References and additional ice flow data from:

Cocking, R.B., Deblonde, C., Kerr, D.E., Campbell, J.E., Eagles, S., Everett, D., Huntley, D.H., Inglis, E., Laviolette, A., Parent, M., Plouffe, A., Robertson, L., St-Onge, D.A., and Weatherston, A., 2015. Surficial Data Model, version 2.1.0: Revisions to the science language of the integrated Geological Survey of Canada data model for surficial geology maps; Geological Survey of Canada, Open File 7741, 276 p. doi:10.4095/296568

Craig, B.C., 1960. Surficial geology, north-central District of Mackenzie, Northwest Territories; Geological Survey of Canada, Preliminary Map 24-1960, scale 1:1 013 760. doi:10.4095/108725

St-Onge, D.A., 1988. Surficial geology, Coppermine River, District of Mackenzie, Northwest Territories; Geological Survey of Canada, Map 1645A, scale 1:250 000. doi:10.4095/126431

Abstract

This new surficial geology map product represents the conversion of Map 1645A and its legend only, using the Geological Survey of Canada's Surficial Data Model (SDM version 2.1) which can be found in Open File 7741. All geoscience knowledge and information from Map 1645A that conformed to the current SDM were maintained during the conversion process. Additional material such as marginal notes or figures which may exist on the original map, are not included here. Supplementary, limited legacy information was added to complement the converted geoscience data. This consists of ice flow features from Craig, 1960. It is identified in the accompanying geodatabase. The purpose of converting legacy map data to a common science language and common legend is to enable and facilitate the efficient digital compilation, interpretation, management and dissemination of geologic map information in a structured and consistent manner. This provides an effective knowledge management tool designed around a geo-database which can expand following the type of information to appear on new surficial geology maps.

Résumé

Ce nouveau produit cartographique de la géologie des formations superficielles correspond à la conversion de la Carte 1645A et de sa légende, en se servant du Modèle de données pour les formations superficielles (MDFS version 2.1) de la Commission géologique du Canada, lequel peut être consulté dans le Dossier public 7741. Toutes les connaissances et l'information de nature géoscientifique de la Carte 1645A qui sont en conformité avec le modèle de données ont été conservées pendant le processus de conversion. Des éléments additionnels tels que des notes marginales ou des figures qui pourraient être présents sur la carte originale ne sont pas inclus ici. Une faible quantité d'information ancienne a été ajoutée en complément aux données géoscientifiques converties. Il s'agit de quelques entités d'écoulement glaciaire tirées de Craig (1960). Ces entités sont identifiées dans la géodatabase du présent produit cartographique. Le but de cette conversion de cartes publiées antérieurement suivant un langage scientifique commun et une légende commune est de permettre et de faciliter la compilation, l'interprétation, la gestion et la diffusion efficaces de l'information géologique cartographique en mode numérique de façon structurée et cohérente. Cette façon de faire offre un outil efficace de gestion des connaissances élaboré à l'aide d'une géodatabase qui pourra évoluer suivant le type d'information à paraître sur les nouvelles cartes des formations superficielles.

National Topographic System reference and index to adjoining published Geological Survey of Canada maps

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CANADIAN GEOSCIENCE MAP 226

SURFICIAL GEOLOGY

COPPERMINE RIVER

Nunavut–Northwest Territories

NTS 86-G, J, N, and 86-O west

1:250 000

QUATERNARY

POST-LAST GLACIATION

O — **Organic deposits, undifferentiated:** peat; 1 to 3 m (?) thick; occur as bog, swamp, and shallow lake sediments.

C — **Colluvial deposits, undifferentiated:** boulders to sand; unsorted; 1 to greater than 5 m thick; commonly as aprons at the base of rock slopes.

ALLUVIAL SEDIMENTS: stream-deposited material related to the Holocene drainage regime.

Ap — **Floodplain sediments:** coarse sand and gravel; 3 to 10 m thick; veneer of pebble and boulder lag common on surface.

At — **Terraced sediments:** fine to coarse sand with minor gravel lenses; wood and peaty material common; 3 to 10 m thick; terrace surfaces commonly gullied or channelled.

MARINE SEDIMENTS: sediments deposited in a marine offlap sequence, generally coarsening upward and fining outward from sediment source.

Mr — **Littoral and beach sediments:** medium to coarse grained sand with minor gravel; 1 to 5 m thick; blanket deposit with flat to gently undulating surface and with occasional beach ridges.

Md — **Deltaic sediments:** boulders, gravel, and sand; 5 to 20 m thick; deeply channelled surfaces with boulder pavements at the bottom of channels.

Mn — **Nearshore sediments:** fine silty sand and sandy silt; 1 to 3 m thick; flat to gently undulating surface generally mantled by 0.5 to 1 m of organic cover.

Mo — **Offshore sediments:** fine sand, silt, and clay; forming generally well defined rhythmites; 5 to 40 m thick; quiet water environments; exposed in extensively gullied areas and along valley walls of major rivers.

M — **Undifferentiated (olistostrome) sediments:** diamicton with sandy silt matrix; 30 to 50 m thick; emplaced by subaqueous debris flows; exposed in valley sides along Coppermine River between Melville Creek and Bloody Fall.

LAST GLACIATION

GLACIOLACUSTRINE SEDIMENTS: sediments deposited in or at the margin of a glacial lake in coarsening upward sequences.

GLr — **Beach sediments:** sand and gravel; greater than 2 m thick; flat, terraced, dissected, or partly covered by dunes.

GLd — **Deltaic sediments:** sand, gravel, and silt; with numerous lenses of pebbles and boulders; 10 to 30 m thick; surface flat or channelled.

GLo — **Offshore sediments:** silt, fine sand, and minor clay; forming rhythmites (varves) 1 to 30 cm thick; 5 to 30 m thick; quiet water environments; generally confined to major valleys; exposed in gullies and in terrace or slump scarps.

GLh — **Hummocky, ice-contact sediments:** silt and fine sand; with dropstones and gravel lenses; 3 to 8 m thick; hummocky surface underlain by contorted rhythmites.

GFc — **Ice-contact glaciofluvial sediments:** gravel and sand; 5 to 50 m thick; forms ridges and terraces; material deposited by meltwater; includes mainly ice-contact sediments and isolated proglacial sediments.

GF — **Undifferentiated glaciofluvial and morainal deposits:** bouldery gravel and diamicton; variable thickness; deposited by meltwater and debris flows within crevasses and unoriented depressions at or near the ice front; generally occurs as a complex of minor ridges and hummocks, 1 to 5 m high, within glaciofluvial corridors.

GLACIAL SEDIMENTS (TILL): poorly sorted, generally sandy sediments reflecting the nature of underlying bedrock; deposited directly by glacier ice flowing from east and/or southeast; forms discontinuous patches in upland regions; covers extensive areas in lowlands.

Tv — **Till veneer:** till; 1 to 3 m thick; boulders and gravel on bedrock; surface concentration resulting from washing out of fines by meltwater flow.

Tb — **Till blanket:** till; 2 to 15 m thick; lodgement or basal meltout; surface gently rolling; fluted in places; masks underlying bedrock topography.

T — **Till, undifferentiated:** till; 2 to less than 15 m thick; lodgement and ablation; surface mimics form of underlying rock; commonly contains colluvial deposits derived from bedrock.

PRE-QUATERNARY

R2 — **Igneous bedrock:** granites, granitic gneisses, and basic metavolcanics; rocks of Archean Slave Province.

R3 — **Metamorphic bedrock:** metasediments, basic metavolcanics, and granites; rocks of Early Proterozoic Wopmay Orogen.

R — **Bedrock, undifferentiated:** sedimentary and volcanic successions, gabbro and diabase sills; rocks of Middle to Late Proterozoic Coppermine Homocline.

Complex units: Where the surficial cover forms a complex pattern and the map units are too small to be mapped individually, yet constitutes a significant aerial extent of the total polygon, a dot (".") separates the first dominant map unit designator from the less abundant secondary unit (e.g. T.C designates an area of till with numerous small colluvial deposits)

Lag deposits

Geological contact, defined

Limit of mapping

Terrace scarp, unspecified

Beach crest

Moraine ridge:

Major, end

Major, end ice-cored

Esker, direction known

Drumlinoid ridge

Crag-and-tail

Bedrock scarp

Striation:

Direction unknown

Direction known

Recommended citation

Geological Survey of Canada, 2016. Surficial geology, Coppermine River, Nunavut–Northwest Territories, NTS 86-G, J, N, and 86-O west; Geological Survey of Canada, Canadian Geoscience Map 226 (preliminary, Surficial Data Model v. 2.1 conversion of Map 1645A), scale 1:250 000. doi:10.4095/297586

Preliminary Preliminary Preliminary Preliminary Preliminary

Geological Survey of Canada
Canadian Geoscience Maps

Canada

Author: Geological Survey of Canada

Geology based on airphoto interpretation and field observations for NTS 86-G by D.A. St-Onge,1981–1982; NTS 86-J by D.A. St-Onge, 1979–1980; NTS 86-N by A. Mercier, 1982–1984, D.E. Kerr, 1983–1984, D.A. St-Onge, 1984; NTS 86-O by H. Bruneau, 1981–1982, D.A. St-Onge, 1981–1982, 1984.

Geology conforms to Surficial Data Model v. 2.1

Data conversion by D.E. Kerr, 2015

Geology has been spatially adjusted to fit the updated base

Geomatics by S. Eagles

Cartography by D. Viner

Initiative of the Geological Survey of Canada, conducted under the auspices of Natural Resources Canada's Geo-mapping for Energy and Minerals (GEM) Program.

Map projection Universal Transverse Mercator, zone 11. North American Datum 1983

CANADIAN GEOSCIENCE MAP 226

SURFICIAL GEOLOGY

COPPERMINE RIVER

Nunavut–Northwest Territories

NTS 86-G, J, N, and 86-O west

1:250 000

5 0 5 10 15 20 km

Base map at the scale of 1:250 000 from Natural Resources Canada, with modifications.

Elevations in metres above mean sea level

Mean magnetic declination 2016, 18°16'E, decreasing 28.5' annually. Readings vary from 16°52'E in the SE corner to 19°30'E in the NW 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/).

Preliminary publications in this series have not been scientifically edited.

CANADIAN GEOSCIENCE MAP 226

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COPPERMINE RIVER

Nunavut–Northwest Territories

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