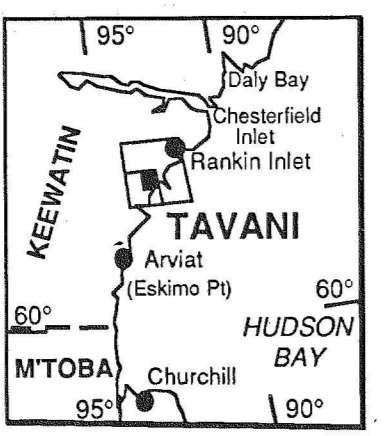


55K/6
GILL LAKE
 Scale 1:50,000
STRUCTURE
 Map B of B



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.
- Younging direction
- S₁, (inclined, vertical)
- S₂, (inclined, vertical)
- S₃, (inclined, vertical)
- lineation (mineral or stretching)
- S₃ intersection lineation
- Fold axis, F₁, F₂
- Fold axial traces F₁, F₂, F₃
- 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

Hurwitz Group (early Proterozoic)

- Tavana 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' (gr₁), south Gill Lake (gr₂), and east Gill Lake (gr₃) plutons, and a granodiorite-monzonite body north of Last Lake (gr₄); syn-tectonic granitoids and granodiorite to granites and quartz-monzonite with subordinate quartz diorite, diorite and gabbro, include the north Gill Lake pluton (gr₅), Tavana (gr₆) and Last Lake (gr₇) granites. Syn-tectonic granitoids have a marginal migmatite zone. Age dates (all discordant, upper intercept U-Pb zircon): south Gill Lake pluton - 2600-2640 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 Aklignaktuk formations; possible subvolcanic intrusive equivalents of felsic volcanic rocks of the Aklignaktuk 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, trondhjemite around Gill Lake) of the Kiksautiuk suite (gbk). Porphyritic, glomerophytic, and minor non-porphyritic varieties, all variably deformed especially at their margins (schistose margins). Gabbros, quartz-gabbros, and diorite of the 'Fat Lake' suite (gbf), all plagioclase megacryst bearing.
- Diorite -- unknown relationship to gbk and gbf, no associated gabbro.
- Porphyritic Dykes -- porphyritic diabase dykes with leuco-gabbro or anorthosite xenoliths (relationship to gb and dr unknown).
- Migmatite -- mafic palaeosomes, dioritic to tonalitic neosomes, palaeosome relics suggest affinities with Atungag and Aklignaktuk formations.

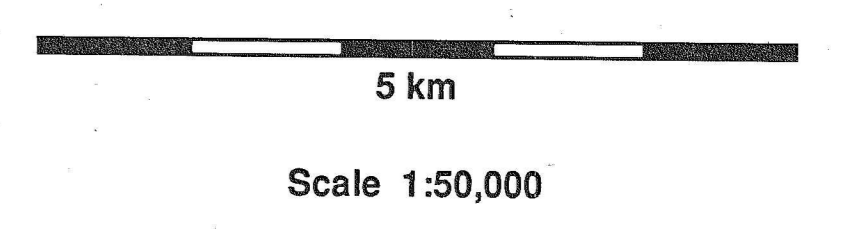
Kaminak Supergroup

- 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 pebbles 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

- Evitaruktuk formation - dominantly quartz-rich greywacke; turbidite cycles grade from coarse arenite to shale-slate. Local feldspathic quartz-arenite and arkose, matrix-supported polymict conglomerate near base of succession (Ev₀)
- Aklignaktuk formation -- Akm - predominantly mafic volcanic rocks, lavas - pillowed, massive, variolitic, porphyritic and non-porphyritic; hyaloclastite, epiclastic breccia, and coarse sandstone. 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.

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



ADRIAN F. PARK and STEVEN RALSER
 CENTRE FOR DEFORMATION STUDIES IN THE EARTH SCIENCES
 DEPARTMENT OF GEOLOGY
 UNIVERSITY OF NEW BRUNSWICK
 FREDERICTON, N.B., E3B 5A3.

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



OPEN FILE
 DOSSIER PUBLIC
2265
 GEOLOGICAL SURVEY OF CANADA
 COMMISSION GÉOLOGIQUE DU CANADA
 OTTAWA
 1990

This map has been reprinted from a scanned version of the original map. Reproduction par numérisation d'une carte sur papier