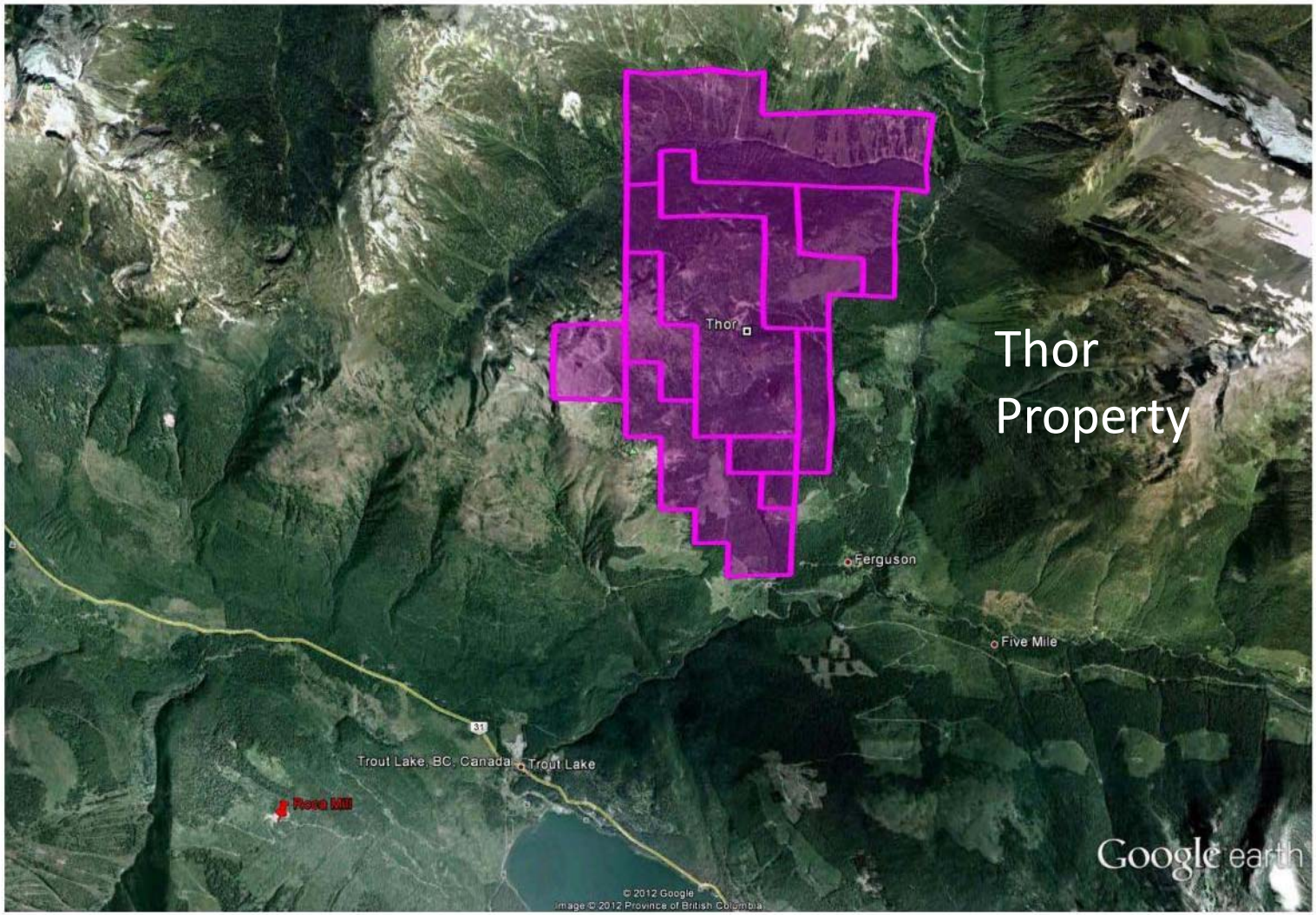
Thor Geology
(Ag-Pb-Zn-Au-Cu Deposit)

Thor Geology
Taranis Resources Inc.
John Gardiner – November 2012

TARANIS RESOURCES INC.

Location of Thor Property



Google earth

miles 5
km 8

Geology Overview (4 parts)

- Stratigraphic Sequence
- Major Rock Types
- Structural Geology
- “Gold Zones”

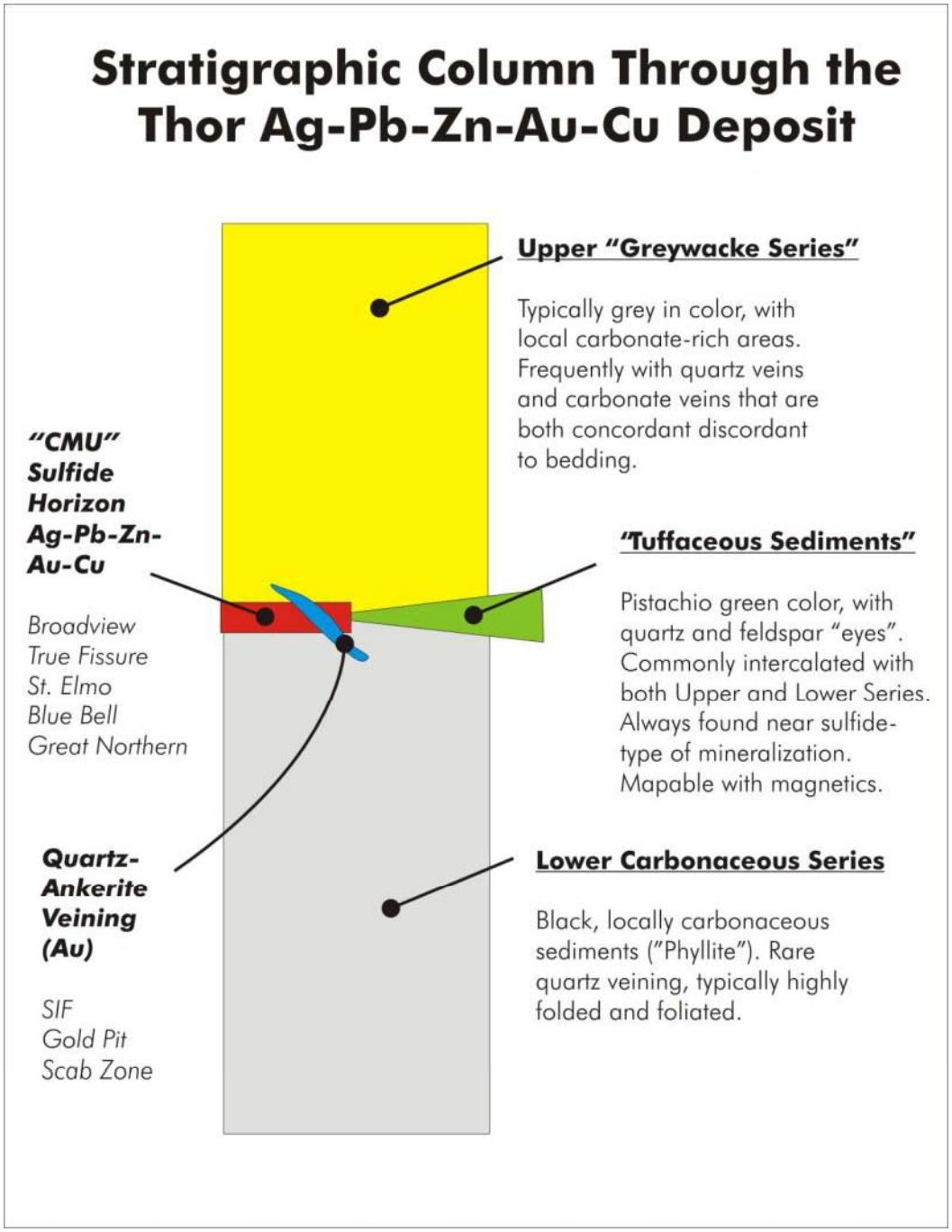
Stratigraphic Sequence

- Relatively simple
- Classic VMS setting along a major transition in stratigraphy
- Profoundly affected by structural geology overprint
- Absence of intrusive or contact metamorphism

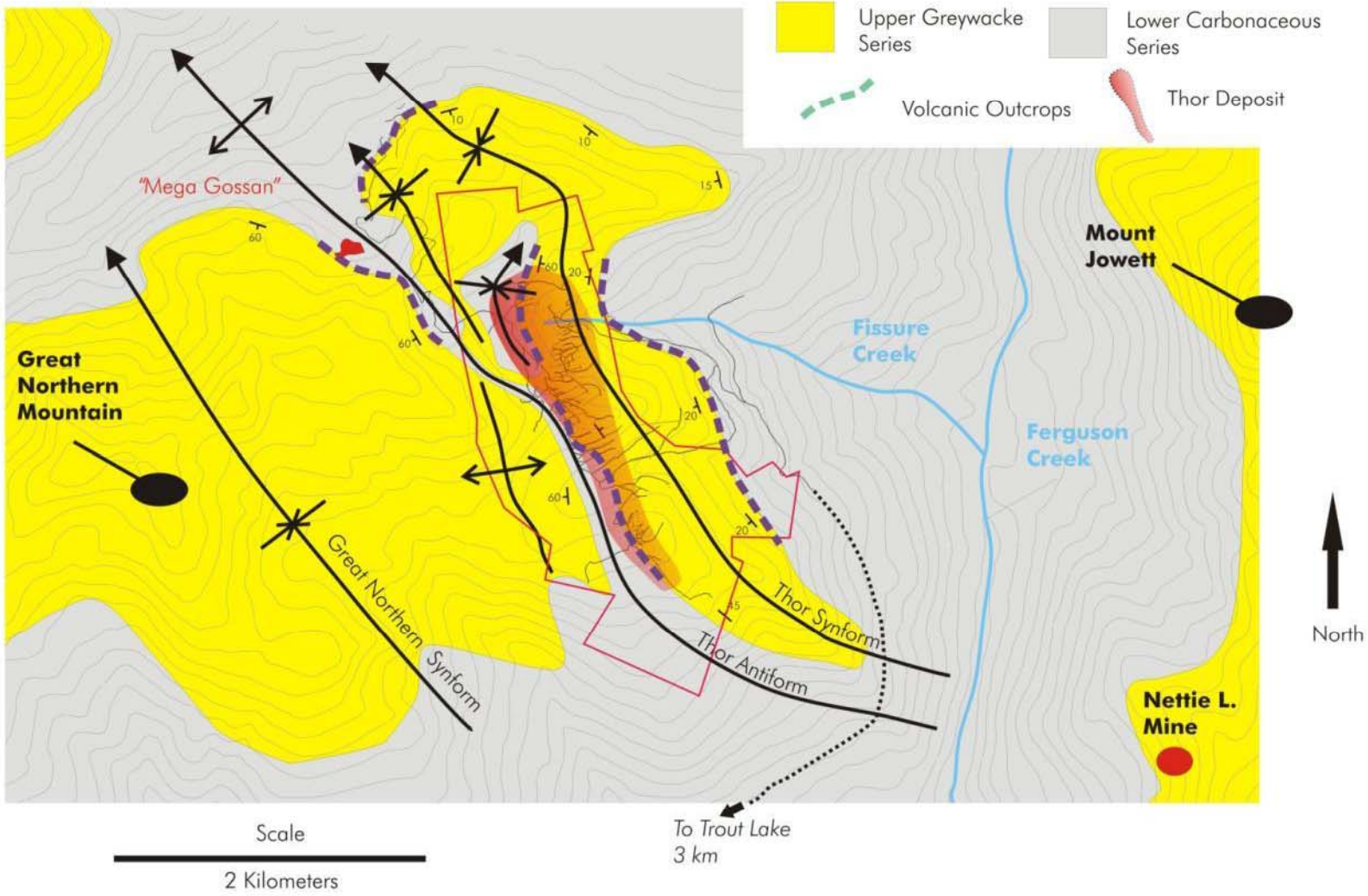
Idealized Stratigraphic column

-No fossils to Indicate Age

-No “top” measurements; therefore the term “Antiform” and “Synform” are used (almost certainly the stratigraphy is upright and not overturned)



Geology of the Thor Ag-Pb-Zn-Au-Cu Deposit & Surrounding Area



Lower Carbonaceous Series

-Typical black color and very phyllitic

-Conductive

-Tightly folded similar to overlying assemblages

Tuffaceous Sediments

-Always Pistachio Green

-Intercalated with sediments indicating active volcanism with sedimentation

-Unit always found in close proximity to sulphide mineralization

Combined Metals Unit ("CMU")

Three major types of sulphide dominated mineralization.

1) "Primary" type mineralization
2) Structurally deformed sulfide mineralization
3) Quartz-Sulfide Breccia mineralization

Upper “Greywacke Series”

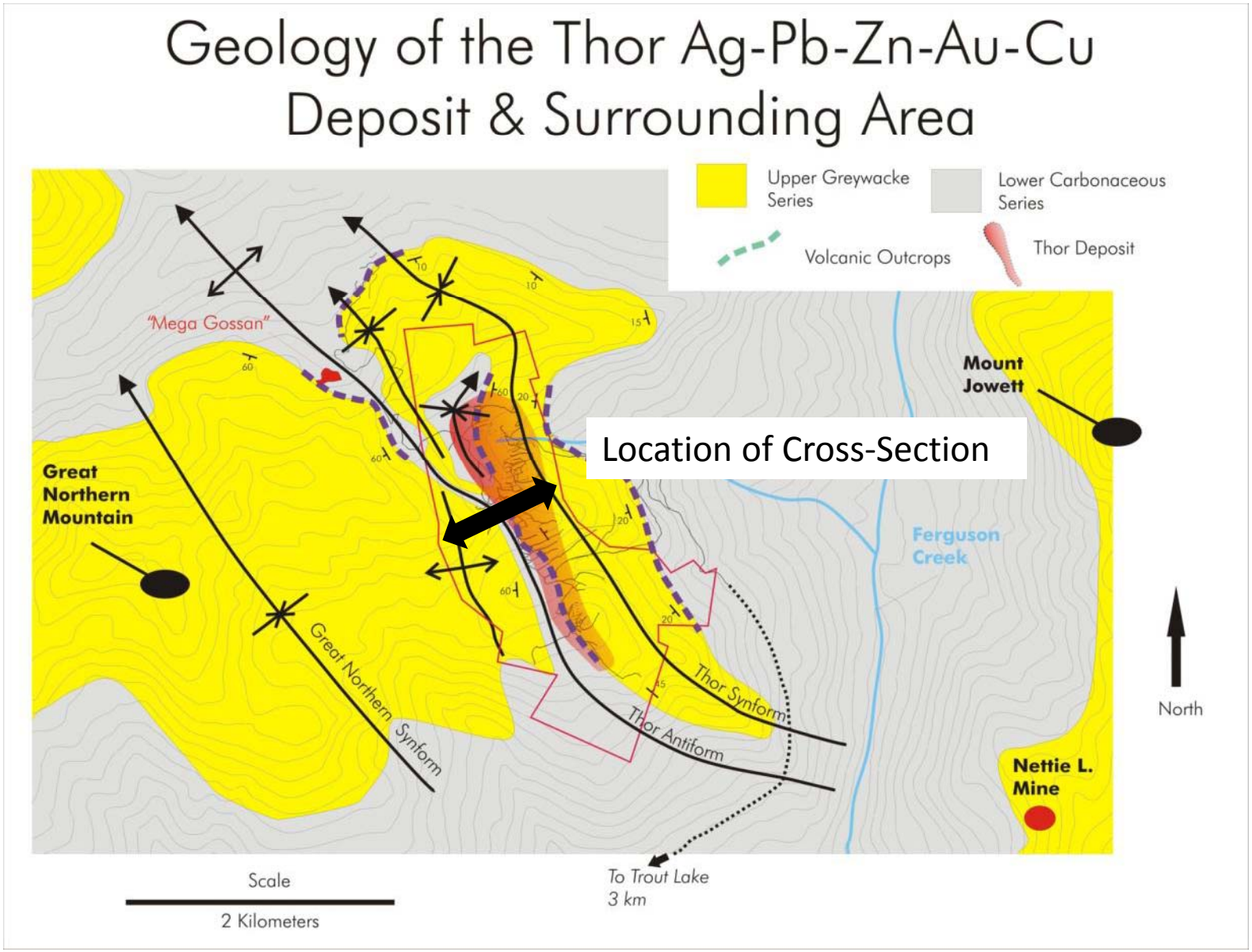
-Tight Folding in Upper Series “Greywacke”

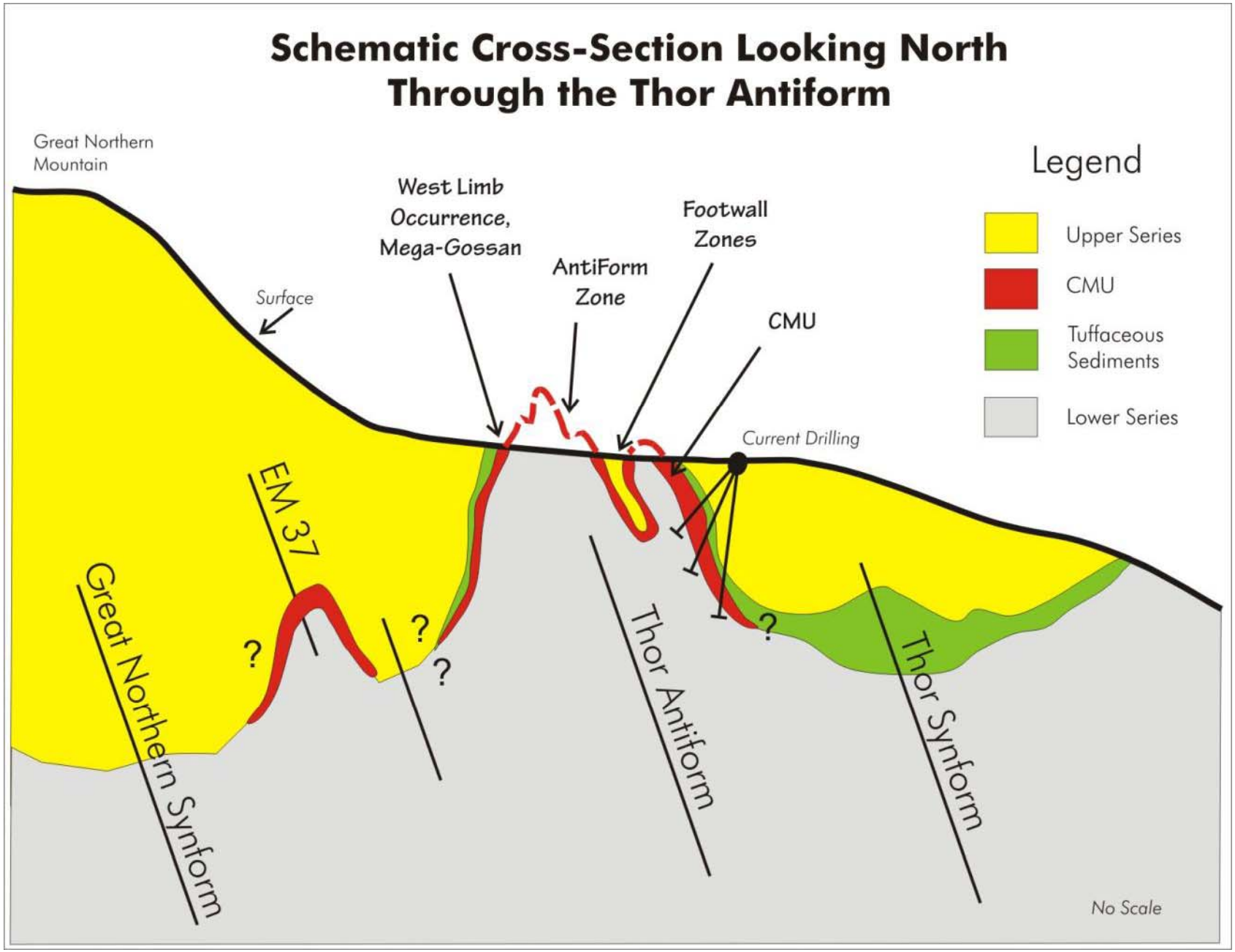
-Boring sedimentary succession

Structural Geology

- The most complicated part of the geological picture and considerable attention was paid to this in the summer 2012 mapping program.
- CMU is for the most part stratabound. Exceptions are the Quartz-Sulphide Breccia Zones and the S_1-hosted types of mineralization.
- Mineralization is generally // to bedding in antiform.
- Very similar to Silvercup Ridge area based on Smith&Gehrels, (1992)

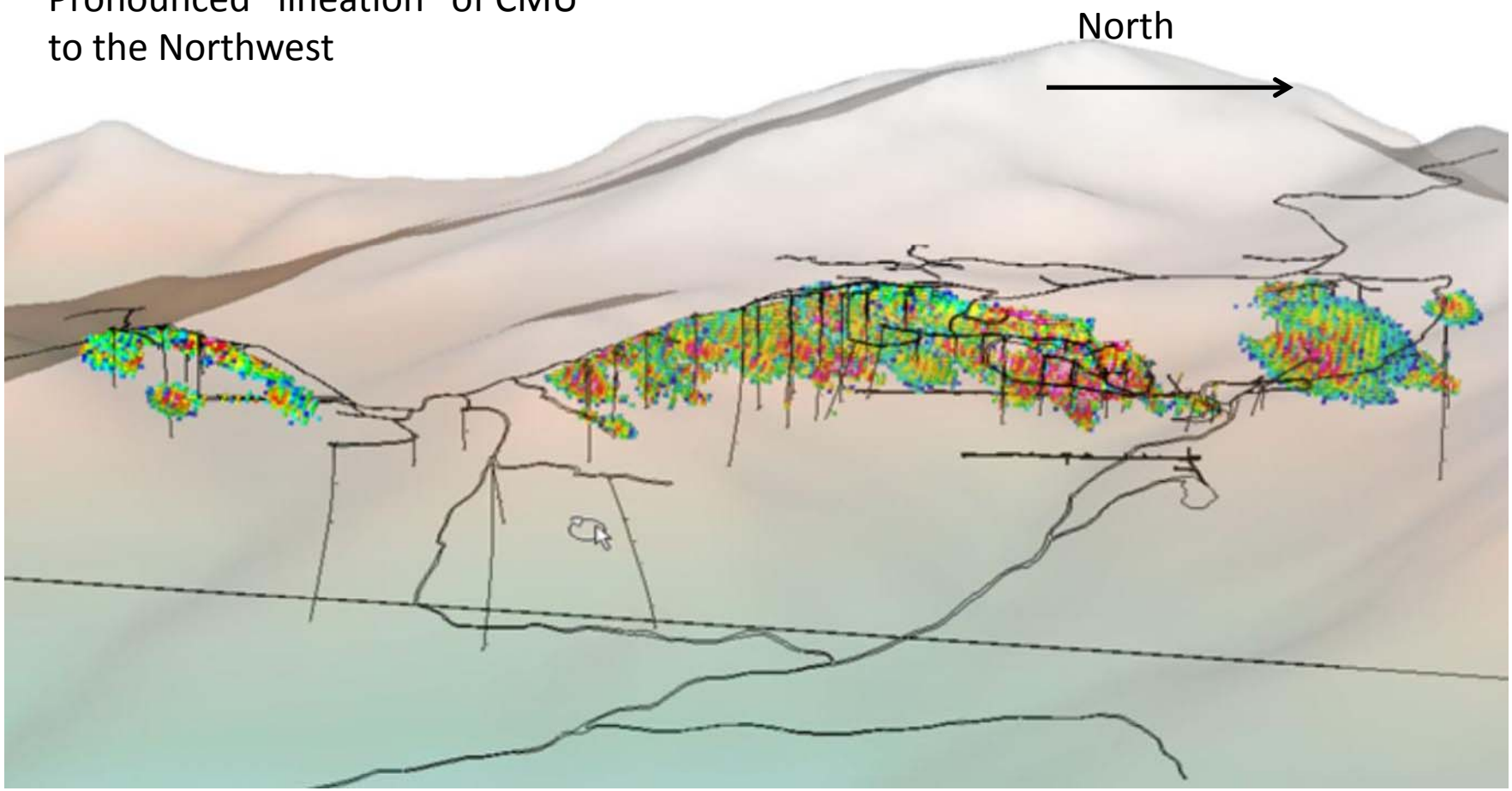
Cross-Section Location




Schematic Cross-Section Looking North
Through the Thor Antiform
Great Northern
Mountain
West Limb
Occurrence,
Mega-Gossan
AntiForm
Zone
Footwall
Zones
CMU
Surface
Current Drilling
Legend
Upper Series
CMU
Tuffaceous
Sediments
Lower Series
EM 37
Great Northern Synform
Thor Antiform
Thor Synform
?
?
?
?
No Scale

Structural Controls

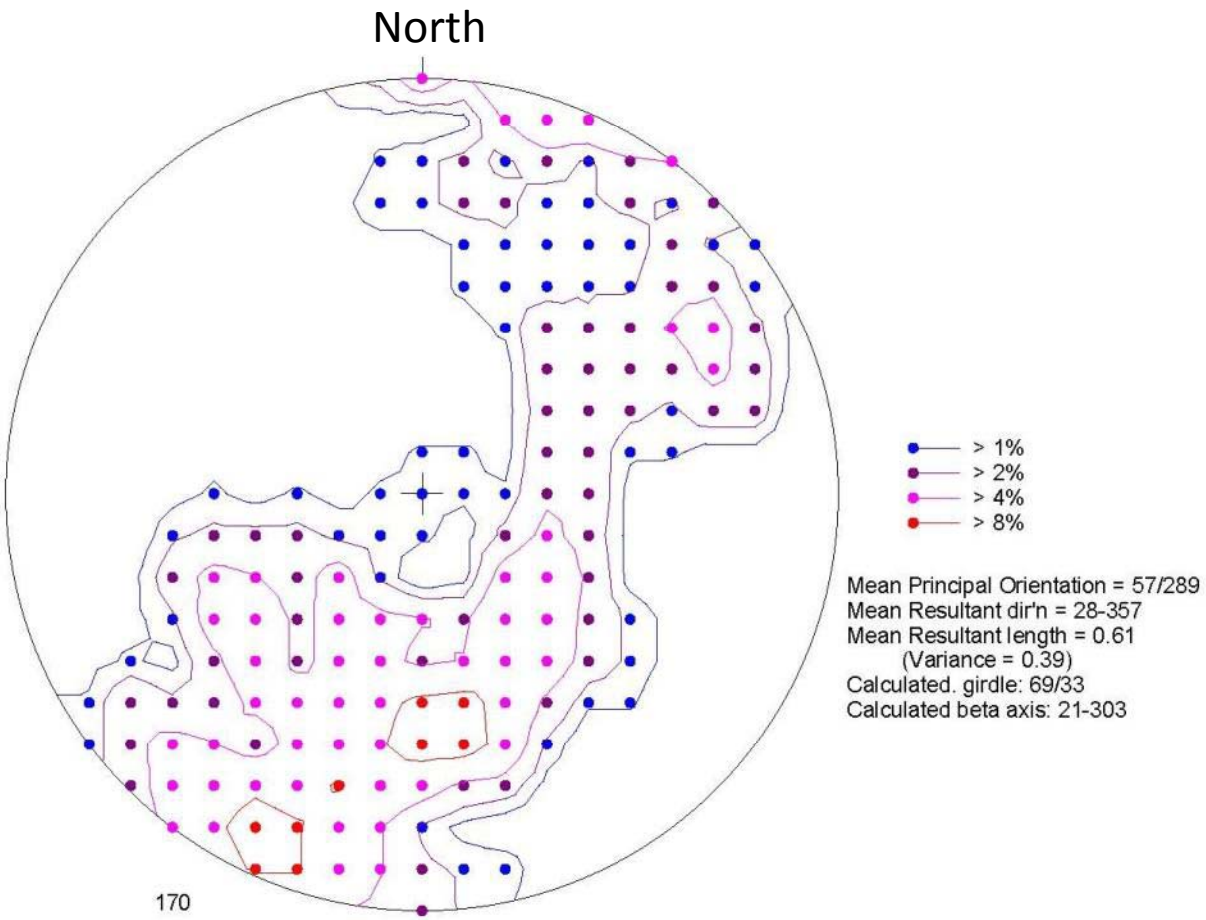
Pronounced “lineation” of CMU
to the Northwest



Primary Bedding (S_0)

-Bedding (S_o) oriented northwest and folded about northwest-trending fold structures

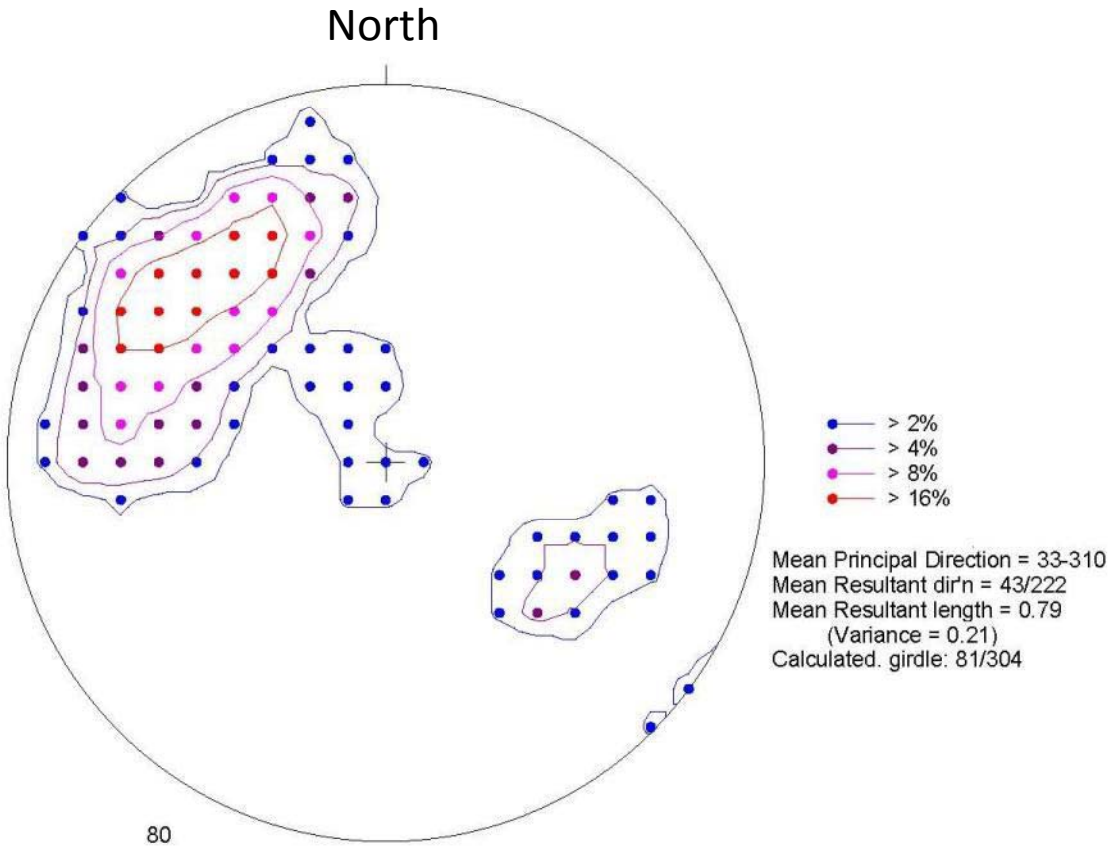
-Axial plane typically dips to the northeast



Folding (F_1)

-Folds plunge at shallow angle to the northwest (~-25 degrees).

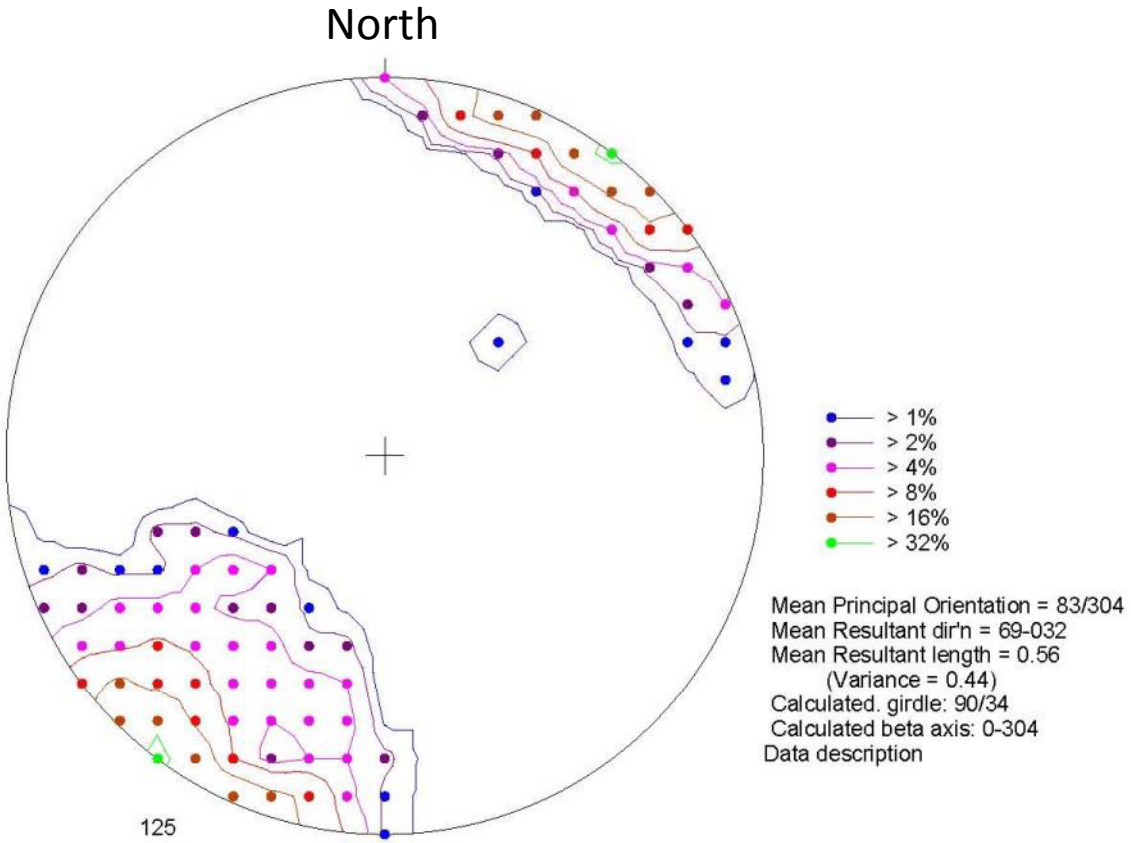
-Smaller field of folds that plunge moderately to the southeast, and could indicate “crumple” folds.



Foliation (S_1)

-Foliation is aligned to the Northwest, and is typically very steep.

-Foliation is frequently cross-cutting primary bedding surfaces.



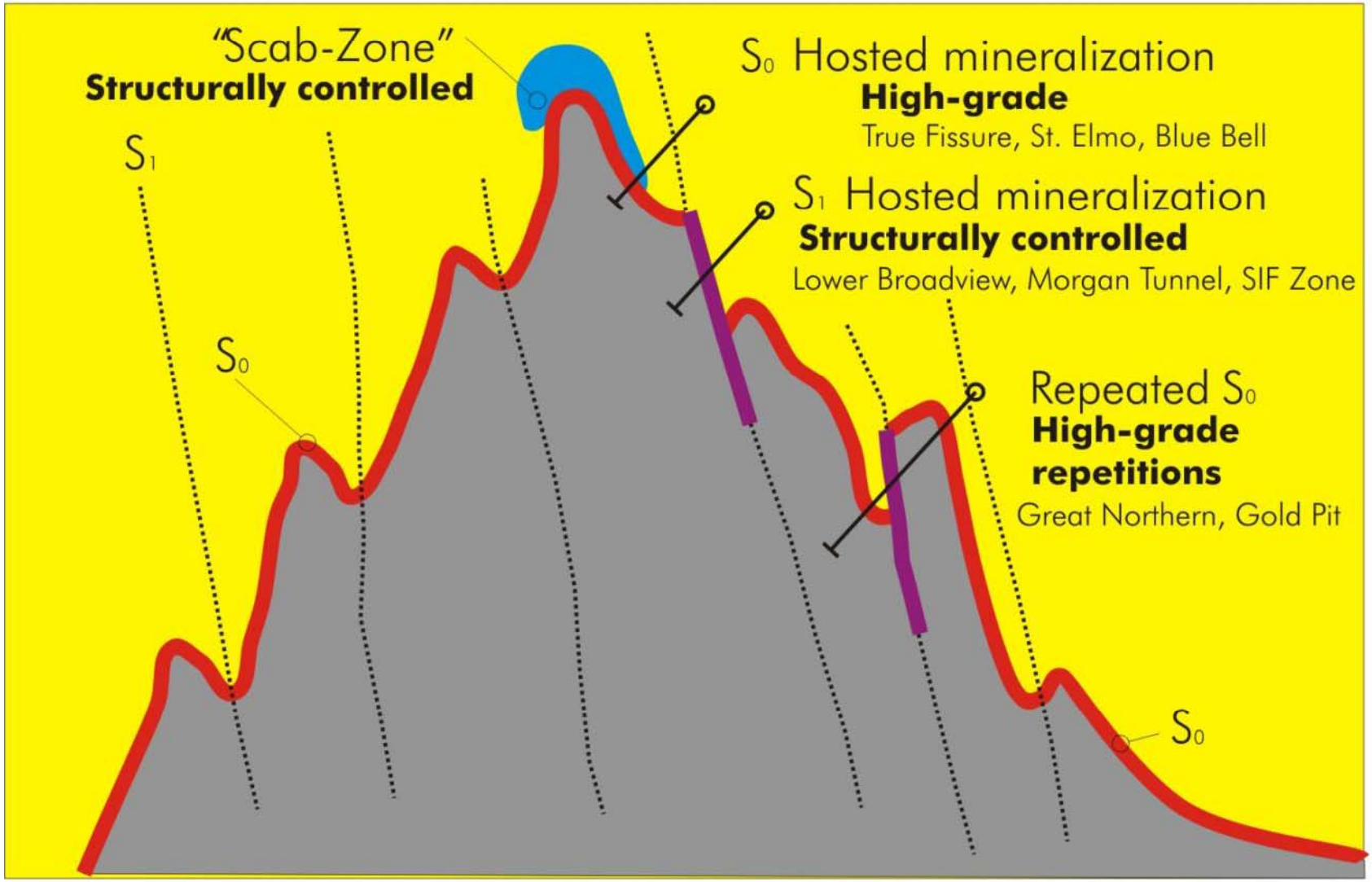
How Structure Has Affected The Deposit

- Original sulphide lodes predate ALL of the structures (F_1, S_1).
- <u>However</u> – The original sulphide lodes have all been profoundly modified by the subsequent folding and “foliation” event.
- This means that the sulphide bodies were originally stratabound – Important implications for exploration!

Three Places that Host Mineralization

- High-grade along primary bedding (S_0)
- Structural-hosted mineralization along S_1 (derived from smearing of S_0 mineralization along S_1)
- “Scab Zone”-type mineralization found near top of Thor Antiform

Primary and Structural Types of Mineralization at Thor



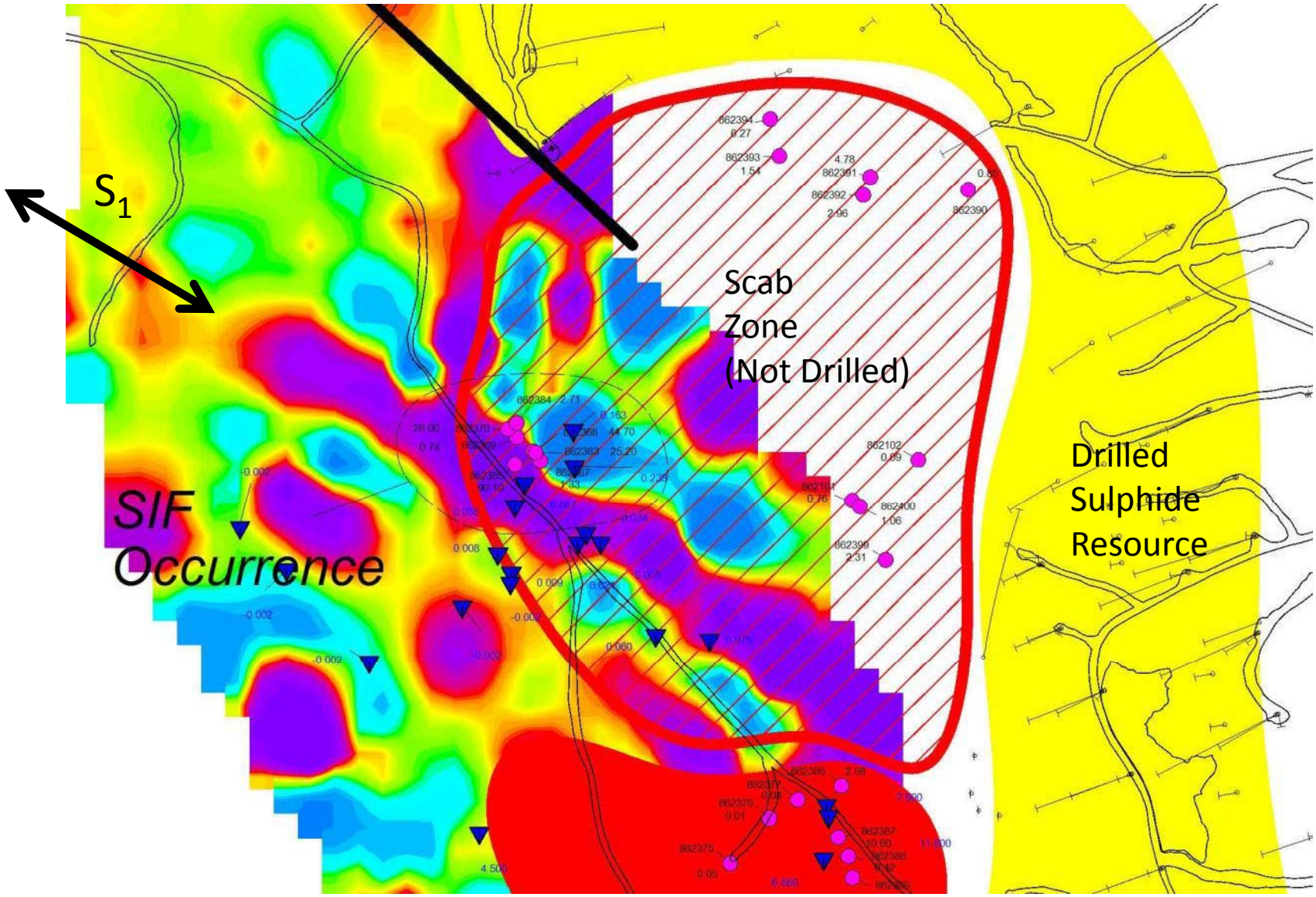
Structurally-Hosted Gold S_1 Example

-Associated with S_1 surface and strike NW and dip steeply to the east

-Structure traced with ground VLF and EM-37 surveys

-Completely unexplored at Thor

SIF Occurrence and Fraser VLF



Conclusion

- Significant Resource of Ag-Pb-Zn-Au-Cu that is currently undergoing an NI 43-101 by Roscoe Postle Associates, Inc.
- Simple VMS deposit that has been tightly folded and sheared in places along the limbs of the folds.
- Numerous exploration targets outside of the existing Resource.