

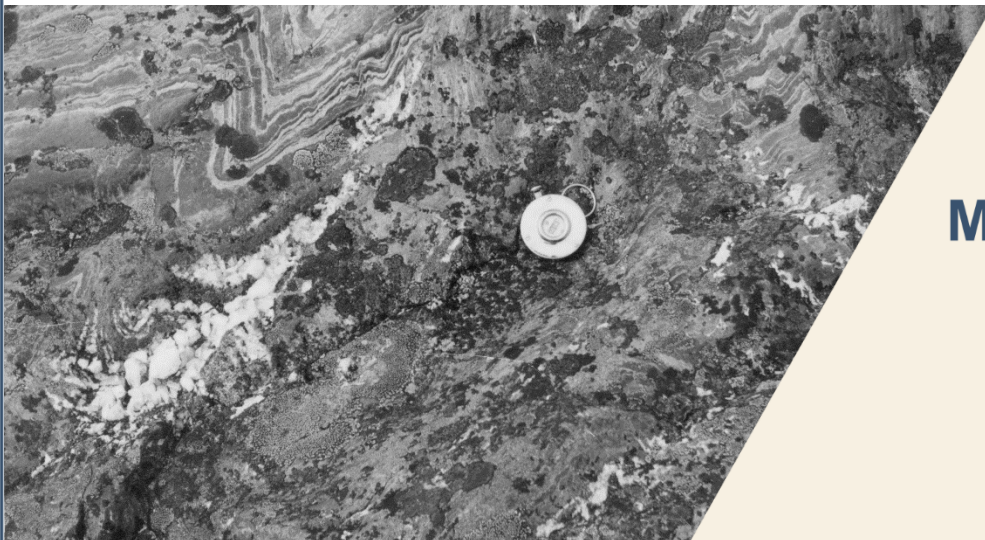


Natural Resources
Canada

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CANADIAN GEOSCIENCE MAP 408
BEDROCK GEOLOGY
NORTHWEST PART OF
NULUUJAAK MOUNTAIN

Baffin Island, Nunavut
part of NTS 37-G/5



**Map Information
Document**

Geological Survey of Canada
Canadian Geoscience Maps

2021

Canada 



MAP NUMBER

Natural Resources Canada, Geological Survey of Canada
Canadian Geoscience Map 408

TITLE

Bedrock geology, northwest part of Nuluujaak Mountain, Baffin Island, Nunavut, part of
NTS 37-G/5

SCALE

1:25 000

CATALOGUE INFORMATION

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ABSTRACT

The map area lies about 40 km northwest of Baffinland's iron mine. Dykes of unit mAnA3 within unit mAnA2 suggest that unit mAnA2 predates unit mAnA3. Unit nAMqf, basal Mary River Group unit, includes regolith material from units mAnA2 and mAnA3. Unit mAnAm may include some dykes of unit nAMb. The Mary River Group was deposited in a volcanic-arc environment, yielding zircon U-Pb ages mostly in the range of 2.88 to 2.72 Ga. Iron-formation (unit nAMi) is approximately 276 m thick locally, with oxide facies (unit nAMio) being most abundant. The quartzite triangle west of 'Iron lake' (unofficial name) may be a small horst. The main east-west-trending synclinal fold, including the area around 'Iron lake' and the no. 4 ore deposit, is upright, nearly isoclinal, and plunges mostly easterly at both ends with small scale anticlines and synclines in the middle. Magnetite constitutes about 75% of high-grade iron deposits in the north limb, whereas hematite predominates in south-limb deposits. K-Ar and Rb-Sr ages indicate middle Paleoproterozoic overprinting. Central Borden Fault Zone was active at ca. 1.27 Ga and during or after Ordovician time.

Note: please be aware that the information contained in CGM 408 is based on legacy data from the 1960–1990s and that it has been superseded by regional-scale information contained in CGM 403.

RÉSUMÉ

Cette région cartographique se situe à environ 40 km au nord-ouest de la mine de fer Baffinland. Des dykes de l'unité mAnA3 situés à l'intérieur de l'unité mAnA2 nous portent à croire que l'unité mAnA2 est antérieure à l'unité mAnA3. L'unité nAMqf, qui forme la base du Groupe de Mary River, comprend des matériaux régolitiques provenant des unités mAnA2 et mAnA3. L'unité mAnAm peut renfermer des dykes de l'unité nAMb. Le Groupe de Mary River s'est mis en place dans un milieu d'arc volcanique et a livré des âges U-Pb sur zircon dans l'intervalle 2,88–2,72 Ga. La formation de fer (unité nAMi) est épaisse d'environ 276 m par endroits et le faciès à oxydes (unité nAMio) est le plus abondant. Le triangle de quartzite situé à l'ouest du 'lac Iron' (nom non officiel) pourrait être un petit horst. Le principal pli synclinal d'orientation est-ouest, qui touche entre autres le secteur autour du 'lac Iron' et du gîte n° 4, est un pli droit, presque isoclinal, qui plonge principalement vers l'est aux deux extrémités et renferme de petits anticlinaux et synclinaux dans sa partie centrale. La magnétite constitue environ 75 % des gîtes de fer à haute teneur du flanc nord, tandis que l'hématite prédomine dans les gîtes de fer du flanc sud. Les âges K-Ar et Rb-Sr indiquent une surimpression au Paléoprotérozoïque moyen. La zone de failles de Central Borden était active à environ 1,27 Ga, ainsi que pendant ou après l'Ordovicien.

Note : L'information présentée sur la carte CGM 408 est fondée sur d'anciennes données recueillies au cours des années 1960–1990 et est supplantée par celle figurant sur la carte CGM 403 à l'échelle régionale.

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SHEET 1 OF 1, BEDROCK GEOLOGY

GENERAL INFORMATION

Author: G.D. Jackson

Geology by G.D. Jackson and W.J. Crawford, 1965

Geological compilation by G.D. Jackson, 2019

Geology conforms to Bedrock Data Model v. 2.9 (Brouillette et al., 2019).

Geology has been spatially adjusted to fit the updated base.

The geological interpretation provided on this map is based on ground traversing, helicopter traversing of areas with few or no outcrops, and aeromagnetic interpretation.

Photographs, chemical analyses and diagrams, descriptions, and Paleozoic stratigraphic sections are available for the area in GSC Memoir 440 (Jackson, 2000). Faults and folds are available in Jackson (1978).

Geomatics by K. Love, R. Buenviaje, and A. Morin

Cartography by N. Côté

Scientific editing by A. Weatherston

Initiative of the Geological Survey of Canada, conducted under the auspices of the GEM North Baffin as part of Natural Resources Canada's Geo-mapping for Energy and Minerals (GEM) program

Map projection Universal Transverse Mercator, zone 17
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

Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area.

Magnetic declination 2021, 30°11'W, decreasing 49.0' annually

This map is not to be used for navigational purposes.

Title photograph: Very thin-bedded, deformed, oxide-facies (magnetite) iron-formation, alternate layers of magnetite and quartz (meta-chert), with local cummingtonite and actinolite. Location: 'Muriel lake'-'David lake' (unofficial names) belt. Photograph by G.D. Jackson. NRCan photo 2018-390

The Geological Survey of Canada welcomes corrections or additional information from users at (nrcan.gscinfo-infocgc.nrcan@canada.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/>).

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.

CARTOGRAPHIC REPRESENTATIONS USED ON MAP

This map utilizes ESRI Cartographic Representations in order to customize the display of standard GSC symbols for visual clarity on the PDF of the map only. The digital data still contains the original symbol from the standard GSC symbol set. The following legend features have Cartographic Representations applied:

Geolines - fault

Geolines - trace

Geolines - contact

DEFINITION QUERIES USED ON MAP

This map utilizes definition queries in order to customize the display for visualization on the PDF of the map only and does not affect the digital data. The following features have a definition query applied:

GEO_POINTS

GEO_LINES

GEO_POLYS

ACKNOWLEDGMENTS

W.J. Crawford was a very able senior field assistant. Field party support was provided by Baffinland Iron Mines Corporation from June to September, 1965. Helicopter service and groceries were provided in the field through an agreement with Baffinland Iron Mines, who also made reports and other information available to us.

The author gratefully acknowledges the following GSC staff for their contributions to this publication. K. Love for careful work (2005) to complete the challenging conversion of legacy paper field maps to digital data. More recently, R. Buenviaje provided extensive support for transformation of the data and GIS compilation work. M. Szadurski located and scanned legacy field photographs.

Thanks also to A. Morin for providing a thorough review of the geodatabase and N. Côté for the final cartography.

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SUGGESTED READINGS

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ADDITIONAL INFORMATION

The Additional Information folder of this product's digital download contains figures and tables that appear in the map surround as well as additional geological information not depicted on the map, nor this document, nor the geodatabase.

-PDF of each figure that appears in the CGM surround.

AUTHOR CONTACT

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COORDINATE SYSTEM

Projection: Universal Transverse Mercator

Units: metres

Zone: 17

Horizontal Datum: NAD83

Vertical Datum: mean sea level

BOUNDING COORDINATES

Western longitude: 80°00'00"W

Eastern longitude: 79°30'00"W

Northern latitude: 71°30'00"N

Southern latitude: 71°19'47"N

SOFTWARE VERSION

Data has been originally compiled and formatted for use with ArcGIS™ desktop version 10.7.1 developed by ESRI®.

DATA MODEL INFORMATION

Bedrock

Based on a data-centric approach, the GSC Bedrock Model was designed using the ESRI ArcGIS® environment. The model architecture is almost entirely tailored to the proprietary functionalities of the ESRI® File Geodatabase such as *SubTypes*, *Domain Values* and *Relationship Classes*.

Consult PDFs in Data folder for complete description of the model with its feature classes, tables, attributes, and domain values.

Note: the PDF document is not intended to describe the entire GSC Bedrock Model, but it provides a complete and detailed description of a subset of the model representing the published dataset.

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

Brouillette, P., Girard, É., and Huot-Vézina, G., 2019. Geological Survey of Canada Bedrock Data Model and tools: design and user guide documentation including ArcGIS™ add-ins; Geological Survey of Canada, Open File 8247, 129 p, 1 .zip file. <https://doi.org/10.4095/314673>