

Geological Survey of Canada  
Resource Geophysics and Geochemistry Division  
and  
Manitoba Department of Energy and Mines  
Mineral Resources Division

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Sample collection by Marshall Macklin Monaghan Ltd., Toronto  
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Water chemical analyses by Barringer Magenta Laboratories (Alberta) Ltd., Calgary

Copies of map material and listings of field observations and analytical data, from which the material was prepared, may be available at users expense by application to:

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**PROGLACIAL AND GLACIAL ENVIRONMENT**

GLACIOLACUSTRINE DEPOSITS: beach and nearshore deposits: sand and gravel 1-4 m thick, forming distinct ridges

GLACIOLACUSTRINE DEPOSITS: deep basin deposits: silt, clay and sand, 1-30 m thick

GLACIOFLUVIAL DEPOSITS: gravel, sand and silt, 1-100 m thick

**GLACIAL ENVIRONMENT**

GLACIAL DEPOSITS: till: 1-5 m thick, derived primarily from Precambrian bedrock

**NONGLACIAL ENVIRONMENT**

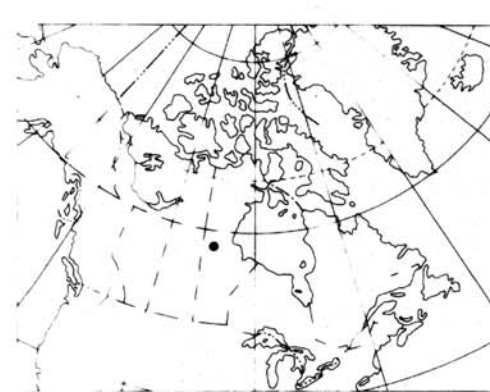
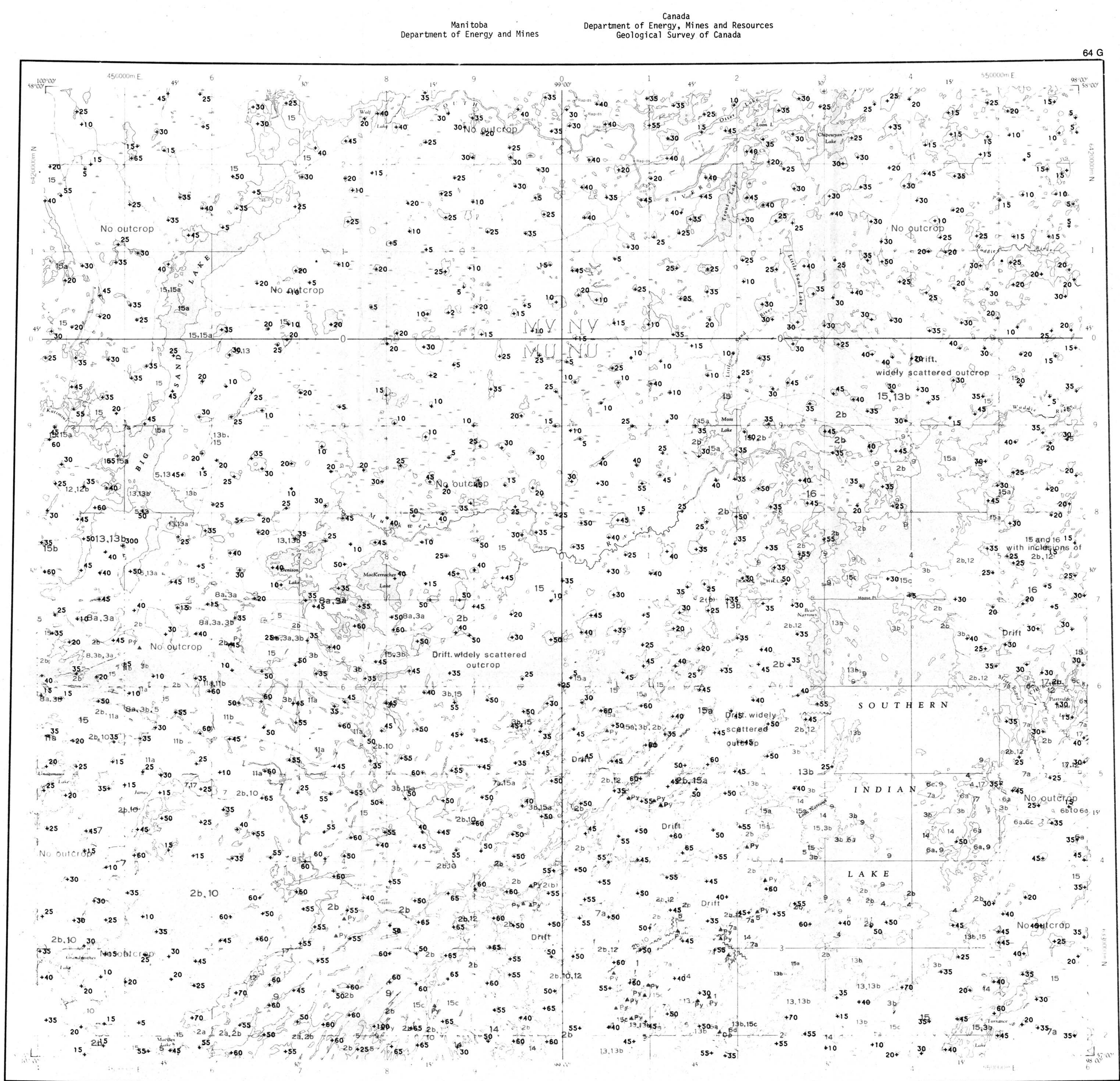
BEDROCK

ORGANIC DEPOSITS: marsh, fen, swamp and bog deposits up to 6 m thick, characterized by seasonal flooding

Striations .....

Flutings, drumlins, and drumlinoid ridges, oriented parallel to ice flow direction .....

Esker (flow direction known or inferred) .....



Elevation in feet above mean sea level

Mean magnetic declination 1985, 9°06' East, decreasing 23.1' annually. Readings vary from 7°35' in the NE corner to 10°28' in the SW corner of the map area

Kilometres 5 10 15 20

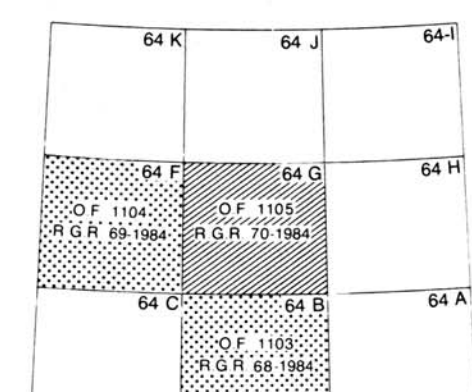
**VANADIUM (ppm)**

GSC OPEN FILE 1105  
REGIONAL GEOCHEMICAL RECONNAISSANCE MAP 70-1984  
CANADA - MANITOBA  
MINERAL DEVELOPMENT AGREEMENT (1984-89)  
LAKE SEDIMENT AND WATER GEOCHEMICAL SURVEY  
NORTH-WEST MANITOBA, 1984

Scale 1:250 000

Universal Transverse Mercator Projection  
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Base map at the same scale published by the Surveys and Mapping Branch in 1963



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**LEGEND**

Note: This legend is common for Regional Geochemical Reconnaissance Map 70-1984, Open File 1105

- A\* Metadiorite, hornblende of possible Archean age
- 1 Amphibolite, volcanic derived with locally preserved pillows
- 2a Biotite-feldspar-quartz-paragneiss + garnet + granite ± muscovite
- 2b Biotite metatextite + garnet + granite (25-75% white granitic lit)
- 2c Biotite metatextite + garnet + cordierite
- 3a Light grey biotite (5-10%) quartz-feldspar-gneiss + magnetite + garnet with discontinuous diorite gneiss lenses
- 3b Light grey to dark grey biotite (5-15%) quartz-feldspar-gneiss interlayered with thin layers of amphibolite and/or hornblende-biotite bearing layers
- 4 Calc-silicate rock
- 5 Amphibolite, metagabbro, locally agmatitic
- 6a Metaconglomerate
- 6b Thin interlayered amphibolite and hornblende biotite-bearing layers
- 6c Arkosic gneiss
- 6d Metavolcanic rocks
- 6e Metagreywacke
- 7 Gneissic diorite and leucodiorite
- 7a Biotite ± hornblende granodiorite gneiss with white granitic lit
- 7b Gabbro
- 8 Grey, medium to coarse grained biotite (5%) + magnetite-tonalite to quartz monzonite
- 8a Hybrid gneiss of grey biotite-quartz monzonite and gneissic diorite
- 9 Foliated quartz diorite + magnetite
- 10 Biotite (15-20%) - tonalite ± garnet
- 11a Megacrystic biotite-granodiorite
- 11b Megacrystic biotite-hornblende ± pyroxene-granodiorite
- 11c Coarse grained leucocratic granodiorite
- 12 White leucocratic medium grained to pegmatitic monzogranite ± garnet
- 13 Coarse grained to megacrystic-pyroxene-hornblende-monzonite to monzogranite with olive-brown feldspar
- 13a Anorthositic gabbro
- 13b Hornblende-biotite-monzonite to quartz monzonite with variegated olive-brown and pink feldspar
- 14 Megacrystic-biotite-magnetite quartz monzonite
- 15 Biotite ± hornblende coarse grained to megacrystic pink granite to quartz monzonite
- 15a Biotite-hornblende granite gneiss
- 15b Leucocratic megacrystic pink granite
- 15c Fine grained quartz monzonite
- 16 Magnetite-biotite-hornblende quartz monzonite
- 17 Granite pegmatite
- 18 Diabase

Pyrite, chalcopryite, galena, sphalerite, Iron Formation ..... ▲Py ▲Cd ▲Pb ▲Sd ▲Ic  
Geological boundary (approximate, assumed, gradational) .....  
Drift covered .....

\* A four character mnemonic name recorded rock type as part of the 1984 field observations

Provisional Compilation map by H.V. Zwanzig,  
Manitoba Department of Energy and Mines

This map forms one of a series of maps released by the Geological Survey of Canada, Open File 1103 to 1105. Each Open File consists of maps of various geochemical variables: 16 for lake sediment, 3 for lake water and 1 sample site location

**VANADIUM (ppm)**  
GSC OPEN FILE 1105  
NORTH-WEST MANITOBA, 1984

**VANADIUM (ppm)**  
GSC OPEN FILE 1105  
NORTH-WEST MANITOBA, 1984