References and additional paleoflow data:

Cocking, R.B., Deblonde, C., Kerr, D.E., Campbell, J.E., Eagles, S., Everett, D., Huntley, D.H., Inglis, E., Laviolette, A., Parent, M., Plouffe, A., Robertson, L., St-Onge, D.A., and Weatherston, A., 2015: Surficial Data Model, version 2.1.0: Revisions to the science language of the integrated Geological Survey of Canada data model for surficial geology maps; Geological Survey of Canada, Open File 7741, 276 p. doi:10.4095/296568

Fyles, J.G., 1963. Surficial geology of Victoria and Stefansson islands, District of Franklin; Geological Survey of Canada, Bulletin 101, 38 p. doi:10.4095/100620

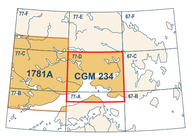
Sharpe, D.R., 1993. Surficial geology, Cambridge Bay, District of Franklin, Northwest Territories; Geological Survey of Canada, Map 1825A, scale 1:250 000. doi:10.4095/184168

Abstract

This new surficial geology map product represents the conversion of Map 1825A and its legend, 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 1825A 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, limited legacy information was added to complement the converted geoscience data. This consists of a few glacial striations, crag-and-tails, and cross-cutting drumlinoid ridges from Fyles, 1963. There 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 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 cartographique de la géologie des formations superficielles correspond à la conversion de la Carte 1825A et de sa légende, en se servant du Modèle de données pour les formations superficielles (MDFS version 2.1) de la Commission géologique du Canada, lequel peut être consulté dans le Dossier public 7741. Toutes les connaissances et l'information de nature géoscientifique de la Carte 1825A qui sont en conformité avec le modèle de données ont été conservées pendant le processus de conversion. Des éléments additionnels tels que des notes marginales ou des figures qui pourraient être présents sur la carte originale ne sont pas inclus ici. Une faible quantité d'information ancienne a été ajoutée en complément aux données géoscientifiques converties. Il s'agit de quelques stries glaciaires, structures en crag-and-tail et crêtes de drumlinoïdes transversales tirées de Fyles (1963). Ces entités 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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Natural Resources Canada | Ressources naturelles du Canada

CANADIAN GEOSCIENCE MAP 234

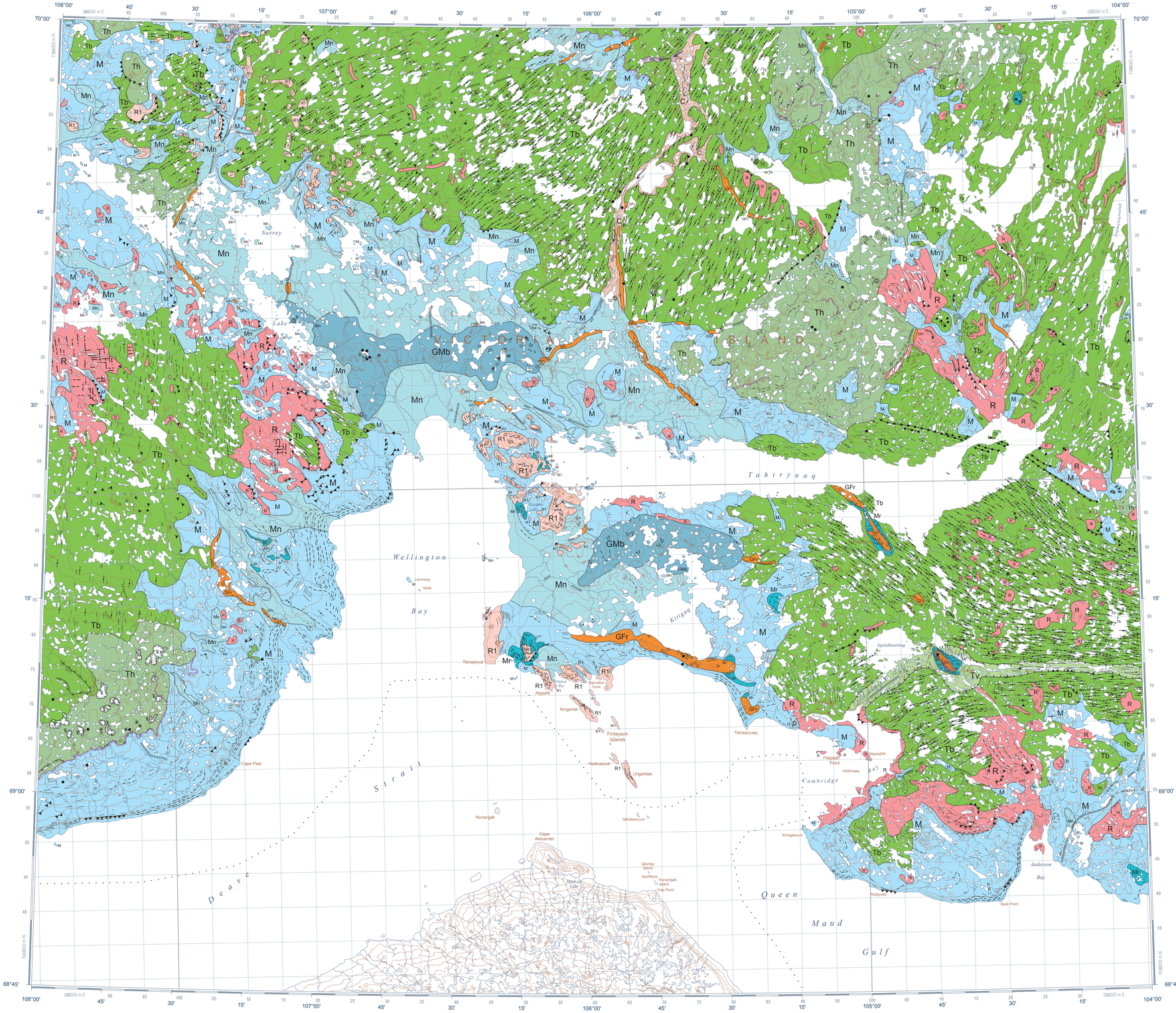
SURFICIAL GEOLOGY

CAMBRIDGE BAY

Nunavut

NTS 77-D and part of 77-A

1:250 000



QUATERNARY

HOLOCENE - LATE WISCONSINAN

NONGLACIAL ENVIRONMENT

- O — **Organic deposits, undifferentiated:** silty to sandy organic-rich sediments; 1–3 m thick; resting on a variety of poorly drained substrates; peat is present locally; mudboils, hummocks, and willow thickets are common.
- C — **Colluvial deposits, undifferentiated:** stony sand, sandy silt; 1–2 m thick; reworked primary (mainly glaciofluvial) sediment; occur as slopewash, solifluction lobes, terraces, or slumps, from thermokarst erosion; some undisturbed glaciofluvial sediment; only large colluvial occurrences that can be clearly distinguished from glaciofluvial or till deposits are shown; deposits occupy floor of tunnel channel.

MARINE SEDIMENTS: sediments deposited by marine processes during regression of the proglacial sea; occur as ridges and veneers on large coastal platforms and as terraces marking regressive sea level events; sediments may have been disturbed by pack ice and iceberg scour.

- Mr — **Beach sediments:** gravel and gravelly sand; 1–4 m thick; littoral sediments occur as flights of raised strandlines; locally disturbed by ice push.
- Mn — **Nearshore sediments:** silt to sandy silt and clay, locally stoney; 1–5 m thick; overlie glaciomarine sediment; sublittoral sediments occur offshore from deltas and beach terraces; form a veneer scoured by drifting ice.
- M — **Marine sediments, undifferentiated:** complex of silt and sandy silt on bedrock, diamicton, or locally, gravel; discontinuous veneer 1–3 m thick.

LATE WISCONSINAN

GLACIAL ENVIRONMENT

- GMb — **Glaciomarine blanket:** silt and clay, massive, locally stoney, with gravel to gravelly sand and sand in proximal fan area; 10–30 m thick; occur in subaqueous and prodelta fans at the ice margin.
- GL — **Glaciolacustrine sediments, undifferentiated:** gravelly sand, silt, and clay; 1–3 m thick; deposited as fans or deltas in shallow lakes at the ice margin; found in flat, but dissected areas.
- GFr — **Esker sediments:** gravel, sand, minor silt and clay; 10–20 m thick; glaciofluvial sediments occur as sharp-crested and flat-topped eskers; deposited subglacially or with ice control

GLACIAL SEDIMENTS (TILL): till and stratified sediments deposited in ice marginal, subglacial, and supraglacial positions by a variety of processes.

- Th — **Humnocky moraine:** interbedded diamicton (till flows), sand, gravel, and silt; 10–25 (?) m thick; diamicton with large (greater than 50 m) polygons is usual surface sediment; hummocks and depressions are common; redistribution of sediment by slump of thawing buried (glacial?) ice; terrain is largely ice-cored.
- Tv — **Till veneer:** thin, patchy diamicton, may include stratified sediments; 1 m thick or less; mainly deposited subglacially; ground moraine commonly bedrock controlled; may remain in meltwater scour areas defined by tunnel channels.
- Tb — **Till blanket:** massive diamicton; in places interbedded with (or underlain by) sand and gravel; 1–15 m thick; mainly deposited subglacially; ground moraine; flutings present locally where drift is thin (1–2 m); drumlins and drumlinoids occur where drift is thick (10–15 m).

PRE-QUATERNARY

- R1 — **Sedimentary bedrock:** carbonate rock; Paleozoic; flat-lying and jointed; fractures can control the location of modern rivers.
- R — **Undifferentiated bedrock:** sandstone, siltstone, shale, and carbonate; Precambrian or Cambrian.

- Thermokarst depression (stable)
- Eolian lag deposit

Geological contact:
- Defined
- Approximate
- Limit of mapping
- Beach crest
- Iceberg scour

Limit of submergence:
- Marine, defined
- Glaciolacustrine, defined

Meltwater channel:
- Minor, direction known
- Major, subglacial, direction known
- Minor moraine ridge
- Lateral moraine

Esker:
- Direction of flow unknown
- Direction of flow known
- Drumlinoid (1 = older, 2 = younger)
- Crag-and-tail
- Fluted bedrock, direction unknown
- Bedrock scarp
- Lineament in bedrock (fracture, joint)
- Retrogressive thaw flow, active
- Delta
- S-form, flow direction known
- Kame
- Striation, ice flow direction known
- Station location, ground observation
- Dated sample location (radiocarbon date, *see* Table 1)
- Sample location

Map ID	Sample ID	Latitude	Longitude	Elevation (m a.s.l.)	Material	Radiocarbon Age
1	GSC-4254	69.058479	105.266495	30	shells	4920 ± 100
2	GSC-4262	69.476828	106.836276	43	shells	7500 ± 130
3	GSC-4294	69.497518	106.851304	65	shells	7630 ± 110
4	GSC-4313	69.179798	104.742615	157	shells	8020 ± 100
5	GSC-4127	69.870146	104.961656	130	shells	8420 ± 130
6	GSC-4299	69.826054	105.383156	116	shells	8440 ± 100
7	GSC-266	69.669423	104.939873	113	whale	8640 ± 140
8	GSC-4269	69.617232	107.10104	130	shells	8660 ± 130
9	GSC-4287	69.573271	106.842643	100	shells	8680 ± 100
10	GSC-4234	69.650140	105.914191	130	shells	8740 ± 100

Table 1. Radiocarbon age.

Recommended citation
Geological Survey of Canada, 2016. Surficial geology, Cambridge Bay, Nunavut, NTS 77-D and part of 77-A; Geological Survey of Canada, Canadian Geoscience Map 234 (preliminary, Surficial Data Model v. 2.1 conversion of Map 1825A), scale 1:250 000. doi:10.4095/297438

Geological Survey of Canada
Canadian Geoscience Maps

Canada

Author: Geological Survey of Canada

Geology based on airphoto interpretation and field observations by D.R. Sharpe, 1984–1988.

Geology conforms to Surficial Data Model v. 2.1

Data conversion by D.E. Kerr, 2015

Geology has been spatially adjusted to fit the updated base.

Geomatics by S. Eagles

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

Map projection Universal Transverse Mercator, zone 13. North American Datum 1983

CANADIAN GEOSCIENCE MAP 234

SURFICIAL GEOLOGY

CAMBRIDGE BAY

Nunavut

NTS 77-D and part of 77-A

1:250 000

5 0 5 10 15 20 km

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

Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area.
Mean magnetic declination 2016, 8°18'E, decreasing 24.1' annually. Readings vary from 11°20'E in the SW corner to 4°41'E 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.

CANADIAN GEOSCIENCE MAP 234

SURFICIAL GEOLOGY

CAMBRIDGE BAY

Nunavut

NTS 77-D and part of 77-A