



QUATERNARY	
HOLOCENE	
NONGLACIAL ENVIRONMENT	
O	Organic deposits, undifferentiated: peat and muck up to 2 m thick formed predominantly by the accumulation of vegetative material in bogs; occurs in depressions, poor drained areas and along valley bottoms; may contain ice-wedge polygons; small unsorted organic deposits occur in most terrace units.
E	Estuarine sediments, undifferentiated: fine to medium sand; poorly to well-sorted; 1 to at least 4 m thick; may contain active and stabilized dunes and bars; derived from glaciolacustrine sediments.
Ap	Alluvial floodplain sediments: silt to gravel; massive to stratified; 1 m to at least 3 m thick; occurs on floodplains deposited by modern streams and rivers.
A	Alluvial sediments, undifferentiated: silt to gravel; massive to stratified; 1 m to at least 3 m thick; deposited by modern streams and rivers; may include floodplains and alluvial fans in braided and meandering rivers.
LAST GLACIATION (WISCONSIN)	
PROGLACIAL AND GLACIAL ENVIRONMENT	
Gd	Glaciolacustrine deltaic sediments: sand, gravel, cobbles and boulders; massive to cross-stratified; up to 2 m or more thick; associated with temporary glacial lakes; may contain deltaic sills, channel sediments, ice-wedge polygons, and beach ridges; may contain massive ground ice.
	Glaciolacustrine sediments: sand, gravel, cobbles and small boulders; 2 m to at least 30 m thick; deposited by water flowing from, or in contact with, glacial ice; may include kettle lakes and ice-wedge polygons; may contain massive ground ice.
Gp	Outwash plain sediments: sand and gravel; massive to cross-stratified; 1 m to at least 20 m thick; generally flat-topped; occur on broad, flat-floored plains; may include subglacial fans.
Gf	Fabric sediments: sand, gravel, cobbles and small boulders; in planar cross-stratified, and massive beds; 1 to at least 30 m thick; forms ridges with both steep and flat topped surfaces up to 20 m long, and 10 to 200 m wide with mounds and barling aprons; deposited in the lee margin; formed subglacially or in a subglacially exposed ice-walled channel; may be associated with cones of accreted rock and fill veneer; boulder logs, isolated sand deposits, and small transverse gravel ridges.
Gfc	Ice-contact glaciolacustrine sediments: sand and gravel; massive to cross-stratified; 1 m to at least 20 m thick; subjected to regular hummocky topography with kettle lakes; may include small eskers.
Gf	Glaciolacustrine sediments, undifferentiated: sand, gravel, cobbles and small boulders; variable thickness; deposited by water flowing from, or in contact with, glacial ice; may include planar, lensoid, flow, eskers; may contain massive ground ice.
	Glacial sediments (B): siltation, unsorted, consisting of a silty sand matrix containing pebbles, cobbles and boulders; regular to irregular clasts; low to high compaction; from less than 1 m to at least 5 m or more thick; deposited beneath, or along the margin of, glaciers in alignment of and adjacent to:
Tr	Till veneer: low compaction; less than 1-2 m thick; occurs as a discontinuous layer where rock structure is generally stable, and as a lag on washed bedrock; may include eskers shown by symbols, and small isolated units of glaciolacustrine sediments and B blanket.
Th	Hummocky till: compact; from 3 m to at least 5 m thick; blocks irregular to oblong shape; may contain low moraine ridges up to 10 m long; local relief up to 5 m; some areas have abundant small esker remnants and transverse ridges.
Tb	Till blanket: moderately compact; from 2 to 5 m thick; occurs as fill plains mimicking bedrock topography and an extensive drumlinoid facies with various asymmetrical landforms shown by symbols; may contain small areas of till veneer.
PRE-QUATERNARY	
R	Bedrock, undifferentiated: sedimentary, volcanic, plutonic and metamorphic rocks; in some areas a range of weathering; from well preserved ice flow features to surfaces which have undergone glacial erosion and deposition; may include eskers, ice-wedge polygons of B veneer and glaciolacustrine sediments; areas of flattened bedrock and moderate scale ice shown by symbols.

- REFERENCES**
- Wright, D.F., Andrews, E.J., Lemieux, D., Bertram-Carter, G.F. (ed.), 2013. Mineral and energy resource assessment of the proposed Thudine Mine National Park Reserve in the area of the East Arm of Great Slave Lake, Northwest Territories. Geological Survey of Canada, Open File 7196. doi:10.4095/292447
- Additional stratum and selected paleoflow data from:
 Craig, B.G., 1964. Surficial geology of East-Central District of Mackenzie. Geological Survey of Canada, Bulletin 99.
- Kingsland, B.A., Knight, R.D., Pearsall, A.P., Shupe, D.R., and Lesemann, J.E., 2013. Geology of B1 samples, 1912, 1913, 2102, 2103, 2104, Mary Frances Lake, Whitefish Lake - Thudine River area, Northwest Territories. Geological Survey of Canada, Open File 7201. doi:10.4095/292447
- Wright, G.M., 1981. Surficial geology, Southeastern Barren Grounds, District of Kwanlin and District of Mackenzie. Geological Survey of Canada, Map 1217A, scale 1:100,000.

- Abstract**
- The Artillery Lake map area is characterized by three broad zones based on distribution and nature of surficial sediments. In the northwest, hummocky till with a few north-south trending moraine ridges, and smaller areas of B1 veneer and bedrock dominate the landscape. The northeast is defined by extensive regions of eskers, ice-wedge polygons, and B1 blanket. The southern regions consist of a combination of bedrock, B1 veneer and B1 blanket. The south is dominated by glaciolacustrine sediments consisting of eskers, ice-wedge polygons, and scattered bedrock. These features record a westward meltwater paleoflow in the north, northwestern flow in the central regions, and a northwesterly to northward flow in the northern regions of the map area. The eastern ice flow, defined by rare striae and widely scattered bedrock in the north, west-southwestward. The last, dominant ice flow forms a rotating pattern defined by striae. Fluted bedrock, conical hills, and drumlins, ice flow was westward in the south, to northwesterly in the central regions, but locally northwesterly, in the northwestern region.

- Résumé**
- La carte Artillery Lake est caractérisée par trois grandes zones basées sur la distribution et nature des dépôts surficiels. Dans le nord-ouest, on retrouve du till hummocky avec quelques crêtes morainiques, ainsi que de la roche affleurante et des dépôts de B1. Le nord-est est dominé par des eskers, des polygones à glace et des dépôts de B1 blanket. Les régions du sud consistent d'une combinaison de roches affleurantes, de dépôts de B1 blanket et de dépôts de B1 veneer. Les régions du sud sont dominées par des sédiments glaciolacustres consistant de dépôts de B1 veneer, de polygones à glace et de roches affleurantes. Ces caractéristiques enregistrent un écoulement des eaux de fonte vers l'ouest dans le nord, un écoulement vers le nord-ouest dans les régions centrales, et un écoulement vers le nord dans le nord-ouest. Le dernier écoulement glaciaire est défini par des stries et des dépôts de roches affleurantes dispersés dans le nord, vers l'ouest-sud-ouest. Le dernier, dominant, écoulement glaciaire forme un motif rotatif défini par des stries. Les roches affleurantes, les collines coniques, les dômes et les buttes, l'écoulement des eaux de fonte vers l'ouest dans le sud, vers le nord-ouest dans les régions centrales, mais plus variable vers le nord-ouest, vers le nord et vers le nord-ouest dans les régions du nord.

Cover Illustration
 1:150000 scale, colorized bedrock, Crystal Island, Artillery Lake. Photograph by R.D. Knight, 2013/01.

Catalogue No. N1835-1110-2013E-POF
ISBN 978-1-105-21743-7
 doi:10.4095/292447

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CANADIAN GEOSCIENCE MAP 110
SURFICIAL GEOLOGY
ARTILLERY LAKE
 Northwest Territories
 NTS 75-O
 1:125 000

Canadian Geoscience Maps

Canada

CANADIAN GEOSCIENCE MAP 110
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 Northwest Territories
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 1:125 000

Map projection: Universal Transverse Mercator, zone 13, North American Datum 1983.
 Base map of the scale of 1:250 000, from Natural Resources Canada, with modifications.
 Elevations in metres above mean sea level.

Authors: D.E. Kerr, R.D. Knight, D.R. Shupe and D.L. Cummings
 Geology based on aerial photograph interpretation by D.E. Kerr, 2006, 2012, with field work by D.E. Kerr, R.D. Knight, D.R. Shupe, D.L. Cummings and B.A. Kingsland, 2006. D.E. Kerr and R.D. Knight, 2009. Revised geological data can be found in Wright et al., (ed.), 2013.
 Cartography by: Robertson and S. Egan
 Cartography by: M. O'Hall and S. Egan

Map scale: 1:125 000, increasing 24% annually. Readings vary from 17°0' E to the SE corner to 17°0' E in the NW corner of the map.

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 GEOSCAN (http://geoscan.nrc.ca/geoscan/).

Recommended citation
 Kerr, D.E., Knight, R.D., Shupe, D.R., and Cummings, D.L., 2013. Surficial geology, Artillery Lake, Northwest Territories, NTS 75-O (previously, scale 1:125 000). doi:10.4095/292447

PRELIMINARY PUBLICATIONS
 This service has not been scientifically edited.

CANADIAN GEOSCIENCE MAP 110
SURFICIAL GEOLOGY
ARTILLERY LAKE
 Northwest Territories
 NTS 75-O