#### SURFICIAL DEPOSITS QUATERNARY

## NONGLACIAL ENVIRONMENT

SURFICIAL GEOLOGY

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.

FLUVIAL DEPOSITS: material deposited by streams within active drainage systems since the retreat of the sea, proglacial lakes, or glacial ice.

★ 6 Alluvial sediments: silt, sand, and rounded gravel, commonly terraced; thicknesses range from a thin veneer up to 30 m; deposited by running water as floodplains, spits, point bars, and islands; this unit contains minor deltaic sediments.

### NONGLACIAL AND 'GLACIAL ENVIRONMENT

deposited in Tyrrell Sea, and glacial deposits modified by marine processes during offlap; commonly overlain by peat.

5 MARINE/GLACIOMARINE DEPOSITS: well sorted, stratified sand to stony silt

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.

4b Nearshore sediments: well sorted sand and gravel; occurs as a ridge or series of ridges with 1 to 4 m of 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.

### 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 m 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 of the western side of the province are sandy to silty sand and have a high percentage of clasts derived from granitic terrain; the tills of the eastern side are generally silty and highly calcareous.

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

R2 Paleozoic rock: sedimentary carbonate rocks; dolomitic limestone and dolomite.

★ R<sub>1</sub> Precambrian rock: largely massive granitic and gneissic rock with isolated bands of volcanic rock.

# small bedrock outcrop

 $\mathcal{I}$  striae (ice flow direction known, unknown)

crossed striae (1=oldest)

drumlin

fluting

crag and tail (direction of ice flow known)

roche moutonnée

esker (direction of flow known, unknown)

beach ridge

Geology by M.D. Clarke, 1987

★ Unit may not appear on this map.

SOUTH

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.

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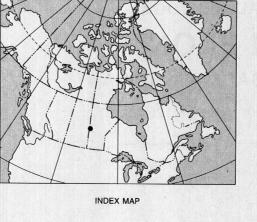
# MANITODA/SASKATCHEWANI

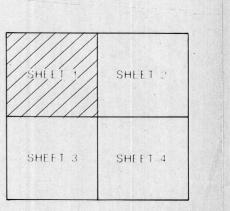
MANITOBA/SASKATCHEWAN

Scale 1:125 000 - Échelle 1/125 000

Universal Transverse Mercator Projection
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1900

GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA
OTTAWA

1988

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