Natural Resources Canada
Ressources naturelles Canada

CANADIAN GEOSCIENCE MAP 263

RECONNAISSANCE SURFICIAL GEOLOGY

HILL ISLAND LAKE

Northwest Territories
NTS 75-C

Map Information Document

Preliminary

Geological Survey of Canada
Canadian Geoscience Maps

2016

Canada

MAP NUMBER

Natural Resources Canada, Geological Survey of Canada
Canadian Geoscience Map 263 (Preliminary)

TITLE

Reconnaissance surficial geology, Hill Island Lake, Northwest Territories, NTS 75-C

SCALE

1:125 000

CATALOGUE INFORMATION

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RECOMMENDED CITATION

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ABSTRACT

Reconnaissance mapping, through air photograph interpretation and limited legacy field data in the Hill Island Lake map area, provides a basic understanding of surficial sediments and glacial history. Bedrock is well exposed throughout the map area but

more extensive in the northern half. Till blanket, veneer and glaciofluvial outwash become increasingly more abundant towards the southern third of the map area. Drumlinized till, crag-and-tails, and striations record ice advance to the southwest. Small isolated moraine ridges may reflect deglacial stagnant ice. Glaciofluvial corridors of eskers and scoured bedrock, record a southwestward meltwater flow during deglaciation. Some corridors are topographically controlled. In the Hill Island and Taylor Lake basins, glaciolacustrine deltas are found at 340 m. Pockets of glaciolacustrine sediments occur along the Thoa, Nolan, Abita river basins, and in the Oswald, Delight, Kidder and other smaller lake basins. These are interpreted to be short lived, ice-dammed glacial lakes. Postglacial dune ridges up to 1–2 km long trend NW-SE.

RÉSUMÉ

Une cartographie de reconnaissance, réalisée par l'interprétation de photos aériennes et l'interprétation d'une quantité limitée d'anciennes données de terrain pour la région cartographique de Hill Island Lake, nous fournit une compréhension sommaire des sédiments superficiels et de l'histoire glaciaire. Le substratum rocheux est bien exposé dans l'ensemble de la région cartographique, mais plus particulièrement dans la moitié nord. Une nappe ou un placage de till et des dépôts d'épandage fluvioglaciaires gagnent en importance dans le tiers sud de la région. Du till à drumlins, des structures en crag-and-tail et des stries rendent compte d'une avancée glaciaire vers le sud-ouest. De petites crêtes isolées de moraine pourraient témoigner de l'existence de glace stagnante à la déglaciation. Des corridors fluvioglaciaires révélés par la présence d'eskers et d'un substratum rocheux affouillé rendent compte d'un écoulement des eaux de fonte vers le sud-ouest à la déglaciation. Certains de ces corridors sont régis par la topographie. Dans les bassins des lacs Hill Island et Taylor, on observe des deltas glaciolacustres à une altitude de 340 m. Des amas de sédiments glaciolacustres sont présents le long des bassins des rivières Thoa, Nolan, Abita ainsi que dans les bassins des lacs Oswald, Delight et Kidder et de lacs plus petits. On croit qu'il s'agirait de lacs de barrage glaciaire de courte durée. Des dunes postglaciaires de 1–2 km de longueur s'étendent suivant une orientation nord-ouest–sud-est.

LICENCE AGREEMENT

ACCORD DE LICENCE

SHEET 1 OF 1, RECONNAISSANCE SURFICIAL GEOLOGY

GENERAL INFORMATION

Authors: V.M. Levson, T. Ferbey, and D.E. Kerr

Geology conforms to Surficial Data Model v. 2.1

Geology based on aerial photograph interpretation by V.M. Levson and T. Ferbey, 2012, 2013, with revisions by D.E. Kerr, 2014, 2015. Striation data from Mulligan and Taylor, 1969.

Geomatics by L. Robertson

Cartography by D. Viner

Initiative of the Geological Survey of Canada as part of Natural Resources Canada's Geo-mapping for Energy and Minerals (GEM) program.

Map projection Universal Transverse Mercator, zone 12.
North American Datum 1983

Base map at the scale of 1:50 000 from Natural Resources Canada, with modifications. Elevations above mean sea level are expressed in metres (NTS 75-C/1–12, 15, and 16) and feet (NTS 75-C/13 and 14)

Mean magnetic declination 2016, 12°57'E, decreasing 14.6' annually. Readings vary from 12°08'E in the SE corner to 13°46'E in the NW corner of the map.

This map is not to be used for navigational purposes.

Title photograph: Fluted till and bedrock recording southwestward ice flow, south of Vandyck Lake. NAPL air photograph A14904-31

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.

Map Viewing Files

The published map is distributed as a Portable Document File (PDF), and may contain a subset of the overall geological data for legibility reasons at the publication scale.

References

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

Mulligan, R. and Taylor, F.C., 1969. Geology, Hill Island Lake, District of Mackenzie; Geological Survey of Canada, Map 1203A, scale 1:253 440. doi:10.4095/109117

Author Contact

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Coordinate System

Projection: Universal Transverse Mercator
Units: metres
Zone: 12
Horizontal Datum: NAD83
Vertical Datum: mean sea level

Bounding Coordinates

Western longitude: 110°00’00”W
Eastern longitude: 108°00’00”W
Northern latitude: 61°00’00”N
Southern latitude: 60°00’00”N

Software Version

Data has been originally compiled and formatted for use with ArcGIS™ desktop version 10.2.2 developed by ESRI®.

Data Model Information

Surficial

The Geological Survey of Canada (GSC) through the Geomapping for Energy and Minerals Program (GEM) has undertaken the Geological Map Flow to develop protocols for the collection, management (compilation, interpretation), and dissemination of surficial and bedrock geology data and map information. To this end, a data model has been created.

The Surficial Data Model (SDM) was designed using ESRI geodatabase architecture. The XML workspace document provided can be imported into a geodatabase, and the geodatabase will then be populated with the feature datasets, feature classes, tables, relationship classes, subtypes, and domains.

Shapefile and table (.dbf) versions of the data are included within the data. Column names have been simplified and the text values have been maintained within the shapefile attributes. The direction columns are numerical, to display rotation for points, and the symbol fields will hold the correct values to be matched to the appropriate style file.

For a more in depth description of the data model please refer to the official publication:

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