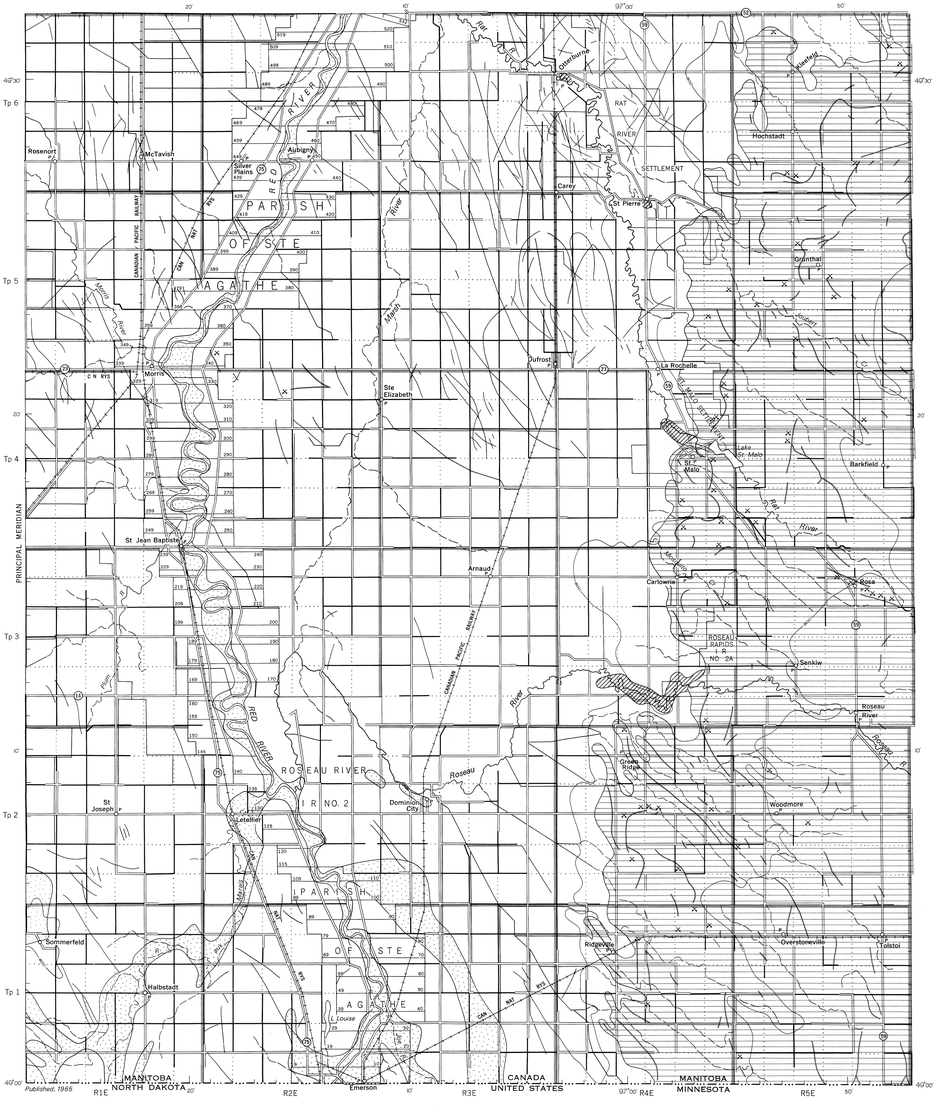
GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF MINES AND TECHNICAL SURVEYS

Figure 1

Surficial deposits and groundwater resources, Emerson area, Manitoba

Scale 1:126,720
1 inch to 2 miles

Miles 2 0 2 4 6 Miles
Kilometres 3 0 3 6 9 Kilometres



Surficial deposits

SURFICIAL DEPOSITS

CENOZOIC — PLEISTOCENE AND RECENT

- Alluvium Deposits: silty
  Soil: fine sandy silt
  Subsoil: clayey silt
- Alluvium Deposits:
  Soil: fine sand
  Subsoil: sandy clay
- Lake Beaches (shore deposits of glacial Lake Agassiz) and Glacial Outwash (eskers and kames)
  Soil: gravelly sand and coarse sand, sorted; in most places deficient in organic matter; surface in the form of low ridges
- Glacial Ice-crack Features
  Soil: silty
  Subsoil: silty clay; surface in the form of long swells
- Lake Bed and Flood-plain Deposits: clayey
  Soil: black clay
  Subsoil: clay with some silt lenses; surface almost level
- Glacial Till (modified)
  Soil: gravelly and sandy with some silt and clay, very stony in places; surface undulating

Gravel pit

Geology by W.A. Johnston, 1916–1918 and 1926–1929, modified by J.E. Charron, 1961

Geological cartography by the Geological Survey of Canada, 1965

- Road, all weather — Route 75
- Other roads
- Railway
- International boundary
- Township boundary
- Section line
- Town or village with Post Office; without Post Office
- Main drainage ditch
- Intermittent stream
- Perennial stream
- Contour (interval 100 feet) — 800

GROUNDWATER RESOURCES

Unconfined Aquifers

Aquifer in alluvium sand and silt: area of potable water; dug wells 6 to 30 feet deep, yield 50 gpd; water excessively hard (1,500 ppm), high nitrate content, supply limited, depending directly on precipitation, which affects the water table

Aquifer in glacial outwash and till: area of potable water; dug wells 6 to 45 feet deep and springs, yield 100 to 3,000 gpd; water very hard (350 ppm), low iron content (less than 1.0 ppm); favours water softeners; water table fairly constant, averaging 8 feet below ground level; supply generally sufficient for farm usage; sand-points are desirable for this type of aquifer

Note: in both aquifers the zones shown as areas of potable water approximate the total area of the aquifer

Confined Aquifers

Aquifer in till: area of potable water; drilled and bored wells 40 to 150 feet deep, water level can be subartesian or flowing artesian, yield 500 gpd to 5 gpm, water hardness 131 ppm; high iron content (over 1.0 ppm); supply is constant and sufficient for domestic and stock needs on a farm; use of screens is advisable for better yield and all-round efficiency of wells

Aquifer in bedrock: area of potable water; drilled wells in limestone 87 to 450 feet deep, generally flowing artesian (up to 16 feet above ground level), natural flow of up to 16 gpm, yields of 100,000 gpd are possible by pumping, water hardness 76 ppm, high iron content (over 1.0 ppm) and high fluoride content (over 1.5 ppm) not uncommon, abnormally low sulphate content; usage of water for irrigation is undesirable in some places by high per cent of sodium; supply is sufficient for farm, municipal, and industrial uses; this is the best aquifer in the entire area

Note: in both aquifers the zones shown as areas of potable water are only part of the total area of the aquifer. Outside of these potable zones the water in these aquifers is generally too salty for human consumption

- Dug well (active, abandoned)
- Shallow flowing artesian well (25 feet or less)
- Drilled subartesian well (active, abandoned)
- Deep flowing artesian well (active, abandoned)
- Spring
- Dry well
- Total depth of well in feet — 140
- Water analysis (see Table I) — A

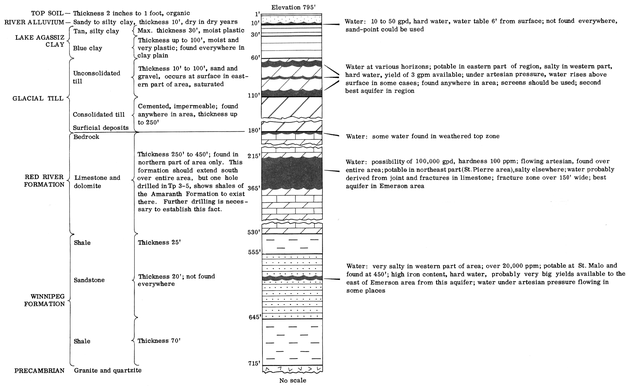
Groundwater data by J.E. Charron, 1961

Base-map cartography by the Geological Survey of Canada, 1965, from map published by the Experimental Farms Service, Dept. of Agriculture, 1954, with minor revisions by the Geological Survey of Canada, 1965

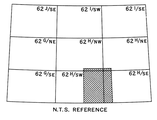
To accompany Paper 64-7 by J.E. Charron

Approximate magnetic declination 9°35' East, decreasing 1.2' annually

GENERALIZED COLUMNAR SECTION OF VARIOUS AQUIFERS IN EMERSON AREA

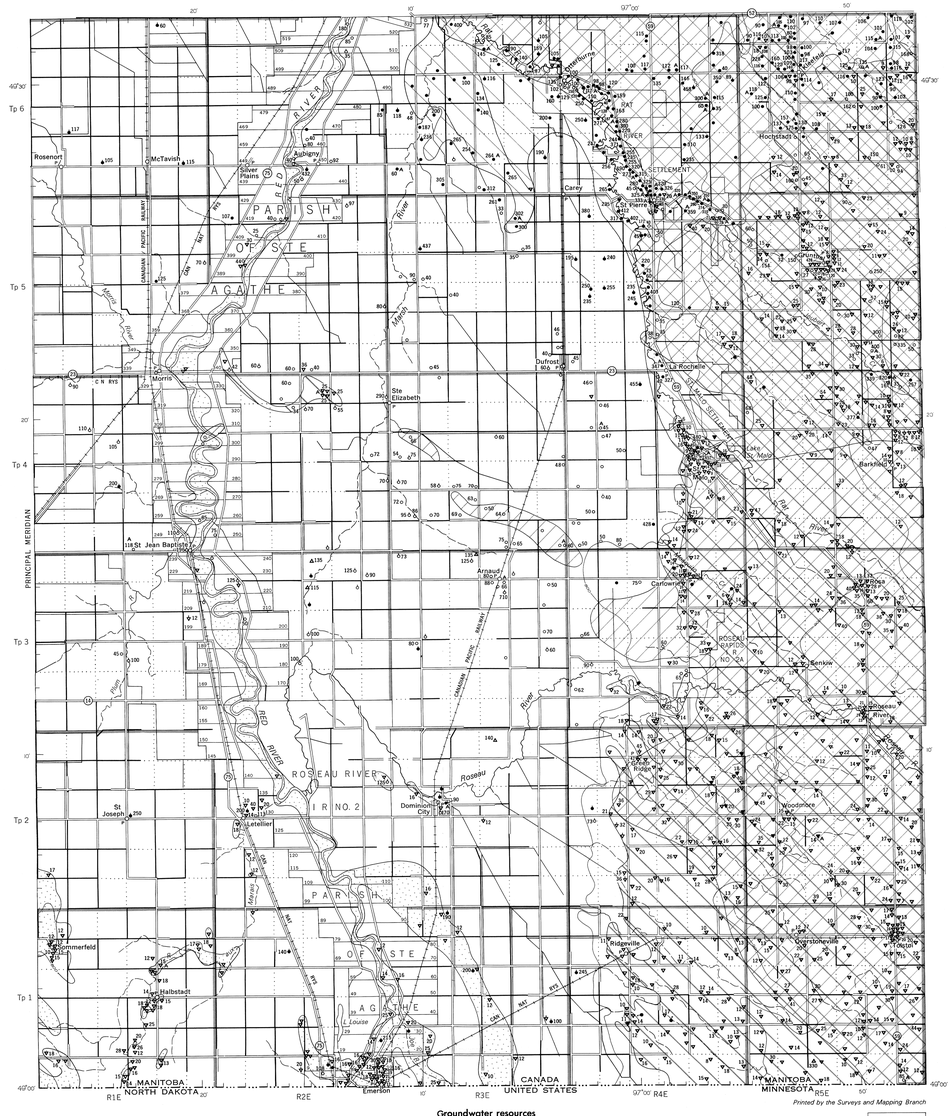


INDEX MAP



N.T.S. REFERENCE

Published, 1965

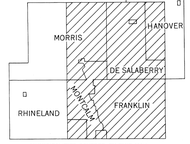


Groundwater resources

Printed by the Surveys and Mapping Branch

DIAGRAM OF TOWNSHIP SHOWING NUMBERING OF SECTIONS

31	32	33	34	35	36
30	29	28	27	26	25
19	20	21	22	23	24
18	17	16	15	14	13
7	8	9	10	11	12
6	5	4	3	2	1



MUNICIPALITIES COVERED BY THIS MAP