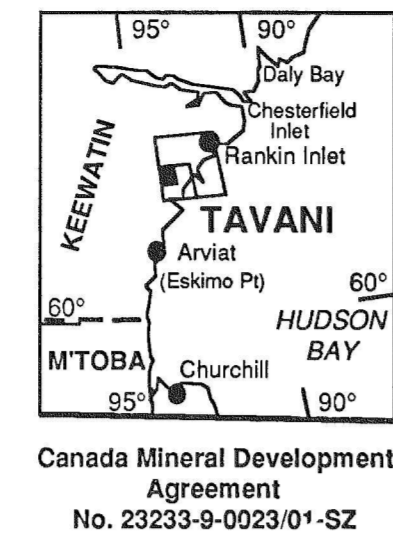


55K/5  
Scale 1:50,000  
GEOLOGY  
Map 3 of 8



Canada Mineral Development Agreement  
No. 23233-9-0023/01-SZ

**LEGEND**

**PROTEROZOIC**

- Diabase Dykes -- gabbro and diabase dykes -- Mackenzie dyke swarm
- Gabbro -- gabbro sills and plugs in the Hurwitz Group
- Lamprophyre Dykes -- minette with subordinate microtrachyte and syenite. A post-Kaminak dyke and a pre-Kaminak dyke swarm are recognised. Early dykes may be foliated, and are locally cut by Kaminak dykes.
- Diabase Dykes -- diabase dykes with abundant plagioclase megacrysts -- Kaminak dyke swarm. Margins sometimes foliated.

**Hurwitz Group (early Proterozoic)**

- Tavaní Formation -- white and pink lithic arkoses and feldspathic arenite/litharenite, local shale partings, red shale rip-up breccia, and polymict conglomerate.
- Kinga Formation -- (Whiterock Lake Member), white orthoquartzite, locally pink pure, carbonate rich layers and dolostone. HKS - sub-Whiterock member, reddened sandstone, siltstone, and shale, mass-flow polymict breccia, impure grey quartz-arenite

**ARCHEAN**

- Granitoids -- two groups recognised: late to post-tectonic granite to granodiorite plutons, include the 'East Lake' (gr), south Gill Lake (gr), and east Gill Lake (gr) plutons, and a granodiorite-monzonite body north of Last Lake (gr); syn-tectonic granitoids and granodiorite to granites and quartz-monzonite with subordinate quartz diorite, diorite and gabbro, include the north Gill Lake pluton (gr), Tavaní (gr) and Last Lake (gr) granites. Syn-tectonic granitoids have a marginal migmatite zone. Age dates (all discordant, upper intercept U-Pb zircon): south Gill Lake pluton - 2500-2540 Ma, east Gill Lake pluton - 2660 ± 2 Ma, north Gill Lake pluton - 2670 ± 4.6 Ma.
- Porphyry -- quartz and quartz-feldspar porphyry, microgranite, and felsite forming dykes, plugs, and stocks, intruded into Atungag and Akliaqnakuk formations; possible subvolcanic intrusive equivalents of felsic volcanic rocks of the Akliaqnakuk formation. Age date on porphyry sheet at Gill Lake 2675 Ma (U-Pb zircon, highly discordant, upper intercept, minimum age).
- Felsite Dykes -- felsite dykes north of Last Lake, relationship to pr is unknown.

- Gabbro -- gabbro and related rocks (subordinate diabase, diorite, quartz-diorite, tonalite, ironjhemite around Gill Lake) of the Kiksautuk suite (gb). Porphyritic, glomerophytic, and minor non-porphyrific varieties, all variably deformed especially at their margins (schistose margins). Gabbros, quartz-gabbros, and diorite of the 'Fat Lake' suite (gb), all plagioclase megacryst bearing.
- Diorite -- unknown relationship to gbk and gb, no associated gabbro.
- Porphyritic Dykes -- porphyritic diabase dykes with leuco-gabbro or anorthositic xenoliths (relationship to gb and dr unknown).
- Migmatite -- mafic palaeosomes, dioritic to tonalitic neosomes, palaeosome relics suggest affinities with Atungag and Akliaqnakuk formations.

**Kaminak Supergroup**

- Tagiulik formation - quartz-poor turbidites and magnetite-chert ironstone. Turbidite units range from coarse psammite wackes and matrix supported breccias to fine lithic siltstones and chert-ironstone. Conglomerate, carbonate, sulphidic pelite locally developed at base of succession. Exposed base of Tagiulik formation at Gill Lake and Mistake Bay is a high strain zone (probable thrust). This formation is allochthonous with respect to the Kasigialik group.

**Kasigialik group**

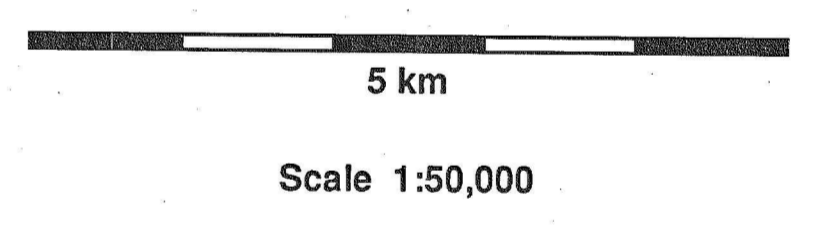
- Evitavuk formation - dominantly quartz-rich greywacke; turbiditic cycles grade from coarse arenite to shale-slate. Local feldspathic quartz-arenite and arkose, matrix-supported polymict conglomerate near base of succession (Ev).
- Akliaqnakuk formation -- Akm - predominantly mafic volcanic rocks, lavas - pillowed, massive, variolitic, porphyritic and non-porphyrific; hyaloclastite, epiclastic breccia. AKf - predominantly felsic volcanic rocks, rhyolitic and dacitic lavas, epiclastic breccia, and coarse sandstone. AKs - predominantly sedimentary, volcanoclastic arenite and siltstone, quartz arenite, polymict conglomerate, oligomict granite conglomerate (AKc), carbonate ironstone, chert, black slate.
- Atungag formation -- mafic pillow lavas and sub-ordinate massive mafic lavas, lava tubes, dykes, sills, minor chert.

- S<sub>0</sub> (inclined, overturned, vertical)
- Younging direction
- S<sub>1</sub>, (inclined, vertical)
- S<sub>2</sub>, (inclined, vertical)
- S<sub>3</sub>, (inclined, vertical)
- lineation (mineral or stretching)
- S<sub>3</sub> intersection lineation
- Fold axis, F<sub>1</sub>, F<sub>2</sub>
- Fold axial traces F<sub>1</sub>, F<sub>2</sub>, F<sub>3</sub>

- Geological Contacts observed, approximate, inferred
- Faults observed, approximate, inferred
- Thrust observed, inferred
- Edge of outcrop
- Lakes, coastline

- Minerals  
py - pyrite, po - pyrrhotite, cp - chalcopyrite, ga - galena, Au - gold, Fe - iron oxide, Ni - nickel, Zn - zinc

**GEOLOGY OF THE SOUTHWESTERN PART OF THE TAVANI MAP AREA (55K/3,4,5,6), DISTRICT OF KEEWATIN, N.W.T.**



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Canada Mineral Development Agreement,  
Contract No. 23233-9-0023/01-SZ

Contribution to Canada-Northwest Territories Mineral Development Subsidiary Agreement 1987-91, under the Economic Development Agreement. Project funded by the Geological Survey of Canada

Contribution à l'Entente auxiliaire Canada-Territoires du Nord-Ouest d'exploitation minière 1987-1991, dans le cadre de l'Entente de développement économique. Projet subventionné par la Commission géologique du Canada

Northwest Territories Energy, Mines and Resources Secretariat

Energy, Mines and Resources Canada / Énergie, Mines et Ressources Canada



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