

**Holocene**

**Organic deposits**  
peat and muck, occurring as flat to gently sloping plains

- fo FENLAND: woody sedge peat, 1-2 m thick
- po PEATLAND: sphagnum peat generally underlain by woody sedge peat, 0.5-2 m thick
- pfO PEATLAND (> 50%) AND FENLAND
- fpO FENLAND (> 50%) AND PEATLAND

**Alluvial deposits**  
sand, silt and minor gravel in association with modern drainage regime

- Ap ALLUVIAL PLAIN: coarse sand and gravel with silt, fine sand and some organic detritus, occurring as channel and overbank floodplain sediments or in-channel bars; 3-5 m thick
- Af ALLUVIAL FAN: mainly sand and silt with minor gravel and discontinuous layers of peat occurring as fan deposits
- Ax ALLUVIAL COMPLEX: floodplain and fan deposits; may contain small areas of colluvium

**Colluvial and landslide deposits**  
diamict and rubble derived from bedrock and/or surficial material through a variety of colluvial and landslide processes

- Cx COLLUVIAL COMPLEX: slope complex consisting of diamict and rubble; may include minor landslides (Cz) and/or alluvial fan (Af) units; > 2 m thick
- Cz LANDSLIDE: bedrock, rubble and/or diamict occurring as stepped or tongue-shaped deposits, formed by rotational slumping, retrogressive thaw flow, debris flows, rock topple and translational slides in surficial sediments and/or bedrock; they are prominent along former meltwater channels

**Late Pleistocene**

**Eolian deposits**  
fine to medium sand; minor silt derived from detritic or glaciolacustrine deposits in association with decadal wind direction

- Ev EOLIAN VENEER: discontinuous cover of mainly fine sand and silt over other surficial units and bedrock; < 1 m thick
- Evb EOLIAN VENEER TO BLANKET: discontinuous cover (veneer dominant) of mainly fine sand and silt over surficial materials, most commonly till, lacustrine and/or glaciolacustrine deposits; < 1-10 m thick
- Er PARABOLIC DUNES: sand; < 15 m thick
- Ex EOLIAN COMPLEX: veneer to blanket deposited over other surficial materials particularly lacustrine and till plains; includes parabolic dunes

**Glaciolacustrine deposits**  
silt and clay with minor sand and diamict; sediments deposited in a proglacial lake

- Lp LACUSTRINE PLAIN: flat to gently sloping cover; locally overlain by eolian sand; 1-10 m thick
- Lp-k LACUSTRINE PLAIN WITH THERMOKARST DEPRESSIONS: flat to gently sloping cover; locally overlain by eolian sand; 1-10 m thick
- Lb LACUSTRINE BLANKET: deposit conforms to local topography up to 8 m of relief; locally overlain by eolian sand; 2-10 m thick
- Lv LACUSTRINE VENEER: discontinuous deposits, conforming to local topography; commonly associated with small lakes following ice retreat; locally overlain by eolian sand; < 2 m thick
- Lm LACUSTRINE PLAIN, ROLLING: rolling, occurring as low ridges; locally overlain by eolian sand; 2-15 m thick
- Ls SHORELINE DEPOSITS: low, ridged beach deposits of sand and gravel; < 5 m thick
- Lx LACUSTRINE COMPLEX: detritic sediments transitional between glaciolacustrine and glaciolacustrine deposits with upper 0.5 m consisting of sand; locally overlain by eolian sand; < 20 m thick
- Lx-c LACUSTRINE COMPLEX, CHANNELLED: detritic sediments transitional between glaciolacustrine and glaciolacustrine deposits with upper 0.5 m consisting of sand, affected by glaciolacustrine channeling; locally overlain by eolian sand; < 20 m thick

**Glaciolacustrine deposits, outwash**  
sand and gravel locally with a veneer of eolian silt and/or sand; deposited as proglacial sediment by glacial meltwater

- Gp GLACIOFLUVIAL PLAIN: flat to gently sloping; 2-20 m thick
- Gp-c GLACIOFLUVIAL PLAIN, CHANNELLED: flat to gently sloping
- Gp-t GLACIOFLUVIAL PLAIN TO TERRACE: glaciolacustrine plain dominant; flat to gently sloping, with no visible boundaries between them; these units occur only along major rivers or interbedded with other drift types; < 10 m thick
- Gt GLACIOFLUVIAL TERRACE: 10-50 m thick
- Gv GLACIOFLUVIAL VENEER: with slopes conforming to underlying topography; < 2 m thick
- Gb GLACIOFLUVIAL BLANKET: with slopes conforming to underlying topography; gently to moderately sloping; 3-8 m thick
- Gd GLACIOFLUVIAL DELTA: gently sloping, abrupt scarp, showing sudden change in lake level; deposited in a glacial lake; 5-15 m thick
- Gd-c GLACIOFLUVIAL DELTA, CHANNELLED: gently sloping, deposited in a glacial lake; commonly channels cut into underlying till; 5-15 m thick
- Gf GLACIOFLUVIAL FAN: mainly coarse gravel with minor sand, locally with mudflow deposits; commonly deposited in a meltwater channel or lake; 5-7 m thick
- Gf-c GLACIOFLUVIAL FAN, CHANNELLED: mainly coarse gravel with minor sand, locally with mudflow deposits; commonly deposited in a meltwater channel or lake where no sudden water level changes had occurred; commonly channels cut into underlying till; 5-7 m thick

**Glaciolacustrine deposits, ice contact**  
sand and gravel locally with a veneer of eolian silt and/or sand; deposited as ice-contact sediment by glacial meltwater

- Gr GLACIOFLUVIAL RIDGES: eskers; 2-15 m thick
- Gx GLACIOFLUVIAL COMPLEX: includes eskers, kames and plains, commonly with thermokarst ponds in places; 2-30 m thick
- Gx-c GLACIOFLUVIAL COMPLEX, CHANNELLED: containing ridges, hummocks and kettled plains, affected by glaciolacustrine channeling; common along Blackwater River; 2-50 m thick

**Glacial deposits**  
unsorted silt, sand, and clay with clasts (pebbles, cobbles and some boulders) deposited by glacial ice in a variety of landforms

- Tp TILL PLAIN: flat to gently sloping; 3-5 m thick
- Tp-c TILL PLAIN, CHANNELLED
- Tv TILL VENEER: with slopes conforming to underlying topography; < 2 m thick
- Td TILL, DRUMLINOID: hilly till plain with individual drumlins or extensive flutes; 3-15 m thick
- Tr TILL, RIDGED: surface of generally coarse till (20-50% pebbles) deposited as ridges; commonly lateral and frontal moraines and hummocks; < 9 m thick
- Tx TILL COMPLEX: largely hummocky, ridged, and/or hilly with patches of gravel; in some places Tx forms veneer over bedrock
- Tc TILL, CREVASSE FILL: coarse diamict (>30% pebbles) deposited as crevasse fills forming high ridges; 2-15 m thick

**Paleozoic to Mesozoic Bedrock**  
primarily prominent ridges, escarpments and hills associated with Devonian rocks

- R Crinoidal shale (various colours) and limestone mostly in plains area; Paleozoic limestone, dolomite, shale (various colours), siltstone, mudstone and sandstone mostly in mountainous areas
- R-k KARSTED: carbonate rocks affected by solution and collapse. Karst forms expressed as sinkholes and channels commonly developed in Mackenzie and Franklin Mountains; Crinoidal shale (various colours) and limestone mostly in plains area; Paleozoic limestone, dolomite, shale (various colours), siltstone, mudstone and sandstone mostly in mountainous areas

**Organic Deposits**  
This pattern is used when organic deposits appear as a second or third component in a polygon

- Fenland constituting 10 - 50% of the map unit
- Peatland constituting 10 - 50% of the map unit
- Peatlands and fenlands undivided constituting 10 - 50% of the map unit

**Eolian Deposits**  
This pattern is used when eolian sand veneer appears as a second or third component in a polygon, eg. Tp, Gx, Ev

- Discontinuous veneer (<1m) mainly fine sand and silt covering other surficial units and bedrock

**Colluvial Deposits**  
This pattern is used when colluvial veneer and sheetwash deposits appear as a second or third component in a polygon, eg. Tv, Cx, Tv, Lb, Cx

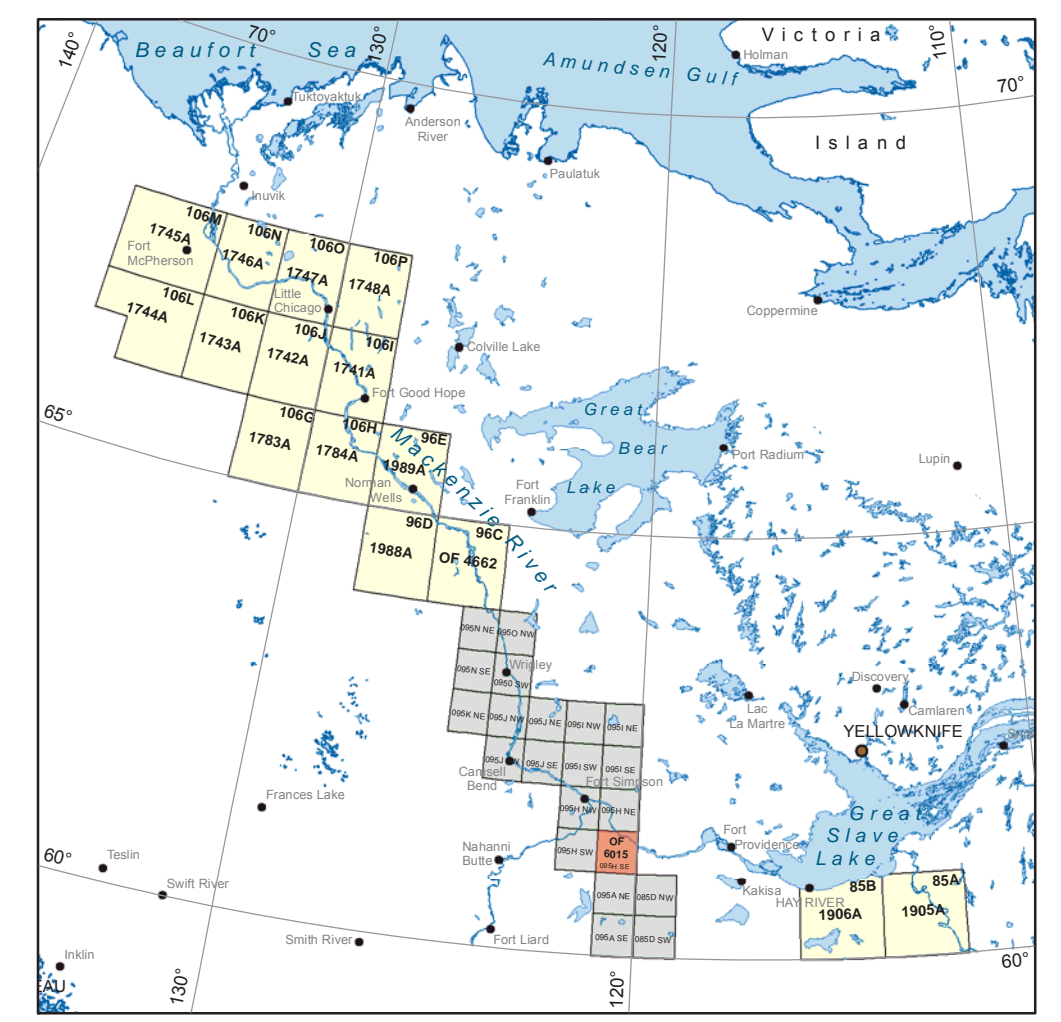
- Discontinuous veneer (<1m) mainly diamict and rubble that conforms to local topography

**Geological boundary (defined)**  
Paleo-drainage scar  
Moraine plateau: commonly rimmed and mantled by glaciolacustrine sediments overlying a till core. The moraine plateau in this area are characterized by rims up to 15 m high enclosing a basinal area. They contain silty-clay sediments to a depth of 2 m; actual thickness of glaciolacustrine sediments are unknown. Moraine plateaus span 100-1400 m in diameter. No till was found below the rims or within the basin area  
Drumlin, drumlinoid ridge or flute (direction uncertain): streamlined hill or ridge of till with long axis paralleling direction of iceflow  
Drumlin, drumlinoid ridge or flute (direction certain): streamlined hill or ridge of till with long axis paralleling direction of iceflow; elliptical base and arched profile with gentle slope pointing in downstream direction  
Meltwater channel (major): erosion and channel formation by meltwater flow along, beneath or in front of a glacier or ice sheet; range from broad, shallow channels to deeply incised, steep-sided, flat-bottomed valleys; channels may run across or along slope contours; may be presently dry, poorly drained or contains an underfit stream or small lakes  
Meltwater channel (minor): erosion and channel formation by meltwater flow along, beneath or in front of a glacier or ice sheet; range from broad, shallow channels to deeply incised, steep-sided channels, may run across or along slope contours; may be presently dry  
Crevasse filling  
Shoreline of former lake: low, ridged beach deposits of sand and gravel  
Shoreline of former lake common to two lakes: low, ridged beach deposits of sand and gravel  
Dune ridge  
Deflation hollow  
Beaver dam  
Kame  
Ground Station  
Helicopter observation

**UNDERSTANDING THE LEGEND**  
The genetic category of surficial material is indicated by the first upper case letter, e.g., G (glaciolacustrine). The morphological category is indicated in lower case following the genetic category, e.g., Gp (glaciolacustrine plain). The modifying processes are indicated in lower case separated from the morphological category by a ( ) e.g., Gp-k (glaciolacustrine plain with thermokarst processes).

Combined units are used where, for reasons of scale, the units cannot be separated. The main unit, covering over 50% of the geologic polygon, is separated by a ( ) from the secondary unit, e.g., Gp-k.Lp. In cases where the polygon has a third unit it is represented by a patterned symbol, e.g., eolian sand cover, peatlands or fenlands.

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Geology by A. Duk-Rodkin, 2007  
Digital cartography by B. Firminson and D.A. Lemay  
Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada  
Digital base from Geomatics Canada, modified by the Geological Survey of Canada  
Mean magnetic declination 2011, 20'SSE, decreasing 24.4' annually.  
Readings vary from 21°11'E in the NW corner to 20°32'E in the SE corner of the map.  
Elevations in metres above mean sea level



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OPEN FILE 6015  
SURFICIAL GEOLOGY  
**FORT SIMPSON (95H/SE)**  
NORTHWEST TERRITORIES  
Scale 1:100 000 / Échelle 1:100 000

kilometres 2 4 6 8 kilometres

UNIVERSAL TRANSVERSE MERCATOR PROJECTION  
Projection transversale universelle de Mercator  
North American Datum 1983  
Système de référence géodésique nord-américain 1983  
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