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CANADIAN GEOSCIENCE MAP 298

SURFICIAL GEOLOGY

DAHADINNI RIVER

Northwest Territories

NTS 95-N northwest

Map Information
Document

Preliminary



Geological Survey of Canada
Canadian Geoscience Maps

2018

Canada 



MAP NUMBER

Natural Resources Canada, Geological Survey of Canada
Canadian Geoscience Map 298 (Preliminary)

TITLE

Surficial geology, Dahadinni River, Northwest Territories, NTS 95-N northwest

SCALE

1:100 000

CATALOGUE INFORMATION

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ABSTRACT

The surficial geology represented in this map has been prepared at 1:50 000 scale and published at 1:100 000 scale. Surficial glacial deposits occupy approximately 95% of the map area. The other 5% of the map area is covered by exposed bedrock represented mainly by Devonian shale, limestone, sandstone, and minor Ordovician and Silurian dolomite, and Cretaceous sandstone and shale. Till deposits (units Tb, Tv, Tp, Td, Tr, Tm and Tx) represent ~ 60% of the surficial deposits. Lacustrine (units Lp, Lb, Lv, Lm, Lx) sediments represent ~12% of the surficial cover. About 13% of the area is covered by colluvial deposits (units Cv, Cx) most of which constitute landslides (unit Cz). Glaciofluvial sediments (units Gt, Gp, Gd, Gf and Gx) form about 5% of the surficial deposits and include prominent terraces along the Redstone and Dahadinni rivers. Alluvial deposits (units Ap, Af, Ax) cover about 3% of the map area. Peat deposits cover ~2%.

RÉSUMÉ

La géologie des formations superficielles représentée sur cette carte a été préparée à l'échelle de 1/50 000 et publiée à l'échelle de 1/100 000. Les dépôts glaciaires superficiels occupent environ 95 % de la région cartographique. Les 5 % restants correspondent à des affleurements rocheux constitués surtout de shale, de calcaire et de grès du Dévonien, mais aussi, en faibles quantités, de dolomie de l'Ordovicien et du Silurien ainsi que de grès et de shale du Crétacé. Les dépôts de till (unités Tb, Tv, Tp, Td, Tr, Tm, Tx) représentent ~60 % des dépôts superficiels. Les sédiments lacustres (unités Lp, Lb, Lv, Lm, Lx) constituent ~12 % de la couverture superficielle. Environ 13 % de la région est couverte par des dépôts colluviaux (unités Cv, Cx) liés pour la plupart à des glissements de terrain (unité Cz). Les sédiments fluvioglaciaires (unités Gt, Gp, Gd, Gf, Gx) constituent environ 5 % des dépôts superficiels et forment des terrasses marquées le long des rivières Redstone et Dahadinni. Des dépôts alluvionnaires (unités Ap, Af, Ax) couvrent environ 3 % de la région cartographique, tandis que des dépôts de tourbe en couvrent ~2 %.

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SHEET 1 OF 1, SURFICIAL GEOLOGY

GENERAL INFORMATION

Author: A. Duk-Rodkin

Geology by A. Duk-Rodkin, 2006–2007

Air photo interpretation by A. Duk-Rodkin

Geomatics by D.A. Lemay and M. Le

Cartography by the Geological Survey of Canada

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 2018, 20°25'E, decreasing 24.7' annually. Readings vary from 20°32'E in the NW corner to 20°16'E in the SE corner of the map.

This map is not to be used for navigational purposes.

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/>).

This publication has been scientifically reviewed, but it has not undergone a formal edit.

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.

DESCRIPTIVE NOTES

This map area is located ~50 km west of the Mackenzie River and ~20 km south of Keele River. It is crossed by two main rivers: Redstone River that zigzags diagonally from southwest to northeast and Dahadinni River in the southeast. The two rivers are connected by a wide valley of about 13 km long occupied by two small misfit streams. Before the Late Pleistocene glaciation affected the region, this paleo-valley drained the Redstone River which was then a tributary of Dahadinni River. During deglaciation of the Late Pleistocene Laurentide Ice Sheet the eastward retreating ice remained in the paleo-valley until after 10 ka BP damming the valley to the east. The glacial dam caused the inundation of Redstone Valley and tributaries forming a proglacial lake with a northward outlet. This outlet cut through overlying Laurentide glacial deposits and highly folded and faulted Devonian shale. The resulting meltwater canyon developed a large variety of rotational slides along both sides of the valley affecting almost all of the slopes within it. Debris flows are also common, and mass wasting continues today. The canyon incision has reached 540 metres calculated from the highest glaciofluvial delta. Further, lateral slope erosion due to landslide activity has reached 960 metres.

Surficial glacial deposits are of late Pleistocene Laurentide origin and age with the exception of some older (pre-last glaciation) deposits of Cordilleran provenance found in stratigraphic sections. The Laurentide glacier carried distinctive pink Canadian Shield granites from a minimum distance of 400 km to the east. The highest elevations at which these granites are found at 1600 metres a.s.l. 10 km west of the Redstone Range in the southwest part of the map.

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/table that appears in the CGM surround.
- Excel file of the Master Legend Table (legend symbols, descriptions, headings, etc.).

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: 126°00'00"W
Eastern longitude: 125°00'00"W
Northern latitude: 64°00'00"N
Southern latitude: 63°30'00"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

No Model

This Canadian Geoscience Map does not conform to either the Bedrock or Surficial Mapping Geodatabase Data Models. The author may have included a complete description of the feature classes and attributes in the Data\Data Model Info folder.