comprehensive agreement that ensures:
    - a) clear lines of communication and engagement defined
    - b) identifies opportunities for First Nation employment
    - c) identifies opportunities for First Nation businesses
    - d) foundation for more comprehensive agreements as the project develops





#### **TPK History: 2010**





- ✓ It took:
  - a) three overburden sampling programs; and
  - b) a core drill program
- to fully appreciate the size of the system we were dealing with

# **TPK History: 2010- Why So Long?**





✓ Not just about the geology!



- √ Aboriginal relationships
- √ Establishment of camp, trail system
- √ Fuel storage

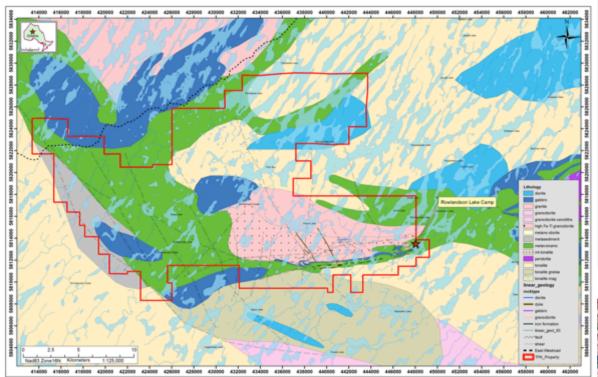
# TPK History: 2010- Why So Long (?)- Logistics a serious issue





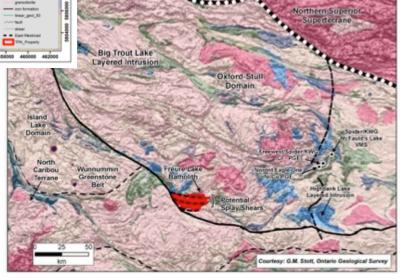
# **TPK: Geological/Structural Setting (2010)**





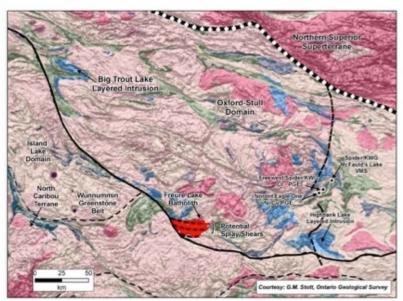
- Geologic Components, 2010:
  - ✓ Freure Lake Batholith
  - ✓ Spero Lake Batholith
  - ✓ Greenstone Belts

- Primary Structural Control:
  - ✓ Gold- receptive splay shears off a major inflection, Stull- Wunnummin Fault.



### **TPK: Geological/ Structural Setting**

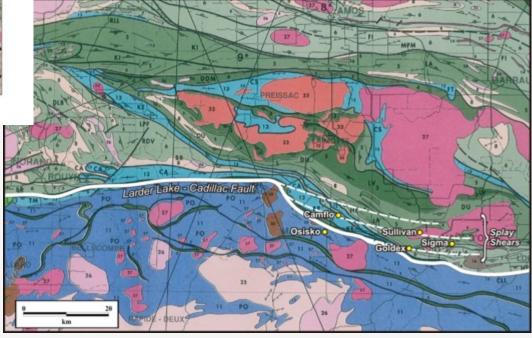




- > Primary Structural Control:
  - ✓ Gold- receptive splay shears off a major inflection, Stull- Wunnummin Fault.

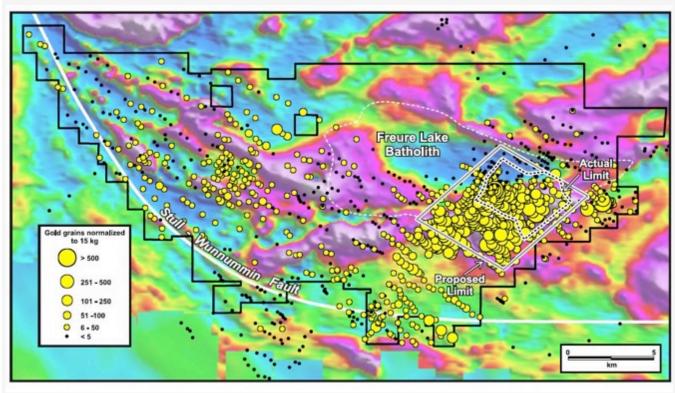
# **➤** Comparable:

✓ Malartic- Val d'Or gold district on splays off major bend, Larder Lake-Cadillac Fault.



#### **TPK: Exploration- Gold Grain-In-Till Dispersal Apron**





#### **Key Characteristics:**

- ✓ Second largest goldbearing shear system in North America, defined primarily by a gold grainin-till dispersal apron, supported by geological mapping, geophysics and drilling;
- ✓ Gold- bearing shear zone/
  apron, 24 km long; and
- ✓ Most gold grains pristine,
   1250 grains from one till sample.

#### **COMPARABLES:**

Meadowbank: 3.5 Moz proven/ probable 1.4 Moz indicated

Meliadine: 2.6 Moz probable 1.5 Moz indicated

Casa Berardi 1.5 Moz proven/ probable 0.8 Moz measured and indicated

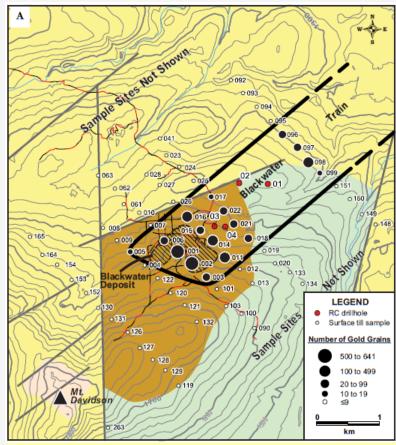
Rainy River 4.4 Moz measured and indicated

#### TPK Exploration: Perspective, Blackwater Deposit, B.C.



- ✓ The Blackwater deposit is large;
- ✓ NI43-101 compliant proven and probable mineral reserve of 8.17 Moz gold and 60.8 Moz silver in 344 Mt grading 0.74 g/t Au and 5.5 g/t Ag (Christie et al. 2014); and
- ✓ Subcrops beneath the till, i.e., the area exposed to glaciation, measures ~300 x 1000 m.

(from Averill, 2015)

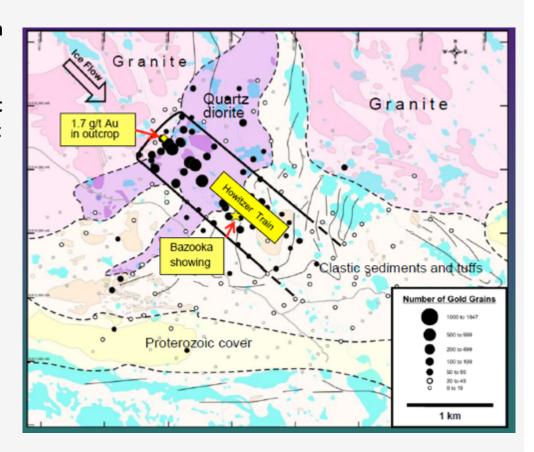


- Sharply defined train ~3 km long x 1.3 km wide
- 10 to 641 gold grains per 10 kg sample vs. background of 0-5 grains

#### TPK Exploration: Perspective, Northquest Property, Pistol Bay, Nunavut



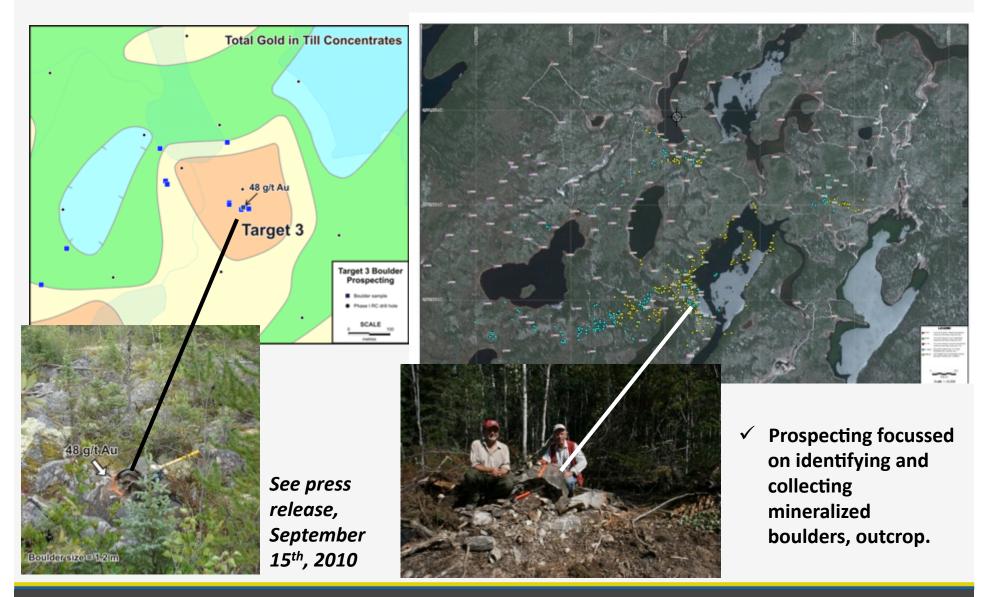
- ✓ Property is still early stage, but the gold grain dispersal train on the property appears to be very similar in size to the known dispersal train from the 8 Moz Blackwater gold deposit in British Columbia and would be detected at the same 300 x 1000-1500 m sample spacing used in the Blackwater survey
- ✓ Nordgold Intends to Make an All-Cash Offer for Northquest Ltd- December 16<sup>th</sup>, 2015:
  - In a depressed market, based on early exploration stage results;
  - To purchase the remaining 50% of Northquest that Nordgold does not own; and
  - Deal worth \$26.9 million dollars.



- Sharply defined train ~3 km long x 1 km wide
- 50 to 1847 gold grains per10 kg sample vs. background of 0-49 grains

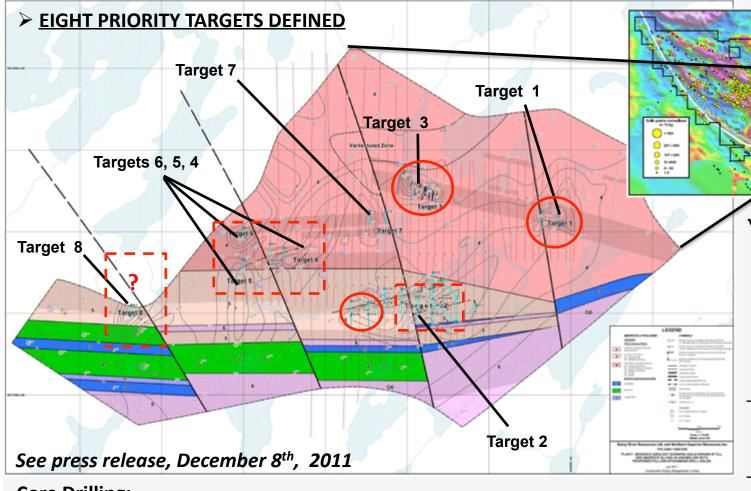
# **TPK Exploration: Mineralized Boulder Trains**





#### **TPK Exploration: Key Targets Defined**





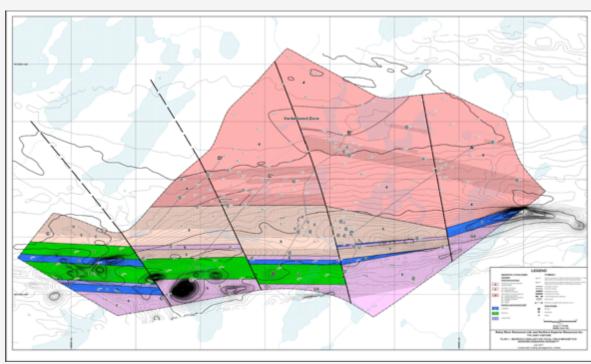
✓ Results from RC drilling provides two pieces of invaluable information in a terrain covered in overburden:

- An accurate bedrock map; and
- Eight excellent drill targets based on the distribution and concentration of gold grains.

- **Core Drilling:**
- ✓ Only two targets drilled, # 1 and 3 and an area west of Target # 2;
- ✓ NONE OF THE PRIMARY TARGETS [ ] HAVE BEEN DRILLED!

#### **TPK Exploration: Bedrock Geology Better Defined**



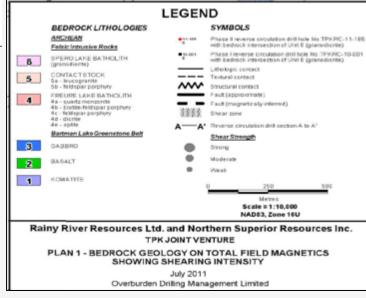


#### **Sheared Leucogranite:**

- ✓ Unlike the sheared granodiorite, significantly altered
- ✓ The principal alteration minerals are sericite, iron sulphides —
  mainly pyrite but locally also pyrrhotite, arsenopyrite and
  fluorite.

#### **BEDROCK GEOLOGY:**

- ✓ Spero Lake Batholith
- ✓ Basalt
- √ Gabbro
- ✓ Freure Lake Batholith
- ✓ Contact Stock
  - leucogranite



#### **TPK Exploration: Core Drilling**



- ✓ Rainy River completed three phases of diamond drilling, 59 holes, 13,458.1m.
- ✓ Tested Targets three and one, both low priority
- ✓ Tested an area west of target two
- ✓ Highlighted by an intersection of 28.75 g/t gold 13.45 m (TPK-10-004, Target 3)

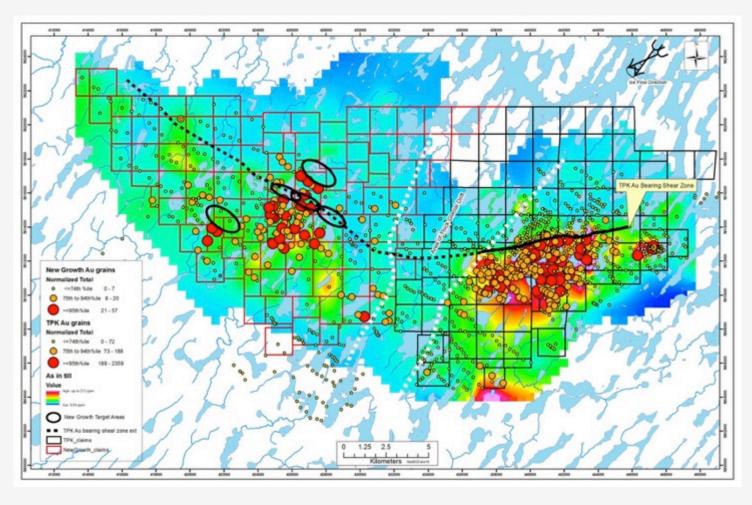


TPK-10-004, Target 3

#### **TPK Exploration- New Growth**

# NORTHERN SUPERIOR RESOURCES

#### **Gold- bearing shear-zone extension- Gold Targets**

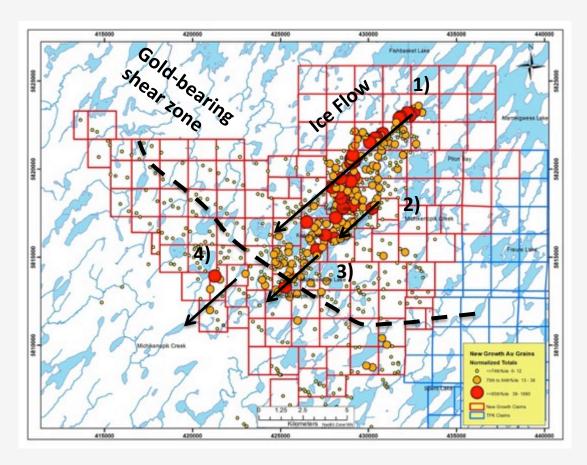


Based on: a) distribution of anomalous gold grains recovered from locally derived tills;

- b) distribution of anomalous till Arsenic (As) values; and
- c) interpretation of structure from a high-resolution airborne magnetics survey (2011).

#### **TPK Exploration- New Growth: Gold Grain Dispersal Corridor**





- Keeley Lake Gold Grain Dispersal Corridor
- ✓ Minimum width 3.5 km
- ✓ Two source areas:
  - 1) New Growth Annex
  - 2, 3, 4) New Growth
- Gold Grain Source?
- ✓ New Growth- Multiple Shears?
- ✓ Annex- Greenstone Belt

#### **TPK Exploration- New Growth: Prospecting**



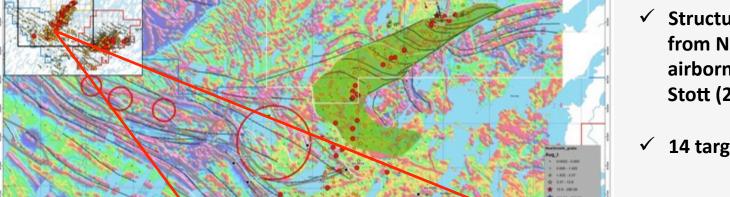


#### **Boulder Recovered:**

- √ 30+cm wide bornite -chalcopyrite bearing quartz vein hosted in a moderately to strongly sheared monzonite boulder with dimensions approximately 2.0m x 1.5m x 1.5m;
- ✓ The quartz vein returned values of 12.60 g/t gold, 111 g/t silver, and 4.05% copper; and
- ✓ The size and tabular shape of the boulder suggests that it was transported a short distance by glacial ice, and therefore recovered relatively proximal to the up-ice bedrock source.

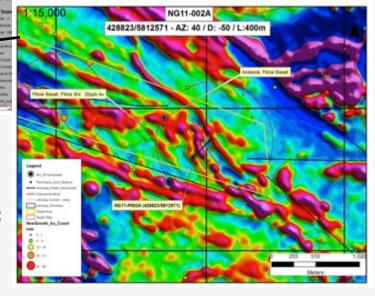
#### **TPK Exploration- New Growth: Key Targets Defined**





- ✓ Structural interpretation from NSR's high resolution airborne magnetic data by Stott (2011); and
- √ 14 targets selected.

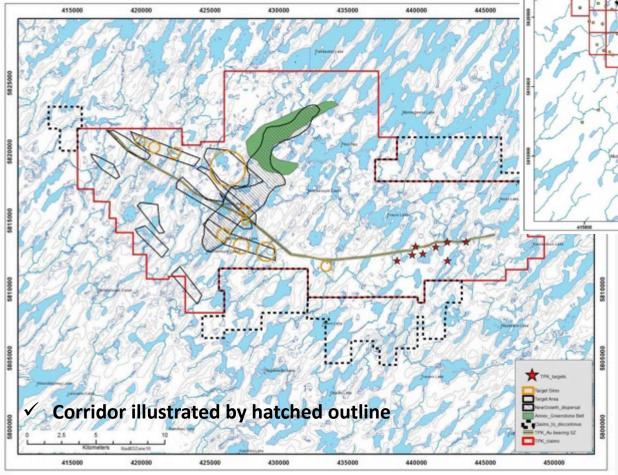
- ✓ Target NG11-002A within a greenstone belt, within 2km from the Stull- Wunnummin Fault;
- ✓ Areas of structural dislocations:
- ✓ Right-handed extensional bend, hydrothermal fluids invasion;
- ✓ Proximity of targets to iron-formation; and
- ✓ 20ppb Au recovered from brecciated basalt outcrop 500m NW of NG



#### **TPK Exploration- Annex**



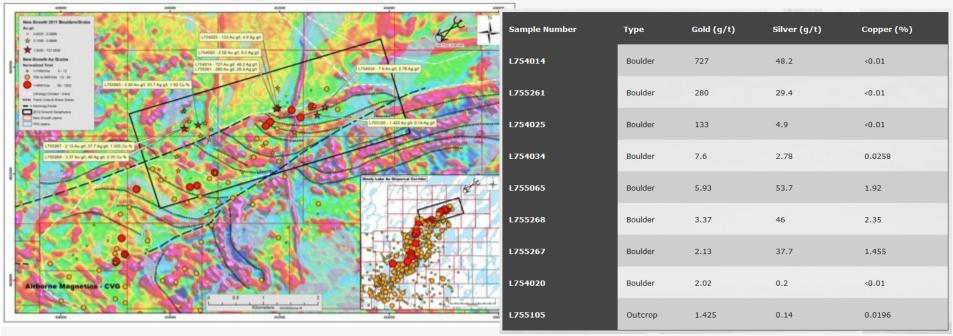
✓ Keely Lake gold grain dispersal corridor (up to 3.5km wide, 10km in length)



 ✓ Corridor illustrated by anomalous proportional circles (larger circles).

#### **TPK Exploration- Annex Prospecting and Key Targets**



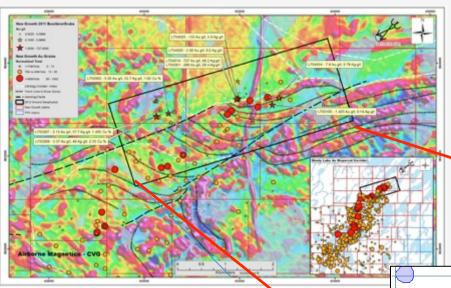


- ✓ Boulders (100) recovered on the margins, within, and down-ice of a faulted and sheared greenstone belt that measures at least 7 km long by 2 km wide;
- √ 83 boulder samples anomalous in gold (>0.005 g/t), 24 of those
  assayed between 0.1 and 1.0 g/t, 9 of those samples over 1g/t; and
- ✓ Several high quality targets defined from geophysics, distribution and concentration of gold grains and mineralized boulders, limited (7 holes, 2,241m) core drilling.



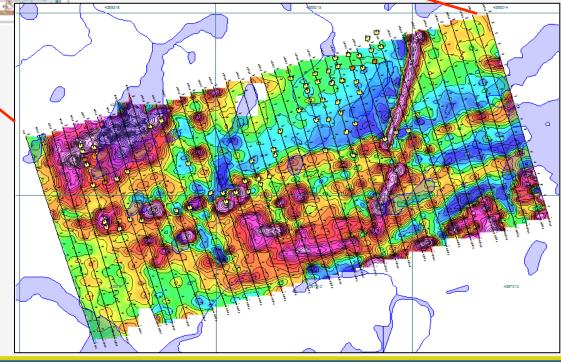
#### **TPK Exploration- Annex Geophysics, Ground Magnetic Survey**





✓ In addition to the airborne TMI survey Northern Superior completed a ground Spectral IP/ Resistivity and Magnetic Surveys in the winter of 2012 over the head of the gold-grain dispersal corridor and interpreted extent of the greenstone belt

- ✓ IP anomaly centres over magnetics
- √ 76.3 line-kms (Mag); 50m station spacing
- √ 36.3 line-kms (IP/RES), 50m station spacing;

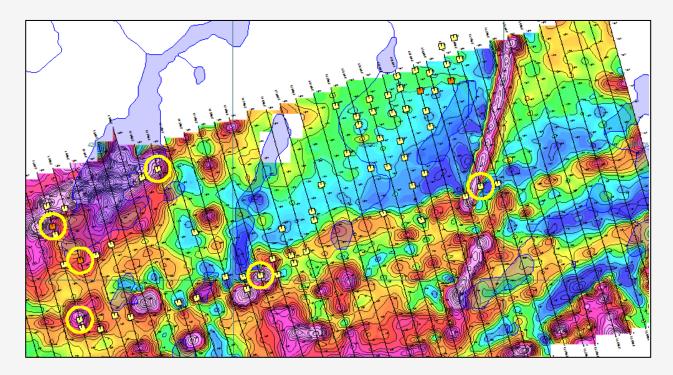


#### **TPK Exploration- Annex Geophysics, Targets Defined**



Based on favourable setting with respect to the boulder/grab and gold grain-in-till results obtained from Northern Superior in the fall of 2011, IP anomaly amplitude, clarity, quality and spectral signature, the following IP targets are suggested (JVX Ltd., 2012,);

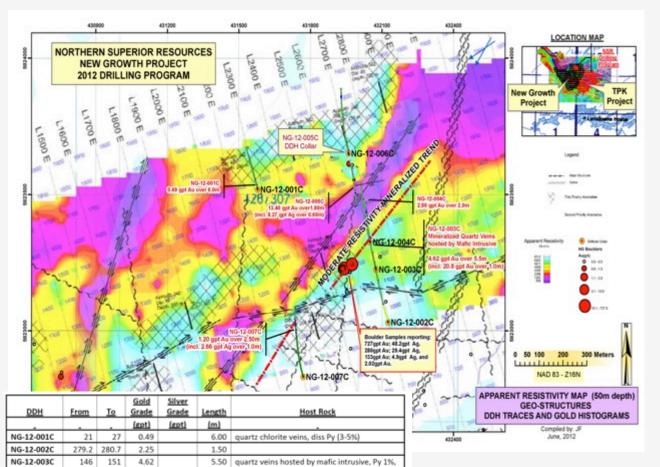
- ✓ Three targets along the magnetic zone boundary that includes the head of the Keely Lake dispersal corridor.
- ✓ Three targets around the magnetic high in the northwest part of the grid.



Magnetics with circled IP targets, New Growth Annex, JVX Ltd., 2012

#### **TPK Exploration: Annex Core Drilling**





#### **2012 Diamond Drill Program**

- ✓ Seven holes completed,2,241 m of drilling; and
- ✓ Grades up to 4.62 g/t gold over 5.5 m including 20.8 g/t gold over 1.0 m.

See press release June 26th, 2012

NG-12-004C

NG-12-005C

NG-12-006C

NG-12-007C

145.6 146.6

224 229.1

224

162.3 164.2

162.3 162.9

267.6

267.6

372.5 374.5

226

137

270.1

268.6

20.80

1.31

2.80

13.40

0.84

0.54

1.00

5.10

2.00

1.90

2.50

1.00

1.70 2%

0.60

8.27

2.66

quartz carb chlorite vein, Py 5-7%

bands of magnetite and Py

quartz veins hosted by quartz diorite, Py 3-8%.

quartz chlorite veins hosted by a milonite, Py

2.00 quartz calcite/chlorite veins hosted by quartz diorite, Py 2%, As 1%, Po 1%

# NORTHERN SUPERIOR'S TPK PROJECT:



**MOVING FORWARD......** 

- 1) Have to believe that the Government/ First Nation Issues are going to eventually get resolved
- 2) All the heavy lifting for this project has been done- three exceptional areas defined on this property all with drill ready targets
- 3) Given the current political and economic environment, is now not the time to take advantage of this exceptional opportunity?