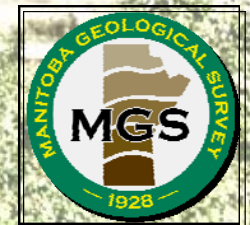
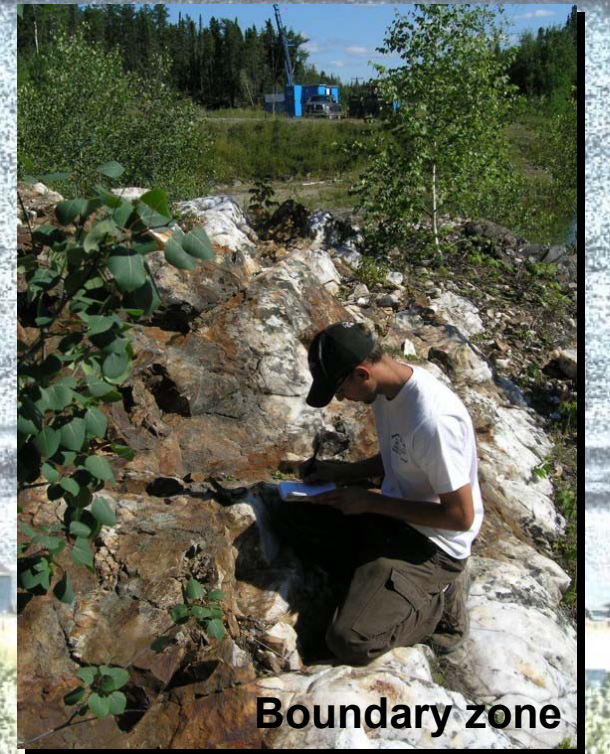


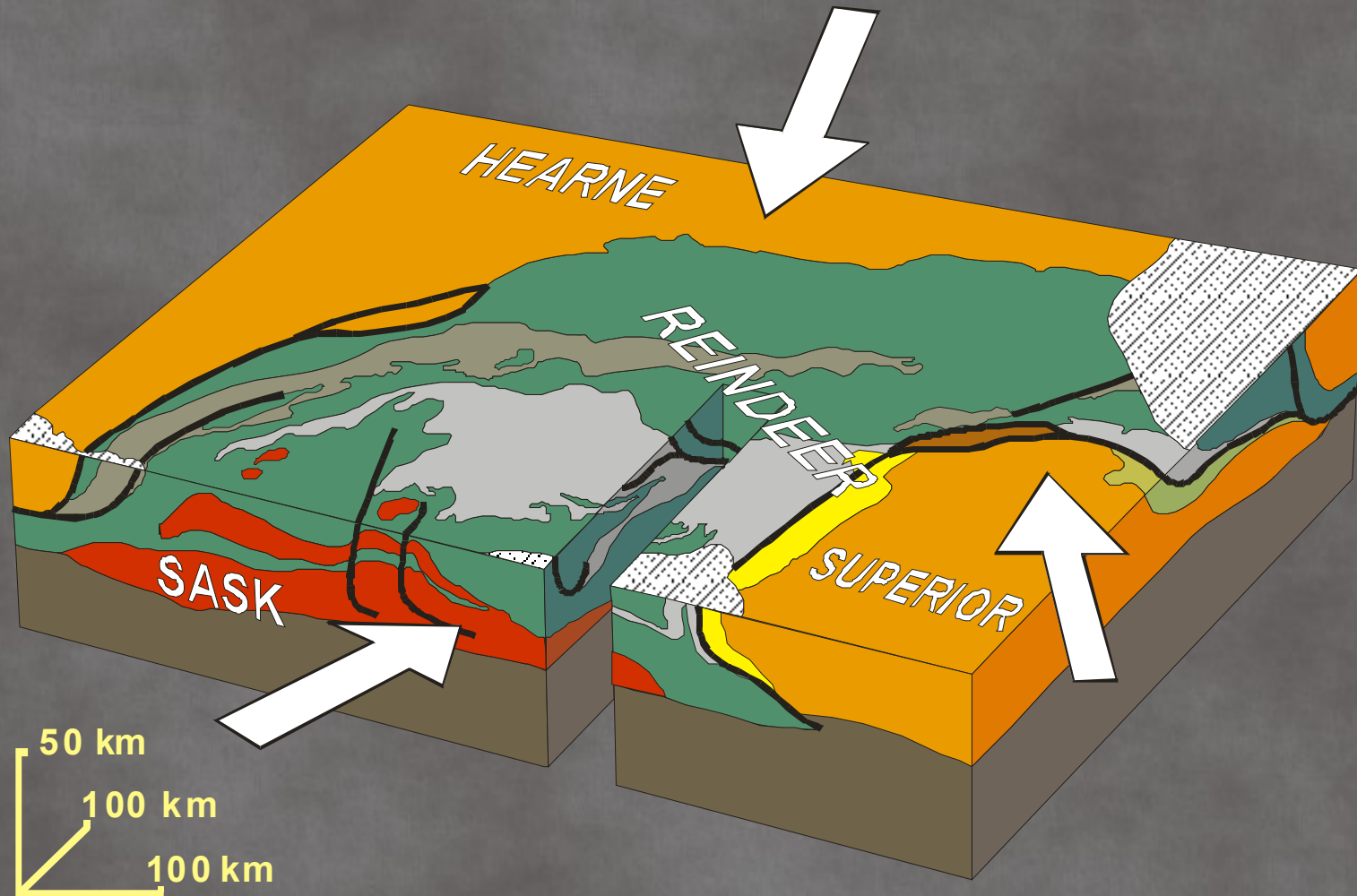
# Structural geology and gold metallogeny of the New Britannia mine area, Snow Lake, Manitoba

Chris Beaumont-Smith  
Manitoba Geological Survey





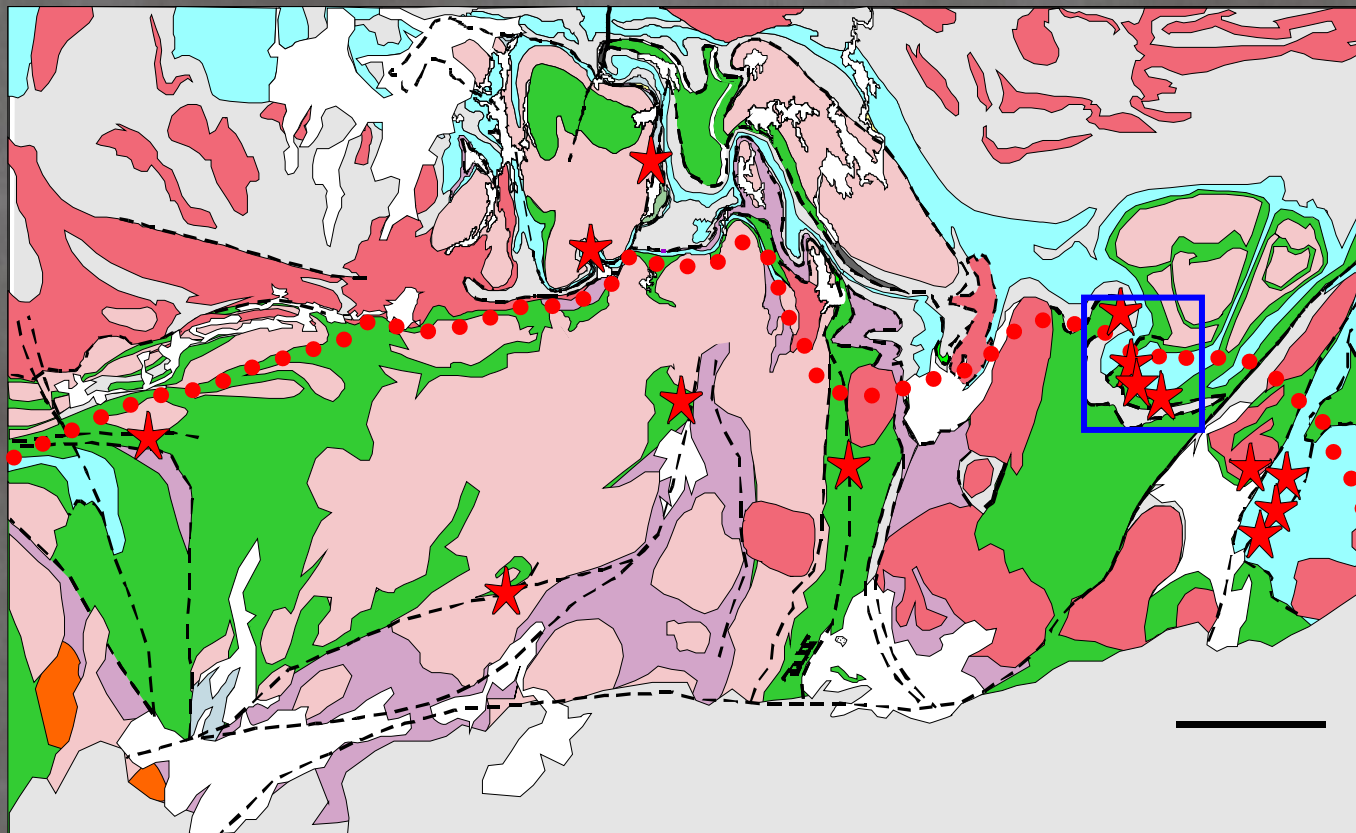
# Trans-Hudson Orogen






Modified from Zwanzig, H.V. 1999





# Flin Flon-Snow Lake Deposits




PRE-ACCRETION ASSEMBLAGES (>1.88 Ga)

-  JUVENILE ARC ASSEMBLAGES
-  OCEAN FLOOR ASSEMBLAGES
-  EVOLVED ARC ASSEMBLAGE

SYN/POST-ACCRETION ROCKS (<1.88 Ga)

-  FELSIC-MAFIC PLUTONS (>1.84, <1.84 Ga)
-  SUCCESSOR ARC & BASIN DEPOSITS  
Missi suite  
Burntwood suite

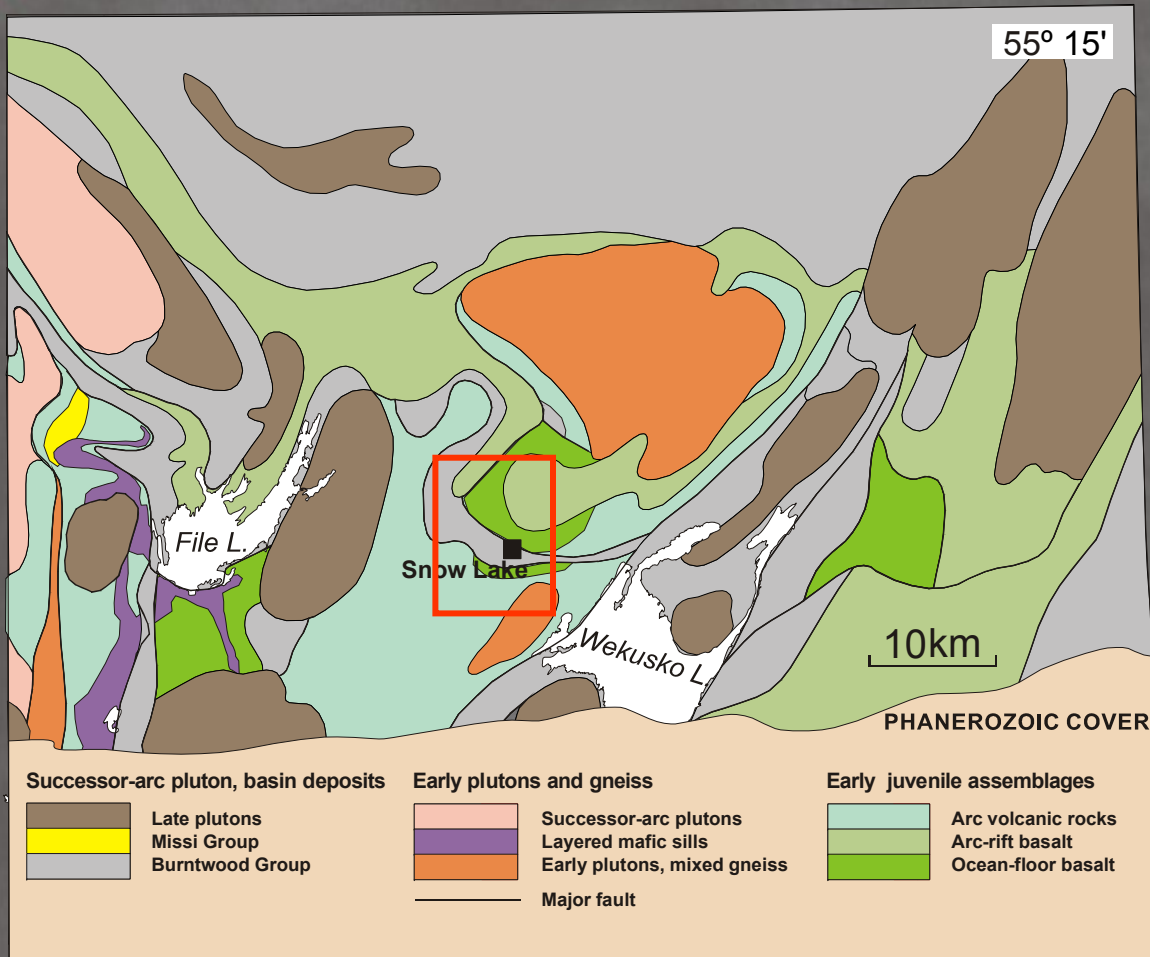
 Major fault (<1.84 Ga)

 Gold deposit





# Snow Lake Deposits



Ca. 1890 Ma Amisk Group volcanic rocks

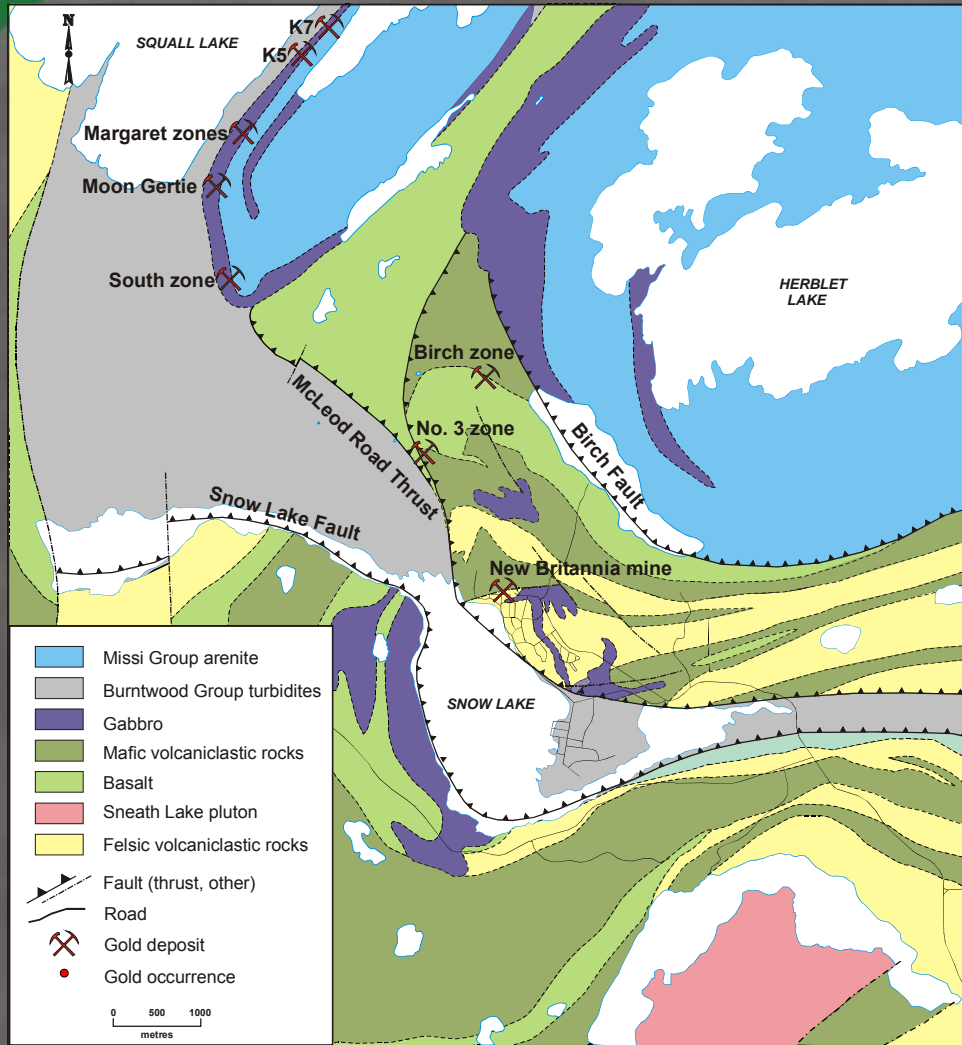
Ca. 1875. 1855, 1830 Ma plutonic rocks

Ca. 1845 Ma Burntwood Group turbidites

Ca. 1845 Ma Missi Group fluvial-alluvial sedimentary rocks



# Snow Lake Geology



Allochthonous volcanic rocks bound by younger sedimentary rocks

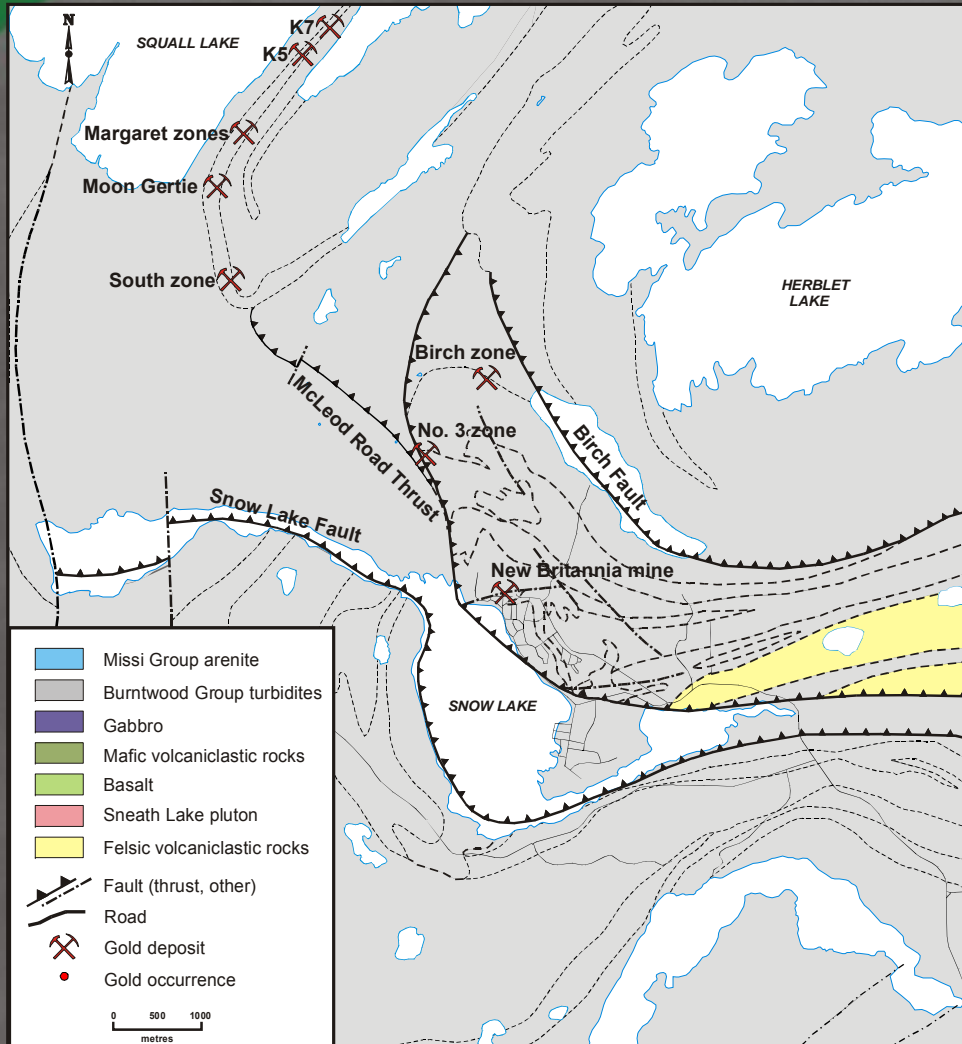
Syn- to post-metamorphic thrusting



New Britannia

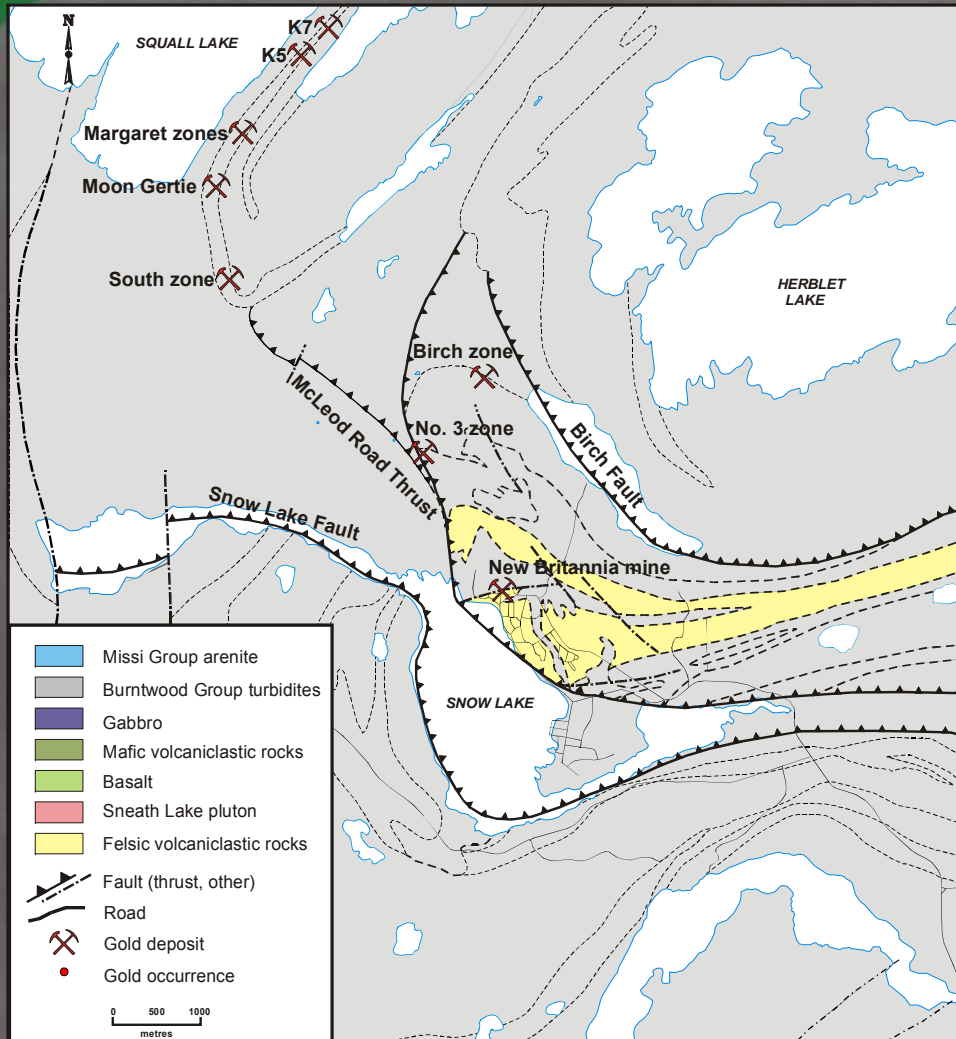


# Stratigraphy



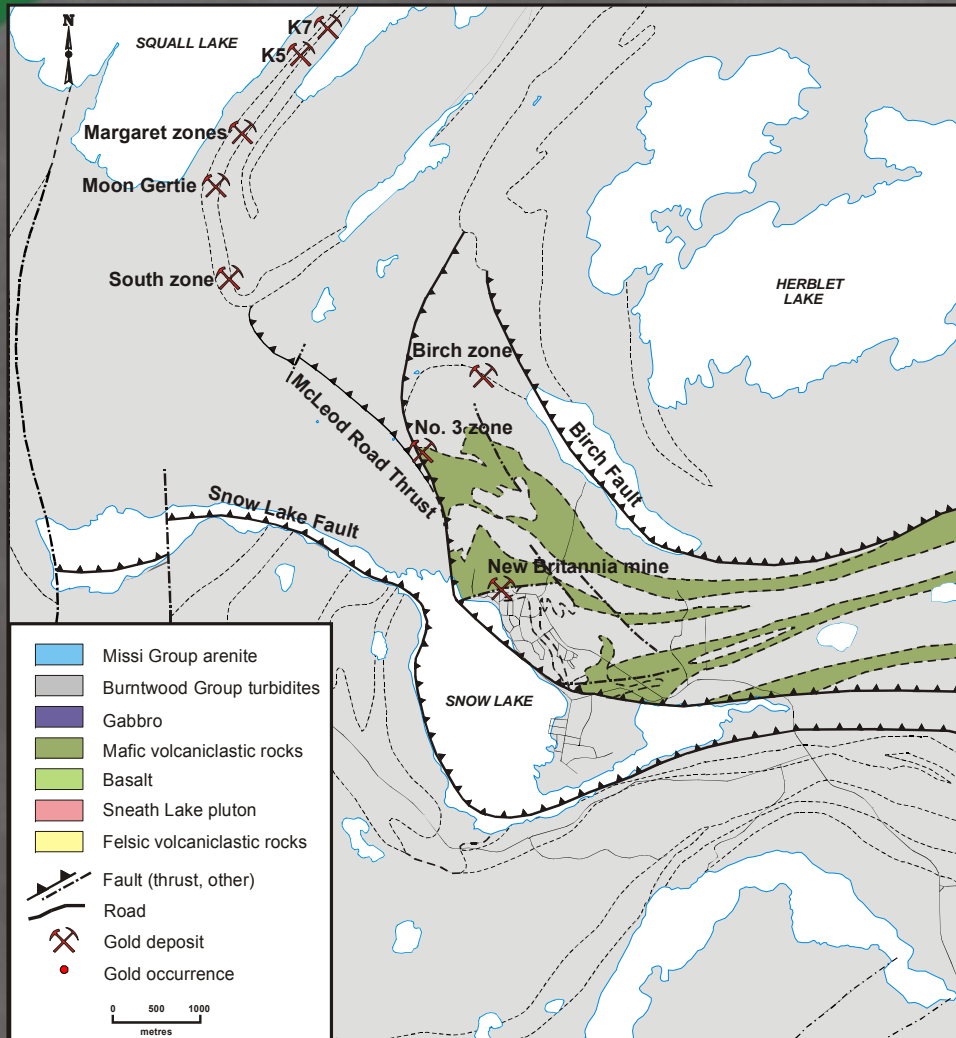


# Stratigraphy





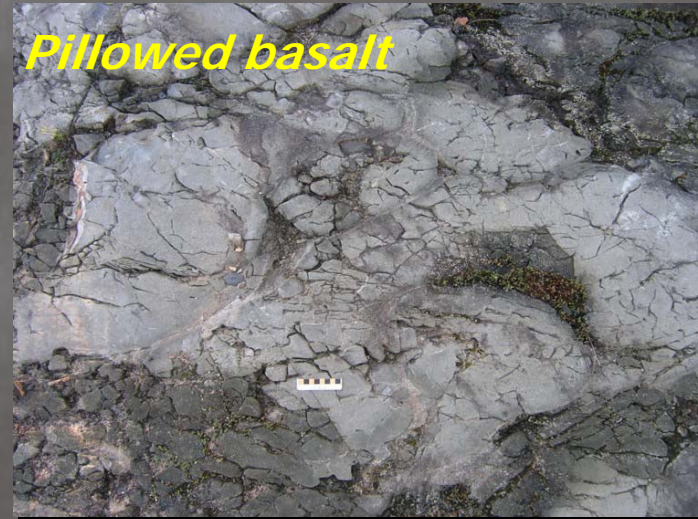
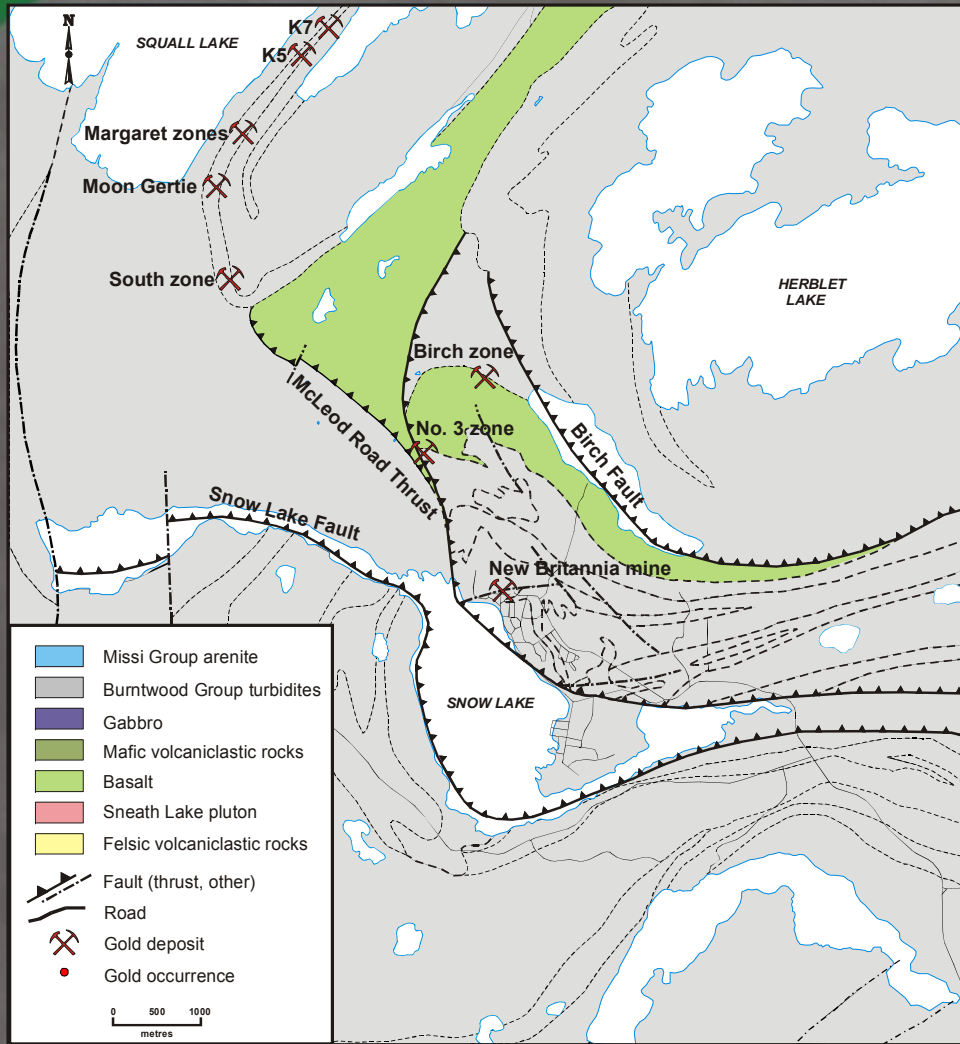
# Stratigraphy





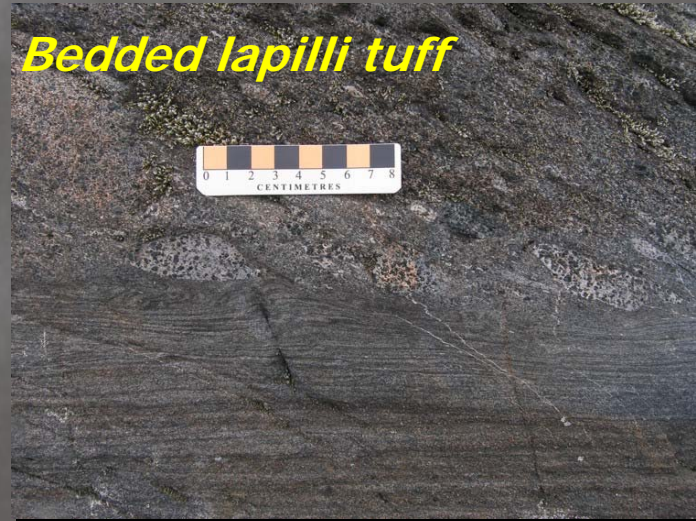
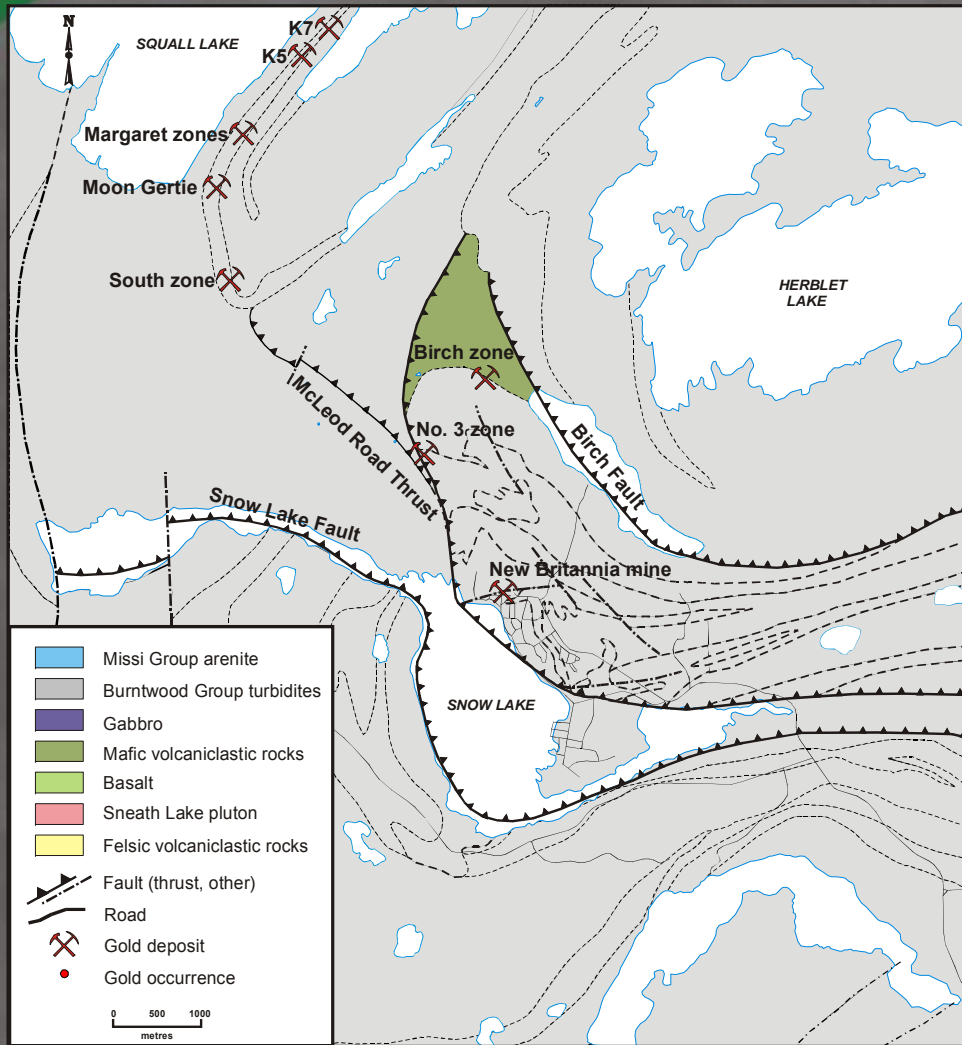


# Stratigraphy



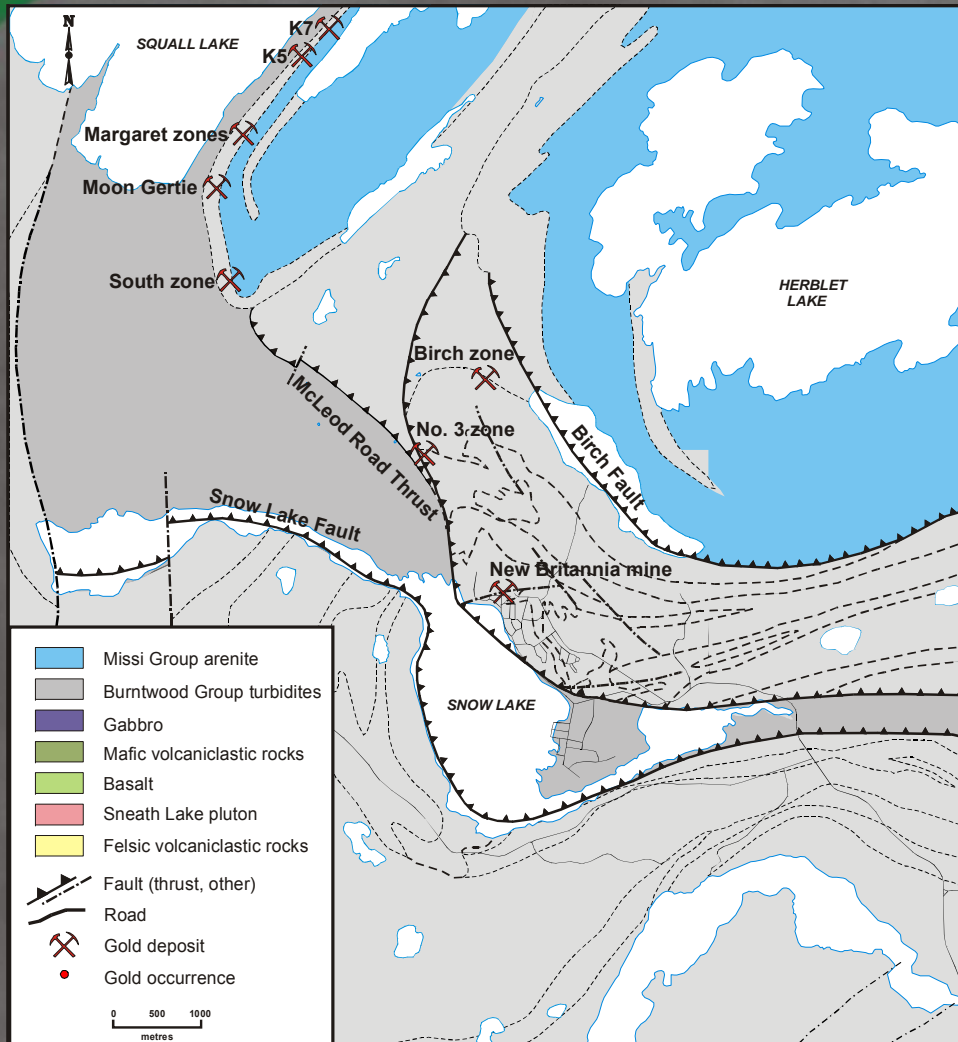


# Stratigraphy



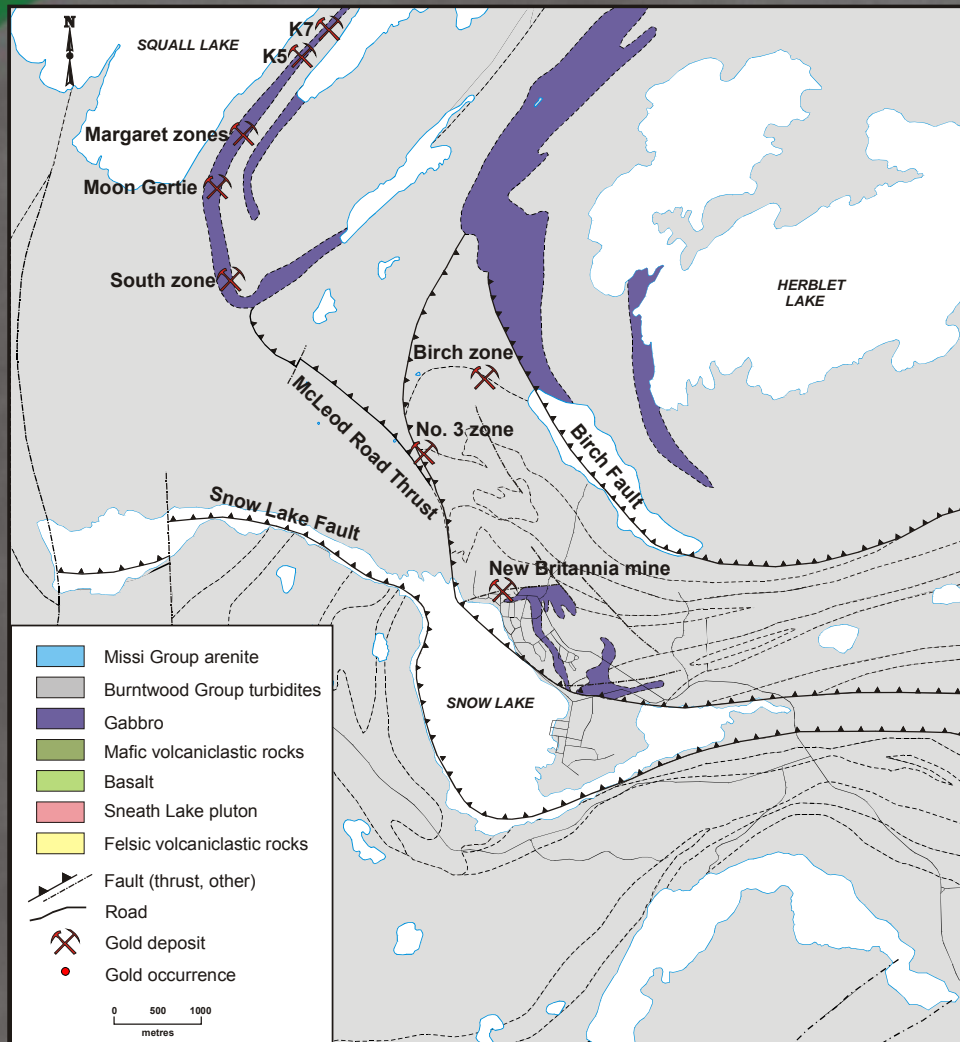


# Stratigraphy



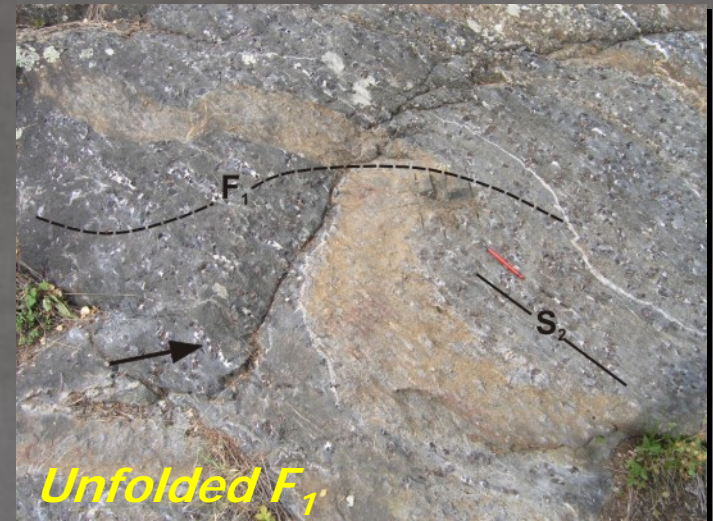
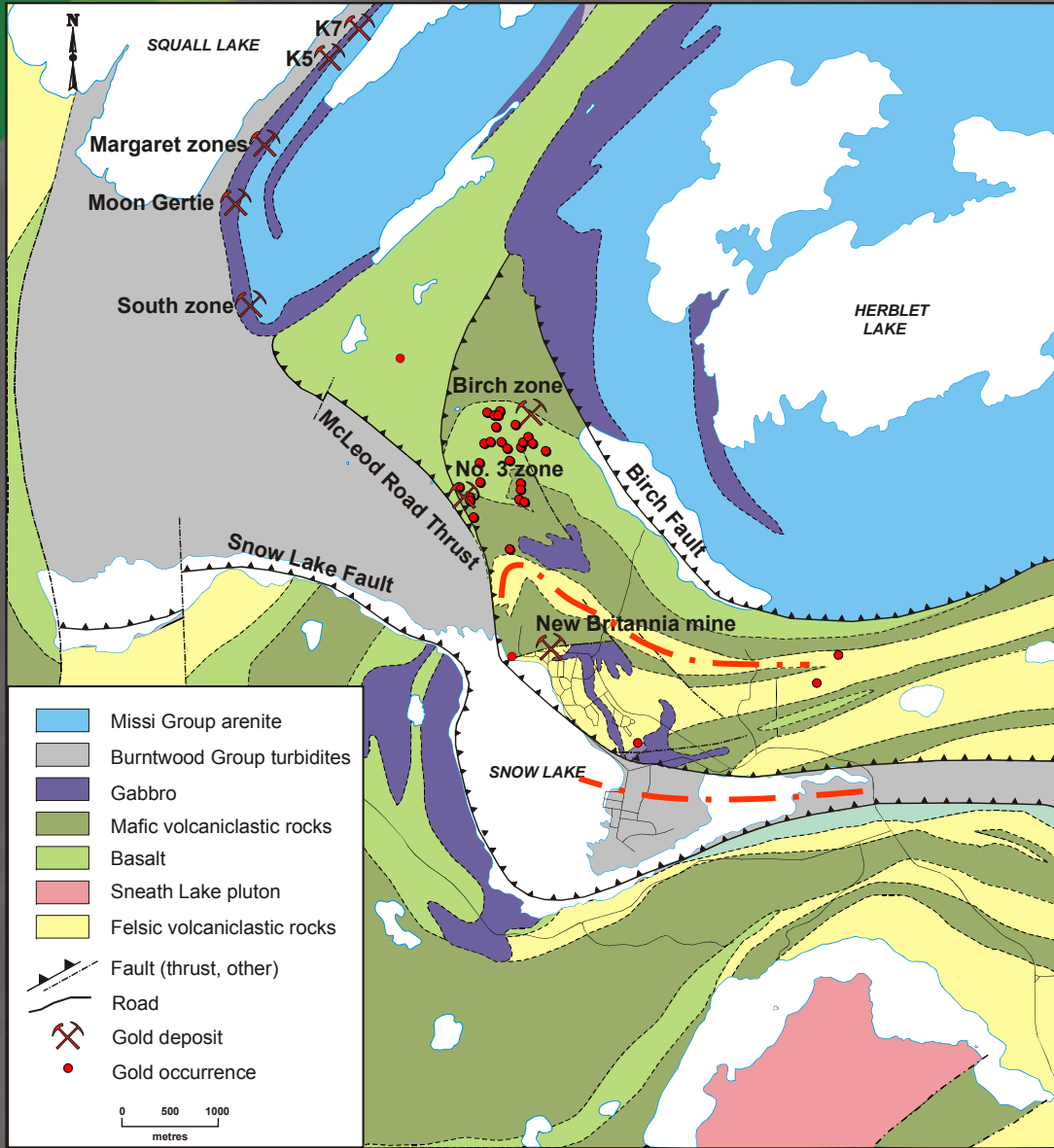


# Stratigraphy



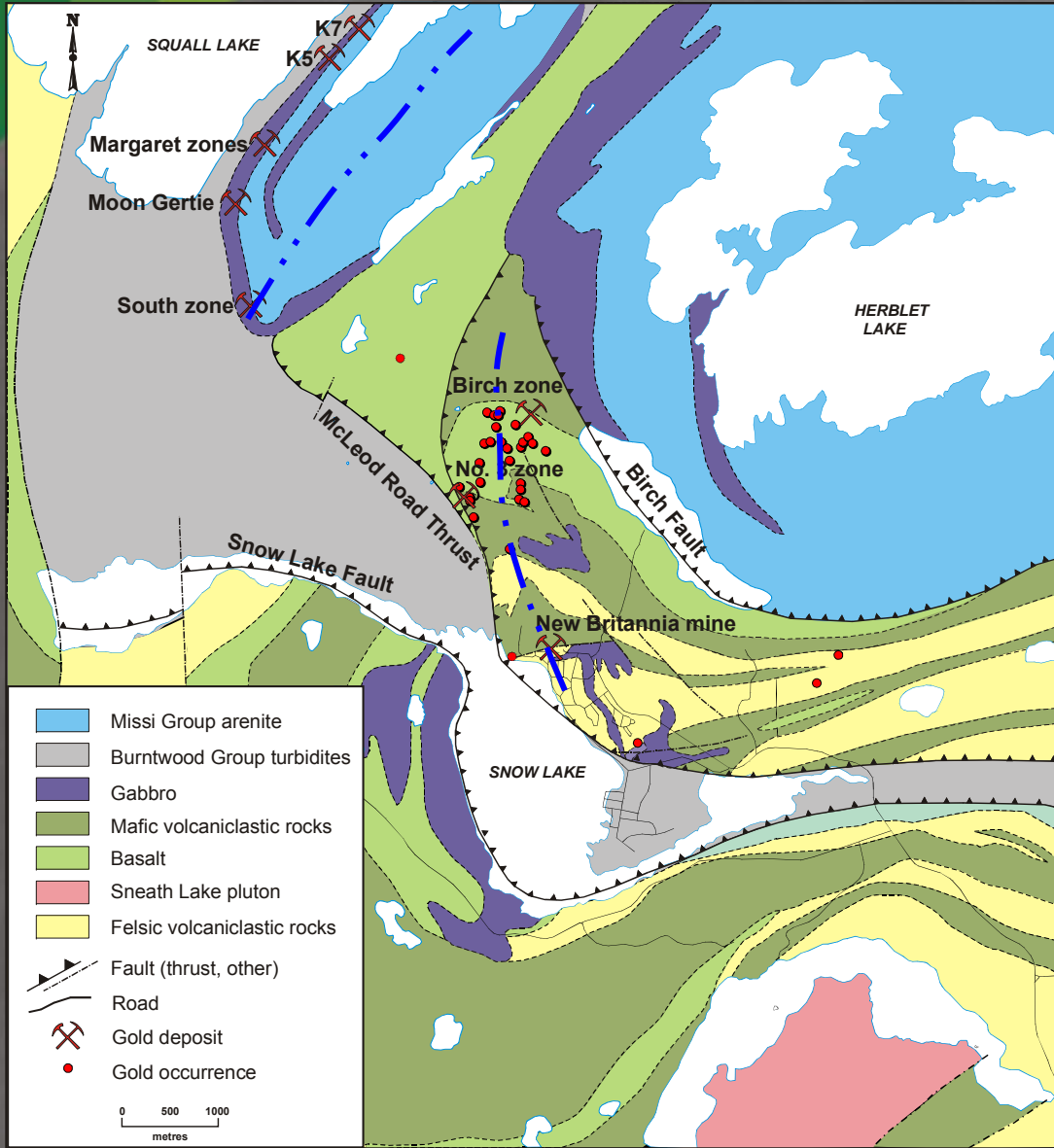


# F<sub>1</sub> Folding



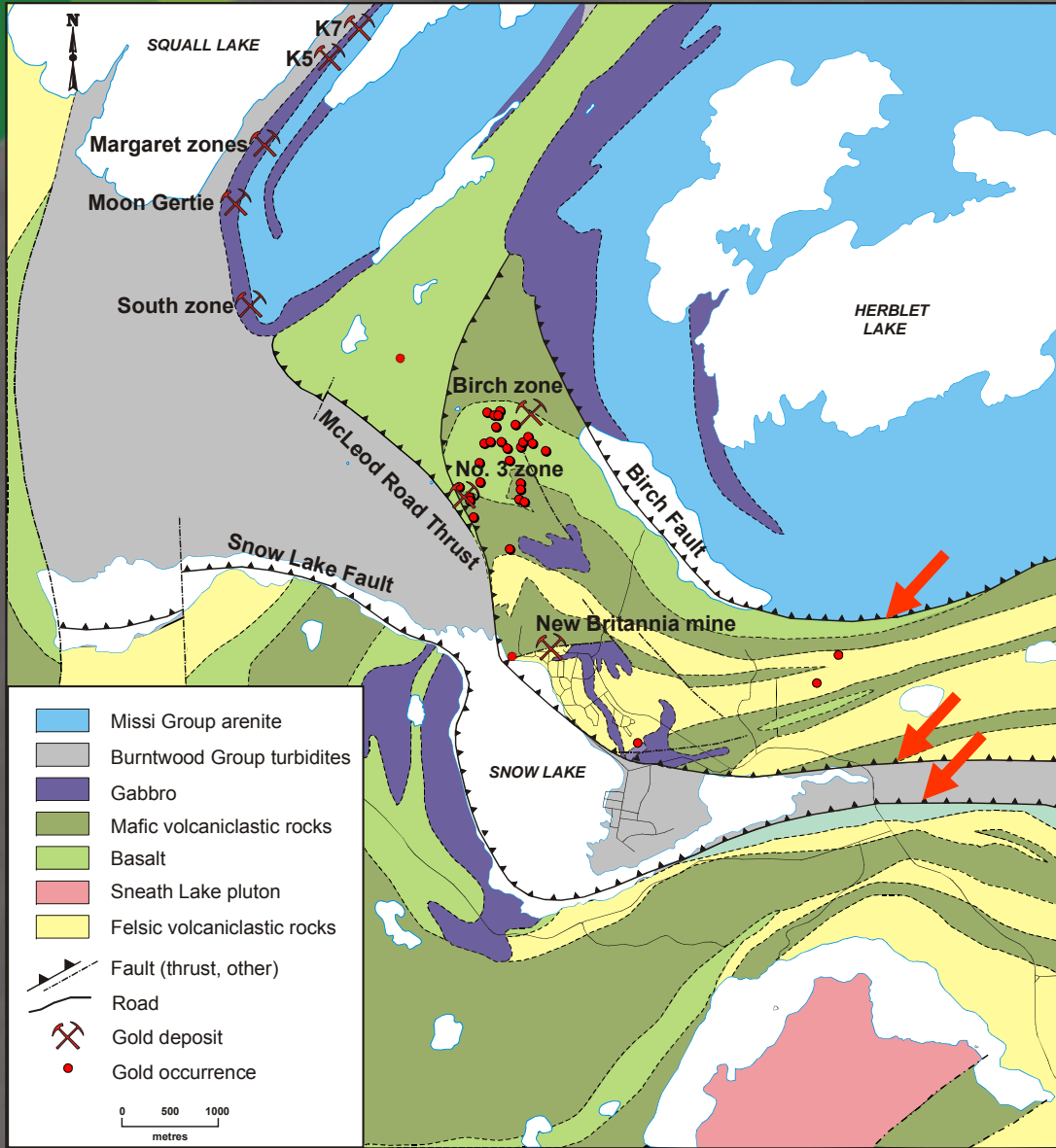


# F<sub>2</sub> Folding



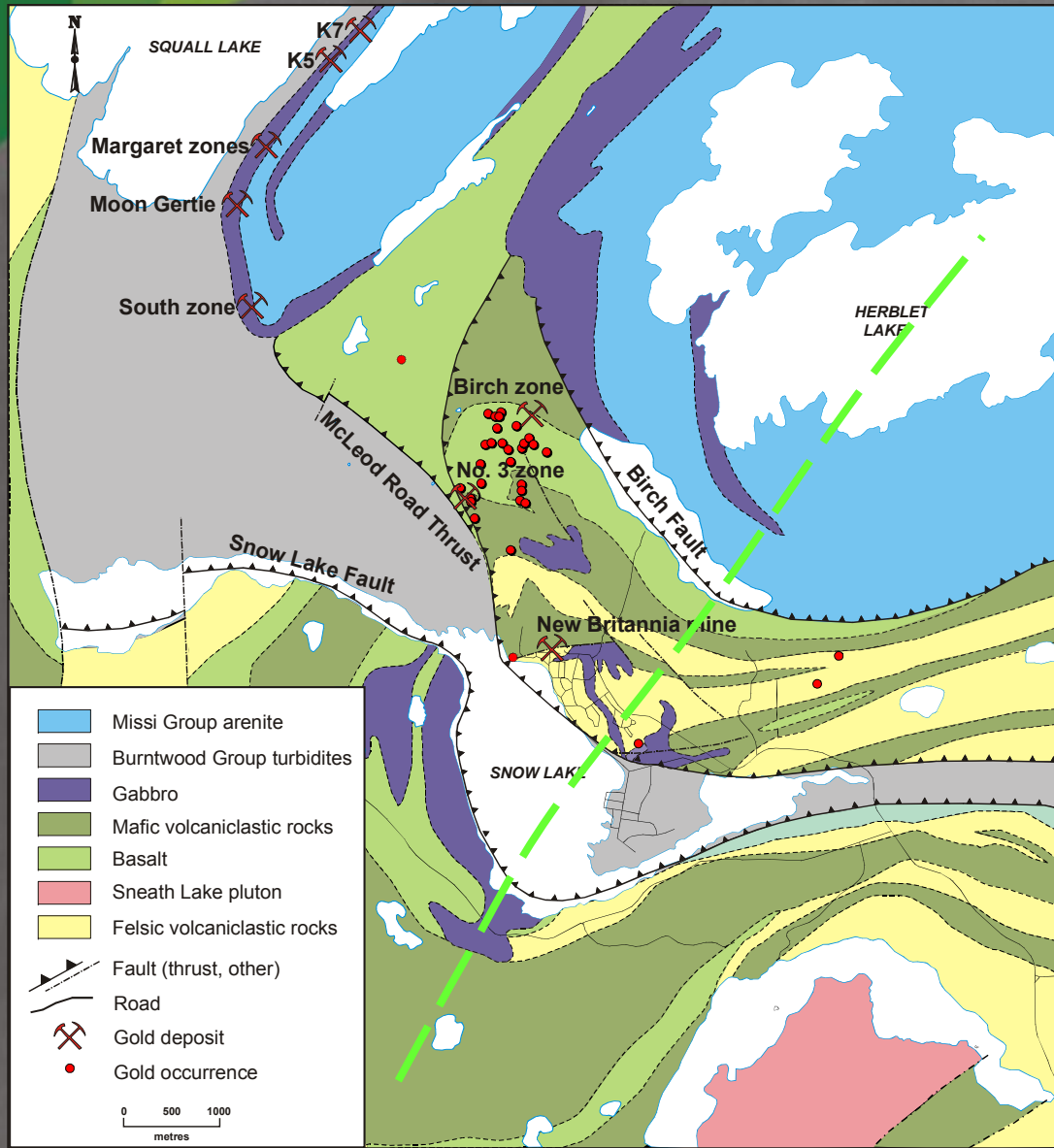


# D<sub>2</sub> Thrust Faulting





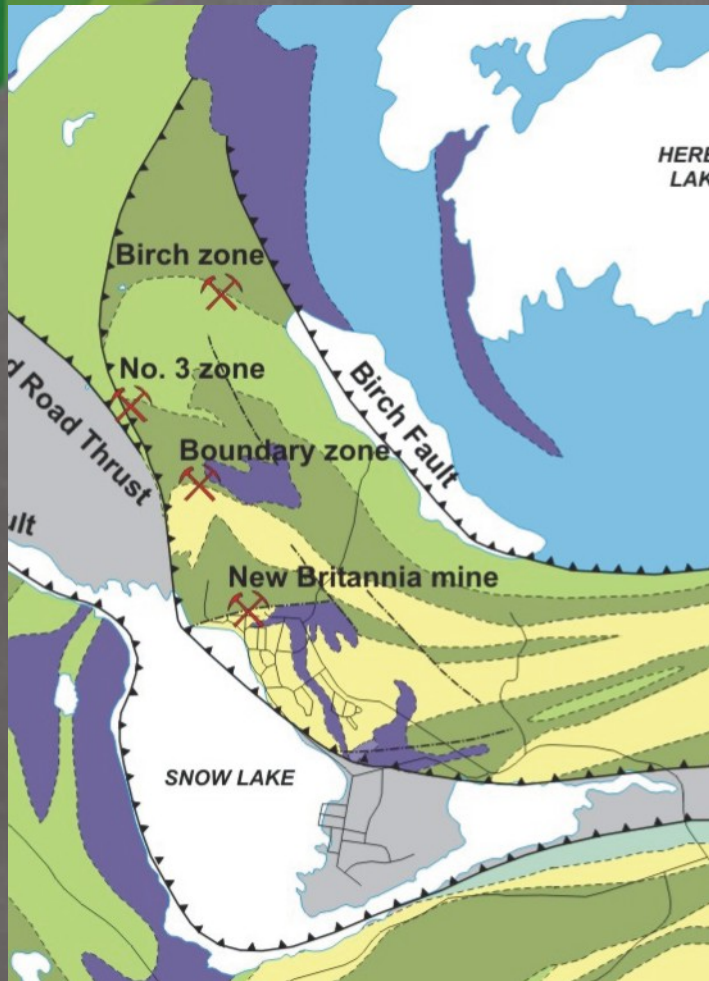
# F<sub>3</sub> Folding







# Gold Mineralization

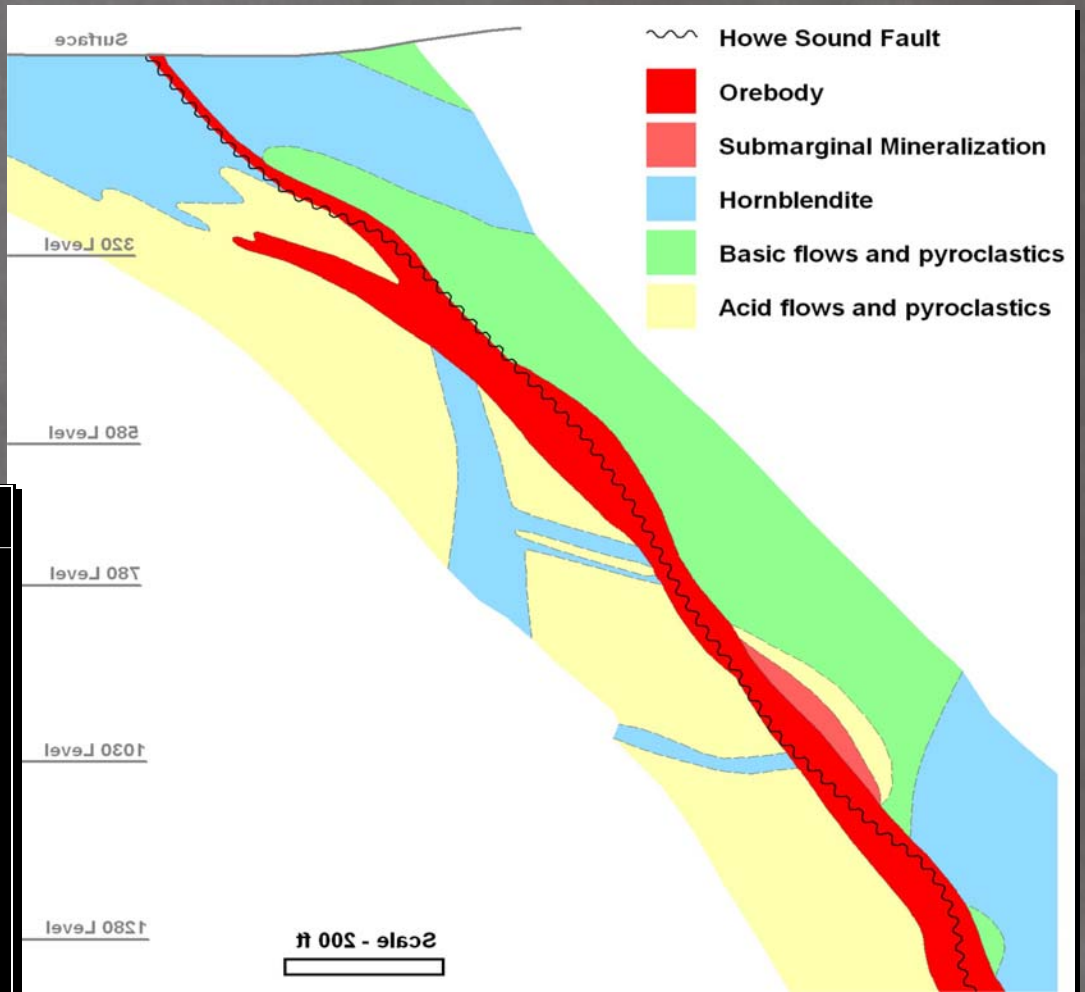


- Structurally controlled gold mineralization
- Mineralization focussed at stratigraphic contacts
- Arsenopyrite association
- High degree of silicification
- Pre- to Syn-mineralization potassium metasomatism and carbonate alteration

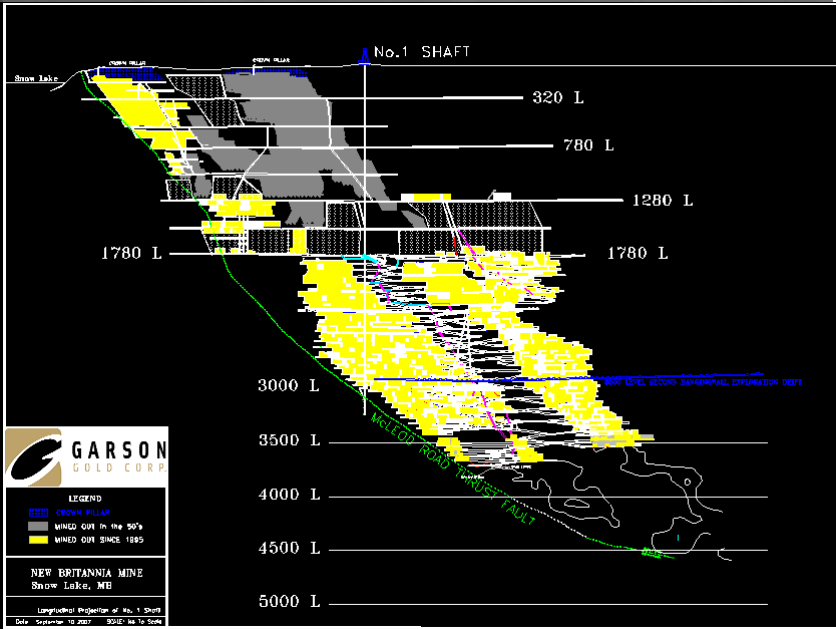




# New Britannia Mineralization



T [ åããåÁ ] { Álogg, 1957

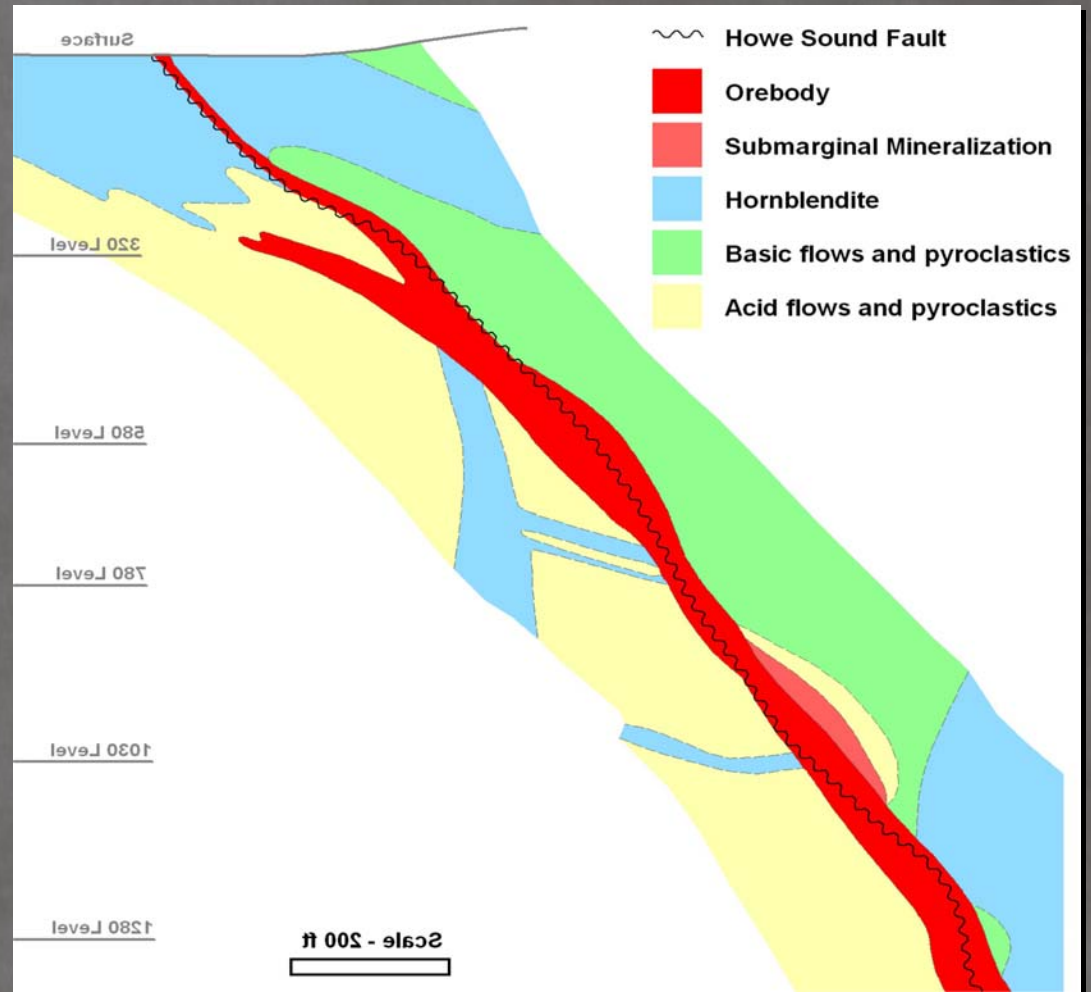
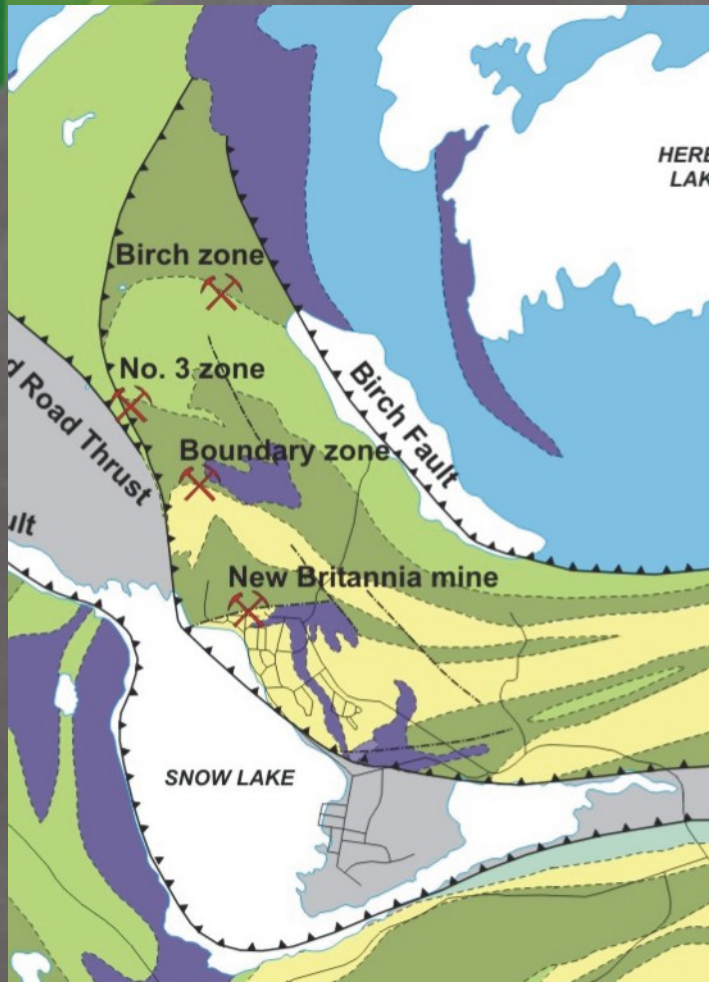


ca | ^ & | c ^ ^ Alexis Minerals [ | ] [ ]





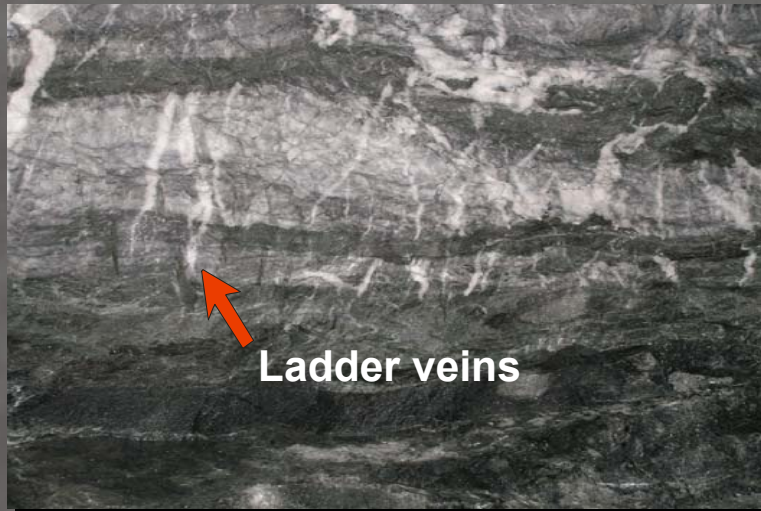
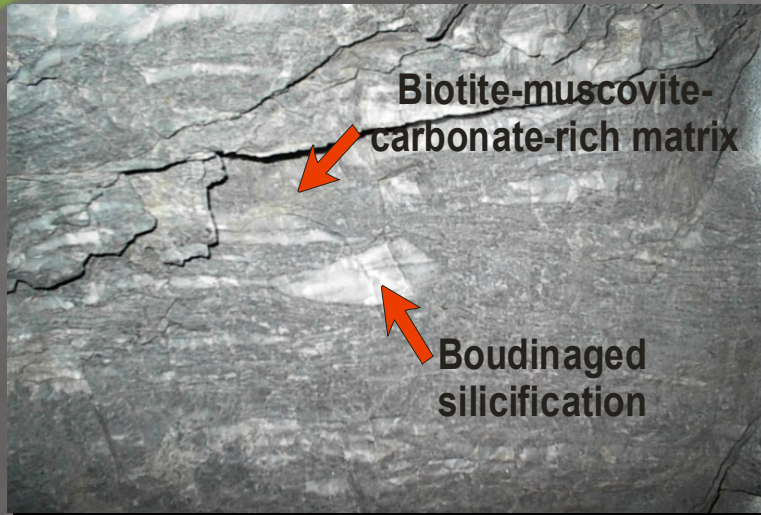
# New Britannia Mineralization



T [ åååå ] { Ålogg, 1957

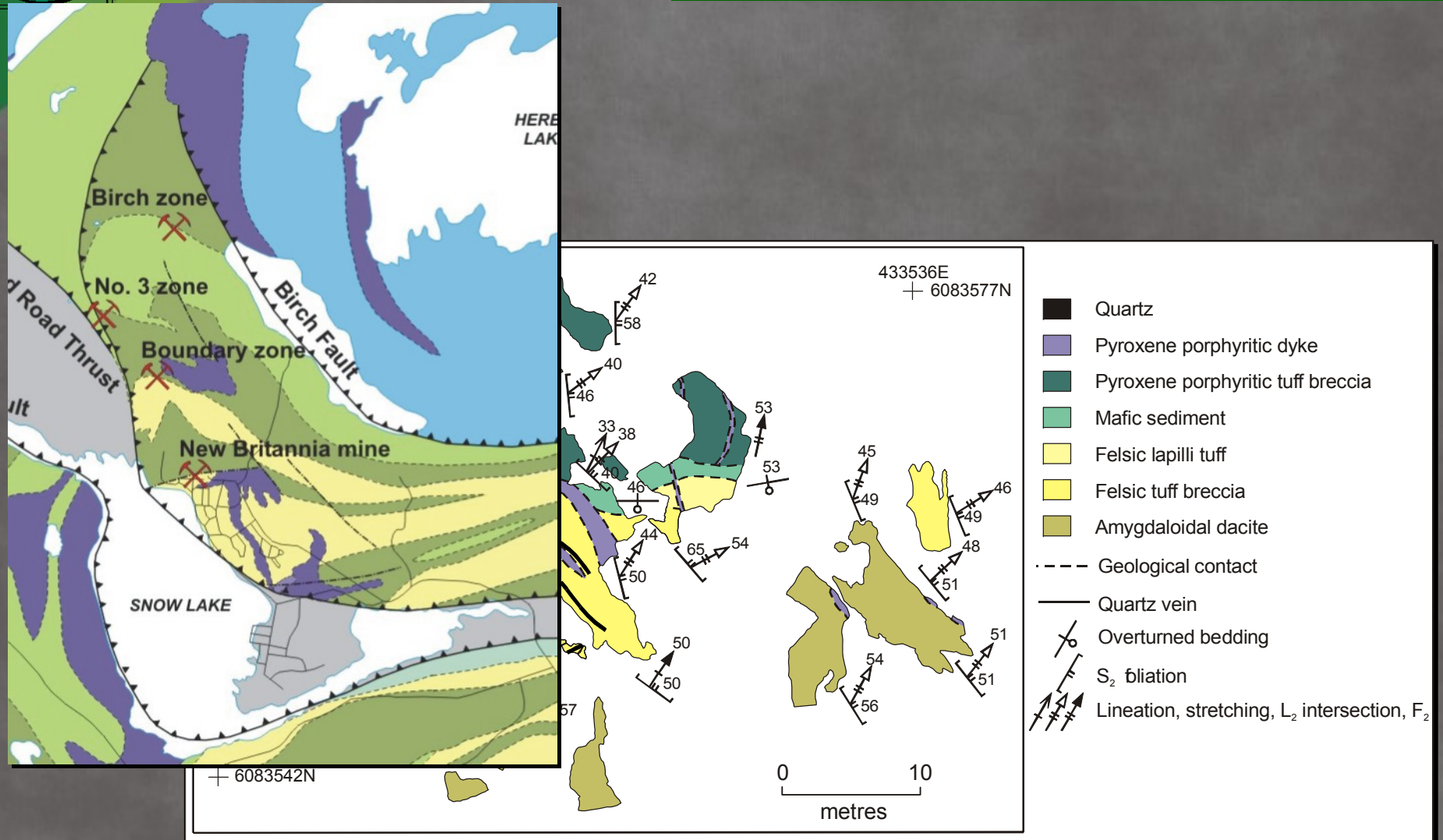


# New Britannia Mineralization





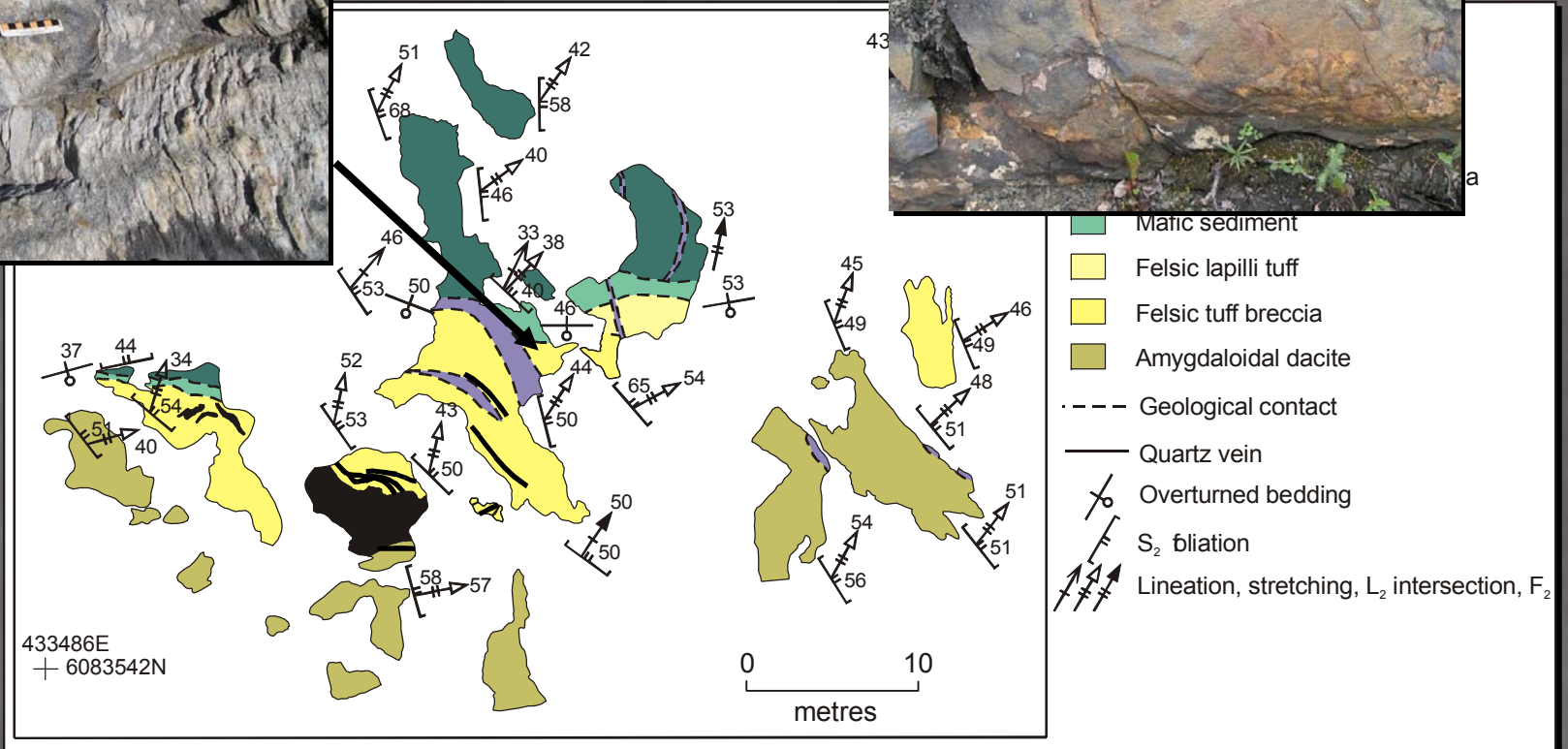
# Boundary Zone



*Overtured stratigraphy*



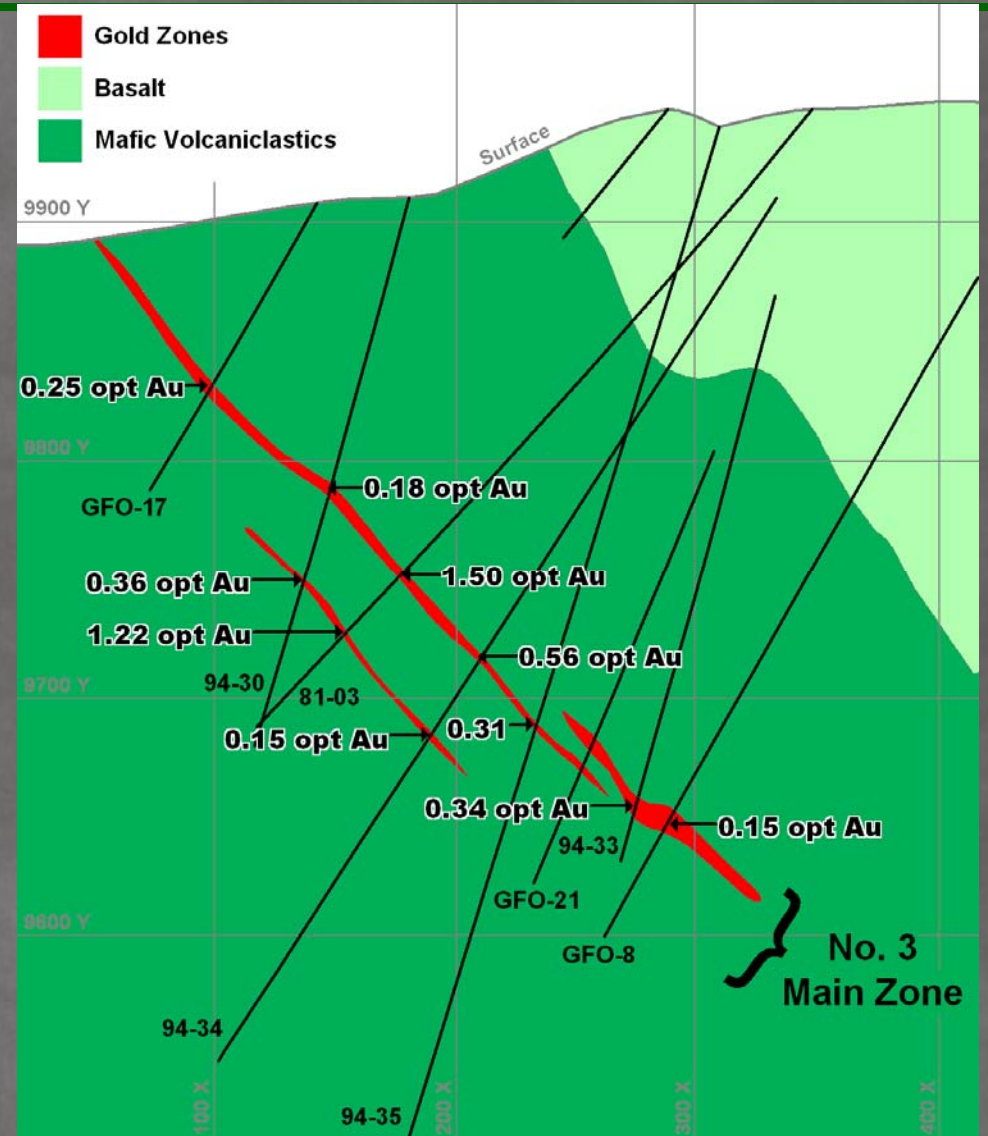
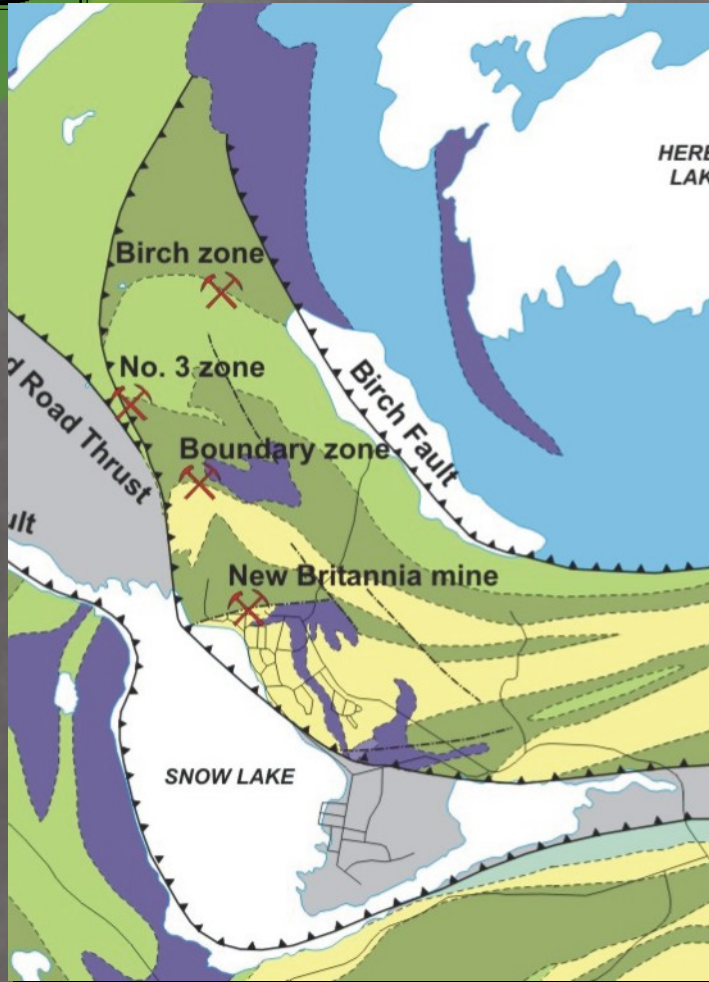
# Boundary Zone



*Overtuned stratigraphy*



# No. 3 Zone



Manitoba  
Alexis Minerals

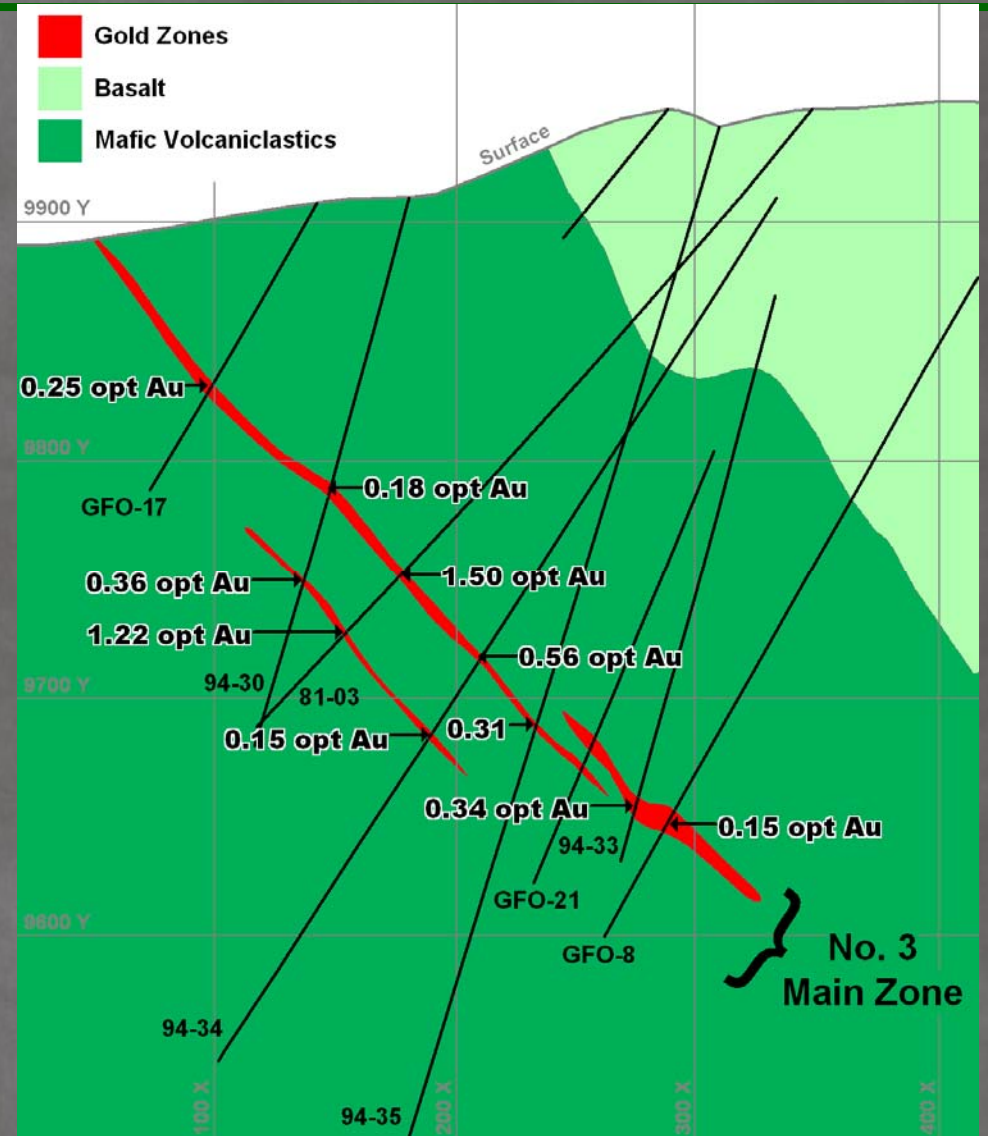




# No. 3 Zone



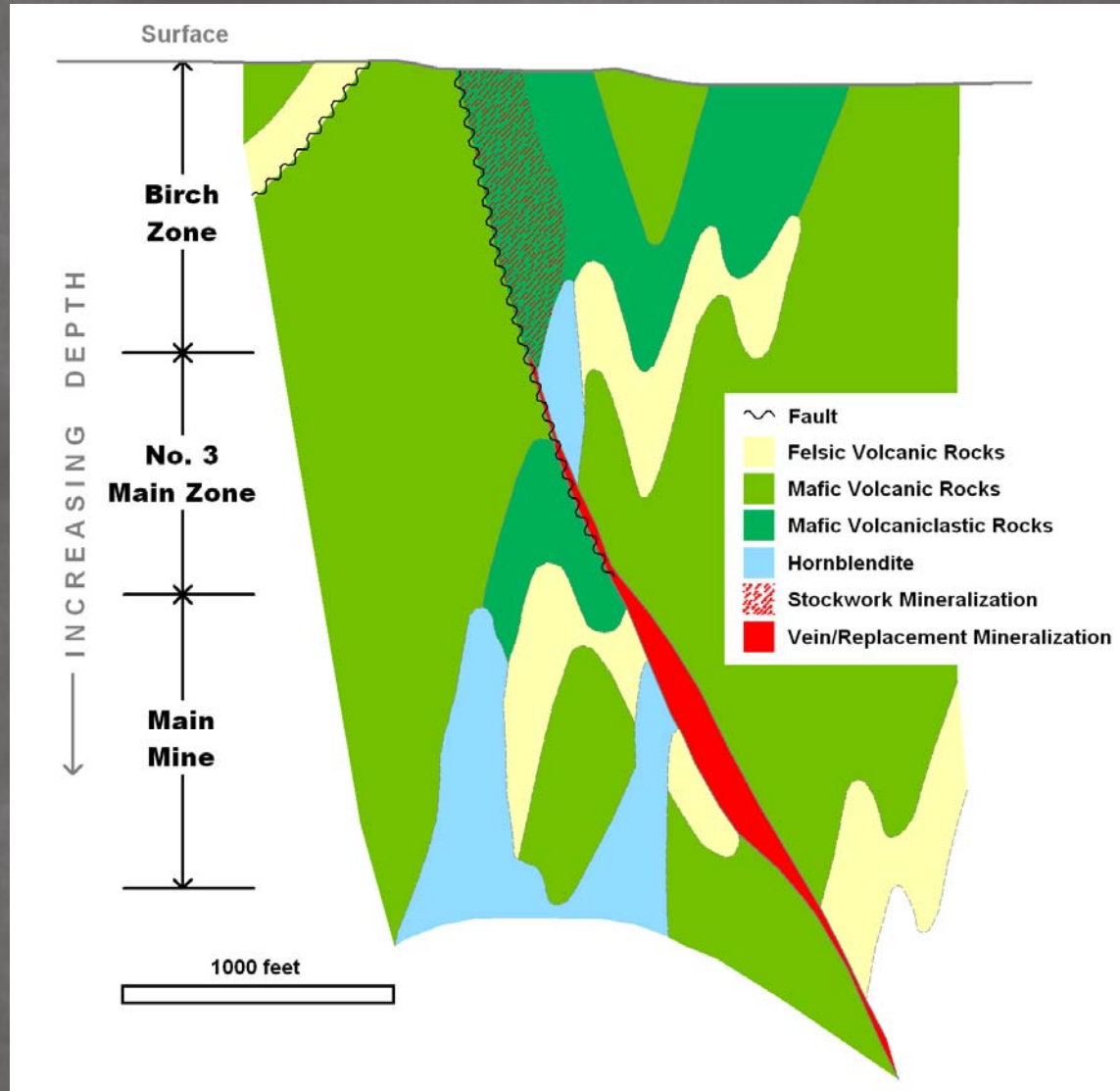
*Reactive veins*







# Schematic Cross Section





# No. 3 Zone

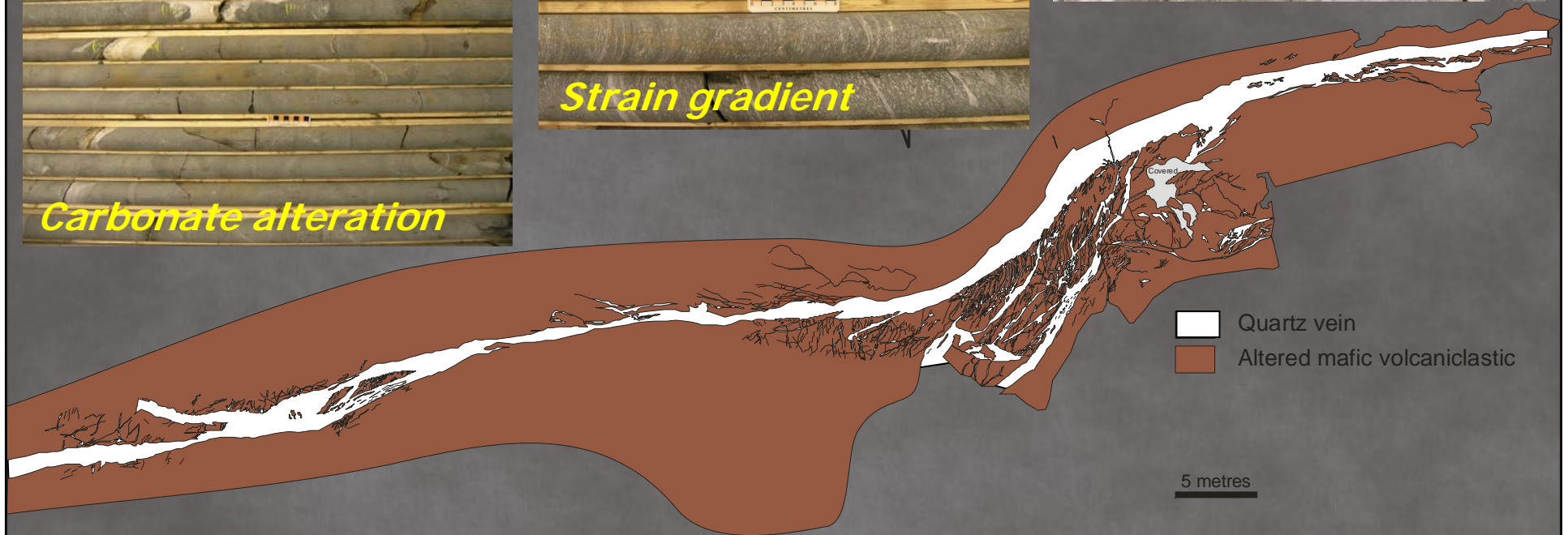
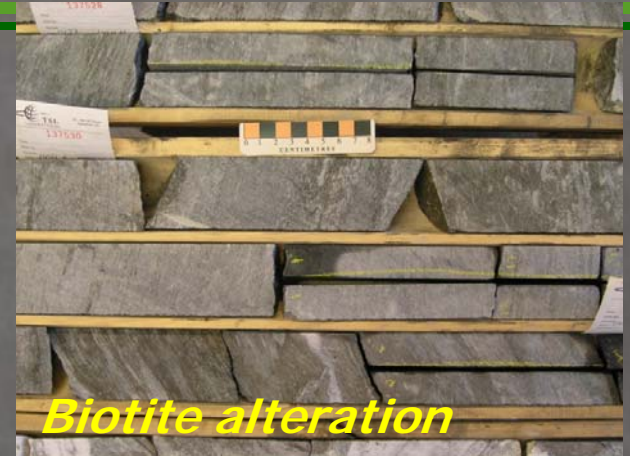
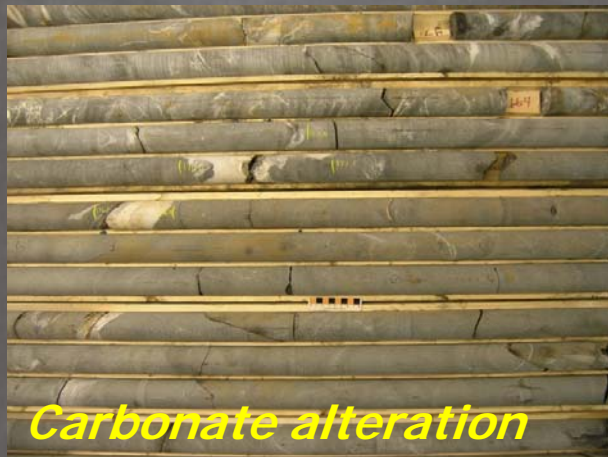
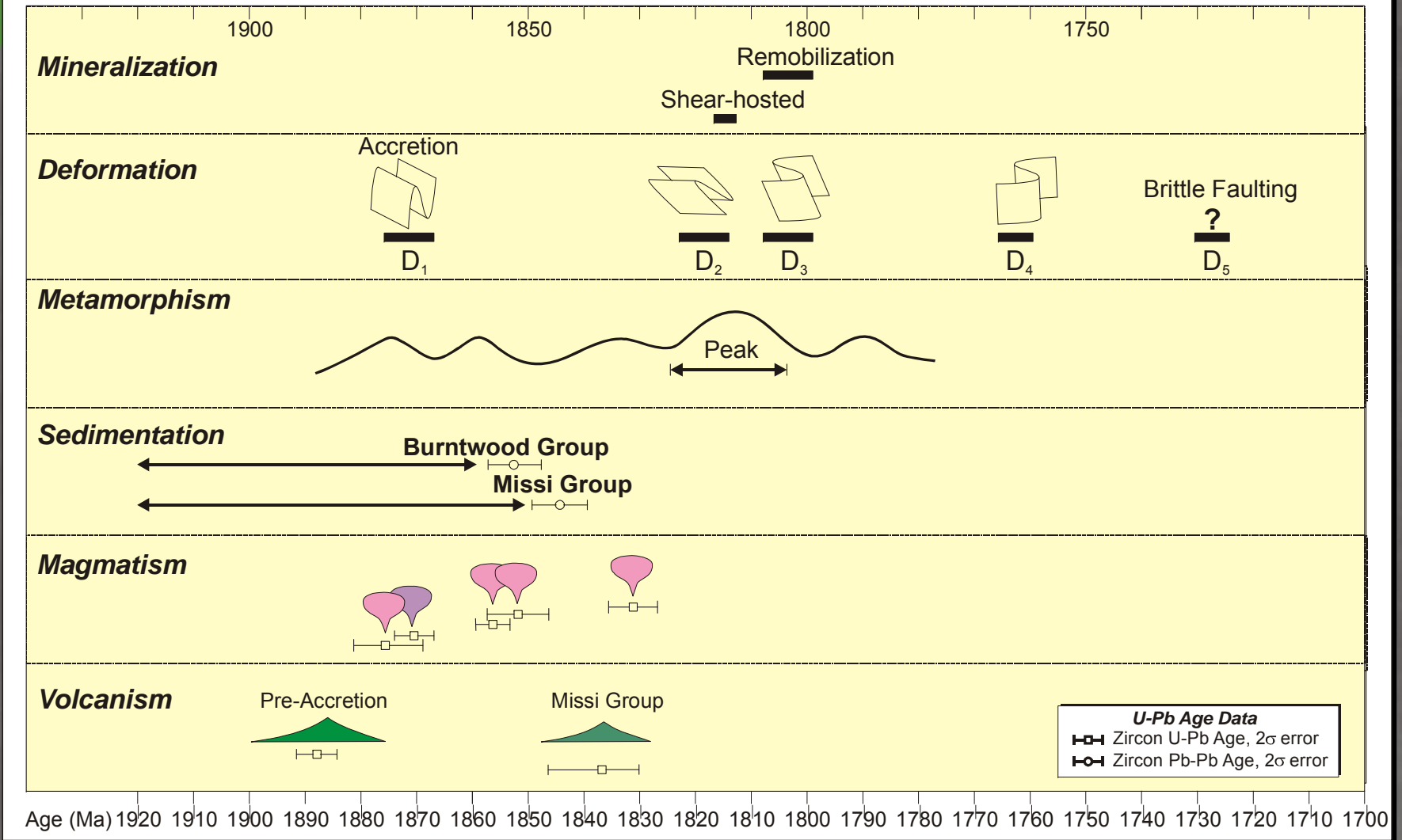


Figure courtesy of Alexis Minerals Corporation



# Summary





# References

**Hogg, N. 1957:** Nor-Acme mine; *in* Structural Geology of Canadian Ore Deposits, Canadian Institute of Mining and Metallurgy, Congress Volume, p. 262–275.

**Zwanzig, H.V. 1999:** Structure and stratigraphy of the south flank of the Kisseynew Domain in the Trans-Hudson Orogen, Manitoba: implications for 1.845-1.77 Ga collision tectonics; *in* NATMAP Shield Margin Project, Volume 2, Canadian Journal of Earth Sciences, v. 36, no. 11, p. 1859-1880