MARGINAL NOTES

LOCATION AND ACCESS

Kawashegamuk Lake lies about 30 km southeast of Dryden. The map-area is included in NTS map sheets 52 F/8 and 59 F/9.

A lumber road commences at Highway 17 at Jackfish Lake, 10 km east of Dinorwic. This road gives access to the western part of the map-area and to Stormy Lake. A township road that commences at Borups Corners on Highway 17 gives access to the eastern part. A third road in the north-central part of the map-area links these two roads. Most of the map-area can be reached by canoe or light watercraft as many lakes are interconnected by short portages.

MINERAL EXPLORATION

In the latest years of the past century, the Lake of the Woods region became the scene of considerable exploration and mining for gold.

During the period 1895 to 1912, at least 20 mines and prospects were opened in the Manitou Lakes area, which lies west of the map-area (Thomson 1933). During these years, prospecting activity started in the Kawashegamuk Lake area. This became known as the "New Klondike" area after gold had been discovered south of Melgund Township, on original claims S.V.258, H.W.416, H.W.418, and H.W. 419. The Tabor prospect (S.V.258, No.20) was held in 1898 by J. Tabor and J. Stephenson who first staked the property in 1897. During 1934 and 1935, Clark Gold Mines Limited developed the property and produced 36 ounces of gold and 4 ounces of silver[1]. This recovery was mainly from 200 feet (61 m) of surface trenching yielding 87 tons of ore. Other exploration and development work consisted of sinking a shaft 280 feet (85 m) deep with levels at 68 feet (21 m), 125 feet (38 m), and 250 feet (76 m) below the surface. 7355 feet of surface diamond drilling was done from a total of 21 holes[1]. The operations were suspended in 1938. In July 1942, Tabor Lake Gold Mines Limited took over the property later leased to Pantan Mines Limited in 1957[1]. Further work was then undertaken, including lateral development, and six holes were diamond drilled indicating an extension of the vein system to the 375-foot (114.3 m) level along a strike length of 400 feet (122 m). Samples assayed an average of 0.45 ounce gold per ton over 3 feet for a length of 35 feet (10.7 m) at the 125-foot level and 0.5 ounce gold per ton over 3 feet for a length of 67 feet (20.5 m) at the 250-foot level[1]. Reserves had been estimated as 50 000 tons of ore averaging 0.5 ounce gold per ton (Canadian Mines Handbook 1960, p.194). The Ontario charter of Tabor Lake Gold Mines Limited was cancelled in 1976[1].

In 1979, the area was restaked with 37 contiguous claims for St. Joseph Explorations Limited who then carried out ground magnetic and V.L.F. electromagnetic surveys and the diamond drilling of four holes on the north shore of Tabor Lake during the winter of 1979 and 1980[1]. Additional work during the 1980 field season consisted of geological mapping and geochemical sampling for gold. Sulpetro Minerals Limited (formerly St. Joseph Explorations Limited) continued the work in 1981 with dewatering of the shaft for sampling.

The Sakoose Mine (H.W.416, No.18), formerly known as the Munroe and Watson Mine or the "Golden Whale" (Satterly 1960), was the only mine which produced in the area. In 1899, extensive clearing and trenching had been carried out, as well as the sinking of shafts No.1, 2, and 3. A standard gauge railway spur was built from the Canadian Pacific railway station in Dyment, south to the mine. Between 1900 and 1902 development work continued on the property which was owned and operated then by the Ottawa Gold Mining and Milling Company Limited. 7735 tons of ore (Carter 1902) were shipped to the Keewatin Reduction Works at Keewatin, Ontario[1,2]. Most of the ore having been extracted from shafts No.1 and 2 and from surface quarrying of the quartz vein[2], the mining operations were suspended in 1902. In 1931, exploration resumed by surface diamond drilling. Development work was continued in July 1934 by Nordic Sturgeon Gold Mines Limited who at that time owned and operated the property. The work consisted of diamond drilling of 7 holes which totalled 2 973 feet (906 m) of core[1,2]. The calculated remaining tonnage of gold ore in the developed part of the deposit was estimated at 44 000 tons[1,2]. Shaft No.4 had been sunk to a depth of 165 feet (50 m). In 1944, Van Houten Gold Mines Limited acquired the property. Development was carried out during 1946 and 1947, including underground work and the drilling of a total of 41 surface diamond-drill holes and 40 holes underground. The total production from 1944 to 1947 amounted to 256 ounces of gold[2]. Operations ceased in 1947. By that year, the total production from the mine had been 3 669 ounces of gold and 145 ounces of silver from 8 828 tons of ore averaging 0.41 ounce gold per ton[2]. In 1958, G.L. Pidgeon restaked the property but it was later dropped. Stripping and trenching has been done at the mine intermittently over the last few years by J. Redden.

In 1899, work had been done on claims H.W.418 and H.W.419 after the discovery of quartz veins by Walker and Brown, the first prospectors in the New Klondike[2]. North Western Ontario Exploration Company (whose head office was in London, England) sank a shaft 142 feet (43.3 m) deep on a quartz vein, located on H.W.419, striking in a westerly direction and having a subvertical dip[2]. This vein is mineralized with chalcopyrite, sphalerite, pyrrhotite, pyrite, and visible gold. No other work has been done to date. A. Kozowy staked a group of seven claims around H.W.419, including the original claim, in August 1981.

Exploration for base metals started in 1952 when the International Nickel Company of Canada Limited conducted a magnetic survey on a diorite body on the northeast shore of Kawashegamuk Lake (No.13). In 1957, Falconbridge Nickel Mines Limited diamond drilled one hole of 416 feet (127 m) on which minor pyrite was reported on the claim group previously investigated by the International Nickel Company of Canada Limited. Three holes were drilled the same year by Falconbridge on Church Lake (No.7) while searching for copper and nickel.

In 1955, the Canadian Pacific Railway Company conducted a geological reconnaissance over the general Stormy Lake-Kawashegamuk Lake area[1].

In 1965 and 1966, Dome Exploration (Canada) Limited carried out a programme of prospecting, geochemical soil sampling, trenching, and 1 710 feet (521 m) of diamond drilling from three holes on a molybdenite occurrence situated between Mennin and Oldberg Lakes (No.5). Results showed a broad northerly trending area of moderate molybdenite anomalies. The molybdenite anomaly coincides with the zone of outcrop in which the molybdenite-bearing quartz veins were found[1]. The drilling programme revealed minor amounts of disseminated molybdenite, fluorite, and trace amounts of pyrite, chalcopyrite, and gold in narrow quartz veins. Following the discovery of the Cu-Zn-Pb-Ag deposits at Sturgeon Lake in 1969, a number of companies flew airborne geophysical surveys over the general Manitou-Stormy Lakes area. In 1970, plans were made by Lynx-Canada Explorations Limited and Dejour Mines Limited to jointly fly an area south of Wabigoon, Ontario[1] encompassing the Boyer Lake, Tabor Lake, and the Sakoose Mine areas. As a result, 155 claims were staked on the most promising anomalies.

Ground follow up work started in May 1970 and continued through to September[1]. Drilling of some electromagnetic anomalies revealed that many conductors were caused by disseminated pyrite and graphitic zones[1]. No encouraging results were encountered and the claims were allowed to lapse. The same year, Asarco Exploration of Canada Limited diamond drilled three holes (No.1): one situated on a gabbro body on the north shore of Snake Bay, and two holes on the southeastern shoreline of Kawashegamuk Lake, both indicating minor amounts of Cu(0.04 percent) and trace amounts of Ni, Ag, Au. In 1971, Asarco Exploration of Canada Limited drilled a hole northeast of Boyer Lake on a conductor picked up by the airborne survey the previous year. This hole confirmed the nature of the conductor as fine-grained disseminated pyrite and sheared pyrite nodules in graphitic zones[1]. Airborne geophysics were performed again in 1973 for Underwood-McLelland and Associates Limited. As a result 231 claims were staked over the airborne conductors. These claims were then optioned to Newmont Mining Corporation of Canada Limited in 1974[1]. Ground follow up of the conductors was carried out and three of them were located by diamond drilling (No.17). Pyrite, pyrrhotite, and graphite mineralization have been reported as the cause of the anomalies.

In 1971, the Canadian Nickel Company Limited carried out a ground magnetic survey over two claims on a gabbro body on the north shore of Snake Bay (No.3), as well as a drilling program on several claims in the northern and central part of Stormy Lake[1]. The drilling revealed local mineralization with disseminated pyrite and pyrrhotite.

In 1976, Selco Mining Corporation Limited staked three claim groups in the map-area (No.19): one northeast of Boyer Lake, one straddling the south boundary of Melgund Township, north of the Sakoose Mine, and one in the Church-Mennin Lakes area. Ground geophysical exploration was done on all claim groups and four diamond-drill holes were drilled to check out some conductor zones. The hole northeast of Boyer Lake confirmed graphite in shear planes as the conductor. The three holes in the north-central part of the map-area revealed minor pyrite, graphite and traces of chalcopyrite. Low copper (0.02 to 0.05 percent) and zinc (0.02 to 0.05 percent) assay values were reported from one hole east of Church Lake[1].

In 1980, as follow up to a regional exploration programme in the general Kawashegamuk Lake area commenced in 1979, Falconbridge Copper Limited carried out detailed geochemical sampling for gold mineralization on property adjoining St. Joseph Explorations Limited west of Tabor Lake (No.6). Sulpetro Minerals Limited, in addition to work on its Tabor Lake property, has conducted ground follow up to both its own and the Ontario Geological Survey airborne electromagnetic surveys released in the spring of 1980, in the general Manitou-Stormy Lakes area.

GENERAL GEOLOGY

The Kawashegamuk Lake area was previously mapped by Thomson (1933) as part of a reconnaissance survey extending from Lower Manitou Lake to Stormy Lake. The present map-area was also investigated as part of a regional study in 1977 (Trowell *et al.* 1977; Trowell *et al.* 1980). To the north, the Dyment area comprising Melgund, Revell, and Hyndman Townships, was mapped by Satterly (1960). To the west, the Boyer Lake area was mapped during the field seasons of 1974 and 1975 (Blackburn 1976a), and to the southwest, the Meggisi Lake area was mapped during the field season of 1975 (Blackburn 1976b).

The map-area lies in the east-central part of a metavolcanic-metasedimentary belt which extends from Lower Manitou Lake to Wabigoon Lake. Bedrock is of Early Precambrian (Archean) age, consisting of thick metavolcanic and metasedimentary sequences intruded by mafic sills, felsic porphyry stocks and dikes, and granitic rocks in the east.

Mapping west of the current map-area (Blackburn 1980a) has established three stratigraphic groups of supracrustal rocks: the Wapageisi Lake Group, the Stormy Lake Group, and the Boyer Lake Group, that have all been traced into this area.

The metavolcanics of the Wapageisi Lake Group underlie the southern part of the map-area. They are a thick sequence facing homoclinally in a north-northeasterly direction. It consists principally of pillowed mafic flows of tholeiitic affinity (Trowell *et al.* 1980) intruded by gabbroic sills, overlain by felsic pyroclastic rocks. These latter rocks are intruded, in the south-central part of the map-area, by a quartz porphyry body which appears to be the source of felsic flows and pyroclastic rocks at Gawjewiaga and Kawijekiwa Lakes. To the southwest, a quartz porphyry stock intrudes the mafic metavolcanics at Thundercloud Lake out of the map-area (only the northeastern margin of the stock appears on the present map). To the north, and genetically related to the porphyry (Blackburn 1980a) is a unit of felsic autobreccias, flows, pyroclastic rocks and coarse-grained sandstones which is exposed south of Dark Horse Lake. Numerous felsic dikes have been observed at Seggemak Lake.

Overlying the Wapageisi metavolcanics with probable unconformity is the Stormy Lake Group, a 3 000 m thick sequence of conglomerates. The basal part is characteristically polymictic with felsic to mafic volcanic clasts, non foliated granitoid clasts, and clasts of magnetite and hematite iron formation and chert. Overlying conglomerates are virtually devoid of granitoid and chemical sedimentary clasts and composed almost exclusively of volcanic clasts. The conglomerate sequence diminishes in thickness in the south-central part of the map-area where deepwater sandstone, siltstone, and greywacke become abundant. These metasediments are transitional eastward into more distal turbidites at Bending Lake with intercalated magnetite iron formation beds (Trowell *et al.* 1980). The entire sequence faces to the north and northeast. Within the proximal facies (conglomerates), several mafic flows and a felsic pyroclastic unit have been traced over up to 800 m. A small body of massive granodiorite and numerous fine-grained felsic dikes intrude the metasediments at Stormy Lake. North of the Stormy Lake Group is the Boyer Lake Group, a thick sequence of mafic pillowed flows and composite gabbro sills of tholeiitic affinity (Blackburn 1980), which is folded about the Kamanatogama syncline (Blackburn 1980a). The Boyer Lake Group is in fault contact with the Stormy Lake Group (Blackburn 1980a, 1980b, 1981). Underlying the Boyer Lake Group to the northeast is a thick sequence of metavolcanics facing homoclinally southwest which has been named the Kawashegamuk Lake Group (Blackburn and Kresz 1981). Chemical analyses of samples collected during the 1977 regional study (Trowell *et al.* 1977, Trowell *et al.* 1980) revealed that the sequence consists of calcalkaline andesite to rhyolite at Church Lake and tholeiitic to calcalkaline basalt to andesite at Morey Lake. Coarse monolithic breccia which becomes increasingly abundant to the southeast overlies the mafic metavolcanics on the north shore of Kawashegamuk Lake. The north-central part of Kawashegamuk Lake is underlain by andesitic pillowed flows. A felsic tuff unit which can be traced along the whole length of the western shore of Kawashegamuk Lake marks the top of the Kawashegamuk Lake Group. The contact with the Boyer Lake Group appears to be conformable and characterized by the transition from calcalkaline to tholeiitic volcanism.

In the Sakoose Mine area is a northeast-trending wedge of metasediments consisting of sandstones, greywackes, argillites, and narrow bands of chert magnetite iron formation. In the northwestern part of the map-area where rocks are pervasively altered, felsic metavolcanics occur mainly as sericitic and carbonatized schists. Irregular gabbro bodies (KAW 12-14 have a tholeiitic basalt composition) intrude the metavolcanics in many places. Two elliptical shaped intrusions of foliated diorite to quartz diorite are exposed in the southeastern part of Kawashegamuk Lake. In the north at Tabor Lake, and to the west, numerous irregular shaped felsic intrusions and felsic dikes occur. They are invariably sheared, carbonatized, and sericitized. The metavolcanics around these felsic intrusions are strongly altered in many places and they have a characteristic rusty-brown weathering color. The most conspicuous secondery alteration product in the mafic metavolcanics is iron carbonate, while in the felsics it is sericite and carbonate. The alteration event is presumed to be pretectonic. The basal metavolcanics in the northeast and east part of the map-area are intruded by massive granodiorite of the Revell batholith (Satterly 1960).

The rocks underlying the map-area have been affected by low grade regional metamorphism of greenschist facies rank. Near the margin of the Revell batholith and as far as 1.5 km away from the granodiorite mass, thermal metamorphism produced rocks belonging to the hornblende-hornfels facies (Satterly 1960).

STRUCTURAL GEOLOGY

The east-trending Kamanatogama syncline is the only major fold in the map-area.

The Mosher Bay-Washeibemaga Lake Fault (Blackburn 1980a, 1980b, 1981) that diminishes in displacement eastward, cannot be recognized east of the northern bay of Stormy Lake. Other faults of lesser magnitude offset metavolcanic units at Kawashegamuk Lake and gabbro sills at Kawijekiwa and Gawjewiagwa Lakes. The northeast-southwest trending shear zone at Kawashegamuk Lake may be considered a tectonic boundary between the Boyer Lake Group and the underlying metavolcanics of the Kawashegamuk Lake Group to the northeast. The contact of the Revell batholith with the supracrustal rocks is in part faulted.

The supracrustal rocks underlying the map-area have been pervasively foliated in an east-southeasterly regional direction.

Primary structures such as pillows in mafic flows, graded beds, cross beds, laminations and bedding in metasediments and tuffs are often well preserved.

ECONOMIC GEOLOGY

The general area covered by this map is known mainly for its gold potential. To the present date, only the Sakoose Mine has produced a significant amount of gold. Quartz veins, up to seven feet wide[1] are associated with quartz-feldspar porphyry dikes and intrude metavolcanics and metasediments. Gold is associated mostly with blue-grey quartz in which pyrite, sphalerite, chalcopyrite, galena, and native gold are present.

Values from two quartz samples are as follows: Au 0.5 ounce per ton, Ag 0.21 ounce per ton (grey quartz, sulphides present), and Au 0.02 ounce per ton (white quartz, no sulphides present)[3]. At Tabor Lake gold occurs as disseminated free fold in white quartz which occurs as a series of veins cutting an east-trending porphyry dike. Carbonate and minor pyrite and galena occur in the vein as well. Other gold occurrences exist in the area. On H.W.419 (No.2) value of quartz samples taken from the tailing pile and at the shaft site, containing carbonate and sulphides are Au 12.66, 2.92, 2.16, 0.05 ounce per ton; Ag 1.50, 0.60, 0.20 ounce per ton[3]. One sample taken from an old shaft site located on original claim H.W.418 gave a gold value of 0.02 ounce per ton[3] (the shaft has not been located). At Lee Lake, a quartz sample from a vein network contained 0.04 ounce per ton gold[3]. At Church Lake visible gold occurs in a white quartz vein cutting a gabbro.

The mapping has shown that in the vicinity and west of Tabor Lake, mafic and felsic metavolcanics have been pervasively carbonatized and sericitized. Sheared and intensively altered porphyries are associated with the altered metavolcanics and it is suggested that gold, silver, and possibly base metals were leached and redeposited in favorable structures as a result of hydrothermal activity.

At least three gabbro-diorite bodies which have been delineated by the field party have been exploration targets in the 1950s for the Canadian Nickel Company Limited, Falconbridge Limited, and more recently by Selco Mining Corporation Limited. Chalcopyrite and nickeliferous pyrrhotite have been described in a report for the Canadian Pacific Railway Company[1] at the margin of a small diorite body just east of the southern most bay of Kawashegamuk Lake where the field party recognized a quartz diorite with blue quartz eyes containing 1 to 3 percent disseminated sulphides. The rock has a rusty weathering color. Fine-grained pyrrhotite and pyrite have been recognized occurring in a similar fashion on the north margin of the diorite intrusive which lies to the northwest. Chalcopyrite and green copper staining (malachite) have been found by the field party in several gabbro bodies at Kawashegamuk Lake. Abundant pyrite mineralization is found in intensively sheared rocks along the southern lake shore of Kawashegamuk Lake along which a long shear zone appears to be.

Between Mennin Lake and Oldberg Lake, disseminated molybdenite with fluorite, pyrite, and traces of chalcopyrite and gold occur in numerous white quartz veins of varying thickness. The granodiorite of the Revell batholith which hosts these quartz veins is greisenized in numerous places near the mineralized quartz veins.

SUGGESTIONS FOR FUTURE MINERAL EXPLORATION

Prospecting and exploration for gold should be directed toward favourable structures (shear zones, faults, porphyry, fold hinges). Gold occurrences are known to exist in the north-central and northeast part of the map-area but gold mineralization is not associated with a particular lithology.

Further exploration for base metals is warranted at the margin of mafic to intermediate intrusives, in zones of intense deformation and shearing and at the margin of the Revell batholith.

[1]Assessment Files Research Office, Ontario Geological Survey, Toronto.

[2]Information from Regional Geologist's Files, Ontario Ministry of Natural Resources, Kenora.

[3]Analyses by the Geoscience Laboratories, Ontario Geological Survey, Toronto.

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SYMBOLS

- Glacial striae
- 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)
- Bedding, top (arrow) from crossbedding (inclined, vertical)
- Lava flow; top (arrow) from pillows shape and packing
- Pillow elongation
- Schistosity (inclined, vertical)
- Foliation (inclined, vertical)
- Banding
- Lineation with plunge
- Geological boundary, observed
- Geological boundary, position interpreted
- Fault (assumed)
- Lineament
- Jointing (horizontal, inclined, vertical)
- Drag folds with plunge
- Kink bands with axial trace
- Syncline, with plunge direction
- Drillhole (inclined)
- Drillhole (projected vertically). Depth of overburden shown
- Vein, vein network. Width in inches
- Shaft, depth in feet

Ontario
Ministry of Natural Resources
Hon. Alan W. Pope, Minister
W.T. Foster, Deputy Minister

ONTARIO GEOLOGICAL SURVEY

MAP P.2570

GEOLOGICAL SERIES - PRELIMINARY MAP

PRECAMBRIAN GEOLOGY OF THE KAWASHEGAMUK LAKE AREA

EASTERN PART

KENORA DISTRICT

Scale 1:15 840

Mile ¼ — 0 — ¼ — ½ Mile

Metres 100 — 0 — 0.2 — 0.4 — 0.6 — 0.8 — 1 Kilometre

NTS References: 52 F/8, 9

ODM-GSC Aeromagnetic Maps: 1144G, 1145G

ODM Geological Compilation Map: 2443

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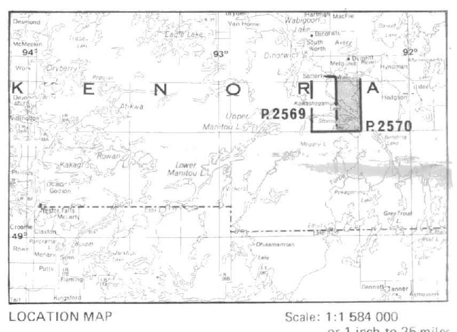

LOCATION MAP

Scale: 1:1 584 000 or 1 inch to 25 miles

LEGEND[a]

PHANEROZOIC
CENOZOIC
QUATERNARY
PLEISTOCENE AND RECENT

Boulders, gravel, sand, swamp, lake, and stream deposits

UNCONFORMITY

PRECAMBRIAN
EARLY PRECAMBRIAN (ARCHEAN)
FELSIC PLUTONIC ROCKS[b]
REVELL BATHOLITH AND OTHER MINOR GRANITIC INTRUSIONS

8
- 8a Massive, medium- to coarse-grained biotite granodiorite
- 8b Quartz monzonite
- 8c Granite
- 8d Aplite

INTRUSIVE AND FAULTED CONTACT

INTERMEDIATE PLUTONIC ROCKS[b]
- 8e Fine- to medium-grained hornblende quartz diorite
- 8f Fine- to medium-grained hornblende diorite

INTRUSIVE CONTACT

INTERMEDIATE TO FELSIC HYPABYSSAL ROCKS[c]

7
- 7a Quartz and quartz feldspar porphyry[d]
- 7b Felsite
- 7c Granitic rocks
- 7d Sheared and sericitized felsic rocks
- 7e Carbonatized felsic rocks
- 7f Biotite quartz-feldspar porphyry
- 7h Feldspar porphyry
- 7j Biotite-feldspar porphyry

MAFIC AND ULTRAMAFIC INTRUSIVE ROCKS[b,e]

6
- 6 Unsubdivided
- 6a Medium- to coarse-grained gabbro
- 6b Medium- to coarse-grained leucogabbro
- 6c Pegmatitic gabbro
- 6d Quartz phyric gabbro
- 6e Diabase dike
- 6f Lamprophyre
- 6k Porphyritic gabbro (feldspar phenocrysts)
- 6m Amphibolite
- 6p Carbonatized mafic rocks
- 6v Epidotic pods

INTRUSIVE CONTACT

METASEDIMENTS AND METAVOLCANICS
METASEDIMENTS
Chemical Metasediments[b]

5
- 5a Banded chert magnetite iron formation
- 5b Chert
- 5c Carbonate rocks

Epiclastic Metasediments[d]

4
- 4a Volcanic clast conglomerate
- 4b Polymictic conglomerate[f]
- 4c Wacke
- 4d Lithic wacke
- 4e Feldspathic (arkosic) wacke
- 4f Quartzose wacke
- 4g Arenite
- 4h Lithic arenite
- 4j Feldspathic arenite
- 4k Quartzose arenite
- 4l Mudstone; slate
- 4m Sericitized rocks

METAVOLCANICS
Felsic Metavolcanics[d]

3
- 3a Dacite to rhyolite tuff
- 3b Dacite to rhyolite lapilli-tuff, lapillistone
- 3c Dacite to rhyolite tuff-breccia, breccia
- 3d Dacite to rhyolite flows
- 3e Dacite to rhyolite flow breccia
- 3f Carbonatized rocks
- 3g Sericite schist

Intermediate Metavolcanics[c]

2
- 2 Unsubdivided
- 2a Andesite to dacite tuff
- 2b Andesite to dacite lapilli-tuff, lapillistone
- 2c Andesite to dacite tuff-breccia, breccia
- 2d Andesite to dacite flows
- 2f Carbonatized rocks
- 2g Sericitized rocks

Mafic To Intermediate Metavolcanics[b]

1
- 1 Unsubdivided
- 1a Fine- to medium-grained flows
- 1b Medium- to coarse-grained flows[g]
- 1c Pillowed flows
- 1d Porphyritic flows (feldspar-phyric)
- 1e Pillowed porphyritic flows (feldspar-phyric)
- 1f Aquagene breccia, hyaloclastite
- 1g Flow breccia
- 1h Amygdaloidal flows
- 1k Amphibolite
- 1m Chloritic schist
- 1n Variolitic flows
- 1p Carbonatized rocks
- 1q Tuff
- 1s Lapilli-tuff, lapillistone
- 1t Tuff-breccia
- 1u Silicified rocks
- 1v Epidotic pods
- l Lithology inferred
- qc Quartz carbonate
- qv Quartz vein (width in inches)

NOTES

a) This is a Field Legend and may be changed as a result of subsequent laboratory investigations.
b) Rocks in these groups are subdivided lithologically and order does not imply age relationships within or among groups
c) May include some felsic flows or pyroclastic rocks
d) May include quartz or quartz-feldspar crystal tuff
e) May include unit 1b rocks
f) Composed mostly of volcanic granitic chert and iron formation clasts
g) May include unit 6 rocks

C — Area of pervasive carbonatization

LIST OF PROPERTIES AND OCCURRENCES

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4. Chamac Holding Limited
5. Dome Exploration (Canada) Limited (Oldberg Lake Mo occurrence) [1966]
6. Falconbridge Copper Limited (Corporation Falconbridge Copper)
7. Falconbridge Nickel Mines Limited [1957]
8. Great Lakes Forest Products Limited
9. Higgins, G.S.
10. Hiser, L.A., and Hiser, E.K.
11. Hoey and McMillan Limited
12. Howard, R.
13. International Nickel Company of Canada Limited, The [1952]
14. Laister, R.C.
15. Lynx-Canada Explorations Limited and Dejour Mines Limited [1970]
16. McKenzie, K., and McKenzie, C.
17. Newmont Mining Corporation of Canada Limited [1975]
18. Redden, J. (Sakoose Mine)
19. Selco Mining Corporation Limited [1978]
20. Sulpetro Minerals Limited (Tabor Lake Prospect)
21. Wallace, R.
22. Young, J.

* Date in square brackets indicates last date of exploration activity.

NOTE: The marginal notes, list of properties and occurrences, metal and mineral abbreviations, and symbols apply to both the Western Part (P.2569) and Eastern Part (P.2570) map sheets of the Kawashegamuk Lake Area, therefore not all properties, occurrences, metal and mineral abbreviations, or symbols may be present on this map sheet.

MINERAL AND METAL ABBREVIATIONS

Ag	Silver
Au	Gold
chl	Chlorite
cp	Chalcopyrite
fl	Fluorite
fu	Fuchsite
gf	Graphite
gn	Galena
mo	Molybdenite
po	Pyrrhotite
py	Pyrite
tour	Tourmaline

SOURCES OF INFORMATION

Base map derived from the Forest Resources Inventory Map, Land and Waters Group, Ontario Ministry of Natural Resources, with minor corrections by D.U. Kresz and C.E. Blackburn.

Kenora-Fort Frances: Ontario Geological Survey, Map 2443, Geological Compilation Series, by C.E. Blackburn, 1981, scale 1:253 440.

Manitou-Stormy Lakes Area; Ontario Department of Mines, Map 42C, by J.E. Thomson, 1934, scale 1:63 360.

Aeromagnetic Map 1144G; Ontario Department of Mines/Geological Survey of Canada.

Aeromagnetic Maps 80460, 80461A, 80461B, 80462B, 80466A, 80466B, 80467A, 80467B, 80468, 80474; Ontario Geological Survey.

Geology is not tied to surveyed lines.

Magnetic declination approximately 3°30' E, 1982.

CREDITS

Geology by D.U. Kresz, C.E. Blackburn, F.B. Fraser, and assistants, 1980, 1981.

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

Kresz, D.U., Blackburn, C.E., and Fraser, F.B.

1982: Precambrian Geology of the Kawashegamuk Lake Area, Eastern Part, Kenora District; Ontario Geological Survey, Map P.2570, Geological Series-Preliminary Map, scale 1:15 840 or 1 inch to ¼ mile. Geology 1980, 1981.