References and additional striation data:

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Abstract

This new surficial geology map product represents the conversion of Map 11-1980 and its legend only, using the Geological Survey of Canada's Surficial Data Model (SDM version 2.1) which can be found in Open File 7741. All geoscience knowledge and information from Map 11-1980 that conformed to the current SDM were maintained during the conversion process. Additional material such as marginal notes or figures which may exist on the original map, are not included here. Supplementary, legacy information was added to complement the converted geoscience data. This consists of ice flow features and striations from McMartin and Henderson, 2004, and from Wright 1955, 1967. It is identified in the accompanying geodatabase. The purpose of converting legacy map data to a common science language and common legend is to enable and facilitate the efficient digital compilation, interpretation, management and dissemination of geologic map information in a structured and consistent manner. This provides an effective knowledge management tool designed around a geo-database which can expand following the type of information to appear on new surficial geology maps.

Résumé

Ce nouveau produit dérivé de la carte des formations superficielles 11-1980 a été produit avec le Modèle de données des formations superficielles (MDFS version 2.1) de la Commission géologique du Canada qui a été publié sous forme de dossier public 7741. La connaissance et toutes les données de la carte 11-1980 se retrouvant dans le MDFS ont été maintenues pendant le processus de conversion. Des éléments supplémentaires tels que les notes marginales ou les figures qui peuvent exister sur la carte originale, ne sont pas incluses ici. Des données complémentaires ont été ajoutées pour compléter les données géoscientifiques converties. Ce sont des formes glaciaires et stries de McMartin et Henderson, 2004 et de Wright, 1955, 1967. Elles sont identifiées dans la base de données géospatiales. Le but de convertir les cartes publiées antérieurement en langage scientifique commun et en légende commune est de permettre et faciliter la compilation, l'interprétation, la gestion et la diffusion numériques efficace d'information de cartes géologiques de façon structurée et cohérente. Cette base de données géospatiales est un outil de gestion qui pourra évoluer suivant le type d'information à paraître sur les nouvelles cartes des formations superficielles.

National Topographic System reference and index to adjoining published Geological Survey of Canada maps

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Natural Resources Canada | Ressources naturelles Canada

2nd EDITION

CANADIAN GEOSCIENCE MAP 225

RECONNAISSANCE SURFICIAL GEOLOGY

MacQUOID LAKE

Nunavut

NTS 55-M

1:125 000

QUATERNARY

NONGLACIAL ENVIRONMENT

ALLUVIAL SEDIMENTS: stream deposited material within modern active drainage systems; "modern" is defined as the period since retreat of the sea, proglacial lakes, or glacial ice.

Ap — **Alluvial floodplain sediments:** silt, sand, and gravel; variable thickness; deposited in channels and on floodplains; may include alluvial sediments in terraces which formed as streams cut to present level in glacial and marine sedimentary fill.

A — **Alluvial sediments, undifferentiated:** modern alluvium mixed with silt and sand; variable thickness; material washed from slopes by wave action or deposited in the sea by meltwater streams; surface generally covered by 40 cm to more than 1 m of fibrous peat on which mosses, sedges, and grasses grow; surface characterized by frost polygons and thaw ponds related to vertical ice wedges extending to a depth of 2 to 3 m.

L — **Lacustrine sediments, undifferentiated:** silt; variable thickness; associated with permanently drained postglacial lake basins; may include up to 15% organic carbon.

MARINE SEDIMENTS: materials deposited in the Tyrrell Sea and glacial deposits modified by marine processes.

Mr — **Beach sediments:** sand, gravel, cobbles, or boulders; variable thickness; generally well sorted; deposited as beaches, bars, spits, and ice-pushed ridges in littoral and nearshore environments; surface characterized by sparse vegetation and orthogonal frost cracks.

Md — **Deltaic sediments:** sand, pebbly mud, and gravel; variable thickness; deposited in the Tyrrell Sea by glacial streams, and during regression by nonglacial streams; surface may be characterized by sparse vegetation and polygonal frost cracks.

Mo — **Offshore sediments:** clay, silt, and silty sand; variable thickness; deposited in a deep water environment; may occur anywhere below marine limit but distribution is patchy above 60 m a.s.l.; thickest deposits generally are found in major river valleys or valleys with major eskers; may include prominent striped or mottled pattern on aerial photos; difficult to differentiate on airphotos from till; surface vegetation is dominantly shrubs in turf circles around mudboils; striped pattern consists of dark and light stripes, 10 to 20 m wide, running downslope and reflects vegetation differences; mottled pattern due to shrub- and mudboil-covered mounds, 5 to 10 m in diameter and less than 0.5 m high, surrounded by light coloured grass-sedge vegetation; likely has high ground ice content.

Mv — **Marine veneer:** clay, silty sand; less than 1–2 m thick.

GLACIAL ENVIRONMENT

GLACIOFLUVIAL SEDIMENTS: water-sorted sediments deposited in, or around, or near a glacier, largely as a result of meltwater stream flow.

GFp — **Outwash plain sediments:** silt, sand, gravel; variable thickness; terraced, hummocky, and kettled surfaces; deposited by subaerial meltwater streams exiting from an esker ridge and valleysides in areas above marine limit; includes outwash fans and materials on the floor or at the mouth of meltwater channels; sparsely vegetated.

GFf2 — **Subaqueous outwash fan sediments:** silt, sand, fine gravel; variable thickness; terraced, hummocky, and kettled surfaces; distal fine sediment debouching from the subaqueous mouth of an ice tunnel into the sea; surface characterized by thaw ponds and tundra polygons; difficult to differentiate on aerial photos from unit A.

GFc — **Ice-contact sediments:** sand and gravel; variable thickness; stratified, deposited near ice margins in, over, or around ice or in ice tunnels, commonly as eskers but includes isolated hummocky deposits of uncertain origin; many eskers are beaded or interrupted at irregular intervals by major bulges marking positions where deltaic or subaqueous fan deposition occurred during periods of slowed ice retreat.

GF — **Glaciofluvial sediments, undifferentiated:** silt, sand, and gravel; variable thickness, deposited in or near a glacier; may occur as flat areas in stream valleys or abandoned channels above marine limit; occurs only as secondary unit.

GLACIAL SEDIMENTS (TILL): poorly sorted till (diamicton) with distinctive forms deposited directly by glacial ice.

Th — **Hummocky till:** till, variable thickness; without significant boulder cover occurring as hummocks; includes ridges of till that are minor end moraines or erosion remnants between subparallel meltwater channels; extensive areas are present in the region of the Keewatin Ice Divide and in some places adjacent to areas of ribbed moraines (Tr); exact origin unknown; may have formed in association with stagnant ice and in some places from erosion of till surfaces by streams in anastomosing meltwater channels; vegetation and periglacial features similar to those on till plain (Tb).

Tm — **Moraine complex:** till, sand, and gravel; variable thickness; undifferentiated disintegration moraine; occurs as short ridges or hummocks, thought to be deposited in holes and crevasses in stagnant ice; ridge orientation may form a reticulate pattern; sparsely vegetated; periglacial features vary from mudboils on till to frost cracks in sorted sediments.

Tr — **Ridged moraine:** generally bouldery till, in places sand and gravel; variable thickness; ribbed (Rogen) moraine, forming hummocks and straight to sinuous ridges, generally less than 1 km long and 2 to 10 m high; ridges generally oriented at right angles and form trains parallel to direction of ice flow; individual ribs may be asymmetric in cross-section with steep side facing down-ice; trains of ribs pass laterally into drumlinoid fields and may be drumlinized in the transition zone; surfaces have sparse vegetation and generally a heavy cover of large boulders and mudboils where composed of till, and are marked by frost cracks where composed of gravel.

Tv — **Till veneer:** generally sandy, silty diamicton; less than 1 m thick; occurs only as secondary unit.

Tb — **Till blanket:** generally sandy, silty till with less than 25% clay sized particles; noncalcareous; grey; variable thickness; forms till plains; includes areas of clay-rich red till; vegetation (shrubs, mosses, grasses) grows in elevated peaty rings around bare or lichen-covered mudboils 1–2 m diameter; may exhibit striped pattern on clay-rich red till as observed on aerial photos.

T — **Till, undifferentiated:** diamicton; variable thickness; associated with complex map units of till-cored landforms blanketed by marine sediments; based solely on aerial photo interpretation.

PRE-QUATERNARY

R — **Bedrock, undifferentiated:** Precambrian intrusive igneous and metamorphic rocks, red volcanic rocks, and unmetamorphosed sediments; surface comprises more than 80% outcrop; vegetation sparse; surface may be glacially rounded or covered by felsenmeer; bedrock (20 to 80% outcrop) is mantled with less than 1 m of the surficial deposit indicated in complex polygons.

Where the surficial cover forms a complex pattern and the map units are too small to be mapped individually, yet constitutes a significant aerial extent of the total polygon, a dot (".") separates the first dominant map unit designator from the less abundant secondary unit (e.g. R.Tv designates an area of bedrock with numerous small deposits of till veneer).

A stratigraphic relationship is shown with a maximum of two map unit designators separated by a slash ("/") (e.g. Mr/R designates marine beach sediments overlying bedrock).

- Geological contact, defined
- Terrace scarp
- Beach crest, bar, or ice-shoved ridge
- Limit of marine submergence
- Major meltwater channel, direction unknown
- Minor moraine ridge, unspecified, De Geer
- Esker, direction known
- Buried or obscured drumlinoid ridge, ice flow feature
- Drumlinoid
- Crag-and-tail
- Fluted bedrock (roche moutonnée)
- Hummock (hummocky moraine)
- Striation:
  - *Poorly defined, direction unknown*
  - *Poorly defined, direction known*
  - *Well defined, direction unknown*
  - *Well defined, direction known*
  - *Crossed, 1 = older, 3 = youngest*
- Small bedrock outcrop

Recommended citation

Geological Survey of Canada, 2017. Reconnaissance surficial geology, MacQuoid Lake, Nunavut, NTS 55-M; Geological Survey of Canada, Canadian Geoscience Map 225 (2nd edition, preliminary, Surficial Data Model v. 2.1 conversion of Preliminary Map 11-1980), scale 1:125 000. doi:10.4095/298706

Celebrating 175 yrs

Geological Survey of Canada
Canadian Geoscience Maps

Canada

Author: Geological Survey of Canada

Geology based mainly on airphoto interpretation by J.M. Aylsworth, A.N. Boydell, C.M. Cunningham, and W.W. Shilts, with ground checking in 1973, 1975, 1976.

Geology conforms to Surficial Data Model v. 2.1

Data conversion by D.E. Kerr, 2014, 2015

Geology has been spatially adjusted to fit the updated base.

Geomatics and cartography by G.S. Hanna

Initiative of the Geological Survey of Canada, conducted under the auspices of Natural Resources Canada's Geo-mapping for Energy and Minerals (GEM) program

CANADIAN GEOSCIENCE MAP 225

RECONNAISSANCE SURFICIAL GEOLOGY

MacQUOID LAKE

Nunavut

NTS 55-M

1:125 000

2 0 2 4 6 8 10 km

Map projection Universal Transverse Mercator, zone 15.
North American Datum 1983

Base map at the scale of 1:250 000 from Natural Resources Canada, with modifications.
Elevations in metres above mean sea level

Mean magnetic declination 2017, 3°42'W, decreasing 0.4' annually. Readings vary from 1°56'W in the SW corner to 5°29'W in the NE corner of the map.

This map is not to be used for navigational purposes.

The Geological Survey of Canada welcomes corrections or additional information from users.

Data may include additional observations not portrayed on this map. See map info document accompanying the downloaded data for more information about this publication.

This publication is available for free download through GEOSCAN (http://geoscan.nrcan.gc.ca/).

Preliminary publications in this series have not been scientifically edited.

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