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GEOLOGICAL AND GEOCHEMICAL REPORT ON THE 32 CLAIM PROPERTY OF MAURICE HIBBARD McGRUER LAKE AREA DISTRICT OF KENORA, PATRICIA MINING DIVISION, ONTARIO

NTS 53B/14

Lat. 53° 00' Long. 90° 15'

- by -

M.D. SMITH, F.G.A.C.

1 DECEMBER 1986

SUMMARY

Maurice Hibbard is the owner of 32 claims in the Eyapamikama Lake area, Ontario. The property was acquired to cover a potentially favourable metavolcanic-metasediment contact which is also geophysically anomalous. This contact area hosts ten known gold occurrences in close spatial association to iron formation along the north shore of Eyapamikama Lake. Potential exists for stratabound gold deposits in metamorphosed or structurally deformed iron formation. In July and August 1986, a geological survey was done on the claim group by Michael Smith Consulting.

On the basis of favourable stratigraphy, anomalous geophysical trends, and the presence of nearby gold occurrences, it is concluded that the property warrants systematic exploration to look for stratabound gold targets.

LIST OF FIGURES

LIST OF APPENDIX

INTRODUCTION

This report was prepared at the request of Ingamar Exploration. It describes the geological and geophysical setting of the North Rim volcanics. Previous work, results of the 1986 field work and geological setting on the claims are described, and the nature of known mineralization to the west is discussed.

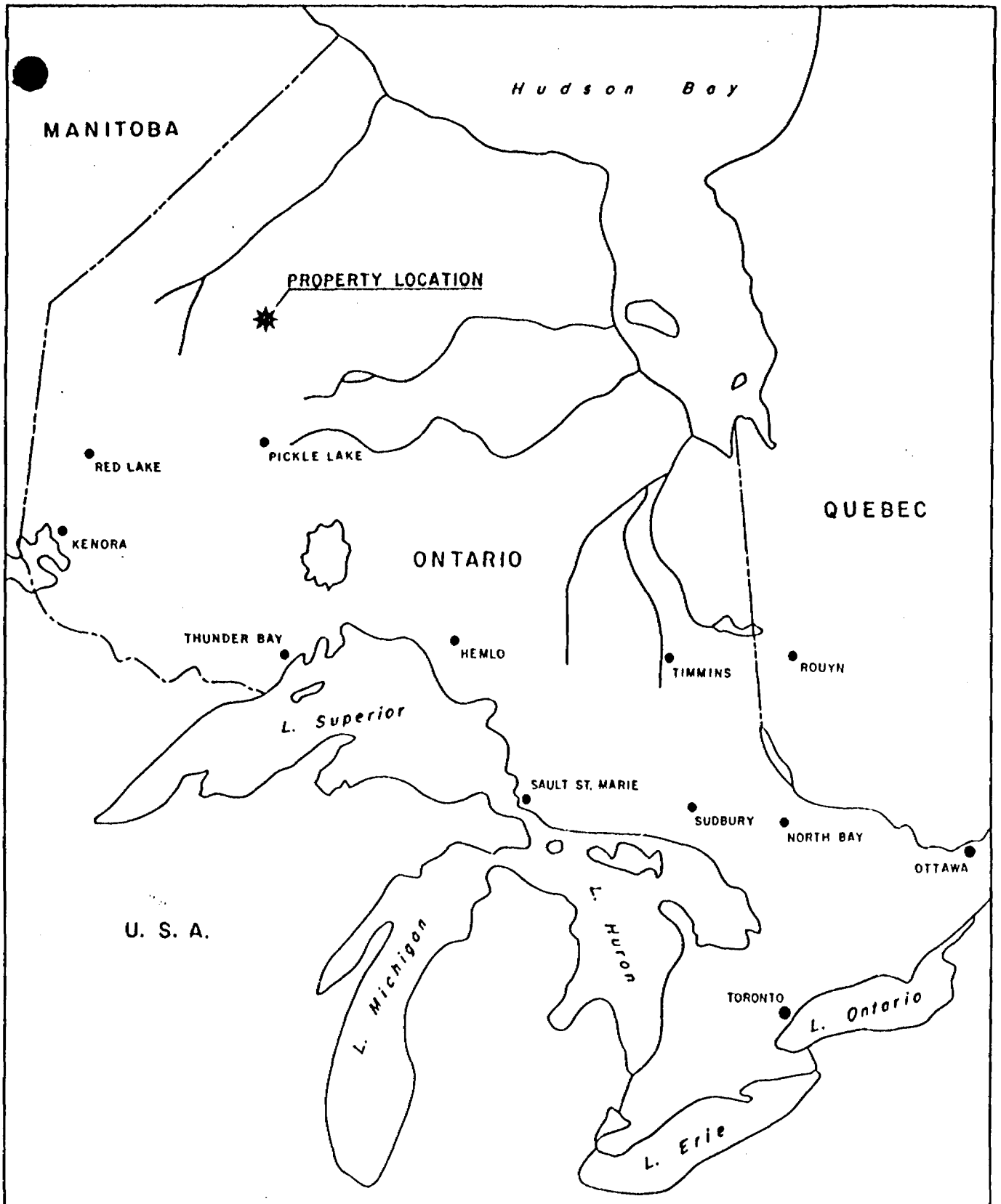
PROPERTY (See figure 2 in text)

The property consists of 32 contiguous unpatented mining claims. The claims are recorded on the MNR Seeseep and Erichsen Lake claim sheets, Patricia Mining Division, Kenora District.

CLAIM NUMBERS		STAKING DATE	
Seeseep Lake			
901236 - 901248 incl.	901240 Excluded.	27 MARCH -	1 APRIL 1986
901255 - 901258 incl.		"	"
880480 - 880483 incl.		"	"
880485 - 880487 incl.		"	"
901301 - 901303 incl.		"	"
Erichsen Lake			
901431 - 901436 incl.		1 APRIL 1986	

LOCATION, ACCESS, AND SERVICES (See Figure 1 in text)

The property is located 105 miles north northwest of the town of Pickle Lake, 180 miles northeast of Red Lake, and 6 miles northeast of the Indian Reserve at Round Lake. Access to the property can be gained by float or ski-equipped aircraft from Round Lake, or the charter base at Windigo Lake, 29 miles to the south. An all weather gravel road connects Windigo Lake to Pickle Lake. Round Lake has a gravel airstrip capable of landing DC-3 sized aircraft, and has daily scheduled air service from southern Ontario.



SCALE 1:8,236,800

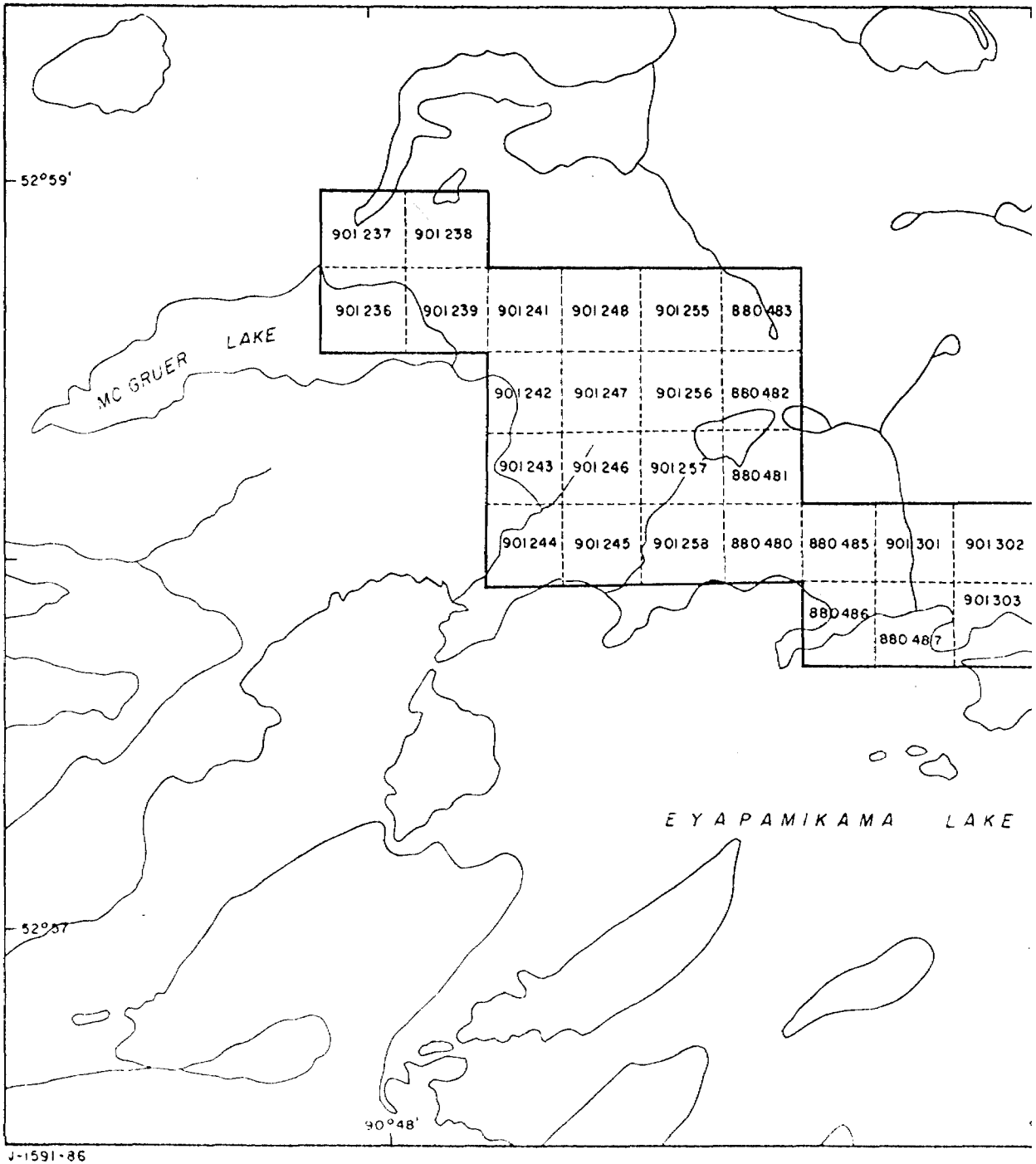
KM	0	160	320	480
MILES	0	100	200	300

NORTH CARIBOU LAKE CLAIMS
LOCATION MAP

MICHAEL SMITH CONSULTING

DEC./86 | FIG. 1

Drawn by Wm. Jomel & Assoc. Ltd.


52°59'
901 237
901 238
901 236
901 239
901 241
901 248
901 255
880 483
901 242
901 247
901 256
880 482
901 243
901 246
901 257
880 481
901 244
901 245
901 258
880 480
880 485
901 301
901 302
901 303
880 486
880 487
MC GRUER LAKE
EYAPAMIKAMA LAKE
52°57'
90°48'

J-1591-86

Groceries, building materials and general mining supplies can be found in Pickle Lake and Red Lake. Groceries and limited building materials can be purchased from the Hudsons Bay Store in Round Lake.

PHYSIOGRAPHY AND VEGETATION

The area is topographically typical of the Precambrian Shield, being essentially flat with local relief from 50-200 feet. Most of the landforms are of glacial origin. Moraines and boulder ridges form prominent features in some localities. Between ridges and low hills, the country is mainly swamp, consisting of spruce or tamarac muskeg.

Due to glacial action, few of the outcrop areas are large or stand out topographically. The exception is the country underlain by the north Rim Volcanic Sequence which extends from Atikomik Lake east to Eyapamikama and southern easterly to Opapimiskan Lake. The metamorphosed pillow lavas and iron formation forming the northern border of the greenstone belt form elongate ridges across the area, including the subject claim group. Relief on the claim group is about 50 feet.

Most of the region drains northward by the Windigo River into the Severn River and thence to Hudsons Bay. Despite the widespread distribution of glacial overburden, which limits outcrop area to about 5%, many of the lakes have shore lines shaped by the underlying rock structure. The long axis of Eyapamikama Lake is the axis of a syncline trending east west.

Forest cover consists of spruce, balsam, poplar, birch, and jackpine; distributions depending on forest age, soil type, and moisture content. Pretty well the whole region has been burnt over at various times. The subject claim group is sparsely covered by spruce forest and spruce muskeg. A band of sandy moraine runs east west through the south half of the claims, and is covered in spruce and poplar.

PREVIOUS WORK

1941	Satterly (1941) produced the first geological map (scale 1" = 1 mi.).
?1950's?	Some exploration activity is indicated by old trenches found at three locations: the west end of Castor Lake in pyrite and arsenopyrite mineralization, south of Pollux Lake in lean quartz-tourmaline-arsenopyrite veins, and southeast of McGruer Lake in rusty black chert. No assessment reports are available.
1960	ODM - GSC (1960) flew an airborne magnetometer survey (scale 1" = 1 mi.).
1962	Emslie (1962) carried out ODM reconnaissance mapping (scale 1" = 4 mi.).
Early 1960's?	A small (?) drill program was carried out west of McGruer Lake as indicated by an abandoned drill camp and overgrown cat road. A drill collar was also noted on the Stanley Lake property of Moss Resources during their 1985 field work. No assessment reports are available. A general lack of outcrop in the area suggests the targets were airborne EM conductors related to massive sulphide exploration.
1971	Thurston et al . (1971) carried out ODM reconnaissance mapping (scale 1" = 4 mi.).
1981	Andrews et al. (1981) conducted a preliminary evaluation of the geology and economic potential of the area for the Ontario Geological Survey.
1984	A large Ontario Geological Survey (OGS) crew mapped the area from Agutua Arm to the eastern end of Eyapamikama Lake. Results of their work were released as Bartlett et al. (1984) and Breaks et al. (1984).

1985 Northern Dynasty drilled 6 holes on their claims at Castor Lake, and 3 noles on their McGruer property.

1985 The Pollux Lake iron formation was the subject of a B.Sc. thesis sponsored by the Ontario Geological Survey.

1986 Piroscho (1986) led a Mineral Deposits mapping team of the Ontario Geological Survey and mapped all of the known showings along the north shore of Eyapamikama Lake.

1986 A preliminary geological reconnaissance of the Atikomik-Miskeesik-Capella Lakes area was done by the author to assess the potential for stratabound gold deposits associated with the iron formation. No previous work has been recorded on the claims, and there is no evidence of any previous field work.

1986 Agnico-Eagle carried out a program of surface work on claims immediately east of the Colin Bowdidge property at Capella Lake.

PRESENT SURVEY

Following the release of the OGS helicopter Mag-EM survey in February 1986, the North Rim Volcanics between Stanley Lake and the Indian Reserve boundary was staked. Mr. Hibbard commissioned the author to undertake a geological/geochemical reconnaissance of the claims and this was done during the period 14 July - 20 August, 1986. The survey consisted of prospecting, rock sampling and mapping along 100 m north south compass and topofil lines, after chaining an east west claim line for control. Map control was by 1:50,000 scale air photography and topographic maps. All data was plotted on a 1:5,000 scale base map, appended to this report. Recent OGS mapping at (Bartlett, 1985) at 1" = 1/2 mile and the helicopter geophysical survey were used as a guide to choosing areas of concentration.

GEOLOGY

Regional Geology (Refer to figure 3 and 4 in text)

The claims are situated along the north limb of the North Caribou-Opapimiskan-Neagawank Lakes greenstone belt. Due to limited access until recently, the

LEGEND

CENOZOIC

QUATERNARY

PLEISTOCENE AND RECENT

Till, clay, sand, gravel.

UNCONFORMITY

PRECAMBRIAN

LATE PRECAMBRIAN

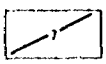
CARBONATITE AND RELATED ROCKS[a, b]

8 Sovite (calcite-rich igneous rock).

INTRUSIVE CONTACT

MIDDLE TO LATE PRECAMBRIAN (PROTEROZOIC)

MAFIC INTRUSIVE ROCKS[a]



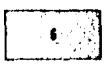
7 Unsubdivided.[f]
7a Diabase dikes.

INTRUSIVE CONTACT

EARLY PRECAMBRIAN (ARCHEAN)

FELSIC INTRUSIVE AND METAMORPHIC ROCKS[c, d, a]

FELSIC INTRUSIVE AND HYBRID ROCKS



6 Unsubdivided.[f]
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.
6j Syenitic rocks.
6k Hornblende granodiorite to quartz diorite.
6m Pegmatite, aplite, and granitic veins.

INTRUSIVE OR GRADATIONAL CONTACT

MIGMATITIC ROCKS[d, a]

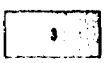
5 Unsubdivided.[f]
5a Biotite-quartz-feldspar gneiss (metasedimentary migmatite > 25% granitic material).
5b Hornblende-feldspar-quartz gneiss (metavolcanic migmatite > 25% granitic material).

MAFIC TO ULTRAMAFIC INTRUSIVE ROCKS

4 Unsubdivided.[f]
4a Gabbro.
4b Diorite, quartz diorite.
4c Ultramafic rocks and their serpentinized equivalents.
4d Hornblendite.
4e Anorthosite to gabbroic anorthosite.
4f Anorthositic gabbro.
4g Gabbro, metagabbro.
4h Porphyritic gabbroic anorthosite.
4j Gabbro porphyry.
4k Foliated to massive quartz diorite to quartz monzonite.

INTRUSIVE CONTACT

METASEDIMENTS[g]



3 Unsubdivided.[f]
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 Garnetiferous metasediments.
3g Staurolite-bearing metasediments.

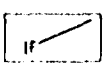
METAVOLCANICS

FELSIC METAVOLCANICS[g]

2 Unsubdivided.[f]
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.

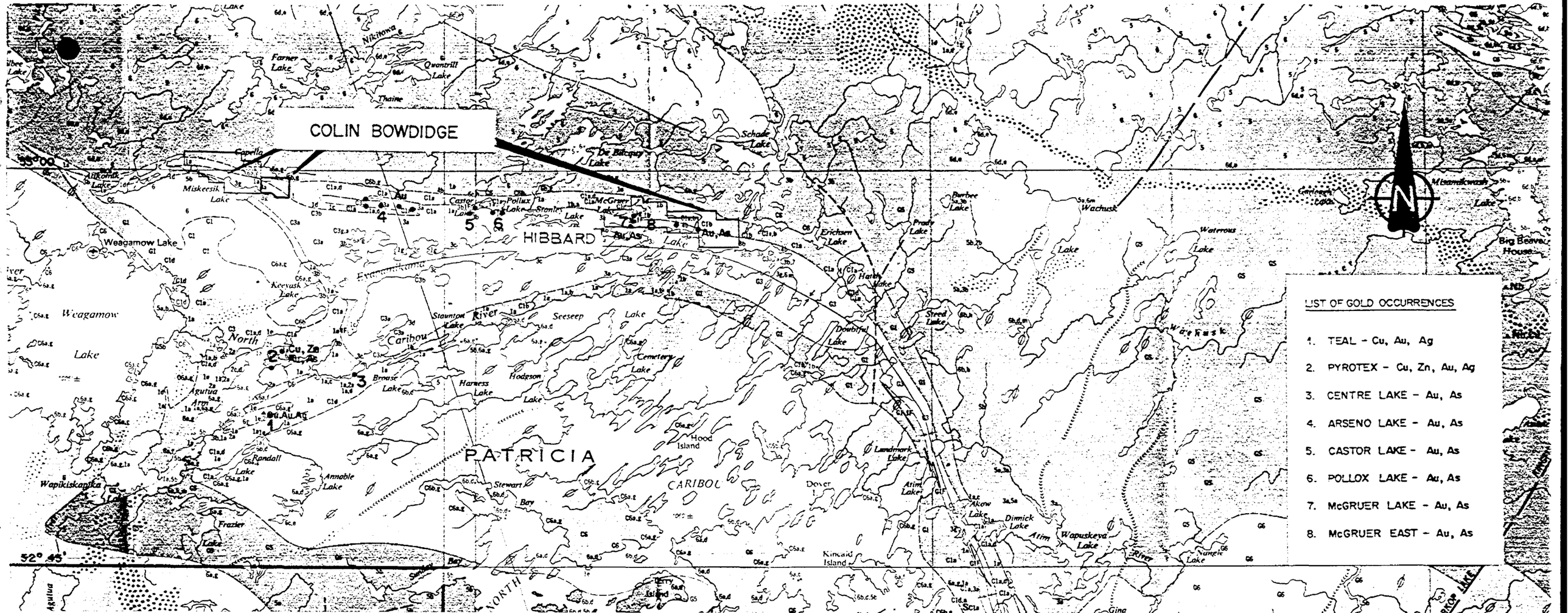
MAFIC TO INTERMEDIATE METAVOLCANICS[g]

1 Unsubdivided.[f]
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).
1g Migmatized mafic metavolcanics (10-25% granitic material).
1h Massive to pillowed variolitic basalt to andesite.
1j Mafic flow top breccia.
1k Flow banded basalt to andesite.



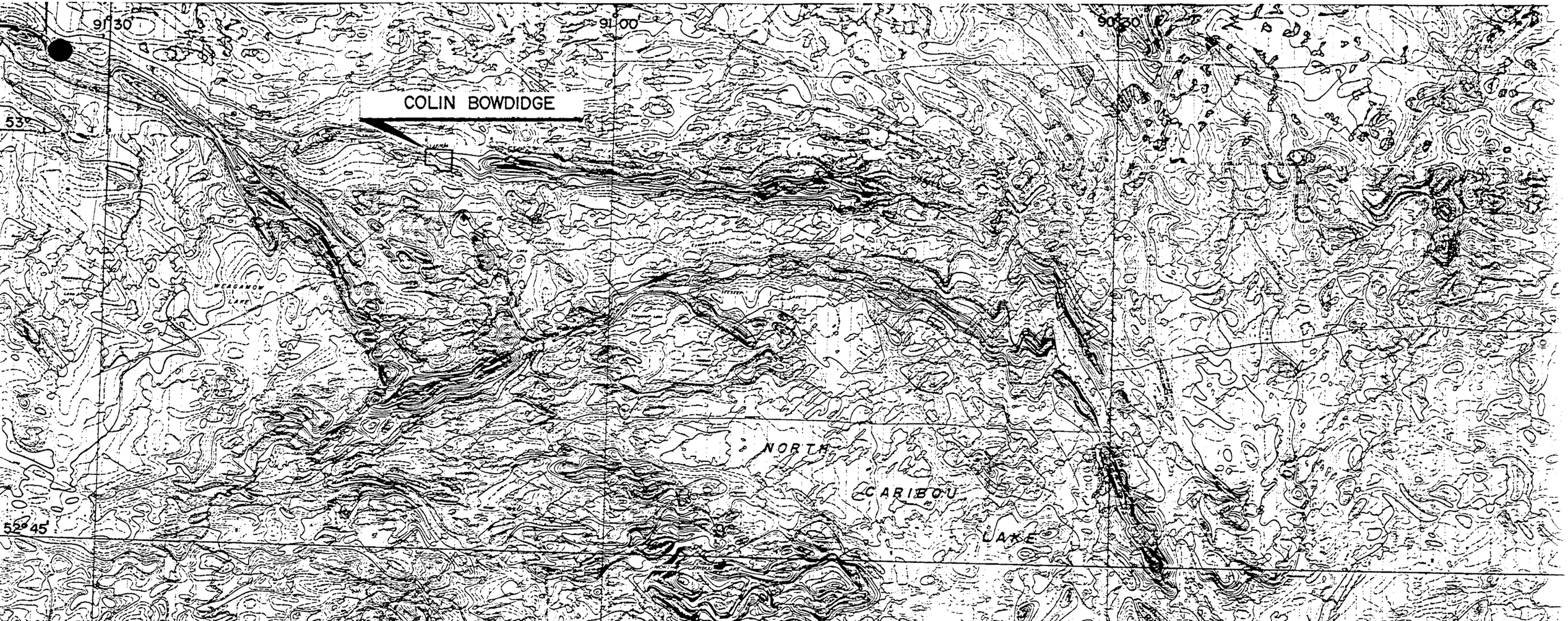
IF Iron formation (associated with stratigraphic formations 1, 2 and 3).

S *Sulphide mineralization.*



LIST OF GOLD OCCURRENCES

1. TEAL - Cu, Au, Ag
2. PYROTEX - Cu, Zn, Au, Ag
3. CENTRE LAKE - Au, As
4. ARSENO LAKE - Au, As
5. CASTOR LAKE - Au, As
6. POLLOX LAKE - Au, As
7. McGRUER LAKE - Au, As
8. McGRUER EAST - Au, As


91°30'
91°00'
90°30'
53°
52°45'
COLIN BOWDIDGE
NORTH
CARIBOU
LAKE

belt has not been extensively worked by mining and exploration companies. Most of the available geological information on the area is from government funded mapping. The Ontario Geological survey is currently involved in the second year of a three-year geological/geophysical survey of the area.

The North Caribou "greenstone belt" forms part of the Sachigo Subprovince, which consists of several small irregularly curved metavolcanic-metasedimentary belts surrounded by granitic rocks. There is speculation on the part of OGS workers that the North Caribou, Windigo Lake, North Spirit Lake, and Wunnummin Lake belts are all remnants of a once continuous "megabelt." Some of the features in the sequences above are quite distinct from supracrustal belts to the south in the Uchi and Wabigoon Subprovince. Within the North Caribou Lake belt, a thick metasedimentary sequence consisting of conglomerates, arenites, wacke-mudstone and chemical metasediments is flanked on both sides by predominantly mafic meta-volcanic sequences. The sediments have been interpreted as overlying the volcanics, forming a large synclinorium, with Eyapamikama Lake as its axis. The supracrustal rocks are bounded on all sides by metamorphosed granitic rocks.

North Rim Metavolcanics

North of Eyapamikama Lake a 400 to 1700 metre thick sequence of metavolcanics is continuously flanked throughout the area by tonalites to the north and clastic metasediments to the south. The metavolcanics comprise massive and pillowed mafic flows with minor inter calations of mafic and intermediate volcaniclastic rocks, chemical metasediments and metamorphosed ultramafic rock of unknown origin. In most areas, the metavolcanics are moderately to intensely deformed; particularly in the Atikomik-Capella Lakes area. Pillows locally contain abundant vesicles, indicating a shallow marine environment of deposition.

When well preserved, as they are northeast of McGruer Lake, they show flow tops to the south. In this area, epidote segregations up to 3 by 12 inches are common. Within flows, metamorphosed equivalents to flow rocks are seen. These are represented by gradations from massive amphibolite to hornblende schist, some of which may represent metamorphosed coarse grained portions of the flows.

At the top of the volcanic sequence, lying between them and the overlying metasediments, is a narrow transition metasediment, from a typical 10 foot width, to 300 feet thickness south of Pollux Lake. They are finely bedded rocks consisting of alternating layers of hornblende and quartz rich material, in essence an impure quartzite. They are overlain in turn by a pebble to boulder conglomerate containing lenticular boulders of white granite. The presence of these large granite boulders indicates a considerable time interval between the deposition of the conglomerate and that of the underlying volcanics. These sediments are therefore a distinct group of rocks which appear to form a transition series between the processes of vulcanism and sedimentation, and should be placed at the top of the volcanic series.

Eyapamikama Lake Metasediments

These rocks represent a major episode of clastic sedimentation occupying the core of the North Caribou Lake belt. They are in gradational contact (see above) with the metavolcanics. Deformation of the sediments is generally most pronounced close to the volcanic contact. The best preserved section of sediments follows the length of Eyapamikama. At the west end of the lake, there is an upward fining sequence from conglomerate through an arenite-mudstone, to a mudstone unit.

The base of the clastics is characterized by matrix-supported conglomerate containing a wide variety of cobble to boulder sized clasts derived from local plutonic, volcanic, subvolcanic, and sediment source areas. Overlying the conglomerates are massive, immature, coarse wackes and feldspathic arenites.

Interbedded mudstone-arenite or wacke commonly exhibits primary structures like graded bedding, flame structures, slump features, and cast rip-ups. As these sediments exhibit various combinations of the Bouma cycle, they are interpreted to be turbidites. Most of the clastics comprise thinly bedded, fine grained mudstones characterized by a well developed slatey cleavage. These rocks imply deposition in a low energy, deep water environment.

Chemical metasediments like chert and banded iron formation commonly occur as local accumulations within both the volcanic and sedimentary sequences above. Grunerite-quartz banded iron formation is common in the Castor-Pollux and McGruer Lakes area, and is associated with pyrite-arsenopyrite-quartz veinlets containing gold values at McGruer Lake. Banded magnetite iron formation has been noted in outcrop at the south west end of McGruer Lake, but is not preserved as a continuous stratigraphic unit along most of the north rim of the Syncline (Bartlett, 1985).

Published government geological maps indicate that the claims owned by Maurice Hibbard straddle the contact between mafic volcanics to the north and clastic sediments to the south. Government aeromagnetic maps suggest that the contact is underlain by a band of iron formation with peak magnetic value near the above contact of 60,750 gammas. This band of iron formation follows the volcanic-sedimentary contact east and south to the Musselwhite property on Opapimiskan Lake, 30 miles along strike. On the south shore of the Lake, a consortium of companies led by Dome Mines has outlined a gold deposit related to structurally

controlled sulfide mineralization in iron formation.

Property Geology (Refer to figure 6, appended)

The 32 claims of Maurice Hibbard, as stated above, centre on the contact between mafic volcanics in the north, and clastic sediments in the south. The rocks are strongly foliated, and dip vertically or steeply to the south. The stratigraphy can be subdivided into 3 rock types within the map area, as follows:

Felsic-Intermediate Metavolcanics (Unit 3)

This unit appears as a single outcrop 150 m south of showing No.1. The rock is fine grained, massive, hard, brittle, a dark olive green fresh surface, and may be similar in composition to the mafic sill to the south.

Mafic Metavolcanics (Unit 2)

In the property area, this 1300 to 2000 metre thick unit consists mainly of fine grained, dark green, foliated, chloritic mafic flows, which are plagioclose rich in places (2b). The unit is pillowed in part with extreme attenuation of pillows close to the contact with the overlying metasediments. Away from the volcanic-sediment contact, pillow attitude indicates tops to the south. The small outcrops of diopside-plagioclose-epidote mafic volcanics (2q) 50 m south of showing No.1 may be metamorphosed sediments.

Clastic Metasediments (Unit 4)

The metasediments exposed on the claims are mainly conglomerates and wackes. Matrix supported conglomerate intercalcated with a coarse grained quartz wacke is exposed just south of the interpreted contact between the mafic volcanics and the sediments. These rocks contain both gold showings found on the claims to date.

This unit is intensely deformed near its lower contact, and is chlorite, and garnet bearing. Thin (10 m?) lenses of rusty weathering grunerite iron formation occur within this unit 50 to 100 m south of the interpreted contact. Conglomerate clasts range from pebble to boulder in size, and all are extremely attenuated parallel to foliation. Most of the clasts are quartz with lesser amounts of mafic volcanics, felsic intrusive, and fine grained metasediment. The grain size decreases higher in section, giving way to wackes and mudstones towards the southern claim boundary. These rocks are fined grained, finely bedded, biotite rich, and have a well developed slatey cleavage.

Chemical Sediments (Unit 6)

As stated above, two exposures of grunerite-chert-iron formation were found 50 to 100 m south of the volcanic-sediment contact. The exposures are less than 50 m wide, with grunerite rich sections about 5 m thick. Thin, 1 m beds of chert and quartz veins occur within this rusty weathering zone, containing semi-massive to massive arsenopyrite garnet, chlorite, and carbonate. Gold values are directly related to arsenopyrite content, which may be as much as 10% of rock volume. Although these exposures are classed as chemical metasediments, the arsenopyrite mineralization is related to thin quartz veins, usually less than 50 cm wide, accompanied by accessory black tourmaline.

Intrusives

Intrusive lithologies are uncommon in the McGruer Lake claims area. The entire stratigraphic sequence is intruded by narrow discordant, discontinuous quartz veins which generally contain little or no sulfides. Several outcrops of gabbo were noted by government mappers on the southeast shoreline of McGruer Lake but were not mapped on the present claim group.

Metamorphism

Garnetiferous chlorite schist horizons found in the sediments, and amphibolitic layers found within mafic flows, indicate that the rocks on the property are regionally metamorphosed to upper greenschist or lower amphibolite facies. According to Breaks (1985), the metamorphic isograds trend roughly east west, and increases from low grade chloritic rank to medium grade, evidenced by the appearance of biotite in the mudstones, and localized andalusite, cordierite, and staurolite. Roughly 2.5 km north of the start of the biotite isograd, the appearance of garnet is favoured in certain mafic metavolcanic and iron-rich metapelite compositions. The garnet isograd was traced for at least 16 km between McGruer Lake and west of Castor Lake. To the west of the claims, in the area of Miskeesik Lake, there is a distinct andalusite-sillimanite isograd. As well, kyanite bearing metapelites have been reported by the OGS from Miskeesik Lake.

Structural Geology

Two major folding events are evident in the rocks in the Eyqpamikama Lake area. The first, D1, is evidenced by tight to isoclinal folding on east striking, near vertical axial planes, a penetrative mineral foliation (S1), and flattening of pillows and conglomerate clasts. A strong mineral lineation (L1) occurs in the hinge zones of D1 folds. Opposing stratigraphic top indicators, particularly in the rocks north of Eyapamikama Lake, suggest the presence of large amplitude folds having wavelengths of 1 km or more. Repetition of stratigraphy is thus likely in many parts of the area.

Bedding and S1 mineral foliation are in turn deformed about open to gentle (D2) folds with northeast striking, shallow to moderate SE dipping axial planes. This is evidenced by crenulated foliation in slately mudstones on the shoreline of Eyapamikama Lake.

A zone characterized by a more ductile style of deformation extends along the northern side of Eyapamikama Lake. This deformation is most obvious along the contact between metavolcanics and metasediments where lithologies of contrasting competency are intercalated. On a mesoscopic scale, competent layers are boudinaged, which may account for the intermittent nature of banded iron formation units in this area. Tight and isoclinal east plunging folds with subvertical axial planes are best seen in the banded iron formation units.

Z folding, on a scale of several inches to several feet, is very common in the iron formation north of Eyapamikama Lake. Gossanous pyrite/pyrrhotite zones form in discontinuous lenses in the iron formation, probably representing permeable structural traps formed by fracturing and deformation. Such has proven to be the case at the Musselwhite and Dona Lake deposits.

GEOPHYSICS (See figure 5 in pocket)

As stated previously, the area was flown in 1985 by a helicopter total intensity magnetic-electromagnetic survey. Geophysical Maps 80720 and 80721 cover the Hibbard claims and are partially reproduced as figure 5 of this report. The volcanic-sediment contact is parallel to, and 100 m north of, an elongate magnetic/electromagnetic anomaly cutting across the claims in a westerly direction. Magnetic relief north of Eyapamikama Lake ranges from 60,800 to 63,000 gammas, with a magnetic relief of 1000 gammas on the Hibbard claims.

the linear magnetic trend on the east half of the claim group is accompanied by co-incident 9 to 32 siemen conductors. The volcanic-sediment conact is actually a magnetic low, with no co-incident electromagnetic anomalies.

GEOCHEMISTRY (See figure 7a, 7b, in pocket)

In order to determine geochemical response of the iron formation and metavolcanic-metasediment contact and examine the type and thickness of surficial deposits, a reconnaissance geochemical soil, till, and rock chip sampling was done on the claims. Alternate north south survey lines were soil sampled, i.e. every 200 metres, with a sample interval of 50 metres, where sample media was present. The east west claim lines marked on figure 7a were chained and marked for use as a sample grid base line. A total of 226 B horizon soil, till, rock chip samples were taken on 22 lines. All sample lines were flagged and sample locations marked with ribbons and/or aluminum tags. The sampling was done by the author and Rand Hodgson during the 1986 field season. Sample numbers and a description of the surface deposits were made for the claim group as a whole, and soil and till characteristics were noted.

Samples were placed in kraft paper soil envelopes, air dried, and sent to X-Ray Assay Lab in Toronto, where they were dried, and screened to - 80 mesh, and an aqua-regia digestion done on a 20 gram sample. Assay method was by fire assay preconcentration followed by DC coupled plasma-emission spectroscopy, with a detection limit of 1.0 ppb. Analytical results are appended.

A plan of sample numbers and gold assay values in ppb were plotted at 1:5,000 scale, appended in pocket as figure 7b. Values considered to be geochemically significant were highlighted by means of solid dark symbols.

DISCUSSION OF RESULTS

In general, the thin to moderate glacial till and sand over over the grid area gave good geochemical response in both BF horizon soils and tills. In the north west quadrant of the claims the extensive muskeg permitted only occasional sampling. From L12E to L32E, glacial and muskeg cover is thin, and the 5 to 10 degree southerly slope meant that ground water flow was close to surface, so anomalies are higher contrast.

From L0E to L12E on the northerly baseline, there is a random scattering of anomalous gold values, with a concentration of significant values near the baseline on L4E and L6E. The 17 pp6 value on L0E at 1 + 50S is a good BF soil on flat ground, as is the 116 ppb value on L4E at 1 + 25S. These values may be due to narrow quartz-arsenopyrite vein systems, like those found 1 km west southwest on the Northern Dynasty showings. The strong narrow linear magnetic/ electromagnetic response trending east west from L0E to L10E near the baseline may be the iron formation which has been fractured and mineralized.

The anomalous values south or down ice from showing No.1 on L15E and L16E may be glacial dispersion or indicative of a separate mineralized system. More detailed sampling using an auger is necessary to check the geochemical response from 1-3 metres below surface. Since many of the sample sites are in bog or muskeg, sampling humus at these depths should not pose a problem. Many of the humus samples reported are of black organics below the muskeg roots at 75 cm below surface. There was little sampling done from L20E to L26E because of the presence of muskeg and swamp. These areas will need to be detailed. The surficial deposits south of showing No.2, from L28E to L32E are anomalous but

not in a concentrated, line to line fashion. One line 28E at 2 + 50S, there is a strong narrow linear magnetic/electromagnetic anomaly that is possibly reflected in the 460 ppb value in rock and the 13 ppb value in humus on L29E, 3 + 00S. Values of 12 and 36 ppb in rock on L32E at 2 + 00S may be related to a subparallel mineralized system to showing No.2.

Values from Showing Nos. 1 and 2 are confined to rock chip samples taken from a 50 cm wide biotite-chlorite-tourmaline alteration zone in which a quartz vein system is mineralized with semi-massive to massive arsenopyrite and minor pyrite and pyrrhotite. Gold values are confined to the arsenopyrite. A black organic humus sample taken several metres south of showing No.1 returned 990 ppb, while rock chips 25 m south of showing No.2 returned 100 and 830 ppb. These latter values may reflect a nearby quartz arsenopyrite vein.

ECONOMIC POTENTIAL

Known mineralization in the North Caribou belt is confined to:

1. Stratabound or structurally controlled gold deposits in iron formation (Musselwhite Deposit - Opapimiskan Lake)
2. Base-precious metal occurrences in felsic rocks (Pyrotex occurrence - Aguta Arm area)
3. Gold-Silver mineralization associated with brittle deformation zones (Centre Lake occurrence - North Caribou River area)
4. Gold associated with arsenopyrite-tourmaline-quartz veins (McGruer Lake prospects)

A description of nearby gold occurrences often gives the best indication of the target type to be expected.

The Castor-Pollux (figure 3 in text)occurrences are thought to occur in highly deformed, banded iron formation. These deposits are described as six tectonically separated lenses of banded iron formation within a ductile deformation zone containing mainly clastic metasediments and mafic metavolcanics (Bartlett, 1985). The banded iron formation lenses are exposed over a strike length of 2.5 km. Near the southwest end of Castor Lake, an 8 metre thick grunerite-quartz banded iron formation containing gold values up to 0.04 oz/ton (grab samples) is well exposed.(1) This metasediment is very thinly bedded and tectonically flattened. Quartz rich layers are 70% of rock volume. Fine grained grunerite rich layers contain accessory garnet, and/or black tourmaline. The OGS feels this unit has been overlooked as a gold target because the magnetic signature of the grunerite units is hard to distinguish from surrounding rocks, and that extensive ground follow-up is warranted in the Stanley-McGruer Lake area.

(1)Breaks, 1986

Also associated with the high deformation zones in the occurrences above, gold values are found in association with arsenopyrite bearing, tourmaline-quartz veins, on the south shore and 2 km east of McGruer Lake. Usually less than 50 cm wide, these veins are concordant to the foliation in the metawacke host rocks, and gold values usually average less than 0.20 oz/ton with occasional highs of 0.35 oz/ton. Values of up to 0.32 oz/ton over 30 cm and 0.17 oz/ton over 30 cm (figure 6) were returned from similar quartz-tourmaline veins at Showings 1 and 2 respectively, from near the volcanic-sediment contact deformation zone discussed earlier. These showings have been chip sampled only.

SUGGESTIONS FOR FURTHER WORK

1. Limited sampling of rock outcrops, till, soil, and humus (not reported here) in the area of showing No.1 and 2 indicates that there is a good potential for additional gold bearing zones underlying the magnetic/electromagnetic anomaly 100 m south of the showings. This area should be detail sampled with the aid of soil augers to penetrate the extensive bog and muskeg in the area of the geophysical response.

2. Detailed ground VLF, HLEM, and test I.P. lines should be considered as aid to investigating the airborne geophysical anomaly above.

3. The present survey did not concentrate on detail mapping of the contact area; therefore an intensive prospecting, lithogeochemical sampling, and detailed mapping should be done in areas which show geophysical response.

4. The volcanic-sediment contact area has been found prospective, but little attention has been paid to crosscutting fault zones and younger intrusive bodies. These have been proven good sites for economic mineralization in the Meen Dempster greenstone belt to the south.

REFERENCES

Andrews, 1981 — A.J., Sharpe, D.R. and Janes, D.A. Preliminary Reconnaissance of the Weagamow-North Caribou Lake Metavolcanic-Metasedimentary Belt, including the Opapimiskan Lake (Musselwhite) Gold Occurrences; p. 196-202 in Summary of Field Work, 1981, by the Ontario Geological Survey, edited by John Wood, O.L. White, R.B. Barlow and A.C. Colvine, Ontario Geological Survey, Miscellaneous Paper 100, 255 p.

Bartlett, 1985 — J.R., Breaks, F.W., DeKemp, E.A. and Shields, H.N. Precambrian Geology of the Eyapamikama Lake Area (Opapimiskan Lake Project), Kenora Dist. (Patricia Portion), Ontario Geological Survey, Map P.2834, Geological Series - Preliminary Map, scale 1:31,680. Geology 1984.

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Satterly, — J. "Geology of the Windigo-North Caribou Lakes Area", Ont. Dept. Mines Annual Rpt. 48, pt. 9, 32 p. and 2 maps.

ASSESSMENT FILES - Toronto, Ontario - All files on NTS Map 53B/14

2.8709 - 1985 Assessment Work, Eyapamikama Lake - North Rim Properties; Arseno Lake, Castor Lake, McGruer Lake - Northern Dynasty Explorations.

2.8997 - 1986 Geological Report, for Comstate Resources, Eyapamikama Lake Claims, by D.R. Pyke, March, 1986.

2.9358 - 1986 Airborne Magnetic and VLF Survey, Arseno Lake Claims for Northern Dynasty Explorations by Terraguest Ltd., July 28, 1986.

2.8839 - 1985 Geological Mapping, Lithogeochemical Sampling, and Prospecting, Stanley Lake Property, by Moss Resources Ltd.

STATEMENT OF QUALIFICATIONS

I, Michael Donald Smith, of 12 - 1039 Cedar Glen Gate, Mississauga, Ontario do hereby certify as follows:

1. That I am a consulting geologist and that I reside and carry on business at the above address.

2. That I am a graduate of Brock University 1975, with an Hons. B.Sc.

3. That I have been owrking in mineral exploration since 1961.

4. That I am a Fellow of the Geological Association of Canada.

5. That my report on the McGruer Lake claims of Maurice Hibbard, dated 1 December 1986, is based on a review of all available sources of information cited in this report, and field mapping and sampling done by the author and Rand Hodgson during the period 14 July - 20 August 1986.

Dated at Mississauga, Ontario
This 1st Day of December, 1986

Michael Smith, BSc., F.G.A.C.

APPENDIX 1 - ANALYTICAL RESULTS

SAMPLE	AU PPB
01-86-80-109	<1
01-86-80-110	<1
01-86-80-123	28
01-86-80-125	2
01-86-80-131	2
01-86-80-133	10000
01-86-80-134	6700
01-86-80-135	3300
01-86-80-136	85
01-86-80-148	24
01-86-80-156	26
01-86-80-163	13
01-86-80-165	100
01-86-80-166	5300
02-86-80-122	20
02-86-80-124	59
02-86-80-126	<1
02-86-80-133	64
02-86-80-135	3
02-86-80-137	27
02-86-80-151	12
02-86-80-154	<1
02-86-80-156	4

SAMPLE	AU PPB
MS-86-80-137	12
MS-86-80-164	<1

SAMPLE	AU PPB
RH 02-86-50-118	1
RH 02-86-50-119	<1
RH 02-86-50-120	6
RH 02-86-50-121	<1
RH 02-86-50-123	1
RH 02-86-50-125	1
RH 02-86-50-127	<1
RH 02-86-50-128	<1
RH 02-86-50-129	<1
RH 02-86-50-130	<1
RH 02-86-50-131	<1
RH 02-86-50-132	<1
RH 02-86-50-134	<1
RH 02-86-50-136	<1
RH 02-86-50-138	2
RH 02-86-50-139	3
RH 02-86-50-143	<1
RH 02-86-50-144	3
RH 02-86-50-145	1
RH 02-86-50-146	<1
RH 02-86-50-147	<1
RH 02-86-50-148	<1
RH 02-86-50-149	<1
RH 02-86-50-150	<1
RH 02-86-50-152	<1
RH 02-86-50-153	<1
RH 02-86-50-155	2
RH 02-86-50-157	4
RH 02-86-50-158	<1
RH 02-86-50-159	10
RH 02-86-50-160	26
RH 02-86-50-161	39
RH 02-86-50-162	2
RH 02-86-50-163	2
RH 02-86-50-164	7
RH 02-86-50-165	5
MS 01-86-50-097	9
MS 01-86-50-098	4
MS 01-86-50-099	9
MS 01-86-50-100	5
MS 01-86-50-101	1
MS 01-86-50-102	17
MS 01-86-50-103	4
MS 01-86-50-104	3
MS 01-86-50-105	19
MS 01-86-50-106	2
MS 01-86-50-107	26
MS 01-86-50-108	5
MS 01-86-50-112	8
MS 01-86-50-113	8

SAMPLE	AU PPB
MS 01-86-50-114	11
MS 01-86-50-115	7
MS 01-86-50-116	5
MS 01-86-50-117	4
MS 01-86-50-118	<1
MS 01-86-50-119	6
MS 01-86-50-120	6
MS 01-86-50-121	<1
MS 01-86-50-122	8
MS 01-86-50-124	9
MS 01-86-50-126	<1
MS 01-86-50-127	12
MS 01-86-50-128	3
MS 01-86-50-129	<1
MS 01-86-50-130	11
MS 01-86-50-132	7
MS 01-86-50-138	3
MS 01-86-50-139	4
MS 01-86-50-140	3
MS 01-86-50-141	7
MS 01-86-50-142	13
MS 01-86-50-143	3
MS 01-86-50-144	9
MS 01-86-50-145	4
MS 01-86-50-146	5
MS 01-86-50-147	6
MS 01-86-50-150	<1
MS 01-86-50-151	5
MS 01-86-50-152	2
MS 01-86-50-153	12
MS 01-86-50-154	9
MS 01-86-50-157	3
MS 01-86-50-158	5
MS 01-86-50-159	<1
MS 01-86-50-160	6
MS 01-86-50-161	2
MS 01-86-50-162	3
MS 01-86-50-167	2
MS 01-86-50-168	6
MS 01-86-50-169	<1
MS 01-86-50-170	<1
MS 01-86-50-171	3

SAMPLE	AU PPB
RH 02-86-30-140	990
RH 02-86-30-141	<1
RH 02-86-30-142	<4
MS-86-50-155	8

SAMPLE	AU PPB
GF-221	<1
GF-229	<1
MS-20-200	2
MS-214	<1
MS-215	<1
MS-216	<1
MS-217	<1
MS-218	<1
MS-219	<1
MS-220	4
MS-221	<1
MS-222	<1
MS-224	2
MS-225	<1
MS-226	<1
MS-228	<1
MS-247	<1
MS-263	<1
RH-238	<1

SAMPLE	AU PPB
86-RH-200	2
86-RH-201	<1
86-RH-202	2
GF-200	<1
GF-201	1
GF-202	2
GF-203	<1
GF-204	<1
GF-205	<1
GF-206	<1
GF-207	1
GF-208	3
GF-209	1
GF-210	2
GF-211	3
GF-212	2
GF-213	<1
GF-214	<2
GF-215	<2
GF-216	14
GF-217	<1
GF-218	<2
GF-219	<1
GF-220	<1
GF-222	<2
GF-224	<1
GF-225	2
GF-226	5
GF-227	<1
GF-228	<1
GF-230	2
GF-231	<1
GF-232	<1
GF-233	<1
GF-234	<2
GF-235	3
GF-236	3
MS-201	24
MS-202	13
MS-204	<2
MS-205	6
MS-206	<2
MS-207	3
MS-208	<1
MS-209	3
MS-210	1
MS-211	<1
MS-212	<2

XRAL

SAMPLE	AU PPB
MS-213	<1
MS-223	<2
MS-227	3
MS-229	<1
MS-230	<2
MS-231	<1
MS-232	<1
MS-233	2
MS-234	2
MS-235	2
MS-236	<2
MS-237	<2
MS-238	3
MS-239	<2
MS-240	<2
MS-241	3
MS-242	<1
MS-242A	2
MS-243	2
MS-244	<1
MS-245	<1
MS-246	<2
MS-247A	<3
MS-249	<2
MS-250	<2
MS-251	13
MS-253	<2
MS-254	<1
MS-255	<2
MS-262	<1
NC TAG	2
RH-203	<1
RH-204	2
RH-205	2
RH-206	8
RH-207	<1
RH-208	<1
RH-209	<1
RH-210	1
RH-211	1
RH-212	<1
RH-213	2
RH-214	1
RH-215	<1
RH-216	1
RH-217	2
RH-218	<1
RH-219	<1

XRAL

30-SEP-86 REPORT 29363 REF.FILE 24779-T3 PAGE 5 OF 5

SAMPLE	AU PPB
RH-220	1
RH-221	1
RH-222	2
RH-223	<1
RH-224	<1
RH-225	2
RH-226	1
RH-227	1
RH-228	<1
RH-229	<1
RH-230	<1
RH-231	1
RH-232	<1
RH-233	1
RH-234	2
RH-235	1
RH-236	1
RH-237	<1
RH-239	<1
RH-240	<1
RH-241	<1

Ministry of Northern Affairs and Mines
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

DOCUMENT
W8803

53B15NW0011 2.10212 SEESEEP LAKE

900

MINING LANDS

#35

Mini

Type of Survey(s)
GEOCHEMICAL SURVEY

Township or Area ERICHSEN LAKE G 2029
SEESEEP LAKE AREA G2204

Claim Holder(s)
INCAMAR EXPLORATIONS LIMITED

Prospector's Licence No.
T 836.

Address
CEDAR HILL CONNAUGHT, ONT

Survey Company
MICHEAL SMITH CONSULTING

Date of Survey (from & to) Day 12. Mo. 7 Yr. 86 | Day 3 Mo. 2 Yr. 87

Total Miles of line Cut —

Name and Address of Author (of Geo-Technical report)
MICHEAL SMITH 12-1039 CEDAR GLEN GATE MISSISSAUGA ONT. L5C 3A7.

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical	
	- Electromagnetic	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	
	Geochemical	20

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical	
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

RECEIVED
FEB 10 1988
MINING LANDS SECTION

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
PA.	901236	
	901237	
	901238	
	901239	
	901241	
	901242	
	901243	
	901244	
	901245	
	901246	
	901247	
	901248	
	901255	
	901256	
	901257	
	901258	
	880480	
	880481	
	880482	
	880483	
	880485	
	880486	

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
PA	880487	
	901301	
	901302	
	901303	
	901431	
	901432	
	901433	
	901434	
	901435	
	901436	

RECEIVED
FEB - 3 1988
PATRICIA MINING DIVISION

Total number of mining claims covered by this report of work. 32

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures $ ÷ 15 = Total Days Credits

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

For Office Use Only

Total Days Cr. Recorded: 640

Date Recorded: FEB. 3, 1988

Date Approved as Recorded:

Mining Recorder:

Branch Director: See revised work statement.

Date: JAN 28/87.

Recorded Holder or Agent (Signature):

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying
MAURICE HIBBARD.
CEDAR HILL CONNAUGHT, ONT POH1A0

Date Certified: JAN 28/87

Certified by (Signature):

Ontario

Ministry of Natural Resources

File _____

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Geochemical

Township or Area EYAPAMIKAMA LAKE AREA

Claim Holder(s) MAURICE HIBBARD
CEDAR HILL, CONNAUGHT, ONT POY1A0

Survey Company MICHAEL SMITH CONSULTING

Author of Report MICHAEL SMITH

Address of Author 12-1039 CEDAR GLEN GATE, MISSISSAUGA, ONT

Covering Dates of Survey JULY 12/86 – FEB 5/87
(linecutting to office)

Total Miles of Line Cut _____

SPECIAL PROVISIONS CREDITS REQUESTED		DAYS per claim
ENTER 40 days (includes line cutting) for first survey.	Geophysical	
	--Electromagnetic	
	--Magnetometer	
	--Radiometric	
ENTER 20 days for each additional survey using same grid.	--Other	
	Geological	
	Geochemical	20 DAYS

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: July 17/87 SIGNATURE: Michael Smith
Author of Report or Agent

Res. Geol. _____ Qualifications 2.9850

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
pf	901237 – 239 incl
	901241 – 243 incl
	901255 – 258 incl
	880480 – 483 incl
	880485 – 880487 incl
	901301 – 303 incl
	901431 – 436 incl

If space insufficient, attach list

TOTAL CLAIMS 32

OFFICE USE ONLY

837 (5/79)

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations _____ Number of Readings _____

Station interval _____ Line spacing _____

Profile scale _____

Contour interval _____

MAGNETIC

Instrument _____

Accuracy – Scale constant _____

Diurnal correction method _____

Base Station check-in interval (hours) _____

Base Station location and value _____

_____

ELECTROMAGNETIC

Instrument _____

Coil configuration _____

Coil separation _____

Accuracy _____

Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency _____
(specify V.L.F. station)

Parameters measured _____

GRAVITY

Instrument _____

Scale constant _____

Corrections made _____

_____

Base station value and location _____

_____

Elevation accuracy _____

INDUCED POLARIZATION
RESISTIVITY

Instrument _____

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time _____ Frequency _____

– Off time _____ Range _____

– Delay time _____

– Integration time _____

Power _____

Electrode array _____

Electrode spacing _____

Type of electrode _____

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

_____

Corrections made _____

_____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

_____

Additional information (for understanding results) _____

_____

_____

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____

(specify for each type of survey)

Accuracy _____

(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

_____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

M. MNDM Ray Pick. Ck
Mc Stay Lk Clo
Wk Blk
96 76 MMA 1w3
965 4855

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken 17

Total Number of Samples 226
Type of Sample soil / till / rock chip
(Nature of Material)
Average Sample Weight 1.5 lbs.
Method of Collection pick and shovel

Soil Horizon Sampled B or C
Horizon Development poor
Sample Depth 25 - 50 cm
Terrain rolling

Drainage Development good
Estimated Range of Overburden Thickness 0 - 10m

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis - 80 mesh
air dry, place in kraft soil envelope
Sieving and sample prep done at
X-Ray Assay Labs.

General

ANALYTICAL METHODS

Values expressed in: per cent ☐
p. p. m. ☐
p. p. b. ☒

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others Au

Field Analysis (_____ tests)
Extraction Method
Analytical Method
Reagents Used

Field Laboratory Analysis
No. (_____ tests)
Extraction Method
Analytical Method
Reagents Used

Commercial Laboratory (_____ tests)
Name of Laboratory X-RAY ASSAY LAB
Extraction Method aqua-regia acid digestion
Analytical Method F.A. precon / DCP spectroscopy
Reagents Used

General

Mr. R. Pichette
Mining Lands Section
Min of Nath Devel & Mines
Queens Park, Ont.

12-1039 Cedar Glen Gate
Mississauga, Ont
L5C 3N7
July 17/87.

Dear Sir,

Enclosed please find 2 copies of a geochemical sampling program report on the McGruer Lake claims owned by Maurice Hibberd.

Yours truly
Michael Smith
Consulting Geologist

Ontario

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

January 11, 1988

Your File: N/A
Our file: 2.10212

Mining Recorder
Ministry of Northern Development and Mines
Court House
P.O. Box 3000
Sioux Lookout, Ontario
P0V 2T0

Dear Sir:

RE: Notice of Intent dated December 22, 1987
Geochemical Survey on Mining Claims PA 880480 et al
in the Area of Seeseep Lake

The assessment work credits, as listed with the above-mentioned Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

W.R. Cowan, Manager
Mining Lands Section
Mines and Minerals Division

Whitney Block, Room 6610
Queen's Park
Toronto, Ontario
M7A 1W3

Telephone: (416) 965-4888

R.M. RM:pl
Enclosure: Technical Assessment Work Credits

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Resident Geologist
Sioux Lookout, Ontario

Mr. Maurice Hibbard
Cedar Hill
Connaught, Ontario
P0V 1A0

Ministry of Northern Development and Mines
Ontario

Technical Assessment Work Credits

File 2.10212

Date December 22, 1987

Mining Recorder's Report of Work No. N/A

Recorded Holder: Maurice Hibbard

~~XXXXXXX~~ Area: Seeseep Lake

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	
Electromagnetic _____ days	PA 880480
Magnetometer _____ days	PA 901432
Radiometric _____ days	
Induced polarization _____ days	
Other _____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological _____ days	
Geochemical 20 days	
Man days ☐ Airborne ☐	
Special provision ☒ Ground ☒	
☐ Credits have been reduced because of partial coverage of claims.	
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

2 Days Geochemical	5 Days Geochemical	10 Days Geochemical
PA 901245	PA 880481	PA 880485
	901242	901241
	901257 & 258 inclusive	901255
	901435	901302

No credits have been allowed for the following mining claims

☒ not sufficiently covered by the survey

PA 880482 to 483 inclusive
880486 to 487 inclusive
901237 to 239 inclusive
901243 to 244 inclusive
901246 to 248 inclusive
901256
901301

☐ insufficient technical data filed

PA 901303
901431
901433 to 434 inclusive
910436

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geologocal - 40; Geochemical - 40; Section 77(19) - 60.

Ontario

Ministry of
Northern Development
and Mines

February 29,1988

Your File: W8803-35
Our File: 2.10212

Mining Recorder
Ministry of Northern Development and Mines
Court House
P.O. Box 3000
Sioux Lookout, Ontario
P0V 2T0

Dear Sir:

RE: Notice of Intent dated February 12, 1988
Geochemical Survey submitted on
Mining Claims Pa-901236, et al
in the Areas of Erichsen Lake and Seeseep Lake

The assessment work credits, as listed with the above-mentioned Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

W.R. Cowan, Manager
Mining Lands Section
Mines and Minerals Division

Whitney Block, Room 6610
Queen's Park
Toronto, Ontario
M7A 1W3

Telephone: (416) 965-4888

QKDK:pl
Enclosure: Technical Assessment Work Credits

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Resident Geologist
Sioux Lookout, Ontario

Ingamar Explorations Limited
Cedar Hill
Connaught, Ontario
PON 1A0

Ministry of Northern Development and Mines
Ontario

Technical Assessment Work Credits

File 2.10212

Date February 12, 1988

Mining Recorder's Report of Work No. W8803-35

Recorded Holder
Ingamar Explorations Limited

~~XXXXXXXX~~ Area
Erichsen Lake and Seeseep Lake

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	PA - 901239 901241-42 901248 901255 901257-58 880480-81 880483 880485 901302-03 901431 to 33 inclusive 901435-36
Electromagnetic _____ days	
Magnetometer _____ days	
Radiometric _____ days	
Induced polarization _____ days	
Other _____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological _____ days	
Geochemical 12 days	
Man days ☐ Airborne ☐	
Special provision ☒ Ground ☒	
☒ Credits have been reduced because of partial coverage of claims.	
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

☒ not sufficiently covered by the survey ☐ insufficient technical data filed

PA-901236 to 38 inclusive
901243 to 47 inclusive
901256
880482
880486-87
901301
901434

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geologocal - 40; Geochemical - 40; Section 77(19) - 60.

AREA NOT MAPPED

KEEYASK LAKE -- G-2085

ERICHSEN LAKE -- G-2029

CEMETERY LAKE G-1989

Seeseep Lake

Staunton Lake

Hodgson Lake

Cemetery Lake

2.10212

McGruer

53°00'

52°52'30"

90°45'

58 57 56 55 54 53 52 51 50 49 48 47 46

56 55 54 53 52°52'30"

DISPOSITION OF LAND

TYPE OF DOCUMENT — SYMBOL

PATENT SURFACE & MINING RIGHTS

SURFACE RIGHTS ONLY

MINING RIGHTS ONLY

LEASE SURFACE & MINING RIGHTS

SURFACE RIGHTS ONLY

MINING RIGHTS ONLY

LICENCE

PERMIT

LEASE

SALE

MISCELLANEOUS

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

M.R.D. MINING RIGHTS ONLY

April 18, 1986
Sept. 16/86
Oct 23/86
Nov 6/86
Jan 1/87
APR 2/87
Apr 20/87
Apr 30/87
Nov 15/87
Dec 2/87
Jan 30/88

RECEIVED
NOV 10 1987
PATRICIA MINING DIVISION

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000

METRES 0 500 1000 1500 2000 2500 (2 KM)

AREA

SEESEEP LAKE

M.N.R. ADMINISTRATIVE DISTRICT

CROSS LAKE/GULL

Ministry of Natural Resources

DATE FEBRUARY, 1914

MAP G-220

53B15NW0011 2.10212 SEESEEP LAKE

200

Sec K

AREA NOT MAPPED

91°00'

53°00'

KEEYASK LAKE G-2085

ERICHSEN LAKE - G-2029

CEMETERY LAKE G-1989

Eyapamatama

Seeseep Lake

McGrath Lake

Staunton Lake

Hodgson Lake

Cemetery Lake

R. Pen

2CM

1CM

+202M

+199M

+159M

+197M

+96M

+195M

58

57

56

55

54

53

52°52'30"

90°45'

LEGEND

ROADS

D LINES

PERENNIAL STREAM

FLOODING OR FLOODING RIGHTS

SUBDIVISION OR COMPOSITE PLAN

RESERVATIONS

SHORELINE

DISPOSITION OF CROWN LA

TYPE OF DOCUMENT	SYMB
PATENT, SURFACE & MINING RIGHTS	
SURFACE RIGHTS ONLY	
MINING RIGHTS ONLY	
LEASE, SURFACE & MINING RIGHTS	
SURFACE RIGHTS ONLY	
MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	
ORDER IN COUNCIL	
RESERVE	
CANCELLED	
SAND & GRAVEL	

NOTE: ... PATENTED PRIOR TO ... RESERVED IN CROWN GRANTS ... PATENTED BY THE P... MINES ACT, R.S.O. 1970, C. 49 AS AMD. SEC. 63, SUB...

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY

S.R.O. – SURFACE RIGHTS ONLY

M.S.R. – MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition

April 18, 1986
Sept. 16/86
Oct 23/86
Nov 6/86
Jan 15/87
APR 2/87
Apr 20/87
Apr 30/87
May 12/87
Sept 28/87
Oct 30/87

RECEIVED
NOV 10 1987
PATRICIA MINING DIVISION

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000

METRES 0 200 1000 2000 (2 KM)

AREA

SEESEEP LA

M.N.R. ADMINISTRATIVE DISTRICT

SIOUX LOOKOUT

MINING DIVISION

PATRICIA

LAND TITLES / REGISTRY DIVISION

KENORA (PATRICIA POR

Ministry of Natural Resources — Land Mana... Bran...

Ontario

DATE FEBRUARY, 1986

Number

G-2...

AREA NOT MAPPED

90°45'

90°30'

53°00'

52°52'30"

Schade Lake

Erichsen Lake

Eyapamiacma Lake

Seeseep Lake

Doucffel Lake

Grace Lake

43 42 41 40 39 38 37 36 35 34 33 32 31

53 54 55 56 57 58 59

N.E. of N. Caribou Lake

53015NW0011 2.10212 SEESEEP LAKE

220

LEGEND

HIGHWAY AND ROUTE No.
OTHER ROADS
TRAILS
SURVEYED LINES
TOWNSHIPS, BASE LINES, ETC.
LOTS, MINING CLAIMS, PARCELS ETC.
UNSURVEYED LINES
LOT LINES
PARCEL BOUNDARY
MINING CLAIMS ETC.
RAILWAY AND RIGHT OF WAY
UTILITY LINES
NON PERENNIAL STREAM
FLOODING OR FLOODING RIGHTS
SUBDIVISION OR COMPOSITE PLAN
RESERVATIONS
ORIGINAL SHORELINE
MARSH OR MUSKEG
MINES
TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	
" , SURFACE RIGHTS ONLY	
" , MINING RIGHTS ONLY	
LEASE, SURFACE & MINING RIGHTS	
" , SURFACE RIGHTS ONLY	
" , MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	
ORDER IN COUNCIL	
RESERVATION	
CANCELLED	
SAND & GRAVEL	

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MA... 1913 VESTED IN ORIGINAL PATENTEE BY THE PUB... LANDS ACT R.S.O. 1... CHAP. 380, SEC. 63, SUBSEC...

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY
S.R.O. – SURFACE RIGHTS ONLY
M. & S. – MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File
R.I. WITHDRAWN	W46/87	APRIL 2/87	M&S	1885

Mar. 4/86
Apr. 18/86
Aug. 8/86
SEPT. 16/86
Sept. 24/86
Oct. 23/86
Nov. 5/86
Dec. 31/86
Mar. 5/87
Apr. 1/87
Apr. 13/87
Apr. 30/87
June 1/87

PATRICIA REGION
AUG
A.M.
7 8 9 10

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000
METRES 0 500 1000 2000 3000
1 KM.

AREA

ERICHSEN LAKE

M.N.R. ADMINISTRATIVE DISTRICT
SIOUX LOOKOUT
MINING DIVISION
PATRICIA
LAND TITLES / REGISTRY DIVISION
KENORA (PATRICIA PORTION)

Ontario Ministry of Natural Resources — Land Management Branch

Date FEBRUARY, 1984.

Number G-2021

INGAMAR EXPLORATION

Mc GRUER LAKE CLAIMS

GEOCHEMICAL SURVEY

SAMPLE NUMBERS

MICHAEL SMITH CONSULTING | SCALE 1:5,000

Mc GRUER LAKE

EYAPAMIKAMA LAKE

5872 000 N

5870 000 N

648 000 E

652 000 E

L.0 L.2E L.4E L.6E L.8E L.10E L.12E L.14E L.16E L.18E L.20E L.22E L.24E L.26E L.28E L.30E L.32E L.34E L.38E

Base Line

B.L.

1-901241 1-901242 1-901243 1-901244 2-901244 3-901241 1-901247 1-901256 1-880485 1-880487 1-901302 1-901432

INSET "A" Showing #1 L. 14+75 E, 0+25N
Scale 1 cm = 5m

L. 15E

BL

INSET "B" Showing #2 L. 30+00 E, 1+55 S
Scale 1 cm = 5m

strike of arsenopyrite

30E

LEGEND

GEOCHEMICAL RESULTS IN PARTS PER BILLION

- ◇ Rock (Au, As)
- ○ Soil
- △ Humus
- ◆ Anomalous Rock (>10)
- ● Anomalous Soil (>5)
- ▲ Anomalous Humus (>2)

N

2.10212

53015NW0011 2.10212 SEESEEP LAKE

240

INGAMAR EXPLORATION	
Mc GRUER LAKE CLAIMS	
GEOCHEMICAL SURVEY	
MICHAEL SMITH CONSULTING	SCALE 1:5,000
DRAWN BY: R. H. CHECKED BY: M. S.	FIGURE 7B

J-1591-96