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PRELIMINARY MAP P. 715  
GEOLOGICAL SERIES

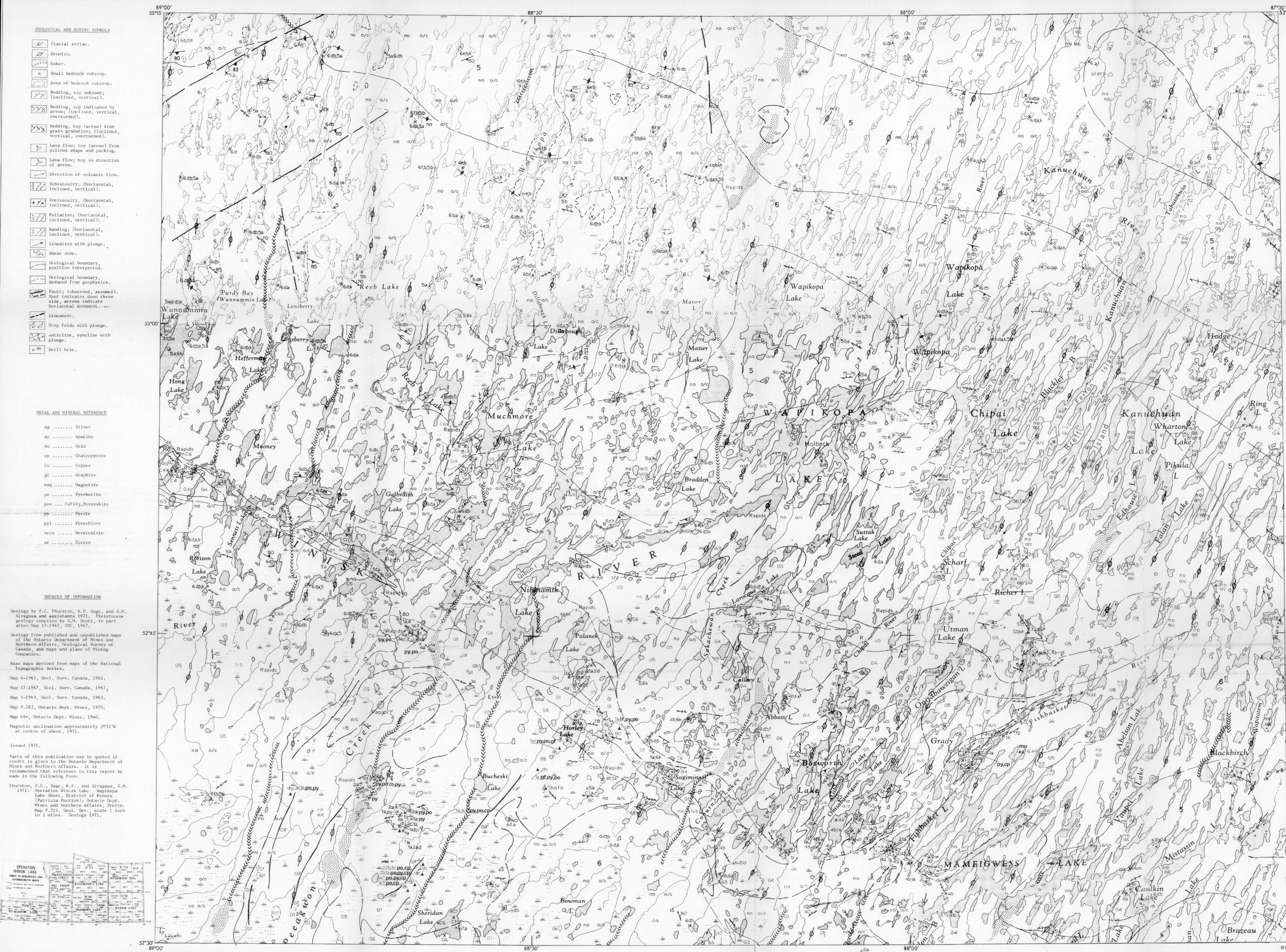
OPERATION WINISK LAKE  
WAPIKOPA LAKE

DISTRICT OF KENORA  
(PATRICIA PORTION)

Scale 1 inch to 2 miles

N.T.S. Reference: 53N, 53A, 43E, 43D  
CGM-CSC Aeromagnetic Maps: 958C, 959C,  
3764C, 960C, 969C, 3782C, 978C, 979C, 3797C

- LEGEND**
- CENOZOIC**  
Pleistocene and Recent  
Till, clay, sand, gravel  
Unconformity
- PALEOZOIC**  
10 SILURIAN  
10 Severn River Formation (dolomite, shaly dolomite, limestone)  
9 ORDOVICIAN  
9a Churchill River Group (limestone)  
9b Mac Gabe Rapids Group (sandstone, dolomitic limestone, limestone)  
Unconformity
- PRECAMBRIAN**  
LATE PRECAMBRIAN  
8 CARBONATITE AND RELATED ROCKS (carbonatite, igneous rock)  
8 Soveite (calcite-rich igneous rock)  
Intrusive Contact
- MIDDLE TO LATE PRECAMBRIAN  
7 MAFIC INTRUSIVE ROCKS (d, e, f)  
7 Unsubdivided  
7a Diabase dikes  
7b Hornblende syenite, monzonite  
Intrusive Contact
- EARLY PRECAMBRIAN (ARCHAIC)  
6 PELTIC INTRUSIVE AND METAMORPHIC ROCKS (d, e, f, h)  
6a Massive rocks  
6b Foliated rocks  
6c Porphyritic or porphyroblastic rocks  
6d Biotite and biotite-hornblende trondhjemite to quartz monzonite  
6e Hornblende and hornblende-biotite trondhjemite to quartz monzonite  
6f Hornblende and hornblende-biotite granite  
6g Biotite and biotite-hornblende granite  
6h Biotite and hornblende granite gneiss  
6i Syenitic rocks  
6j Hornblende granodiorite to quartz diorite  
6k Pegmatite, apatite, and granitic veins  
Intrusive or Gradational Contact
- 5 MIGMATITIC ROCKS (d, e, f, h)  
5 Unsubdivided  
5a Biotite-quartz-feldspar gneiss (metasedimentary migmatite > 25% granitic material)  
5b Hornblende-feldspar-quartz gneiss (metavolcanic migmatite > 25% granitic material)  
Intrusive Contact
- 4 EARLY MAFIC TO ULTRAMAFIC INTRUSIVE ROCKS (d, e)  
4 Unsubdivided  
4a Gabbro  
4b Diorite, quartz diorite  
4c Ultramafic rocks and their serpentized equivalents  
Big Trout Lake Complex  
4g Hornblende  
4h Anorthositic to gabbroic anorthositic  
4i Anorthositic gabbro  
4j Gabbro, metagabbro  
4k Porphyritic gabbroic anorthosite  
4l Gabbro porphyry  
4m Foliated to massive quartz diorite to quartz monzonite  
Intrusive Contact
- 3 METASEDIMENTS (d, e)  
3 Unsubdivided  
3a Quartzite, arkose, greywacke  
3b Conglomerate  
3c Shale, slate  
3d Biotite-quartz-feldspar schist and gneiss (with minor hornblende)  
3e Migmatized metasediments (10-25% granitic material)  
3f Gneissiferous metasediments  
3g Scaevolite-bearing metasediments  
IF Iron Formation
- METAVOLCANICS**  
2 PELTIC METAVOLCANICS (d, e)  
2 Unsubdivided  
2a Rhyolite to dacite  
2b Tuff, banded and lapilli tuff  
2c Agglomerate, breccia  
2d Porphyritic flow, quartz-feldspar porphyry  
2e Brecciated and flow-banded to massive rhyolite to dacite  
IF Iron Formation
- 1 Mafic to Intermediate Metavolcanics (d, e)  
1 Unsubdivided  
1a Basalt to andesite, massive to foliated  
1b Basalt to andesite, pillowed  
1c Mafic tuff, agglomerate  
1d Layered amphibolite  
1e Metadiabase (coarse-grained flows or intrusions)  
1f Migmatized mafic metavolcanics (10-25% granitic material)  
1g Massive to pillowed variolitic basalt to andesite  
1h Mafic flow top breccia  
1i Flow banded basalt to andesite  
IF Iron Formation
- Notes**
- a. Paleozoic subdivisions after B.V. Sanford, A.W. Norris, and H.H. Bostock, CSC Paper 67-60, 1968.
  - b. Age relations between units 7 and 8 unknown.
  - c. The Big Beaverhouse carbonatite is Late Precambrian in age and the Schryburn Lake body is assumed to be equivalent in age (Gittins et al. 1967).
  - d. The letter "C" preceding a rock unit number, for example "C1" indicates interstratification is based on geophysical data only.
  - e. The letter "O" preceding a rock unit number, for example "O1" indicates that the outcrop position and identification has been compiled from published and unpublished data or assessment files; the outcrops were not examined.
  - f. Subdivisions of major rock units do not indicate age relations except in unit 9.
  - g. Outcrops in unit 6 are coded with two letters, one indicating texture, and the other rock type, e.g. 6h,i describes a foliated syenitic rock.
  - h. The contacts between predominantly granitic and predominantly migmatitic terrain are based on geophysical data; therefore outcrops of granitic rocks will occur in migmatitic areas and vice versa. Also, unit 5 provisionally includes: some foliated granitic rocks; inclusion-rich areas of granitic rock; and metamorphosed granitic rocks.
  - i. Rock identification based on airborne observation.
  - j. Age relations between units 1, 2, and 3 are unknown.
  - k. 9/1 and 9/4 indicate extensions of Precambrian rocks under Paleozoic rocks, based on aeromagnetic information.
  - l. An "X" within an indicated outcrop area represents a data point.
  - m. Rock codes or symbols not found on this map will be found on other maps in the Operation Winisk Lake area.



- GEOLOGICAL AND MINING SYMBOLS**
- Glacial striae.
  - Drumlin.
  - Esker.
  - Small bedrock outcrop.
  - Area of bedrock outcrop.
  - Bedding, top unknown; (inclined, vertical).
  - Bedding, top indicated by arrow; (inclined, vertical, overturned).
  - Bedding, top (arrow from grain gradation); (inclined, vertical, overturned).
  - Lava flow; top (arrow) from pillow shape and packing.
  - Lava flow; top in direction of arrow.
  - Direction of volcanic flow.
  - Schistosity; (horizontal, inclined, vertical).
  - Conformity; (horizontal, inclined, vertical).
  - Foliation; (horizontal, inclined, vertical).
  - Banding; (horizontal, inclined, vertical).
  - Lineation with plunge.
  - Shear zone.
  - Geological boundary, position interpreted.
  - Geological boundary, deduced from geophysics.
  - Fault; (observed, assumed). Spot indicates down throw side, arrows indicate horizontal movement.
  - Lineament.
  - Drag folds with plunge.
  - anticline, syncline with plunge.
  - Drill hole.

- METAL AND MINERAL REFERENCE**
- Ag ..... Silver
  - ap ..... Apatite
  - Au ..... Gold
  - cp ..... Chalcopyrite
  - Cu ..... Copper
  - gf ..... Graphite
  - mag ..... Magnetite
  - po ..... Pyrrhotite
  - pov ..... Ca<sub>10</sub>Perovskite
  - py ..... Pyrite
  - pyl ..... Pyrochlore
  - verm ..... Vermiculite
  - zr ..... Zircon

- SOURCES OF INFORMATION**
- Geology by P.C. Thurston, R.P. Sage, and G.M. Siragusa and assistants 1971. Pleistocene geology compiled by G.M. Scott, in part after Map 17-1967, CGS, 1967.
- Geology from published and unpublished maps of the Ontario Department of Mines and Northern Affairs, Geological Survey of Canada, and maps and plans of Mining Companies.
- Base maps derived from maps of the National Topographic Series.
- Map 4-1962, Geol. Surv. Canada, 1962.
  - Map 17-1967, Geol. Surv. Canada, 1967.
  - Map 3-1963, Geol. Surv. Canada, 1963.
  - Map P.583, Ontario Dept. Mines, 1970.
  - Map 49n, Ontario Dept. Mines, 1940.
- Magnetic declination approximately 293'W at centre of sheet, 1971.

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Thurston, P.C., Sage, R.P., and Siragusa, G.M. 1971. Operation Winisk Lake: Wapikopa Lake Sheet, District of Kenora (Patricia Portion); Ontario Dept. Mines and Northern Affairs, Prelim. Map P. 715, Geol. Ser., scale 1 inch to 2 miles, 1971.

