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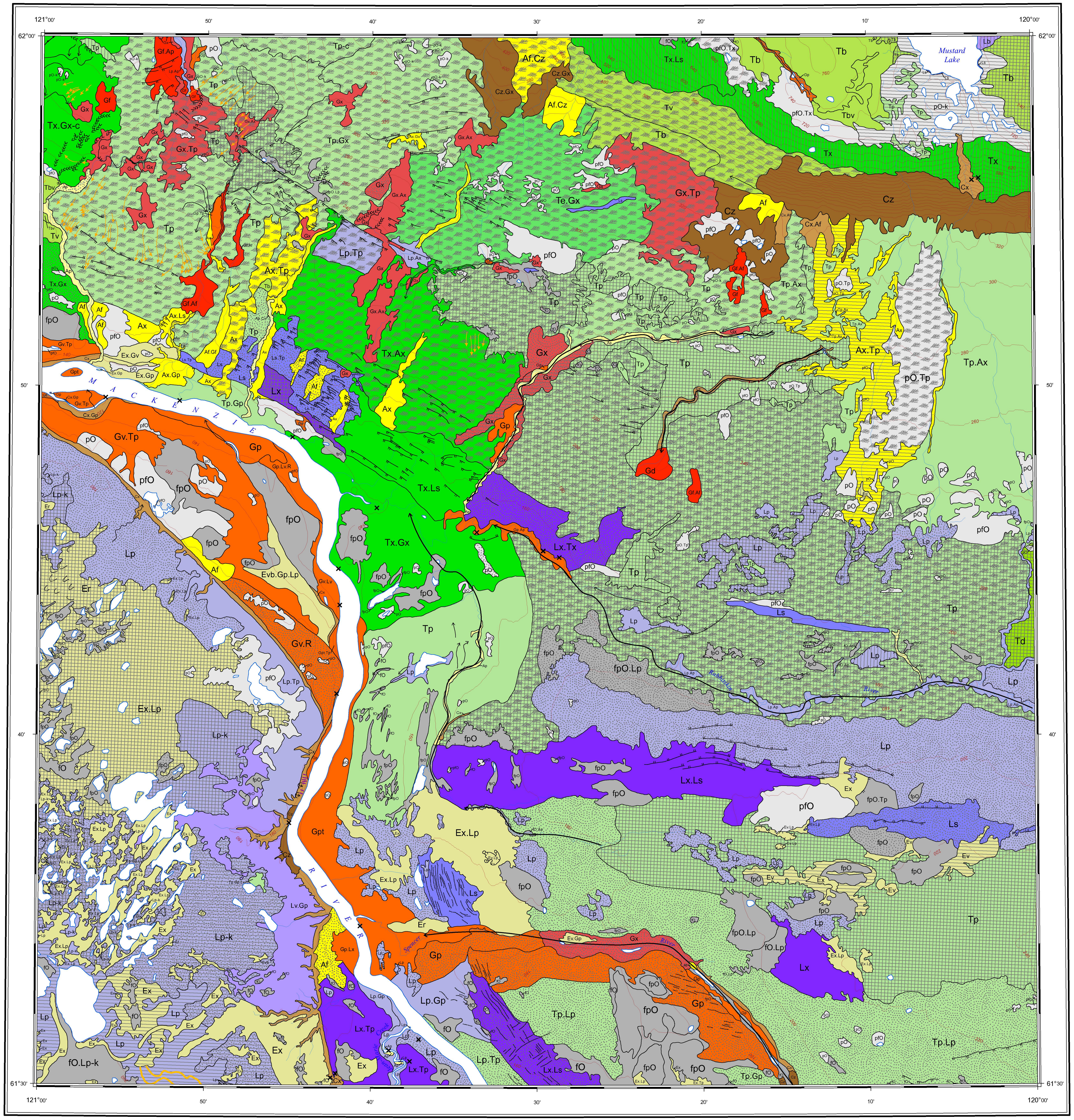
GEOLOGICAL SURVEY OF CANADA   COMMISSION GÉOLOGIQUE DU CANADA



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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
pO-k	PEATLAND: contains thermokarst depressions
pfO	PEATLAND (> 50%) AND FENLAND
pfO-k	PEATLAND (> 50%) AND FENLAND: contains thermokarst depressions
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

diamicton and rubble derived from bedrock and/or surficial material through a variety of colluvial and landslide processes

Cx	COLLUVIAL COMPLEX: slope complex consisting of diamicton and rubble; may include minor landslides (Cz) and/or alluvial fan (Af) units; > 2 m thick
Cz	LANDSLIDE: bedrock, rubble and/or diamicton 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 deltaic or glaciolacustrine deposits in association with deglacial 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 glaciofluvial deposits; <1-10 m thick
Ebv	EOLIAN BLANKET TO VENEER: discontinuous cover (blanket dominant) of mainly fine sand and silt over surficial materials, most commonly till, lacustrine and or glaciofluvial 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 diamicton; 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: discontinous deposits, conforming to local topography; commonly associated with small lakes following ice retreat; locally overlain by eolian sand; < 2 m thick
Ls	SHORELINE DEPOSITS: low, ridged beach deposits of sand and gravel; < 5 m thick
Lx	LACUSTRINE COMPLEX: deltaic sediments transitional between glaciofluvial and glaciolacustrine deposits with upper 0-5 m consisting of sand; locally overlain by eolian sand; < 20 m thick

Glaciofluvial 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
Gpt	GLACIOFLUVIAL PLAIN TO TERRACE: glaciofluvial 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
Gd	GLACIOFLUVIAL DELTA: gently sloping, abrupt scarp, showing sudden change in lake level; deposited in a glacial lake; 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

Glaciofluvial deposits, ice contact

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

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 glaciofluvial channelling; 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
Tb	TILL BLANKET: gently to moderately sloping plain conforming to underlying topography; 2-8 m thick
Tbv	TILL BLANKET TO VENEER: conforming to underlying topography; 2-8 m thick
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
Tx	TILL COMPLEX: largely hummocky, ridged, and/or hilly with patches of gravel; in some places Tx forms veneer over bedrock
Te	TILL, ERODED: gently to moderately sloping till plain, highly modified by landsliding

Paleozoic to Mesozoic

Bedrock

primarily prominent ridges, escarpments and hills associated with Devonian rocks

R	Cretaceous 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

▒	Discontinous 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

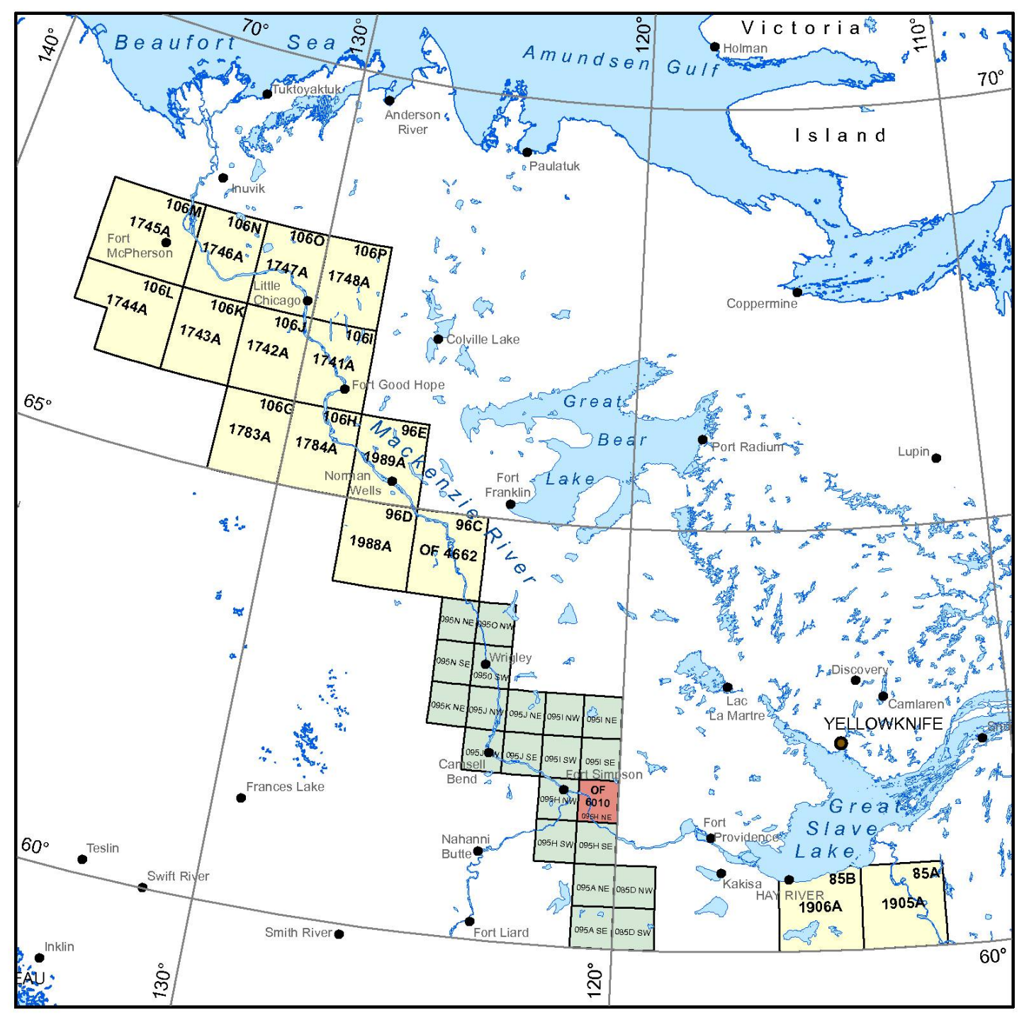
▒	Discontinous veneer (<1m) mainly diamicton and rubble that conforms to local topography

Geological boundary (defined)
Paleo-drainage scar
Moraine ridge: unconsolidated sediments (till, sand and gravel) deposited in ridges at terminal, recessional, lateral and medial positions with respect to ice margins
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
Paraglacial channel
>>>>>>>>>>>>> Esker (direction certain): sinuous, low ridge composed of sand and gravel; formed by deposition from meltwater running through a channel beneath or within glacier ice
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
Landslide
/// Debris flow
× Ground Station

UNDERSTANDING THE LEGEND

The genetic category of surficial material is indicated by the first upper case letter, e.g., G (glaciofluvial). The morphologic category is indicated in lower case following the genetic category, e.g., Gp (glaciofluvial plain). The modifying processes are indicated in lower case separated from the morphologic category by a (-) e.g., Gp-k (glaciofluvial 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 patterened symbol, e.g., eolian sand cover, peatlands or fenlands.



Surficial Geology Location Map, Southern Mackenzie Corridor

Author: A. Duk-Rodkin

Geology by A. Duk-Rodkin, 2007

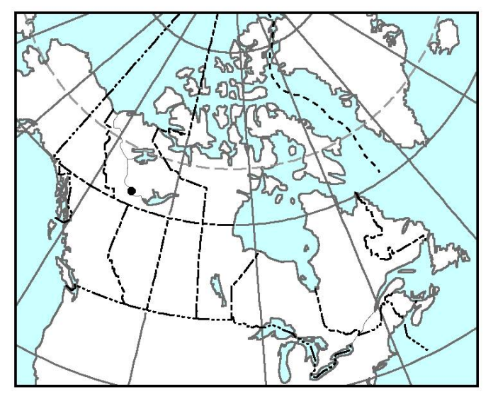
Digital cartography by B. Firmston and D.A. Lemay

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, 21°9'E, decreasing 25.3' annually.
Readings vary from 21°25'E in the NW corner
to 20°53'E in the SE corner of the map

Elevations in metres above mean sea level



LOCATION MAP

OPEN FILE 6010

SURFICIAL GEOLOGY

FORT SIMPSON (95H/NE)

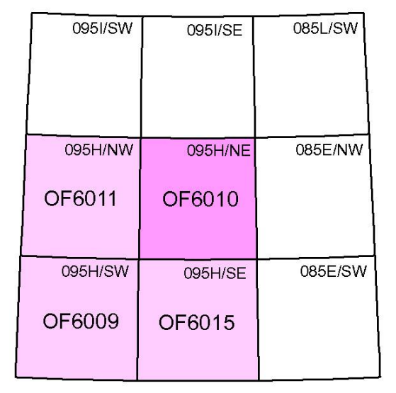
NORTHWEST TERRITORIES

Scale 1:100 000/Échelle 1/100 000

kilometres 2 0 2 4 6 8 kilomètres

Universal Transverse Mercator Projection
North American Datum 1983

Projection transvers universelle de Mercator
Système de référence géodésique nord-américain, 1983



NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO ADJOINING GEOLOGICAL SURVEY OF CANADA MAPS

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2011

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