

QUATERNARY	
HOLOCENE	
NONGLACIAL ENVIRONMENT	
O	Organic deposits, undifferentiated: peat and musk; variable thickness, generally confined to river sediments.
E	Flood sediments, undifferentiated: well-sorted sand, variable thickness, occurs as sheets and dunes east of Ellice River, derived from alluvial and glaciofluvial sediments.
Al	Alluvial terrace sediments: sand and gravel, variable thickness, occurs as benches elevated above modern floodplains.
A	Alluvial sediments, undifferentiated: sand and gravel, stratified, variable thickness, deposited along modern rivers as terraces and floodplains.
Mv	Marine veneer: clay, silt and sand, <2 m thick, deposited during marine regression.
Md	Marine deltaic sediments: sand with gravel, variable thickness, deposited as the distal facies of outwash in front of the MacAlpine Moraine.
Mb	Marine blanket: clay, silt and sand, <2 m thick, deposited during marine regression; occurs extensively in the Queen Maat Gulf Bird Sanctuary.
M	Marine sediments, undifferentiated: silt, sand and gravel, variable thickness, deposited during marine regression.
LAST GLACIATION (WISCONSIN)	
PROGLACIAL AND GLACIAL ENVIRONMENT	
GLv	Glaciofluvial veneer: silt and sand, <2 m thick, deposited where meltwater drainage was impeded by ice, till or topography.
GL	Glaciofluvial sediments, undifferentiated: silt and sand, variable thickness, deposited where meltwater drainage was impeded by ice, till or topography.
GFp	Glaciofluvial outwash plain sediments: sand and gravel with boulders, stratified, <2 m thick, deposited by meltwater streams beyond the ice front.
GFR	Glaciofluvial subalut outwash fan sediments: sand and gravel, stratified, 2-10 m thick, deposited by meltwater in front of the MacAlpine Moraine.
GFc	Ice-contact sediments: sand, gravel and boulders, stratified, 2-10 m thick, occurs as lobes and kames, deposited by meltwater in contact with glacial ice.
GF	Glaciofluvial sediments, undifferentiated: sand, gravel and boulders, stratified, 2-10 m thick, deposited by meltwater in subglacial meltwater channels, hummocks and ridges.
GLACIAL ENVIRONMENT	
Tv	Till veneer: silt-sand diamict, <2 m thick, basal meltout and ablation till; surface mimics underlying bedrock topography, till is boulder-free; it has been modified by meltwater; unit contains nodules of bedrock.
Tb	Till blanket: silt-sand diamict, 2-10 m thick; lodgement, basal meltout and ablation till; surface mimics underlying bedrock topography; surface commonly gently rolling to streamlined with numerous hummocks; may contain smaller areas of till veneer.
Ts	Streamlined till: diamict, variable thickness, extensively fluid till; individual ridges (drumlinoids) seldom exceed 1 km in length; may contain nodules of bedrock.
Th	Hummocky till: silt-sand and gravel diamict, may be stratified, 5-10 m thick; forming lobes, elongated ridges, and kame-and-kettle topography associated with the MacAlpine Moraine.
T	Till, undifferentiated: silt-sand diamict, variable thickness; lodgement, basal meltout and ablation till; surface mimics underlying bedrock topography; may contain smaller areas of till veneer.
PRE-QUATERNARY	
R	Bedrock, undifferentiated: granite and gneiss, glacially scoured and striated; includes meltout of till veneer; marine and glaciofluvial sediments; areas of meltwater scour and boulder lag are shown by contour symbols.

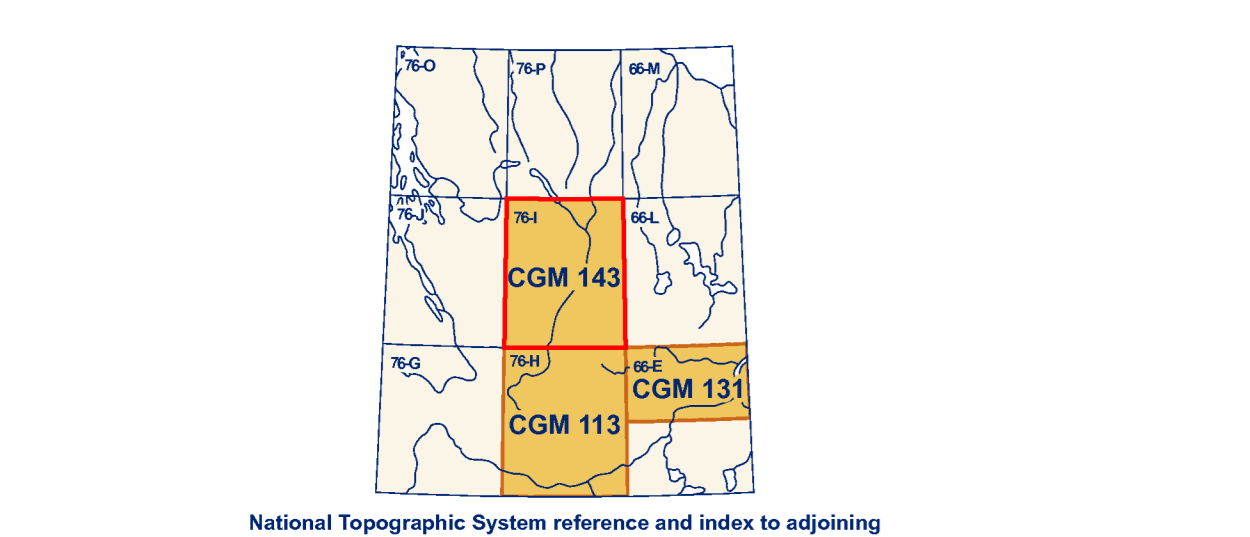
- NOTES:**
- Stratigraphic relationships: map unit stratigraphy is shown with a maximum of two map unit designators separated by a slash (" / ") (e.g., GFR/GFR designates undifferentiated organic deposits overlying undifferentiated marine sediments).
  - Contour symbols: unless the surface cover forms a complex pattern and the map units are too small to be mapped individually, yet constitute a significant areal extent of the total polygon, a "dotted" symbol separates the first dominant map unit designator from the less abundant secondary unit (e.g., GFR designates an area of glaciofluvial sediments with some areas of bedrock).
- Boulder lag
  - Washed scoured lag
  - Geological contact, defined
  - Geological contact, approximate
  - Ice-contact terrace scarp
  - Terrace scarp, unspalled
  - Minor moraine channel, sense known
  - Major end moraine
  - Minor moraine
  - Washed esker, sense known
  - Esker, sense unknown
  - Crag and tail
  - Drumlinoid ridge (1 = older, 2 = younger)
  - Fluted bedrock, sense known
  - Fluted bedrock, unknown
  - Limit of glaciomarine submergence, defined
  - Limit of glaciomarine submergence, approximate
  - Beach ridge
  - Dune crest
  - Stagnant, sense known
  - Delta, sense known
  - Delta, sense unknown
  - Kame
  - Kettle lake
  - Thermokarst
  - Small outcrop
  - Patterned ground (ice wedges)
  - Observation site
  - Till sample site

**NOTES/REFERENCES:**

Station and station/sample data from:  
 McMorris, I., Burman, R.G., Normand, P.X., and Perreault, J.A., 2013. Till composition of a transect across the Thelon tectonic zone, Queen Maat Block, and adjacent Bar craton: results from the GeosMapping Frontiers (Cherty) project. Geological Survey of Canada, Open File 7418.

**Abstract**  
 Preliminary surficial geology studies, based on photo interpretation and limited field data, were undertaken in the Overby Lake map area to provide an understanding of the glacial and marine sedimentary history and regional glacial history. Much of the western area is characterized by subglacially scoured lake basins. Streamlined rock and till landforms indicate ice flow towards the northeast and north-northeast. Till blankets and veneers have a pebbly silt-sand matrix, but their surfaces tend to be boulder-free where they were affected by glacial meltwater. Subglacial meltwater channels consisting of eskers, washed till, boulder lags and scored bedrock, cross the entire area. The MacAlpine Moraine in the southeast formed during glacial recession about 8000 years ago, and is defined by hummocky till, kames, and related glaciofluvial outwash. Early glaciofluvial marine sediments extend up Ellice River to 225 m a.s.l. In the northwest, below 100 m a.s.l., silt, marine deposits form extensive plateaus between drumlinoid ridges in the Queen Maat Gulf Bird Sanctuary.

**Résumé**  
 Pour connaître la répartition et la nature des dépôts de surface et l'histoire glaciaire de la zone du lac Overby, nous avons entrepris des études préliminaires de la géologie de surface en analysant des photos aériennes et un ensemble limité de données de terrain. Une bonne partie du secteur ouest est caractérisée par un substratum rocheux qui est recouvert de blocaille et qui contient des bancs limoneux peu profonds créés par les glaciers. Les reliefs fuselés de roche et de till indiquent un écoulement glaciaire vers le nord-est et le nord-nord-est. Les nappes et les placages de till sont composés d'une matrice de silt et de sable limoneux, mais leurs surfaces tendent à être dépourvées de blocs là où elles ont été modifiées par les eaux de fonte glaciaires. La zone moraine est formée de till hummocky, de kames, et de dépôts glaciofluviaux associés. Les sédiments marins glaciofluviaux s'étendent en amont dans la rivière Ellice jusqu'à 220 m au-dessus du niveau de la mer. Au nord-est, à moins de 100 m au-dessus du niveau de la mer, des dépôts marins limoneux forment de vastes plateaux entre les dômes drumlinoides, à l'intérieur du Refuge-Océanique de la gulfine Reine-Maat.



Cover illustration: Cyclic fluted till adjacent to a fluted outcrop in the foreground, with the Ellice River and exposed outwash sediments in the background. Photograph by P. Normand, 2013/12/22.

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**CANADIAN GEOSCIENCE MAP 143**  
**RECONNAISSANCE SURFICIALE GÉOLOGIE**  
**OVERBY LAKE**  
 Nunavut  
 NTS 76-I  
 1:125 000

**Canada**

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 Geology based on aerial photograph interpretation by L.A. Dredge (2012) with minor additions and revisions by D.E. Kerr (2012-2013). Station data from P. Normand, field work 2012 (see Notes).  
 Map projection: Universal Transverse Mercator, zone 13, North American Datum 1983.  
 Geomatics by GSP Geographics Inc. and S. Eagles  
 Cartography by S. Eagles

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Base map at the scale of 1:250 000 from Natural Resources Canada, with modifications.  
 Elevations in metres above mean sea level.  
 Shaded relief image derived from the digital elevation model supplied by Natural Resources Canada.  
 Illumination: azimuth 315°, altitude 45°, vertical factor 5x.  
 Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in the area.  
 Mean magnetic declination 2013, 9°09'E, increasing 28' annually. Readings vary from 7°05'E in the NE corner to 10°54'E in the SW corner of the map.

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The Geological Survey of Canada welcomes corrections or additional information from users.  
 Data may include additional observations not portrayed on this map. See documentation accompanying the data.  
 This publication is available for free download through GEOCAN (http://geocan.nrc.ca/geocan/).

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**Preliminary publications in this series have not been scientifically edited.**

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