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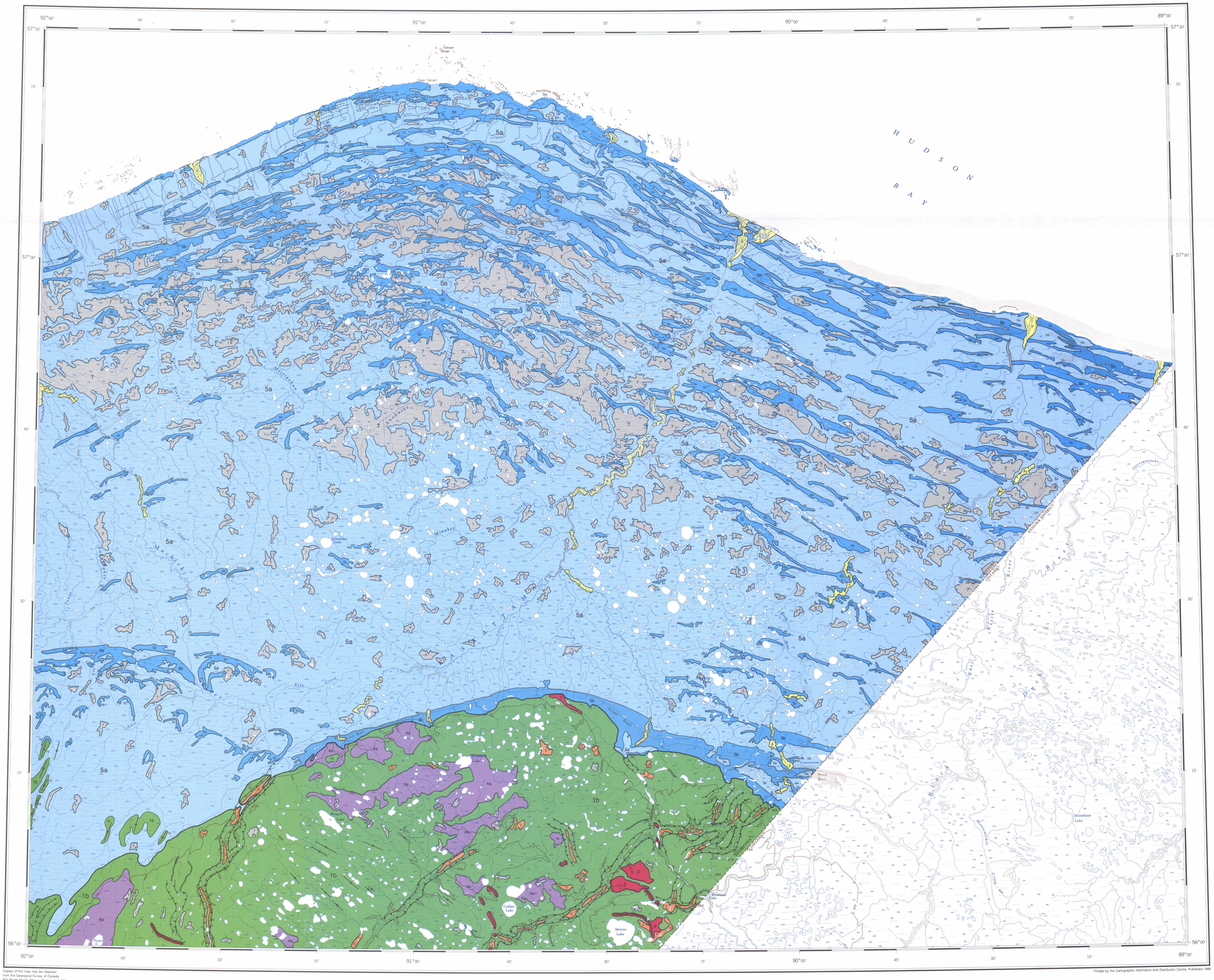
Geological Survey of Canada
Commission géologique du Canada



LEGEND

Coloured legend blocks indicate map units that appear on this map

SURFICIAL DEPOSITS
QUATERNARY

HOLOCENE

NONGLACIAL ENVIRONMENT

8 — *LACUSTRINE DEPOSITS: sand, muddy sand and pebbly sand; up to 2 m thick; occurs as sloping or gently undulating plain; nearshore sediments associated with modern lakes*

7 — *ORGANIC DEPOSITS: lichen-moss, sedge, and woody peat; 1.5 to 3 m thick; may occur at or up to 3 m above the water table; includes both bog peat and fen peat; peat mantles most geological features*

6 — *ALLUVIAL DEPOSITS: silt, sand and rounded gravel, commonly terraced; thicknesses range from a thin veneer up to 30 m; deposited by streams within active drainage systems since the retreat of the sea, proglacial lakes, or glacial ice as floodplains, spits, point bars, and deltas*

NONGLACIAL AND GLACIAL ENVIRONMENT

MARINE/GLACIOMARINE DEPOSITS: well sorted, stratified sand to stony silt deposited in Tyrrell Sea, and glacial deposits modified by marine processes during offlap; commonly overlain by peat

5b — *Nearshore sediments: well sorted silt, sand, and gravel; up to 3 m thick; occurs as a series of ridges in the form of beaches, bars, spits, and ice-pushed ridges, or as a flat plain*

5a — *Offshore sediments: poorly sorted clayey silt, stony silt, and sand with pockets of nearshore sand and gravel and windblown sand; probably a till plain levelled by filling of depressions and planation by wave action; thicknesses of up to 2 m near marine limit and increasing towards Hudson Bay to a maximum of 7 m; may contain marine fossils; commonly overlain by organic materials*

LACUSTRINE/GLACIOLACUSTRINE DEPOSITS: massive to bedded silt-clay with granules, overlain by a veneer of sand; Deposited in glacial Lake Agassiz; where deposits are thin, they mirror the underlying glacial and bedrock structures, and where thick, they form a flat plain

4d — *Littoral sediments: blanket of sand grading basinward into undifferentiated silt and clay*

4c — *Nearshore sediment veneer: well sorted sand and gravel; occurs as a ridge or series of ridges with 1 to 4 m relief on wave washed glaciofluvial deposits predating glacial Lake Agassiz*

4b — *Nearshore sediments: well sorted sand and gravel; occurs as a ridge or series of ridges with 1 to 4 m relief; includes beaches, bars, spits, and ice-pushed ridges*

4a — *Offshore sediments: well sorted clay, silt, and sand; thickness ranges from a thin veneer up to 20 m; surface characterized by iceberg scours and extensive areas of peat*

LATE PLEISTOCENE

GLACIAL ENVIRONMENT

GLACIOFLUVIAL DEPOSITS: water sorted, stratified sand and gravelly sand deposited in, around, or near a glacier, largely as a result of meltwater flow

3 — *Outwash sediments: well rounded, cross-stratified sands and gravels, 3 to 20 m thick, characterized by braided channels and kettle depressions; occurs along the flanks of eskers or in the bottom of subglacial and proglacial meltwater channels; surfaces are commonly terraced and hummocky*

2 — *Ice contact stratified drift: well sorted, poorly stratified sand and gravel kame deposits, 10 to 30 m high, stratified sand and minor gravel esker deposits, 5 to 20 m high, and recessional, end, or interlobate moraines; kames occur as irregular mounds flanking eskers; eskers occur as elongate ridges generally parallel to the direction of ice movement*

GLACIAL DEPOSITS (TILL): poorly sorted debris deposited at the front of or beneath glaciers or under ice shelves. The tills in the western part of the province are sandy to silty sand and have a high percentage of clasts derived from granitic terrain; the tills in the eastern part are generally silty and highly calcareous

1b — *Till blanket: silty to sandy, 1 to 10 m thick; masks most bedrock features; surface features include drumlins, fluting, ribbed moraine, and hummocks*

1a — *Till veneer: sandy, usually less than 1 m thick, interspersed with areas of thicker till, bedrock, marine, or lacustrine sediments; surface reflects the underlying bedrock structure*

BEDROCK
PRE-QUATERNARY

R_2 — *Paleozoic rock: sedimentary carbonate rocks; dolomitic limestone and dolomite*

R_1 — *Precambrian rock: largely massive granitic and gneissic rock with isolated bands of volcanic rock*

Geological boundary
Drumlin
Fluting
Esker (direction of flow known)
Meltwater channel (large, small)
Beach ridge
Tyrrell Sea limit

Geology by M.D. Clarke, 1988, based mainly on airphoto interpretation and satellite imagery

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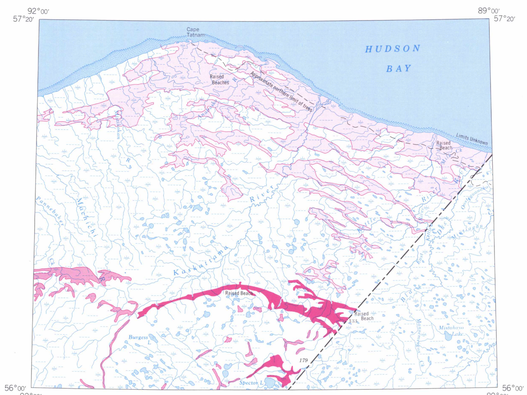
Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

Base map at 1:250 000 from parts of maps 54A & 44D, 54B, 54G & H, published by the Surveys and Mapping Branch in 1965, 1964, 1963. Base map at 1:1 000 000 from parts of maps NO-15, NO-16 published by the Surveys and Mapping Branch in 1977, 1976

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

Mean magnetic declination 1989, 03°45' West, increasing 8.5' annually. Readings vary from 0°56'W in the SW corner to 06°50'W in the NE corner of the map

Elevations in feet above mean sea level



POTENTIAL AGGREGATE RESOURCES

SAND AND GRAVEL DEPOSITS

High potential for economic feasibility; large volume ice contact and esker deposits. Ideally, gravel content is greater than 35%, oversize gravel (>10 cm diameter) content is less than 20%, and lithological deficiencies (i.e., chert, shale, mica, etc.) are minimal

Medium potential for economic feasibility; small volume ice contact and esker deposits and large volume nearshore lacustrine and nearshore marine deposits. Deposit lacks either in volume or quality of aggregate to be considered of high potential

Low potential for economic feasibility; small volume nearshore lacustrine or nearshore marine deposits and small volume ice contact and esker deposits

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MAP 1696A

SURFICIAL GEOLOGY

KASKATTAMA RIVER

MANITOBA-ONTARIO

Scale 1:250 000 - Échelle 1/250 000

Kilometres 5 0 5 10 15 20 Kilometres

Universal Transverse Mercator Projection
Projection transverse universelle de Mercator

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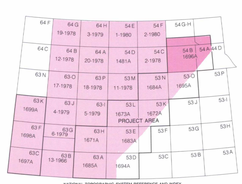
INDEX MAP



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

Contribution to Canada-Manitoba Mineral Development Agreement 1984-89, a subsidiary agreement under the Economic and Regional Development Agreement. Project funded by the Geological Survey of Canada

Manitoba Energy and Mines

Canada

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