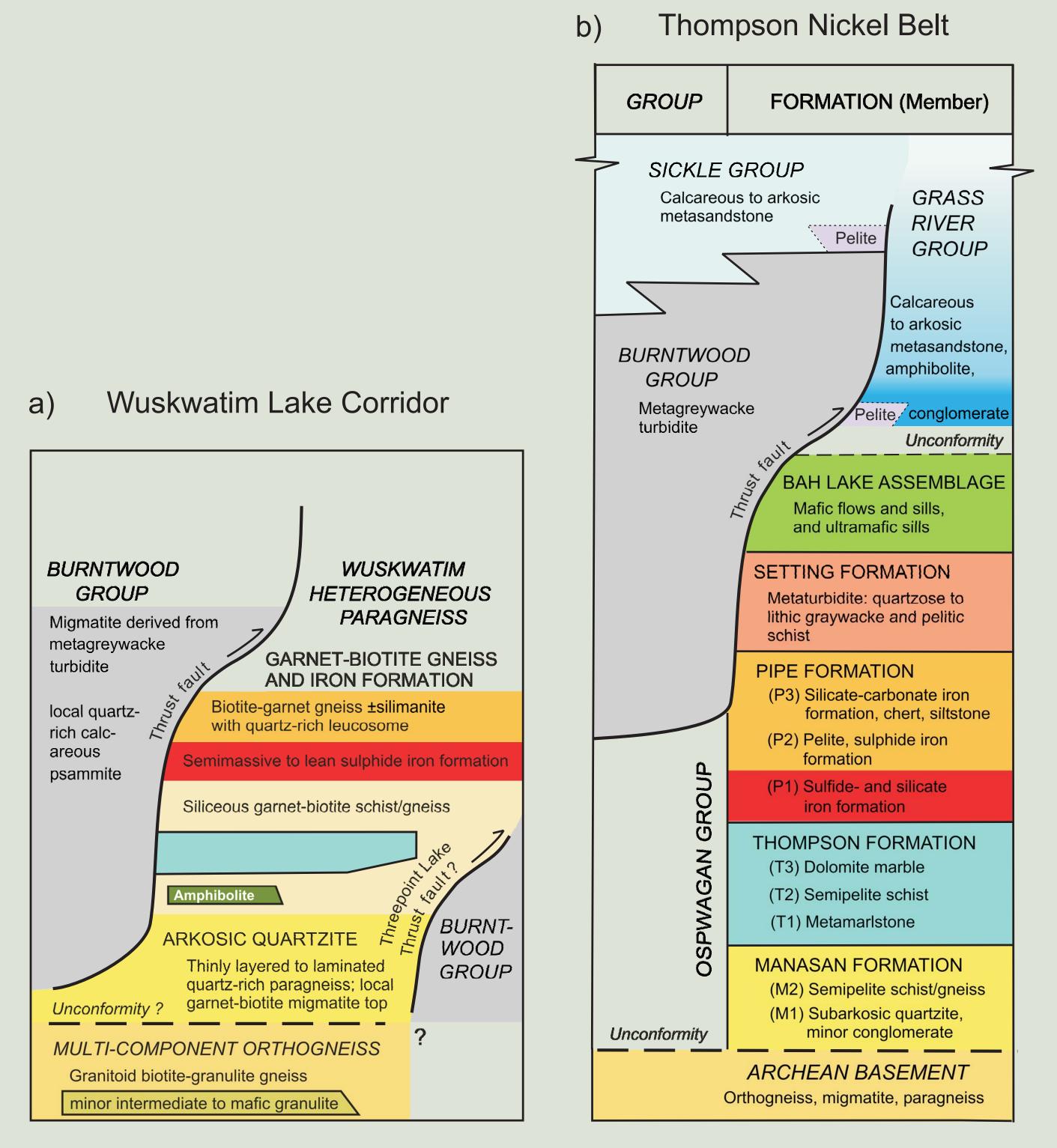


## Simplified geology of the exposed Thompson Nickel Belt with Threepoint - Wuskwatim lakes area outlined in red



Composite tectonostratigraphic columns comparing Wuskwatim Lake and Thompson Nickel Belt sections

# Summary

stratigraphic section through the narrow belts of this

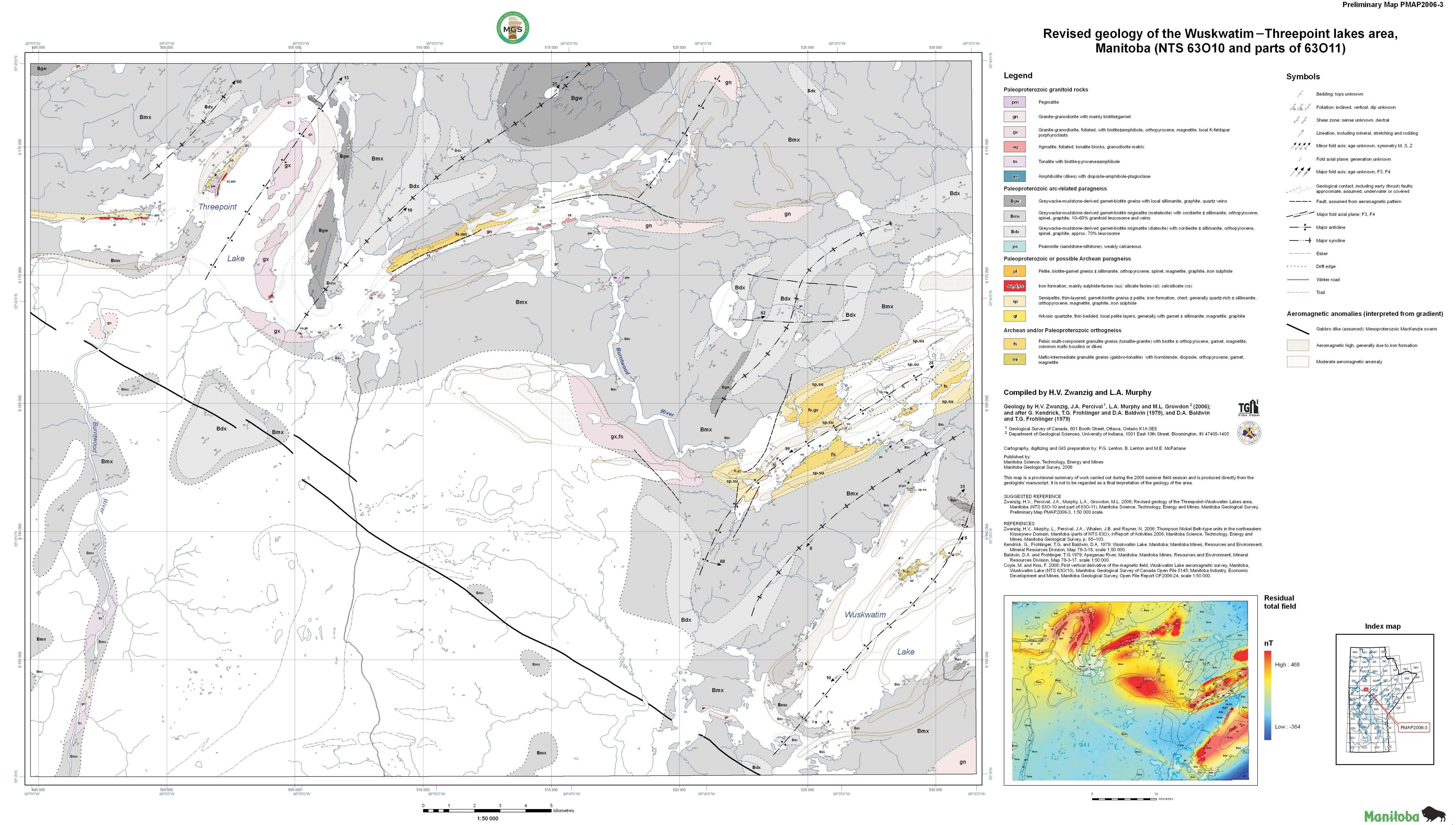


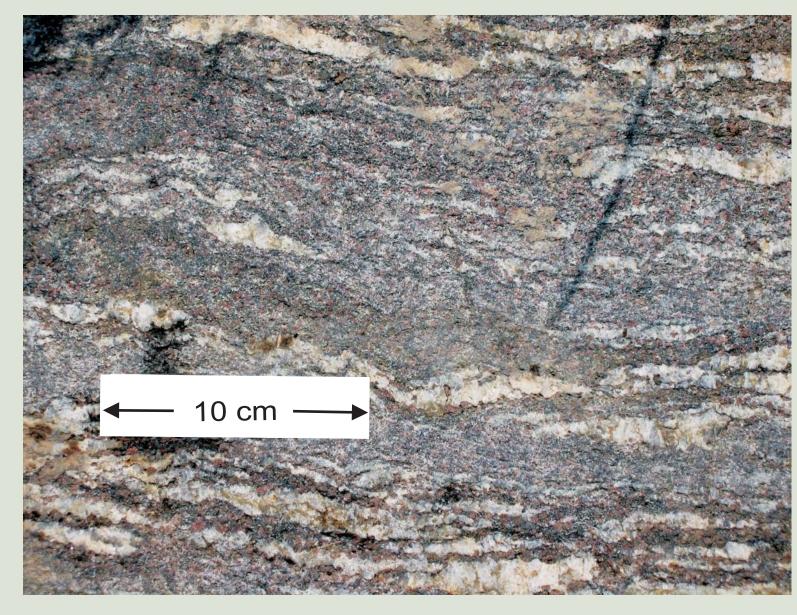
**Thompson Nickel Belt type-units in the northeastern Kisseynew Domain** 

Remapping a corridor from the Thompson Nickel Belt (TNB) 60 km west to Threepoint Lake (south of Nelson House) and a preliminary interpretation of geochemistry and Nd isotope data provide new evidence for an Archean age of crystallization and/or mantle extraction of biotite granulite facies orthogneiss in the northeastern part of the Kisseynew Domain. The gneiss occurs in local structural culminations mantled by, and probably interleaved with, heterogeneous paragneiss that may overlie it unconformably. A composite

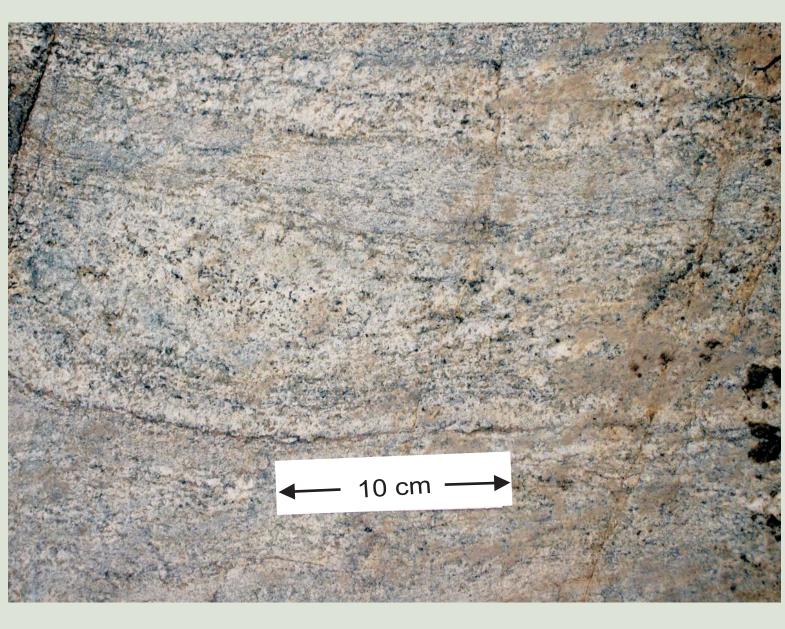
paragneiss comprises basal quartzite (containing only Archean detrital zircons) and minor calcsilicate gneiss, overlain by garnet-biotite gneiss and aeromagnetically prominent sulphide-facies iron formation. The succession has distinct similarities to the lower half of the cover rocks (Ospwagan Group) on the Archean basement in the TNB, but also some problematic differences. These narrow units are in fault contact with widespread juvenile Paleoproterozoic migmatite (Burntwood Group)

derived from volcanic-arc sedimentary rocks. A preliminary interpretation suggests that a large region, which seems to be structurally underlain by these rocks, may be a major exploration frontier for Thompson-type nickel deposits. This assumes that the correlation of these rocks with the Ospwagan Group is confirmed by more rigorous examination, including planned analytical work and further mapping.





Burntwood Group greywacke-mudstone-derived metatexite (Bmx) with quartz-rich leucosome; Nd model age = 2.37 Ga. Layers with larger garnets and more leucosome (eg. below scale) are interpreted as more pelitic.

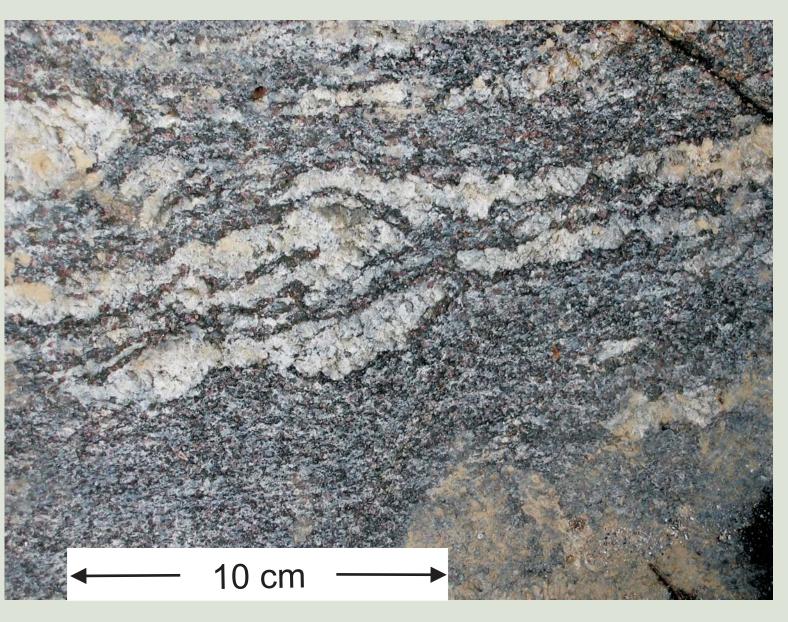


Calcareous quartz-rich metapsammite (unit cs) with lenses (near scale bar) and layers of calcsilicate minerals (top) including calcite; Nd model age = 2.38 Ga interpreted as part of the Burntwood Group.

egend	Symbols
aleoproterozoic granitoid rocks	Bedding: tops unknown
pm Pegmatite	Foliation: inclined, vertical, dip unknown
gn Granite-granodiorite with mainly biotite±garnet	ズ ズ Shear zone: sense unknown, dextral
gx Granite-granodiorite, foliated, with biotite±amphibole, orthopyroxene, magnetite, local K-feldspar porphyroclasts	Lineation, including mineral, stretching and rodding
ag Agmatite, foliated, tonalite blocks, granodiorite matrix	Minor fold axis: age unknown, symmetry M, S, Z
tn Tonalite with biotite-pyroxene±amphibole	Fold axial plane: generation unknown
am Amphibolite (dikes) with diopside-amphibole-plagioclase	Major fold axis: age unknown, F3, F4
aleoproterozoic arc-related paragneiss	Geological contact, including early (thrust) faults: approximate, assumed, underwater or covered
Bgw Greywacke-mudstone-derived garnet-biotite gneiss with local sillimanite, graphite, quartz veins	———— Fault, assumed from aeromagnetic pattern
Bmx Greywacke-mudstone-derived garnet-biotite migmatite (metatexite) with cordierite ± sillimanite, orthopyroxene, spinel, graphite, 10–60% granitoid leucosome and veins	Major fold axial plane: F3, F4
Bdx Greywacke-mudstone-deri∨ed garnet-biotite migmatite (diatexite) with cordierite ± sillimanite, orthopyroxene, spinel, graphite, approx. 70% leucosome	──··↓── Major anticline
ps Psammite (sandstone-siltstone), weakly calcareous	──···★ Major syncline
leoproterozoic or possible Archean paragneiss	Esker
pl Pelite, biotite-garnet gneiss ± sillimanite, orthopyroxene, spinel, magnetite, graphite, iron sulphide	···· Drift edge
u,silos Iron formation, mainly sulphide-facies (su); silicate facies (si); calcsilicate (cs)	
Semipelite, thin-layered, garnet-biotite gneiss ± pelite, iron formation, chert, generally quartz-rich ± sillimanite, orthopyroxene, magnetite, graphite, iron sulphide	Trail
orthopyroxene, magnetice, graphice, non suprice   qt   Arkosic quartzite, thin bedded, local pelite layers, generally with garnet ± sillimanite, magnetite, graphite	Aeromagnetic anomalies (interpreted from gradie
rchean and/or Paleoproterozoic orthogneiss	Gabbro dike (assumed): Mesoproterozoic MacKenzie swar
fs Felsic multi-component granulite gneiss (tonalite-granite) with biotite ± orthopyroxene, garnet, magnetite, common mafic boudins or dikes	Aeromagnetic high, generally due to iron formation
mi Mafic-intermediate granulite gneiss (gabbro-tonalite) with hornblende, diopside, orthopyroxene, garnet, magnetite	Moderate aeromagnetic anomaly

Geology by H.V. Zwanzig, J.A. Percival <sup>1</sup> , L.A. Murphy and M.L. Growdon <sup>2</sup> (2006); and after G. Kendrick, T.G. Frohlinger and D.A. Baldwin (1979), and D.A. Baldwin and T.G. Frohlinger (1979)	F
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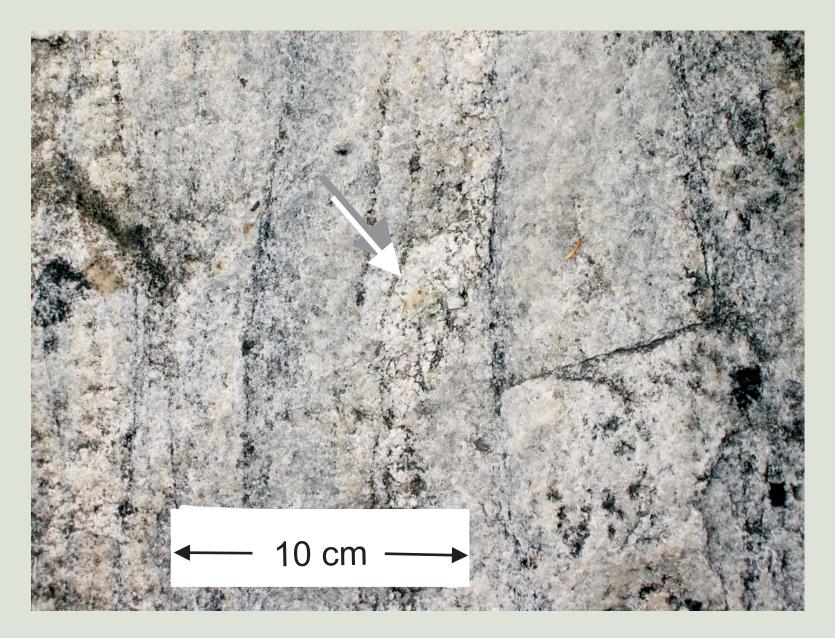
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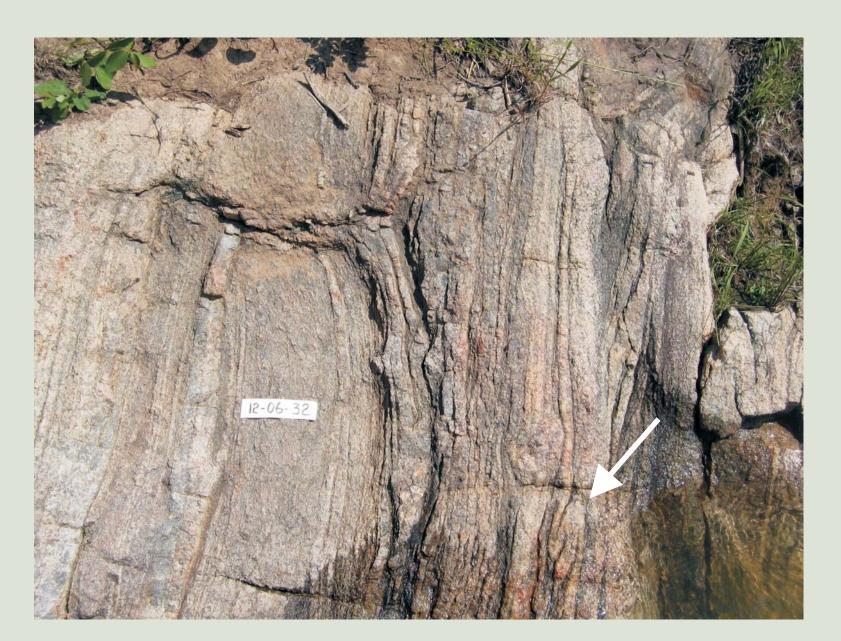
Quartz-rich veins in biotite-garnet gneiss (unit pl) appearing similar to Burntwood Group but formed from Archean detritus; Nd model age = 3.29 Ga: interpreted as part of Ospwagan-like paragneiss sequence.



Sulphide-facies iron formation (unit su) with quartzrich garnet-biotite gneiss interlayers (arrow), interpreted as part of Ospwagan-like paragneiss sequence.



Arkosic quartzite (unit qt) with thin biotite-rich partings as remnants of bedding and yielding only Archean detrital zircons, interpreted as base of Ospwagan-like sequence; pegmatite at arrow.



Layered multicomponent biotite-granulite gneiss, showing local isoclinal intrafolial folds (arrow); tape is 10 cm long: possible basement to the paragneiss sequence (above). Nd model age is 3.27 Ga.

H.V. Zwanzig, 2006