



Copies of this map may be obtained from the Geological Survey of Canada
601 Booth Street, Ottawa, Ontario K1A 0E8
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LOCATION MAP

Bedrock geology compiled by R.H. Rainbird; surficial geology by D.A. Hodgson. Logistical support provided by the Polar Continental Shelf Project and its operators

Electrostatic plot produced by the Geoscience Information Division

Digital cartography by J.D. Narraway, Geoscience Information Division

Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

OPEN FILE 3450
BEDROCK AND SURFICIAL GEOLOGY
YOUNG INLET
DISTRICT OF FRANKLIN
NORTHWEST TERRITORIES

Scale 1:50 000/Échelle 1/50 000

kilometres 1 0 1 2 3 4 kilometres

Universal Transverse Mercator Projection
CGM 109°30', Scale Factor 1
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Projection transversale universelle de Mercator
MCC 109°30', facteur d'échelle 1
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Digital base map from data compiled by Geomatics Canada, Natural Resources Canada and modified by the Geoscience Information Division

Copies of the topographical editions covering this map area may be obtained from the Canada Map Office, Natural Resources Canada, Ottawa, Ontario, K1A 0G9

Mean magnetic declination 1997, 35°06' E, decreasing 48.9' annually. Readings vary from 33°51' E in the SE corner to 36°18' E in the NW corner of the map

Elevations in feet above mean sea level

Geographical names subject to revision

78B/12 78B/11 78B/10
OF 3121 OF 3450
78B/5 78B/8 78B/7
OF 2921 OF 2781
78B/4 78B/3 78B/2
OF 3111 OF 3035

NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO ADJOINING GEOLOGICAL SURVEY OF CANADA MAPS

CANADA-NWT MINERAL INITIATIVES 1991-1996

CANADA-NWT ECONOMIC DEVELOPMENT AGREEMENT

Contribution to the Canada-Northwest Territories Minerals Initiatives 1991-1996, a subsidiary agreement under the Canada-Northwest Territories Economic Development Agreement. Project funded by the Geological Survey of Canada

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CENOZOIC (Hodgson, 1993)

HOLOCENE

Ht FLUVIAL DEPOSITS: Gravel and silt/sand. Up to 10 m thick. Channel, floodplain, delta and terrace deposits

Hb RAISED BEACH DEPOSITS: Bouldery to silty sand over till and rubby to silty gravel over rock; single ridges. A few centimetres to several metres thick

PLEISTOCENE

Pw GLACIOMARINE DEPOSITS: Silt or fine sand, massive to finely laminated with scattered dropstones; commonly gullied. Up to 20 m thick. Deposition adjacent to major glacial meltwater outlets

Pt3 HADLEY BAY READVANCE TILL: Story loam locally incorporating ice-thrust layers of shelly marine sediments. Numerous flowslides and prominent frost-tissue troughs. Up to 2 m thick

Pt2 VICTORIA ISLAND TILL: Story loam; commonly seen as lineations on air photos, some fields of spindle drumlins. Includes till veneer too thin to mask underlying bedrock. Up to 10 m thick. Deposition by continental glacier, possibly late Wisconsinan maximum

unconformity

NEOPROTEROZOIC

Franklin igneous events 723 Ma (Heaman et al., 1992)

Nfg GABBRO SILLS: Differentiation sequence in sills: olivine-chromite cumulates, plagioclase-olivine cumulates, plagioclase-olivine-clinopyroxene cumulates, plagioclase-clinopyroxene-cumulates, plagioclase-clinopyroxene-pigeonite cumulates, ± granophyre

SHALER SUPERGROUP (Rainbird et al. 1994)

WYNNIATT FORMATION: In NW Minto Inlet divisible into 3 members (ascending stratigraphic order): Nw1: interbedded dolomite and dolomite with desiccation cracks. An overlying unit contains metre-scale cycles consisting of rhythmically laminated dolomite overlain by oolitic dolomite, intraformational breccia and stromatolite dolomite. Nw2: thin- to thick-laminated black, rusty-weathering mudstone/siltstone with minor quartzite and dolomite interbeds at top. Desiccation cracks near top and base. Nw3: coarsening upward slope sequence of dolomite/dolomite dolomite rhythmic overlain by a red/rim stromatolite bottom and interbed and back-slope granitoid. Overlain by inner shelf marginal laminite dolomite and lagoonal carbonaceous limestone/siltstone

Nmi MINTO INLET FORMATION: Five cyclically alternating informal members: lower evaporite (Nmi1), lower carbonate (Nmi2), middle evaporite (Nmi3), upper carbonate (Nmi4) and upper evaporite (Nmi5). Evaporite members include laminated to thin bedded and cross-laminated white gypsiferous and grey anhydrite, red gypsiferous siltstone and buff to grey calcisiltite. Chickens, modular anhydrite and crosscutting siltstone veins common in gypsiferous siltstone units. Rip-ups and intracast beds are common. Rare halite muds and desiccation cracks in calcisiltite. Carbonate members: Grey to buff-grey laminated to thin bedded to massive dolomite and fine dolomite. Hummocky cross-bedding and laterally linked stromatolites are common in lower member. Nmi = undifferentiated Minto Inlet Formation

REYNOLDS POINT GROUP

Nj JAGO BAY FORMATION: Interbedded cross-bedded quartzite, parallel-laminated and mudcracked dolomite and dolomite. Distinctive, yellow-weathering stromatolite biosphere composed of both laterally linked and digitate forms with abundant inter-columnar quartz occurs within 10 m of base of formation

Nf FORT COLLINSON FORMATION: Medium-bedded, fine- to medium-grained quartzite, glauconitic quartzite and dolomitic quartzite. Herringbone cross-bedding throughout with subordinate sub-horizontal planar stratification to low angle cross-bedding

Nb BOOT INLET FORMATION: Cyclically alternating dolomite oolite granitoid, stromatolite dolomite and dolomite rhythmic (see Morr and Rainbird, 1993). Detrital quartz more abundant toward top

Ngb GRASSY BAY FORMATION: Basal mudstone unit with thickness increasing westward. Coarsens abruptly upward to medium-grained, planar-laminated cross-bedded quartzite. Upper part of formation includes sporadic erosional unconformity overlain by fining upward succession of hummocky cross-bedded quartzite, parallel-bedded dolomite and parallel-laminated dolomite. Top of formation is defined by carbonate > 50%

RAE GROUP

Na AOK FORMATION: Cream to orange-brown-weathering siderite to ankeritic dolomite composed of upright to fanning digitate columnar (elongate in plan) stromatolites. In some areas formation comprises two biospheres of similar thickness separated by very laminated dolomite and dolomite

Nnh NELSON HEAD FORMATION: Base of formation is thinly laminated black, carbonaceous and pyritic mudstone, locally in paleodepressions, grades up into thick-laminated red siltstone and fine-grained ripple cross-laminated quartzite. Middle two-thirds of formation is fine- to medium-grained, white to light pink quartzite with small to moderate-scale, planar-laminated cross-bedding. Interbeds of red ripple cross-laminated very fine-grained quartzite and parallel-bedded siltstone are less than 1 m thick. Finely disseminated pyrite and chloropyrite in sections along Hadley Bay coast (see Rainbird et al. 1992 and GSC Open File 2781). Uppermost part of formation is parallel to planar hummocky cross-bedded fine-grained pink to green glauconitic quartzite interbedded with wavy- to lenticular-bedded very fine sandstone and parallel laminated green siltstone

Geological boundary (defined, approximate)

Rock drumlin

Glacial striae

Stromatolite mound elongation

Lineament (from air photo)

Bedding, top known (horizontal, inclined)

Fault (defined, inferred), ball on downthrow side

Anticline (defined, approximate)

Syncline (defined, approximate)

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