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Technical Analysis - GSL Zinc Project: A Sedex/MVT-Type Zinc-Lead Target

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Summary of the GSL Zinc Project

- 60,000 hectares in NW Alberta along Mackenzie Highway.
- Property is in the source region of a 4,000 km2 sphalerite (zinc sulphide) in till anomaly.
- We believe that this world class dispersion train must have orginated from a very large source.
- Source of anomaly thought to be a stratiform SEDEX (SEDimentary EXhalative) deposit in Upper Cretaceous (circa 80M years old) bituminous shales that subcrop beneath overburden.
- Property is well located with road and rail infrastructure crossing the claims.
- Ample work force available at the town of High Level, 80km to south, and adjacent to Dene Tha' First Nation commmunities.

What are SEDEX deposits?

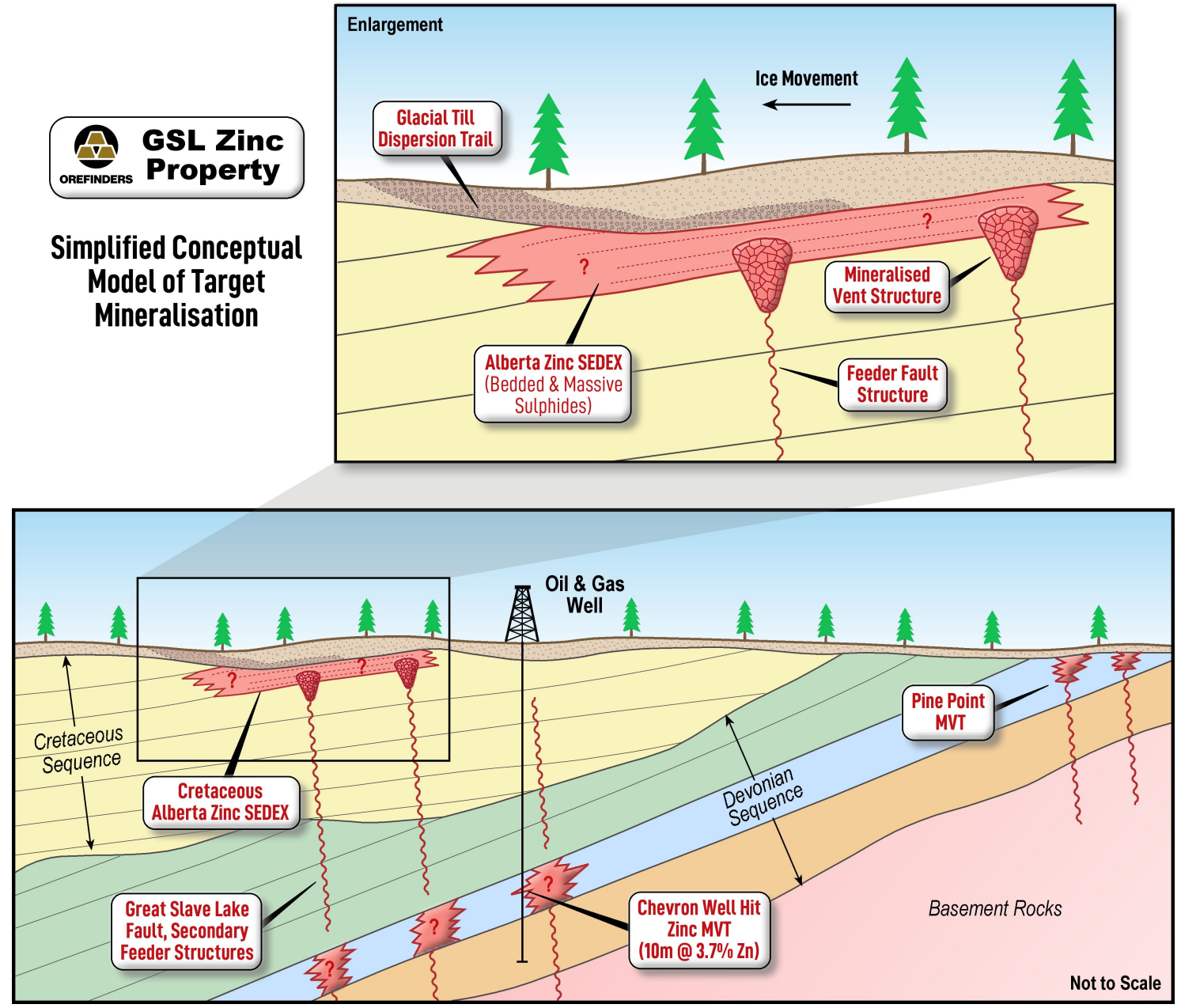
- These deposits are very similar to VMS but are instead products of dewatering and metamorphisms of thick piles of accumulated **sediments** in ocean basins
- The **exhalative** portion of the name refers to the venting of hydrothermal solutions into submarine environment.
- The vicinity to oil discoveries is not uncommon considering the accumulated sediments in ocean basins.
- Formed through hydrothermal vents, SEDEX deposits form deep under the ocean. These hot, saline fluids percolate through several kilometers of sediments and crystalline rocks, picking up metals along the way. As the metal-rich hydrothermal fluids hit the cool sea water, they precipitate material onto the sea floor at and near the vents. Metal-rich minerals are deposited between layers of fine-grained mud, sand and silt at the bottom of the ocean.
- More than half of the world's zinc and lead has come from the SEDEX deposits like Mt Isa in Australia, Red Dog in Alaska and the former Sullivan mine in Canada.

Direct Exploration Evidence

- A till sampling survey carried out by the government in 2000's looking for kimberlite indicators instead discovered a 4,000 km2 Sphalerite (a zinc sulphide containing mineral) in till anomaly.
- The known glacial transport direction suggests that the source of the sphalerite in till anomaly is located in the vicinity of the property, immediately to the north of the GSLSZ (see red star in previous slide).
- The bedrock source of the sphalerite till anomaly is of the same age or younger than the Cretaceous rock sequences that subcrop in the area.
- We suspect, from the existence of the MVT Missisippi Valley Type mineralization in the Devonian carbonates (i.e. 3.7% of Zn over 10.0m) that the GSLSZ was actively moving mineralizing fluids up to surface at some time in the past.
- There is good evidence in the Pine Point district, that a first mineralizing event occurred in the late Devonian (the age of PP mineralization) and that a second thermal event, which peaked in the late Cretaceous, was recorded in rocks around Pine Point and elsewhere in Northern Alberta. We suggest that this event is the right age for a SEDEX mineralizing event on the Alberta Zinc Property.
- During the late Cretaceous the property was submerged in a shallow restricted sea to the east of the Rocky Mountains. We think that the thermal event could have produced a deposit on or near the property and the deposit would have been subsequently partly eroded and dispersed by land glaciers during the Quaternary.

GSL Zinc Property

Simplified Conceptual Model of Target Mineralisation



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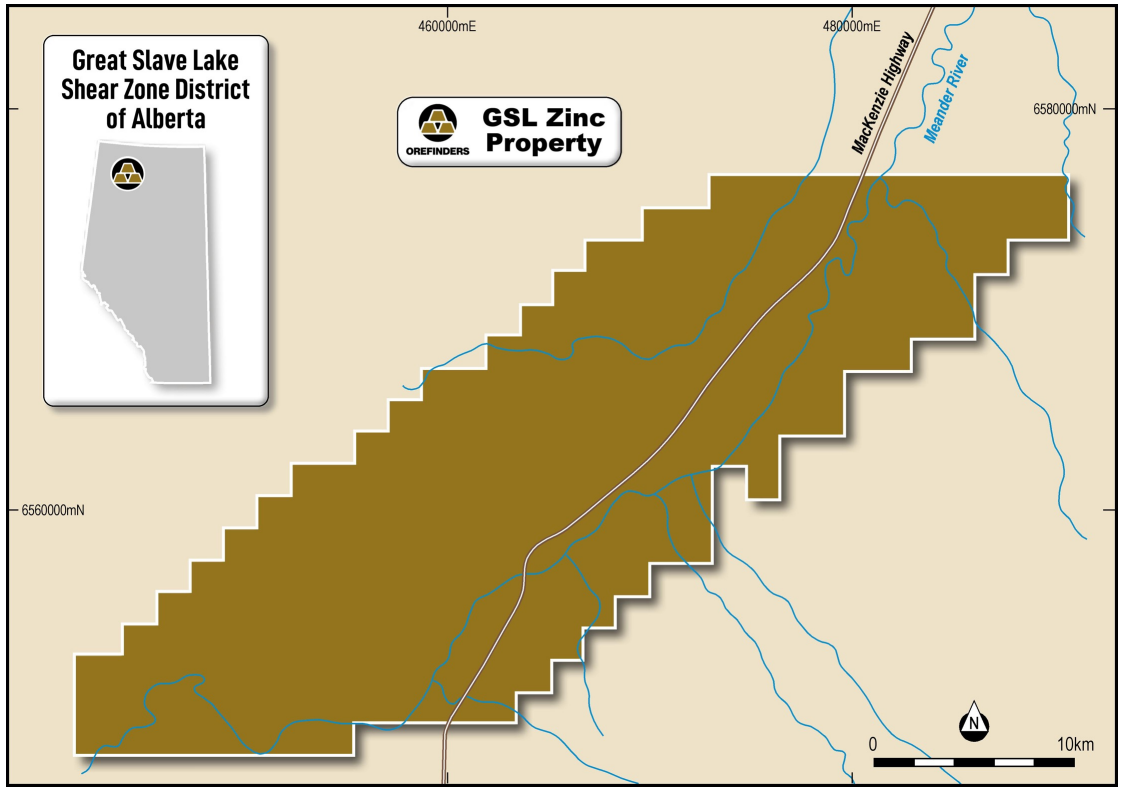
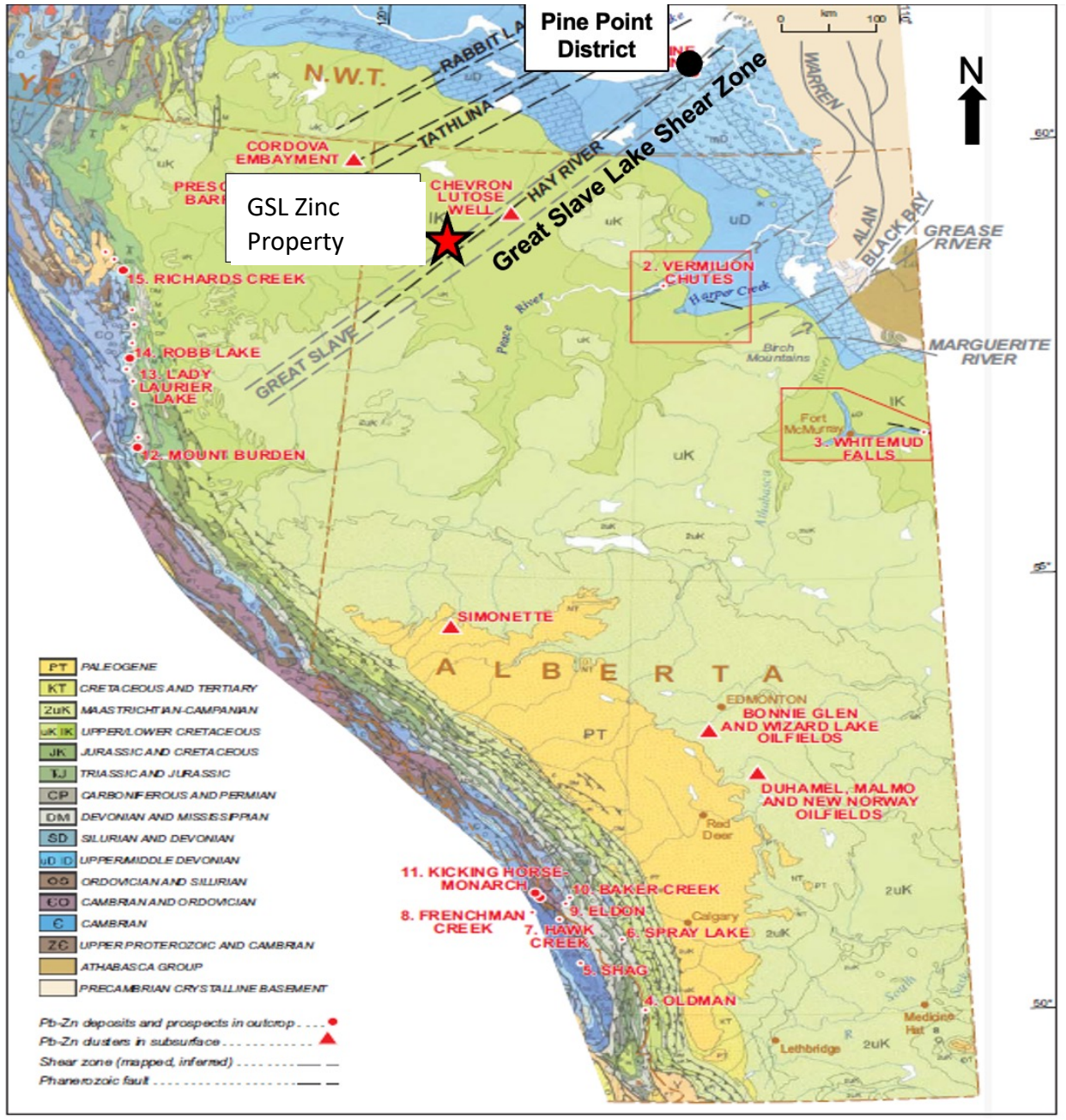
Property is located along Great Slave Lake Shear Zone in Western Canada Sedimentary Basin. The area of the property is covered by extensive till sheets with few outcrops.



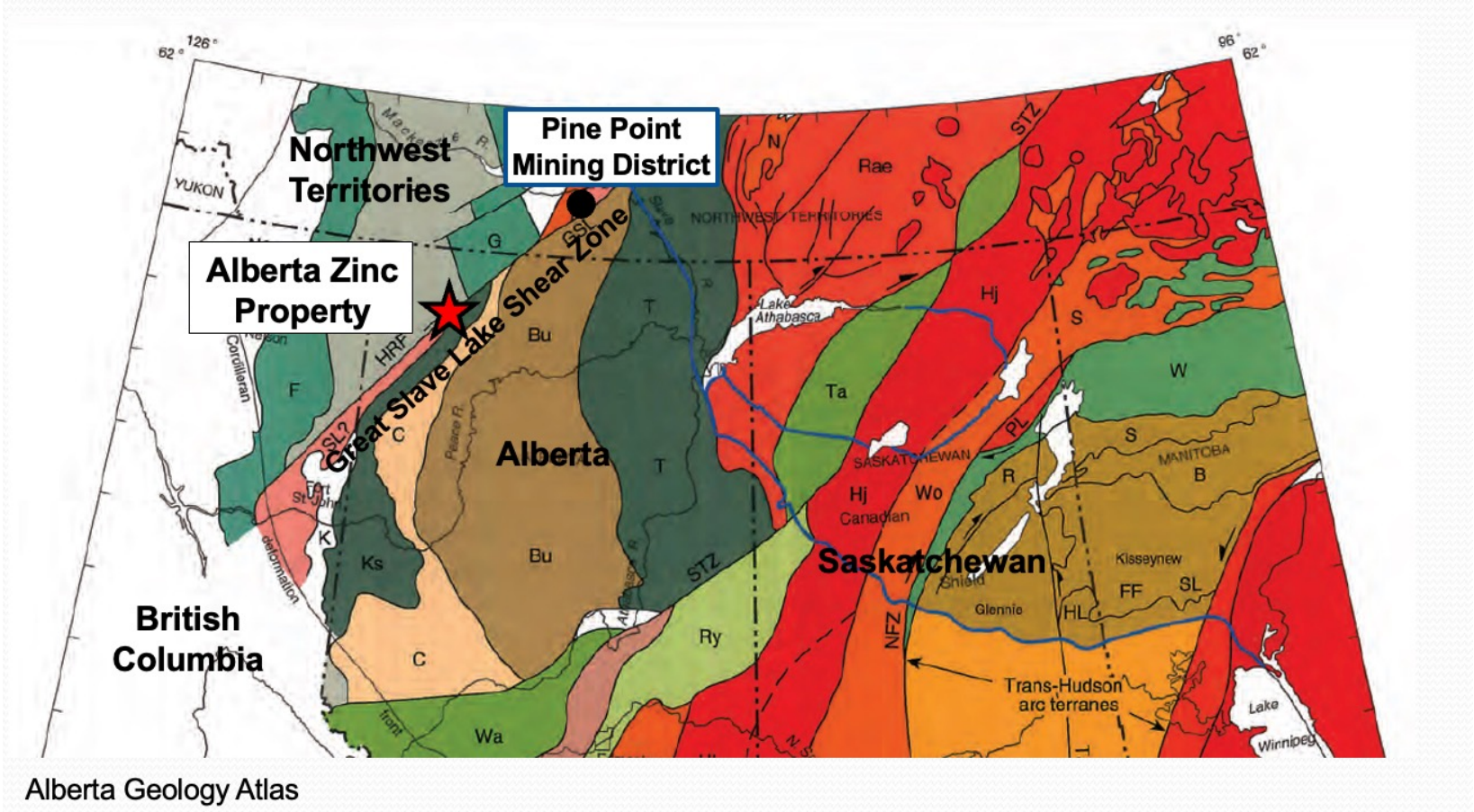


(From Pana, 2006)

Target and Model

- The property is underlain by sedimentary sequences of the Western Canada Sedimentary Basin (WCSB) with rocks of the Cretaceous, formed 80M years ago (shale and sandstone), and Devonian (MVT), formed 370M ago (limestone and dolomite), at depth.
- The Sedex-type mineralization in the Cretaceous shale sequence we are targeting is believed to be immediately beneath the glacial overburden at depth of between 20 and 50m.
- The Devonian sequence is stratigraphically equivalent to the Pine Point District (65M Tonnes of 8.5% Zn and 1.5% Pb) stratigraphy and for Alberta Zinc is located at depth (does not outcrop like Pine Point, see slide 11).
- Devonian-aged Mississipi Valley Type (MVT) zinc-lead mineralization similar to Pine Point is present on the property in Devonian dolomite grading 3.7% Zn/10m @ 1250m depth. There is evidence to suggest that this mineralization represents the same event as Pine Point but because it is located at great depth its economic potential is limited. The Upper Cretaceous sequence is absent at Pine Point and may have been eroded whilst it is still in place on the Alberta Zinc project.
- We believe that that the 1250m deep find of 3.7% over 10m confirms the area of the Alberta Zinc Property is on the extension of the Pine Point District. Moreover, the presence nearby of the GSLSZ fault provided the major pathway for Zn-Pb rich fluids to reach the surface hence why we think that the much younger Upper Cretaceous event has some very interesting potential.

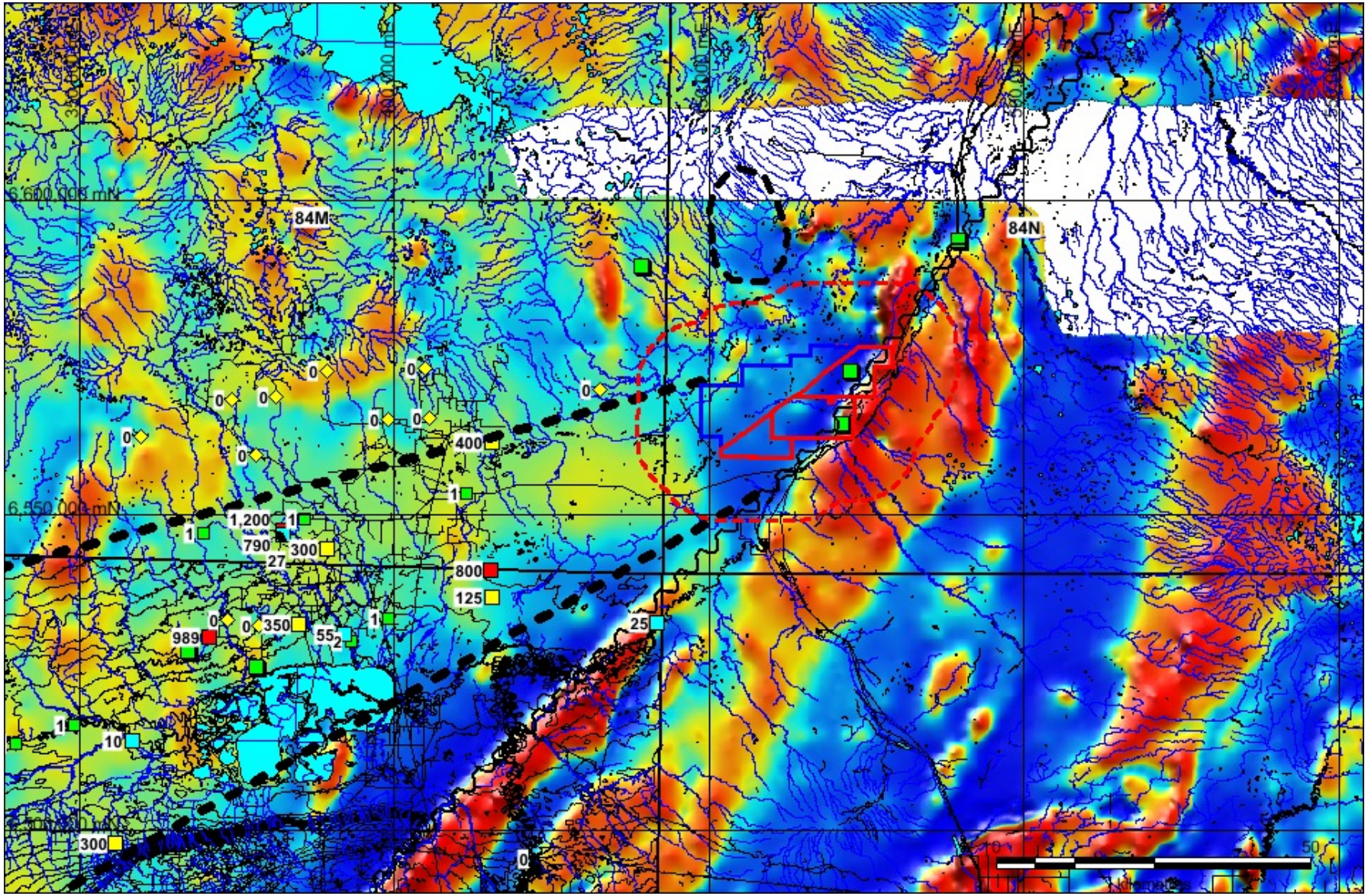
Location of Property and Regional Tectonics



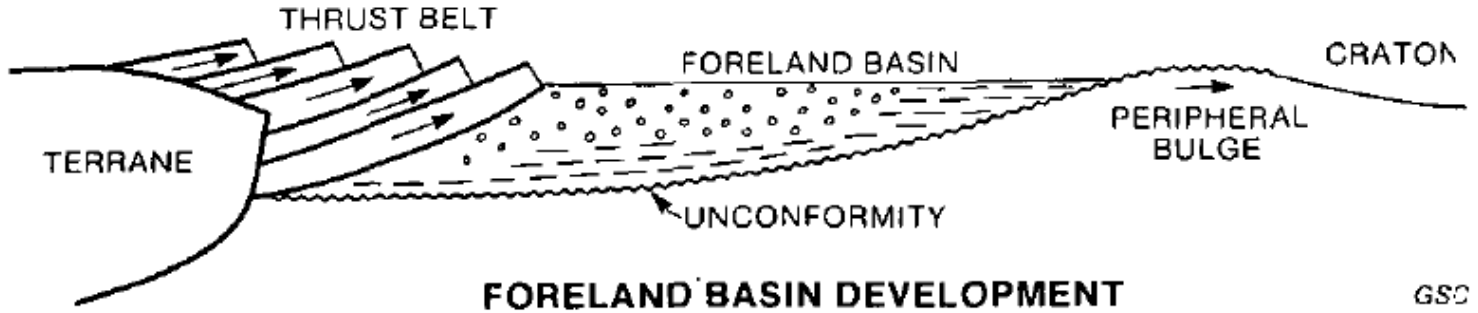
Alberta Geology Atlas

- Property located over Great Slave Lake Shear Zone (GSLSZ), a major crustal discontinuity beneath the Western Canada Sedimentary Basin.
- World-Class Pine Point MVT District also located along GSLSZ.
- We believe the association is not fortuitous but related to the interpretation that the GSLSZ provided the major pathway for Zn-Pb rich fluids to reach the surface.

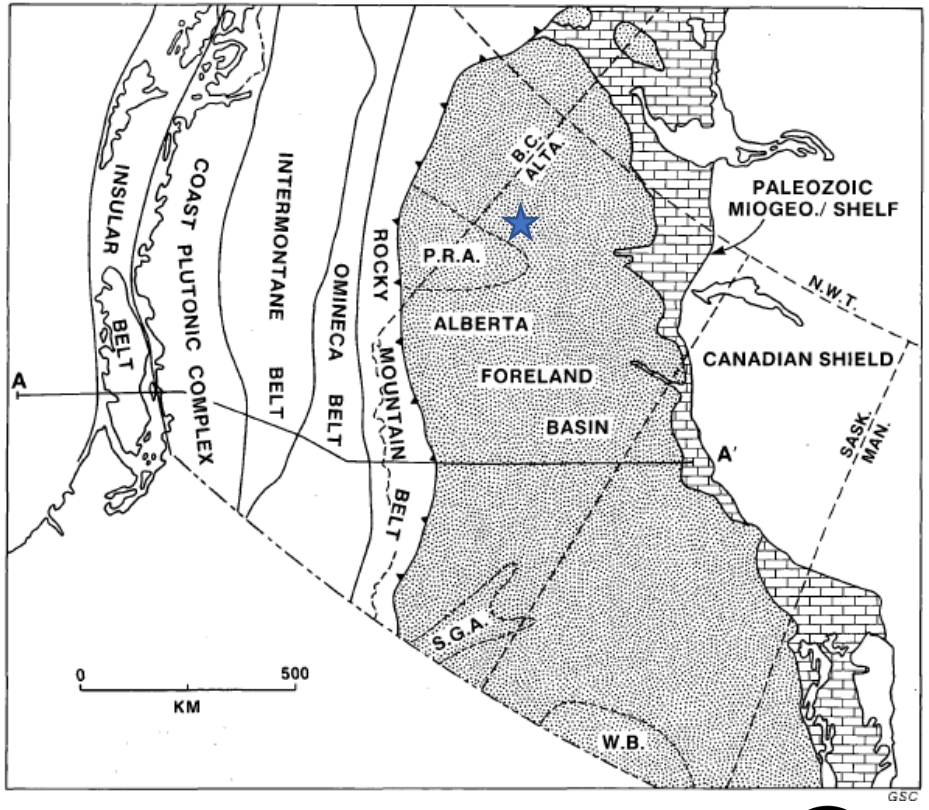
Airborne Magnetics 1VD

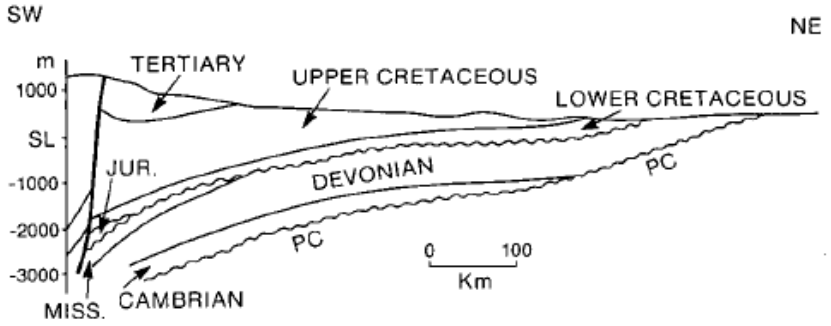


Stratigraphic Model



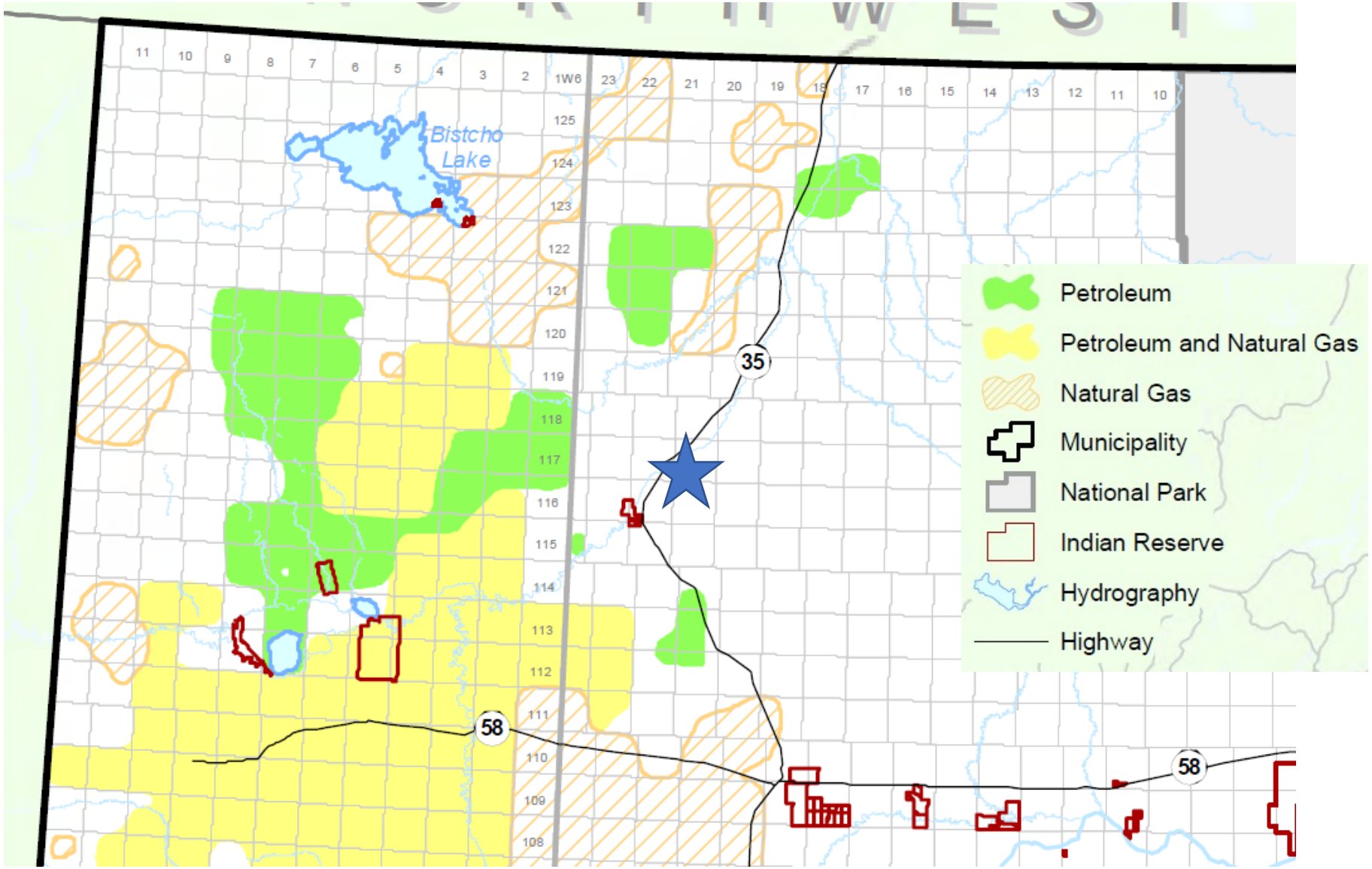
FORELAND BASIN DEVELOPMENT GSC





CROSS-SECTION OF ALBERTA BASIN GSC

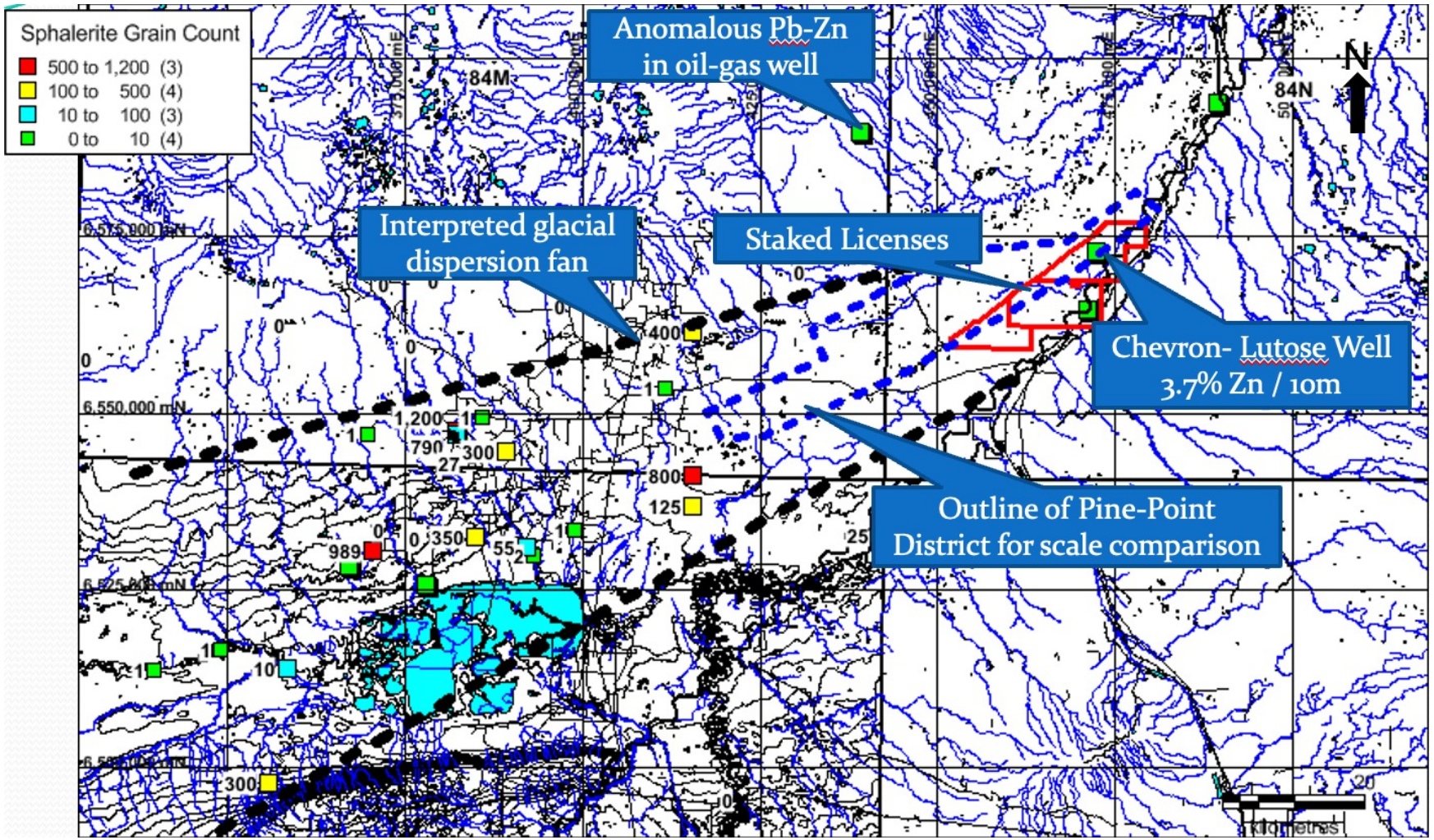
Oil and Gas Fields



Mineralized Dolomite in Chevron-Lutose Well (16-34-118-21W5)

Figure 22. Sulphide-cemented carbonate breccia in core from northern Alberta. **a.** Sphalerite, pyrite and minor galena in brecciated Keg River Formation from drillhole 16-34-118-21W5, above the magnetic trace of the Great Slave Shear Zone. **b.** Pyrite- (and sphalerite?) cemented carbonate breccia from the Jean Marie Formation in the depth interval 252–267 m in drillhole 04-03-100-07W5, north of Birch Mountains.

Zinc-Lead Dispersion Train Comparable in size to Pine Point District



Property is located up ice from regional sphalerite in till anomaly

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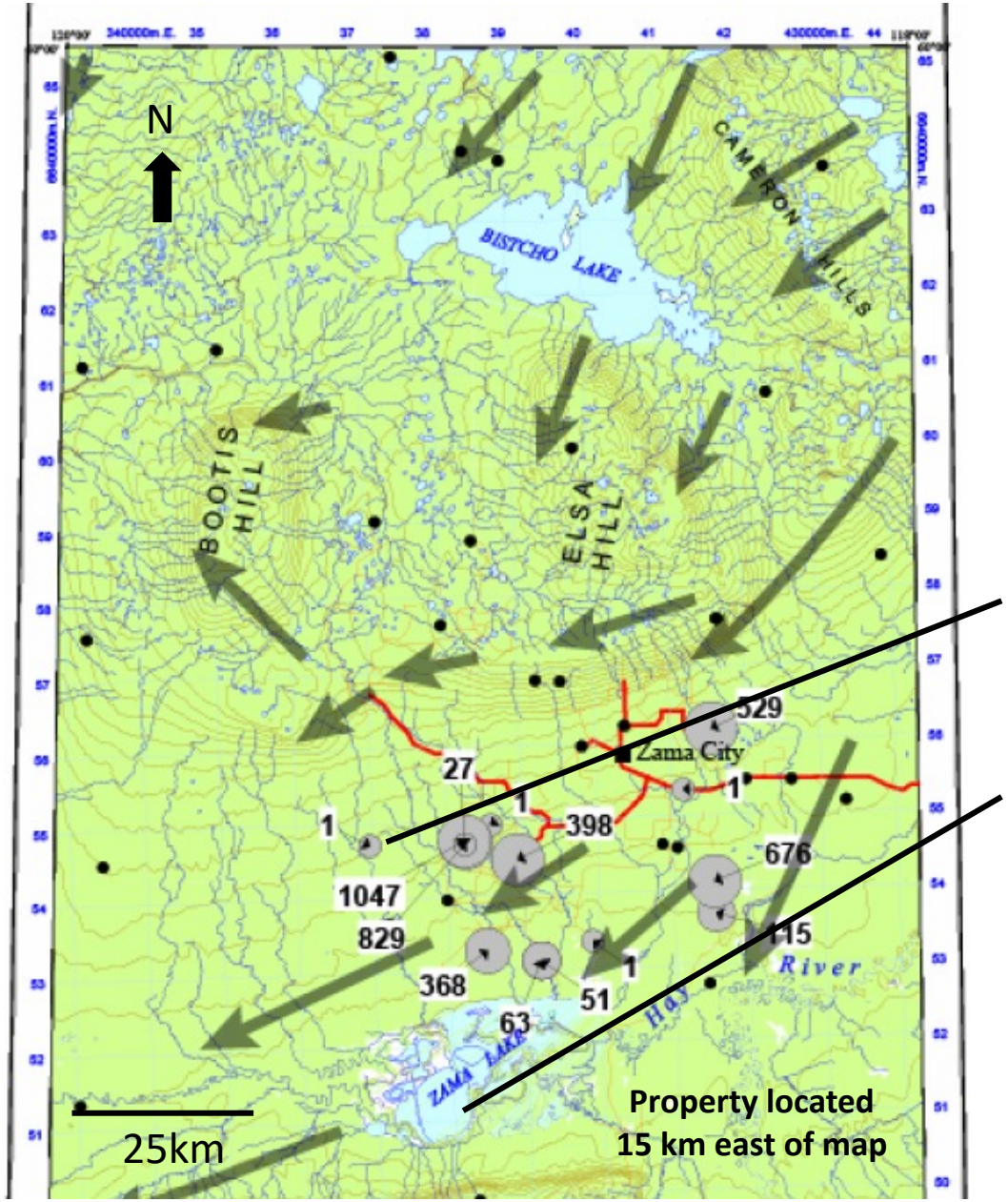
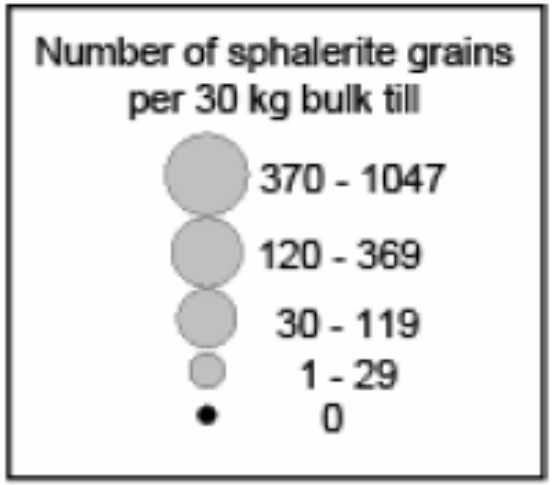
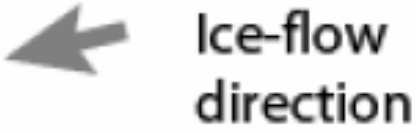


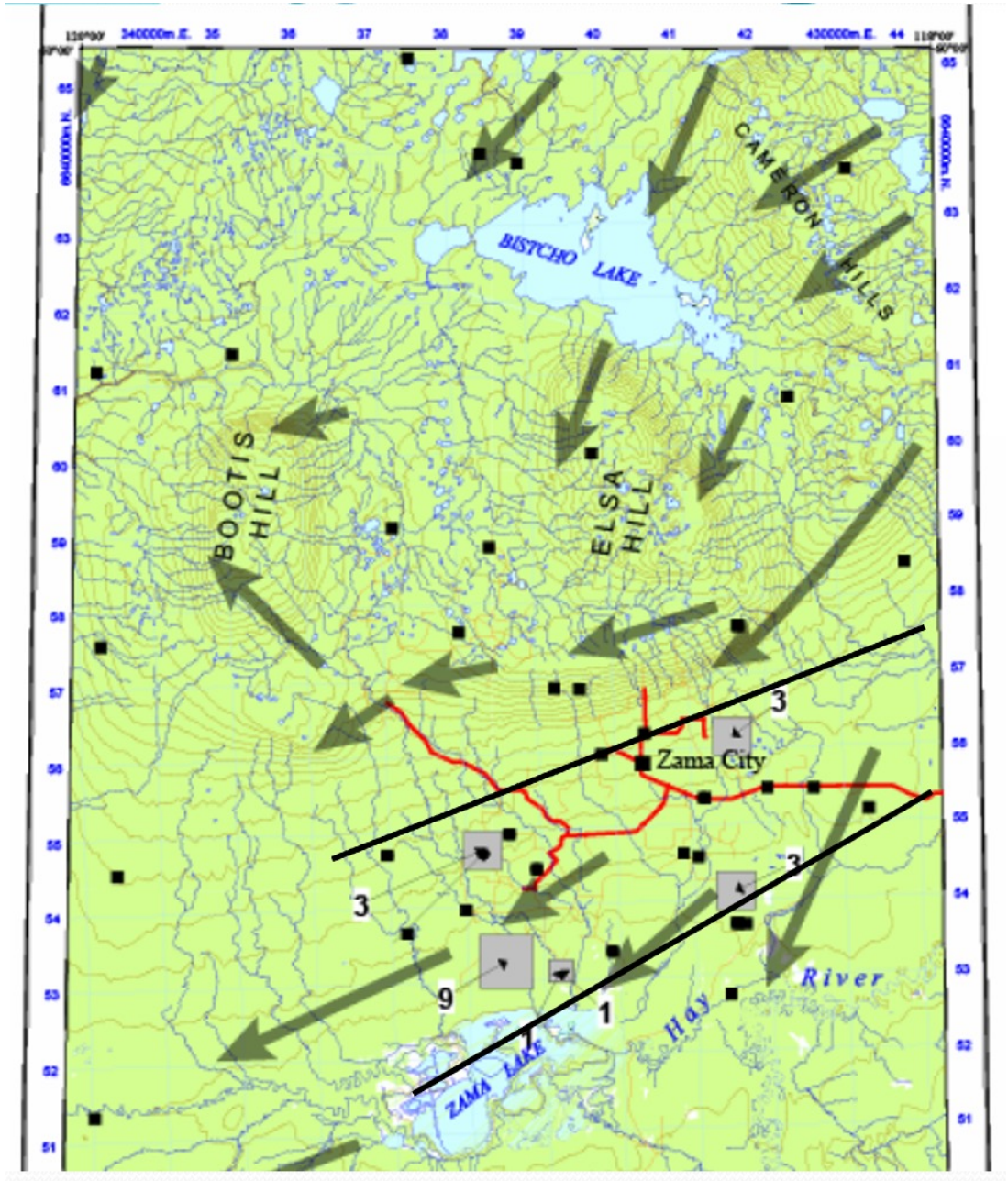




Sphalerite Grain Count per 30kg of Till and Dispersion Fan

From OF-5545

Sphalerite indicator mineral train discovered by GSC-AGS while searching for kimberlite indicator minerals (Alberta Zinc property is about 20km east of the map)



Number of galena grains per 30 kg bulk till

9

3

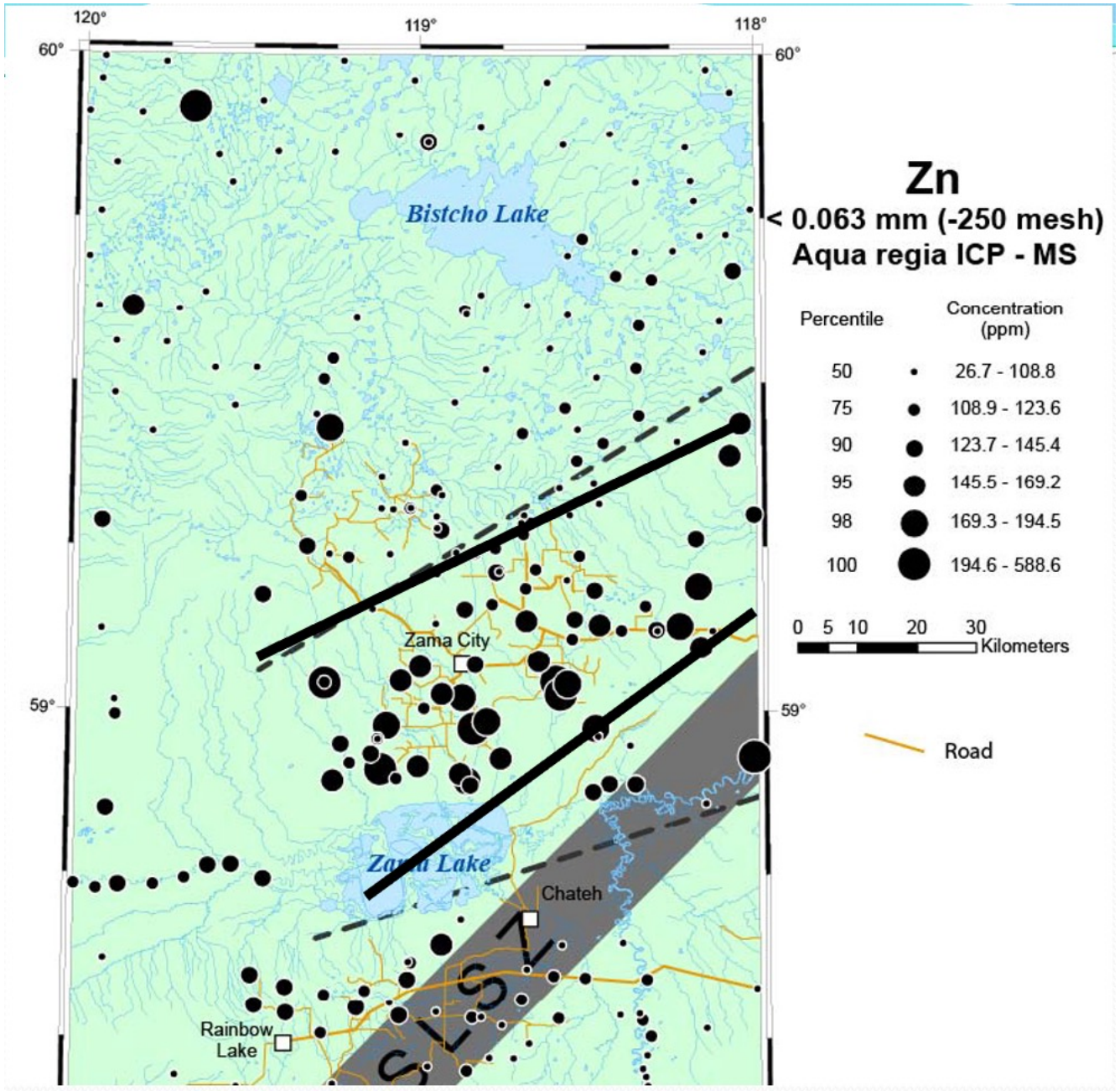
1

0

Ice-flow direction

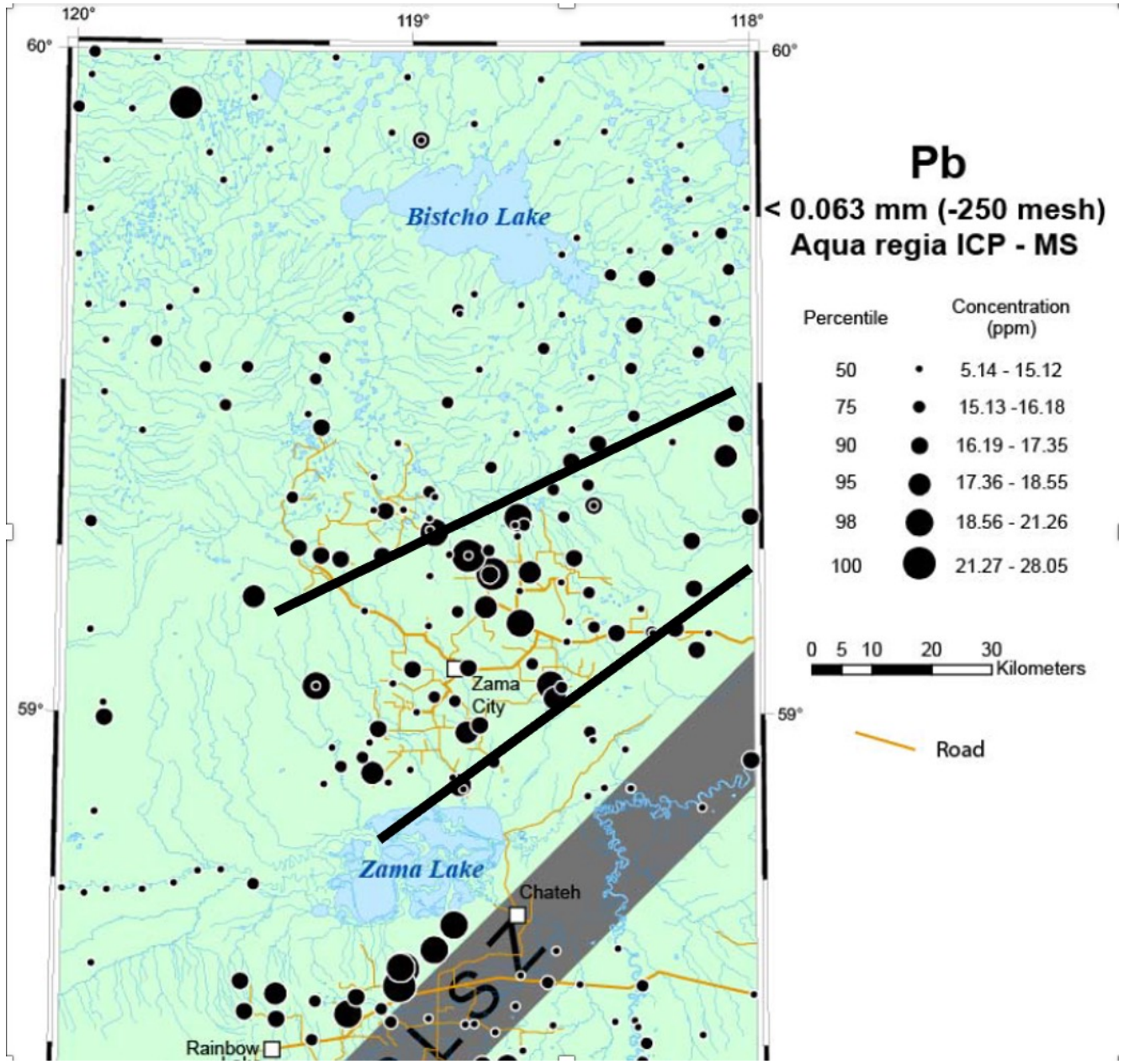
Galena Grain Count per 30kg of Till

From OF-5545



Zinc Concentration (ppm) in Fine Fraction of Till

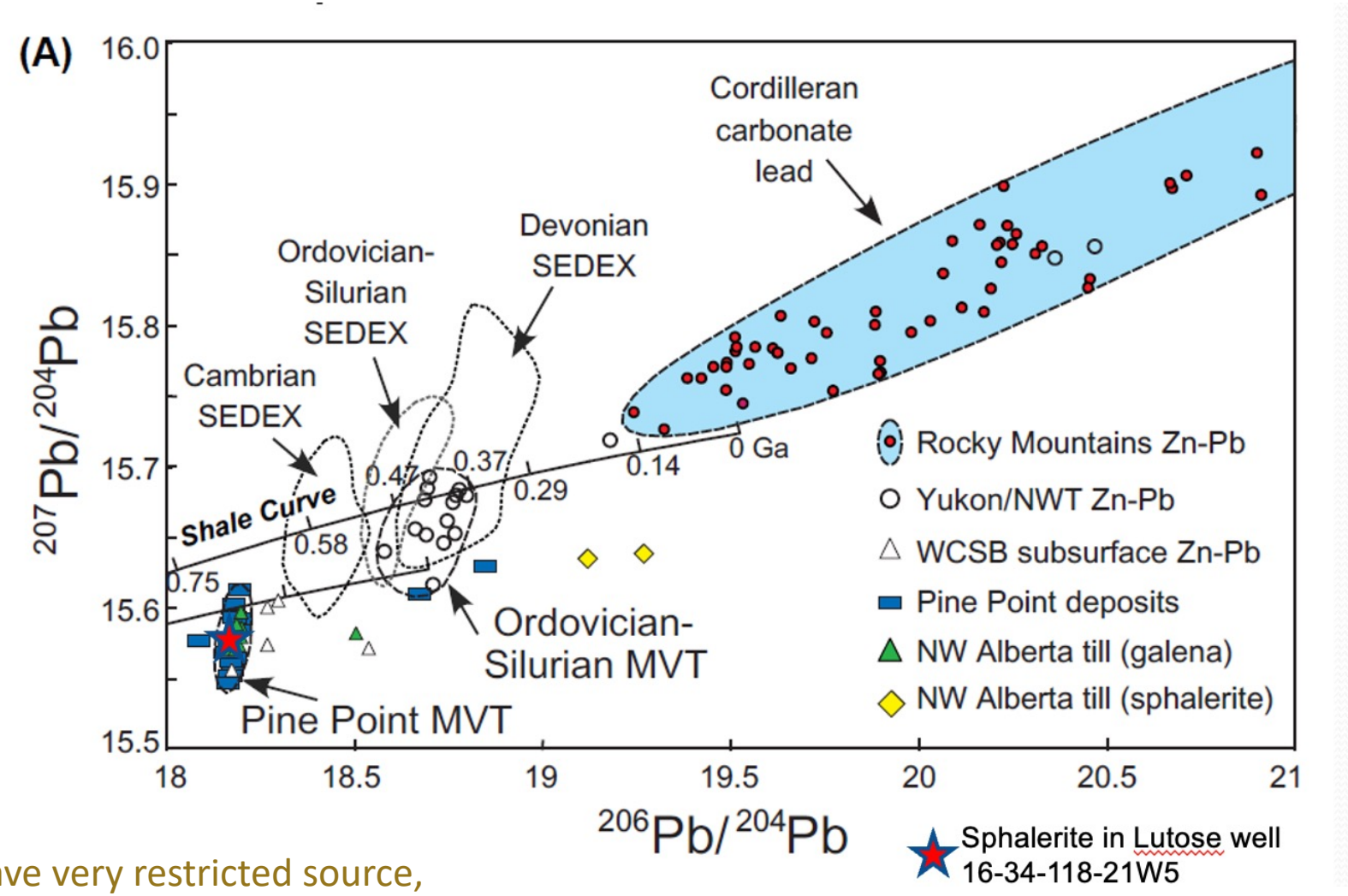
From Plouffe et al, 2006, OF5121



Lead Concentration (ppm) in Fine Fraction of Till

From Plouffe et al, 2006, OF5121

Lead Isotopes of Various Source Materials From Region



Pine Point samples have very restricted source, thought to be Pre-Cambrian Shield. Till galena have same source but not till sphalerite

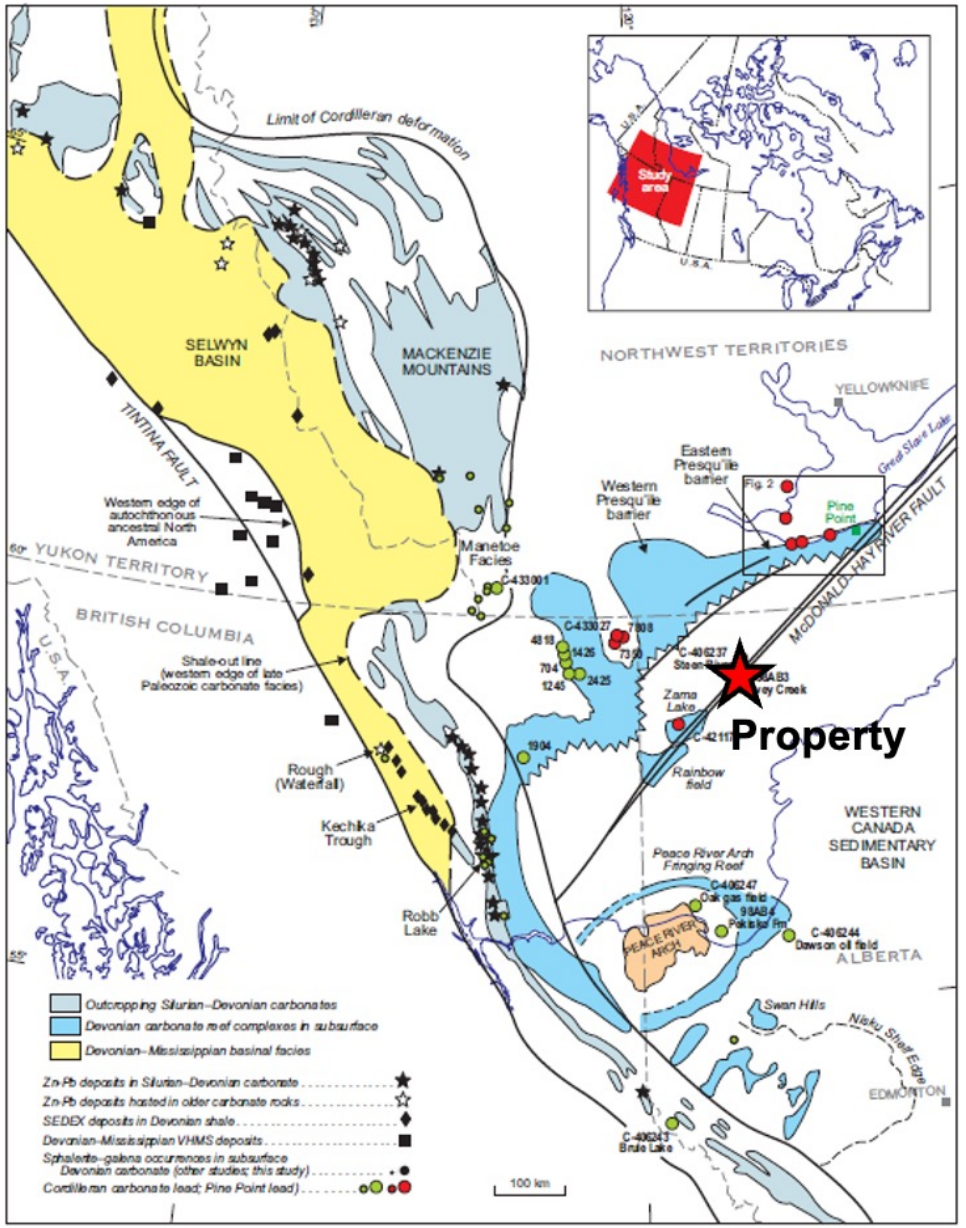
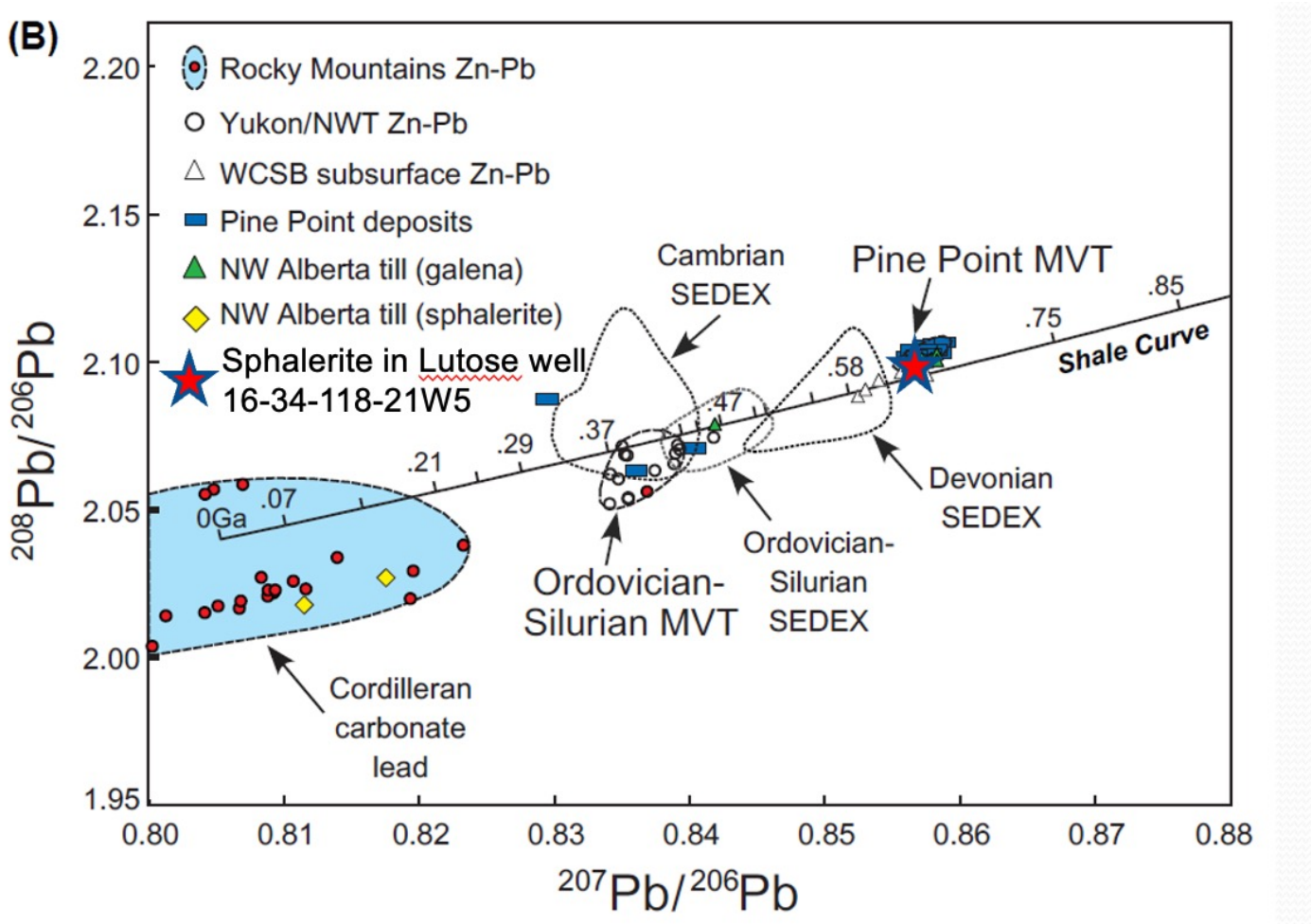


Figure 10. Location of samples analyzed for lead isotopes in this and other studies. Also indicated is the lead isotopic signature ("Cordilleran carbonate lead" versus "Pine Point lead") of sulphide occurrences within the Western Canada Sedimentary Basin and the northern Rocky Mountains.

Isotope Chart for Zn-Pb Mineralization in Western Canada Basin



Pine Point (PP) has very tight clustering of lead isotope ratios and near Shale Curve. Two sphalerite samples from tills have lead isotopes closer to Cordilleran deposits but galena in till are same as PP. Sphalerite from Chevron Lutose well same at PP.

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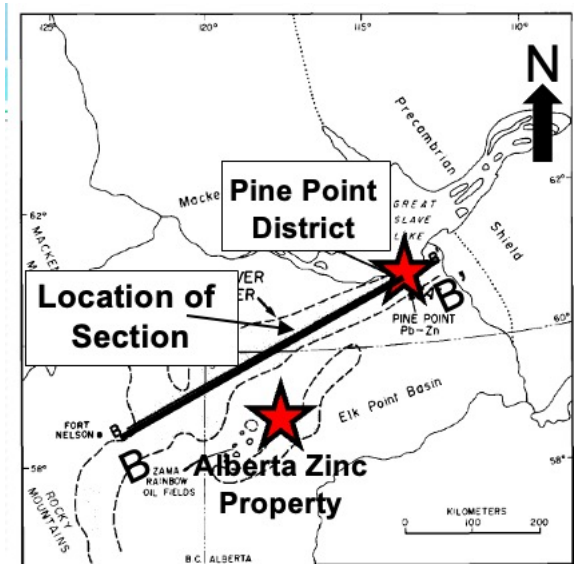
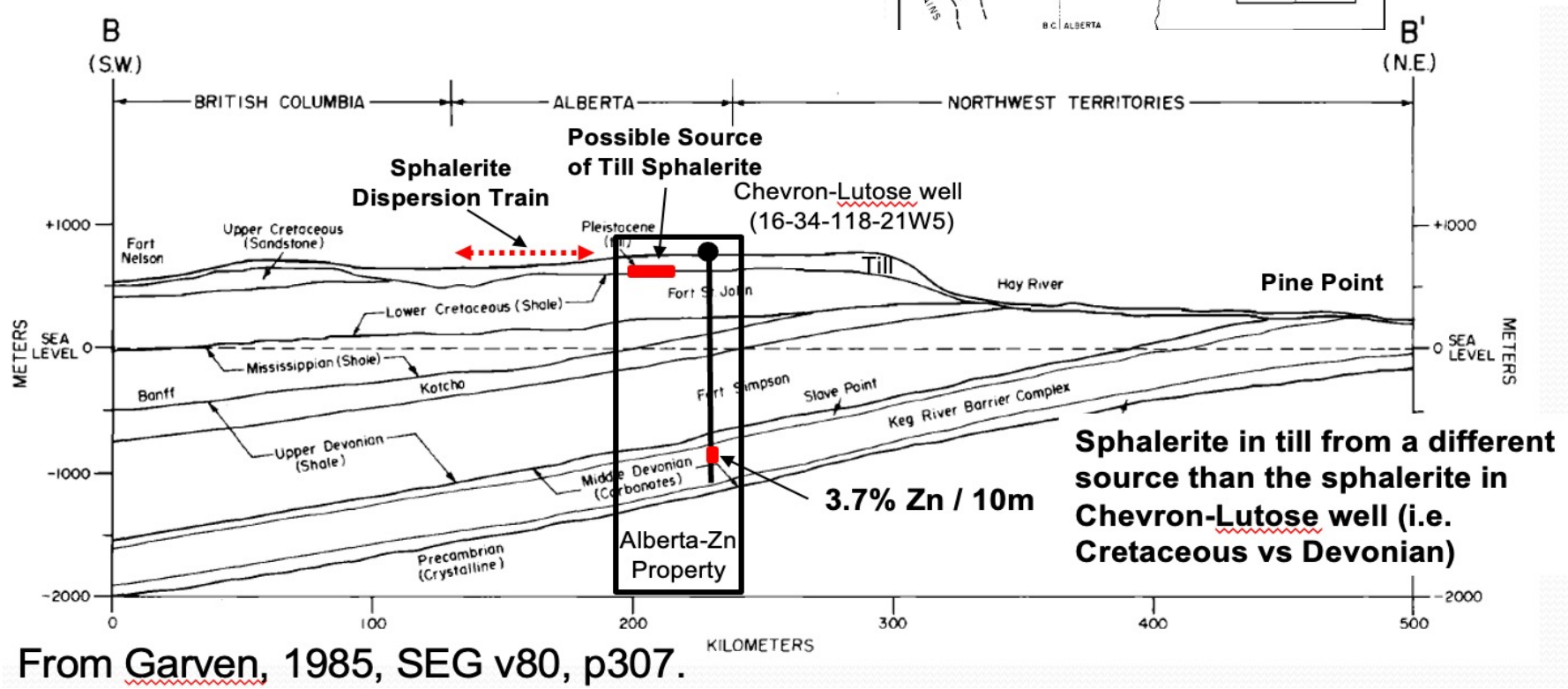
From OF-7542

Schematic Regional Cross Section Western Canada Sedimentary Basin From Rocky Mountains to Pine Point



Note: Section to north of Property

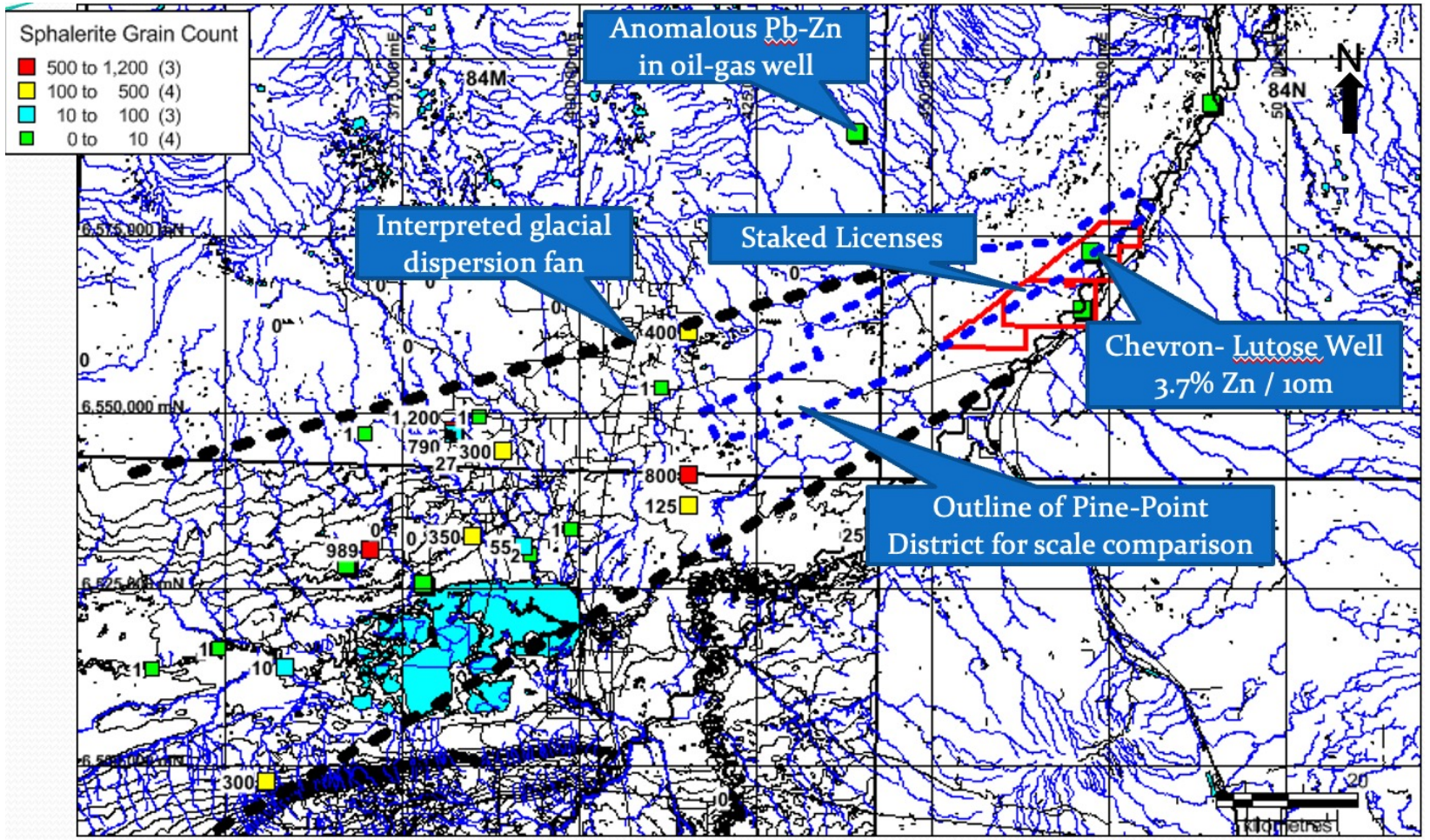


From Garven, 1985, SEG v80, p307.

Pine Point Mississipi Valley Type District

- Mined between 1964 and 1988.
- Produced 64.3Mt of Pb-Zn ore at 7.0% Zn and 3.0% Pb.
- Over 100 lenses and deposits identified over 1,600km2 area.
- Deposits ranged in size from 0.1Mt to 17.5Mt
- District located on the northern edge of the Great Slave Lake Shear Zone (GSLSZ), see next slide, a major crustal discontinuity between the Archean Slave Province to north and Churchill Province to south.
  - ❑ GSLSZ extends for circa 1,500km from Rocky Mountains to NWT (see slide 8).
  - ❑ GSLSZ is a zone of highly deformed and sheared rocks bounded by large-scale lateral strike slip faults.
  - ❑ Later faults like McDonald and Hay River faults followed same trace as GSLSZ.

Source area of Zinc-Lead Dispersion Train Comparable in size to Pine Point District



Property is located up ice from regional sphalerite in till anomaly

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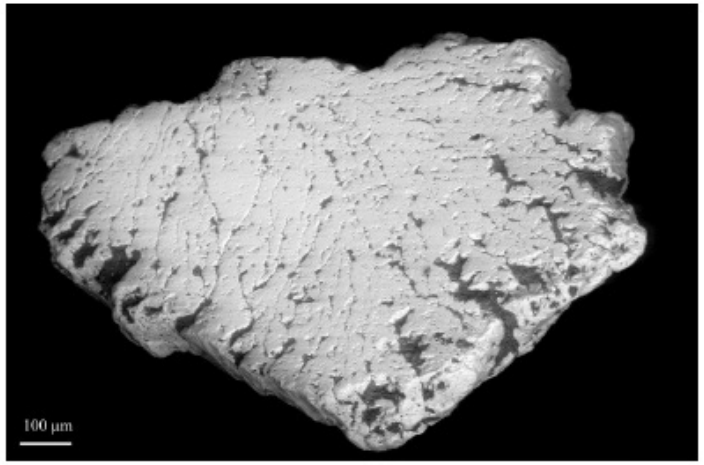
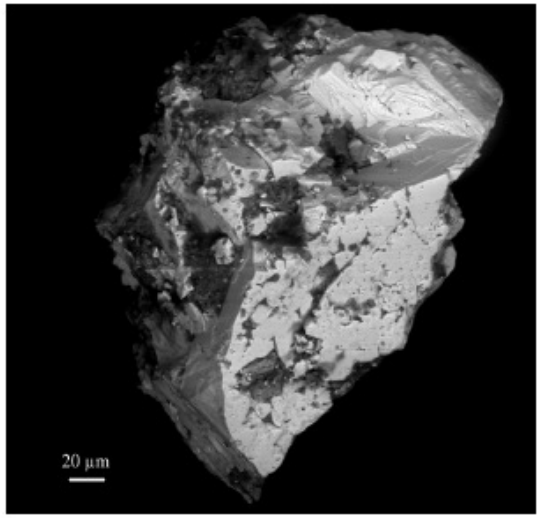


(A)



(B)

From OF-5545

Sphalerite from till is typically greasy metallic grey and quite different than Pine Point sphalerite

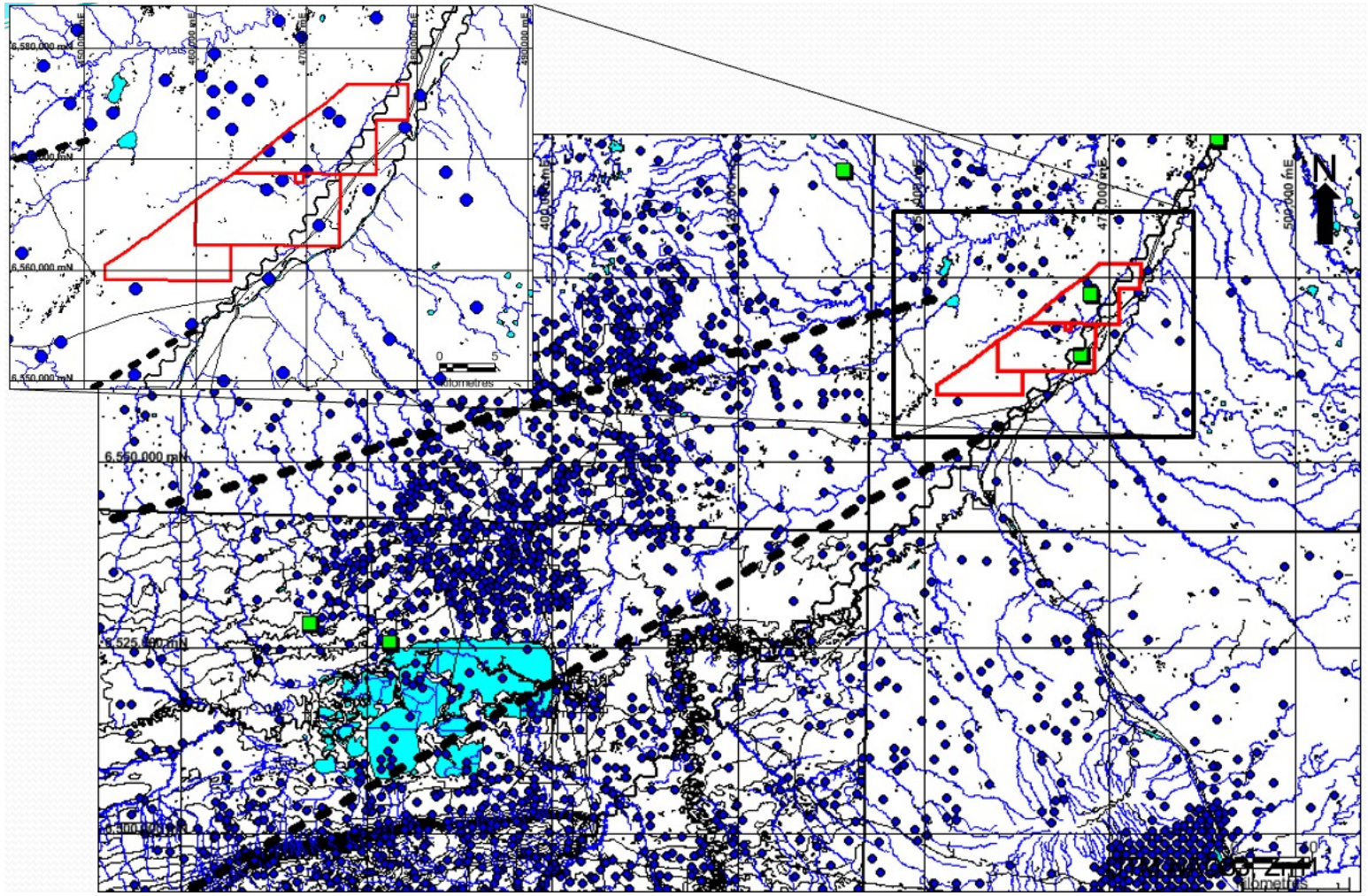
From Plouffe et al, 2008, GSC OF5692

Sphalerite from till is delicate and platy grey and Interpreted to be from proximal source.

From Oviatt et al, 2013, GSC OF7423

Proximal sphalerite from till at Pine Point.

Historic Oil Wells in Vicinity of Property



Few wells drilled on property and none in western half.
Well info available at Alberta Government.

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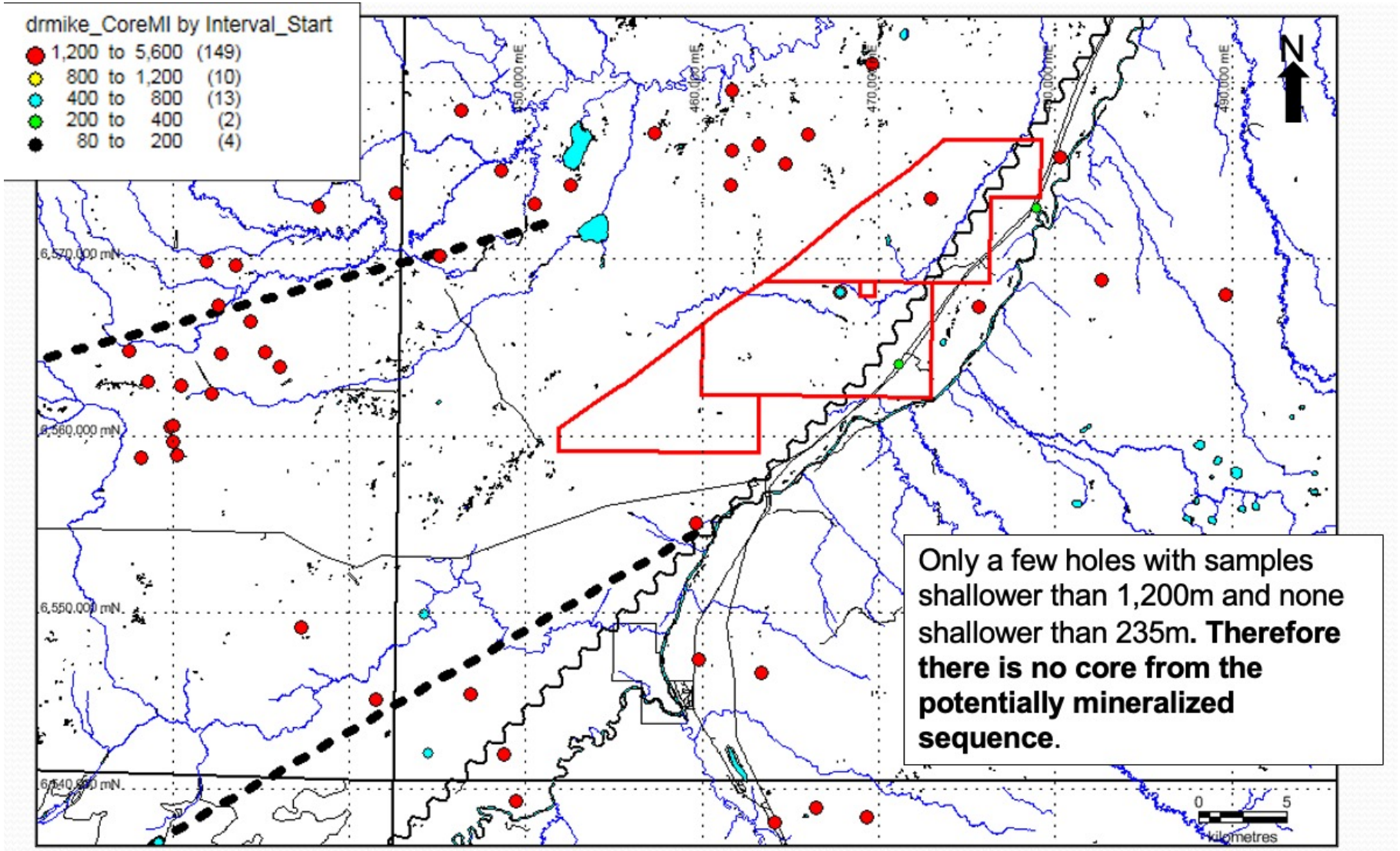
Historic Oil Wells Near Property with Core



Conclusions

- Sphalerite in till anomaly probably sourced from Cretaceous shales under the property approximately 30km from the till anomaly. The Great Slave Lake Shear Zone passes immediately south of the Alberta Zinc property.
- We believe the property holds excellent potential for a SEDEX-style deposit. The target deposit is different and younger than the Pine Point Mineralization but used the same fluid pathways to come to surface.
- A zinc-rich glacial till dispersion area was truncated during sampling for kimberlite indicator minerals but the head of the fan has not yet located although certainly to east of till anomaly, in the vicinity of the property.
- Region of property completely covered by glacial sediments and as such does not outcrop contrary to the Pine Point deposit and relatively few historic oil wells were drilled within property boundary.
- Moreover, none of the wells have any core available in the target depth, although the footwall rocks do have core and can be sampled.
- Property is very well situated with an operating rail line crossing the claims along with a paved highway. Moreover a flat-lying SEDEX deposit would have an extremely favourable geometry for open pit mining considering an expected depth of 20-50m for the deposit. Electricity is available within 10km on the Dene Tha' First Nation community at Meander River.

Board & Management

STEPHEN STEWART

CHAIRMAN

- 15 years of experience in the resource and finance industries
- Focused on the M&A, exploration and development of resource assets
- Held senior offices with numerous TSX Venture companies

Antoine Schwartzman

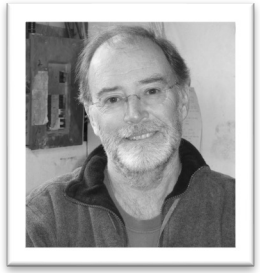
GEOLOGY MANAGER

- Project Geologist managing and coordinating exploration activities.
- BSc and MSc in Geology

Joel Friedman

CFO

- Over 10 years' experience in the Mining Industry
- Held Senior roles at Banro Corporation and Primero Mining Corporation
- Holds CPA, CA, and Honours Bachelor of Administration



Jared Beebe

EXPLORATION MANAGER

- Proven exploration geologist with over 35 years of experience
- BSc in geology and registered professional geologist in Quebec and Ontario

ANTHONY MOREAU

DIRECTOR

- 10 years of experience in the mining industry
- CEO of American Eagle Gold Corp. (AE:TSXV)
- Previously with IAMGOLD in Business Development & Special Projects
- Director of the Young Mining Professionals Toronto and co-founder of the YMP Scholarship Fund

ALEXANDER STEWART

DIRECTOR

- Over 40 years of experience in the practice of securities law and natural resource investment
- In the past he was the founder behind a number of mining projects including the Côté Lake Project and the Eagle One deposit

Charles Beaudry

DIRECTOR

- Geologist with more than 35 years of experience across the globe
- 17 years with Noranda-Falconbridge-Xstrata as well as a tenure with IAMGOLD as General Manager of New Business Opportunities.

Video: Orefinders Resources

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