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

GEOLOGICAL SURVEY OF CANADA | COMMISSION GÉOLOGIQUE DU CANADA

LEGEND

QUATERNARY

HOLOCENE

- 8 — ***GLACIERS AND GLACIERETTES:*** *ice, firn, and snow; stagnant ice caps to 60 m thick and drift glaciers*
- 7 — ***COLLUVIAL DEPOSITS:*** *silty clay to rubble diamicton derived from upslope deposits; 1-5 m thick; mainly weathered rock incorporating till, and marine or deltaic deposits*
- ***FLUVIAL DEPOSITS:*** *channel, floodplain, fan, and deltaic deposits; gravel, sand, or silt dominant depending on eroding source deposits; deltas fining downwards*
- 6b — ***Fluvial deposits, active:*** *1-3 m thick; subject to flooding during snowmelt freshet*
- 6a — ***Fluvial deposits, inactive:*** *1-20 m thick; including terraces and abandoned segments of deltas and fans*
- 6 — ***Fluvial deposits:*** *undivided*
- ***MARINE DEPOSITS***
- 5b — ***Raised beaches:*** *sand, minor silt or gravel; 1-2 m thick; single ridges or flights of emerged low amplitude ridges*
- 5a — ***Emerged neritic deposits:*** *silt and fine sand, scattered ice-rafted clasts, rare marine shells; generally massive, in places laminated; 1-6 m thick*
- 4 — ***GLACIOLACUSTRINE OR EMERGED GLACIOMARINE DEPOSITS:*** *silt and fine sand, rare dropstones; faint to strong rhythmic bedding (colour or textural laminae); 1-20 m thick; highly dissected; commonly overlies glaciogene diamicton*

PLEISTOCENE

- ***GLACIOFLUVIAL DEPOSITS***
- 3b — ***Outwash:*** *ice contact sediments and valley train deltas: boulder to granule size gravel over sand or silt; up to 20 m thick*
- 3a — ***Kames and eskers:*** *boulder to granule size gravel and silty sand; 2-20 m thick; possibly a veneer protecting silty sand weathered rock*
- ***MORAINAL DEPOSITS***
- 2b — ***Till, Laurentide:*** *granule to boulder size clasts of local lithologies and some Precambrian Shield and more southerly Paleozoic lithologies, in a calcareous silty matrix; 5-20 m thick; flat to ridged. Deposited by a glacier or ice shelf occupying M'Clure Strait after maximum recorded extension of local ice*
- 2a, 2a′ — ***Till, local provenance:*** *granule to boulder size clasts of mainly quartzitic sandstone in silty sand matrix; 1-10 m thick; generally featureless except for rock drumlinoid ridges with till veneer (**2a′**). Deposited by ice originating on Melville Island; rare Precambrian Shield erratics deposited during earlier inundation by continental ice*

QUATERNARY AND PRE-QUATERNARY

WEATHERED BEDROCK: *rubble to fines derived from disaggregation to 1-5 m depth by mechanical weathering of underlying and subjacent bedrock, probably in the Quaternary; unweathered rock outcrops on steeper slopes*

- 1d, 1d′ — ***Rubble:*** *angular to subround blocks in sand or silt matrix, matrix locally dominant; occurs on flat to inclined tablelands, ridges, scarps and cliffs to 600 m high; includes minor intact outcrop; where derived from quartzitic sandstone it is neutral to weakly acidic (**1d**), where derived from limestone or dolomite it is alkaline (**1d′**)*
- 1c — ***Sand:*** *discontinuous lag gravel veneer, minor rubble, or silty sand, derived from friable sandstone and siltstone; occurs on tablelands and low scarplands; neutral to weakly acidic, locally alkaline*
- 1b, 1b′ — ***Rubble to fines, undivided:*** *discrete areas and combinations of rubble, sand, silt, and clayey silt, derived from underlying sandstone, siltstone, or shale; occurs on dissected tablelands; weakly acid (**1b**) to weakly alkaline (**1b′**)*
- 1a, 1a′ — ***Fines:*** *fine sand, silt, minor clay; clasts of shale or siltstone; derived from generally weak lithologies which contain some resistant units; occurs on rolling lowlands; weakly acid (**1a**) to weakly alkaline (**1a′**)*

Geological boundary (defined, approximate, assumed/transitional)
Prominent cliffed coastline or inland scarp
Fluting
Moraine ridge
Erratics (Precambrian, Paleozoic) — pC, P
Gravel knoll
Abandoned ice marginal meltwater channel (ice front, sidehill, col, minor Neoglacial)
Delta
Marine bench
Raised beach ridge/rill
Limit of lichen absence indicating extent of Neoglacial snow/firn cover
Ponding, commonly around high centre polygons
Blowout in sand plain
Pingo
Massive ground ice exposed in slope failure
Elevation (m) of former sea level at significant features, measured by altimeter — 78
Ground observation (Fyles, 1964; Hodgson, 1985 and 1989; Henoch, 1962)

	Age	Material
Radiocarbon age estimate	Lab no	Elevation (m) sample (related sea level) (m)

Geology by D.A. Hodgson, 1985, 1989

Geological cartography by Y.F. St Pierre Savard, Geological Survey of Canada

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

Colour separations were produced using digital methods

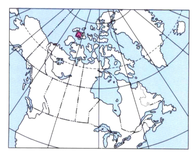
Base map assembled by the Geological Survey of Canada from maps 88 H (1988), 89 A (1966), 88 G, 89 B (1965), published at the same scale by the Surveys and Mapping Branch

Copies of the topographical editions covering this map area may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, Ontario, K1A 0E9

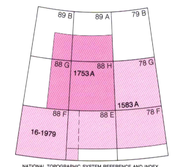
Bathymetric contours in metres were derived from hydrographic charts 7572, 7832, 7951 and 7952 published by the Canadian Hydrographic Service

The proximity of the North Magnetic Pole causes the magnetic compass to be erratic in this area
Mean magnetic declination 1991, 54°04′ East, decreasing 43.7′ annually. Readings vary from 51°19′ E in the SW corner to 56°59′ E in the NE corner of the map

Elevations in feet (88 G, 89 A, 89 B), and in metres (88 H) above mean sea level



INDEX MAP



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

MAP 1753A

SURFICIAL GEOLOGY

WESTERN MELVILLE ISLAND

DISTRICT OF FRANKLIN

NORTHWEST TERRITORIES

Scale 1:250 000 - Échelle 1/250 000

Kilometres 5 0 5 10 15 20 Kilometres

Universal Transverse Mercator Projection

Projection transverse universelle de Mercator

Copies of this map may be obtained from the Geological Survey of Canada:
601 Booth Street, Ottawa, Ontario K1A 0E8
3303-33rd Street, N.W., Calgary, Alberta T2L 2A7

Published 1992

Canada

Recommended citation:
Hodgson, D.A.
1992: Surficial geology, western Melville Island, Northwest Territories; Geological Survey of Canada, Map 1753A, scale 1:250 000