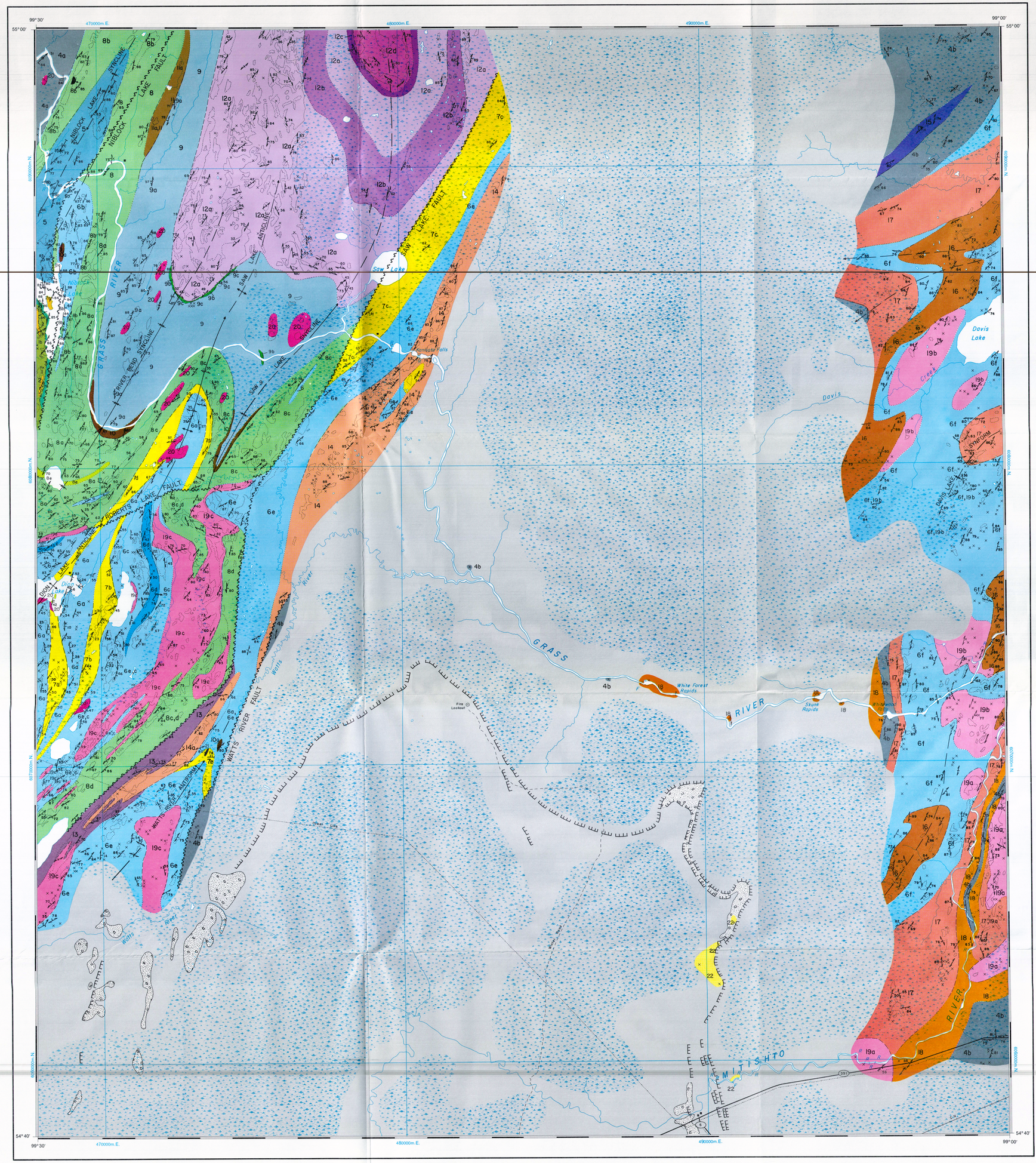
Manitoba
Energy and Mines



LEGEND[1]

QUATERNARY

Sand and gravel of Minago beach of Glacial Lake Agassiz

Varved lacustrine clays of Glacial Lake Agassiz

ORDOVICIAN

22 — Red River Formation: Mottled dolomitic limestone

EARLY PROTEROZOIC

Intrusive Rocks[2]

LATE- TO POST-KINEMATIC INTRUSIVE ROCKS

21 — Garnet hornblendite

20 — Felsic pegmatite, pegmatitic granite

19 — Magnetiferous biotite leucogranite
a) massive magnetiferous biotite leucogranite and pegmatitic leucogranite
b) weakly foliated biotite leucogranite, commonly magnetiferous, locally pegmatitic
c) gneissic magnetiferous hornblende leucogranite, rarely pegmatitic
d) quartz-phyric magnetiferous leucogranite

SYN-KINEMATIC INTRUSIVE ROCKS

18 — Gneissic leucomonzogranite with xenoblasts of garnet and cordierite

17 — Gneissic magnetiferous microcline-augen biotite granite and biotite-hornblende granite
a) massive to slightly foliated microcline-porphyritic biotite granodiorite

16 — Gneissic magnetiferous microcline-augen hornblende-biotite-monzodiorite, monzonite, quartz monzodiorite and quartz monzonite

15 — Enderbite

14 — Kanisota Falls granodiorite/granite: gneissic biotite granodiorite and granite, commonly garnetiferous; minor gneissic hornblende biotite tonalite, commonly garnetiferous
a) gneissic biotite granite

13 — Garnetiferous hornblende melatonalite and melagranodiorite

Saw Lake pluton

12a — a) gneissic biotite granite, locally garnetiferous; minor gneissic hornblende-biotite tonalite

12b — b) gneissic hornblende-biotite tonalite, commonly garnetiferous

12c — c) strongly foliated garnet porphyroblastic biotite-hornblende melagranodiorite

12d — d) gneissic biotite granodiorite and granite, local microcline phenocrysts, commonly garnetiferous

EARLY KINEAMATIC INTRUSIVE ROCKS

11 — Metagabbro
a) orbicular metagabbro

10 — Metapyroxenite
a) olivine metapyroxenite
b) melagabbro

Supracrustal Rocks

MISSI GROUP

9 / 9a — Protoquartzite, siliceous paragneiss
a) local narrow layers of amphibolite
b) massive ortho-amphibolite
c) sillimanite-rich quartzofeldspathic biotie gneiss

8 / 8a — Metabasalt
a) massive
b) pillowed
c) mafic metavolcanic gneiss, ortho-amphibolite
d) amphibolite (origin unknown)
e) felsic to intermediate heterolithic lapilli tuff and breccia

7 — Carbonate-rich metasediments, para-amphibolite
a) massive calc-silicate gneiss and para-amphibolite
b) garnet porphyroblastic para-amphibolite
c) layered calc-silicate gneiss and garnetiferous para-amphibolite, local interbeds of siliceous paragneiss
d) layered garnetiferous amphibolite and siliceous paragneiss
e) garnet-rich, diopside-bearing amphibolite; protoquartzite

6 / 6a — Metasandstone, minor polymictic metaconglomerate
a) siliceous paragneiss, quartzofeldspathic biotite paragneiss, protoquartzite; local pebble layers, carbonate-rich metasedimentary rocks, and disseminated sulphides
b) fluviatile metasandstone
c) quartzofeldspathic magnetite-bearing biotite paragneiss, local pebble layers and biotite or magnetite-rich laminae
d) polymictic metaconglomerate
e) quartzofeldsapthic granoblastic migmatitic biotite gneiss, rare pebbles, locally contains magnetite
f) coarsely granoblastic quartz-feldspar-magnetite-biotite gneiss with local microcline porphyroblasts, may contain up to 30 per cent pink granite (units 17 and 19)

5 — Staurolitic metasiltstone, staurolitic metamudstone, metasandstone, polymictic pebble conglomerate

AMISK GROUP[3]

4 — Metagreywacke, metasiltstone, metamudstone
a) garnet-biotite gneiss ± staurolite ± sillimanite
b) garnet-biotite *lit par lit* gneiss, may contain up to 30 per cent white anatectic monzogranite and granodiorite (unit 18)

3 — Stratified heterolithic volcaniclastic breccia

2 — Metarhyolite tuff and lapilli tuff
a) vesicular metadacite

1 — Metabasalt
a) massive
b) pillowed

SYMBOLS

Layering
Bedding, tops known (inclined, vertical, overturned, dip unknown)

Bedding, tops unknown (inclined, vertical, dip unknown)

Lava flow contact, top inferred from pillow structures, strike approximate and dip unknown

Foliation
Schistosity and gneissosity (inclined, vertical, dip unknown)

Minor Folds
Axis (inclined)

Axial plane (inclined, vertical)

Symmetry (Z-asymmetrical, S-asymmetrical, symmetrical)

Example of combined symbol showing S-asymmetrical fold with axis plunging 45 degrees and axial plane dipping 60 degrees

Major Folds
Anticline, antiform (defined, approximate)

Syncline, synform (defined, approximate)

Direction of plunge of fold

Linear structures
Deformed clast (inclined)

Boudin axis (inclined)

General Symbols
Rock outcrop, area of outcrop

Geological boundary (defined, approximate, assumed)

Fault (defined, approximate, assumed)

Falls, rapids

Swamp

Buildings

Power line

Highway

Railroad

STRATIGRAPHIC RELATIONS

Units 1 to 3 are of uncertain age. They are included in the Amisk Group, but could belong to the Missi Group. Their age relative to unit 4 is not known.

Units 4 to 9 are in approximate stratigraphic order. Unit 9 may be post-Missi.

Units 12 to 18 are listed in approximate order for the western half (units 12 to 14) and the eastern half (unit 15 to 18) of the map area. Unit 12 predates M_2 metamorphism, units 13, 14, 16 and 17 are early-M_2, and unit 18 is syn-M_2 anatexite.

Unit 19 cross cuts foliated, folded intrusions of units 16 and 17. Unit 20 cross cuts unit 12.

Unit 21 is a post-M_2 intrusion of unknown age.

INDEX TO AERIAL PHOTOGRAPHS

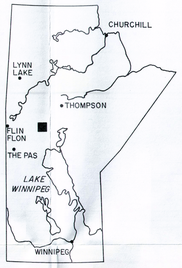
Aerial photographs numbered:
A 19726: 4—32
A 19729: 113—142
A 19736: 2—29
A 20169: 57—83, 90—116
A 20170: 106—132, 136—163
A 20173: 110—137
A 20174: 2—32
A 20175: 58—86
A 20784: 173—198
A 20806: 118—145

provide complete coverage at 1:15 840 (1 inch = 1320 feet), and may be obtained from the National Air Photo Library, Ottawa

INDEX MAP

The corresponding sheet of the National Topographic System is

63J-14 and part of 63J-11



NOTES

1. Both supracrustal and intrusive rocks are exposed in a series of fault slices. Consequently stratigraphic relations could not always be accurately determined and are only approximate.

2. Intrusive rocks are classified according to the IUGS sanctioned scheme presented in Streckeisen (1976).

3. To the north, unit 4b correlates directly with exposures of the Burntwood River Metamorphic Suite (Lenton, 1981).

Geology by
A.H. BAILES and J. MALYON, 1976

Cartography by
C. SANDY

Geological Services Branch, Mineral Resources Division, Winnipeg

To accompany MRD Geological Report GR83-2

The approximate magnetic declination at the east edge of the map-area is 12°26' East (1981) and is decreasing by 1.1 annually

Printed 1985

MAP GR83-2-1

SAW LAKE

Scale 1:50 000

KILOMETRES 1 0 1 2 3 4 5 KILOMETRES