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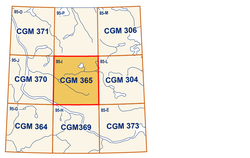
Abstract

This new surficial geology map product represents the conversion of Preliminary Map 10-1978 (Hawes, 1980) and its legend, using the Geological Survey of Canada's Surficial Data Model (SDM version 2.3.14) (Deblonde et al., 2018). All geoscience knowledge and information from Preliminary Map 10-1978 that conformed to the current SDM were maintained during the conversion process. Additional material on the original map, consisting of an extended legend, is not included here. Supplementary, limited legacy information was added to complement the converted geoscience data. This consists of drillhole and station location data from Rutter et al., (1973). 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 geological map information in a structured and consistent manner. This provides an effective knowledge-management tool designed around a geodatabase that 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 préliminaire 10-1978 (Hawes, 1980) et de sa légende, en se servant du Modèle de données pour les formations superficielles (MDFS version 2.3.14) de la Commission géologique du Canada (Deblonde et al., 2018). Toutes les connaissances et l'information de nature géoscientifique de la Carte préliminaire 10-1978 qui sont en conformité avec le modèle de données ont été conservées pendant le processus de conversion. De l'information supplémentaire contenue dans la légende détaillée de la carte originale n'est pas incluse ici. Une quantité limitée de données existantes a été ajoutée en complément aux données géoscientifiques converties. Il s'agit de données de sondages et de données de terrain tirées de Rutter et al. (1973). Ces données sont identifiées dans la géodatabase du présent produit cartographique. Le but de la 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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Natural Resources Canada | Ressources naturelles Canada

CANADIAN GEOSCIENCE MAP 365

RECONNAISSANCE SURFICIAL GEOLOGY

BULMER LAKE

Northwest Territories

NTS 95-I

1:125 000

QUATERNARY

NONGLACIAL ENVIRONMENT

Owf — **Fen deposits:** dominantly moderately decomposed fen peat derived from sedge, tamarack, and mosses; 2–3 m thick; flat to very gently sloping; water at surface through summer months; unfrozen to at least 3 m; various saturated soil patterns from the topographic base may appear in this unit.

Owb — **Bog deposits:** dominantly moderately decomposed forest and/or undecomposed *Sphagnum* peat derived from black spruce, *Cladonia*, feather-mosses, ericaceous and/or *Sphagnum* vegetation; 1.5–7 m thick; flat to gently sloping areas with scattered mounds, with 1–6 m relief; frozen at 0.3–0.5 m; contains segregated ice in peat and in underlying mineral soil; various saturated soil patterns from the topographic base may appear in this unit.

Er — **Dune sediments:** fine to medium sand; 1–20 m thick; dune ridges, usually parallel to subparallel; subject to wind erosion.

Cz — **Landslide deposits:** silt and sand to rubble and diamicton, derived mainly from glaciolacustrine silts and clays, till and shale bedrock; variable thickness; unspecified landslide deposits, includes debris avalanches as thin narrow tongues, earthflows, mudflows, and slump deposits as blocks; fine-grained material may contain segregated ice.

Cv — **Colluvial veneer:** material derived from underlying surficial sediments; less than 1.5 m thick; gently to steeply sloping surfaces, less than 5–20 degrees; may include minor organic deposits; appears only as secondary unit in complex polygons.

C — **Colluvial deposits, undifferentiated:** material derived from underlying surficial sediments or bedrock; 1–6 m thick; forming complexes with gently to steeply sloping surfaces, less than 5–20 degrees; silty clay colluvium contains segregated ice.

Ap — **Alluvial floodplain sediments:** silt, sand, and gravel; 1–8 m thick; floodplain and low bordering terraces; floodplains within mountain regions commonly scarred by braided channels; floodplains within plains regions commonly with meander scars; may include small alluvial deposits less than 2 m thick when overlying till; permafrost and segregated ice may be present in areas where overlying bog is more than 1.5 m thick; various saturated soil patterns from the topographic base may appear in this unit.

Af — **Alluvial fan sediments:** mostly gravel, some sand; 3–25 m thick; gently to moderately sloping fans and coalescent fans; may include one or more shifting streams.

At — **Alluvial terraced sediments:** silt, sand, and gravel; 1–30 m thick; may be overlain by Owb; may be channelled; terraces may be associated with Ap, GFp, and GFt; level to slightly sloping surfaces.

Av — **Alluvial veneer:** silt, sand, and gravel; less than 1.5 m thick; may include terrace, fan, and floodplain sediments; appears only as secondary unit in complex polygons.

PROGLACIAL AND GLACIAL ENVIRONMENT

GLv — **Glaciolacustrine veneer:** silt and sand; 0.5–1.5 m thick; reflects topography of underlying material.

GLb — **Glaciolacustrine blanket:** silt and sand; 1.5–50 m thick; flat to gently sloping plain; may contain segregated ice in various forms and amounts; may be overlain by organic deposits with thermokarst; may include glaciolacustrine veneer when overlying till.

GFp — **Glaciofluvial outwash-plain sediments:** silt, sand, and gravel; 1–30 m or more thick; flat to gently sloping plain; may include other minor glaciofluvial units and minor organic deposits; surface may be channelled; may include veneer when overlying till; if overlain by organic deposits greater than 1.5 m thick, permafrost may be present.

GFt — **Glaciofluvial terraced sediments:** silt, sand, and gravel; 1–30 m or more thick; flat to gently sloping plain; surface may be channelled; if overlain by organic deposits greater than 1.5 m thick, permafrost may be present.

GFf — **Glaciofluvial outwash/fan sediments:** silt, sand, and gravel; 1–10 m thick; flat to gently sloping fan; surface may be channelled; if overlain by organic deposits greater than 1.5 m thick, permafrost may be present.

GFh — **Glaciofluvial hummocky sediments:** mainly gravel with sand; 1–10 m thick; hummocks with local relief up to 10 m; segregated ice may be present in silt layers beneath depressions.

GFr — **Glaciofluvial esker sediments:** mainly gravel with sand; 1–30 m thick; long sinuous esker ridges and esker complexes, up to 30 m high; segregated ice may be present in silt layers beneath depressions.

GFv — **Glaciofluvial veneer:** mainly gravel and sand; 0.5–1.5 m thick; reflects topography of underlying material.

GF — **Glaciofluvial sediments, undifferentiated:** silt, sand, and gravel; 1–10 m or more thick; complex which may include plains, fans, hummocks, and ridges; if overlain by organic deposits greater than 1.5 m thick, permafrost may be present; appears only as secondary unit in complex polygons.

GLACIAL ENVIRONMENT

Th — **Hummocky till:** sand, gravel, and diamicton; 1–20 m thick; individual to coalescent glacial hummocks, with slopes up to 20 degrees; hummocky terrain may include minor ridges; moderately to strongly calcareous.

Tr — **Ridged till:** sand, gravel, and diamicton; 1–10 m thick; crevasse fillings or ridge moraine consisting of individual, parallel to subparallel, straight to sinuous glacial ridges within a moraine plain; 0.5–5 m relief, slopes of 5–30 degrees; may include minor Th; moderately to strongly calcareous.

Ts — **Streamlined till:** sand, gravel, and diamicton; 2–30 m thick; area consisting largely of parallel drumlins and or flutings which may be rock cored; moderately to strongly calcareous.

Tp — **Till plain:** clay, silt, sand, pebbles, boulders, and diamicton; 1.5–50 m thick; flat to uniformly sloping morainal plain, from 2–15 degrees; may include other minor till units and organic deposits; moderately to strongly calcareous; various saturated soil patterns from the topographic base may appear in this unit.

Tb — **Till blanket:** sand, gravel, and diamicton; 5–30 m thick; subdued hummocks and rolling terrain, slopes of 5–30 degrees; moderately to strongly calcareous.

T — **Till, undifferentiated:** sand, gravel, and diamicton; 1–10 m or more thick; includes other minor till units; may include minor organic deposits; appears only as secondary unit in complex polygons and in stratigraphic relationships within polygons.

Complex units: two map-unit designators separated by a dot (.) are used where the surficial cover forms a complex area and the units are too small to be mapped individually (e.g., Ap.C designates an area of alluvial plain sediments with colluvial deposits).

Stratigraphic relationship: two map-unit designators separated by a slash (/) are used where a stratigraphic relationship is observed or confidently inferred (e.g. GLv/T indicates glaciolacustrine blanket overlying till).

Thermokarst:
- *Large*
- *Small*

Patterned ground area

Geological contact:
- *Defined*
- *Approximate*

Landslide escarpment:
- *Potential slumping*
- *Active*

Terrace scarp, escarpment

Beach crest, depositional

Meltwater channel:
- *Minor, paleocurrent direction unknown*
- *Minor, paleocurrent direction known*
- *Major, paleocurrent direction known*

Moraine ridge:
- *Minor, unspecified*
- *Major, end or lateral*

Esker:
- *Paleocurrent direction unknown*
- *Paleocurrent direction known*

Drumlinoid

Drumlin

Small outcrop

R-45-III — Station location, drillhole location, with number (*see* Map Information Document)

Recommended citation
Geological Survey of Canada, 2019. Reconnaissance surficial geology, Bulmer Lake, Northwest Territories, NTS 95-I; Geological Survey of Canada, Canadian Geoscience Map 365 (Surficial Data Model v. 2.3.14 conversion of Map 10-1978), scale 1:125 000. https://doi.org/10.4095/308378

Geological Survey of Canada
Canadian Geoscience Maps

Canada

Author: Geological Survey of Canada

Geology by N.W. Rutter and A.N. Boydell, 1972

Geological compilation by R.J. Hawes, 1975

Geology conforms to Surficial Data Model v. 2.3.14 (Deblonde et al., 2018).

Geological data conversion by D.E. Kerr, 2016 and 2017.

Geology has been spatially adjusted to fit the updated base.

Geomatics by S. Eagles, J. Kingsley, and C.D. Stevens

Cartography by M.J. Baldock

Scientific editing by A. Weatherston

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 10
North American Datum 1983

CANADIAN GEOSCIENCE MAP 365

RECONNAISSANCE SURFICIAL GEOLOGY

BULMER LAKE

Northwest Territories

NTS 95-I

1:125 000

2 0 2 4 6 8 10 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 2019, 18°48'E, decreasing 21.8' annually
Readings vary from 19°10'E in the NW corner to 18°23'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.

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