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49°53'46" 49°53'46' LEGEND 4m Biotite-muscovite-quartz schist: derived from metasediments; fissile to crenulated; contains C3 (1C3 PHANEROZOIC <10 percent injected granitic stringers and/or 231 CENOZOIC XC3d c) 3 c,e Crossecho 4n Metatexite: brown wacke paleosome with QUATERNARY semicontinuous bedding; contains 10 to 70 RECENT percent granitic mobilizate: melanosome XC3d Lake, stream, and swamp deposits either poorly developed or absent; rarely ag-PLEISTOCENE C3d,1,10c 4p Staurolite-bearing metasediments: staurolite Sand and gravel deposits; boulder and clay till porphyroblasts (2 mm to 2 cm) developed in CROSSECHO UNCONFORMITY wackes, schists, and metatexites 4q Conglomerate: angular to rounded clasts of PRECAMBRIAN felsic and mafic metavolcanics, quartz, and LAKE D40,1,1,kg1 3c,f metasediments in a sandy wacke matrix; unpo,py,cp ARCHEAN sorted; 5 mm to 30 cm; matrix supported STOCK LATE ARCHEAN D3g,4a MAFIC INTRUSIONS Felsic Metavolcanics 11 11a Lamprophyre dikes; dark green; biotite 3 3a Flows: massive to laminated; feldspar and/or phenocrysts in a tremolite-plagioclase quartz phyric; white to pale yellow; aphanitic groundmass; contains numerous xenoliths to very fine grained 11b Lamprophyre: light to dark green; biotite-horn-3b Flows: autobrecciated; white to grey; contains blende-magnetite bearing; xenoliths absent chloritic wisps and pods; may retain flow lamipy,po,cp,sp INTRUSIVE CONTACT 3c Tuffs: thickly bedded to laminated; massive to graded; white to cream coloured; biotitic at NO OUTCROP EARLY TO LATE ARCHEAN higher metamorphic grade METAMORPHOSED FELSIC INTRUSIONS 3d Crystal tuffs: thickly bedded; massive; white ALDER + CEDAR to pink; composed of feldspar and quartz Miscellaneous Felsic Intrusionsa crystals in a quartzo-feldspathic matrix 3e Lapilli tuff, lapillistone: heterolithic, commonly 10 10a Granite pegmatite and aplite: white; biotitewith <10 percent combined mafic metavol-80 VO 310,9V D2a,3m,9b,a muscovite bearing; may contain garnet, tourcanic, metasedimentary and sulphide mineral sgkmam py,cp (15) maline, and/or fibrolitic sillimanite fragments; white 10b Granite pegmatite and aplite: pink; biotite-3f Breccia, tuff breccia: heterolithic; commonly 211,g,qv muscovite bearing; may contain garnet and contains mafic metavolcanic and feldspar portourmaline; fibrolitic sillimanite absent phyritic clasts in a felsic-tuff to crystal-tuff ma-10c Tonalite, monzonite, granodiorite dikes and trix; usually clast supported; white stringers: white to pink; fine to medium 3g Sericite-quartz schist; pale yellow to white; grained; equigranular; usually found intruding derived from sheared felsic metavolcanics and metasediments; parentage uncertain felsic dikes; fissile; may contain sulphide min-INTRUSIVE CONTACT 3h Sericite-carbonate-quartz schist; brown to vel-/3 d,e,4a low green; fissile; contains brown iron carbonate; derived from sheared felsic metavol-Crossecho Lake Stocka € 3d,e,c,4a canics and felsic dikes; may contain sulphide e,d,f,c,4a 9 9a Aplite: pink; very fine grained; sugary texture; 3i Quartz-feldspar aplitic dikes: white to pink; often cut by quartz veins sugary; fine grained; equigranular; may be 9b Tonalite: white; medium grained; biotite bearpervasively carbonate altered; may contain 40,300 sulphide minerals (cf. felsite) 3k Feldspar-phyric dikes; white to grey; eq-INTRUSIVE CONTACT uigranular to porphyritic; fine to medium grained; quartz phenocrysts rare or absent 3m Feldspar-quartz-phyric dikes: white, grey, or Sandybeach Lake Stocka pink; fine to coarse grained; equigranular to porphyritic; prominent quartz phenocrysts oc 8 8a Quartz monzodiorite to quartz diorite; grey to pasionally up to 2 cm in diameter pink; equigranular to porphyritic (plagioclase 3p Quartz porphyry: white to yellow: small quartz phenocrysts); medium grained; hornblendephenocrysts (0.1 mm) in an aphanitic, quartz-A. 4a.emp biotite bearing; foliated rich matrix; may be recrystallized 8b Quartz monzonite to monzonite: pink; equigranular to porphyritic (plagioclase Hornblende-Phyric Mafic and Intermediate henocrysts); medium to coarse grained; nornblende greater than biotite Metavolcanicsb INTRUSIVE CONTACT 2 2a Flows: massive; dark green; fine grained; ve-0a.4 m. sicular to amygdaloidal; foliated tour 2b Flows: pillowed; dark green to green; vesicu-Basket Lake Batholitha lar to amygdaloidal; fine grained 2c Flows: plagioclase phyric; 5 to 25 percent an-7 7a Hybrid zone: dioritic to quartz dioritic compohedral to subhedral, white plagioclase sition; variable colour and texture; contains 4 amp,10 a phenocrysts in a dark-green, fine-grained NO OUTCROP 40,b,d/1. numerous xenoliths and shows evidence of stoping and partial assimilation; hornblende 2d Flows: variolitic; dacitic composition; grey to POPLAR AND SPRUCE brown; 1 to 5 mm elongated varioles 7b Quartz diorite: leucocratic; medium grained; 2e Tuffs: dark green; foliated; feldspathic equigranular to porphyritic; biotite bearing; 2f Lapilli tuff, lapillistone: heterolithic; andesitic massive to foliated and dacitic clasts in a fine-grained, dark-green 7c Quartz monzonite: white to pink; medium tuff matrix grained; equigranular to porphyritic (ortho-2g Breccia, tuff breccia: heterolithic; light-grey clase phenocrysts); biotite bearing; massive dacitic and dark-green andesitic clasts in a fine-grained, dark-green tuff matrix 7d Granodiorite to granite: white to pink; medium 2h Chlorite-talc schist: green to dark green; foli-4a,3k to coarse grained; porphyritic (orthoclase ated; derived from sheared, hornblende-phyric phenocrysts) to equigranular; biotite bearing; 4h,c,3k,10c Au,py,asp,mag metavolcanics massive to foliated 2j Quartz-feldspar-phyric porphyry: dark-grey 7e Tonalite: white; blotite bearing; usually occurs groundmass with white plagioclase and blue-Sandybeach as dikes intruding mafic metavolcanics near 4b,m,p,1j,k,10a,3k quartz phenocrysts; biotitic the borders of the batholith 7f Aplite: pink to grey; fine grained; occurs as Mafic Metavolcanicsc INTRUSIVE CONTACT 100,0 1 1a Flows: massive; green to dark green; fine to 1m,n,3m medium grained; contains <1 percent plagio-Melgund Lake Stocka clase phenocrysts 1b Flows: amygdaloidal; green to dark-green groundmass with large (up to 1 cm) chlorite-6 6a Diorite to monzodiorite: grey to pink; por-SAND AND GRAVEL serpentine-filled amygdules (black) phyritic (plagioclase phenocrysts) to equi-1c Flows: pillowed; vesicular and amygdaloidal; granular; medium to coarse grained; often green; pillows well formed, close packed to contains amphibolite xenoliths; hornblende amoeboid, with thick selvedges and >10 perbiotite bearing /10b 6b Monzonite: pink to white; medium grained; cent interselvedge material 1d Lava tubes: defined as pillowlike structures equigranular to porphyritic; hornblende greater 1 100 with > 2 m long axes; amoeboid to mattress 2 100,40 shaped 6c Quartz monzonite: pink to white; medium grained; equigranular; massive to weakly foli-1e Pillow breccia, isolated pillow breccia, ated; hornblende greater than biotite hyaloclastite: rounded to angular pillow frag-40 0 100 ments in a green to dark-green matrix; pillow 6d Granodiorite: pink; medium to coarse grained; fragments retain chilled margins equigranular to porphyritic; hornblende much 1f Tuff: green to dark green; massive to foliated; greater than biotite often recrystallized to black, coarse-grained, 6e Monzonite to quartz monzonite dikes: pink to hornblende phenocrysts white; fine to medium grained; hornblende-biotite bearing; intrudes mafic metvolcanics 100 /100 1g Lapilli tuff, lapillistone: heterolithic; mafic and felsic metavolcanic clasts in a black to dark-INTRUSIVE CONTACT green, mafic-tuff matrix; pyroclastic to epiclastic in origin 1h Breccia, tuff breccia: heterolithic; mafic and Wild Pidgeon I METAMORPHOSED MAFIC INTRUSIONS felsic metavolcanic clasts in a black to darkgreen, mafic-tuff matrix; pyroclastic to epiclas-5 5a Gabbro: dark green to black; fine to coarse () 10 b 1j Basaltic dikes and sills: fine to medium grained; equigranular; ophitic to recrystallized 103k grained; dark to bright green; very hard; contextures; hornblende bearing 5b Melanogabbro: black; medium to coarse tacts clearly observe Au,cp,py,tour,mc,qv grained; magnetic; equigranular; colour index 1k Amphibolite: tine to medium grained; dark Lake ≤10; hornblende bearing 1m,n,3k green to black, often banded; recrystallized; 5c Leucogabbro: pale green to green; fine to derived from mafic-metavolcanic flows and medium grained; equigranular; colour index ≥40; hornblende bearing 1m Talc-chlorite schist: dark green; fine grained; fissile; derived from mafic metavolcanics 5d Knobby gabbro: contains hornblende porphyroblasts (2 to 7 mm) in a gabbroic to 1n Talc-cholorite-carbonate schist: dark green to SANDYBEACH LAKE leucogabbroic groundmass brown; pervasively iron-carbonate to calcite 5e Plagioclase-phyric gabbro: pale green to altered; derived from mafic metavolcanics black; 1 to 5 percent euhedral to anhedral, STOCK 1p Plagioclase-phyric flows: massive; contains >1 70/14a10c white to pale green, plagioclase phenocrysts, percent euhedral to anhedral, white to green up to 2 cm, in a gabbroic to leucogabbroic plagioclase phenocrysts in a light to darkgroundmass; hornblende bearing green groundmass ("Leopard Rock") 1q Plagioclase-phyric flows: pillowed; plagioclase INTRUSIVE CONTACT phenocrysts in pillow cores and selvedges 1r Plagioclase-phyric pillow breccia, isolated-pil-METAVOLCANICS AND METASEDIMENTS O CIPO low breccia, hyaloclastite: retains recognizable Clastic and Chemical Metasediments plagioclase phenocrysts throughout rock 1s Plagioclase-phyric lava tubes: as 1d with plagioclase phenocrysts 1t Plagioclase-phyric talc-chlorite schist: derived quartzose; massive to graded; thinly to very from plagioclase-phyric metavolcanics thickly bedded 1u Plagioclase-phyric amphibolite: contains NO OUTCROP 4b Siltstones: buff to grey; thickly laminated to stretched plagioclase phenocrysts thinly bedded; often interbedded with wackes 1v Hornblende-epidote xenoliths: dark green; 4c Argillaceous to phyllitic schist: dark grey to megacrystic; occurs as inclusions in the Sanblack, often graphitic; frequently interbedded dybeach Lake Stock with wackes 4d Ferruginous wackes: brown to rusty weathering; very thickly bedded, often with limonitic sil Silicified zone streaks and clasts; nil to trace sulphide miner 49°47'58" ADJOINS MAP 2529 49°47'58' 4e Pebbly sandstone: millimetre- to centimetre-CC 1050 Carbonate alteration sized quartz and lithic clasts in a sandstone to wacke matrix; usually clast supported 4f Mafic wackes: dark grey to black; thinly to a. Felsic intrusions are separated on the basis of lithology, spatial sepathickly bedded, usually massive; hornblende very much greater than biotite; derived from **PROPERTIES** relationships are not implied by the order of appearance in the leg-7. Geophysical Engineering Limited (1977); exploration arm 15. Porcupine Peninsular Gold Mines Limited (1950); name **ABBREVIATIONS** mafic metavolcanics of Teck Corporation Limited changed to Brunhurst Mines Limited (1953); incorporated 1. Asarco Exploration Company of Canada Limited (1970) 4g Chert; white to cream; very fine grained to b. Rocks contain prominent, millimetre-sized hornblende po-8. Goldlund Mines Limited (1981); receivership in November into Hydra Explorations Limited cryptocrystalline; occurs mainly as interflow 2. Beth-Canada Mining Company (1979); now defunct rphyroblasts and phenocrysts. . silver metasediments or with ironstones 16. Rivers Option (1960) c. Rocks have no intermediate members, and hornblende phenocrysts 3. Canadian Nickel Company Limited (1970) 9. Midas Mines Limited (1907); now defunct 4h Magnetite-quartz ironstone: laminated to thinly asp arsenopyrite and porphyroblasts are absent. 17. Ronayne Explorations Limited (1947); now defunct 4. Consolidated Ansley Gold Mines Limited (1950); name bedded; with or without garnet The legend, symbols and abbreviations are for the combined townships of McAree (Map 2528) and MacFie and Avery (Map 2529). Not all 10. Morton, C. (1969) Au gold 18. Selco Exploration Company Limited (1971); now Selco In-. quartz vein changed to Ankeno Mines Limited (1950), then to Bankeno 4j Hornblende-biotite-garnet amphibolite: black 11. Noranda Exploration Company Limited (1985): Standon cp chalcopyrite sheelite Mines Limited (1955) corporated with red spots (5 to 10 mm garnets); interunits may be found on this particular map sheet.

Mines and

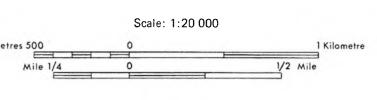
Minerals

Division

MAP 2528

PRECAMBRIAN GEOLOGY

MELGUND LAKE AREA **McAREE TOWNSHIP**



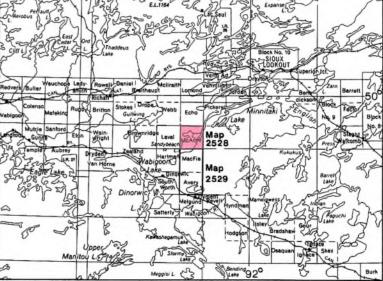
NTS Reference: 52 F/16 ODM-GSC Aeromagnetic Map: 1146G OGS Geological Compilation Map: 2443

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Scale: 1:1 584 000 or 1 inch to 25 miles **LOCATION MAP**

SYMBOLS × Small bedrock outcrop boundary Area of bedrock outcrop Bedding, top unknown (incl

observed - Geological boundary, position interpreted unknown (inclined, vertical) Geological boundary, position Bedding, top indicated by arrow

geophysical-inter-preted fault overturned) Lava flow, top in Anticline, syncline, with plunge direction of arrow o^{DH}o^T Diamond-drill hole Lava flow, dip overturned

Lava flow, dip a150 Shaft Foliation, (inclined, MA Magnetic attraction vertical)

special designation for fold axis

SOURCES OF INFORMATION

Base maps from maps of the Forest Resources Inventory, Lands and Waters Group, Ontario Ministry of Natural Resources, with revisions by B.R. Berger.

1981, Compilation 1973-1978. Operation Kenora-Ear Falls, Sandybeach-Route Lakes Sheet, District of Kenora; Ontario Division of Mines, Geological Series-

Volume 50, Part 2, by J. Satterly, scale 1:63 360 or 1 inch to 1 mile, 1941, Geology 1939 and 1940. Palonen, P., Speed A.A. and Huggins, R. 1976. Unpublished

Magnetic declination approximately 3°06'E in 1986.

Metric conversion factor: 1 foot = 0.3048 m.

Cartography by B.L. Aikman, Publication and Cartographic

Services, Ontario Geological Survey, 1989. Every possible effort has been made to ensure the accuracy of the information presented on this map; however, the Ontario Ministry of Northern Development and Mines does not assume any liability for errors that may occur. Users may wish to verify critical information; sources include both the references listed here, and information on file at the Resident Geologist's office This is one of a group of transitional stage, computer-assisted cartographic publications. The appearance of subsequent

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- 5. Conwest Exploration Company Limited (1950) 6. Frederick Mining and Development Limited (1950); name changed to Consolidated Frederick Mining Limited; defunct
- showing 12. Nova-Co Explorations Limited (1980)
- Abbican Mines Limited; defunct 1964
- 19. Sulpetro Minerals Limited (1981); now Novamin Resources Incorporated

gf graphite

gt garnet

mag magnetite

mc malachite

sp sphalerite

tour tourmaline

Zn zinc

22. Windfall Oils and Mines Limited (1970); name changed to

Camreco Incorporated (1981)

13. Orlac Red Lake Mines Limited (1951); name changed to 14. Pacemaker Petroleums Limited (1951); name changed to Pacemaker Mines and Oils Limited; defunct 1968

20. Tarbush Lode Mining Limited (1980, 1981, 1982) 21. Wilkinson, D. (1977)

Banding, (inclined) Lineation with plunge, note

ODM-GSC Aeromagnetic Maps 1145G, Dyment, Kenora District, scale 1:50 000; 1146G, Sandybeach Lake, Kenora Dis-

Assessment Files Research Offices, Ministry of Northern Development and Mines, Toronto, Sioux Lookout and Kenora. Kenora-Fort Frances, Districts of Kenora and Rainy River; Ontario Geological Survey, Geological Compilation Series, Map 2443, by C.E. Blackburn, scale 1:253 440 or 1 inch to 4 miles,

Preliminary Map P.1204, by F.W. Breaks, W.D. Bond, N. Harris, C.J. Westerman and D.W. Desnayers, scale 1:63 360 or 1 inch to 1 mile, 1976, Geology 1975. Sioux Lookout Area, District of Kenora; Ontario Department of

Mines, Map 41h, Accompanying Annual Report 1932, Volume 41, Part 6, by M.E. Hurst, scale 1:95 040 or 1 inch to 1 1/2

Lateral Lake Area (East Haif), District of Kenora; Ontario Geological Survey, Geological Series-Preliminary Map P.2372, by R.O. Page and B.J. Christie, scale 1:15 840 or 1 inch to 1/4

Dryden-Wabigoon Area, District of Kenora; Ontario Department of Mines, Map 50e, Accompanying Annual Report 1941,

map of Sandybeach Lake Area map covering McAree Township, scale 1:15 840 or 1 inch to 1/4 mile.

Sutcliffe, R.H. 1977, Unpublished maps of portions of Avery and MacFie townships, scale 1:15 840 or 1 inch to 1/4 mile. Geology not tied to surveyed lines.

CREDITS

Geology by B.R. Berger, D. MacMillan, D. Butler and assis-

and the Mining Recorder's office nearest the map area. maps may change as technological refinements and modified production procedures are implemented.

geology, Melgund Lake area, McAree Township; Ontario Geological Survey, Map 2528, scale 1:20 000.

Ontario Geological Survey

Northern Development

Ministry of

and Mines

- 4 4a Wackes: light to dark grey; feldspathic to

- bedded with mafic wackes and ironstones; derived from mafic metavolcanics; contains
- 4k Pyrite-magnetite-quartz ironstone; usually gossany and schistose; sulphide minerals 5 to 60 percent of rock

quartz in matrix

The letter "C" preceding a code refers to data compiled from existing maps and unpublished maps and reports covering portions of the Melgund Lake area. The letter "D" preceding a code refers to data compiled from diamond-drill logs filed for assessment work credits. he letter "G" preceding a code refers to data compiled from published airborne geophysical maps and maps filed for assessment work