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CANADIAN GEOSCIENCE MAP 222
CNGO OPEN FILE MAP 2015-01

SURFICIAL GEOLOGY

CHIDLIAK BAY

Baffin Island, Nunavut
NTS 26-B

Map Information Document

Preliminary

Canadian Geoscience Maps

2015

CANADA-NUNAVUT GEOSCIENCE OFFICE | BUREAU GÉOSCIENTIFIQUE CANADA-NUNAVUT
KANATAMI-NUNAVUMI GEOSCIENCE TITIGAKVIIT

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Cover Illustration

Frobisher Bay Moraine, Baffin Island, Nunavut. Photograph by T. Tremblay. 2014-246

ABSTRACT

This surficial map is based on aerial photographs and satellite images interpretations, as well as on field work observations (Tremblay et al. 2013, 2014 and 2015). The southwestern corner of the NTS 26-B mapsheet was mapped by Leblanc-Dumas et al. (2015). The plateau forms a heteregenous map pattern, with patches of cold-based sediments (regolith, and regolith mixed with till) cross-cut by till deposited during glacial readvances, and glacial lakes sediments. The regolith is a pre-glacial or interglacial landscape feature (Leblanc-Dumas et al., 2015). The northeastern rugged land was eroded by warm-based glaciers flowing toward the northeast, and is dominantly covered by till and bedrock outcrops. The striation data was compiled from Tremblay et al. (2015) and Johnson et al. (2012). The eastern coast was dissected by valley and fiord glaciers. The Frobisher Bay moraine was formed from 9 to 8 ^{14}C ka, and the deglaciation of Chidliak Bay is dated at 8.6 ^{14}C ka (Miller, 1985; Hodgson, 2005).

Proglacial lakes were dammed by important moraines (Frobisher Bay and Hall moraines: Miller, 1985). The observed marine limits range from 60 m asl to 85 m asl.

RÉSUMÉ

Cette carte des formations superficielles provient de l'interprétation de photos aériennes et d'images satellites, et de travaux de terrain (Tremblay et al. 2013, 2014 and 2015). La partie sud-ouest du feuillet SNRC 26-B fut cartographiée par Leblanc-Dumas et al. (2015). Le plateau est représenté par un patron cartographique hétérogène, avec des zones de glace à base froide (régolithe, et till mélangé au régolithe) entrecoupées de till et de sédiments glaciolacustres. Le régolithe est d'origine préglaciaire ou interglaciaire (Leblanc-Dumas et al., 2015). Le terrain rugueux du nord-est fut érodé par des glaciers à base chaude s'écoulant vers le nord-est; cette zone inclut principalement du till et des affleurements rocheux. Les données de stries furent compilées de Tremblay et al. (2015), et Johnson et al. (2012). La côte est fut dissectée par des glaciers de vallées et de fiords. La moraine de Frobisher fut déposée de 9 à 8 ^{14}C ka, et la déglaciation de la Baie de Chidliak date de 8.6 ^{14}C ka (Miller, 1980; Miller, 1985; Hodgson, 2005). Des lacs proglaciaires furent bloqués par des moraines (Frobisher Bay et Hall; Miller, 1985). La limite marine est de 60 m asl à 85 m.asl.

ABOUT THE MAP

General Information

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This map was produced by the Canada-Nunavut Geoscience Office in co-operation with Natural Resources Canada.

Geology by T. Tremblay and J. Leblanc-Dumas, 2012–2013

Geology conforms to Surficial Data Model v. 2.0

Geomatics by T. Tremblay and C. Gilbert

Cartography by C. Gilbert

Initiative of the Canada-Nunavut Geoscience Office, conducted under the auspices of the Hall Peninsula Integrated Geoscience Project, supported by CanNor's Strategic Investment for Northern Economic Development (SINED) program.

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Map projection Universal Transverse Mercator, zone 19.
North American Datum 1983

Base map at the scale of 1:50 000 from Natural Resources Canada, with modifications. Elevations in metres above mean sea level

Shaded relief image derived from the digital elevation model supplied by the Canada-Nunavut Geoscience Office. Illumination: azimuth 315°, altitude 45°, vertical factor 1x

Mean magnetic declination 2015, 29º39'W, decreasing 25.4' annually. Readings vary from 28º55'W in the SW corner to 30º20'W in the NE corner of the map.

The Geological Survey of Canada and the Canada-Nunavut Geoscience Office welcome corrections or additional information from users.

Data may include additional observations not portrayed on this map. See documentation accompanying the data.

This publication is available for free download through GEOSCAN (http://geoscan.nrcan.gc.ca/) and the Canada-Nunavut Geoscience Office (http://cngo.ca/).

This map is not to be used for navigational purposes.

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.

About the Geology

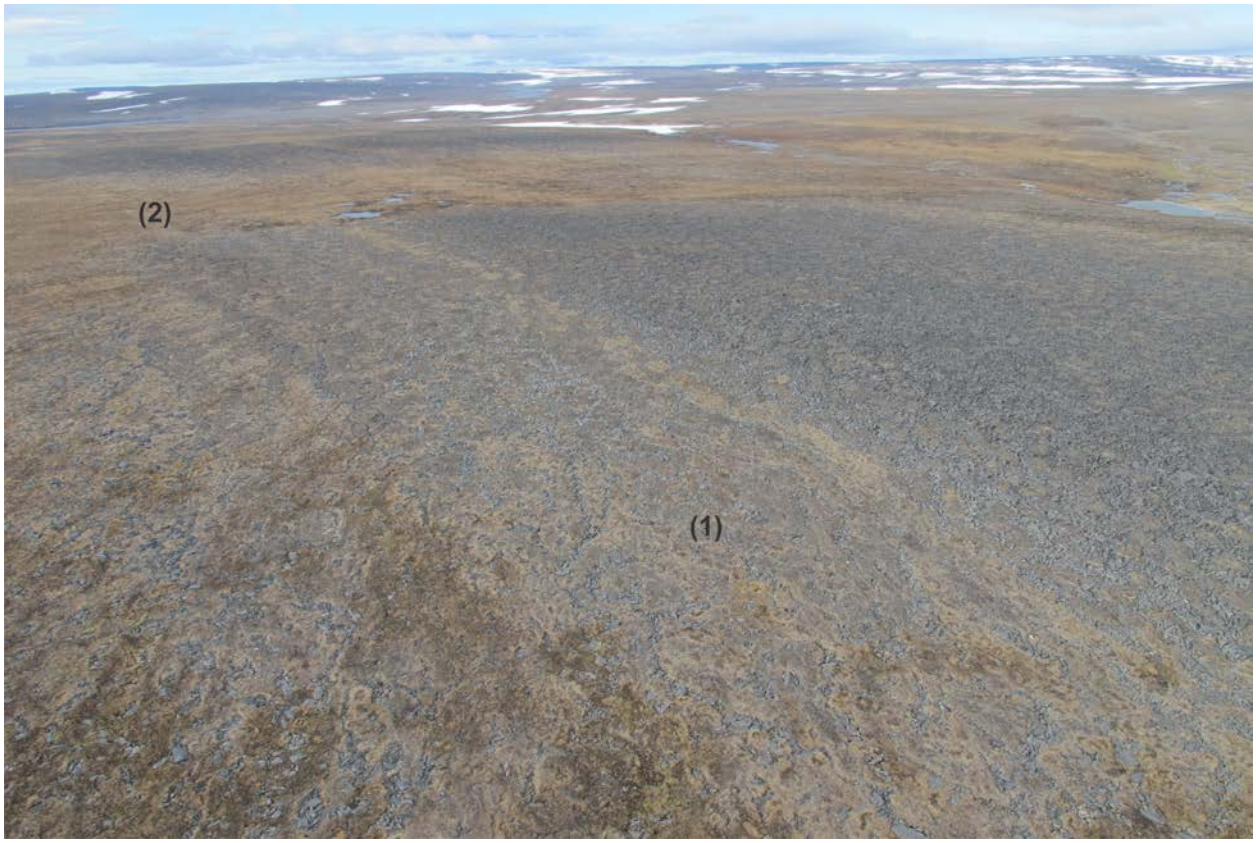

Figure 1. Regolith from layered metasediments (1), partly covered by till (2). Photograph by T. Tremblay. 2014-248

Figure 2. Regolith cover (1) on rounded hill, flanked by glaciofluvial marginal channels (2). In the near field, glaciofluvialplain sediments (3) cover the valley at the end of marginal channels. Photograph by T. Tremblay. 2014-245

Figure 3. Glaciolacustrine sediments (1), sandy beach ridges (2) and till (3), south of McKeand River. Photograph by T. Tremblay. 2014-249

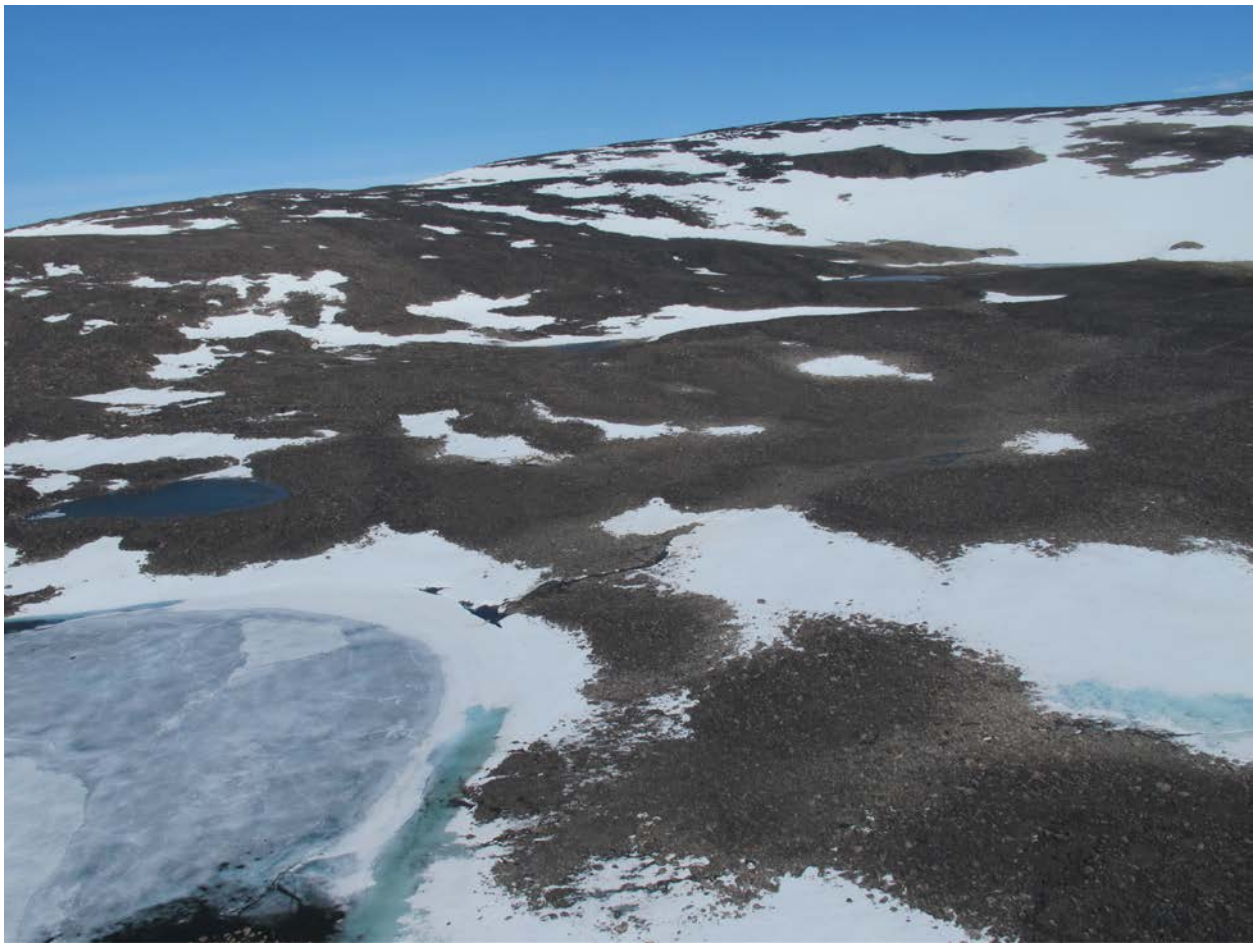

Figure 4. Hummocky till and moraines ridge, Hall Peninsula highlands, Nunavut. Photograph by T. Tremblay. 2014-247

Acknowledgments

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References

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Coordinate System

Projection: Universal Transverse Mercator
Units: metres
Zone: 19

Horizontal Datum: NAD83
Vertical Datum: mean sea level

Bounding Coordinates

Western longitude: 68°00’00” W
Eastern longitude: 66°00’00” W
Northern latitude: 65°00’00” N
Southern latitude: 64°00’00” N

Surficial Data Model Information

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:

Deblonde, C., Plouffe, A., Eagles, S., Everett, D., Huntley, D.H., Inglis, E., Kerr, D.E., Moore, A., Parent, M., Robertson, L., Smith, I R., St-Onge, D.A., and Weatherston, A., 2014. Science language for an integrated Geological Survey of Canada data model for surficial geology maps, version 2.0; Geological Survey of Canada, Open File 7631, 464 p. doi:10.4095/294225

LICENCE AGREEMENT

ACCORD DE LICENCE