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MARGINAL NOTES

LOCATION AND ACCESS

The centre of Esouega Township is located at approximately 48°01' north latitude and 81°35' 30" west longitude. Highway 101 crosses a road in the south-western portion of the township. The town site of Hawk Junction in the northeast corner of the township is connected by road with Highway 101. The Algoma Central Railway line to Wawa passes along the north side of the township and a private mine-access road runs along the west side. A road accessible by 4-wheel drive vehicles leads west from Hawk Junction to the former Regency Gold Mine Limited. Numerous trails and logging roads cut through the bush.

MINERAL EXPLORATION

The township is part of the Algoma Central Railway right of way lands and has been subjected to extensive prospecting activity. Between 1929 and 1938 the Ruth iron range, located in the northeast corner of the township, was drilled by International Steel Corporation, Michigan Iron Mines, Jalore Mining Limited, and Algoma Ore Properties. Drilling in excess of 15 000 metres has outlined deposits of 7 350 000 tons of low silica iron mineralization and 12 714 000 tons of high silica iron mineralization. (Statistical Files, Mineral Resources Group, Ontario Ministry of Natural Resources). The reader should refer to Moore (1945) for additional details.

The former Lakemount Mine Limited property was drilled between 1943 and 1956 by several companies. Drilling in excess of 21 000 metres has outlined 2 000 000 tons of iron in excess of 1 percent combined copper and nickel with platinum values (Canadian Mines Handbook 1977-78, p. 177). The former Lakemount property is currently being explored by Friespur Explorations Limited to evaluate a number of base-metal showings on the property. In the northern third of the township three gold occurrences have been discovered. These properties were known as Auel Mines Limited, Murray Algoma Mining Company Limited, and Sococana Mining Company Limited. Extensive pitting, stripping and limited diamond drilling was done on these properties during the 1930s. Records for most of the work are missing and there is no record of significant gold production. The former Regency Metals Limited developed a mine to a depth of 243 feet with two levels at 52 and 230 feet. In the centre of the township it produced a limited amount of copper and molybdenum in a mill test. A viable concentrate was not produced and while the prospect has been examined many times no further attempts at production have been made. Table 1 is a tabulation of exploration data on Esouega Township.

GENERAL GEOLOGY

In Esouega Township the Hawk Lake granitic complex, centered northwest of Hawk Lake, consists of medium-grained equigranular tonalite and granite near the lake and biotite monzonite and porphyritic monzonite to the southwest. The quartz porphyry and quartz-feldspar porphyry rocks marginal to, and intrusive into, the biotite monzonite and granite occur in the more pluto-appearing granitic rocks of the Hawk Lake granitic complex. Felsic fragmental extrusive rocks occur in a narrow unit south of the Friespur Explorations Limited copper-nickel showing. This unit is approximately 150 m in maximum width and 1.6 km in length. Felsic metavolcanics centered on Holdsworth Lake consist of crystal tuff, lapilli tuff and massive flows. Minor quantities of felsic tuffs and lapilli tuffs occur between the Katherin iron range east of the north end of Looskin Lake.

Felsic metavolcanics are present beneath the eastern extension of the Lucy iron range and beneath the Ruth iron range. Beneath the Ruth iron range the felsic metavolcanics consist of tuff, lapilli tuff, various breccias, and subvolcanic flows and are generally well exposed. Minor quantities of felsic intrusive rocks occur east of McCann Lake, west of the Murray Algoma Mining Company Limited property and southeast of the Murray Algoma Mining Company Limited property. The mafic rocks in Esouega Township consist of crystal tuffs, tuffs, breccias, and plowed, amygdaloid, tarc-actinone and massive flows. Massive, medium-grained intrusive rocks of gabbro to diorite composition are common. They occur most abundantly on the Friespur Explorations Limited property and between the former properties of Auel Mines Limited and Murray Algoma Mining Company Limited. Iron formation predominantly consisting of, from top to bottom, siderite, ironstone, pyrite ironstone, chert, and pyrite gabbro, constitutes the Lucy and Ruth iron ranges. The Katherin iron range is relatively thin and consists predominantly of chert and minor pyrite ironstone. A large mafic to ultramafic intrusion, predominantly meta-pyroxenite, is centered on Sunrise Lake. It hosts copper and nickel mineralization. The Hawk Lake granitic complex is an epizonal intrusion characterized by rapid lithologic changes. The former Regency Metals Limited mine was developed in a toner phase of the intrusion.

STRUCTURAL GEOLOGY

The metavolcanics and metasediments in Esouega Township form a northeast-trending series of units which appear to be monoclinal, facing north. The Hawk Lake granitic complex displays an intrusive relationship with these supracrustal rocks. The quartz porphyry border phase of the complex contains abundant blocks of supracrustal rock and sharply cross cuts them. The Hawk Lake granitic complex displays epizonal relationships with such as abundant xenoliths, porphyritic border phases, and sharp cross-cutting intrusive relations. The sheared nature of the rocks on McEwen Lake suggest a fault is present within the lake and the tectonic offset by gneiss faulting on an unnamed lake northeast of Holdsworth Lake. The inferred appearance of the rocks at a number of locations on Looskin Lake suggests fault movement along the length of the lake parallel to the lake.

ECONOMIC GEOLOGY

Base-metal mineralization occurs in quartz veins and shear zones in supracrustal and intrusive rocks on the Friespur Explorations Limited property, and massive base-metal sulphide mineralization consisting of chalcocite, sphalerite and pyrite occurs along a quartz porphyry - mafic metavolcanic contact just south of Sunrise Lake. Disseminated pyrite, pyrrhotite, chalcocite and pentlandite occur in the ultramafic metaproxenite intrusion centered on Sunrise Lake. Massive chalcocite and pyrite with minor magnetite occurs at the Regency Metals property. This mineralization may be associated with xenolithic blocks of supracrustal rocks caught up in the Hawk Lake granitic complex. Gold mineralization found on the Auel Mines Limited, Murray Algoma Mining Company Limited and Sococana Mining Company Limited properties is already associated with the contact between quartz and porphyry intrusions and supracrustal rocks. Silicification, carbonization, and pyrite are common in areas of gold mineralization. Siderite is the iron mineral of economic interest within the iron formations. The siderite is fine-grained, and frequently comprises a massive siderite ironstone unit at the stratigraphic base of the iron formation.

RECOMMENDATIONS TO THE PROSPECTOR

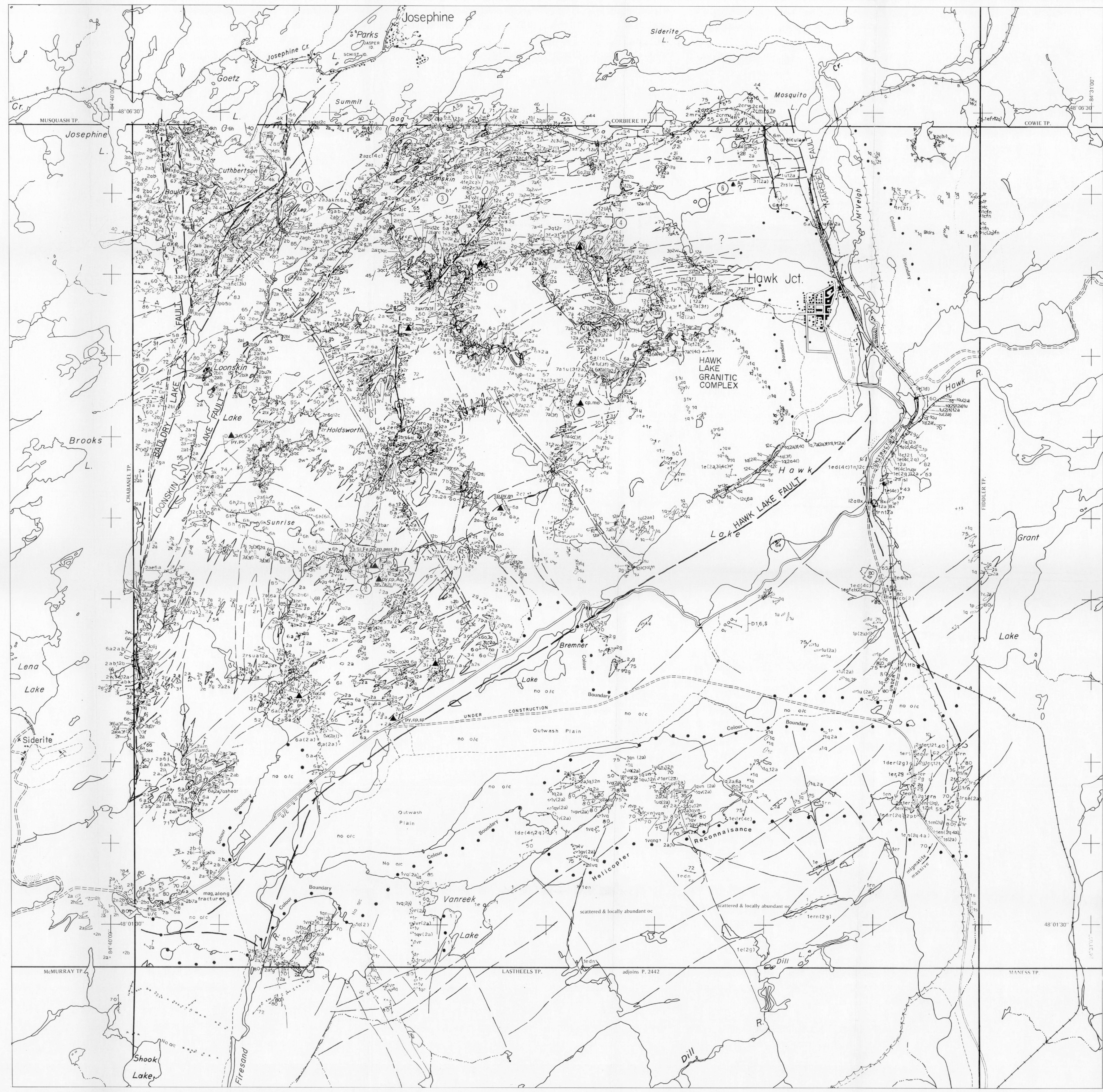
The iron ranges have been extensively drilled so as to preclude the location of additional near-surface iron deposits. The general area of contact between the quartz-feldspar porphyry intrusion and supracrustal rocks in Esouega Township appears to be a potentially favourable area to prospect for gold. Some of the former gold properties found in the area may warrant re-examination. The rocks found in both townships are favourable for base-metal mineralization even though base-metal showings are not common.

REFERENCE

Moore, E.S. and Armstrong, H.S. 1945. Iron Deposits in the District of Algoma, Ontario. Department of Mines, Annual Report, Vol. 95, Part 4, p. 1-178.

TABLE 1 - TABULATED DATA OF EXPLORATION ACTIVITIES IN ESOUEGA TOWNSHIP (DATA FROM ASSESSMENT LIBRARY FILES, TORONTO AND RESIDENT GEOLOGIST'S OFFICE, SAULT STE. MARIE AND ALGOMA CENTRAL RAILROAD FILES, SAULT STE. MARIE, ONTARIO)

Table with columns: Company, File, Commodity. Lists exploration activities for various companies like Algoma Central R.R., Algoma Ore Properties, Auel Mines Ltd., etc.



LEGEND\* showing geological symbols for various rock types and features. Includes symbols for mafic to ultramafic intrusive rocks, mafic to ultramafic igneous rocks, and metamorphosed rocks.

ESQUEGA TOWNSHIP WAWA AREA ALGOMA DISTRICT. Includes map scale (1:158 000) and location map showing the township's position relative to Lake Superior and the Algoma District.

PHANEROZOIC GEOLOGIC QUATERNARY. Lists geological units such as Pleistocene and Recent, and Precambrian units like Mafic Intrusive Rocks and Carbonate Rocks.

METAL AND MINERAL ABBREVIATIONS. Lists abbreviations for various minerals and metals: Au (Gold), Ag (Silver), cp (Chalcocite), ga (Galena), mag (Magnetite), mo (Molybdenite), pent (Pentlandite), pt (Pyrrhotite), pi (Platinum), pr (Pyrite), sp (Sphalerite), st (Sulphide Mineralization), su (Sulphur).

LIST OF PROPERTIES AND DEPOSITS. Lists 8 properties and deposits: 1. Auel Mines Limited (Huber, W. claims), 2. Friespur Explorations Limited (Lakemount Mines Limited), 3. Katherin Iron Range (MacAulay Iron Prospect), 4. Murray Algoma Mining Company Limited, 5. Regency Mines Limited (Regency Metals) (International Rawick Limit 60), 6. Sococana Mining Company Limited (Reed Gold claim), 7. Ruth Iron Range, 8. Lucy Iron Range.

SYMBOLS. Lists symbols for geological boundaries, structural features, and other map elements. Includes symbols for Schistosity, Lamination, Glacial striae, and various types of faults and folds.

SOURCES OF INFORMATION. Lists sources of geological data: Base map derived from the Forest Resources Inventory maps, Lands and Waters Group, Ontario Ministry of Natural Resources; Assessment Files Research Office, Ontario Geological Survey; Assessment Files Office, Ontario Ministry of Natural Resources; Statistical Files, Mineral Resources Group, Ontario Ministry of Natural Resources; Assessment Files Office, Algoma Central Railway, Sault Ste. Marie; Assessment Files Office, Algoma Central Railway, Sault Ste. Marie.

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NOTES. Provides additional information about the map, including: a) This is a field legend and may be changed subsequently to laboratory investigations; b) Greater than 50 percent carbonate; c) Greater than 50 percent quartz; d) Greater than 50 percent quartz; e) Greater than 50 percent quartz; f) Greater than 50 percent quartz; g) Greater than 50 percent quartz; h) Greater than 50 percent quartz; i) Greater than 50 percent quartz; j) Greater than 50 percent quartz; k) Greater than 50 percent quartz; l) Greater than 50 percent quartz; m) Greater than 50 percent quartz; n) Greater than 50 percent quartz; o) Greater than 50 percent quartz; p) Greater than 50 percent quartz; q) Greater than 50 percent quartz; r) Greater than 50 percent quartz; s) Greater than 50 percent quartz; t) Greater than 50 percent quartz; u) Greater than 50 percent quartz; v) Greater than 50 percent quartz; w) Greater than 50 percent quartz; x) Greater than 50 percent quartz; y) Greater than 50 percent quartz; z) Greater than 50 percent quartz.