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- References**  
Bouletre, P., Grant, E., and Host-Veitze, G. 2019. Geological Survey of Canada Bedrock Data Model and tools design and use guide documentation including ArcGIS (TM) add-ins. Geological Survey of Canada, Open File 8247, 129 p. 1:6 file. <https://doi.org/10.4095/8247>
- Jackson, G.D. 1978. Basement geology and the Mary River Group, No. 4 deposit area, northwest Baffin Island, District of Franklin in Nunavut. *Geological Survey of Canada, Paper 77-14*, p. 18-24. <https://doi.org/10.4095/7714>
- Jackson, G.D. 2000. Geology of the Clyde-Comstock land area, north-central Baffin Island, Nunavut. *Geological Survey of Canada, Memoir 463*, 318 p. <https://doi.org/10.4095/21289>
- Jackson, G.D., Hill, P.A., Lovett, W.D., and Frank, R.R. 1960. Reconnaissance geology of Baffin Island, N.W.T. 1:100,000. *Geological Survey of Canada, Paper 89-9*, p. 123-148. <https://doi.org/10.4095/899>
- Saurin, B.M., Skilton, D.R., St-Onge, M.R., Biss, E.R., Acosta-Gonzalez, P., Kelly, C.J., Amin, A., O'Brien, M.E., Johnson, S.T., Vetter, O.M., et al. 2016. Precambrian geology of the surroundings of Ikroavut and western Baffin Island (NTS 37-G/5, 37-F, 37-C). *Baffin Island, Nunavut, Canada-Natural Resources Canada, Summary of Activities 2016*, p. 29-45.
- Saurin, B.M., Skilton, D.R., St-Onge, M.R., Jackson, G.D., Wodicka, N., Biss, E.R., Vetter, O.M., and Johnson, S.T. 2020. Bedrock geology, Nunavut: Mary River Baffin Island, Nunavut, NTS 37-G/5 east. *Geological Survey of Canada, Canadian Geoscience Map 403*, scale 1:100,000. <https://doi.org/10.4095/21289>
- Tettin, H.P. 1975. Investigations of Lower Paleozoic geology, Fove Basin, northeastern Melville Peninsula, and parts of northeastern and Central Baffin Island, Geological Survey of Canada, Bulletin 251, 177 p. <https://doi.org/10.4095/19375>

**Suggested Readings**  
Crawford, W.J.P. 1973. Metaterrane origin of the Mary River Group and adjacent parts of northern Baffin Island. Ph.D. thesis, University of Waterloo, Waterloo, Ontario, 104 p.

Wright, H.W., Jr., and Jackson, G.D. 1971. Paleogeography of the Franklin domain, Canada. *Canadian Journal of Earth Sciences*, v. 8, no. 4, p. 455-487. <https://doi.org/10.1139/e71-047>

Frey, B.J. 1971. Canadian Precambrian iron formations: ages and trace element compositions. Ph.D. thesis, Massachusetts Institute of Technology, Cambridge, Massachusetts, 174 p.

Frey, B.J. 1971. Age and trace element compositions of Neoproterozoic iron formations of the Canadian Shield. In *Variations in Isotopic Abundances of Strontium, Calcium and Argon and Related Topics - Ninth Annual Progress Report for 1971*, Department of Earth and Planetary Sciences, Massachusetts Institute of Technology, Cambridge, Massachusetts, p. 65-96.

Geological Survey of Canada. 1977. District of Franklin (Sheet 37-G/5) Northwest Territories. *Geological Survey of Canada, Map 463*, scale 1:100,000. <https://doi.org/10.4095/21289>

Hoppe, E., Jackson, G.D., Whalen, J.R., and Hladik, N. 2007. Some Mesoproterozoic and Paleoproterozoic rocks of Baffin Island, in *Digital Geoscience Atlas of Baffin Island* (south of 70°N and east of 80°W), Nunavut, [ed. M.R. St-Onge], p. 103-107. *Geological Survey of Canada, Open File 516*, 1. 2p file. <https://doi.org/10.4095/22351>

Jackson, G.D. and Berman, R.G. 2000. Precambrian metamorphic and tectonic evolution of northern Baffin Island, Nunavut, Canada. *The Canadian Mineralogist*, v. 38, no. 2, p. 399-421. <https://doi.org/10.2113/canmin.38.2.399>



**Figure 1:** Mural Lake syncline (unit mAnA2-i) partially overlain by unit mAnA3-i (unit mAnA3-i). The two rock types were folded together at the east end of the Mural syncline. Photograph by G.D. Jackson, NRCan photo 1997-0548.

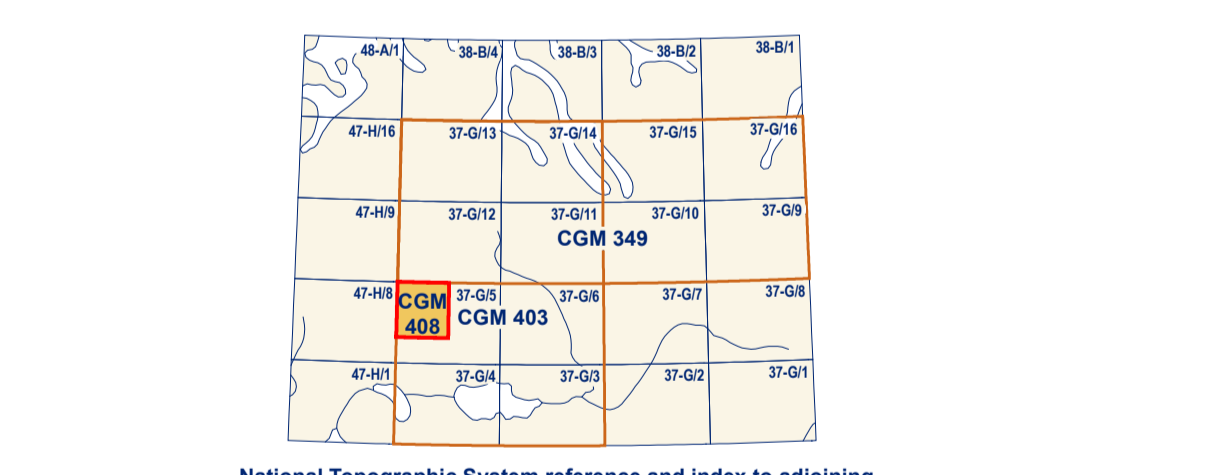


**Figure 2:** Thin section of a quartzite sample showing basal crenulate foliation. The image displays the complex folding and mineralogical textures characteristic of this rock type.

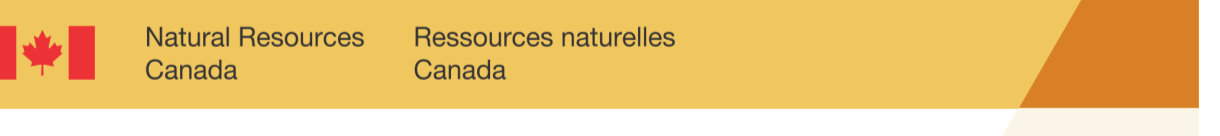
**Abstract**  
The map area lies about 40 km northwest of Baffinland Iron Mine. Dikes of unit mAnA3-i within unit mAnA2-i suggest that unit mAnA2-i predates unit mAnA3-i. Unit mAnA3-i, basal Mary River Group unit, includes relict material from units mAnA2-i and mAnA3-i. Unit mAnA3-i may include some dikes of unit mAnA2-i. The Mary River Group was deposited in a volcanic-arc environment, during Proterozoic (2.6 Ga) in the range of 2.8 to 2.7 Ga. Ion-formation (unit mAnA3-i) is approximately 270 m thick locally, with wide facies (unit mAnA3-i) being more abundant. The quartzite triangle formation of the unit mAnA3-i is approximately 270 m thick. The main exposure, syncline, fold, including the area around Mural lake and the no. 4 core deposit, is largely mesoseismic, and plunges north easterly at both ends with small scale antiforms and synclines in the middle. Magnetite concretions about 75% of high-grade iron deposits, in the north limit, where hematite predominates in south-dip axial. K-Ar and Rb-Sr ages indicate middle Proterozoic overprinting Central Border Fault Zone was active at ca. 1.27 Ga and during or after Ordovician time.

**Résumé**  
Cette région cartographique se situe à environ 40 km au nord-ouest de la mine de fer Baffinland. Des dikes de l'unité mAnA3-i situés à l'intérieur de l'unité mAnA2-i nous portent à croire que l'unité mAnA2-i antécède l'unité mAnA3-i. L'unité mAnA3-i, qui forme la base du Groupe de Mary River, comprend des matériaux relictuels provenant des unités mAnA2-i et mAnA3-i. L'unité mAnA3-i peut renfermer des dikes de l'unité mAnA2-i sur des zones denses. Le Groupe de Mary River est déposé dans un milieu d'arc volcanique et a été déposé dans un intervalle de 2,8-2,7 Ga. La formation de fer (unit mAnA3-i) est épaisse d'environ 270 m localement, avec des faciès (unit mAnA3-i) étant plus abondants. Le triangle de quartzite (unit mAnA3-i) est plus abondant. Le triangle de quartzite situé à l'ouest de la lac Mural (non officiel) plonge vers le nord-est à ses deux extrémités avec de petites ondulations et synclines à l'intérieur. Les concrétions de magnétite à environ 75% des dépôts de fer de haute teneur de ce triangle de quartzite. Les âges K-Ar et Rb-Sr indiquent une surimpression au Proterozoïque moyen. La zone de failles de Central Border Fault Zone était active à ca. 1,27 Ga, pendant ou après l'Ordovicien.

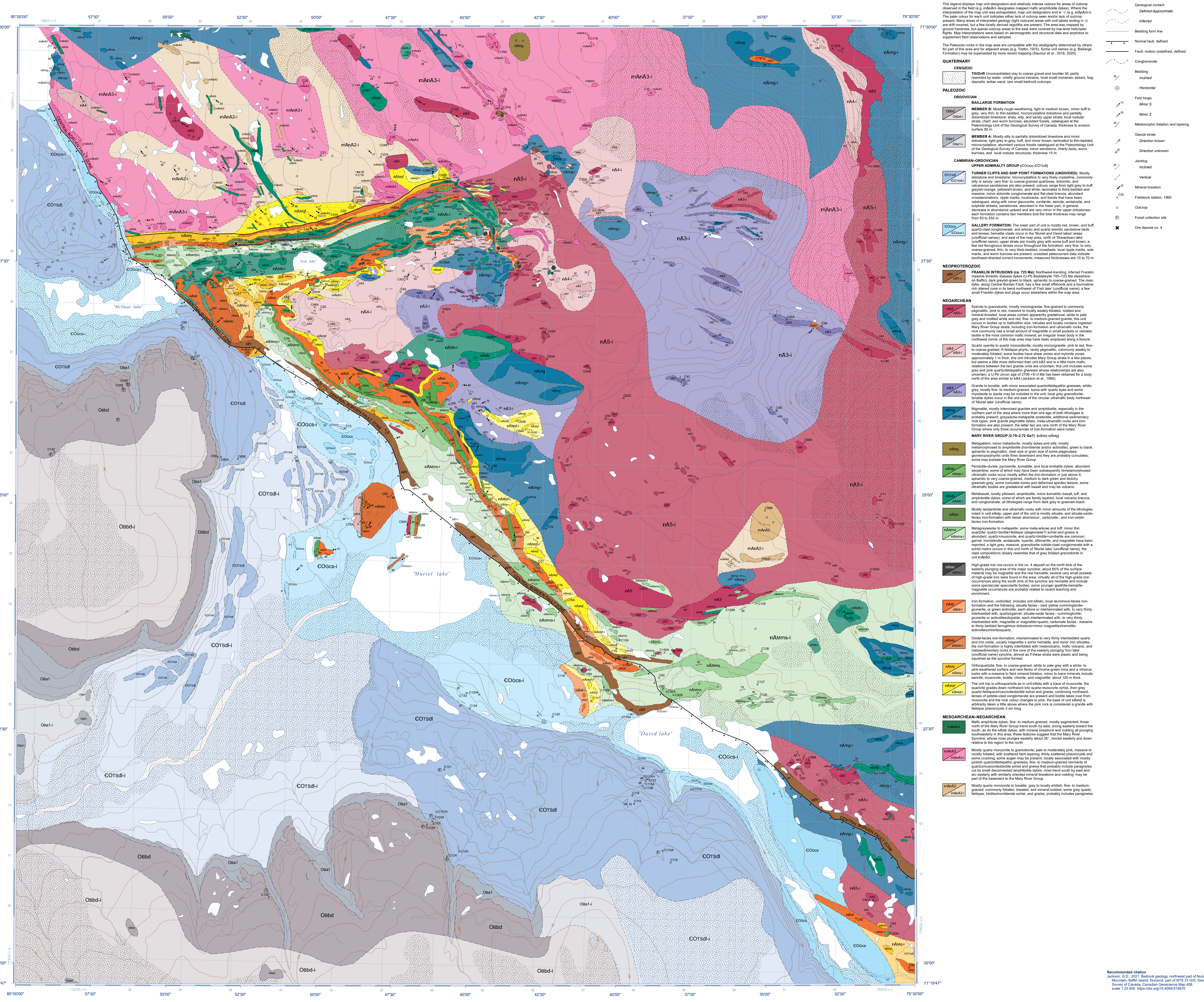
Note: please be aware that the information contained in the 1980-1980 and that it has been superseded by regional-scale information contained in CGM 403.



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**CANADIAN GEOSCIENCE MAP 408  
BEDROCK GEOLOGY  
NORTHWEST PART OF  
NULUUJAAK MOUNTAIN**  
Baffin Island, Nunavut  
part of NTS 37-G/5  
1:25 000



**Author:** G.D. Jackson  
**Geology by:** G.D. Jackson and W.J. Crawford, 1985  
**Geological compilation by:** G.D. Jackson, 2019  
**Geology conforms to:** Bedrock Data Model v. 2.9 (Bouletre et al., 2019). The 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 Memoirs (Jackson, 2000). Faults and folds are available in Jackson (1978).  
**Geomorphic by:** K. Love, R. Buevovic, 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

**BEDROCK GEOLOGY**  
**NORTHWEST PART OF NULUUJAAK MOUNTAIN**  
Baffin Island, Nunavut  
part of NTS 37-G/5  
1:25 000

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°1'W, decreasing 49' annually  
This map is not to be used for navigational purposes.

Title photograph: Very thin-bedded, delaminated, oxide-faces (magnetite) non-ferrous, alternating layers of magnetite and quartz (red-streak), with local conglomerates and actinolite. Location: 'Mural lake' - 'David lake' (unit mAnA3-i). Photograph by G.D. Jackson.  
The Geological Survey of Canada welcomes corrections or additional information from users of its open geo-information (https://doi.org/10.4095/21289).  
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 GEOCAN (https://geocan.nrcan.gc.ca/)

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