References

Deblonde, C., Cocking, R.B., Kerr, D.E., Campbell, J.E., Eagles, S., Everett, D., Huntley, D.H., Inglis, E., Parent, M., Plouffe, A., Robertson, L., Smith, I.R., and Weatherston, A., 2018. Surficial Data Model: the science language of the integrated Geological Survey of Canada data model for surficial geology maps; Geological Survey of Canada, Open File 8236, ver. 2.3.14, 1 .zip file. https://doi.org/10.4095/308178

Little, E.C., 2006. Surficial geology, Ellice Hills (north), Nunavut; Geological Survey of Canada, Open File 5016, scale 1:50 000, 1 .zip file. https://doi.org/10.4095/222142

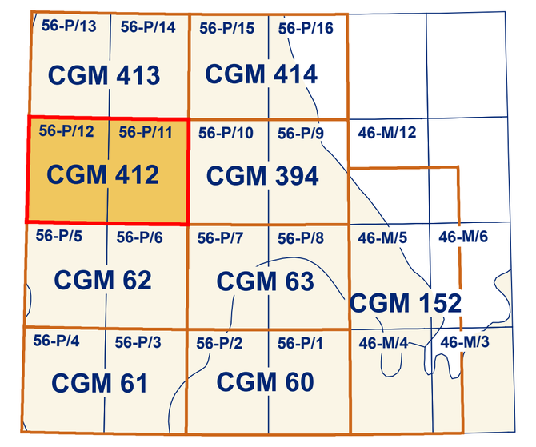
McMartin, I., Utting, D.J., Little, E.C., Ozyer, C.A., and Ferbey, T., 2003. Complete results from the Committee Bay drift prospecting survey, central Nunavut (NTS 56-K, 56-J north, 56-O south, and 56-P); Geological Survey of Canada, Open File 4493, 1 .zip file. https://doi.org/10.4095/214646

Abstract

This new surficial geology map product represents the conversion of Open File 5016, map 2 (Little, 2006) and its legend only, using the Geological Survey of Canada's Surficial Data Model (SDM version 2.3.14) (Deblonde et al., 2018). All geoscience knowledge and information from Open File 5016, map 2 that conformed to the SDM were maintained during the conversion process. Supplementary legacy information (descriptive notes) on the original map is not included here. Limited legacy information was added to complement the converted geoscience data. This consists of striations (McMartin et al., 2003). 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 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 2 du Dossier public 5016 (Little, 2006) et de sa légende uniquement, en se servant du Modèle de données pour les formations superficielles (MDFS version 2.3.14) de la Commission géologique du Canada (Deblonde et al., 2018). Toutes les connaissances et l'information de nature géoscientifique de la carte 2 du Dossier public 5016 qui sont en conformité avec le modèle de données ont été conservées pendant le processus de conversion. De l'information additionnelle (notes descriptives) présente sur la carte originale n'est pas incluse ici. Une quantité limitée de données existantes a été ajoutée en complément aux données géoscientifiques converties. Il s'agit de données sur des stries glaciaires tirées de McMartin et al. (2003). Ces données sont identifiées dans la géodatabase de la carte. 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 de la géologie des formations superficielles.



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

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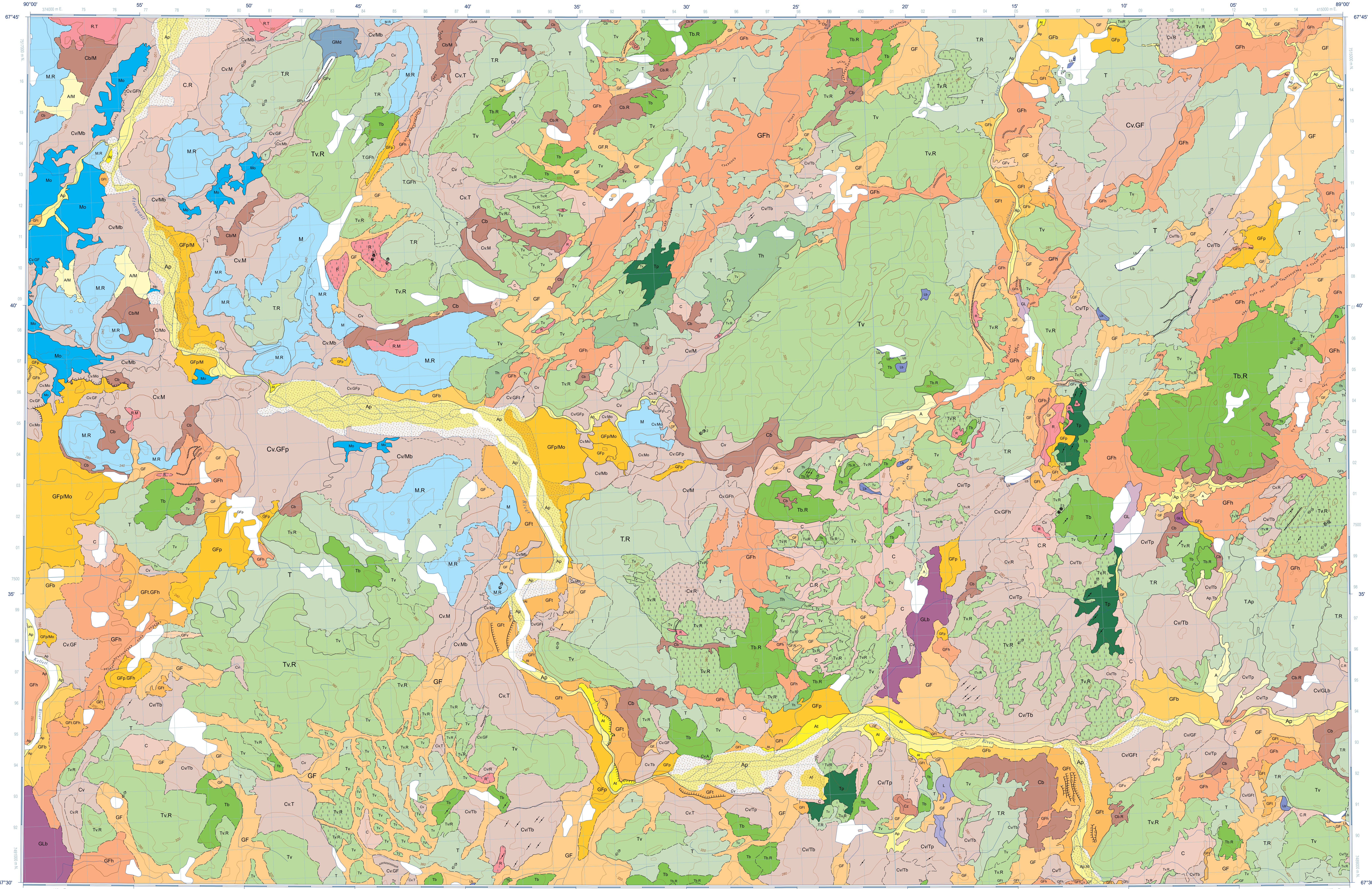
NATURAL RESOURCES CANADA
GEOLOGICAL SURVEY OF CANADA
CANADIAN GEOSCIENCE MAP 412
CANADA-NUNAVUT GEOSCIENCE OFFICE
OPEN FILE MAP 2022-03

SURFICIAL GEOLOGY
ATORQUAIT RIVER

Nunavut

NTS 56-P/11 and 12

1:50 000



QUATERNARY

HOLOCENE

POSTGLACIAL ENVIRONMENT

ALLUVIAL SEDIMENTS: silt, sand, and gravel deposited by streams, either within channels or as overbank deposits; deposits are usually stratified and moderately to well sorted, with the exception of some alluvial fan deposits.

Ap — **Floodplain sediments:** predominantly sands and gravels; thickness ranges from 1 to 5 m; may be locally overlain by or include lacustrine silt, clay, and minor peat and organic silt deposited in abandoned channels and along floodplain margins; typically forms plains within approximately 1 m of present stream level.

Af — **Fan sediments:** gravel and gravelly diamicton, stratified, poorly to moderately sorted; thickness can reach up to 10 m; forms fan-shaped landforms where streams enter larger valleys.

At — **Terraced sediments:** sand and gravel with minor silt, massive to stratified, moderately to well sorted; thickness ranges from sporadic cover on bedrock to several metres; terraced sediments are of floodplain origin and presently isolated from flooding by stream incision.

A — **Alluvial sediments, undifferentiated:** complex of alluvial units too small to be represented at the scale of mapping; varied thickness; consists primarily of alluvial units but may have relatively small pockets of colluvium, till, glaciolacustrine, glaciofluvial, glaciomarine, and/or marine sediments.

LACUSTRINE SEDIMENTS: sediments infilling drained or partially drained postglacial lake basins.

Lb — **Lacustrine blanket:** clay, silt, and sand, well stratified; thickness ranges from 1 to 10 m; forming a plain with local relief less than 1 m that masks the underlying topography.

L — **Lacustrine sediments, undifferentiated:** clay, silt, and sand; varied thickness; consists primarily of lacustrine units, but may have relatively small pockets of alluvial or colluvial sediments, till, glaciofluvial, glaciomarine, and/or marine sediments too small to be represented at the scale of mapping.

HOLOCENE AND LATE PLEISTOCENE (WISCONSINAN GLACIATION)

PERIGLACIAL AND GLACIAL ENVIRONMENT

COLLUVIAL DEPOSITS: typically less than 1 m thick, but can reach thicknesses up to 2 m; poorly sorted, unconsolidated debris (diamicton) deposited on slopes; derived from bedrock or glacial parent materials.

Cz — **Landslide deposits:** diamicton; thickness is highly varied, but may range up to 10 m; formed of broken rock, soil, and glacial deposits; forms a hummocky or ridged topography with ridges transverse to direction of movement; direction of movement indicated by symbol.

Cv — **Colluvial veneer:** diamicton and other materials; less than 1 m thick or discontinuous sheets of colluvial materials; colluvial veneer may form complex units with another surficial material.

Cb — **Colluvial blanket:** diamicton; thickness greater than 1 m; forming a mantle of colluvial material.

C — **Colluvial deposits, undifferentiated:** colluvial units too small to be represented at the scale of mapping; varied thickness; consists primarily of colluvial units, but may have relatively small pockets of alluvium, till, glaciolacustrine, glaciofluvial, glaciomarine, and/or marine sediments.

POSTGLACIAL AND GLACIAL ENVIRONMENT

MARINE AND GLACIOMARINE SEDIMENTS: sediments deposited from suspension in a marine or glaciomarine environment by submarine gravity flows, and those sediments that accumulate in the littoral zone.

Mo — **Marine offshore sediments:** silt, silty clay, and clay, rhythmically stratified; thickness ranges from 1 m to greater than 20 m; usually forms thick sequences that exhibit extensive gullying; locally fossiliferous.

Mb — **Marine blanket:** silt, sand, and gravel; varied thickness, but greater than 1 to 2 m; appears only as secondary unit in complex polygons and in stratigraphic relationships within polygons.

M — **Marine sediments, undifferentiated:** silt, sand, and gravel; varied thickness; complex may have relatively small pockets of alluvial or colluvial sediments, till, glaciofluvial, and/or glaciomarine sediments too small to be represented at the scale of mapping.

GMd — **Glaciomarine deltaic sediments:** sand and rounded gravels, cross-stratified; varied thickness; a scarp or face with a low-relief mantle associated with glaciofluvial deposition into a glaciomarine environment.

PROGLACIAL AND GLACIAL ENVIRONMENT

GLACIOLACUSTRINE SEDIMENTS: stratified sand, silt, and clay deposited in lakes dammed by glacial ice; distally deposited glaciolacustrine sediments typically underlie plains or gently rolling terrain; proximally deposited glaciolacustrine sediments may underlie ridged, hummocky, or pitted terrain caused by subsequent meltout.

GLb — **Glaciolacustrine blanket:** clay, silt, and sand, well stratified; thickness ranges from 1 m to greater than 20 m; a plain with local relief less than 1 m that masks the underlying topography.

GL — **Glaciolacustrine sediments, undifferentiated:** clay, silt, and sand; varied thickness; consists primarily of glaciolacustrine units, but may have relatively small pockets of alluvial or colluvial sediments, till, glaciofluvial, glaciomarine, and/or marine sediments too small to be represented at the scale of mapping.

GLACIOFLUVIAL SEDIMENTS: well stratified to massive sand, gravel with minor silt, and diamicton deposited by streams flowing away from, or in contact with, glacial ice; these sediments can range from well to poorly sorted; strata are commonly deformed due to syndepositional collapse from the meltout of supporting ice.

GFp — **Outwash plain sediments:** sand and rounded gravels, moderately to well sorted, cross-stratified; 1 to 20 m thick; forming low-relief mantle.

GFt — **Terraced sediments:** sand and rounded gravels, moderately to well sorted, cross-stratified; varied thickness; a scarp or face with a low-relief mantle of outwash sediments typically elevated above a lower level glaciofluvial or alluvial deposit.

GFh — **Hummocky sediments:** composed primarily of sand and gravel, poorly sorted; from 5 to 15 m thick; complex arrangement of slopes extending from rounded depressions to irregular conical ice-contact mounds and includes esker ridges.

GFv — **Glaciofluvial veneer:** gravel, sand, and silt, stratified to massive; thickness is typically less than 1 m; may occur in patches or as gravel lag over rock.

GFb — **Glaciofluvial blanket:** sand and gravel; varied thickness but greater than 1 to 2 m thick; comprising units GFv, GFt, GFp, and/or GFh.

GF — **Glaciofluvial sediments, undifferentiated:** sand and gravel; varied thickness; consists primarily of glaciofluvial units, but may have relatively small pockets of alluvial or colluvial sediments, till, and/or glaciolacustrine sediments too small to be represented at the scale of mapping.

GLACIAL ENVIRONMENT

GLACIAL SEDIMENTS (TILL): diamicton (granule- to boulder-sized clasts suspended in a poorly sorted clay to sand matrix); ground moraine deposited directly by glacial ice; redeposition directly from glacial ice is by sediment gravity flow and/or ductile deformation; contrasting vegetation cover reflecting compositional differences; thickness ranges from 1 m to greater than 20 m.

Th — **Hummocky till:** diamicton and interstratified glaciofluvial gravel and sand, stratified to massive, stratification often exhibits syndepositional deformation features caused by slumping or ice meltout; up to 20 m or more thick; may contain varied amounts of ice-walled glaciofluvial and glaciolacustrine sediments; forms hummocky surface (kame and kettle topography); in places the unit may exhibit prominent ridges marking major recessional ice margins, or diffuse zones marking boundaries between glacial-ice regimes.

Tp — **Till plain:** diamicton; thickness is greater than 5 m; surface morphology forms gently rolling plains with 1 to 2 m of relief; may exhibit flutes; generally masks underlying topography; some areas have large frost polygons and stone nets.

Tv — **Till veneer:** diamicton; less than 1 m thick; occurs in patches over rock and is interspersed with rock outcrop; deposits are thin enough to reveal details of underlying rock structure; may occur as a unit in complex polygons.

Tb — **Till blanket:** diamicton; thickness generally from 1 to 5 m; surface morphology conforms to underlying bedrock topography; may exhibit crag-and-tails, flutes, and/or roches moutonnées; some areas have large frost polygons and stone nets.

T — **Till, undifferentiated:** diamicton; varied thickness; complex may have relatively small pockets of alluvial or colluvial sediments, glaciofluvial, glaciolacustrine, glaciomarine and/or marine sediments too small to be represented at the scale of mapping.

PRE-QUATERNARY

R — **Bedrock, undifferentiated:** various lithologies; where felsenmeer overlay present, frost-heaved, angular blocks of bedrock occur and are only identifiable from field observations.

Complex units: two map-unit designators separated by a dot (.) are used where the surficial cover forms a complex area and the units are too small to be mapped individually (e.g. Cv.Tb designates an area of colluvial veneer with numerous small deposits of till blanket). The map-unit polygon is coloured according to the dominant unit and labeled in descending order of cover.

Stratigraphic relationship: two map-unit designators separated by a slash (/) are used where a stratigraphic relationship is observed or confidently inferred (e.g. Cv/Mb indicates colluvial veneer overlying marine sediments). The map-unit polygon is coloured according to the overlying unit.

Area of felsenmeer

Geological contact:
Defined
Approximate
Inferred

Landslide escarpment, active

Terrace scarp, escarpment

Meltwater channel, minor, paleoflow direction unspecified

Esker:
Paleoflow direction unspecified
Paleoflow direction known

Drumlinoid, fluting, length not mapped to scale

Crag-and-tail, length not mapped to scale

Roche moutonnée, length not mapped to scale

Striation:
Poorly defined, ice-flow direction unknown
Well defined, ice-flow direction unknown
Well defined, ice-flow direction known
Crossed, 1 = older, 3 = younger

Recommended citation
Geological Survey of Canada, 2022. Surficial geology, Atorquait River, Nunavut, NTS 56-P/11 and 12; Geological Survey of Canada, Canadian Geoscience Map 412 (Surficial Data Model v. 2.3.14 conversion of Open File 5016, Map 2); Canada-Nunavut Geoscience Office, Open File Map 2022-03, scale 1:50 000. https://doi.org/10.4095/315132

Geological Survey of Canada
Canadian Geoscience Maps

Author: Geological Survey of Canada

Geology by E.C. Little, M. Giangioppi, D. Utting, T. Ferbey, and C. Ozyer, 2003

Geological compilation by E.C. Little, 2004 and 2005

Geology conforms to Surficial Data Model v. 2.3.14 (Deblonde et al., 2018).

Geological data conversion by D.E. Kerr, 2016 to 2018

Geology has been spatially adjusted to fit the updated base.

Geomatics by J. Kingsley, S.A. Keskinler, and C.D. Stevens

Cartography by D. Viner

Scientific editing by L. Ewert

Joint initiative of the Geological Survey of Canada and the Canada-Nunavut Geoscience Office, conducted under the auspices of the Information Management Project as part of Natural Resources Canada's Geo-Mapping for Energy and Minerals (GEM) program

SURFICIAL GEOLOGY
ATORQUAIT RIVER
Nunavut
NTS 56-P/11 and 12
1:50 000
1 0 1 2 3 4 km

Map projection Universal Transverse Mercator, zone 16
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

Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area.
Magnetic declination 2022, 13°09'W, decreasing 26.7' annually

This map is not to be used for navigational purposes.

The Geological Survey of Canada welcomes corrections or additional information from users (gscpublications-cgcpublications@nrcan-rncan.gc.ca).

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 (https://geoscan.nrcan.gc.ca/) and Canada-Nunavut Geoscience Office (https://cngo.ca/).

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