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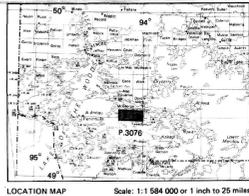
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LEGEND

PHANEROZOIC	
CENOZOIC	
QUATERNARY	
RECENT	
	Swamp, lake, and stream deposits
PLEISTOCENE	
	Sand, gravel, and clay
	UNCONFORMITY
PRECAMBRIAN	
PROTEROZOIC	
LATE MAFIC INTRUSIVE ROCKS	
7	7 Diabase dikes
INTRUSIVE CONTACT	
INTERMEDIATE TO FELSIC INTRUSIVE ROCKS	
6	6 Unsubdivided ^a
	6a Tonalite, trondhjemite
	6b Granite, granodiorite
	6c Quartz diorite, diorite
	6d Monzonite, monzogabbro
	6e Aplite
	6f Pegmatite
	6g Felsite-phyric intermediate to felsic intrusive rocks
	6h Xenotite intermediate to felsic intrusive rocks
	6i Biotite-bearing intermediate to felsic intrusive rocks
	6k Epitaxial intermediate to felsic intrusive rocks
	6m Fine-grained intermediate to felsic intrusive rocks
	6n Hornblende-bearing intermediate to felsic intrusive rocks
	6o Clotly intermediate to felsic intrusive rocks
	6p Potassium feldspar-phyric intermediate to felsic intrusive rocks
INTRUSIVE CONTACT	
MAFIC TO ULTRAMAFIC INTRUSIVE ROCKS	
5	5 Unsubdivided ^a
	5a Gabbro
	5b Leucogabbro
	5c Diorite
	5d Quartz gabbro
	5e Peridotite
	5f Pyroxenite
	5g Hornblende
	5h Amphibole-phyric mafic to ultramafic intrusive rocks
	5k Xenolithic mafic to ultramafic intrusive rocks
	5m Magnetite-bearing mafic to ultramafic intrusive rocks
	5n Magnetite-phyric mafic to ultramafic intrusive rocks
	5o Monzogabbro, monzoniorite
INTRUSIVE CONTACT	
METAVOLCANICS AND METASEDIMENTS	
METASEDIMENTS	
CLASTIC METASEDIMENTS	
4	4 Unsubdivided ^a
	4a Arinite
	4b Arkose
	4c Wacke
	4d Mudstone
	4e Siltstone
	4f Feldspathic arenite
CHEMICAL METASEDIMENTS	
3	3 Unsubdivided ^a
	3a Magnetite ironstone
	3b Chert
METAVOLCANICS	
INTERMEDIATE TO FELSIC METAVOLCANICS	
2	2 Unsubdivided ^a
	2a Tuff
	2b Lapilli tuff
	2c Lapillstone, tuff-breccia
	2d Pyroclastic breccia
	2e Autoclastic breccia
	2f Feldspar crystal tuff
	2g Amphibole (pyroxene) phenocryst crystal tuff
	2h Amphibole (pyroxene) phenocryst crystal tuff
	2i Quartz crystal tuff
	2j Lithic pyroclastic rocks
	2k Amphygadial intermediate to felsic metavolcanics
	2m Porphyritic flows
	2n Quartz crystal tuff
MAFIC TO INTERMEDIATE METAVOLCANICS	
1	1 Unsubdivided ^a
	1a Massive flows
	1b Pillowed flows
	1c Feldspar-phyric flows
	1d Amphibole (pyroxene)-phyric flows
	1e Amygdaloidal flows
	1f Tuff
	1g Lapilli-tuff, lapillstone
	1h Feldspar crystal tuff
	1i Amphibole (pyroxene) phenocryst crystal tuff
	1j Quartz crystal tuff
	1k Lithic pyroclastic rocks
	1l Tuffaceous mafic to intermediate metavolcanics
	1m Puncosque mafic to intermediate metavolcanics

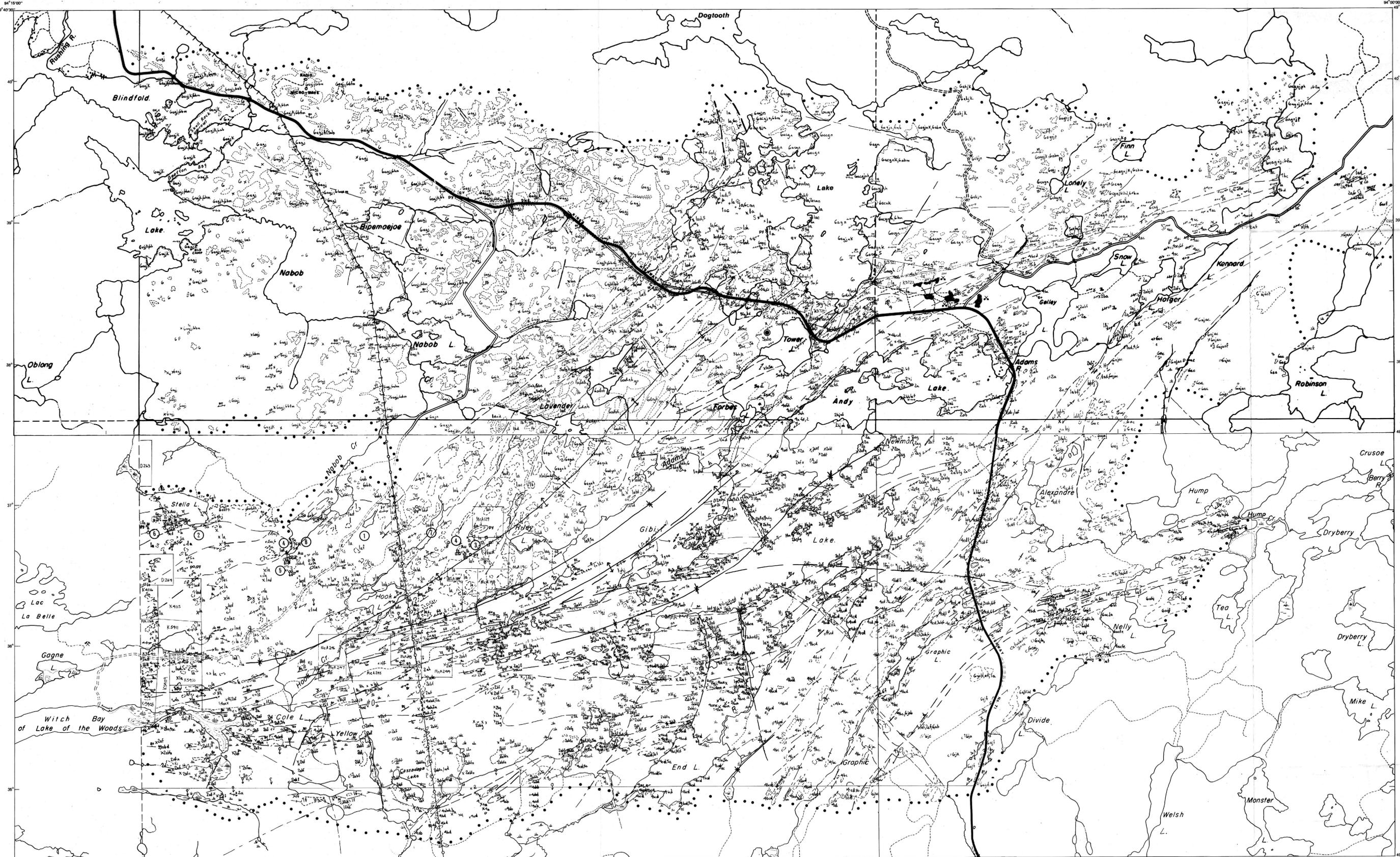
Geology by N.F. Trowell, J. Logothetis, G.F. Caldwell, J.R. Webb, and assistants, 1979, 1980

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Issued 1987

Information from this publication may be quoted if credit is given. It is recommended that reference to this map be made in the following form:

Trowell, N.F., Logothetis, J., Caldwell, G.F., and Webb, J.R., 1987: Precambrian Geology of the Gibi Lake Area, District of Kenora. Ontario Geological Survey, Map P.3076, Geological Series—Preliminary Map, scale 1:15 840 or 1 inch to 1/4 mile. Geology 1979, 1980.



MARGINAL NOTES

LOCATION AND ACCESS

The map area comprises portions of the four contiguous townships of Code, Work, McEwen, and May. The Town of St. James is approximately 25 km to the south and Kenora is 30 km to the northwest. Highway 71 passes through the central part of the map. Logging, and camp-access, gravel roads from the main highway provide access to the entire area.

MINERAL EXPLORATION

Exploration, concentrating on gold, was initiated within the map area during the late 1880s and continued into the early 1900s. Underground development and considerable trenching was undertaken during this period at the Triggs and Stella Prospects, situated in the northwestern corner of Code Township. Sporadic activity continued at, and in the vicinity of, the Stella Prospect, with additional trenching occurring during the period from 1935 to 1937 and from 1946 to 1948, and diamond drilling by E.J. Stone in 1950. A bulk sample was taken from the Triggs Prospect in 1950. In 1953, Rexona Mining Corporation Limited carried out geological mapping and diamond drilling in the immediate vicinity of the Triggs mine, and diamond drilling north of Hook Lake. Further diamond drilling near the Triggs prospect was conducted by Macassa Gold Mines

Limited in 1960. D. Schwab and A. Jensen (Olympia Mines Limited) carried out diamond drilling west of Hook Lake in 1970. Dome Exploration (Canada) Limited carried out airborne and ground magnetic and electromagnetic surveys and followed diamond drilling on several claim groups north, west and south of Gibi Lake between 1972 and 1976.

GENERAL GEOLOGY

The Gibi Lake area comprises the eastern part of the Lake of the Woods Metavolcanic-metasedimentary belt situated within the western part of the Wabigoon Subprovince of the Superior Province.

Generally, east-trending, tectonically folded metavolcanics and metasediments intruded by mafic to ultramafic and intermediate to felsic intrusions (Unit 5), occupy the central and southern parts of the map area. These rocks are bounded to the north, east, and southeast by felsic to intermediate intrusions (Unit 6) of various proportions. A central mafic to ultramafic "basaltic" diabase dikes (Unit 7) of Proterozoic age post-date all other bedrock units, which are Archaean in age. Pleistocene and Recent deposits cover substantial portions of the bedrock.

The metavolcanic, metasedimentary, and mafic to ultramafic intrusions, have been metamorphosed from the greenschist to lower amphibolite facies.

Interpretation of fold types is based on the mapping portrayed here and subsequent mapping by the senior author and regional interpretation by G.W. Johns (Geologist, Precambrian Geology Section, Ontario Geological Survey, Toronto). Direction of internal and bounding granitoid bodies deformed and reoriented the earlier developed local folds. A major east to northeast-trending zone of shearing, the "Crowduck Lake-Witch Bay Shear Zone" extends from Witch Bay of Lake of the Woods, through the northern portion of Gibi Lake. Other zones of shearing having the same trend also occur south of Stella Lake to as far east as Dogtooth Lake, and deserves attention as a potential exploration target for similar gold-copper mineralization and perhaps also silver and platinum group elements.

Reassessment of the known gold occurrences (see Properties), particularly those associated with the Crowduck Lake-Witch Bay Shear Zone, and the conducting of follow-up electromagnetic and induced polarization surveys to outline possible extensions of the shear zones, is warranted.

Quartz-sulphide and tourmaline veins and masses (not shown on the map-face) appear to be located along east-trending fracture zones and zones of localisation, and mark zones of extensive post-tectonic hydrothermal fluid flow. As gold is known to be often found in areas that have undergone post-tectonic metamorphism, these zones could have potential for localisation of mineralization in favourable structural settings.

The chemical measurements may have potential for hosting precious and base metals.

ECONOMIC GEOLOGY

Indications of gold, base metals, nickel, iron, beryl, and tourmaline mineralization have been found in the map area.

Mineral occurrences in the map area fall into four categories: gold-bearing quartz - calcite (uncommon) veins and shear zones in mafic metavolcanics and intermediate to felsic intrusions; chert and magnetite ironstone in metasediments; and magnetite ironstone in metasediments with sulphide mineralization.

1. interbedded chert and magnetite ironstone in metasediments

2. berylum-bearing pegmatite dikes

4. base metal sulphide occurrences associated with:

1 mafic metavolcanics

2 intermediate, mafic, and felsic tufts commonly with associated granitoid

3 Gold and copper mineralization in the Wendigo Mine (a east producing locality west of the map area is associated with folded, differentiated, ultramafic to mafic intrusions. This zone of intrusion extends into the map area south of Stella Lake to as far east as Dogtooth Lake, and deserves attention as a potential exploration target for similar gold-copper mineralization and perhaps also silver and platinum group elements.

SYMBOLS

	Small bedrock outcrop		Schistosity (horizontal, inclined, vertical)
	Area of bedrock outcrop		Foliation (horizontal, inclined, vertical)
	Bedding, top unknown (inclined, vertical)		Geological contact, observed
	Bedding, top indicated by arrow (inclined, vertical, overturned)		Geological contact, position interpreted
	Lava flow top in direction of arrow		Fault (observed, assumed)
	Drag folds with plunge		Lineament or fault
	Anticline, syncline, with plunge		Exploration trenching
	Diamant-drill hole (vertical, inclined)		Gravel pit
	Shaft		Pyrite
	Query		Quartz vein
	Tee pit		Sulphide mineralization

PROPERTIES

- Dome Exploration (Canada) Limited
- Huacaston, P. (Star-Bee Star Occurrence)
- Macassa Mines Limited
- Rexona Mining Corporation Limited
- Schwab, D. and Jensen, A.
- Stone, E.J.
- Triggs Mine
- Witch Bay Gold Mines Limited

ABBREVIATIONS

ap: Aeromagnetic Map 11782
 G: Geological Map 11782
 G: Geological Map 11782
 M: Magnetic declination approximately 6°E in 1980.
 M: Metric conversion factor 1 foot = 0.3048 m.

SOURCES OF INFORMATION

Base map from maps of the Forest Resources Inventory, Lands and Waters Group, Ontario Ministry of Natural Resources.

Geology of the Whitefish Bay Area, Lake of the Woods, Kenora District, Ontario, Department of Mines, Annual Report for 1943, Volume 52, Part 4, by N.H.C. Fraser, 1945. Accompanied by Map S2, scale 1:63 360 or 1 inch to 1 mile.

Geology of the Bigstone Bay Area, Lake of the Woods, District of Kenora, Ontario, Department of Mines, Annual Report for 1950, Volume 39, Part 3, p.57-71, by G.G. Surfel, 1951. Accompanied by Map 391, scale 1:63 360 or 1 inch to 1 mile.

Gibi Lake Area, Kenora District, Ontario Geological Survey, Preliminary Map P.2044, Kenora Data Series, scale 1:15 840 or 1 inch to 1/4 mile, by Scott Rivett and A.D. MacTavish, 1980.

Geological and geophysical maps and reports of mining companies.

OGS-GSC Aeromagnetic Map 11782.

Geology is not tied to surveyed lines.

Magnetic declination approximately 6°E in 1980.

Metric conversion factor 1 foot = 0.3048 m.

CREDITS

Geology by N.F. Trowell, J. Logothetis, G.F. Caldwell, J.R. Webb, and assistants, 1979, 1980

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NOTES

a) This is a field legend and may be changed as the result of subsequent laboratory investigations.

b) "Unsubdivided" refers to outcrops which are interpreted from air photos, and not visited by the field party.