Methodology

This predictive surficial geology map is derived from integrating digital datasets of satellite imagery and interpreted air photos. The limit of airphoto interpretation defines training areas where surficial geology map units and landforms have been identified, and used in the generation of the predictive map. Some additional geological features in these areas include small bedrock outcrops, kames, thermokarst depressions, patterned ground, beach ridges, and escarpments. These features may also exist beyond the boundaries of the airphoto interpreted areas. Lakes may include hydrographic layers and mask areas. In Edition 2 of CGM 200, the “undifferentiated” map unit of Edition 1 was removed and adjacent surficial units were extended to fill these areas.

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QUATERNARY

HOLOCENE

NONGLACIAL ENVIRONMENT

- **H** — **Anthropogenic deposits:** areas disturbed by human development.
- **O** — **Organic deposits, undifferentiated:** fen, bog and floating aquatic vegetation.
- **E** — **Eolian sediments, undifferentiated:** fine to medium sand; variable thickness; may contain dunes and blow outs.
- **L** — **Lacustrine sediments, undifferentiated:** marl; variable thickness; exposed sediment surrounding modern lakes.

PROGLACIAL AND GLACIAL ENVIRONMENT

- **GLr** — **Glaciolacustrine beach sediments:** sandy gravel, may contain cobbles and boulders; variable thickness; derived from reworked glaciofluvial sediments, forming raised beaches associated with ancestral Great Slave Lake, as a result of isostatic uplift.
- **GLn** — **Glaciolacustrine littoral and nearshore sediments:** fine sand to silty clay; up to 8 m or more thick; associated with ancestral Great Slave Lake and underlain by deep water sediments of glacial Lake McConnell; may include small areas of bedrock; may contain ground ice.
- **GL** — **Glaciolacustrine sediments, undifferentiated:** fine sand to silty clay; up to 10 m or more thick; associated with ancestral Great Slave Lake and may be underlain by deep water sediments of glacial Lake McConnell; may include small areas of bedrock; may contain ground ice.
- **GF** — **Glaciofluvial sediments, undifferentiated:** sand and gravel to cobbles; variable thickness; forming esker ridges, terraces, outwash plains; may be reworked by wave action forming raised beaches; may include small areas of bedrock.
- **Tv** — **Till veneer:** silt to gravel diamicton; poorly sorted; variable thickness but generally <2 m; may be modified by lacustrine processes during isostatic uplift and meltwater processes, may contain small bedrock outcrops and glaciolacustrine veneer.
- **Tb** — **Till blanket:** silt to gravel diamicton; poorly sorted; variable thickness but greater generally > 2 m; locally fluted; may be modified by lacustrine processes during isostatic uplift or glacial meltwater.

PRE-QUATERNARY

- **R** — **Bedrock, undifferentiated:** glacially scoured and sculpted; may be overlain by discontinuous cover of till veneer, glaciolacustrine veneer and isolated glaciofluvial patches.

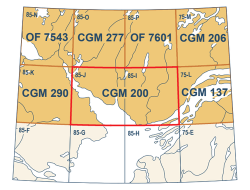
- Thermokarst depression, derived from air photo interpretation
- Geological contact
- Terrace scarp, derived from air photo interpretation
- Beach crest, derived from air photo interpretation
- Minor meltwater channel, sense known, derived from air photo interpretation
- Esker:
  - *Sense unknown, derived from air photo interpretation*

Abstract

This new predictive surficial geology map product represents the conversion of Open Files 7108 and 7233 and their legends, using the Geological Survey of Canada’s Surficial Data Model (SDM version 2.0) which can be found in Open File 7631. All geoscience knowledge and information from the predictive surficial geology maps derived from LANDSAT in Open Files 7108 and 7233 that conformed to the current SDM were maintained during the conversion process. 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 dérivé des cartes prédictives de la géologie de surface des dossiers publics 7108 et 7233 a été produit avec le Modèle de données des formations superficielles (MDFS version 2.0) de la Commission géologique du Canada qui a été publié sous forme de dossier public 7631. La connaissance et toutes les données des cartes prédictives provenant de LANDSAT des dossiers publics 7108 et 7233 se retrouvant dans le MDFS ont été maintenues pendant le processus de conversion. Le but de convertir les cartes publiées antérieurement en langage scientifique commun et en légende commune est de permettre et faciliter la compilation, l'interprétation, la gestion et la diffusion numériques efficaces d'information de cartes géologiques de façon structurée et cohérente. Cette base de données géospatiales est un outil de gestion 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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2nd EDITION

CANADIAN GEOSCIENCE MAP 200

PREDICTIVE SURFICIAL GEOLOGY

YELLOWKNIFE AND HEARNE LAKE

Northwest Territories

NTS 85-J and 85-I

1:125 000

Geological Survey of Canada
Canadian Geoscience Maps

Authors: C.W. Stevens, D.E. Kerr, S.A. Wolfe, and S. Eagles

Geology by C.W. Stevens and D.E. Kerr, 2011, 2012

Geology conforms to Surficial Data Model v. 2.0

Data conversion by D.E. Kerr and M. Ednie, 2014

Geomatics and cartography by L. Landon-Roy and M. Smith

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

PREDICTIVE SURFICIAL GEOLOGY

YELLOWKNIFE AND HEARNE LAKE

Northwest Territories

NTS 85-J and 85-I

1:125 000

2 0 2 4 6 8 10 km

Base map at the scale of 1:50 000 from Natural Resources Canada, with modifications.
Elevations above mean sea level are expressed in metres (NTS 85-I/1–5, 85-I/9–10) and feet (NTS 85-J/10)

Magnetic declination 2017, 16°30'E, decreasing 19.8' annually. Readings vary from 15°09'E in the SE corner to 17°41'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.

Recommended citation

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2nd EDITION

CANADIAN GEOSCIENCE MAP 200

PREDICTIVE SURFICIAL GEOLOGY

YELLOWKNIFE AND HEARNE LAKE

Northwest Territories

NTS 85-J and 85-I