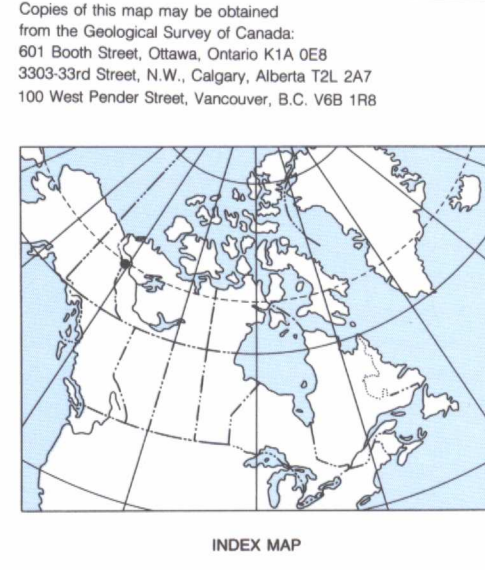
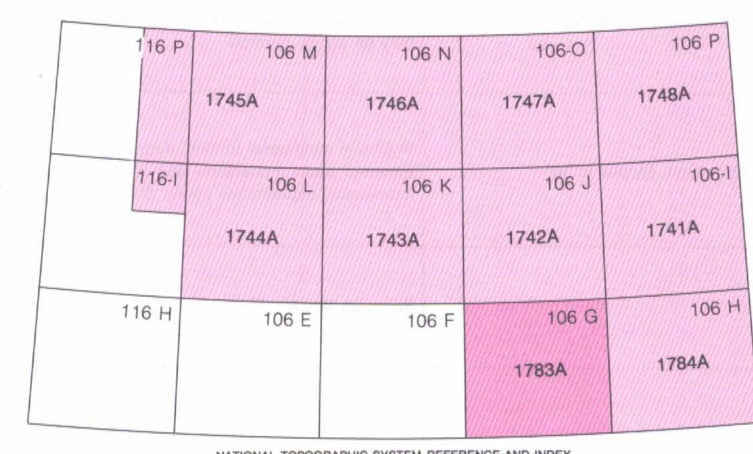


MAP 1783A
SURFICIAL GEOLOGY
UPPER RAMPARTS RIVER
DISTRICT OF MACKENZIE
NORTHWEST TERRITORIES

Scale 1:250 000 - Échelle 1/250 000
Kilometres 5 10 15 20 Kilometres
Universal Transverse Mercator Projection / Projection transverse universelle de Mercator
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* Dominant map unit not present in this map (may occur as subordinate part of a map unit)

- QUATERNARY**
- HOLOCENE**
- ORGANIC DEPOSITS:** peat, occurring as flat to gently sloping plains
- fo, pO, pO-k, pO, fo
 - fo - fenland, consisting of woody sedge peat, 2-3 m thick; pO - peatland, sphagnum peat generally underlain by sedge and woody sedge peat, 2-4 m thick; pO-k - peatland containing thermokarst depressions; pO - peatland and fenland undivided, peatland dominant; fo - fenland and peatland undivided, fenland dominant
- Fenlands constitute 10-50% of map unit
 - Peatlands constitute 10-50% of map unit
 - Peatlands and fenlands undivided make up 10-50% of map unit
- ALLUVIAL DEPOSITS:** sand, silt, and minor gravel in association with modern drainage regime. Streams in mountainous areas commonly have braided channel system and lack overbank deposits
- Ap, Ap-k, At
 - At - coarse sand and gravel with silt and fine sand occurring as channel and overbank floodplain sediments, 3-5 m thick; Ap-k - floodplain sediments containing thermokarst depressions; At - sand and silt, in places underlain by gravel, occurring as terraces, 2-5 m thick
 - Af
 - Af - mainly silt, sand, and minor gravel locally with discontinuous layers of woody peat; occurs as fans and aprons; within Mackenzie Mountains comprises mainly gravel, locally with lenses of mudflow deposits
 - Ax
 - Ax - complexes of Ap, At and Af undivided
- COLLUVIAL AND SHEETWASH DEPOSITS:** diamicton, rubble, and organic-rich silt and sand derived from bedrock and surficial deposits by a variety of colluvial and sheetwash processes
- Cv, Cv, Ca, Cb
 - Cv - veneer deposit that conforms to bedrock topography, <3 m thick; Cb - blanket deposit that conforms to bedrock topography, >3 m thick; Ca - organic-rich silt and sand developed on glacial lacustrine or soft bedrock, 0-2 m thick
 - Cz
 - Cz - Landslide deposit: rubble and/or diamicton occurring as stepped or fan-shaped deposits; includes large rockslides and rotational failures on steep slopes in the Mackenzie Mountains; rotational failures in glacial lacustrine sediments capped by gravel, and retrogressive-thaw flow slides in ice-rich glacial lacustrine sediments and till
 - Ct
 - Ct - Cryoglation terrace deposits: colluvial rubble occurring as a 1-3 m thick mantle on a step or bench in a mountain slope
 - Cx
 - Cx - Slope complex: complex consisting of two or more of Cv, Ca, Cz, and Af undivided
- PLEISTOCENE**
- GLACIAL LACUSTRINE DEPOSITS:** silt and clay with minor sand, in many places overlain by a discontinuous veneer of organic deposits and locally overlain by sand, sediments laid down in a glacial lake
- Lp, Lp-k, Lv, Lb
 - Lp - thick sediments occurring as a flat to gently sloping plain, 2-15 m thick; Lp-k - lacustrine plain containing thermokarst depressions; Lv - veneer of sediments occurring as a flat to gently sloping plain, <3 m thick; Lb - blanket of lacustrine sediments occurring as gently to moderately sloping plain, 2-5 m thick
 - *Lm
 - *Lm - Thick sediments occurring as broad hummocks or low hills
 - Lx, Lx-k
 - Lx - lacustrine complex or transitional between glaciofluvial and lacustrine deposits with upper 0-3 m consisting of sand; 3-20 m thick; Lx-k - lacustrine complex containing thermokarst depressions, 3-20 m thick
- GLACIOFLUVIAL DEPOSITS:** outwash deposits, sand, and gravel, locally with a veneer of eolian silt or sand; deposited as proglacial or ice contact sediments by glacial meltwater
- Gp, Gt, Gv, Gd
 - Gp - flat to gently sloping plain, 2-30 m thick; Gt - deposits underlying a terrace, 2-30 m thick; Gv - deposit underlying a terrace, <3 m thick; Gd - delta deposits, up to 30 m thick
 - Gx
 - Gx - Glaciofluvial complex: areas of Gp, hummocks and ridges undivided, relief <5 m
- GLACIAL DEPOSITS:** nonsorted silt, sand, and clay with some coarser clasts (till); till of mountainous areas has abundant pebbles, cobbles, and boulders in silty sand matrix; deposited by glacier ice and occurring in a variety of different landforms. Montane deposits are designated as follows: M^u - penultimate glaciation; M^p - last glaciation; M^u - uncorrelated; and M^h - hybrid montane and Laurentide
- Mp, Mpv
 - Mp - moraine plain: till occurring as: Mp - flat to gently sloping plain, 3-20 m thick; Mpv - variable area of thick and thin till, 1-3 m thick
 - Mv, Mb
 - Mv - veneer of till with slopes conforming to underlying bedrock topography, 0-2 m thick; Mb - gently to moderately sloping plain controlled by bedrock, 3-6 m thick
 - Md
 - Md - Drumlinoid and hilly plain: till occurring as: Md - plain with individual drumlins or extensively fluted, <30 m thick
 - Mh, Mr, Mm
 - Mh, Mr, Mm - Hummocky and ridged moraine: generally coarse till (0-50% pebble size) in plains, typically bouldery till in mountains; Mh - individual and coalescent hummocks; locally contains hummocks of gravel, relief 15-50 m, <50 m thick; Mr - individual to compound, either straight or sinuous ridges 15 to 60 m high, <60 m thick; Mm - broad hummocks or low hills with 10-20 m relief, <20 m thick
 - Mx
 - Mx - Glacial deposit complex: largely hummocky and ridged and hilly till undivided
- PRE-QUATERNARY**
- R
 - R - Primarily prominent ridges, escarpments, and hills

LEGEND

- Geological boundary (defined, approximate)
- All-time limit of Laurentide Ice Sheet (defined, approximate, assumed)
- Limit of Tutsieta Lake Phase (defined, approximate)
- Limit of Gayna River Glaciation (defined, approximate)
- Cirque (Mountain River Glaciation, Gayna River Glaciation)
- Erratic of shield origin
- Moraine ridge
- Moraine ridge complex
- Drumlin or drumlinoid ridge (sense of ice flow not determined)
- Esker
- Karne
- Glacial meltwater channel (major, minor)
- Rock glacier
- Eolian veneer mainly of fine sand, dunes
- Slope failure (in most places retrogressive-thaw flow slides)
- Pingo

Final interpretation and compilation by A. Duk-Rodkin; geology by A. Duk-Rodkin (1986-1989) and O.L. Hughes (1969-1973; 1986-1987)

Geological cartography by E. Everett, Geological Survey of Canada

Colour separations were produced using digital methods

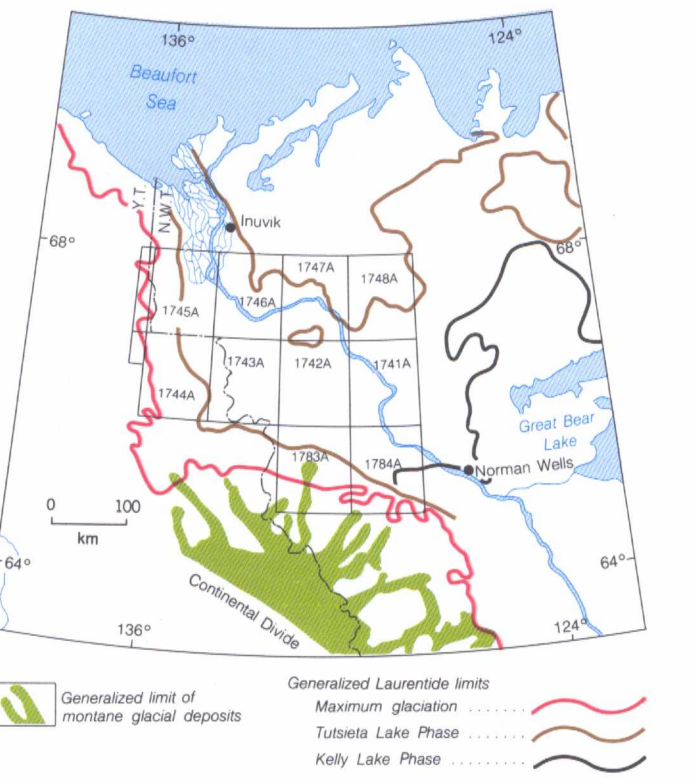
Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

Base map at the same scale published by the Surveys and Mapping Branch in 1959

Copies of the topographical edition of this map may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, Ontario, K1A 0E9

Mean magnetic declination 1992, 33°18' E, decreasing 13.5' annually. Readings vary from 32°36' E in the SW corner to 34°02' E in the NE corner of the map

Elevations in feet above mean sea level



ACKNOWLEDGMENTS

Additional information on surficial geology and granular materials obtained from: E.B.A. Engineering Consultants Ltd. and F.F. Slaney & Company Ltd., 1974. Granular materials inventory; Ripley, Klotz & Leonard Alberta Ltd. and J.C. Sproule and Associates Ltd., 1970. Mackenzie Valley Pipeline, Vol. III Photo mosaics and pipeline route; Gulf, Shell and Texaco oil companies provided borehole data from seismic shot-holes

This map supersedes:
Hughes, O.L. 1970. Surficial geology, Upper Ramparts River, District of Mackenzie, Geological Survey of Canada, Open File 26, scale 1:125 000, 106 G

REFERENCES

Aitken, J.D., Cook, D.G., and Yorath, C.J. 1982. Upper Ramparts River (106 G) and Sans Sault Rapids (106 H) map areas, District of Mackenzie, Geological Survey of Canada, Memoir 388, 46 p., Map 1452A, 1453A
Hughes, O.L. 1970. Surficial geology, Upper Ramparts River, District of Mackenzie, Geological Survey of Canada, Open File 26, scale 1:125 000, 106 G

PREFIXES, COMBINED MAP UNITS, AND MODIFYING PROCESSES
Lower case prefixes are used to distinguish two types of organic deposits - fenland (fo) and peatland (pO)

Combined map units are used where, for reasons of scale, two intermingled units cannot be delineated individually. There are two different forms of combined unit designators: 1) Where the two units are from the same genetic group, the second upper case letter representing the genetic category of the subordinate unit is dropped (e.g., alluvial plain and terrace undifferentiated becomes Ap). In some cases, where the combined unit has characteristics different from the two individual units, the combined unit is described in the legend (e.g., Mpv - thick and thin till). 2) Where the map unit designator is composed of different genetic categories, the dominant unit (>50%) is followed by a dot and then the second unit which makes up 20-50% of the map area (e.g., Mp.Cx)

The organic units are shown in two different ways: 1) with colour where the organic deposits are dominant (e.g., fo, Mp, fo.Mp) and 2) with a pattern where the organic deposits make up the subordinate unit (e.g., Mp.fo, Mp.Cx). Two different patterns are used - one for fenland and another for peatland, which are combined if the two types of organic deposits appear together

Three special designators are used to indicate the former or current activity of modifying processes: thermokarst activity (k), gulling (g), and channeling (c). These are added to the end of the map unit designator and separated from it by a dash (e.g., Lp-k)

Superscripts u, o, and v are used to indicate the age of montane glacial deposits: u, Mountain River (Illinoian); o, Gayna River (Late Wisconsinan); v, hybrid montane and Laurentide; u, uncertain (possible older)

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