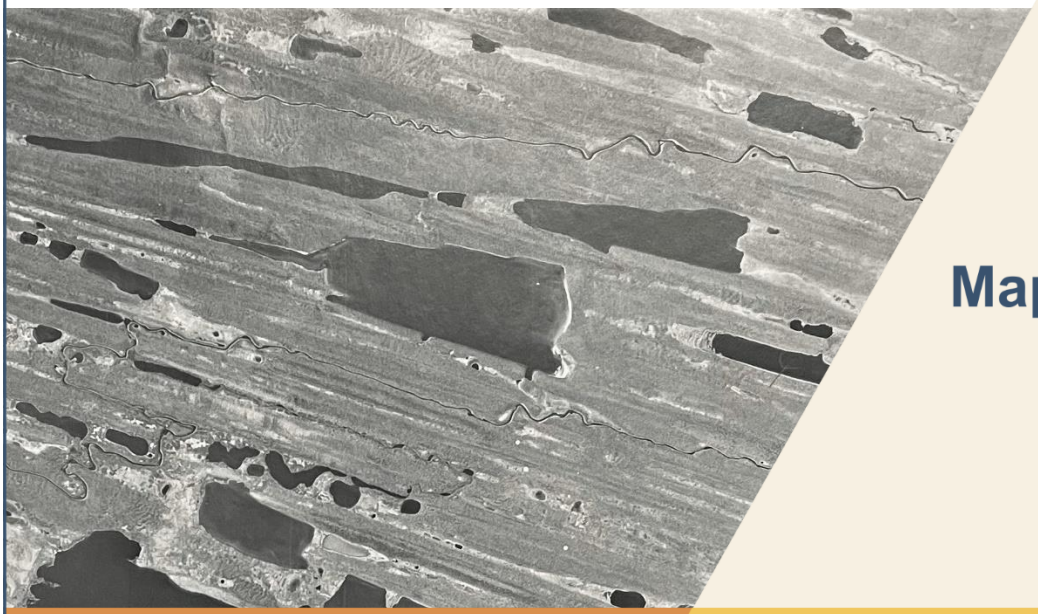
Natural Resources Canada
Ressources naturelles Canada

CANADIAN GEOSCIENCE MAP 452

RECONNAISSANCE SURFICIAL GEOLOGY

BLOODY RIVER

Northwest Territories–Nunavut
NTS 96-P



Map Information Document

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Reconnaissance surficial geology, Bloody River, Northwest Territories–Nunavut, NTS 96-P

SCALE

1:125 000

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ABSTRACT

Preliminary surficial geology, based on airphoto interpretation and limited legacy field data of Bloody River map area, records a dynamic Late Wisconsin glacial landscape. Streamlined till and bedrock landforms, relating to Laurentide ice originating east of the map region, indicate regional westward flow diverged northwestward and southwestward at the eastern end of two topographic highs. Ice then converged between and south of these two highs, then diverged at the western end of these highlands. During deglaciation, ice stagnated in northwestern and central highland regions, forming extensive hummocky moraine, large kames, recessional moraines, and kame moraines. In other parts of the map area, hummocky till, small moraines, and undifferentiated till ridges, were deposited over fluted till. Outwash plains, eskers, and meltwater corridors record northwestward to southwestward meltwater flow. Glaciolacustrine sediments associated with glacial Lake McConnell occur in the southeast, up to 280 m elevation. Other unrelated, isolated glaciolacustrine deltas indicate small ice-marginal lakes between 400 and 460 m elevation.

RÉSUMÉ

La cartographie préliminaire de la géologie des formations superficielles de la région cartographique de Bloody River, fondée sur l'interprétation de photos aériennes et une quantité limitée d'anciennes données de terrain, rend compte d'un paysage glaciaire dynamique du Wisconsin supérieur. Les reliefs profilés du till et du substratum rocheux, liés à de la glace laurentidienne dont la source se situe à l'est de la région cartographique, indiquent que l'écoulement régional en direction de l'ouest a divergé vers le nord-ouest et le sud-ouest à l'extrémité est de deux hauteurs topographiques. La glace a ensuite convergé entre ces deux hauteurs et au sud de celles-ci, puis a divergé à l'extrémité ouest de ces hautes terres. Pendant la déglaciation, la glace a stagné dans les hautes terres du nord-ouest et du centre, formant de vastes moraines bosselées, de grands kames, des moraines de retrait et des moraines de kame. Dans d'autres parties de la région cartographique, du till bosselé, de petites moraines et des crêtes de till non différencié se sont déposés sur du till cannelé. Des plaines d'épandage, des eskers et des couloirs d'eau de fonte rendent compte d'un écoulement des eaux de fonte dans une direction variant du nord-ouest au sud-ouest. Des sédiments glaciolacustres associés au Lac glaciaire McConnell se trouvent dans le sud-est, jusqu'à 280 m d'altitude. D'autres deltas glaciolacustres isolés et non apparentés révèlent l'existence de petits lacs de front glaciaire entre 400 et 460 m d'altitude.

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SHEET 1 OF 1, RECONNAISSANCE SURFICIAL GEOLOGY

GENERAL INFORMATION

Author: D.E. Kerr

Geology by D.E. Kerr, 2020 and 2021, based on air photo interpretation of 1:70 000 scale NAPL airphotos taken in June 1953 and July 1954; striations from Craig et al.,1960; station locations from B. Craig, unpublished fieldnotes, 1959.

Geological data conforms to Surficial Data Model v. 2.4.0 (Deblonde et al., 2019).

Geomatics by L. Robertson

Cartography by D. Viner

Scientific editing by L. Ewert

Initiative of the Geological Survey of Canada, conducted under the auspices of the Supporting Adaptation in Permafrost Regions project as part of Natural Resources Canada's Climate Change Geoscience program

Map projection Universal Transverse Mercator, zone 10
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

Mean magnetic declination 2022, 19°27′E, decreasing 17.4′ annually
Readings vary from 19°07′E in the SE corner to 19°45′E in the NW corner of the map.

This map is not to be used for navigational purposes.

Title photograph: West-northwest-oriented drumlinoids and megascale glacial lineations. Photo from the National Air Photo Library. NAPL photo A13608-69

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/).

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:

- Geomorphology line symbols

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:

- Station location point symbols

References

Craig, B.G., Davison, W.L., Fraser, J.A., Fulton, R.J., Heywood, W.W., and Irvine, T.N., 1960. Surficial geology, north-central District of Mackenzie, Northwest Territories; Geological Survey of Canada, Preliminary Map 24-1960, scale 1:1 013 760. https://doi.org/10.4095/108725

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., 2019. 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. 2.4.0, 1 .zip file. https://doi.org/10.4095/315021

Suggested readings

Craig, B.G., 1960. Surficial geology of north-central District of Mackenzie, Northwest Territories; Paper 60-18, Geological Survey of Canada, 8 p. https://doi.org/10.4095/101204

Author Contact

Questions, suggestions, and comments regarding the geological information contained in the data sets should be addressed to:

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Coordinate System

Projection: Universal Transverse Mercator
Units: metres
Zone: 10

Horizontal Datum: NAD83
Vertical Datum: mean sea level

Bounding Coordinates

Western longitude: 122°00′00″W
Eastern longitude: 120°00′00″W
Northern latitude: 68°00′00″N
Southern latitude: 67°00′00″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

Surficial

The Geological Survey of Canada (GSC) through the Geo-mapping 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., 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., 2019. 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. 2.4.0, 1 .zip file. https://doi.org/10.4095/315021