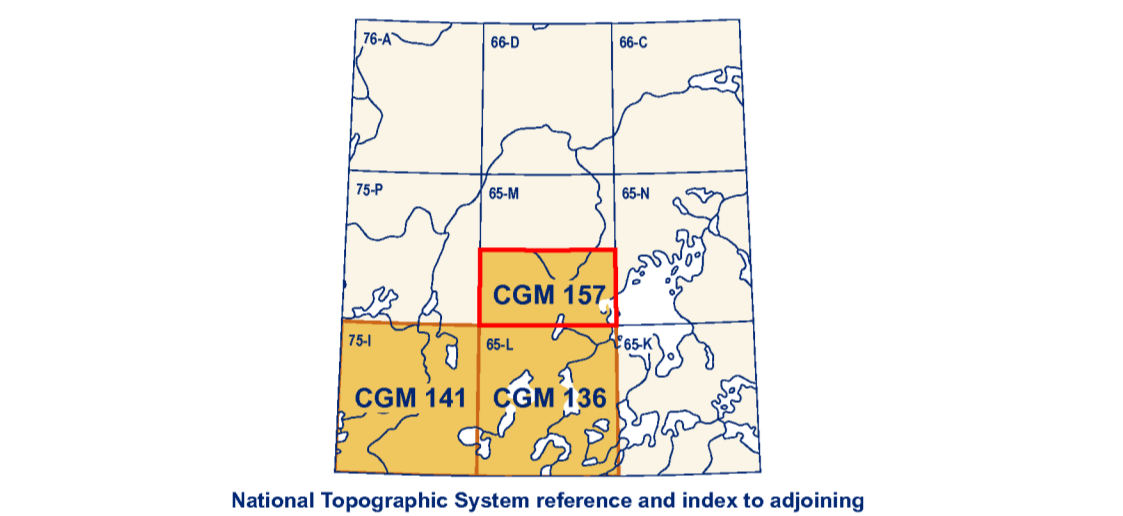


Abstract
Preliminary surficial geology studies, through aerial photographic interpretation undertaken in the Clarke River map area (south half), provide an improved understanding of the surficial geology and regional glacial history. Till blankets and veneers are dominant. Streamlined, ridged and hummocky till are less common. Extensive bedrock occurs west of Duhovni Lake. Two major, westerly to northwesterly trending, glaciofluvial systems transect the area, characterized by major meltwater channels and large esker-kame complexes. An extensive branching esker system occurs in the north-central region and several relatively shallow, meltwater channels with terraced glaciofluvial deposits occur in the west-central regions. Drumlins, flutings and Craig-and-tail ridges in the southern half of the area consistently show westerly to west-northwesterly ice flow. In the northeast to northwest corners of the map, a second set of flutings occur, locally associated with short east-west trending moraine ridges. These flutings are generally shorter and less distinct, suggesting a weaker, possibly later southern flow.

Résumé
Des études préliminaires de la géologie de surface dans la région de la carte Clarke River (moitié sud), au moyen de l'interprétation de photos aériennes, permettent de mieux comprendre la géologie des formations superficielles et l'histoire glaciaire. Les nappes et placages de till sont prédominants. Les dépôts de till fuselés, en forme de crête et bosselés sont moins fréquents. De grandes étendues du substratum rocheux sont présentes à l'ouest du lac Duhovni. Deux grands réseaux fluvio-glaciaires, orientés vers l'ouest et le nord-ouest, traversent la région. Ils sont caractérisés par d'importants chenaux d'eau de fonte et de grands complexes d'eskers et de kames. Un vaste réseau ramifié d'eskers se trouve dans le centre-est de la région et plusieurs chenaux d'eau de fonte relativement peu profonds, comportant des dépôts fluvio-glaciaires en terrasses, se trouvent dans le centre-ouest. Des drumlins, des formes fuselées et des crag-and-tail dans la moitié sud de la région indiquent un écoulement glaciaire d'orientation ouest à ouest-nord-ouest. Dans les coins nord-est à nord-ouest de la carte, un deuxième ensemble de formes fuselées est présent, associé par endroits à de courtes crêtes morainiques orientées est-ouest. Ces formes fuselées sont généralement plus courtes, indiquant un écoulement plus faible et peut-être plus tardif au sud.



Cover illustration
Glaciofluvial and alluvial terraced sediments in the Clarke River valley, with till covering the uplands, Northwest Territories. NAPL photograph A15059-101

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- QUATERNARY**
- HOLOCENE**
- O Organic deposits, undifferentiated: peat, muskeg, bogs, variable thickness, occur over a relatively large area, invariably in topographic lows often around lake margins, most common as a secondary unit with other poorly drained surficial materials such as till
 - Er Eolian sediments: well-sorted sand, variable thickness, wind-blown sediments forming dunes, derived from alluvial and glaciofluvial sediments
 - Cv Colluvial veneer: diamicton, <2 m thick, on or below steeply sloping bedrock ridges, may include some outcrops
 - Cb Colluvial blanket: diamicton, <2 m thick, on or below steeply sloping bedrock ridges, may include some outcrops
 - Af Alluvial fan sediments: sand and gravel, variable thickness, fan surface expression
 - Al Alluvial terraced sediments: sand and gravel, variable thickness, inactive sediments occurring as benches elevated above modern floodplains
 - Ap Alluvial plain sediments: sand and gravel, variable thickness, active floodplain; mainly occurs within narrow valleys along small stream channels or, less commonly, along the bottoms of larger valleys
 - A Alluvial sediments, undifferentiated: sand and gravel, variable thickness, may include meandering streams, terraces and floodplains
 - Lv Lacustrine veneer: sand and silt, <2 m thick, associated with present-day lakes and depressions
 - L Lacustrine sediments, undifferentiated: sand and silt, variable thickness, associated with present-day lakes and depressions
- LAST GLACIATION (WISCONSIN)**
- GLb Glacio-lacustrine blanket: sand and gravel, >2 m thick, occurs in low areas, may be associated with strandlines
 - GL Glacio-lacustrine sediments, undifferentiated: sand and silt, variable thickness, occurs in low areas
 - GFv Glaciofluvial veneer: sand and gravel, <2 m thick, locally common in some areas as a widespread veneer over bedrock or till
 - GFf Glaciofluvial outwash fan sediments: sand and gravel, variable thickness, fan surface expression
 - GFo Glaciofluvial esker sediments: sand and gravel, variable thickness, includes individual eskers, ridges and esker complexes, small eskers are represented by line symbols
 - GFp Glaciofluvial outwash plain sediments: sand and gravel, variable thickness, associated with river valleys, may be terraced, may exhibit rotational slumps
 - GFc Glaciofluvial ice-contact sediments: sand and gravel, variable thickness, in the form of mounds, hummocks, sinuous ridges (eskers) and circular ponds (kettles) surrounded by gravel ridges berms, may form "belts" parallel to regional ice flow, may also be associated with areas of exposed bedrock
 - GFt Glaciofluvial terraced sediments: sand and gravel, variable thickness, terraces elevated above modern stream courses, may be associated with large glaciofluvial systems, usually channelled
 - GFh Glaciofluvial hummocky sediments: sand and gravel, variable thickness, irregular (non-linear) surface expression; hummocks have rounded-tops
 - GFb Glaciofluvial blanket: sand and gravel, <2 m thick, locally occurs where glaciofluvial features are superimposed on top of, or occur between, isolated till deposits (till erosional remnants)
 - GF Glaciofluvial sediments, undifferentiated: sand and gravel, variable thickness, usually small areas lacking well developed surface expression
- GLACIAL ENVIRONMENT**
- Tv Till veneer: diamicton, <2 m thick, common where bedrock topography is apparent under the till, where small bedrock outcrops are present
 - Tr Ridged till: diamicton, variable thickness, concentration of small transverse till ridges that are mainly discontinuous and irregular; less commonly Rogen-like moraines; individual ridges are mapped with line symbols
 - Ts Streamlined till: diamicton, variable thickness, fluted and drumlinized, includes Craig-and-tail features; may incorporate bedrock exposures
 - Tm Moraine complex: diamicton, variable thickness, occurs where many small ridges are superimposed on a mantle of till; symbols identify small ridges
 - Th Hummocky till: diamicton, >2 m thick, hummocky surface expression; forms hills and hollows
 - Tb Till blanket: diamicton, >2 m thick, commonly occurs in association with organics in lowlands, till veneer or streamlined till
 - T Till, undifferentiated: diamicton, variable thickness, basal meltout and ablation till; masks underlying bedrock topography; may contain smaller areas of till veneer
- PRE-QUATERNARY**
- R Bedrock, undifferentiated: bedrock with variable surficial veneer (generally till); bedrock structure and topography readily apparent
- NOTES:**
- Stratigraphic relationship:** map unit stratigraphy is shown with a maximum of two map unit designators separated by a slash (/). (e.g. Cv/Tb designates colluvial veneer overlying till blanket)
 - Complex units:** where the surficial cover forms a complex and the map units are too small to be mapped individually, yet constitutes a significant areal extent of the total polygon, a dot (•) separates the first dominant map unit designator from the less abundant secondary unit (e.g. Tb•O designates an area of till blanket with some areas of organic).
- Geological contact, defined**
- Esker, sense known
 - Esker, sense unknown
 - Drumlin
 - Drumlinoid ridge
 - Craig-and-tail
 - Fluted bedrock, sense unknown
 - Major meltwater channel
 - Minor meltwater channel, sense known
 - Minor meltwater channel, sense unknown
 - Major moraine ridge
 - Minor moraine ridge
 - Kame, may include sand dunes
 - Patterned ground
 - Small outcrop

CANADIAN GEOSCIENCE MAP 157
RECONNAISSANCE SURFICIAL GEOLOGY
CLARKE RIVER (SOUTH HALF)
Northwest Territories
NTS 65-M
1:125 000

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Geology based on aerial photograph interpretation by V.M. Levson, with minor additions and compilation by D.E. Kerr, 2012-2013

Cartography: E. Everett
Initiative of the Geological Survey of Canada, conducted under the auspices of the Geo-mapping Frontiers Project as part of Natural Resources Canada's Geo-mapping for Energy and Minerals (GEM) program.

Map projection: Universal Transverse Mercator, zone 13, North American Datum 1983

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 2013, 7°23'E, decreasing 20' annually. Readings vary from 6°02'E in the NE corner to 6°40'E in the SW corner of the map.

Geomatics: by GSP Geomatics Inc. and S. Eagles

Geological Survey of Canada welcomes corrections or additional information from users.
The data may include additional observations not ported on this map.
See documentation accompanying the data.
This publication is available for free download through GEOSCAN (<http://geoscan.nrcan.gc.ca/>).

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Preliminary publications in this series have not been scientifically edited.

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