

LEGEND

Coloured legend blocks indicate map units that appear on this map

QUATERNARY

SURFICIAL DEPOSITS

POST LAST GLACIATION

NONGLACIAL ENVIRONMENTS

ORGANIC DEPOSITS: peat, 1 to 2 m thick; formed by the accumulation of vegetation in poorly drained depressions (swamps and bogs); produces flat, wet terrain

Bag peat: Sphagnum or forest peat formed in an ombrotrophic environment; may be forest or treeless with a cover of ericaceous shrubs; hummocky, wet terrain, in places underlain by ground ice, O_h; undifferentiated bog and fen deposits, O₁

Fen peat: peat derived from sedges and partially decayed shrubs in a eutrophic environment; forms relatively open peatlands with a mineral rich water table that persists seasonally near the surface; often covered with low shrubs and sometimes a sparse layer of trees

COLLUVIAL DEPOSITS: mass wasting debris <100 m thick; nonsorted to poorly sorted, massive to stratified debris deposited by direct, gravity-induced movement

C

Landslide and slump debris: active and inactive landslides, C

ALLUVIAL DEPOSITS: sorted gravel, sand, and organic detritus deposited by flowing water

A

Fluvial deposits: sorted gravel and sand >1 m thick; forming active flood plains with meander channels and scroll marks, Ap, alluvial fan deposits, poorly sorted gravel and sand >1 m thick, At; low terraces on flood plains with meander scars, active and inactive channels, primarily along Pettit River, Al; undifferentiated, A

Ac

Fluvial channels: numerous subparallel alluvial channels covering gentle to moderate slopes

At

Fluvial terraces: low, inactive terraces immediately above the Pettit River

L¹

LACUSTRINE DEPOSITS: sand, silt and minor clay deposited in a former lake; generally overlain by organic deposits; exposed by recent fluctuations in lake levels

E

EOLIAN DEPOSITS: wind deposited sand forming small dune ridges a few tens of metres long, Er

POSTGLACIAL OR LATE WISCONSINAN

PROGLACIAL AND GLACIAL ENVIRONMENTS

L

GLACIOLACUSTRINE DEPOSITS: fine sand, silt, and clay, deposited in glacier-dammed lakes in valleys or along margins of the retreating Laurentide Ice Sheet; > 1 m thick; level topography; usually overlain by organic deposits in lowlands; hummocky topography, Lh

G

GLACIOFLUVIAL DEPOSITS: proglacial outwash, gravel and sand with minor diamictites deposited in front of the ice margin, usually 1-10 m thick; forming distal outwash terraces Gt; ice-contact ridges, Gr; undifferentiated, G

TILL: nonsorted debris deposited directly by glaciers; matrix is sandy to clayey and contains striated clasts of various lithologies, including many Canadian Shield erratics in the lowlands

Tb

Till blanket: > 1 m thick; forming undulating topography; extensively fluted and drumlinized till blanket, Td; moraines or crevasse fillings forming a ridged topography, Tr; hummocky moraine, Th; rolling topography, Tm

Tr

Ridged moraine: moraines or crevasse fillings forming a ridged topography

NOTE: In areas where the surficial cover forms a complex pattern, the area is coloured according to the dominant unit and labelled in descending order of cover; slash between two units indicates that the former unit overlies the latter

Geological boundary (defined, gradational)

Small swamp or bog

Landslide (arrow indicates the direction of movement)

Abandoned meltwater channel or channel occupied by an underfit stream (large, small and direction of flow inferred, small and direction of flow not inferred)

Esker (flow direction inferred)

Escarpment

Kettle

End moraine

Minor moraine or crevasse filling

Ice moulded form in till (direction of flow inferred, not inferred; broader forms have middle dots)

Furrows and troughs related to glacial flow, likely formed subglacially

Bedrock outcrop

NOTES ON GLACIAL HISTORY:

Celibeta Lake map area was glaciated during the Late Wisconsinan glaciation (ca. 25 000-10 000 years ago). Although the area may have been first glaciated by montane ice from the west, the continental Laurentide Ice Sheet was the last ice to cover the area, and generally flowed from northeast to southwest in this region. West of Celibeta Lake map area, the Laurentide Ice Sheet came in contact with Cordilleran ice and was forced to flow northward. Glacial fillings in this map area show the dominant Laurentide flow from the northeast. Prominent tillings and furrows show a continuous glacial flow line extending for more than 15 km through the central portion of the map area.

During deglaciation, the regional drainage through the Liard River system was blocked by the Laurentide Ice Sheet as it retreated eastward. Glacial Lake Liard formed within the main Liard River valley, whereas, smaller, short-lived glacial lakes were created in many depressions. The Celibeta Lake map area is covered by flat-lying glaciolacustrine deposits. A more integrated drainage system developed with further recession of the ice margin and several northward trending meltwater channels were cut as the glacial lakes drained. A prominent channel in the southwest part of the map area was probably used by an early course of the Pettit River, while others are partially filled with till and may have been tunnel valleys within the glacier. For example, extensive ice-contact ridges paralleling either side of the Muskeg River, suggest that this part of the river was probably a tunnel valley during deglaciation. Other small and moraines and crevasse fillings north of Pettit River, show a detailed record of progressive ice retreat to the north.

Celibeta Lake map area has large areas of organic terrain, particularly overlying the flat-lying, glaciolacustrine deposits. Areas of hummocky muskeg are likely underlain by ground ice.

OPEN FILE

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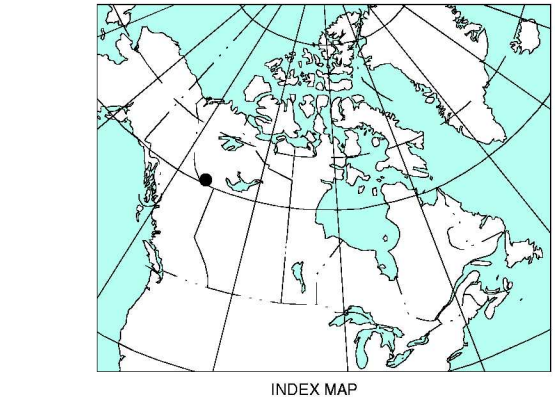
1754

Geological Survey of Canada
Commission Géologique du Canada

2003

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OPEN FILE 1754

SURFICIAL GEOLOGY

CELIBETA LAKE

NORTHWEST TERRITORIES - BRITISH COLUMBIA

Scale 1:50 000 Échelle

Universal Transverse Mercator Projection
Projetion transversale universelle de Mercator
Système de référence géodésique nord-américain 1983
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Geology by J. Bednarski, 2000, 2001, 2002
Geological compilation and digital cartography by J. Bednarski, 2002

This is a product of the Central Foreland NATMAP Project
Any revisions or additional geological information from the user would be welcomed by the Geological Survey of Canada

CONTOUR INTERVAL: 100 FEET
Elevations in Feet above Mean Sea Level

Digital Topographic Data provided by Geomatics Canada, Natural Resources Canada and adjusted to conform to Landnet Discoverer image for the author

INDEX MAP

| | | |
|-------------------------------------|--|--------------------------|
| 95 B/7 Tourentine River | 95 B/8 Muskeg River GSC OF 1763 | 95 A/5 No Title |
| 95 B/2 Lake Bovie GSC OF 1761 | 95 B/1 Celibeta Lake GSC OF 1754 | 95 A/4 No Title |
| 94 O/15 Emile Creek | 94 O/16 Stanislas Creek | 94 P/13 Estaline Lake |

Recommended citation:
Bednarski, J.M.
2003. Surficial geology, Celibeta Lake, Northwest Territories - British Columbia (NTS 95B/1). Geological Survey of Canada, Open File 1754, 1 map, scale 1:50 000.

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