References and additional paleoflow data from:

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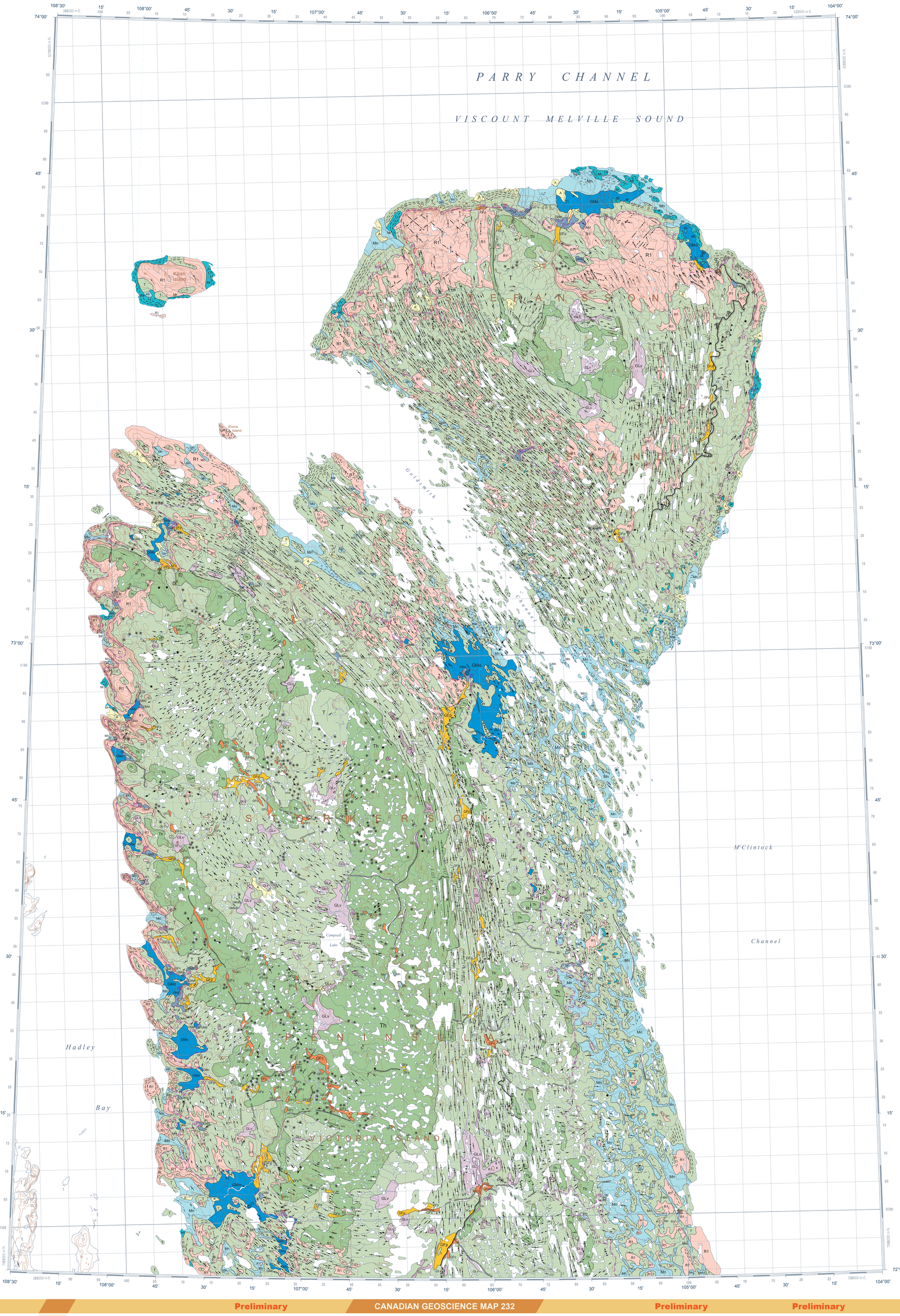
Fyles, J.G., 1963. Surficial geology of Victoria and Stefansson islands, District of Franklin; Geological Survey of Canada, Bulletin 101, 38 p. doi:10.4095/100620

Hodgson, D.A., 1993. Surficial geology, Storkerson Peninsula, Victoria Island and Stefansson Island, Northwest Territories; Geological Survey of Canada, Map 1817A, scale 1:250 000. doi:10.4095/192421

Hodgson, D.A., 1994. Episodic ice streams and ice shelves during retreat of the northwesternmost sector of the late Wisconsinan Laurentide Ice Sheet over the central Canadian Arctic Archipelago; Boreas, vol. 23, no. 1, p. 14–28.



Abstract

This new surficial geology map product represents the conversion of Map 1817A 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 1817A that conformed to the current SDM were maintained during the conversion process. 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 1817A 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 1817A qui sont en conformité avec le modèle de données ont été conservées pendant le processus de conversion. Le but de cette 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.

QUATERNARY

HOLOCENE

NONGLACIAL ENVIRONMENT

- C — **Colluvial deposits, undifferentiated:** silt to rubble diamicton; 1 to 5 m thick; derived by mass wasting from upslope rock and till; mapped only on steeper slopes where the material is mixed.
- A — **Alluvial sediments, undifferentiated:** gravel to silty sand; 1 to 10 m thick; channel, terrace, fan, and deltaic sediments.

MARINE SEDIMENTS: silt to bouldery gravel shoreline, nearshore, and offshore sediments; left by the regressing sea.

- Mr — **Beach sediments:** gravel and silty sand over silty till (mainly east coast), rubble to silty gravel over and adjacent to rock (mainly north coast); a few centimetres to several metres thick; occurring as single raised ridges to complexes of flights; small beaches common on drumlinoid summits; single ridges and discontinuous flights shown by symbols.
- Mn — **Nearshore sediments:** stony sandy silt, reworked till; a few centimetres to 2 m thick; poorly drained, especially between drumlinoids; in places reworked into low amplitude beaches, shown by strandlines; neritic environment.

EARLY HOLOCENE AND LATE PLEISTOCENE (LATE WISCONSINAN)

PROGLACIAL AND GLACIAL ENVIRONMENTS

- GMd — **Glaciomarine deltaic sediments:** fine gravel or sand (1–2 m thick) over massive to stratified sand or silt; rarely fossiliferous; up to 20 m thick; deposited at distal end of valley train in marine environment at limit of postglacial inundation.
- GMo — **Glaciomarine offshore sediments:** emerged silt or fine sand, with scattered dropstones; in massive to finely laminated deposits; 1 to 20 m thick; commonly gullied; deposited distal to major glacial meltwater outlets.
- GLv — **Glaciolacustrine veneer:** silt or fine sand; less than 1 m thick; deposited in a proglacial basin or ice-dammed valley.
- GL — **Glaciolacustrine sediments, undifferentiated:** silt or fine sand; 1 to 3 (?) m thick; deposited in a proglacial basin or ice-dammed valley.

GLACIOFLUVIAL SEDIMENTS: sand, silt, and minor gravel from subglacial, englacial or supraglacial fluvial deposits and proglacial valley train deposits.

- GFp — **Outwash plain sediments:** sand, silt, or bouldery gravel; 1 to greater than 10 m thick; in plains, terraces, or fans; proglacial in fluvial or possibly subaqueous environment.
- GFc — **Ice-contact sediments:** bouldery gravel, sand, or silt; 2 to 50 m thick; in esker and kame ridges, knolls, or flat-topped complexes; from subglacial or englacial environment.
- Th — **Hummocky till:** granule to boulder size clasts; dominantly of carbonate rock; in a matrix of greater than 50% dark greyish brown; highly calcareous loam or silty loam; unsorted; commonly 50 m thick; surface stony, especially in prominent frost fissure troughs; slope failures widespread; possibly high ice content; mammillated, hummocky to rolling topography.
- T — **Till, undifferentiated:** granule to boulder size clasts; dominantly of carbonate rock in a matrix of greater than 50% dark greyish brown; highly calcareous loam or silty loam; unsorted; undifferentiated; thickness 1 to greater than 50 m; till plain and veneer initially deposited by continental ice, bearing shield erratics; includes spindle drumlins and drumlinoids commonly 5 to 30 m thick, local interdrumlinoid rock and rubble; local northwestward and westward drumlinoid ridges crosscut older streamlined features that may be largely modified; till below marine limit commonly reworked leaving local concentrations of boulders, gravel, sand, or silt, and subdued or erased glacial landforms.

PRE-QUATERNARY

- R1 — **Sedimentary bedrock:** Paleozoic dolomite, minor limestone chert and shale; subhorizontal except folded on northernmost Stefansson Island; rock fractured to blocks or disaggregated to pitted rubble by glacial and subaerial processes, except for polished intact bedrock locally exposed where streamlined till cover has been recently removed rubble worked into discontinuous beaches locally below marine limit.

Reworked sediments, by meltwater

Geological contact, defined

Beach crest

Marine limit of submergence (elevation in metres):
- 65 — *Approximate*
- 90 — *Defined*

Glaciolacustrine limit of submergence, defined

Iceberg scour

Meltwater channel:
- *Minor, col, direction unknown*
- *Minor, proglacial, direction known*
- *Minor (lateral uphill left)*
- *Minor (lateral uphill right)*

Minor moraine ridge, transverse, may include crevasse fillings

End moraine, major

Ice-thrust ridge

Esker:
- *Direction unknown*
- *Direction known*

Drumlinoid:
- *Large*
- *Small (1 = older, 2 = younger)*

Crag-and-tail (1 = older, 2 = younger)

Fluted bedrock, ice flow direction known

Limit of glaciation from readvance:
- *Approximate*
- *Defined*

Lineament in bedrock

Patterned ground

Pingo

Dune crest, blowout; sense known

Delta, paleocurrent unknown

Kame, gravel knoll and/or pressed till knob

Glacial striation:
- *Ice flow direction unknown*
- *Ice flow direction known*

Fossil observation

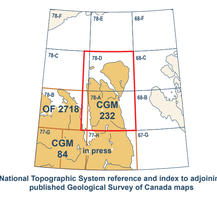
Station location, ground observation

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	S-2955	73.216584	104.748750	29 ±29	whalebone	7865 +/- 155 BP
2	GSC-4483	73.215328	104.752229	6.5 ±6.5	driftwood	2940 +/- 60 BP
3	GSC-4484	73.286440	104.690723	60 ±60	mollusc	8540 +/- 100 BP
4	GSC-4336	73.491212	104.694293	120 ±90	mollusc	9560 +/- 100 BP
5	GSC-4377	73.650026	104.715248	75 ±60	mollusc	9640 +/- 110 BP
6	GSC-4481	73.200020	107.860709	4.7 ±4.7	driftwood	1890 +/- 50 BP
7	GSC-4482	73.200020	107.860709	3.5 ±3.5	driftwood	1190 +/- 50 BP
8	TO-533	73.101684	107.743649	110	mollusc	10350 +/- 80 BP
9	GSC-4316	72.963446	106.138362	75 ±60	mollusc	9140 +/- 100 BP
10	GSC-4445	72.851482	108.040021	70 ±75	mollusc	10 000 +/- 110 BP
11	S-2954	72.851482	108.040021	68 ±68	whalebone	9935 +/- 190 BP
12	GSC-4403	72.624237	107.870281	81 ±61	mollusc	9820 +/- 100 BP
13	GSC-299	72.110471	107.273081	1081 ±247	mollusc	9400 +/- 150 BP
14	GSC-4409	72.123136	105.429460	80 ±62	mollusc	8840 +/- 120 BP

Table 1. Radiocarbon age.



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 232

SURFICIAL GEOLOGY

STORKERSON PENINSULA, VICTORIA ISLAND, AND STEFANSSON ISLAND

Nunavut

NTS 78-A, D, and parts of 78-B, C

1:250 000

Recommended citation
Geological Survey of Canada, 2016. Surficial geology, Storkerson Peninsula, Victoria Island, and Stefansson Island, Nunavut, NTS 78-A, D, and parts of 78-B, C; Geological Survey of Canada, Canadian Geoscience Map 232 (preliminary, Surficial Data Model v. 2.1 conversion of Map 1817A), scale 1:250 000. doi:10.4095/297333

Geological Survey of Canada
Canadian Geoscience Maps

Canada

Author: Geological Survey of Canada

Geology based on airphoto interpretation and field observations by D.A. Hodgson, 1986.

Geology conforms to Surficial Data Model v. 2.1

Data conversion by D.E. Kerr, 2015

Geomatics by S. Eagles

Cartography by D. Viner

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

SURFICIAL GEOLOGY

STORKERSON PENINSULA, VICTORIA ISLAND, AND STEFANSSON ISLAND

Nunavut

NTS 78-A, D, and parts of 78-B, C

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, 4°39'E, decreasing 30.5' annually. Readings vary from 1°57'W in the NE corner to 9°46'E in the SW 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 232
SURFICIAL GEOLOGY
STORKERSON PENINSULA, VICTORIA ISLAND, AND STEFANSSON ISLAND
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