



GEOLOGICAL SURVEY OF CANADA / COMMISSION GÉOLOGIQUE DU CANADA

SURFICIAL GEOLOGY

QUATERNARY

NONGLACIAL ENVIRONMENT

7 **ORGANIC DEPOSITS:** silt, sand, siltstone, and peat; includes both low and high peat; occupies most topographic lows near the shoreline.

8 **ALLUVIAL DEPOSITS:** silt, sand and rounded gravel commonly sorted; thickness variable; ranging from a few centimetres to several metres; deposited by streams within active drainage systems.

NONGLACIAL AND GLACIAL ENVIRONMENT

MARGINEGLACIAL/DEPRESSURE DEPOSITS: well sorted sand, stratified sand and silt, deposited in 3000 m, and glacial deposits modified by marine processes during retreat; commonly restricted to point bars.

25a **Meander Deposits:** well sorted silt, sand and gravel up to 3 m thick; occurs in a series of ridges in the form of benches, bars, oxbow, and ice-pushed ridges, or as a plain.

25b **Oxbow Deposits:** poorly sorted clayey silt, silty silt, and sand with pockets of medium sand and gravel; includes siltstone; probably a fill plain modified by filling of depressions and planation by wave action; thicknesses of up to 2 m near main lake and increased toward main lake; very steep slopes toward main lake and commonly overlain by organic materials.

GLACIAL ENVIRONMENT

GLACIAL ACCRETION DEPOSITS: massive to laminated sand, silt and clay, commonly overlain by a veneer of sand; deposited in glacial Lake Agassiz; thicknesses variable; deposited from 1000 m; contains pebbles, gravel and boulders; topographic; back deposits mask underlying topography and form planar surface commonly marked with pits.

43 **Nonpoint and lateral accretion:** sandstone sediments commonly well sorted, sand and siltstone; occurring in a series of ridges, 1 to 6 metres in height; includes benches, bars and dunes; commonly well developed on wave-washed beach-like deposits; sandstone commonly overlain by a veneer of sand, peat, silt and clay; contains pebbles, gravel and boulders; back deposits mask underlying topography and form planar surface commonly marked with pits.

44 **Colluvial and debris flow:** all and clay fractions variable; ranging from fine to coarse; may be matrix supported; back accumulations from planar surfaces; commonly characterized by pits.

GLACIAL ENVIRONMENT

GLACIOLACIAL DEPOSITS: water sorted, stratified sand and gravelly sand and cobbles; deposited on, around, or near a glacier as a result of meltwater flow.

45 **Outwash deposits:** well rounded, cross-sorted sands and gravels, 3 m to 20 m thick; characterized by massive channel and fan deposits; may have valley cross-section; some surfaces are commonly marked and hummocky.

2 **Ice contact gravelly drift:** composed of unconsolidated sand, gravel, cobbles and clasts; deposited by meltwater flowing in contact with, or proximal to, glacier ice; thicknesses variable; ranging from 5 to 30 metres; commonly forms ridges and mounds; includes siltstone, sandstone, shale, and claystone.

GLACIAL DEPOSITS: silt and sandstone, comprising unsorted to poorly sorted debris deposited at the base of or beneath a glacier, or under ice sheets; common deposits at the western part of the study area (N75, S75, E60 and E60) include a clayey sandstone, commonly well developed on wave-washed beach-like deposits; former sand (N75, S75 and E60); glacial deposits are silt and sandstone; and a clayey sandstone derived from Franciscan carbonate lithologies (Hobson Bay and Agassiz periods).

19 **Siltstone:** forms a continuous cover, to several metres in thickness, marking the margin of the Agassiz; siltstone commonly sand, and may be covered by a veneer of Lake Agassiz drift.

14 **Siltstone:** forms a discontinuous cover, ranging from 0.5 to 3 metres in thickness; siltstone deposits may fill residual bedrock depressions; surface morphology reflects underlying bedrock structure.

BEDROCK

PRE-QUATERNARY

81 **PALAEZOIC ROCK:** sedimentary carbonate rocks; includes limestone and shales.

82 **PRECAMBRIAN ROCK:** east-west trending belt of metasedimentary and igneous rocks and associated faults or major tectonic lineaments.

SYMBOLS

- X small bedrock outcrop
- circle (with dot) wetland, unknown (or defined)
- circle with (I) = alluvial
- filling
- * long and tall (direction of flow known)
- channel filling
- * land-hole
- meandering, cut or intertidal marine
- other (direction of flow known, unknown)
- meandering channel (large, small)
- beach ridge
- hummocked depression
- dunes
- ice-contact dunes
- fluvial area

* Use of symbols does not appear on this map sheet.

Geology by C.A. Kaszycki, 1985.
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Reference:
Kaszycki, C.A. and Wry Nos, V.J., 1985. Surficial Geology of south-central Manitoba. Geological Survey of Canada, Memoir 415. Ottawa, 1985. 165 p. (Also available as a separate report, Geological Survey of Canada, 1985. 165 p. (Also available as a separate report, Geological Survey of Canada, 1985. 165 p.)

64 F OF 1931	64 G OF 2000	64 H OF 2000
64 C OF 1280	64 B OF 2115	64 A OF 2115
63 N OF 2001	63 O OF 2001	63 P OF 2001

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SURFICIAL GEOLOGY
BIG SAND LAKE
MANITOBA

Scale 1:125 000 - Échelle 1/125 000

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