References and additional ice-flow and field data

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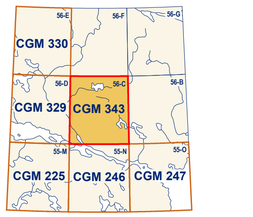
Abstract

This new surficial geology map product represents the conversion of Map 46-1989 (Aylsworth, 1990) and its legend only, using the Geological Survey of Canada's Surficial Data Model (SDM version 2.3) (Deblonde et al., 2017). All geoscience knowledge and information from Map 46-1989 that conformed to the current SDM were maintained during the conversion process. Supplementary legacy information was added to complement the converted geoscience data. This consists of striations and field data from Wright (1967) and McMartin et al. (2013, 2016, 2017) that are 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 geological map information in a structured and consistent manner. This provides an effective knowledge management tool designed around a geodatabase that can expand, following the type of information to appear on new surficial geology maps.

Résumé

Ce nouveau produit cartographique de la géologie des formations superficielles correspond à la conversion de la Carte 46-1989 (Aylsworth, 1990) et de sa légende uniquement, en se servant du Modèle de données pour les formations superficielles (MDFS version 2.3) de la Commission géologique du Canada (Deblonde et al., 2017). Toutes les connaissances et l'information de nature géoscientifique de la Carte 46-1989 qui sont en conformité avec le modèle de données ont été conservées pendant le processus de conversion. Des éléments d'information existants ont été ajoutés en complément aux données géoscientifiques converties. Il s'agit de stries glaciaires et de données de terrain tirées de Wright (1967) et de McMartin et al. (2013, 2016, 2017). Ces entités et données sont identifiées dans la géodatabase du présent produit cartographique. Le but de la conversion de cartes publiées antérieurement suivant un langage scientifique commun et une légende commune est de permettre et de faciliter la compilation, l'interprétation, la gestion et la diffusion efficaces de l'information géologique cartographique en mode numérique de façon structurée et cohérente. Cette façon de faire offre un outil efficace de gestion des connaissances élaboré à l'aide d'une géodatabase 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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CANADIAN GEOSCIENCE MAP 343

RECONNAISSANCE SURFICIAL GEOLOGY

TEHERY LAKE

Nunavut

NTS 56-C

1:250 000

QUATERNARY

HOLOCENE

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.

A — **Alluvial sediments, undifferentiated:** silt, sand, and gravel; variable thickness; deposited in channels and on floodplains; may include alluvium in terraces which formed as streams cut to present level in glacial and marine sedimentary fill; when associated with glaciofluvial sediments it occurs as flat areas in stream valleys or abandoned channels; when associated with marine sediments it occurs as flat areas consisting of modern alluvium mixed with marine silt and sand that were washed from slopes by wave action or deposited in the sea by meltwater streams; surface generally covered by 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 2–3 m.

LACUSTRINE SEDIMENTS: materials deposited in modern lakes.

L — **Lacustrine sediments, undifferentiated:** silt and sand; variable thickness; permanently drained postglacial lake basin; may include deposits of silty sediments with up to 15% organic carbon.

NONGLACIAL AND GLACIAL ENVIRONMENT

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

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

Md — **Deltaic sediments:** sand, pebbly sand, and gravel; variable thickness; deposited in the Tyrrell Sea by glacial or nonglacial streams.

M — **Marine sediments, undifferentiated:** sand and silt; variable thickness; washed from slopes by wave action or deposited in the sea by meltwater or modern streams; appears only as secondary unit in complex polygons.

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:** sand and gravel; variable thickness; with terraced, hummocky, and kettled surfaces; deposited by subaerial meltwater streams in areas above local sea level; includes 1) sediment deposited between the esker ridge and valley sides, commonly over stagnant ice that forms temporary floor, 2) outwash fans, 3) outwash plains, and 4) materials on the floor or at the mouth of meltwater channels; sparsely vegetated.

GFf2 — **Subaqueous outwash-fan sediments:** sand, fine gravel, and silt; variable thickness; with terraced, hummocky, and kettled surfaces; distal fine sediment grading from the subaqueous mouth of an ice tunnel; material settled preferentially in depressions between the esker ridge and valley sides; vegetation is commonly sedge, grass, and moss growing on thin, fibrous peat; surface characterized by thaw ponds and tundra polygons; difficult to differentiate from unit A.

GFc — **Ice-contact sediments:** sand and gravel; stratified; variable thickness; 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; appears only as secondary unit in complex polygons.

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

Th — **Hummocky till:** diamicton; variable thickness; till without significant boulder cover occurring as low, rounded hummocks; includes ridges of till that are minor end moraines or erosion remnants between subparallel meltwater channels; 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 Tb.

Tr — **Ridged moraine:** diamicton, in places sand and gravel; generally bouldery; variable thickness; ribbed (Rogen) moraine, forming hummocks and straight to sinuous ridges, generally less than 1 km long and 2–10 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 drumlin 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 marked by frost cracks where composed of gravel.

Tv — **Till veneer:** generally sandy, silty diamicton; less than 1 m thick.

Tb — **Till blanket:** generally sandy, silty diamicton; noncalcareous; grey till; variable thickness; includes areas of clay-rich red till; plain surface characterized by 1–2 m diameter patches of bare or lichen-covered mud (mudboils) surrounded by elevated peaty rings on which grow shrubs, mosses, and grasses; at lake margins characterized by cobble-covered, 2 m wide ribs separated by 2 m wide boulder-filled troughs, generally trending downslope to a water depth of about 2 m; may include prominent striped pattern on airphotos.

PRE-QUATERNARY

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

Complex units: two map-unit designators are used in cases where the surficial cover forms a complex area and the map units are too small to be mapped individually, yet constitute a significant areal extent of the total polygon (e.g. Tv.R designates an area of till veneer with numerous small bedrock outcrops). In such instances a dot (.) is used to separate the map-unit designators.

Stratigraphic relationship: a stratigraphic relationship is shown with two map-unit designators separated by a slash (/) (e.g. Tr/R designates ridged till overlying bedrock).

- Felsenmeer
- Geological contact, defined
- Beach crest, bar, or ice-shoved ridge
- Limit of marine submergence
- Major meltwater channel, direction unspecified
- Minor moraine ridge, undifferentiated, De Geer
- Esker, direction known or inferred
- Drumlinoid, fluting
- Crag-and-tail
- Hummock (hummocky moraine)
- Striation:
  - *Ice-flow direction unknown*
  - *Ice-flow direction known*
- Small bedrock outcrop
- Station location, ground observation (*see* geodatabase)
- Sample location (*see* geodatabase)

Recommended citation

Geological Survey of Canada, 2018. Reconnaissance surficial geology, Tehery Lake, Nunavut, NTS 56-C; Geological Survey of Canada, Canadian Geoscience Map 343 (Surficial Data Model v. 2.3 conversion of Map 46-1989), scale 1:250 000. https://doi.org/10.4095/306595

CANADIAN GEOSCIENCE MAP 343

Geological Survey of Canada
Canadian Geoscience Maps

Canada

Author: Geological Survey of Canada

Geology based on air photo interpretation by J.M. Ayslworth

Geology conforms to Surficial Data Model v. 2.3 (Deblonde et al., 2017).

Data conversion by D.E. Kerr, 2012, 2016, 2017

Geomatics by GISmo Solutions Ltd. and C. Lai

Cartography by N. Côté

Scientific editing by A. Weatherston

RECONNAISSANCE SURFICIAL GEOLOGY
TEHERY LAKE
Nunavut
NTS 56-C
1:250 000

5 0 5 10 15 20 km

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

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 2018, 7°16'W, decreasing 4.8' annually
Readings vary from 5°27'W in the SW corner to 9°09'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/).

CANADIAN GEOSCIENCE MAP 343
RECONNAISSANCE SURFICIAL GEOLOGY
TEHERY LAKE
Nunavut
NTS 56-C