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Mineral Occurrences and Prospects in the Fort Hope–Winisk Area

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ONTARIO GEOLOGICAL SURVEY

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Mineral Occurrences and Prospects in the Fort Hope–Winisk Area

by

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ABSTRACT

The Fort Hope-Winisk area study was initiated in 1993 to document all known mineral occurrences and prospects within the northern portion of the Beardmore-Geraldton Resident Geologist District. From detailed research and property examinations conducted by the Resident Geologist and staff over the past 10 years, 42 mineral occurrences (prospects and deposits) were compiled and each is described in this report (Appendix 1). The base map (Map 1, back pocket) accompanying the report indicates the location of these mineral occurrences relative to the regional geology and existing infrastructure.

The 42 mineral occurrences are located over 3 Subprovinces within the Precambrian Shield; namely the Uchi, Berens River and Sachigo Subprovinces. A total of 8 gold deposit types and 3 base metal types, including magmatic, VMS and massive sulphide/banded iron formation were identified.

The study area encompasses the communities of Fort Hope, Lansdowne House and Summer Beaver, and also includes the Eabametoong (Fort Hope), Wunnummin and Webequie First Nation Reserves. With the exception of an extensive winter road network, the region is accessible by air only.

MINERAL OCCURRENCES AND PROSPECTS OF THE FORT HOPE - WINISK AREA

BY

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INTRODUCTION

The Fort Hope-Winisk area study was initiated in 1993 to compile and document all mineral occurrences and prospects in the northern portion of the Beardmore-Geraldton Resident Geologist District. This was accomplished through extensive research of both the assessment and mineral deposit files in the Thunder Bay office, a review of all past geological reports covering the area and property examinations by the Resident Geologist and staff. A total of 42 gold and base metal occurrences (prospects and deposits) were documented and located on the geological base map accompanying this report (Map 1, back pocket).

The community of Fort Hope, which lies in the south central portion of the study area, is located 360 km north north-east of Thunder Bay. The study area also includes the native communities of Lansdowne House and Summer Beaver, as well as several reserves. The entire area is accessible by air only, with the exception of a winter road network that connects the native communities.

ACKNOWLEDGEMENTS

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Geology and Structure

The Fort Hope area occurs in the eastern portion of the Uchi Subprovince. It consists of a tabular, east-trending (080·) belt of metavolcanic and metasedimentary rocks forming a semicontinuous supracrustal network. The Uchi Subprovince, in turn, extends for over 625 km.

Stott and Corfu (1991) describe the geology of the Uchi Subprovince:

> The Uchi Subprovince contains a linear, belt-like collage of volcanic and sedimentary assemblages that represent discrete magmatic and erosional pulses during approximately 280 million years of Archean history. These supracrustal rocks, underlain by synvolcanic plutons, were invaded by younger felsic plutons and were preserved being the Kenoran Orogeny, which culminated in this part of the Superior Province about 2.7 Ga. Some clastic and chemical sedimentary sequences comprise the youngest units in the volcanic assemblages. Other sedimentary rocks form separate assemblages lying unconformably upon the volcanic units and formed mainly during the Kenoran Orogeny. Some volcanic assemblages are dominantly composed of tholeiitic basalt and komatiitic rocks, interpreted to have originated as oceanic mafic plan sequences, probably in a back-arc setting; most assemblages are composed of cycles or sequences comprising tholeiitic basalt platforms overlain by calc-alkalic andesite, dacite and rhyolite, interpreted to have originated in continental or oceanic arcs. The U-Pb isotopic ages of felsic volcanic rocks permit us to recognize that the present stacking of volcanic strata locally forms repetitions of individual volcanic cycles (e.g., the Confederation assemblage) or locally forms volcanic sequences staked out of normal stratigraphic order, presumably by thrusting, as in the Confederation and St. Joseph assemblages.
>
> Distinct orogenic periods are each interpreted to compose all or most of the following sequence of magmatic, sedimentary and structural events: a) intrusion of synvolcanic plutons into older volcanic sequences, in places stitching 2 assemblages and providing age constraints on the sequence of events; b) thrust stacking and tilting of volcanic and sedimentary strata within assemblages; c) erosive exhumation of deformed strata and plutons, with detritus collecting in synorogenic troughs; d) continued regional, horizontally directed shortening; and e) emplacement of late to posttectonic plutons. Only the final orogenic event (the Kenoran Orogeny) can be clearly shown to terminate with regional transcurrent displacement (transpression) across faults accompanied by crustal block rotation. Post-Archean faulting has occurred at least locally.

The collage of assemblages in the subprovince shows a general southward younging; one could postulate from the geological patterns and sequence of events that the assemblages of the Uchi Subprovince reflect episodic additions of crustal units to the margin of a growing continent. More complex age distributions and dramatic changes in stratigraphic orientations are interpreted to reflect allochthonous or parautochthonous, northward transport of some assemblages.

Within the Miminiska-Fort Hope greenstone belt, Stott and Corfu (1991) outlined 5 tectono-stratigraphic subdivisions based on limited age-dating and structural and regional stratigraphic considerations. The 5 subdivisions are discussed under the following sub-headings by Stott and Corfu (1991) and are outlined on Figure 6.3 in Geology of Ontario, (p.150-151):

Keezhik Lake area	3 subdivisions
St. Joseph Assemblage (volcanic rocks)	1 subdivision
Miminiska Lake (sedimentary rocks)	1 subdivision

Keezhik Lake Area

In the northern part of the belt, the authors have provided a provisional subdivision of strata into 3 unnamed assemblages (see Figure 6.3) based on stratigraphic and geophysical features. The northernmost assemblage, labelled 3 on Figure 6.3, is composed of basaltic flows with a marker unit of banded magnetite iron formation. This assemblage may correlate with the McGruer assemblage in the North Caribou greenstone belt (Thurston et al. 1991). It trends at a high angle to a second unnamed assemblage in the vicinity of Keezhik Lake labelled 4 on Figure 6.3. The possible correlation with the McGruer assemblage is based on similar rock types and particularly a magnetite iron formation unit forming a discontinuous aeromagnetic anomaly extending between the North Caribou greenstone belt and the northern Keezhik Lake area.

A comparison with the arrangement of assemblages in the Pickle Lake area (see Figure 6.3) leads one to suggest that the second "assemblage" may in future be shown to be a composite of 2 assemblages, correlative with the Pickle composite of 2 assemblages, correlative with the Pickle Crow and Woman assemblages of the Pickle Lake greenstone belt. This sequence of rocks faces consistently southward and is composed of massive to pillowed basalt flows with a marker unit of banded magnetite iron formation that may correspond to a prominent iron formation unit of the Pickle Crow assemblage on First Loon Lake in the Pickle Lake greenstone belt (Stott et al. 1989a, 1989b). This is succeeded southward by a basaltic pile supporting a unit of dacitic pyroclastic rocks accompanied by a quartz porphyry intrusion. The pyroclastic unit is speculated to be an extension of the Woman assemblage from the Pickle Lake greenstone belt.

A third unnamed assemblage in the northern part of the belt is labelled 4-5 on Figure 6.3 and is composed of basaltic flows and minor felsic volcanic units. It appears, west of Keezhik Lake, to lie unconformably upon a narrow sedimentary unit west of Keezhik Lake that lies at the top of the assemblage labelled 4 on Figure 6.3. This third assemblage also faces stratigraphically southward. Its southern contact with the St. Joseph assemblage, the fourth assemblage of this belt, is not well established, but is provisionally located where there is a regional change in the stratigraphic younging directions, from south facing amongst these northern rocks, to north facing amongst rocks that are clearly part of the St. Joseph assemblage in the vicinity of Miminiska Lake.

These interpreted subdivisions in the Keezhik Lake region are projected eastward into the northeastern region of the belt from aeromagnetic patterns. The northeasternmost region is dominated by basalt interbedded with some iron formation units (Thurston and Carter 1970) and is comparable with the lithological characteristics of the older units preserved locally in the northern half of Uchi Subprovince and in that part of the North Caribou terrane described farther to the north by Thurston, Osmani et al. 1991.

St. Joseph Assemblage (Volcanic)

The southern half of the Miminiska-Fort Hope greenstone belt is interpreted to be dominated by young volcanic sequences of tholeiitic and calc-alkalic basaltic flows (Wallace 1981a) and overlain by calc-alkalic pyroclastic deposits ranging form andesitic to rhyolitic compositions. This range and the abundance of andesitic volcanic material corresponds with the uppermost cycle of the St. Joseph assemblage on Lake St. Joseph. Quartz-phyric felsic pyroclastic rocks at 3 locations in this assemblage (see Figure 6.3) show a range in age from 2723 to 2716 Ma (F. Corfu, unpublished data). This assemblage is interpreted to continue eastward, beyond Fort Hope, where it is interleaved on a regional scale with clastic sedimentary sequences in the eastern part of the belt (see Figure 6.3). the boundary between the St. Joseph assemblage and older volcanic rocks to the north is interpreted to project eastward beyond Fort Hope (see Figure 6.3), based on aeromagnetic interpretations only.

Sedimentary Rocks of the Miminiska Lake Area

The sedimentary rocks of Miminiska Lake area composed of medial to distal turbidite wacke sediments and interbeds of banded magnetite iron formation. There is some folding of the beds, but with an overall northward sense of younging. The top of the assemblage is marked locally by conglomerate with a mix of volcanic, iron formation and granitoid clasts. Since there is uncertainty about the source of the detritus in this sequence and the original depositional setting of the assemblage, the sedimentary rocks are treated as an unnamed assemblage for the present. It is speculated that the assemblage evolved in its present position; it is just as conceivable that this sequence, which does not appear to be an original synclinal basin in the belt, was separated as a tectonic wedge from the northernmost

part of the English River assemblage and transported northward to its present position. In this respect, the relationship of this sedimentary assemblage to the apparently interleaved volcanic and sedimentary sequences that characterize the east half of this belt (see Figure 6.3) merits an assessment of similarities to the northern part of the Quetico Subprovince east of Lake Nipigon, where Williams (1987, 1990) and Devaney and Williams (1989) documented features, in a similarly interlayered set of rocks, which are consistent with a fore-arc accretionary prism. The interlayering of strata in the easternmost Uchi Subprovince may correspond to a comparable pattern of interlayered volcanic and sedimentary units that characterizes the La Grande River Subprovince (Card and Ciesielski 1986) in Quebec.

Gold Deposits

Gold deposit types have been subdivided as follows:

(1) quartz veins in mafic metavolcanic rocks ± porphyry (Currie occurrence, Fort Hope gold mine, Hansen gold occurrence, Pioneer Lake occurrence, Schist Lake occurrence)

(2) quartz veins, silicification and carbonatization in clastic metasedimentary rocks (Szetu-Bayne occurrence)

(3) banded iron formation and arsenopyrite or pyrrhotite association (Asarco occurrence, Goss Lake prospect, Wottam Lake occurrence)

(4) quartz veins + feldspar porphyry and antimony association in mafic metavolcanic rocks (Howells Lake prospect)

(5) feldspar ± quartz porphyry, silicified ± sheared (KL-12 zone, Talbot Lake gold prospect)

(6) quartz-tourmaline veins in wackes (North Wottam Lake occurrence)

(7) strongly foliated to sheared mafic to felsic metavolcanic rocks (OL-12/OL-29 zones, Zulapa prospect)

(8) quartz-tungsten veins ± strong foliation to shear zones hosting pyrite-pyrrhotite-magnetite (Reserve Creek occurrence, Rich Lake occurrence)

Base Metal Deposits

Base metal occurrences in the Fort Hope area are at the following locations:

Uchi Belt:

(1)	Makokibatan Lake-Schist Lake-Washi Lake area	- sulphides [massive sulphide/ banded iron formation (MS/BIF)]
(2)	Norton Lake area	- copper-nickel (magmatic sulphide)
(3)	Weese Lake	- copper-nickel (magmatic sulphide)
(4)	Shabuskwia Lake	- copper-nickel (magmatic sulphide)
(5)	Sim Lake	- copper-nickel (magmatic sulphide)
(6)	Kawitos-Auger Lakes	- copper-zinc [volcanogenic massive sulphide (VMS)]

Sachigo Belt:

(7)	Lavoie-Rowlandson Lakes area	- copper-nickel (magmatic sulphide)
(8)	Summer Beaver	- sulphides (MS/BIF)

Sachigo and Berens River Subprovinces

The Sachigo and, to a lesser degree, the Berens River Subprovinces are the most northerly granite-greenstone subprovinces in Ontario. These subprovinces are made up of isolated, thin greenstone belts surrounded by extensive granite and gneiss units (Thurston, Osmani and Stone 1991).

For the purpose of this study, mineral occurrences are located in the southeastern portion of the Sachigo Subprovince in the Wunnummin Lake greenstone belt. Four lithologic assemblages have been identified in the Wunnummin Lake greenstone belt (Thurston, Osmani and Stone 1991):

Table 1. Lithologic Assemblages of the Wunnummin Lake Greenstone Belt

Name	Rock Types, Primary Structures (stratigraphy from base to top)	Interpreted Environment	Age (Ma)	References
22) Wunnummin	900 m wide unit of pillowed and massive komatiitic flows with intercalated quartz arenite and conglomerate; underlain by quartz-rich wacke up to 6.5 km wide; lower contact is intrusive; upper is erosional	platform	2965 detrital	Stott and Janes 1985 Thurston et al. 1987
23) Central Wunnummin	polymictic framework-supported conglomerate with sandstone interbeds; fines upward to sandstone and shale; clasts up to 1.2 m, rounded; clast types=granitic, amphibolite, metasedimentary rocks (wackes) and rare metavolcanic rocks; disconformably overlies Wunnummin	late unconformable sequence	2710(?)	Prest 1942
24) Big North	pillow and massive mafic flows, minor zones of saussuritization and felsic tuffs; in tectonic contact with Stull Lake-Wunnummin Lake fault zone; uncertain contact relationship with Central Wunnummin	arc volcanics	2.8 Ga(?)	Thurston et al. 1979
25) Peeagwon	pillowed and massive mafic flows, minor units of oxide + sulphide-facies iron formation; interbeds of quartzite and felsic tuff	platform	2.9 Ga(?)	-

APPENDIX 1

MINERAL OCCURRENCES AND PROSPECTS

Note: *refers to unpublished reports in assessment files or mineral deposit files, Thunder Bay.

FORT HOPE-WINISK OCCURRENCES

1	Asarco occurrence
2-7	Boylen occurrences
8	Canadian Nickel Company Limited Drill Hole 49115 Zinc occurrence
9	Currie occurrence
10	Fort Hope gold mine
11	Goss Lake prospect
12	Gould Lake occurrence
13	Hansen Gold occurrence
14	Howells Lake prospect
15	KL-12 zone
16	KL-L18 zone
17	KL-27 zone
18,19,20	KL-30 Series Drill Holes
21,22	Lavoie Lake Cu-Ni prospects
23	Leitch Cu-Ni prospect
24	Lilypad Lakes occurrences
25	NBK zone
26	Niska occurrence (float)
27	North Wottam Lake occurrence
28	Norton Lake Cu-Ni deposit
29,30	OL 12, OL-29 zones
31	Pioneer Lake occurrence
32	Reserve Creek occurrences
33	Rich Lake occurrence
34	Rowlandson Lake occurrence
35	Schist Lake occurrence
36	Sheridan Lake Zinc occurrence
37	Szetu-Bayne occurrence
38	Talbot Lake Gold prospect
39	Thompson occurrence
40	Weese Lake occurrence
41	Wottam Lake occurrence
42	Zulapa prospect

1) PROPERTY NAME: Asarco occurrence (1) DATE(S) VISITED:

MDI #: n.a.

2) ALTERNATE NAME(S): Abazotikichuan Lake occurrence
Asarco AEM-3 (Hole 12) occurrence
Washi Lake project occurrence

3) COMMODITY: MAIN: Au SECONDARY: Fe

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1966: Asarco Exploration Co. of Canada Ltd. conducted a reconnaissance geological survey over a portion of the Washi Lake area.

1968: Asarco contracted Canadian Aero Mineral Survey Ltd. to fly an airborne electromagnetic and magnetic survey in the Washi-Makokibatan Lakes area. Fifteen-hundred and fifty (1550) line miles, with 1/6 mile line spacing, were flown. Fifty-two (52) conductive zones were detected. One hundred and three (103) claims were staked, 77.2 line miles of line were cut and 25 miles of bush road cut. Sixty-two (62) miles of geological, magnetic and electromagnetic surveys were completed. A total of 15 holes totalling 2,152 feet were diamond drilled. "A total of 28 airborne EM conductors were outlined in detail by ground geophysical surveys." (Mongeau 1968)

Mining claims Pa 43872 to Pa 43877 inclusive, Pa 43872 to Pa 43877 inclusive and Pa 43859 to Pa 43862 inclusive were staked in the Schist Lake area, covering the Abazotikichuan Lake occurrence. The remaining claims of the 103 are situated to the east in the Makokibatan-Washi Lakes area.

1970: Amoco Canada Petroleum Company Limited hired Questor Surveys Limited to fly an airborne electromagnetic (INPUT) and magnetic survey of the Washi Lake area. Thirty-six hundred and ninety (3690) miles were flown at 1/8 mile line spacing.

CURRENT

1995: The area is open for staking (with the exception of the Albany River Waterway Park; March 8, 1995).

5) LOCATION AND ACCESS: N.T.S. 42M5/SE
Latitude 51·21'
Longitude 87·37'30"
U.T.M. Zone 16 Northing 5688350
Easting 456350

GENERAL LOCATION: The Asarco (Abazotikichuan Lake) occurrence is located approximately 142 km (89 miles) northwest of Nakina, 36 km (23 miles) southeast of Fort Hope and 13 km (8 miles) southeast of Frenchman's Rapids. The Schist Lake gold occurrence is located approximately 3 km (2 miles) northeast of the Asarco occurrence.

ACCESS: The property is accessible by either helicopter or float plane to Abazotikichuan Lake, and then by foot to the occurrence.

REFERENCES: Mongeau (1968)*
Prest (1944)
Thurston and Carter (1970)

Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 51c Eastern Extension of Fort Hope Area (Prest 1944)
Map 2237 Fort Hope-Lansdowne House Sheet (Thurston et al. 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Schist Lake-Makokibatan Lake area is underlain by an east-trending, narrow belt, approximately 90 km long, of mafic to intermediate metavolcanic rocks "including porphyritic facies and pillow horizons, some gneisses" (Prest 1944). The narrow metavolcanic belt is flanked by felsic intrusive rocks consisting of: "granite, granodiorite, quartz diorite, diorite, gabbro and pegmatites" (Prest 1944).

Metasedimentary rocks, including quartzite, argillite and iron formation, were noted by Mongeau (1968) as the main lithology intersected by Asarco in diamond drill holes.

7) MINERALIZATION:

Twenty-eight conductive zones were tested by drilling and determined to be caused by massive pyrrhotite in quartzite, argillite, graphitic argillite or iron formation or pyrite layers/magnetite laminae in phyllite.

Mongeau (1968) noted pyrrhotite, pyrite, graphite and magnetite were "barren of base-metals and precious metals".

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

Diamond drill hole 12 (AEM-3) intersected 0.8 m (2.5 feet) of 0.04 ounce gold per ton (Mongeau 1968).

1) PROPERTY NAME: Boylen occurrences (2-7)

DATE(S) VISITED: July 26/89
June 10/92

MDI #: TB0120

2) ALTERNATE NAME(S): Boylen prospect (2)
Gold Fields occurrence (7)
Doorigan property-Alpamayo occurrence (6)
Ryley-Cormac occurrence (3)
(Magellan and Cortez showing)
NJZ-76 occurrence (4)
NYLA occurrence (5)

3) COMMODITY: MAIN: Cu, Zn SECONDARY: Ag, Pb, Au

DEPOSIT TYPE: Volcanic-associated massive sulphide (VMS)

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1961-62: M.J. Boylen Engineering Offices of Toronto conducted detailed geology, magnetometer, E.M., A.E.M. and magniphase surveys and diamond drilling (12 holes) over three separate claim groups west and southwest of Kawitos Lake, which is part of the Albany River system. These are the Seeber Group, Morrison-Eden Group and the Ouilette-Eden Group.

Four shallow trenches were blasted which uncovered sulphide mineralization on claim TB 22999 of the Seeber Group, 3 km south southwest of Kawitos Lake. This is the actual location of what is known as the Boylen occurrence.

Exploration activity conducted on each of the three claim groups is as follows:

1) Seeber Group (eastern block): Four trenches and five diamond drill holes totalling 1909 feet were completed:
   - Claim KK 22999: Three parallel trenches (#2, #3, #4) and two diamond drill holes (343-9 and 343-10).
   - Claim KK 23000: One circular trench (#1) and three diamond drill holes (343-7, 343-8 and 343-11).

2) Morrison-Eden Group (southwest block): Six diamond drill holes totalling 2319 feet were completed:
   - Claim KK 23012 (southeast corner): DDH 343-1 at 460 feet.

   - Claims KK 22650, KK 22652, KK 22654-55: DDH 343-2 to 343-6. These five holes were drilled in an east-west line 200-300 m south of the Ryley-Cormac occurrence (discovered in 1989).

3) Ouilette-Eden Group (northwest block): One diamond drill hole:
   - Claim KK 23064: DDH 370-1 at 835 feet.

1972: In January and February, Imperial Oil Enterprises Ltd. conducted a detailed magnetometer and electromagnetic survey over eight grids south of Auger Lake, which is southwest of the Boylen occurrences.

1976: New Jersey Exploration Company (Canada) Limited diamond-drilled nine holes (two on TB 441163 and seven on TB 441402 & 441403) totalling 1053 feet.
- 2 holes on claim TB 441163 appear to have been drilled just west of the Ryley-Cormac Occ. found by S. Parent.
- the other seven holes were drilled on two claims located approx. 1.3 km NE of the Ryley-Cormac Occ.

1986: Gold Fields Canadian Mining, Limited conducted an Aerodat Limited combined helicopter-borne magnetic, VLF and electromagnetic survey (known as the Attwood Lake area project) over two claim blocks 1 to 3 km south and southwest of Kawitos Lake. Although the survey failed to cover the Boylen Occ. and the as-yet undiscovered Alpamayo Occ., it did cover the Ryley-Cormac Occ. as well as the areas drilled by M.J. Boylen (1961) and New Jersey Zinc (1976) in the southwest claim block.

1987: Gold Fields Canadian Mining, Limited drilled one 807-foot hole on claim TB 963474 (DDH-87-7) in an area 1 km south of Kawitos Lake, just northeast of the original Boylen occurrence.

1989: Geologist/prospector S. Parent conducted prospecting, trenching and a reconnaissance magnetometer and VLF-EM survey over the Boylen occurrence and surrounding Kawitos Lake area.

Two additional copper/zinc occurrences - the Ryley-Cormac and the Doorigan-Alpamayo - were discovered. Several alteration zones were also identified at this time.

As a result of these discoveries, 17 claims were staked to cover all three occurrences:
- Boylen occurrence: TB 1040631, TB 1120975 to TB 1120977, TB 1120979 and TB 1122020.
- Doorigan-Alpamayo occurrence: TB 1122021 to TB 1122026.
- Ryley-Cormac occurrence: TB 1122027, TB 1122029, TB 1138336, TB 1138338 and TB 1138339.

1990: Falconbridge Limited optioned the 17 claims from S. Parent and staked an additional 176 claims to cover a large portion of the metavolcanic rocks in the area.

From August to September, Falconbridge Limited conducted exploration work focused on the Riley-Cormac area (south of Cormac pond), namely claims TB 1122027 and TB 1138338. The program consisted of 41.2 km of line cutting, geological grid mapping, lithogeochemical sampling, HLEM and magnetometer surveys and power stripping.

1991: From March to June, Falconbridge Limited cut, brushed out and chained 395 line km of grid over most of the 12 km long x 3.2 km wide Kawitos Lake property. The property is divided into three grids--the south, west and east grids, with one continuous baseline.

Magnetometer and VLF surveys were completed over 354 km of the grid by Northwest Geophysics of Thunder Bay (March to June). The summer program involved detailed (1:5000 & 1:500 scale) geological grid mapping and 1723.5 m of diamond drilling in nine holes (PO-1 to PO-9). The south main HLEM anomalies (two holes), the Gold Fields showing (three holes), the Ryley-Cormac occurrence (two holes) and the north central geological and geophysical anomalies were tested.

During this period, 12 claim blocks were staked by Falconbridge Limited along the west, north and south boundaries of the original 1990 property. They ranged from single claim units (TB 1173498 to TB 1173503) to six multi-claim

units (TB 1188525 to TB 1188527 and TB 1188529 to TB 1188531).

Note: It is important to mention that from July to August, S. Parent staked seven multi-claim units adjoining the Falconbridge Limited property to the north (claims TB 1188758 to TB 1188760, TB 1194466 and TB 1194468 to TB 1194470). This is not part of the Falconbridge option but covers the northern extension of the same felsic metavolcanic unit.

S. Parent conducted reconnaissance magnetometer and VLF EM surveys and geological mapping, prospecting and lithogeochemical sampling. As a result, two main alteration zones were discovered--the Magellan (TB 1188758) and Cortez showings (TB 1194470).

1993: At the beginning of the year, the 205-claim Falconbridge option covered three main occurrences including the Boylen, the Riley-Cormac and the Doorigan-Alpamayo.

Noranda Exploration Company Limited purchased Shaun Parent's and partner Michael Smith's 25% interest (Falconbridge Limited holding 75%) in the 205-claim property. Noranda can earn up to a 51% interest in the property.

In the fall, Noranda Exploration optioned additional adjoining claims from Shaun Parent which included three to the north - TB 1197061, TB 1197062 and TB 1197064 - and three to the south which included TB 1194467, TB 1202210 and TB 1202211. The northern option included the Gallileo and Magellan occurrences (the original Magellan claim block of TB 1188758 having been restaked). The southern block covered what is known as the Adam Lake occurrence on claim TB 1194467.

Up to 1993, when Falconbridge ceased to be operator on the property (but still retained an interest), the company had completed magnetometer, VLF-EM and geological mapping around some of the main showing and diamond drilling at the Gold Fields and Ryley-Cormac zones.

1995 On April 11, Noranda Exploration Company Limited optioned Shaun Parent's Auger Lake Group (which includes TB 1202212, 1207819, 1207965, 1207966 and 1207967). This covers

what is known as the J. Murphy copper-zinc-anthophyllite occurrence on claim TB 120221. This claim group adjoins the southern portion of the previously-optioned group and covers the "favourable" horizon that appears to extend southward from the Adam Lake occurrence to the J. Murphy occurrence.

To date, Noranda has conducted magnetometer surveys, Max-Min surveys in the eastern portion of the main Falconbridge option and limited reconnaissance and detailed geological mapping, primarily in the southern portion of the north Parent option. Questor Surveys was also contracted in the spring of 1995 to conduct airborne geophysical surveys over the area between the Adam Lake occurrence and the J. Murphy occurrence on the Auger Lake option (New Jersey Zinc had conducted a geophysical survey over the surrounding area in 1975, but a gap remained in this area; this is the reason for the current survey). A large regional area to the north and northwest immediately south of the Albany River was flown by Questor Surveys, under contract to Noranda.

From 1994 to 1995, Shaun Parent staked seven claims (TB 1207809, 1207810, 1207811, 1207812, 1202213, 1207814 and 1207817) and conducted reconnaissance geological mapping and preliminary geophysical surveys over what is known as the Atwood Lake Group or project. The same favourable felsic horizon has been traced to the southwest into the Atwood Lake area.

CURRENT

1995 Noranda Exploration Company Limited is currently conducting drilling on the main Falconbridge joint venture property (June 22, 1995).

5) LOCATION AND ACCESS:

N.T.S.	52P/8NW	
Latitude:	51·25'30"	
Longitude:	88·15'	
UTM:	Zone 16	Northing 5697250
		Easting 413100
		(Boylen occurrence)

Note: Boylen occurrence is used as location point.

GENERAL LOCATION: The Boylen occurrences are located approximately 130 km east of the town of Pickle Lake and 1 to 3 km south of Kawitos Lake on the Albany River waterway.

ACCESS: Access to the area is by boat, west along the Albany River system from the Fort Hope First Nation, located 30 km the east northeast (scheduled flights travel to Fort Hope). Alternatively, direct access may be obtained via float plane from Pickle Lake to Kawitos Lake, then south by foot along claim lines to the occurrences.

REFERENCES:

Baldwin	(1961, 1962)*
Edwards	(1991)*
Hodges	(1991)*
Hodges and Fournier	(1991)*
Podolsky	(1986)*
Thurston and Carter	(1970)
Wallace	(1981)

MAP REFERENCES:

Map 2199	Ontario Geological Map-West Central Sheet (Ayres et al. 1970)
Map 2237	Fort Hope-Lansdowne House Sheet (Thurston et al. 1972)
Map 2436	Attwood Lake (Wallace 1981)

6) GENERAL GEOLOGY AND STRUCTURE:

The Boylen occurrences lie at the eastern end of the Uchi greenstone belt, a predominantly east-trending metavolcanic-metasedimentary sequence. Much of the property is underlain by mafic and felsic metavolcanic rocks within the north portion of the Attwood Lake Belt. They generally trend northeastward (045°) and connect with the main, regional supracrustal rocks of the Uchi Subprovince. The volcanic rocks within the property are bounded on the north, east and south by extensive masses of felsic to intermediate plutonic rocks (Wallace 1981) and on the west by a major shear zone known as the Auger Shear. These rocks have been metamorphosed to amphibolite facies (Edwards 1991).

Exploration work during the 1991 field season by Falconbridge Limited on the Parent option (which covers the Boylen occurrences) identified five geological domains. These include the Western Volcanics, Central Volcanics, Cormac Volcanics, Southern Granitic Terrain and the Northern Granitic Terrain. These are described by Edwards (1991) of Falconbridge Limited as follows:

6.1 Western Volcanics

The Western Volcanics are composed predominantly of pillowed to massive mafic flows and mafic tuff. The volcanics are bound to the east by the Central Felsic Volcanics and the Auger shear. A possible continuation of the Northern Granitic Intrusion occurs west of Parent option. The Auger shear was identified by strong VLF linears, air photo interpretation, and strongly foliated mafic volcanic rocks. Splays of the Auger shear appear to penetrate the Western Volcanics, as identified by sheared outcrop exposures.

Massive Mafic Flows

The massive flows are medium to coarse grained and composed of amphibole with interstitial feldspar. Amphibole grains vary from 2mm to 5mm. Foliations are generally non-existent. The coarse grained nature of these flows mimic those of gabbroic intrusions, although dyke related textural features (chill margins, wallrock assimilation) are not present. The extensive surficial coverage of the flows, and association with pillowed mafic flows suggests an extrusive origin for the massive mafic units. The coarse grained nature of the flows may be accounted for by slow cooling of thick flows.

Pillowed Mafic Flows

The pillowed flows are fine to very fine grained and composed predominantly of amphibole and feldspar. Pillow geometry and shapes range from buds (1cm wide, 5cm long) to large mega-pillows (75cm wide and 2 metres long) with 1cm to 3cm thick biotitic selvages. Infrequently, pillow cores are strongly epidotized and contain iron carbonate.

Mafic Tuff

Mafic tuff zones are fine to very fine grained, dark to medium green, and composed predominantly of amphibole and feldspar with lesser chlorite as a retrograde product of amphibole. Texturally, the tuff units are massive and non-bedded, although finely laminated (1-3mm) to thickly bedded (1 to 3m) layering occurs infrequently. Textural criteria used to identify a tuffaceous origin include faint <2mm wide amphibole-feldspar fragments and less frequently 1% to 5% feldspar phenocrysts.

6.2 Central Felsic Volcanics

The Central Felsic Volcanics consist predominantly of felsic tuff and reworked felsic sediments (felsic epiclastic tuff), often with distinct anastomosing (brickwork) fracture controlled alteration. The domain is bound to the west by the Western Volcanics and to the east by the Cormac Volcanics. Outcrop exposures are limited south of baseline 0+00 between lines 40+00W and 20+00W due to high density of cedar swamp and bog.

Anastomosing "brickwork style" fracture controlled alteration characterizes the Central Felsic Volcanic domain and occurs, with varying intensities, in the majority of outcrop exposures (Plate 1). The alteration consists of chlorite, amphibole, garnet, and magnetite in a network of 1cm to 4cm wide fractures. Alteration intensities were defined on the basis of distance between fractures and on the proportion of alteration minerals relative to wallrock. The alteration is both stratiform and stratabound, and occurs only within the Central Felsic Volcanics. Strong magnetic and VLF trends correspond with the alteration zone, and appear to increase in intensity near the (sheared?) northern boundary of the domain.

Felsic Tuff; 3ex Felsic Crystal Tuff

The felsic volcaniclastic tuff units are fine grained and consist mainly of 15% to 20% biotite in a quartzofeldspathic matrix. Crystal rich units contain 10 to 15% feldspar (2mm grains) and <5% quartz eyes (2mm grains). In addition, lapilli to block sized fragments occur infrequently. The fragments are fine grained, siliceous, and contain 15 to 20% fine grained biotite.

Felsic Sediments (epiclastics) and Mudstone

The argillaceous units are very fine grained, medium grey to light brown, finely laminated (1mm to 2cm) to thickly bedded (1m to 2m), and contain a mixture of mud and reworked felsic material. The units generally contain 20 to 30% biotite, trace to 5% euhedral 0.5 mm garnets, and a remainder of fine grained quartz and feldspar. Staurolite occurs infrequently as 5% subhedral to 1 to 3mm porphyroblasts. Some thin beds contain very fine grained, reworked felsic material with little or no biotite. Thin muddy clast rich units are also

common, and characterized by pale greyish brown fragments (5 to 25mm by 5mm).

6.3 Cormac Volcanics

The Cormac Volcanics consist mainly of massive (coarse grained) to pillowed mafic flows, reworked felsic tuff, debris flow sediments, and massive biotitic units (metamorphosed muds). The domain is bound to the north and west by the Central Felsic Volcanics and to the south, east and northeast by late granitic terrains. Younging directions (interpreted) are to the south. The Cormac Volcanics host the majority of mineralized surface showings.

Massive Mafic Flows

The massive flows are dark green and variably fine to coarse grained. Coarse grained flows are texturally and mineralogically similar to the massive flows of the Western Volcanics and consist predominantly of coarse 2mm to 5mm amphiboles with interstitial plagioclase. Massive fine grained mafic flows occurr less frequently. Thin 2 to 5cm wide clast rich zones (containing 1cm to 4cm wide buff coloured clasts) and iron stained zones are common.

Pillowed Mafic Flows

Pillowed mafic flows are fine grained, medium green, and consist predominantly of amphibole and feldspar. The pillows vary in size and geometry from buds to mega-pillows and contain thin 1cm wide selvage rims of biotite. Thin buff coloured clast rich zones are also characteristic. Vesicle concentrations are present in only some outcrop exposures. In some areas, felsic sediment (3s) fills gaps between adjacent pillows. Some outcrop exposures exhibit pre-hyaloclastite quench fracturing (Plate 2). Highly weathered and pitted mafic flank breccias, containing a monolithic mass of reworked mafic material, are often associated with the pillowed flows (Plate 3).

Felsic Volcaniclastic Tuff: 3ex Felsic Crystal Tuff

The tuff units are fine grained, pale greyish white, and contain 3 to 5% biotite (3mm) in a quartzofeldspathic matrix (Plate 4). The tuff is often quartz phyric with 3 to 5% quartz eyes (locally up to 10%) as 2mm to 3mm grains. Crystal tuff units contain 5% to 10% plagioclase as 1mm to

3mm grains. Biotite often defines a subtle foliation. Unit contacts are generally abrupt and near parallel to foliation. The felsic units are 4 to 5 metres wide on average, with a maximum width less than 20 metres. Biotite clasts occur infrequently, and are interpreted to represent metamorphosed mud clasts incorporated during deposition. The tuffs are considered to have been waterlain.

Debris Flows

The debris flows are characterized by an open framework of lithic felsic and argillaceous clasts (35 to 50%) in a muddy pale green mafic to medium brown argillaceous matrix (50 to 65%). Clast sizes vary from 5 cm to 30cm (Plate 5). In some outcrops, the lithic clasts are finely laminated with up to 20% biotite in a quartzofeldspathic matrix. Argillaceous clasts contain 1 to 3% garnet as 1mm porphyroblasts. Contacts, where present, are generally abrupt.

Felsic Lapilli Tuff

Felsic lapilli tuff is found in only a few outcrop areas throughout the Cormac Volcanics, mainly around drill hole PO-3. The unit consists of 30% felsic fragments (3mm to 5mm) and 5% biotite fragments (5mm to 10mm) in a fine grained quartz-feldspar-biotite matrix.

Biotitic (metamorphosed muds found mainly in drill sections)

Massive biotitic units (up to 95% biotite) were interested in drill core, but were not usually exposed on the surface. The units are considered to represent interflow sediments deposited during a quiescence in volcanic activity. The pre-metamorphic composition of the muds probably included a mixture of clay material (smectites) and water. Sulphides, including pyrrhotite and chalcopyrite were often associated with the biotite units.

6.4 Southern Granitic Terrain

The Southern Granitic Terrain consists of a coarse grained quartz-feldspar-biotite intrusion which bounds the Cormac volcanics to the north. Contacts between the Cormac volcanics and granitic intrusion are irregular (Plate 6), and in some cases contain thin zones of massive magnetite (Plate 7).

Chalcopyrite bearing chlorite pods and fracture associated coarse grained chlorite-biotite garnet alteration occur within the intrusion near lines 10+00E and 12+00E at 13+50S.

6.5 Northern Granitic Terrain

The Northern Granitic Terrain consists of a coarse grained quartz-feldspar-biotite intrusion which bounds the Cormac Volcanics, sheared sections of the Central Felsic Volcanics, and possibly the Northern Volcanics. At the margins of the pluton, the granite appears to have been forcefully intruded into the surrounding volcanics.

Work conducted by Falconbridge Limited on a local scale indicates that the Western Volcanics, Central Felsic Volcanics and the Cormac Volcanics form a west- to southwest-trending volcanic sequence. Foliations and mineral lineations generally follow this trend (Edwards 1991).

7) MINERALIZATION (ALTERATION):

The Boylen property contains numerous mineralized surface showings with anomalous copper and zinc. As discussed by Edwards (1991) of Falconbridge Limited, the majority of showings occur within the Cormac Volcanic Domain (including the Boylen, Ryley, Cormac, Gold Fields, NJZ 76 and Nyla showings).

The Alpamayo showing occurs in the southern granitic terrain. Descriptions of the main showings that follow are taken primarily from the work of Falconbridge Limited during the 1991 field season (Edwards 1991), S. Parent's observations during the initial discovery and limited field observations by the authors. The Ryley-Cormac and Alpamayo occurrences were initially discovered by S. Parent in 1989; the Gold Fields showing was discovered by Gold Fields Canadian Mining, Limited in 1986; and the Nyla occurrence was discovered by Falconbridge Limited during the 1991 season.

CORMAC VOLCANIC DOMAIN:

Boylen occurrence:

The Boylen occurrence is hosted in fine-grained mafic pillowed flows with zones of medium- to coarse-grained amphibole-chlorite, magnetite-chlorite and garnet alteration. In places, these units are intruded by granodiorite and granite gneiss. Mineralization was first exposed in several trenches completed by M.J.

Boylen Engineering (1961) to investigate the bedrock source of a copper boulder and includes chalcopyrite, pyrite, sphalerite, pyrrhotite and galena. The mineralized surface exposures generally occur as localized patches, roughly 0.5 m by 0.5 m in size. Drilling by M.J. Boylen Engineering (1961) tested the occurrence to a maximum vertical depth of 131 m in five diamond drill holes and intersected a wide carbonate alteration zone with disseminated sulphides. Significant results included the intersection of massive magnetite (over 10 m core length) with chalcopyrite and pyrrhotite, assaying up to 4.01% Cu over 0.61 m.

Ryley-Cormac occurrence:

At surface, this occurrence consists of two thin, discontinuous silicified biotite-rich (exhalative?) zones containing trace chalcopyrite and sphalerite. The zones are 0.25 m wide, traceable for roughly 10 m on surface, and trend northeast. Adjacent to the biotite-rich zones are medium-grained mafic tuffs and pillowed mafic flows. Thin, 10 mm wide, remobilized massive sphalerite bands were found in the mafic volcanics near the silicified zones and were the source of a 26.01% Zn assay obtained by S. Parent during the initial discovery of the occurrence. As stated by Edwards (1991) of Falconbridge Limited: "Similar remobilized bands are suggested to account for Boylen Engineering's 1961 Hole 343-3 intersection of 4.27% Zn over a 3 m core length. Hole 343-3 was completed roughly 250 m south-west of the Ryley Cormac occurrence". Diamond drilling in 1976 by New Jersey Zinc Explorations Co. (Canada), approximately 200 m east of the present day occurrence, also intersected mineralization assaying 4.0% Zn over 0.3 m associated with minor chalcopyrite. Lithologies intersected include rhyodacitic agglomerate, garnet-chlorite schist and mafic to intermediate flow rocks.

Gold Fields occurrence:

The Gold Fields showing is located .8 km due east of the Ryley-Cormac occurrence. Edwards (1991) of Falconbridge Limited describes the following:

> The Gold Fields showing consists of pervasive stringer chalcopyrite mineralization and chlorite-garnet alteration in a quartz phyric felsic volcanic host. The showing, roughly 20 m by 10 m, was mechanically stripped by Gold Fields Mining previous to 1990.

NJZ-76 occurrence:

The New Jersey Zinc occurrence is located roughly 2.7 km due west of the Boylen occurrence. Edwards (1991) again describes this occurrence as follows:

> New Jersey Zinc 1976 (line 5+00W, 3+50S)
>
> The New Jersey Zinc showing consisted of massive to pillowed mafic flows with distinct massive medium to coarse grained amphibole alteration hosting disseminated chalcopyrite mineralization (grab sample 0.79% Cu). The mineralized surface exposures are locallized patches, roughly 0.5 metres by 0.5 metres in size. A strongly sericitized quartz phyric felsic with 2% sulphides (pyrite and pyrrhotite with trace chalcopyrite) occurs 100 metres southwest of the showing. Associated geophysical anomalies include magnetics, VLF, and a large 935 Hz Airborne EM conductor. New Jersey Zinc tested the showing in 1976 with 7 drill holes totalling 243 metres (ATT-3 through 9). The zone was tested to a maximum vertical depth of 27 metres. Significant results included the intersection of disseminated chalcopyrite (visual estimates to 5% cpy), pyrrhotite, and pyrite in a medium to coarse grained radiating amphibole host. Surface geochemical samples of the amphibole units obtained during the 1991 mapping program indicated that the amphiboles are common hornblende (or basaltic hornblende) rather than the high grade metamorphic alteration mineral anthophyllite.

Nyla occurrence:

The occurrence was discovered by Falconbridge Limited during its 1991 field program and is located roughly .7 km due north of the NJZ-76 occurrence. Edwards (1991) describes the showing as follows:

> The Nyla showing consists of a small sulphide exposure containing thin 3mm to 10mm wide bands of fine grained sphalerite (1.63% Zn grab sample) within a biotite rich interflow sediment near a mafic-felsic contact. The exposure is 1 meter long by 10 cm wide. Geophysical anomalies include a large 935 Hz Airborne E.M. conductor.

SOUTHERN GRANITIC TERRAIN:

Alpamayo occurrence:

The Alpamayo occurrence on the Doorigan property is located 1.5 km southwest of the Boylen occurrence and was

discovered by S. Parent while prospecting the area in 1989. It is underlain by garnetiferous-chlorite-biotite schist, a possibly hydrothermally-altered rock unit. Granite gneiss, amphibolite and foliated mafic metavolcanic rocks occur on the Doorigan property, but outcrop exposure is limited due to overburden. Grab samples collected by S. Parent assayed up to 5.85% Cu. Edwards (1991) describes the occurrence as follows:

> The Alpamayo showing is characterized by 2 small 0.5 meter wide chalcopyrite bearing chlorite pods within the granite. The showing is associated with a magnetic anomaly and VLF linears which are interpreted as representing large fractures. West of the showing are coarse grained fracture controlled chlorite-biotite-garnet alteration zones (sulphide burned on weathered exposures) within the granitic host. The fractures trend 100· to 120· and contain 15 to 20% coarse grained chlorite, 15 to 20% coarse grained biotite, and 3 to 10% garnet (porphyroblasts up to 15mm in size). The granitic host near the fracture alteration contains 40% quartz eyes from 3mm to 8mm in size. The presence of hydrothermally altered intrusive rocks was originally speculated as resulting from the interaction of a subvolcanic intrusive and a hydrothermal cell. The granitic rocks appear to be part of a basement complex and the relationships of the alteration and mineralization are uncertain.

Note: To date, five companies have conducted mineral exploration in the area covering the Boylen occurrences, Noranda Exploration Limited being the current operator. Three of these companies including M.J. Boylen Engineering (1961), New Jersey Zinc (1976), Falconbridge Limited (1990-93) and Noranda Exploration were/are exploring for base metals. Only Gold Fields Canadian Mining, Limited (1986) was exploring for gold mineralization.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

The following is a compilation of all assay and geochemical analyses (by occurrence) from the Boylen occurrences property, from 1961 to fall 1992.

	Occurrence/ Showing Name	Company/ Individual	Type of Sample	COMMODITY Zn (%)	Cu (%)	Pb (%)	Ag (oz/ton)	Au (oz/ton)
(1)	Boylen Occ.	M.J. Boylen Engineering (1961)	DDH Core over 3.6 m	--	0.82	--	--	--
(2)	Boylen Occ.	M.J. Boylen Engineering (1961)	DDH Core over 0.61 m	--	4.01	--	0.20	--
(3)	Boylen Occ.	Authors (1989)	Surface Grab	--	0.685	--	--	--
(4)	Ryley-Cormac Occ.	M.J. Boylen Engineering (1961)	DDH 343-3 (216-227')	4.27	--	0.28	0.28	--
(5)	Ryley-Cormac Occ.	M.J. Boylen Engineering (1961)	DDH 343-3 (242-252')	2.14	--	0.19	0.15	--
(6)	Ryley-Cormac Occ.	S. Parent (1989)	Surface Grab/Chip over 0.1 m	11.92	--	--	1.1	--
(7)	Ryley-Cormac Occ.	S. Parent (1989)	Surface Grab/Chip over 0.2 m	12.32	--	--	2.4	--
(8)	Ryley-Cormac Occ.	S. Parent (1989)	Surface Grab/Chip over 0.1 m	26.04	--	--	0.99	--
(9)	Ryley-Cormac Occ.	S. Parent (1989)	Surface Grab	--	1.54	--	--	--
(10)	Ryley-Cormac Occ.	S. Parent (1989)	Surface Grab	--	1.18	--	--	--
(11)	Ryley-Cormac Occ.	Falconbridge Limited (1991)	DDH PO-3 over 0.28 m	4.71	--	--	--	--
(12)	Ryley-Cormac Occ.	Falconbridge Limited (1991)	DDH PO-3 (111.46 to 112.06 m)	0.38	--	--	--	--
(13)	Ryley-Cormac Occ.	Falconbridge Limited (1991)	DDH PO-3 (112.06 to 113.02 m)	0.77	--	--	--	--

	Occurrence/ Showing Name	Company/ Individual	Type of Sample	COMMODITY Zn (%)	Cu (%)	Pb (%)	Ag (oz/ton)	Au (oz/ton)
(14)	Ryley-Cormac Occ.	Falconbridge Limited (1991)	DDH PO-3 (100 m wide zone incl. above sects.)	284 ppm to 1900 ppm	--	--	--	--
(15)	Ryley-Cormac Occ.	Falconbridge Limited (1991)	DDH PO-4	up to 1.84	up to 2083 ppm	--	--	--
(16)	Southwest of Ryley-Cormac Occ.	Falconbridge Limited (1991)	DDH PO-5 (over 1.31 m)	--	1.13	--	2.93	--
(17)	Southwest of Ryley-Cormac Occ.	Falconbridge Limited (1991)	DDH PO-6 (over 2.17 m)	--	1.17	--	0.45	--
(18)	Southwest of Ryley-Cormac Occ.	Falconbridge Limited (1991)	DDH PO-6 (over 1.27 m)	--	2.09	--	1.14	0.07
(19)	Alpamayo Occ.	S. Parent (1989)	Surface Grab	--	1.8	--	--	
(20)	Alpamayo Occ.	S. Parent (1989)	Surface Grab	--	5.85	--	--	.045
(21)	Alpamayo Occ.	S. Parent (1989)	Surface Grab	--	3.22	--	--	
(22)	NJZ-76 Occ.	Falconbridge Limited (1991)	Surface Grab	--	0.79	--	--	--
(23)	Nyla Occ.	Falconbridge Limited (1991)	Surface Grab	--	1.63	--	--	--
(24)	Gold Fields Occ.	Falconbridge Limited (1991)	DDH PO-7 (over 0.26 m)	0.18	4.62	--	1.25	.006
(25)	Gold Fields Occ.	Falconbridge Limited (1991)	DDH PO-7 (over 0.31 m)	0.62	15.7	--	2.75	--

Note: A gold assay up to .045 oz/ton was obtained in one of the three samples (Parent 1989)

	Occurrence/ Showing Name	Company/ Individual	Type of Sample	COMMODITY Zn (%)	Cu (%)	Pb (%)	Ag (oz/ton)	Au (oz/ton)
(26)	Gold Fields Occ.	Falconbridge Limited (1991)	DDH PO-7 (over 0.28 m)	0.07	0.52	--	0.20	--
(27)	Gold Fields Occ.	Falconbridge Limited (1991)	DDH PO-7 (over 0.18 m)	0.11	0.43	--	0.13	--
(28)	Southwest of Gold Fields Occ.	Falconbridge Limited (1991)	DDH PO-8 (over 0.21 m)	2.81	0.09	--	0.05	0.005
(29)	Southwest of Gold Fields Occ.	Falconbridge Limited (1991)	DDH PO-8 (over 0.43 m)	0.29	0.17	--	--	--
(30)	Southwest of Gold Fields Occ.	Falconbridge Limited (1991)	DDH PO-8 (over 0.30 m)	1.14	2.40	--	1.63	0.04
(31)	Southwest of Gold Fields Occ.	Falconbridge Limited (1991)	DDH PO-9	0.20	.394	--	--	--

1) PROPERTY NAME: Canadian Nickel Company Limited Drill Hole No. 49115 Zinc occurrence (8)

DATE(S) VISITED:

MDI #: KP0420

2) ALTERNATE NAME(S): Horley Lake occurrence

3) COMMODITY: MAIN: Zn SECONDARY: Cu

DEPOSIT TYPE: Volcanic-associated massive sulphide (VMS)

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1971-
1972: Canadian Nickel Company Limited drilled 23 holes totalling 2649 m in a large area from south of Bosworth Lake to Sheridan Lake in the west and Nibinamik Lake in the north proximal to the community of Summer Beaver.

Note: There is no known surface expression of the occurrence.

CURRENT

1995: Claims are open for staking (March 8, 1995).

5) LOCATION AND ACCESS:

N.T.S.	53A10/NE
Latitude	52·40'41"
Longitude	88·34'30"
U.T.M.	Zone 16
	Northing 5837397
	Easting 393519

GENERAL LOCATION: The Canadian Nickel Company Limited drill hole no. 49115 occurrence is located 8 km (5 miles) west of Horley Lake and 5.6 km (3.5 miles) southwest of Nibinamik Lake. The occurrence is situated approximately 70 km (44 miles) northwest of Lansdowne House.

ACCESS: The occurrence is accessible by helicopter from Pickle Lake, which is the closest helicopter base.

REFERENCES: Thurston et al. (1979)

Resident Geologist's files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

P.715 Wapikopa Lake-Operation Winisk Lake (Thurston et al. 1971)
2287 Winisk Lake Sheet (Thurston et al. 1974)

6) GENERAL GEOLOGY AND STRUCTURE:

The Canadian Nickel Company Limited drill hole no. 49115 occurrence is situated in the Sachigo Subprovince, an arcuate group of mafic to felsic metavolcanic rocks and metasedimentary assemblages underlain by synvolcanic plutons and intruded by younger felsic intrusions and larger batholithic complexes.

In detail, the drill hole no. 49115 zinc occurrence is within the Peeagwon Assemblage of the Wunnummin Lake greenstone belt. Pillowed and massive mafic flows, minor units of oxide- and sulphide-facies iron formation and interbeds of quartzite and felsic tuff make up the assemblage (Thurston et al. 1992). The regional Stull Lake-Wunnummin Lake fault zone strikes northwest and occurs to the north of the drill hole no. 49115 zinc occurrence.

7) MINERALIZATION:

Thurston et al. (1979) summarized the percentage of lithologies and mineralization expressed as concentrations over the apparent thickness of the host rock for all 23 holes drilled in the 1971-72 program. The summary of the log for drill hole 49115 is as follows:

Hole 49115

Length: 154 m
Overburden: 14 m
a - Metavolcanics mostly of andesitic compositions containing one rhyolite interbed 1.5 m thick ...70.2 percent.
b - Iron formation and subordinate graphitic schists ...1.43 percent.
c - Quartz porphyry ....6.3 percent.

Mineralization

in a-Seventy percent sulphides (pyrrhotite, pyrite, sphalerite, chalcopyrite) with 7 percent sphalerite over 1.5 m, at the contact of andesite and rhyolite; 10 percent sphalerite stringers in rhyolite. Two percent to 5 percent pyrrhotite, pyrite with traces of chalcopyrite and sphalerite locally found in andesite. One percent sphalerite stringers over 3.0 m in andesite and up to 45 percent pyrrhotite, pyrite, (chalcopyrite) over 0.7 m intermediate metavolcanics.

in b-Generally less than 1 percent pyrrhotite, pyrite with occasional minor chalcopyrite, and 10 percent to 30 percent magnetite over 10.7 m.

*Drill hole 49165, located immediately north of drill hole 49115, intersected 2% sphalerite over 0.12 m. Drill hole 49168, to the north, intersected 3% sphalerite over 0.21 m.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

1) PROPERTY NAME: Currie occurrence (9) DATE(S) VISITED: Aug. 7/86

MDI #: n.a.

2) ALTERNATE NAME(S): Currie prospect
Z-2 Grid
Currie Veins

3) COMMODITY: MAIN: Au SECONDARY: Ag

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1928: Vein(s) and gold-bearing float were noted near the Albany River by T.A. Currie and staked for Consolidated Smelters. Stripping, trenching, and sampling were completed.

1935-39: T.A. Currie, prospector, held claims Pa 2222 to Pa 2233 inclusive, north of the Albany River and in the Patricia Mining Division, and mining claims KK 2577 to KK 2582 inclusive, south of the Albany River and in the Kowkash Mining Division. The gold occurrence is located on claim Pa 2223, north of the Albany River on a bend in the river. Prospecting, trenching and sampling were performed on the No. 1, No. 2 and No. 3 veins. Roche Long Lac Mines Ltd. optioned the property and diamond-drilled beneath the No. 1 vein.

1947: T.A. Currie approached Sylvanite gold mines to determine if Sylvanite might be interested in the property. There is no record of follow-up.

1978: M. Culliton staked mining claims TB 510802 and TB 510803 to cover the occurrence.

All interest was transferred to New Jersey Zinc Exploration Company (Canada) Limited.

Airborne geophysics were performed.

1979-82: New Jersey Zinc Exploration Company (Canada) Limited conducted ground magnetometer, electromagnetic and VLF-EM surveys. Diamond drilling was undertaken on a block of 8 claims

(Z-2 Grid) covering the Currie occurrence numbered: TB 510802, TB 510803, TB 510812, TB 510813 and TB 506109 to TB 506112 inclusive.

Seven drill holes were drilled on the Z-2 Grid, one of which intersected the Currie vein No. 1.

1984: New Jersey Zinc Exploration Company (Canada) Limited transferred a 50% interest to Felmont Oil Corporation. A Notice of Agreement between New Jersey Zinc, Felmont and Case-Pomeroy Oil Corporation was registered.

1985: Felmont Oil Corporation transferred a 50% interest to Homestake Mineral Development Company.

1990: The land survey plan for claims TB 510802 and TB 510803 was approved.

New Jersey Zinc Exploration Co. (Canada) Limited transferred 50% to Homestake Mineral Development Company. A Release of Agreement with New Jersey Zinc Exploration Company (Canada) Limited, Case-Pomeroy Oil Corporation and Felmont Oil Corporation was registered.

CURRENT

1995: On January 7, 1991, a lease was issued on mining claims TB 510802 and TB 510803 to Homestake Mineral Development Company (March 8, 1995).

5) LOCATION AND ACCESS:

N.T.S.	52P10/SW	
Latitude	88·49'30"	
Longitude	51·33'20"	
U.T.M.	Zone 16	Northing: 5713250
		Easting: 373350

GENERAL LOCATION: The Currie occurrence is located on the north side of the Albany River approximately 61 km (38 miles) west of Fort Hope and approximately 90 km east of Pickle Lake (56 miles). Snake Falls is approximately 7.2 km (4.5 miles) upstream (southwest) on the Albany River. The entrance and south end of Howells Lake is located 3.7 km (2.3 miles) east on the Albany River.

ACCESS: Float planes can readily land on the Albany River or helicopters can land on or near the occurrence. Pickle Lake is the closest air service point for fixed wing aircraft or helicopters.

REFERENCES: Currie (1939)*
Prest (1940)
Scott (1977)*
Thurston and Carter (1970)
Wallace (1981)

Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 48e Keezhik-Miminiska Lakes area (Prest 1940)
Map 2237 Fort Hope-Lansdowne House Sheet (Thurston et al. 1972)
Map 2416 Miminiska Peninsula (Wallace 1981)

6) GENERAL GEOLOGY AND STRUCTURE:

The Snake Falls-Howells Lake-Miminiska Lake area has been described by Wallace (1981):

> ...underlain by a thick metasedimentary sequence consisting of intercalated wacke and mudstone units and in places oxide, carbonate and/or silicate facies iron formation. This sequence conformably overlies a thick metavolcanic succession of predominantly mafic pillowed flows to the south. To the north, there is a second mafic metavolcanic succession. A wedge of felsic to intermediate pyroclastic rocks and intercalated volcanoclastic metasediments appear to directly overlie the lower mafic metavolcanics. This wedge is enclosed in the main wacke-mudstone sequence toward the east in the main portion of Miminiska Lake.

A major intrusion of quartz monzonite to granodiorite, known as the Troutfly Lake Batholith, occupies a large area northwest of Howells Lake.

Wallace (1981) described the structure:

> Structural elements are generally east-northeast-trending in the east, and northeast trending in the western part of the area. Major folds can be outlined only in the metasediments east of Miminiska Peninsula. The major faults in the area extend northeastward from Miminiska Peninsula sub-parallel to Ferguson Creek.

A 1977 unpublished report written by J. Scott, Geologist, Ministry of Northern Development and Mines, Thunder Bay, after visiting the Howells Lake property east of the Currie occurrence, stated:

> New Jersey Zinc's interpretation is that the mafic volcanic/clastic metasedimentary contact (which traces through Howells Lake) is actually an unconformity. Gabbro sills are large and more numerous than mapped by Wallace.

7) MINERALIZATION:

The Currie occurrence is underlain by massive metavolcanic flows and related autoclastic breccias (Wallace 1981) and diorite to chlorite schists (sheared and altered chlorite) (Currie 1939).

Gold mineralization is associated with 3 quartz veins striking 21· to 26·. Currie (1939) also noted numerous shear zones on the property. The veins numbered 1, 2 and 3 (No. 2 is the most westerly) contain visible gold (No. 1 and No. 2 showed visible gold in hand sample and No. 3 after panning).

Two float locations have been documented on the property. A "porphyry float" containing chalcopyrite was noted northwest of the No. 2 vein and a "quartz float" containing gold and chalcopyrite, which was the original discovery, is located immediately northeast of the No. 1 vein.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

Currie (1939) reported the following:

> Smelters trenched across formation at outcrop area and got a general average of $2.50 per ton (old gold price). Some specimens would give as high as $65.00 to $99.00 per ton. Only about 100 ft. long strike of formation was possible to investigate with pick & shovel.

*1928 price of gold = $20.67 per ounce
$2.50 per ton = 0.12 ounce gold per ton (Canadian)
$65.00 per ton = 3.14 ounce gold per ton (Canadian)
$99.00 per ton = 4.79 ounce gold per ton (Canadian)

Stripping and trenching in 1939 opened up the No. 1 vein for a length of greater than 60 m (200 feet).

Visible gold was noted by Currie (1939) in the No. 1 and No. 2 veins. Gold was panned in the No. 3 vein.

New Jersey Zinc Exploration Company (Canada) Limited (1980) drilled hole number 80-MW-4 on Grid Z-2 through the Currie No. 1 vein. Gabbro was encountered for the entire length of the hole, which totalled 40 m (134 feet). A shear zone with well-developed foliation and strong carbonatization was intercepted between footage 80 and 108. Disseminated pyrrhotite, pyrite, chalcopyrite and quartz-carbonate veins were noted in the same section. New Jersey Zinc did not file assay results from hole 80-MW-4.

1) PROPERTY NAME: Fort Hope gold mine (10)

DATE(S) VISITED: Aug. 8/86
July 20/88
July 26/89

MDI #: KP0007

2) ALTERNATE NAME(S): Golden Hope Mine
Hopa-Tricia Mine
Rond Lake property

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1924-25: The Nipissing Mining Company of Cobalt, Ontario prospected the Fort Hope area.

1927: Lorne Howey and a prospecting crew accessed Fort Hope from Armstrong by canoe (June-July). On July 16, L. Howey made a gold discovery that ultimately would become the Fort Hope gold mine. By July 27, 16 claims were staked to cover the discovery, then named the Howey-Smith discovery (Burwash 1929). Claims were numbered Pa (Patricia) 33 to Pa 44 inclusive, Pa 46, Pa 47 to Pa 50 inclusive. Later in that year, a company known as Fort Hope Mines Ltd. was formed with intentions to finance the operations of the mine (Globe and Mail, December 11, 1927).

The Albany River Mine was also incorporated to add financial support to the operations of the new mine (Sudbury Star, December 13, 1927).

1928: Steamplant, boilers, compressor, hoist, and a year's worth of supplies were shipped by winter road from Tashota station to the mine site. Trenching of quartz veins was initiated (Financial Post, January 20, 1928). Development of the mine began on February 1 under the direction of C.R. Ferguson. This included sinking of a shaft and installation of a milling plant (Globe and Mail, March 1928). The shaft was sunk by hand and by the end of April it was recorded to have reached a depth of 10 feet. By June the plant was completed

and the shaft had reached a depth of 20 feet (Northern Miner, June 7, 1928). By August the shaft reached 115 feet and by September 1928 lateral work was underway on the 100-foot level. Encouraging assay results were obtained from sampling the Shaft Vein. Drifting along the vein was reported to have extended for more than 175 feet (Northern Miner, September 1928).

In October 1928 an interesting sequence of events were recorded in the Northern Miner. Development to date had included a 115 foot shaft with lateral work on the 100 foot level totalling 225 feet. Discouraging results coupled with exhausted funds resulted in a decision to close down the mine. When these instructions reached the mining engineer in charge, he decided to exhaust the remaining supplies and available mining material before shutting down operations. Several side slashers were put into the drift and three rounds were taken out. The results of this extra effort was a welcome surprise. A new vein, parallel to the one which had been getting the attention, was discovered. The new vein had an average width of 1.2 meters (4 feet) and had visible gold associated with it. This discovery kept hopes alive that the operation might not be suspended. Since supplies and mining equipment were restricted, continuing the operations would have to wait for financial support (Northern Miner, October 18, 1928).

1929: A deal for financing the re-opening of the mine was aborted in April, the reason being unknown (Northern Miner, October 18, 1928).

1933: The Fort Hope gold mine remained idle until 1933, when the Fort Hope Gold Syndicate was formed to develop the property (Northern Miner, November 30, 1933).

1934: The property was acquired by Fort Hope Consolidated Gold Mines Ltd. and between 1934 and 1935 the mine was de-watered and 17 holes totalling 1520 meters (5000 feet) was completed. Surface showings were extended and the underground workings were sampled. No further exploration in the area was recorded in 1934 (Wallace 1978).

1938: The Hopa-Tricia Gold Mine Ltd. (formerly Fort Hope Consolidated Mines) was incorporated to develop the property. Mr. Charles L. Laederer, a mining engineer, was given the task of submitting a summary report and general description of the property. No work was recorded by the company (Assessment Files, Beardmore-Geraldton District, Thunder Bay).

1946: Golden Hope Mines Ltd. was incorporated to acquire the property. In the latter part of 1946, a contract was tendered for a ground magnetometer survey of the area to help outline possible mineralized sections. Koulomzine, Geoffrey and Brossard carried out the survey and reported that the mineralization appeared to be related to a series of parallel faults and drilling was recommended [Prest (1944) outlines these faults in his report]. These recommendations were never carried out and no work was recorded on the property until 1958 (Golden Hope Mines, Prospectus, 1959).

1958-59: During March, a small crew was sent into the property on behalf of the Golden Hope Mine, to test results obtained from other companies. The veins near the shaft were tested and the following results were obtained:

0.06 oz/ton - 2.05 g/tonne Au
0.10 oz/ton - 3.43 g/tonne Au
1.71 oz/ton - 58.68 g/tonne Au

Stripping, trenching, and sampling continued until October. Prospecting on their grid disclosed two new mineralized quartz veins that are located north-east of the shaft at co-ordinates 410E and 480E. Assay values of 0.88 oz/ton Au (30.184 g/tonne Au) and 0.98 oz/ton Au (33.61 g/tonne Au) were obtained from these veins. Both these veins were trenched and drilled. Reports on this drilling were not available (Assessment Files, Beardmore-Geraldton District, Thunder Bay).

A bulk sample of 73 pounds of quartz was sent for extraction tests to Lakefield Research Ltd. (see "Economic Features" for details)

Work was suspended because of lack of funds.

1963: Golden Hope Mines Ltd. carried out an examination of the property.

1972: Golden Hope Mines Ltd. carried out another examination.

1974: The ownership of the claims was transferred to B.B. Jessel (Wallace 1978).

1978: The original patented claims were cancelled. A. Hopkins staked 16 claims (TB 465884 to TB 465899) covering the mine property. The claims were optioned to L. Dempster and La-Chib Mines Ltd. Line cutting, ground geophysics and geological mapping were performed.

1980: Three drill holes totalling 179 m (587 feet) were diamond-drilled for Mountainview Explorations and La-Chib Mines Ltd.

1982: Claims expired on June 24. Mike Labchuk and John Londry staked 6 claims around the shaft area numbered TB 651376 to TB 651379 inclusive and TB 740028 and TB 740029.

1984: A magnetometer and VLF-EM surveys were carried out over claims TB 651376 to TB 651379 inclusive by Lorne Dempster and John Londry.

1985: Fourteen claims were added to the group. Title for the original 6 claims was transferred to Robert James Reid, Pickering, Ontario. Ohio Resources Corp. acquired the claims via option agreement. A ground magnetometer survey was conducted and one diamond-drill hole was completed totalling 46 m (150 feet).

1986: Title to the remaining 14 claims was transferred to R.J. Reid. Airborne magnetic, electromagnetic and VLF-EM surveys by Aerodat Limited for Pure Gold Resources Inc. were conducted over ground to the north which extends onto the northern portions of the mine claims. Five short drill holes totalling 172 m were drilled.

1988: A ground magnetometer and soil geochemistry survey was conducted by Ohio Resources Corp.

Claim holdings consisted of the following claims: TB 651376 to TB 651379 inclusive
TB 740028, TB 740029
TB 840781 to TB 840794

1989: Hi-Tec Resource Management Ltd. conducted induced polarization (IP), magnetometer and VLF-EM surveys to investigate the possible

extension of gold-bearing zones identified by Pure Gold Resources Inc. (Noramco Exploration Inc.)

1990: Eight diamond-drill holes totalling 1350 m were completed under the supervision of Graham Ground Geoconsultants Ltd. for Ohio Resources Corp. to test IP and magnetometer anomalies including possible extension of the OL-12 Pure Gold Resources Inc. (Noranda Exploration Inc.) gold occurrences.

CURRENT

1995: Robert James Reid holds a large group of staked claims covering a portion of the original Fort Hope Mine property. Claim TB 840786 covers part of the old shaft claim but does not appear to cover the shaft itself. According to claim map G.388, the claims in the area are listed in good standing to November 8, 1997 (June 22, 1995).

5) LOCATION AND ACCESS:

N.T.S.	52P9/SE	
Latitude:	51·36'40"	
Longitude:	88·02'30"	
U.T.M.	Zone 16	Northing: 5718200
		Easting: 427800

GENERAL LOCATION: The Fort Hope gold mine is located approximately 8 km northwest of Fort Hope (Eabametoong First Nation), Ontario. Rond Lake is located 1.6 km north of the property. The Fort Hope gold mine is situated 145 km east of Pickle Lake, 168 km north-northeast of Armstrong and 200 km northwest of Nakina.

ACCESS: The mine site is accessible by helicopter to a pad immediately north of the shaft or by float plane to Rond Lake and then by trail (1.6 km). Winter roads to the community of Fort Hope (Eabametoong First Nation) have been developed from the south (Nakina) and west (Pickle Lake) in the past.

REFERENCES:

Bourdages	(1982)*
Bowdidge	(1979)*
Brown	(1980)*
Burwash	(1928,30)
Cruickshank	(1988)*
Dent	(1972)*
Gagan	(1959a,b)*
Goldsmith	(1988)*

Graham	(1989)*
Halet	(1956)*
Howey	(1928)
Laederer	(1938)*
Londry	(1985a,b)*
Oja	(1963b)*
Prest	(1944)
Thurston and Carter	(1970)
Wallace	(1978)

Resident Geologists File, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 51b Fort Hope Area (Prest 1944)

Map 2234 Fort Hope Lansdowne House Sheet (Thurston et al. 1969)

Map 2379 Opikeigen Lake Area (Wallace 1978)

6) GENERAL GEOLOGY AND STRUCTURE:

Shortly after Lorne Howey made his gold discovery, E.M. Burwash was sent up to evaluate the area on the behalf of the Ontario Department of Mines. His objective was to determine the character of the ore deposit and the structure, lithology and the extent of the rock formations in which they occur. After a detailed mapping project, a report of the geology of the Fort Hope Gold area was published in the 1929 Annual Report of the Ontario Department of Mines. The following is a quote from this report:

> The exposure of ellipsoidal Keewatin rock in which the vein occurs is part of a low rounded knoll which rises about 40 feet above the surrounding muskeg. It is several acres in extent, largely covered with soil, and was thickly wooded with spruce. The country rock traversed by the vein is a fine-grained, fairly massive, dark-grey pillow lava, chloritic on sheared faces and displaying to the unaided eye occasional small grains of pyrite. Microscopically it presents an ophitic texture with laths of andesine (Ab 60 per cent., An 40 per cent.) and a few larger crystals altered to kaolin. The interstices are filled with a felt of green hornblende, the fibres mainly parallel, irrespective of the direction of the feldspars. The hornblende is slightly epidotized. Accessory ilmenite, altered to leucoxene, and disseminated pyrite grains complete the list of

> minerals usually present. Where fractures traverse the rock they are healed with chlorite, epidote, and quartz. The country rock as a whole is, therefore, an ophitic andesite or andesite gneiss rather than a hornblende schist, as at first supposed.
>
> The strike of the gneissic and ellipsoidal structure is nearly east and west. It has been much fractured and faulted after the deposition of the ore. The vein is a fractured zone of age long subsequent to the folding of the rocks, whose strike it traverses at an angle of about 45 degrees in a northeast to southwest direction. The fragments of the andesite gneiss have been altered by the hydrothermal action accompanying the intrusion of the vein matter, which has produced a recrystallization of the hornblende in somewhat coarser individuals than before.

(Burwash 1930)

C.L. Laederer (1938) mapped the area on behalf of Hopa-Tricia Gold Mines and noted the presence of east-trending porphyritic dikes ranging from 1.35 to 1.8 m wide and 240 m in strike length. Quartz veins were described as fracture fillings in mafic metavolcanic rocks proximal to the porphyry dikes (Assessment Files, Beardmore-Geraldton District, Thunder Bay).

H. Wallace (1973) described the geology as follows:

> The area around the mine is one of the few places in the map-area where pillow lavas are well exposed. These lavas are intermediate in composition, now consisting of oligoclase and hornblende. They have been intruded by several east-west-trending quartz-feldspar and feldspar porphyry dikes and lenses, trondhjemitic to granodioritic in composition, which vary up to 2 m (6 feet) wide but are generally less than 70 cm (2 feet) wide.

7) MINERALOGY:

Wallace (1978) described the mineralogy as follows:

> The gold-bearing quartz and quartz-carbonate veins are east-west- and northeast-southwest-trending. Several distinct veins have been trenched and (or) intersected in drill holes, but cross-cutting northwest-southeast-trending fractures have created numerous offsets, making it difficult to trace individual veins. The

northeast-southwest-trending veins are commonly lenticular in three dimensions, pinching from several metres to a few centimetres wide over short distances or bifurcating into a system of narrow stringers. Where these veins are intersected by the northwest-southeast-trending faults and shear zones they tend to bulge markedly. The east-west-trending veins are much more regular in shape and width.

The vein material is predominantly white quartz, but dull grey calcite is also abundant. Sulphide minerals in the veins include pyrrhotite, pyrite, and chalcopyrite. Visible gold has been reported in several places in the vicinity of the mine, particularly near the intersections of quartz veins and the northwest-southeast-trending fractures, and in quartz veins and silicified shear zones along the contacts of the porphyritic intrusions with the country rock.

Gold is associated primarily with the quartz-carbonate vein material, but significant gold content in the country rock was reported up to 1.3 m (4 feet) from the veins by Laederer (1938), Gagan (1959) and Halet (1955) but gold "values" were generally described as erratic. A single grab sample of "good-looking ore" taken by Burwash, who visited the mine in 1928, assayed 9.37 ounces of gold per ton (Burwash 1929). Burwash reported an average assay of 1.01 ounces of gold per ton from samples taken across widths of from 20 to 198 cm (8 to 78 inches) over a vein length of 175 m (575 feet).

Exploration work in the past has been concentrated on two vein systems which have become known as the "Shaft" and "California" veins (Figure 6). The following description of the "Shaft" vein is taken from Dent's summary of the mine property (Dent 1972):

> The "Shaft Vein" is an irregular fracture zone striking north 27· east and dipping 74· northwest. Only a length of about 30 feet has been explored. Southeast striking fractures cut the above zone. At some of these intersections, irregular bodies of quartz with visible gold are frequently found. The quartz is white, sugary, and often glassy, with carbonates. Mineralization consists of pyrrhotite, pyrite and chalcopyrite, R.V. Oja says: "The visible gold is not confined to the vein quartz. In several places, gold was noted in the schisted wallrocks. The

width of the mineralization varies but the average lies between two to four feet". At the time of the writer's visit, where the "Shaft Vein" was well exposed and accessible, little quartz was visible. The "Shaft Vein" could be seen in the northeast end of the shaft but could not be examined closely because the shaft timber is unsafe. The vein appeared to be about 10 inches, wide and, although it showed several minor displacements by cross fractures, it had a steep northwest dip. This main vein appeared to be cut off near the northeast end of the shaft by a northwest-striking fracture. A stringer zone could be traced in shallow trenching, northeastwards, perhaps 25 feet from the shaft collar. The vein was not exposed southwest of the shaft, although there is evidence that rock trenching has been done in this direction adjacent to the shaft.

Initial sampling underground of a vein, apparently the "Shaft Vein", averaged 1.06 ounces gold per ton across a width of 3.0 feet along a length of 35 feet.

R.A. Halet, in a report dated March 23, 1955, states, in reference to the "Shaft Vein": "The average of eight channel samples...on surface over a length of 25 feet is 0.63 ounce per ton...with an average width of 1.5 feet. The vein on the 100 foot level is 26 feet long, 0.8 feet average width, and the average grade of four samples is 0.71 ounce per ton..." He reports a lenticular body of quartz, 7 feet by 3 feet, on the 100-foot level giving assays of 1.80 ounces, 0.76 ounces, 0.51 ounces, and 1.20 ounces gold per ton.

E.W. Gagan, in a report dated April 15, 1959, described his efforts in 1958 and 1959 to locate, and sample, the "Shaft Vein". He exposed a vein at the northeast corner of the shaft, which was one foot wide and assayed 3.06 ounces gold per ton. He says: "A cut was blasted at this point and sampling at a depth of 5 feet below the surface gave a value of 50.02 ounces...per ton but was not considered representative of the true value due to the highly erratic nature of

free gold occurring at this point. In opening up this vein it was found that is was cut off by a fault a few feet to the north of the shaft and pinched out at depth." Gagan found the extension of the vein to the southwest. He reports that the vein is 18 inches wide near the southwest corner of the shaft and increases in width to 4 feet a short distance to the southwest. He reports: "To sample this section properly, five bulk shipments were made which gave the following results: 8.8 ounces - $296.65; 2.758 ounces - $82.08; 0.536 ounce - $18.76; 0.90 ounce - $31.50; 4.71 ounces - $164.85 per ton. The aggregate weight of these samples amounted to 6842 pounds. Last sampling of this vein gave a value of 19.84 ounces - $694.40 per ton but this again cannot be considered representative." He states that this vein dips to the south and rakes to the southwest and west. In the shaft area, Oja, in quoting Gagan, reports that a quartz vein 40 feet north of the shaft showed very fine visible gold and assayed 0.22 ounce gold per ton, and a quartz vein 25 feet north of the shaft assayed 0.36 ounce gold per ton.

The face of the southwest drift, on the "Shaft Vein" is said to be in high grade material.

Dent's description of the "California" vein is as follows:

Considerable rock trenching has been done on the "California" vein about 400 feet east of the shaft. Two parallel veins, about 75 feet apart have been trenched. A vein estimated to be about 10 inches wide could be seen in parts of the trenches. R.V. Oja gives the following description: "This zone contains an irregular body of quartz, traced for a length in excess of 200 feet striking north 75· west and dipping south. The zone ranges in width to a maximum of ten feet." He goes on to say, "The California Vein" is a well defined structure where quartz lenses parallel the hanging wall of the north-dipping porphyry dike. The dike varies in width from 4.5 to 6.0 feet and has been traced

for a length of 1000 feet. The dike and quartz veins follow an east-west trend. The quartz veins are lenticular both horizontally and vertically and lie in well developed shear zones along the contacts of granodiorite stocks. The shear zones are highly silicified and carry a network of quartz stringers, lenses and irregular bodies of quartz. In many places, these shear zones only give low values in gold but appear richer (in gold) at the junctions with transverse fracture zones".

R.A. Halet sampled the "California Vein". He states: "It is 200 feet long with an average width of 1.5 feet. The 30 feet long "C" section of this vein gave an average value of 0.09 ounce per ton...and the 130 foot long "D" section gave an average value of 0.18 ounce per ton."

Gagan reports visible gold and grab samples up to 0.97 ounce gold per ton after the visible gold had been removed.

Burwash (1930) reported:

Small fragments are reduced to hornblende schist. The vein matter between the fragments consists of quartz and calcite. The sulphide mineralization includes pyrrhotite, pyrite, and chalcopyrite in decreasing order of abundance, and in some places native gold. The sulphides are to some extent disseminated in the fractured country rock, but the gold is said to be mainly in the quartz. Sampling in 21 places over a length of about 575 feet showed widths varying from 8 to 78 inches, averaging 34.5 inches. The values found ranged from $311.00 to 40 cents per ton, the average being $20.81. These values were those reported by the company from assays made by them up to November 11, 1927. A grab sample taken by the writer of good-looking ore assayed $193.60. The average of $20.81 given about omits the extreme high value of $311.00.

8) ECONOMIC FEATURES:

BULK SAMPLING:

It was reported that since there is a substantial amount of arsenopyrite associated with the quartz veins problems were anticipated in gold recovery.

Therefore, a bulk sample of 73 pounds of quartz was sent for extraction tests. Lakefield Research Ltd. carried out the tests and reported that 0.46 oz/ton (15.709 g/tonne) Au was present and a recovery of 96.8% by straight cyanidation was possible when ground to 90-100 mesh (Assessment Files, Beardmore-Geraldton District, Thunder Bay).

The high grade vein located near the shaft ranges in width from 4 inches (.1 meter) to 4 feet (1.2 meters) and a bulk sample of 6842 pounds (3105 kg) was sent in for assay. The results were as follows:

8.8	oz/ton	301.84 g/tonne
2.756	oz/ton	94.599 g/tonne
0.536	oz/ton	18.384 g/tonne
0.94	oz/ton	30.87 g/tonne
4.71	oz/ton	161.53 g/tonne

(Wallace 1978; Assessment Files, Beardmore-Geraldton District, Thunder Bay)

DEVELOPMENT:

Year	Shaft	Level	Drifting	Crosscutting	Tons
1928	125' (37.5 m)	1@100' (30 m)	300' (90 m)	30' (9 m)	2000 (at dump)

9) CHEMICAL ANALYSES:

Laederer sampled the underground workings and reported that the shaft vein, for a length of 7.5 meters (25 feet) and averaged width of .42 meter (1.4 feet), returned an average of .915 oz/ton (31.38 g/tonne) (Assessment Files, Beardmore-Geraldton District, Thunder Bay).

Burwash reported that sampling in 21 places over a length of 172.5 meters (575 feet), over widths varying from 20 cm to 1.95 meters (8 to 78 inches), averaging 86.25 cm (34.5 in.), returned values ranging from $311.00 to 40 cents per ton (15.04 oz/ton) to .019 oz/ton - 515.8 g/tonne to trace) (Burwash 1929).

1) PROPERTY NAME: Goss Lake prospect (11)

DATE(S) VISITED: Aug. 7/86
July 21/88
July 26/89

MDI #: KP0413

2) ALTERNATE NAME(S): Frond Lake prospect
Keezic Resources prospect

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold/Iron Formation

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1940: In 1940, prospector John Goss discovered gold on the property south of Goss Lake in a sulphide-bearing iron formation outcrop. From April to July of 1940, the Connell Mining and Exploration Company Ltd. drilled holes 1 to 33 along the strike of the iron formation.

1945-46: Exploration was interrupted by the war in 1940 and began again in 1945 when the Frond Lake Mining Company (formed in January 1943), funded by Conwest Exploration Company Ltd. and Central Patricia Gold Mines Ltd., conducted a drilling program which lasted until October 1946. During this period, drill holes 34 to 65, 148 to 153, and D-1 to D-10 were completed. Twenty-nine trenches were excavated and sampled between 1941 and 1946. The claims were surveyed and patented.

The diamond drilling indicated two parallel mineralized zones carrying favourable gold values with substantial length disclosed in the south zone (900 feet) (Northern Miner, October 1981).

The two zones contained approximately 45 tons per vertical foot grading 0.35 oz/ton Au. However, deeper diamond drilling did not confirm similar values and further diamond drilling was planned (Canadian Mines Handbook 1947, p.115).

1947-71: No work was undertaken. In 1961, claims were patented by Frond Lake Mining Corporation (Canadian Mines Handbook 1961).

1971: Fourteen claims were staked to the east. Conwest Exploration Company Ltd. conducted a vertical loop electromagnetic survey, fluxgate magnetometer survey and geological survey on a portion of the property which included the following claims: Pa 5151-2, Pa 5154, 5155, 5160 and Pa 5164-65 all inclusive and the new claims. The surveys outlined several anomalies which may represent bands of iron formation; the conductive zones within these could be sulphides and/or graphitic zones (Bergmann 1973).

The Northern Miner (1981) summarized the Conwest Exploration data to date as extensive stripping, trenching, sampling and 15,000 feet (4,500 meters) of diamond drilling. From this, two encouraging shoots were discovered, a north and a south shoot. The north shoot was traced for 400 feet (120 meters) and averaged 0.39 oz Au/ton (13.38 g/tonne). The south shoot was traced for 900 feet (270 meters) and is present in broken sections. This shoot averaged 0.25 oz Au/ton (8.58 g/tonne) over 6.2 feet.

1979: In October, Frond Lake Mining Company changed its name to Solo Resources and Energy Inc. (Canadian Mines Handbook 1979).

1981: Keezic Resources Ltd. optioned the property. This company undertook humus geochemical and VLF-EM surveys over the drilled area. Later that year, the entire property (47 line km) was covered with fluxgate magnetometer and VLF-EM surveys.

1982: Nine diamond drill holes numbered 82-3 to 82-10 and totalling 2405 feet were drilled from February to March 1982. They were located in the area of the 1940's drilling and were drilled to confirm and expand upon those assay results. Eight claims were staked to the east of the property in an effort to locate the nose of a large isoclinal fold interpreted by V.K. Prest in the 1940s.

1983: In early 1983, VLF-EM and fluxgate magnetometer surveys were carried out on the newly staked claims. Eight diamond drill holes, totalling 2050 feet, were drilled along strike and to the

east of the drilled area from March to April 1983. During this time, Lacana Mines undertook a proton magnetometer and horizontal loop EM survey over Goss Lake and parts of the drilled area. Following the drilling, Westmin Resources Ltd. conducted geological mapping, proton magnetometer and humus goechemical sampling programs covering most of the 24 patented claims during July and August 1983.

1984: In January and February, Westmin and Lacana conducted a horizontal loop EM survey of 24.5 line miles covering most of the Keezic Resources claims, including the easterly block of 8 claims.

1985: Keezic Resources Ltd., Stanmar Resources Ltd., and Tandem Resources Ltd. amalgamated in October under the name Tandem Resources Ltd.

1987: From June to September, a 20,301 foot diamond-drill program was conducted on the 32 claim Frond Lake property. A limited outcrop sampling program was also completed. Financing was provided by Ayrex Resources Ltd. and Tandem Resources Ltd. Field work and compilations were conducted by H.E. Neal & Associates Ltd.

Forty-two holes were drilled to test two altered, banded iron formations for gold mineralization. Drilling in the first area was beneath and to the east of previous (i.e. 1940, 1982 and 1983) drilling. The second area, not previously drilled, was to the south.

The first drill target consisted of three sub-parallel, altered banded iron formation units within a series of unaltered to weakly-altered greywackes. Thirty-five holes intersected these units.

The second target was banded iron formation with a strong magnetic signature. Seven holes intersected this target located 1000 feet to 1800 feet south of Goss Lake.

CURRENT

1995: Tandem Resources Ltd. is the owner of 27 patented claims, including PA 5155, which hosts the original Goss Lake occurrence (June 22, 1995).

5) LOCATION AND ACCESS: N.T.S. 52 P 9/SW
Latitude: 51·36'30"
Longitude: 88·21'25"
U.T.M.: Zone 16 Northing: 5718250
Easting: 406350

GENERAL LOCATION: The Frond Lake area is situated within the Miminiska Lake-Albany River area of the Thunder Bay Mining Division. The area is approximately 145 km north of Lake Nipigon and 104 km east of Pickle Lake. Fort Hope (Eabametoong First Nation) is approximately 20 km east of the property.

ACCESS: Access to the area is by float plane or helicopter from Pickle Lake, Armstrong or Nakina to Frond Lake, east of Goss Lake. A trail south of, and parallel to, a creek connects Goss and Frond Lakes. Trenches and surface prospects are mainly located on the southern shore of Goss Lake.

REFERENCES:

Bergmann	1972*
Gledhill	1983*
Kidd	1981a*
Kidd	1981b*
Kidd	1982a*
Kidd	1982b*
Mason et al.	1987
Miller	1987*
Neal and Miller	1987*
Prest	1942
Thurston and Carter	1970
Tough	1981a*
Tough	1981b*
Tough	1983*
Wallace	1978
Wallace	1981

Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 516 Geology of the Fort Hope Area (Prest 1942)
Map 2237 Fort Hope-Lansdowne House Sheet (Thurston, Carter and Riley 1972)
Map 2417 Geology of Wottam Lake (Wallace 1978)

6) GENERAL GEOLOGY AND STRUCTURE:

The Goss Lake-Frond Lake area lies within the east-trending Uchi Subprovince. All rocks are Archean in age with the exception of younger north-striking diabase dikes (Wallace 1981).

The claims are located completely within an east-trending metasedimentary belt bounded to the north and south by metavolcanic rocks. The metasedimentary rocks consist of interbedded units of wacke and siltstone and their metamorphosed equivalents, forming a thick continuous sequence (Wallace 1981). Minor amounts of conglomerate, arkose, quartzite, slate, iron formation and calcsilicates are also present and have been metamorphosed from greenschist to almandine-amphibolite facies (Thurston 1970). The Cluff Lake granitic intrusion is located to the north.

Wackes are thinly bedded, occasionally graded, with individual beds ranging from 1 to 5 cm in width. The iron formations have been metamorphosed to amphibole schists. Locally large garnets, up to 2 cm, are developed. The iron formation contains alternating layers of amphibole-garnet and cherty beds ranging from 1 to 10 cm in thickness. It is complexly folded with a pronounced thickening of units at the fold nose. Two cleavages are developed. Two individual iron formations (up to 3 m wide) are known on the property (Mason et al. 1987).

The property was mapped by Conwest Exploration Ltd. in 1971-71 and again by Westmin Resources Limited in 1983.

The Conwest mapping covered only the portion of the property south of Goss Lake. They determined that the strike of the units was generally east-west, the predominant dip of the units was steeply (90· to 40·) to the north and the plunge on minor folding was both to the east and west. A sulphide facies iron formation was located at 4+00N with hornblende, actinolite, quartz, and mica gneiss immediately to the south. An oxide-facies iron formation trends generally east-west at 6+00S with garnet and actinolite gneiss located immediately to the north and south.

Westmin Resources Ltd. mapped the 24 patented claims. To the north of baseline at 20+00N, quartz-feldspar-biotite schist and garnetiferous quartz-feldspar-biotite schist dominate, with unmetamorphosed arkosic wackes and mudstones dispersed within. Between 8+00N and 20+00N, mudstones, phyllites, slates, quartz-sericite schists and various lithic and arkosic wackes were observed. The rock units south of 8+00N to 13+00S were similar to those north of the baseline. Two iron formations were found, one at 3+00N to 4+00N (divided into three horizons), and one from 6+00S to 8+00S. In both locations, a massive to foliated amphibole-garnet-biotite iron formation was dominant. The northern iron formation contained a pyrite-pyrrhotite-graphite slate component while the southern formation contains a banded grunerite-

hornblende component and a banded magnetite-quartz-chert component. South of 13+00S a staurolitic component of the quartz-feldspar-biotite schist occurs.

According to Miller (1987):

> The Miminiska-Frond Lake area is situated on the south limb of a regional easterly plunging east-west trending syncline. Within the south limb three major fold axes trend eastwardly. An anticline fold axis in inferred from lithologic symmetry in the Goss Lake-Frond Lake area. Cross folding of the fold axes suggests second generation tectonic deformation.

Quartz-filled tension fractures are related to the axial plane cleavage best developed near the fold noses and axes of the iron formation.

7) MINERALOGY:

The mineralization, which consists of pyrrhotite, arsenopyrite and visible gold, is confined to the iron formation and quartz-filled tension fractures within it. The pyrrhotite occurs as disseminations in layers up to 2 cm wide, usually parallel to the foliation. Arsenopyrite is found as megacrysts up to 1 cm in size, most commonly in amphibole-rich layers. Visible gold was observed in the quartz-filled tension fractures. These fractures are often rimmed by a halo of amphibole. According to a 1981 unpublished consultant's report for Keezic Resources Limited (Resident Geologist's Files, Ontario Ministry of Northern Development and Mines, Thunder Bay):

> Two gold zones were indicated, one of which has a total length of 900 feet of separated shoots which average 0.25 ounces gold per ton across a width of 6.2 feet. The other zone has an indicated total length of 400 feet averaging 0.394 ounces gold per ton across 5.0 feet.

Pyrrhotite, arsenopyrite and gold mineralization are secondary sulphidation products of hydrothermal fluid introduction in what were originally banded magnetite-chert iron formations.

H. Neal and Associates (Neal 1987) provided the most current geological report for the Goss Lake prospect following a 1987 exploration program:

The gold mineralization is exclusive to the 3 altered banded iron formations located south of Goss Lake between 2+00N and 7+50N (zones A,B and C). In most cases the gold mineralization is related to arsenopyrite. Where arsenopyrite is not seen with gold, it may be too fine to be viewed with a hand lens.

Four drill core chip samples containing pyrrhotite, arsenopyrite and/or chalcopyrite and gold were sent to Lakefield Research in Lakefield, Ontario for a description of the opaques. Three of the four samples contained gold along with pyrrhotite as inclusions within more coarse arsenopyrite grains. Traces of chalcopyrite were also seen accompanying the pyrrhotite and gold. In one sample magnetite with traces of ilmenite occurred with the pyrrhotite as inclusions within the arsenopyrite. This may indicate that pyrrhotite was replacing both the magnetite and ilmenite when the arsenopyrite was introduced into the environment. In one sample, crystal faces of pyrrhotite were seen against those of arsenopyrite. This may indicate that part of the mineralizing processes for arsenopyrite and pyrrhotite were syngenetic.

Gold was not seen an inclusions in pyrrhotite though it was in arsenopyrite indicating it post-dated the pyrrhotite mineralizing process but predated the arsenopyrite.

Zone A

The gold mineralization was most abundant and most concentrated in the alteration band furthest north (Zone A between 10+00W and 24+00W). Previous drilling was limited to under 245 ft depth but had outlined 3 mineralized pods for follow up work. These pods were defined by a cut-off grade of 0.2 oz/ton over a minimum 5 ft width.

One pod, located at 20+00W, was under 100 ft wide and 60 ft deep. Grades in this pod were as high as 0.34/6.0 (oz per ton/feet). Three holes were drilled from 110 ft to 150 ft deep, below and to the sides of the pod. Assay results ranged between 0.01 oz/ton and 0.02 oz/ton over intervals up to 8.3 ft.

The second pod was located from 12+00W to 16+00W at the 60 ft to 220 ft depth. Mineralization ranged up to 0.64/4.4. Fourteen holes were drilled below this zone to a depth of 300 ft with only 3 bettering the cut-off grade. Four holes were

drilled at a depth of 500 ft. The best result was 0.3/1.6 in hole 87-4. The others were between 0.03 oz/ton and 0.08 oz/ton.

The third pod located from 0+00 to 4+00W had concentrations of up to 0.48/4.5 down to a depth of 170 ft. Nine holes intersected the alteration zone below the pod with the best result being 0.22/2.1.

Zone B

Previous drilling intersected 4 small pods up to 130 ft wide and 50 ft deep between 10+00W and 18+00W. Many old holes intersected this zone below these pods without increasing their size or grade.

Three groups of 5 holes each were drilled into zone "B" in the 1987 drilling: beneath the pods at 18+00W, beneath the pods at 10+00W, deep beneath the pods in the centre. Results from all samples were below the cut-off grade of 0.2 oz/ton over 5.0 ft. The best result was from hole 87-5 (0.18/4.0) at a depth of 520 ft.

The "B" zone did not continue any further east than 10+00W. West of 10+00W the alteration became intermittent with depth.

Zone C

Three pods were identified from previous drilling between 10+00W and 18+00W with 2 pods extending to a depth of 80 ft and the third to 360 ft. Assays ranged up to 0.9/12 ft. Thirteen holes were placed below the pods to a depth of 640 ft. The best assay was 0.22/2.7 in hole 87-23. Seven holes intersected the eastern extension of this zone between 1+00E and 2+00W with no significant assay results.

In all 3 zones (A,B,C) gold concentrations quickly diminished with depth. These zones have been tested to depths of 500 ft, 610 ft and 640 ft respectively.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. Gold is associated with pyrrhotite and arsenopyrite. Where gold occurs both arsenopyrite and pyrrhotite are commonly present. When gold is not found pyrrhotite can still be abundant. Arsenopyrite is less

frequently seen in non-auriferous zones than is pyrrhotite. Gold and pyrrhotite occur together as inclusions in arsenopyrite.

2. The sulphide minerals (mainly pyrrhotite and arsenopyrite with a lesser amount of pyrite and scarce chalcopyrite) occur most commonly as fine and coarse disseminations within the altered banded iron formation.

3. Gold concentrations were greatest in the "A" zone.

4. Gold has a closer affiliation to the weaker magnetic anomalies than the strong. This was determined through comparison of the two drilling zones. Although more work may be needed to determine its validity it may be useful as an exploration guide.

5. Within the 3 alteration zones the grade of gold mineralization generally decreases with depth. Zones "A", "B" and "C" have been tested to a vertical depth of 500' 610' and 640' respectively.

6. Check assays of 1982-83 half core samples showed discrepancies in gold values, with the re-assay content lower that the original assays.

8) ECONOMIC FEATURES:

Drill-indicated resources are 300,000 tons averaging 0.22 ounce gold per ton to 60 m (200 feet) depth (Canadian Mines Handbook 1991-92, p.369)

9) CHEMICAL ANALYSES:

1) PROPERTY NAME: Gould Lake occurrence (12)

DATE(S) VISITED:

MDI #: TB0118

2) ALTERNATE NAME(S): McWami Lake occurrence
Governor gold mines occurrence
Miron occurrence

3) COMMODITY: MAIN: Cu SECONDARY: Ni

DEPOSIT TYPE: Mafic-Ultramafic Intrusion-Hosted Cu-Ni-PGE

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1956: The Consolidated Mining and Smelting Company of Canada Limited staked claims KK 15485 - KK 15520 inclusive and claims KK 15387 - KK 15423 (72 claims) east of Shabuskwia Lake and south of Gould (McWami) Lake.

Trenching and sampling were undertaken.

1957: Consolidated Mining and Smelting Company of Canada conducted line cutting, geological mapping, a magnetometer survey and diamond drilling. Holes MW1 and MW2 (198 m total) were drilled to test the occurrence at depth. Eight other holes were drilled on the property (585 m total).

1961: Governor Gold Mines Limited staked 24 mining claims to cover the Gould Lake (McWami Lake) occurrence:
KK 23415 - KK 23420 inclusive
KK 23434 - KK 23451 inclusive.

Prospecting, stripping, trenching and sampling were undertaken.

CURRENT

1995: Claims are open for staking (March 8, 1995).

5) LOCATION AND ACCESS: N.T.S. 52P02/NW
Latitude 51·11'20"
Longitude 88·53'35"
U.T.M. Zone 16
Northing 5672326
Easting 367711

GENERAL LOCATION: The Gould occurrence is located 4.4 km (2.6 miles) east of the southern portion of Shabuskwia Lake, 1.3 km (0.8 miles) south of Gould (McWami) Lake and 3.0 km (2 miles) northeast of the Leitch Cu-Ni prospect. The Gould occurrence is located 109 km (68 miles) north of Armstrong, 82 km (51 miles) west of Fort Hope and 90 km (56 miles) southeast of Pickle Lake.

ACCESS: Shabuskwia and Gould lakes are accessible by float plane or helicopter. Pickle Lake and Armstrong are the closest air service points for fixed wing aircraft. Helicopter service is available in Pickle Lake.

REFERENCES: McCombe (1961)*
Shklanka (1969)
Thurston and Carter (1970)

Resident Geologist's files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

P.564 Attwood-Caribou Lakes Sheet-Operation Fort Hope (Thurston et al. 1969)
2237 Fort Hope-Lansdowne House Sheet (Thurston et al. 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Shabuskwia-Gould lakes area is located in the northern portion of the English River Subprovince. The regional geology consists of massive biotite- and biotite-hornblende granite and metasedimentary migmatite. Anorthosite is also present.

7) MINERALIZATION:

McCombe (1961) described the property geology and mineralization:

> The main rock type in the area containing the mineralized zones is anorthosite consisting or relatively large crystals of plagioclase feldspar

with horneblend and augite. The anorthosite has been fractured by strong shearing which has a general trend of N-60-W.

The other rock types observed in this are are diorite, horneblend-mica schist and pegmatite.

The diorites are dark and rather fine grained with a width of from two to three feet and appear to have intruded along the shear zone and confirm with its strike. However some three hundred feet northeast of Pit No. 3 diorite was exposed along a small outcrop and here had a nearly due north-south strike. This may imply a north-south fracture pattern or it may be a folded section of an east-west fracture zone. Overburden made determination impossible.

The horneblend-mica schist was observed only in the shear zones where it varies in width from six inches to two feet. This Schist is present in all of the three shear zones and, in all probability, represents basic dikes that were intruded along the original fracture zones and were altered to their present schistose state by further shearing and some folding.

Pegmatite was only seen in one pit and its width is not fully exposed. It appeared fresh and unaltered and probably is the youngest rock type present.

The anorthosite in which the mineral showings occur has a known extent from north to south or more than three quarters of a mile. The east-west extent has not been established but prospecting to date would indicate a possible length of over a mile.

The regional geology is dominated by granite masses and pegmatite dikes. Areas of anorthosite are present but their extent is not presently determined. A peridotite dike with a width in excess of one hundred feet and a north-south strike is reported cutting the granite in the northwestern portion of the property.

On Claim No. KK-23417 three shear zones have been exposed in pits blasted in the anorthosite.

The three shears are roughly parallel, the most northern where exposed in Pit No. 1 striking N-70-W and the other two striking N-60-W. Reference to Appendix "B" illustrates the attitude of the shear zones which have a uniform steep dip to the northeast.

The intensity of the shearing does not show to any marked degree on the undisturbed surface of the rocks and is only fully in evidence after blasing has taken place.

The strongest shearing is on the south zone, exposed in Pit No. 3, where both the diorite and the horneblend-mica schist show folding in both the horizontal and vertical planes.

In Pits Nos. 1 & 2 shearing is evident but folding is not present.

Overburden is general and much more shearing is probably present but obscured.

The mineralization consists of chalcopyrite, pyrrhotite, pentlandite and some minor amounts of pyrite. It occurs as irregulary distributed blebs and as disseminations in the anorthosite and the horneblend-mica schist. Diorite in contact with pegmatite in Pit No. 1 is heavily mineralized in chalcopyrite.

The pyrrhotite and contained nickle mineral or minerals appear to be primary in origin with the chalcopyrite secondary and replacing the pyrrhotite.

Pit No. L. (Appendix "C")
In this pit scattered chalcopyrite and pyrrhotite mineralization is found in the anorthosite and the horneblend-mica schist. Strong chalcopyrite mineralization occurs over a width of eight inches in the ciorite in contact with the pegmatite.

A grab sample of average mineralization and not including any of the eight inch width of strong chalcopyrite returned:
Copper 0.71% Nickle 0.14%

Pit No. 2. (Appendix "D")
Mineralization in this pit consisted of disseminated chalcopyrite and pyrrhotite occurring in both the anorthosite and the horneblend-mica schist.

A grab sample of representative material returned:
Copper 0.78% Nickle 0.02%

Pit No. 3. (Appendix "E")
The best mineralization in this pit occurred along the anorthosite diorite contact on the north side of the pit. Here the Chalcopyrite and pyrrhotite

are irregularly distributed as blebs and disseminations. In the horneblend-mica schist both minerals are finely distributed with some good sized blebs of nearly massive chalcopyrite.

A representative grab sample of the mineralization in the anorthosite returned:
Copper 1.87% Nickle 0.18%

A grab sample of the horneblend-mica schist and excluding any of the massive chalcopyrite returned:
Copper 0.32% Nickle 0.02%

CONCLUSIONS

The mineralization exposed by the limited amount of work done last summer under difficult prospecting conditions, together with the shearing conditions found in favourable rocks, leaves no doubt that this area fully warrants much further investigation.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

(See 7) MINERALIZATION)

Grab Sample Location	Copper	Nickel
Pit #1	0.71%	0.14%
Pit #2	0.78%	0.02%
Pit #3	1.87%	0.18%
Pit #3	0.32%	0.02%

1) PROPERTY NAME: Hansen Gold occurrence (13)

DATE(S) VISITED:

MDI #: KP0400

2) ALTERNATE NAME(S): Hansen Gold showing
C.K. Hansen gold occurrence
North Bay occurrence

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1938: V.K. Prest (1940) reported one grab sample of 0.07 ounce Au per ton from quartz stringers in a mineralized porphyry dike.

The occurrence is on a creek entering the northeast end of North Bay, Keezhik Lake.

1960: C.K. Hansen staked 40 claims to cover the gold occurrence and a northeast-trending iron formation unit (Reed 1960). The main occurrence was located on claim P.A. 5719.

Prospecting and sampling, including chip sampling, were undertaken and claim group was expanded to 56 claims.

Reed (1960) reported 3 diamond drill holes were drilled to intersect the eastern extension of the vein. Approximately 2000 feet of EX core was estimated by Reed to be at a log camp on the northwest shore of North Bay.

1986: Dome Exploration (Canada) Limited contracted Dighem Surveys to fly an airborne geophysical survey totalling 648 km over a large area north of Keezhik Lake. The survey was a total field magnetometer and VLF-EM survey and covered an area immediately southeast of the Hansen gold occurrence.

1987: Thirty-one claims were staked by Frank Rodgers, Pickle Lake (February) on the north flank of the original large claim block, covering the

original Hansen occurrence. The claims were transferred to Dome Exploration (Canada) Limited.

Diamond drilling was performed on a portion of the claim group. The Hansen gold occurrence is located approximately in the area of claims TB 927579, TB 927580, TB 913006 and TB 913007. On December 3, Dome Exploration (Canada) Limited transferred ownership to Placer Dome Inc.

1988: Placer Dome Inc. hired Geosearch Consultants Limited to conduct an electromagnetic and magnetic survey on the northeast trending 31-claim group, which included the Hansen gold occurrence. Fifteen anomalies were identified by the electromagnetic survey. The magnetometer survey outlined a major iron formation with one tight fold and six transcurrent faults (Racic 1988).

1989: Diamond drilling was performed on claims TB 913009 and TB 913013 located west and southwest of the Hansen gold occurrence.

CURRENT

1994-95: On January 11, 1994, Placer Dome Inc. transferred 100% ownership to Placer Dome Canada Limited, who is the current claim holder. This includes claim TB 927579 which covers the occurrence (March 8, 1995).

5) LOCATION AND ACCESS: N.T.S. 52P15/SE
Latitude: 51·47'30"
Longitude: 88·34'12"
U.T.M.: Zone 16 Northing: 5738600
Easting: 391800

GENERAL LOCATION: The property is located approximately 1.5 km north of North Bay, Keezhik Lake.

ACCESS: Access to Keezhik Lake is by float plane from Pickle Lake, Nakina or Armstrong. The Hansen gold occurrence can be reached by claim lines or possibly partially overgrown trail from the north end of North Bay.

REFERENCES: Prest (1940)
Racic (1988a)
Reed (1960)*
Thurston and Carter (1970)

Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 48e Geology of the Keezhik-Miminiska Lakes Area (Prest 1939)

Map P.562 Operation Fort Hope: Lansdowne House-Fort Hope Sheet (Thurston and Carter 1970)

Map 2237 Fort Hope-Lansdowne House Sheet (Thurston, Carter and Riley 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

V.K. Prest (1939) mapped the Keezhik area as being underlain by an east-trending belt of mafic to felsic metavolcanic rocks, bedded tuffs and associated metasedimentary rocks. Iron formation interpreted from outcrop and "magnetic attraction" trends northeast through the Hansen claims. The metavolcanic rocks in the vicinity of the gold occurrence has been termed amphibolite (Reed 1960). Reed described the following minerals as being present: hornblende and pyroxene (±25%), chlorite (±25%), biotite (±23%), carbonate (±15%), quartz (±10%) and sulphides (±2%). Racic (1988) stated a tight fold and six faults were present in the iron formation after interpretation of a magnetometer survey.

A fracture in the amphibolite, striking 285·, hosts the vein occurrence.

7) MINERALOGY:

The vein strikes 285· and consists of quartz (±65%), carbonate (±15%), chlorite (±13%) and sulphides (±7%). Pyrite and traces of chalcopyrite and pyrrhotite were noted. The average dip of the vein is 65· to the north. The vein pinches to the west; the east extension has been drilled but no logs on assays are known to exist in the literature. The vein is up to 0.45 m (1.5 feet) wide and 66 m (220 feet) long (Reed 1960).

Porphyry dikes hosting quartz (±carbonate) veins and stringers were noted north of North Bay (Prest 1939). Prest (1939) realized an assay of 0.07 ounce Au per ton from one grab sample of vein in the creek presumably north and northeast of the later-discovered Hansen gold occurrence.

Placer Dome Inc. (1989) diamond drilling on claim TB 913013 (Hole 282-040) intersected 7.35 m of interbedded basalt-tuff chert (±iron formation) with 5% quartz-carbonate stringers and 5% disseminated, stringer and coarse pyrite in association with 1% fine pyrrhotite. Quartz-feldspar porphyry hosting quartz veinlets and up to 2% pyrite was intersected stratigraphically below the the iron formation. Both units were sampled by Placer Dome Inc. but no assay results were published. Hole 282-036 (claim TB 927579) intersected silicified and pyritic mafic to felsic metavolcanic rocks. Assay data was not submitted. Both drill holes are proximal to the Hansen gold occurrence.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

C.L. Reed (1960) channel sampling for Steep Rock Iron Mines Ltd. (commencing east end of vein):

		WARNOCK HERSHEY	BELL WHITE
Sample No.	**Footage**	**Assay (ounce Au per ton)**	**Assay (ounce Au per ton)**
2920	0.6	0.02	
2921	0.4	0.04	0.13
2922	0.8	0.04	
2923	0.5	0.40	0.30
2924	0.8	0.01	
2925	1.75	0.02	
2926	1.5	0.06	
2927	0.7	0.62	0.66
2928	1.75	0.34	0.29
2929	1.0	0.01	

1) PROPERTY NAME: Howells Lake prospect (14)

DATE(S) VISITED: 1977
1982
1986
1988
July 26/89

MDI #: KP0411

2) ALTERNATE NAME(S): NJZ (New Jersey Zinc) prospect
Howells Lake-Miminiska project

3) COMMODITY: MAIN: Sb, Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1937: V.K. Prest, while mapping for the Ontario Department of Mines, reported mineralized porphyry float containing massive stibnite and pyrite on a small island in Howells Lake.

1940: V.K. Prest mentions in the 1942 Annual Report of the Ontario Department of Mines (Vol. LI, Part III) that "Mineral prospects were worked during 1940 at the northeast corner of Howell's Lake." Also mentioned in the January 1941 issue of the Canadian Mining Journal was that "Dome Mines, Limited held a group of claims along the sedimentary-volcanic contact off the northeast corner of Howell's Lake".

1971: Conwest Exploration Company Ltd. drilled two holes totalling 161 feet (49 m) on a small island in the notheastern portion of Howells Lake. The company held four claims (TB 268337 to TB 268340) in the area and both holes were collared from the same location in the western portion of claim TB 268338.

1975: R. Kidd held a block of 20 staked claims consisting of TB 416555 to TB 416564 and TB 431661 to TB 431670 inclusive, covering the northeastern part of Howells Lake. There was no report of exploration work done on the property. The claims were cancelled on December 15, 1975.

1977: New Jersey Zinc Exploration Company (Canada) Limited conducted an airborne magnetometer survey covering an area from the Albany River northeast through the western portion of Miminiska Lake.

1978: New Jersey Zinc held a group of 24 claims (TB 510782 to 87, TB 510804 to 07, TB 510825 to 28, TB 523364 to 73) located just off the northeastern corner of Howells (misnamed Howards Lake.) Five drill holes (U1-78-1b to U1-78-5) were completed for a total of 564.4 feet (172 m) in the south central portion of claim TB 510805.

1979: New Jersey Zinc conducted a second more extensive airborne magnetometer survey over three blocks (known as the Seagreen project) from the Albany River and Howells Lake in the west to Opikeigan Lake in the east. Block A covering the Howells Lake area consisted of approximately 260 claims staked in 1979 and added to the original 24 claim group staked the previous year.

An extensive diamond drill program was initiated by New Jersey Zinc in July 1979. A total of 23,469 feet (7153 m) of drilling in 50 drill holes (MW-79-6, MW-79-7, MC-79-1b to MC-79-12a, MC-V3-79-5 to MC-V3-79-29 and MC-V3-80-1 to MC-V3-80-13) were completed from July to February 1980. All work was concentrated along a northeast-trending zone across the north-central portion of Howells Lake.

The main stibnite-bearing quartz-carbonate vein system is located on claim TB 510807 just west of Howells Lake. Drill-indicated reserves calculated by New Jersey Zinc at this time were 1.7 million tons grading 1.5% Sb. Gold values are variable and range up to 2.3 ounce Au per ton. A secondary zone of antimony-gold mineralization was also discovered by means of drilling just northeast of Howells Lake.

Drilling in the main zone was concentrated on claims TB 510814 to 510817, 510820, 510821, 537683, 537689 and 537711. Drilling in the northeast zone was focused on claims TB 510782, 510783, 523368, 523369, 532396, 537701, 537703, 537705, 537708 and TB 537716.

1980: In March, New Jersey Exploration Company (Canada) Ltd. flew a second large airborne electromagnetic and VLF-EM survey over their entire land holdings in the area including the Howells Lake area.

1984: On January 26, New Jersey Zinc Exploration Company (Canada) Ltd. transferred 50% interest in their Howells Lake claim holdings to Felmont Oil Corporation. (The property was optioned from New Jersey Zinc by Felmont Oil Corporation.)

Felmont Oil Corporation became the property operator and conducted an IP survey over the 192 claim Miminiska property (George Cross News Letter, December 11, 1986).

A second phase of drilling was initiated over the Howells Lake property. Work was again concentrated just west and northeast of the lake on claims TB 510785, 510786, 510805, 532396, 537701, 537702, 537703, 537711 and 537718. Twelve holes were completed from February to June in this area for a total of 5,580 feet (1700.8 m). Drilling was targeted on IP anomalies. (According to the Dec. 11, 1986 issue of the George Cross News Letter, a total of 2360 m was drilled over the entire 192 claim block during this period).

In June a Notice of Agreement was drawn up between New Jersey Zinc Exploration Company (Canada) Limited (New York, NY), Felmont Oil Corporation (Arvada, Colorado) and Case-Pomeroy Oil Corporation (Mining Recorder's Office Abstract, Thunder Bay Mining Division, Thunder Bay).

1985: A merger agreement was signed between Felmont Oil Corporation and Homestake Mineral Development Company. As a result, Felmont Oil Corporation's 50% interest in the Miminiska property was transferred to Homestake. [This left New Jersey Zinc Exploration Company (Canada) Ltd. with a 50% interest in the Miminiska property]. All assets from both companies above were controlled by Homestake Mineral Development Company.

1986: Baroque Resources Ltd. (use listed) signed an option agreement to acquire from Homestake Mineral Development Company a 51% interest in the 192 claim Miminiska property by spending

$2,600,000 on exploration over four years. New Jersey Zinc through Gulf and Western Industries, Inc. of New York retained a 6% net smelter return royalty at this time (George Cross News Letter Ltd., December 11, 1986). MPH Consulting Limited conducted the field work on behalf of Baroque Resources Ltd. and completed a 20 hole diamond drill program totalling 8,200 feet (2499 m) from November 1986 to February 1987 (George Cross News Letter, December 24, 1986). Several gold-bearing zones from initial drill sections were reported at this time and ranged from 0.124 to 0.31 oz. ounce Au per ton as much as 14 feet.

Drill holes M86-1 to M86-7 and M87-1 to M87-13 were completed over claims TB 532458, 532520, 532528, 532529, 532532, 532538 to 532541, 523405 and 523409.

1989: By year's end, all but 20 claims in two separate blocks were cancelled due to lack of assessment work.

1990: New Jersey Zinc Exploration Co. (Canada) Ltd. transferred its 50% interest in the remaining claims to Homestake Mineral Development Company.

Surveys were completed on 20 claims and all were brought to lease.

CURRENT

1995: The Howells Lake prospect is presently held (March 8, 1995) by Homestake Mineral Development Company and consists of two leased claim blocks. The main zone (southwest over Howells Lake) is covered by 14 leased claims including TB 510814, 510815, 510817, 510819, 510820, 532396, 537701, 537703, 537704, 537711, 537716 to 537718 and 537720.

5) LOCATION AND ACCESS:

N.T.S.	52P/10SW	
Latitude:	51·34'40"	
Longitude:	89·47'20"	
U.T.M.:	Zone 16	Northing 5714850
		Easting 376000

GENERAL LOCATION: The property is located approximately 95 km due east of the town of Pickle Lake at Howells Lake, which is located just west of Miminiska Lake.

ACCESS: Access to the area is by boat along the Albany River system from the Fort Hope First Nation, located about 50 km to the east (regular scheduled flights travel to Fort Hope). Alternatively, direct access may be obtained via float plane from Pickle Lake.

REFERENCES:

de Carle	(1979)*
Mason et al.	(1988, 1989)
Patterson et al.	(1987)
Patterson, Mason, Schnieders	(1983)
Prest	(1940, 1944)
Rainsford	(1982)*
Scott	(1977)*
Thurston and Carter	(1970)
Wallace	(1981)

Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 48e	Keezhik-Miminiska Lakes area (Prest 1940)
Map 2416	Miminiska Peninsula (Wallace 1981)
Map 2199	Ontario Geological Map-West Central Sheet (Ayres et al. 1970)
Map 2237	Fort Hope-Lansdowne House Sheet (Thurston et al. 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Howells Lake prospect is located in the eastern portion of the Uchi Subprovince. According to Wallace (1981): "A predominately metavolcanic-metasedimentary east-trending belt in the Superior Province of the Canadian Shield". Wallace (1981) goes on to state that the immediate area surrounding Howells and Miminiska Lakes is:

> ...underlain by a thick metasedimentary sequence consisting of intercalated wacke and mudstone units and in places oxide, carbonate and/or silicate facies iron formation. This sequence conformably overlies a thick metavolcanic succession of predominantly mafic pillowed flows to the south. To the north, there is a second mafic metavolcanic succession. A wedge of felsic to intermediate pyroclastic rocks and intercalated volcanoclastic metasediments appear to directly overlie the lower mafic metavolcanics. This wedge is enclosed in the main wacke-mudstone sequence toward the east in the main portion of Miminiska Lake.

A major intrusion of quartz monzonite to granodiorite, known as the Troutfly Lake Batholith, occupies a large area northwest of Howells Lake.

In terms of structure, Wallace (1981) states:

> Structural elements are generally east-northeast-trending in the east, and northeast trending in the western part of the area. Major folds can be outlined only in the metasediments east of Mimininska Peninsula. The major faults in the area extend northeastward from Mimininska Peninsula sub-parallel to Ferguson Creek.

A 1977 unpublished report written by J. Scott (Geological Section, Ministry of Natural Resources, Thunder Bay), after visiting the Howells Lake property, indicates:

> New Jersey Zinc's interpretation is that the mafic volcanic/clastic metasedimentary contact (which traces through Howells Lake) is actually an unconformity. Gabbro sills are large and more numerous than mapped by Wallace.

Although these gabbroic units are not directly related to the antimony-gold mineralization, they may be important for structural determinations in that all are cut off by this unconformity (J. Scott, Staff Geologist, Ministry of Northern Development and Mines, personal communication, 1992).

Related to the geology and structure of the area, a 1979 Questor Surveys Limited report (de Carle 1979) of an airborne magnetometer survey completed for New Jersey Zinc, noted a significant anomaly near the Howells Lake prospect (the economic importance of this anomaly has yet to be determined):

> The main magnetic feature on this map sheet is the high intensity magnetic trend which traverses across the northern shore of Mimininska Lake in a southwest direction towards the eastern shore of Howells Lake. This is a westward continuation of an iron formation which has been indicated on geology MAP 2416. From this point, the magnetics are offset to the north by a fault zone along the eastern shore of Howells Lake. The iron formation is then again faulted off just to the west of Howells Bay. The host rocks for this iron formation is clastic metasediments. Where the Albany River bends to the east to join Mimininska Lake, the moderate magnetic intensity could be

> related to a mafic metavolcanic environment as opposed to an iron formation. It is interesting to note that east and south of the Albany River, the magnetics are flat. The rock types have been indicated to be mafic metavolcanics, felsic metavolcanics and metasediments in this area (refer to geology MAP 2416). However, based on the magnetics it would certainly be difficult to determine the geology.

7) MINERALOGY:

The first mention of economic importance was made by Prest (1939) while mapping the area for the Ontario Department of Mines:

> A number of porphyry bodies heavily mineralized with pyrite occur on a small island in Howell's Lake. There was also much massive stibnite occurring here as float, but only minor amounts were found in place. Neither the porphyry bodies nor the quartz stringers within them carry a gold content.

John Scott (Staff Geologist, Ministry of Northern Development and Mines, Thunder Bay), after a visit to the Howells Lake property in 1977 and discussions with New Jersey Zinc Company personal, indicates the following:

> Stibnite/gold mineralization occurs in zones and veins more or less perpendicular to the unconformity as interpreted by New Jersey Zinc. A characteristic alteration (carbonated and bleached) halo surrounds most of the occurrences. Stibnite is associated primarily with quartz veining, but prevails in the host rock surrounding the vein. The most noticeable is in (New Jersey Zinc's) grid V3 area west of Howells Lake.

Subsequent visits to the Howells Lake property were made during the 1980s by the Thunder Bay geological staff. The main Howells Lake antimony zone occurs to the south of a creek which drains into the west-central side of Howells Lake. An extensive zone of carbonate alteration is associated with a porphyry intrusion. Shearing and quartz veining occur at the contact (New Jersey Zinc's interpreted unconformity) between mafic metavolcanic rocks and graphitic schists. Associated with the quartz veining is green mica, pyrite and stibnite (Resident Geologist's Files, Ontario Ministry of Northern Development and Mines, Thunder Bay).

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

Personal communication with Homestake Mineral Development Company staff (present owners of the property) during the 1980s indicates that drilling has defined two zones of mineralization. The western zone has a preliminary estimated tonnage of 83 000 tons grading 1.37% Sb and 0.07 ounce Au per ton. The eastern zone contains 660 000 tons of 3.1% Sb and erratic gold values to a depth of 150 m. The western zone is open to the west and the eastern zone is open along strike. Both zones are open at depth (Patterson et al. 1986).

By contrast, in 1977, New Jersey Zinc personnel stated that preliminary calculations from 32 diamond drill holes (totalling 14,702 feet) have indicated 1.7 million tons grading 1.5% Sb. Personal communications with J. Scott (1977)* states:

> Gold values are variable and range up to 2.3 oz per ton. Total drilling on the property is 23,000 feet. The grid V3 zones have been tested to 300 feet. Several deep holes have intersected the zone at 1000 feet.

9) CHEMICAL ANALYSES:

Drill core analysis of hole ML-86-5 completed by MPH Consulting Limited for Baroque Resources Ltd. in 1986 was reported in the George Cross News Letter (December 24, 1986). The hole was drilled on what was claim TB 532532 along the northeastern extension (northeast of Howells Lake) of the main gold-antimony zone. Results are as follows:

Intercept, Feet	Footage	Oz. Gold/Ton
158 - 170	12.0	0.169
includes	3.4	0.31
196.6 - 205.4	8.8	0.147
217 - 231	14.0	0.124

1) PROPERTY NAME: KL-12 zone (15) DATE(S) VISITED: July 20/88
July 25/89

MDI #: KP0434

2) ALTERNATE NAME(S): Hinzer option
Stanford occurrence

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1971: Cominco conducted airborne electromagnetic and magnetic surveys in the Keezhik Lake area.

1977-79: Standard Mines Limited (John Hamilton) staked the porphyry and undertook trenching and diamond drilling. Twenty-six drill holes were completed along a north-trending shear zone.

1982: Nick Hibbart staked 25 contiguous claims numbered TB 656462 and TB 656469-92 inclusive for John Ternowesky.

1984: J. Hinzer completed a preliminary geology report for J. Ternowesky.

1985: Terraquest completed an airborne electromagnetic and magnetic survey for J. Ternowesky and Jet Mining Exploration Inc.

1987: All interest transferred to John Ternowesky.

1987: Pure Gold Resources Inc. optioned the 25 claims. The following work was completed by Noramco Explorations Inc. on behalf of Pure Gold:

Line cutting	35.3 km
Geological Mapping	22.0 km
Diamond Drilling (14 holes)	2981.7 m
Humus Geochemical Survey	22.0 km
Ground Magnetometer Survey	33.1 km
Ground VLF-EM Survey	25.6 km
Horizontal Loop EM Survey	6.1 km
Induced Polarization/ Resistivity Survey	24.0 km

Airborne Magnetometer/
VLF-EM Survey 35.0 km

1988: Memo of Agreement: Severide Resources Inc. and Pure Gold Resources Inc.
Memo of Agreement: Severide Resources Inc., Pure Gold Resources, Jet Mining Exploration Inc. and Joe Hinzer.

1988: Pure Gold Resources Inc. returned the property to J. Ternowesky.

CURRENT

1995: Claims are currently owned by J. Ternowesky (Jet Mining Exploration Inc.) (March 8, 1995).

5) LOCATION AND ACCESS: N.T.S. 52P/16SW
Latitude: 51·46'10"
Longitude: 88·28'05"
U.T.M. zone 16U Northing 5736200
Easting 398650

GENERAL LOCATION: On Keezhik Lake, 38 km (24 miles) northwest of Fort Hope First Nation (south shore of narrows to the East Arm, Keezhik Lake).

ACCESS: The property is accessible by float aircraft or helicopter.

REFERENCES:

Barrie (1985)*
Hinzer (1984)*
Prest (1940)
Taylor (1988)*
Thurston and Carter (1970)

Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 48e Keezhik-Miminiska Lakes Area (Prest 1940)
Map P.562 Operation Fort Hope: Lansdowne House-Fort Hope Sheet (Thurston and Carter 1970)
Map 2237 Fort Hope-Lansdowne House Sheet (Thurston, Carter and Riley 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Keezhik Lake area is underlain by east-trending mafic to felsic metavolcanic rocks, including both flow and

tuffaceous rocks, that are in turn a portion of the East Uchi Subprovince.

Banded magnetite iron formation is intercalated with the metavolcanic rocks. Minor metasedimentary rocks are present. Hornblendite, gabbro, diorite, quartz porphyry and feldspar porphyry intrude the metavolcanic rocks. Precambrian diabase dikes intrude the Archean rocks (Prest 1940).

On the KL-12 zone property, massive, weakly foliated, moderately silicified mafic metavolcanic rocks are intruded by a pink-buff to pale green feldspar porphyry. The porphyry may be at the core of a felsic volcanic pile.

Lapilli tuff and breccia xenoliths (roof pendants) occur in a circular porphyry body and are a dark green to grey, clast-supported pyroclastic rock. The feldspar porphyry is fine- to medium-grained and weakly to moderately foliated. Up to 20% grey anhedral feldspar phenocrysts, 2% hornblende and tourmaline and up to 2% pyrite occur (Taylor 1988).

A northeast-trending foliation is exhibited in the porphyry and the metavolcanic rocks in the form of a preferred development of sericite and chlorite. This foliation has been traced for approximately 500 m.

The foliation is overprinted by a northwest-trending fracture cleavage which hosts narrow quartz veins. According to Taylor (1988), a late north-trending fault through the KL-12 zone is evidenced by a "1-2 m wide zone of shearing and crenulation with associated sericite-carbonate alteration. The shear fabric is oblique to the trend of the fault."

7) MINERALOGY:

Taylor (1988) described the alteration and mineralization:

> Four types of hydrothermal alteration occur in the feldspar porphyry. These are sericite-carbonate alteration, K-alteration, silicification and carbonate alteration. These alteration types overlap and the relationship between them are unclear.
>
> Sericite-carbonate alteration with associated clay minerals and weak (up to 2%) pyrite mineralization is pervasive throughout much of the

porphyry stock. Trace amounts of molybdenite, scheelite and sphalerite with anomalous gold are associated with these alteration zones. The pyroclastic xenoliths within the porphyry are sericite-carbonate altered and contain anomalous to economic grade gold.

K-alteration occurs as patches within the sericite alteration zones. The K-altered porphyry is pink to purple in colour and contains up to 1% disseminated pyrite. Anomalous (0.1 to 0.5 g/t) gold contents are sometimes associated with the stronger zones of K-alteration. Silicification and quartz veining occur as narrow zones within the sericite altered zones and are associated with economic grades (>2.5 g/t) of gold mineralization. The stronger zones of silicification are controlled by NE and N-trending shear zones. Traces of galena, molybdenite and scheelite occur along with up to 2% pyrite in these zones which are silicified to a distinctive blue colour. Rare specks of visible gold are present, usually associated with galena.

Carbonate-alteration (calcite) occurs in the Zone KL-12 area. These zones usually have open fractures and the porphyry has a bleached appearance. The rock is usually quite porous due to dissolution of calcite by groundwater. This type of alteration is not related to the gold mineralization although some sections are weakly anomalous (0.03-0.10 g/t).

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

Horizontal "A" within KL-12 has received the most diamond drilling. The following intersections were announced on April 20, 1988 in the George Cross Newsletter:

Hole Number	Interval Meters	Width Meters	Ounce Au per ton
KL-64	57.3 - 69.7	12.4	0.088*
includes	66.6 - 69.7	3.1	.169*
	72.5 - 75.3	2.8	.054
	76.7 - 78.1	1.4	.03
	127.4 - 128.8	1.4	.061
KL-70	51.3 - 54.8	3.5	.194
	94.8 - 97.8	3.0	.03
	142.8 - 145.3	2.5	.041
KL-71	13.9 - 23.2	9.3	.014
	34.3 - 40.5	6.2	.16
includes	37.7 - 40.5	2.8	.351
	46.6 - 47.9	1.3	.021
	53.7 - 72.8	assays pending	
	72.8 - 82.1	7.8	.03
	130.8 - 239.9	assays pending	

*previously announced

1) PROPERTY NAME: KL-L18 zone (16) DATE(S) VISITED: Jul. 20/88

MDI #: n.a.

2) ALTERNATE NAME(S): KL-18 zone
KL-L18 occurrences

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1971: Cominco conducted airborne electromagetic and magnetic surveys in the Keezhik Lake area.

1986-88: Severide Resources Inc. acquired the property by staking. Electromagnetic, magnetometer, IP, airborne VLF-EM and magnetic, humus geochemical and geological surveys were undertaken by Noramco Exploration Inc. for Severide Resources Inc. These were funded by Golden Day Mining Exploration Inc. Prospecting, stripping, trenching, sampling, and diamond drilling were also conducted.

Diamond drilling of 21 holes totalling 3339.1 m all on claims TB 891384 and TB 891386 was conducted.

1987: All interest transferred to Pure Gold Resources Inc.

1988: Severide Resources Inc. and Pure Gold Resources Inc. signed a Memo of Agreement.

CURRENT

1995: Pure Gold Resources Inc. (March 9, 1995).

5) LOCATION AND ACCESS: N.T.S. 52 P 16/SW
Latitude: 51·46'25"
Longitude: 88·25'40"
UTM: Zone 16 Northing: 5736700
Easting: 401600

GENERAL LOCATION: On Keezhik Lake, 38 km (24 miles) northwest of Fort Hope First Nation (north shore of East Arm, Keezhik Lake, west of former Noramco camp).

ACCESS: The property is accessible by float aircraft and foot or by helicopter.

REFERENCES: Barrie (1985)*
Davis (1988)*
Prest (1940)
Thurston and Carter (1970)
Winter (1988)*

Resident Geologist Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 48e Keezhik-Miminiska Lake area (Prest 1940)

Map P.562 Operation Fort Hope: Lansdowne House-Fort Hope Sheet (Thurston and Carter 1970)

Map 2237 Fort Hope-Lansdowne House Sheet (Thurston, Carter and Riley 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Keezhik Lake area is underlain by east-trending mafic to felsic metavolcanic rocks, including both flow and tuffaceous rocks, that are in turn a portion of the East Uchi Subprovince. Banded magnetite iron formation is intercalated with the metavolcanic rocks. Minor metasedimentary rocks are present. Hornblendite, gabbro, diorite, quartz porphyry and feldspar porphyry intrude the metavolcanic rocks. Precambrian diabase dikes intrude the Archean rocks (Prest 1940).

Davis (1988) described the geology and structure:

> Zone KL-L18 is characterized by two main units: felsic metavolcanics and gabbro.
>
> The felsic metavolcanic unit is dominated by grey-green to blue-grey light coloured ash tuffs, well bedded and massive. Minor units of lapilli tuff (KL-11) and crystal tuffs with very coarse grained quartz porphyroblasts (KL-52,53,55) also occur. KL-53 has a silicified agglomerate with Asp from 59.0-60.7 m. Interbedded with these metavolcanics are minor metasediments: low grade Barrovian biotite zone argillites (KL-52,55,56); and greywacke (KL-63). These interbedded units in

most cases are well bedded and in core as well as in outcrop show primary sedimentary features either in metasediments or reworked metavolcanic horizons. Wacke units commonly exhibit graded bedding. Soft sediment deformation is commonly preserved in load casts, ball and pillow structures, and mud volcanoes (from dewatering).

The gabbro unit is found: to the north and east of the metavolcanics along the irregular fold contact; to the west along a presumed fault contact which dips east and is intersected at depth in DDH's KL-1, 6, 7, 8, 10. This is an irregular contact whose apparent dip in the north-south plane is 0· on L41+00W and north 37· on L40+50W. The cross-sections for these lines give an apparent eastward dip for the contact, would appear to show convergence of the north and south gabbro units indicating the anticlinally folded metavolcanics are plunging to the east.

Regionally, units face south. Zone KL-L18 has a well bedded meta-volcanic/sediment sequence with units facing north and east toward the gabbro contact at surface as it swings in a "Z" shape to the east and south. In cross-section this contact appears conformable along the northern flank of the metavolcanics and at depth has an apparent eastward dip disconformably truncating the metavolcanic sequence along an irregular contact. This indicates the intrusive is younger, but probably pre-deformation. Structural outcrop data also indicates the metavolcanics form an apparently asymmetrical anticline plunging ESE beneath the gabbro. The two main lithological units appear to be co-folial with a fabric striking 110·, dipping NNE 50·.

The zone is bounded on the west by a north-south trending right lateral strike-slip fault. The metavolcanic sequence, favourable to Au mineralization may have potential where offset by faulting or truncated by intrusion. By virtue of the main units being co-folial, favourable Au mineralization along cleavage planes may extend into the gabbro.

7) MINERALOGY:

Davis (1988) described the alteration and mineralization of the KL-L18 zone:

Anomalous gold intersections are almost exclusively contained within the felsic metavolcanic sequence, the three exceptions being: 1) a quartz veined gabbro with 5% Asp, 0.55 ppm/ 2.2 m Au, in DDH KL-9; 2) a greywacke near the contact of a sheared gabbro, having 1.65 ppm/1.5 m in KL-63; 3) a sheared gabbro having 1.05 ppm/1.5 m in KL-65. This may partially be due to a sampling bias, in that few gabbro samples were assayed, even though some sections had strong carbonate alteration, some brecciation and were foliated. Little evidence of sulphidization was apparent in gabbro intervals. Trace amounts of magnetite are responsible for the magnetic highs flanking the zone.

The felsic metavolcanic sequence hosts most of the anomalous gold occurrences for the zone. Anomalous gold is concentrated typically in lighter grey to blue-grey tuffs where there is:

1) significant brecciation and/or silification which in part may be patchy, and often imparts a blue colour to the rocks.
2) quartz and/or carbonate veining either ptygmatic, co-folial, or random.
3) abundant microfractures.

Often these horizons display shearing and increased amounts of arsenopyrite to 10%, trace mineralization, particularly of pyrite, pyrrhotite, chalcopyrite, galena, tourmaline, molybdenite and sphalerite. Occasionally, visible gold is seen in core.

The major gold mineralization trend previously mentioned when projected vertically strikes 130· and includes four of the five most significant anomalous intervals in the zone. The fact that this trend is linear and that mineralization is generally associated with cleavage- related silicification that for different depths would not project along a straight line, may indicate a vertical structural break coincident with these anomalies that may extend into gabbro units.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

Drill hole KL-18 intersected 2 m of 0.474 ounce Au per ton. The diamond drill hole was drilled in 1986 and represents the original discovery on the property (Winter 1988). Results from subsequent diamond drilling in 1987 and 1988 which exceed 0.5 ppm Au is summarized as follows (Davis 1988):

DDH	INTERVAL (m)	PPM Au	INTERVAL LENGTH (m)	PPM Au X M
KL-52	31.0-31.4	1.64	0.4	
	53.8-54.3	0.51	0.5	
	62.2-62.8	1.16	0.6	
	72.1-72.8	0.71	0.7	
	101.9-103.3	2.07	1.4	
	105.8-106.2	0.90	0.4	
		1.34	4.0	5.4
KL-53	21.4-22.5	0.96	1.1	
	61.8-66.3	0.65	4.5	
	73.1-76.5	0.86	3.4	
		0.73	9.0	6.6
KL-54	17.1-17.6	0.84	0.5	
	29.2-35.0	2.01	5.8	
	38.0-38.7	1.36	0.7	
	42.6-43.3	0.50	0.7	
		1.74	7.7	13.4
KL-55	NIL			0
KL-56	192.0-193.5	0.63	1.5	0.9
KL-63	84.8-86.3	1.65	1.5	
	102.7-103.1	3.41	0.4	
	123.1-124.6	1.77	1.5	
	130.4-131.0	1.48	0.6	
	168.1-171.7	0.96	3.6	
	190.0-190.5	0.82	0.5	
		1.39	8.1	11.2
KL-65	45.6-47.1	1.05	1.5	
	55.0-60.2	0.68	5.2	
	80.7-82.7	1.52	2.0	
	110.6-111.7	1.27	1.1	
		0.97	9.8	9.5
KL-66	15.8-16.5	3.63	0.7	9.5
KL-67	25.1-25.6	0.71	0.5	
	47.4-61.5	1.44	14.1	
(INCL	56.4-56.8	14.79	0.4)	
(	61.0-61.5	9.84	0.5)	
	65.8-67.3	0.73	1.5	
	67.7-68.5	1.65	0.8	
	71.0-72.4	0.96	1.4	
		1.34	18.3	24.25
KL-73	11.8-12.3	1.89	0.5	
	21.2-22.3	0.57	1.1	
	46.8-48.3	0.86	1.5	
	83.9-84.4	1.23	0.5	
		0.97	3.6	3.5

1) PROPERTY NAME: KL-27 zone (17) DATE(S) VISITED: July 20/88

MDI #: n.a.

2) ALTERNATE NAME(S):

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP

PAST

1971: Cominco conducted airborne electromagnetic and magnetic surveys in the Keezhik Lake area.

1986-88: Severide Resources Inc. acquired the property by staking. Airborne VLF-EM and magnetic, electromagnetic (Max-Min), magnetometer, IP and geological surveys were undertaken by Noramco Exploration Inc. for Severide Resources Inc. These were funded by Golden Day Mining Exploration Inc. Prospecting, stripping, trenching, sampling and diamond drilling were also conducted.

Diamond drilling of 12 holes totalling 2552.3 m on claim TB 891371, TB 891380 and TB 891389 was conducted.

1987: All interest transferred to Pure Gold Resources Inc.

1988: Severide Resources Inc. and Pure Gold Resources Inc. signed a Memo of Agreement.

CURRENT

1995: Pure Gold Resources Inc. (March 9, 1995).

5) LOCATION AND ACCESS:

N.T.S.:	52 P16/SW		
Latitude:	51·47'15"		
Longitude:	88·25'45"		
UTM:	Zone 16	Northing:	5738000
		Easting:	401350

GENERAL LOCATION: On Keezhik Lake, 38 km (24 miles) northwest of Fort Hope First Nation (1.5 km north of

north shore of East Arm of Keezhik Lake and 1.3 km north of KL-L18 zone).

ACCESS: The property is accessible by float aircraft, then by foot along claim lines or by helicopter.

REFERENCES: Barrie (1985)*
Davis (1988)*
Prest (1940)
Thurston and Carter (1970)
Winter (1988)*

Resident Geologist Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 48e Keezhik-Miminiska Lake Area (Prest 1940)

Map P.562 Operation Fort Hope, Lansdowne House-Fort Hope Sheet (Thurston and Carter 1970)

Map 2237 Fort Hope-Lansdowne House sheet (Thurston, Carter and Riley 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Keezhik Lake area is underlain by east-trending mafic to felsic metavolcanic rocks, including both flow and tuffaceous rocks, that are in turn a portion of the East Uchi Subprovince. Banded magnetitic iron formation is intercalated with the metavolcanic rocks. Minor metasedimentary rocks are present. Hornblendite, gabbro, diorite, quartz porphyry and feldspar porphyry intrude the metavolcanic rocks. Precambrian diabase dikes intrude the Archean rocks (Prest 1940).

Davis (1988) described the geology and structure:

> Four main lithological units dominate a complex stratigraphy in which closely spaced holes often exhibit a variable succession of units. Major units often pinch out over intervals of 25 m or are out of sequence relative to nearby holes. Strong folding can be seen in outcrop to the west and in some cored intervals. An oblique fault has been interpreted between holes KL-30 and 50. Primary structures in three holes indicate that stratigraphic tops are down hole (south, grid 205·) in agreement with the regional trend.
>
> The main units in an approximate downhole sequence are:

1) mafic volcanics: flows and tuffs in part with 2-10% magnetite (KL-18,40,41), dark green, moderately to strongly chloritic with 1% pyritization.

2) oxide or lean oxide facies BIF: chert-magnetite or chert-hematite, highly fractured, trace to 6% sulphides that may include up to 1% arsenopyrite, often include sub-units of sulphide facies IF; banded graphite-chert or massive sulphides, quartz veining in KL-30 shows Au 13.30 ppm./1.4m.

3) felsic volcanics: thick sequences locally that often pinch out over 25 m, tuff lapilli tuff and rhylitic agglomerate with up to 50% white to light grey bombs in a grey sericitic matrix, bombs typically have the appearance of a welded tuff. Holes KL-49 and 51 have the same sequence of felsics overlain by BIF followed by intermediate volcanics. Holes KL-29 and 50 have BIF overlain by intermediate then felsic volcanics. Other intervening holes have no felsic unit.

4) intermediate volcanics: grey to blue-grey tuffs that progress through a zone rich in dark chloritic wisps; followed by a combination of crystal-lapilli-lithic tuffs with coarse grained blue quartz eyes, lapilli or rock fragments (typically chert); through tuffs having 3-8% pyrrhotite blebs and stringers. The intermediate sequence as outlined above is typical of holes centrally located within the zone. The regularity of the sequence in the lower half of these drill holes suggests the variation in the upper sequence is due to local units pinching out rather than complex folding.

Stratigraphic correlation shows a complex sequence of highly folded units, facing south in agreement with the regional trend. The regional strike is ESE with an apparent steep southerly (grid 205·) dip of 70 degrees. A left lateral oblique fault with increasing offset to the north has been interpreted between KL-30 and 50. Iron formations are highly fractured due to their competency and local folding. This fracturing enhances alteration and mineralization.

Shearing seen in KL-69, 51, 50 and 29 transgresses several lithological units and may indicate a single trend that deepens towards the east (115·). This apparent trend mimicks the eastward plunging trend of the three most anomalous gold intersections seen in KL-51, 30 and 27.

7) MINERALIZATION:

Davis (1988) described the alteration and mineralization of the KL-27 zone:

> Anomalous gold mineralization cross-cuts lithological units appears to be related to an eastward plunging trend of quartz veining. Factors that show positive correlation with anomalous occurrences are: quartz veining, highly fractured BIF's, fold hinges, Asp in amounts <1%. Many intersections have no or only one positive correlation with the above. The major east plunging trend previously mentioned (12.0 ppm/1.5 m KL-51, 13.3 ppm/1.4 m KL-30, 12.86 ppm/1.5 m KL-27) while high grade, appears thin and discontinuous. The gold mineralization is associated with fracturing and quartz veining rather than pervasive alteration.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

Drill hole KL-87-27 intersected 12.86 ppm Au over 1.5 m and represents the occurrence discovery hole. Drill hole KL-87-30 intersected 13.30 ppm Au over 1.4 m (Winter 1988). Intersections anomalous with respect to gold from the 1987 diamond drilling program are summarized as follows (Davis 1988):

DDH	INTERVAL (m)	PPM Au	INTERVAL LENGTH (m)	PPM Au X M
KL-87-18	NIL			
KL-87-27	34.1-35.7	0.65	1.6	
	146.9-148.4	12.86	1.5	
		6.56	3.1	20.3
KL-87-29	67.5-69.0	0.55	1.5	0.8
KL-87-30	135.8-137.2	13.30	1.4	18.6
KL-87-40	226.0-227.7	0.55	1.7	
	229.2-230.0	2.81	0.8	
	234.5-236.0	0.55	1.5	
	253.6-256.6	0.65	3.0	
	262.3-263.3	0.94	1.0	
		0.86	8.0	6.9
KL-87-41	168.2-169.8	1.17	1.6	
	188.1-189.6	0.51	1.5	
		0.85	3.1	2.6
KL-87-42	NIL			
KL-87-49	NIL			
KL-87-50	NIL			
KL-87-51	104.3-107.3	6.48	3.0	19.4
(INCL	104.3-105.8	12.00	1.5)	
KL-87-68	NIL			
KL-87-69	79.8-81.4	0.98	1.6	1.6

1) PROPERTY NAME: KL-30 Series Drill Holes (18,19,20)

DATE(S) VISITED:

MDI #: n.a.

2) ALTERNATE NAME(S): KL-31 zone (18)
KL-35 zone (19)
KL-38 zone (20)

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1971 Cominco conducted airborne electromagnetic and magnetic surveys in the Keezhik Lake area.

1986-88 Severide Resources acquired the property by staking. Airborne VLF-EM and magnetometer surveys, an IP survey and diamond drilling were conducted.

1987: All interest transferred to Pure Gold Resources Inc.

1988: Severide Resources Inc. and Pure Gold Resources Inc. signed a Memo of Agreement.

CURRENT

1995 Pure Gold Resources Inc. holds a large group of claims (March 8, 1995).

5) LOCATION AND ACCESS:

KL-31 zone

N.T.S.:	52P/16SW	
Latitude:	51·47'30"	
Longitude:	88·29'15"	
U.T.M.:	Zone 16	
	Northing:	5738650
	Easting:	397350

KL-35 zone

N.T.S.:	52P/15SE	
Latitude:	51·45'35"	
Longitude:	88·32'12"	
U.T.M.:	Zone 16	
	Northing:	5735300
	Easting:	393950

KL-38 zone
N.T.S.: 52P/16SW
Latitude: 51·46'20"
Longitude: 88·26'45"
U.T.M.: Zone 16
Northing: 5736450
Easting: 400300

GENERAL LOCATION: North of Keezhik Lake, 38 km (24 miles) to 45 km (27 miles) northwest of Fort Hope First Nation.

Note: These are all diamond drill sites.

ACCESS: KL 31, 35, 38 are accessible by helicopter.

REFERENCES: Barrie (1985)*
Davis (1988)*
Prest (1940)
Thurston and Carter (1970)
Winter (1988)*

Resident Geologist Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 48e Keezhik-Miminiska Lake Area (Prest 1940)

Map P.562 Operation Fort Hope: Lansdowne House-Fort Hope Sheet (Thurston and Carter 1970)

Map 2237 Fort Hope-Lansdowne House sheet (Thurston, Carter and Riley 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Keezhik Lake area is underlain by east-trending mafic to felsic metavolcanic rocks, including both flow and tuffaceous rocks, that are in turn a portion of the East Uchi Subprovince. Banded magnetite iron formation is intercalated with the metavolcanic rocks. Minor metasedimentary rocks are present. Hornblendite, gabbro, diorite, quartz porphyry and feldspar porphyry intrude the metavolcanic rocks. Precambrian diabase dikes intrude the Archean rocks (Prest 1940).

7) MINERALOGY:

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

Winter (1988) described the mineralization:

ZONE KL-31

Gold mineralization (4.43 grams/ton over 1.5 meters) is associated with altered iron formation in mafic flows near the quartz porphyry contact as intersected in hole KL-31 at 67+00W, 12+00N. There has been no follow-up work in this area.

ZONE KL-35

5.01 grams/ton of gold over 0.8 meters and a 115 meter zone carrying anomalous gold values (>100 ppb) associated with sulphide mineralization and thinly banded iron formation in mafic flows was intersected in hole KL-35 (101+00W, 21+85S). This occurrence has not been followed up to date.

ZONE KL-38

Anomalous gold values occur in vertical, north trending, quartz veins and along an east-west shear zone which dips north. This zone was tested by diamond drill hole KL-38 which returned a highly anomalous assay result (1.34 grams/ton over 1.5 meter). Grab samples with up to 0.44 grams/ton have been taken from the quartz veins and 1.28 grams/ton from the shear zone on surface. Also in hole KL-38 a 15 meter wide zone of highly anomalous gold values (>500 ppb) is associated with quartz veining in a quartz feldspar porphyry. No additional work has been done on this zone.

1) PROPERTY NAME: Lavoie Lake
Cu-Ni prospects (21,22)
DATE(S) VISITED: Aug. 8/86
MDI #: KP0414

2) ALTERNATE NAME(S): Blue Heron project
Springer-Lavoie Lake occurrence
Copper Point occurrence

3) COMMODITY: MAIN: Cu, Ni SECONDARY: Au, Pt, Pd

DEPOSIT TYPE: Mafic-Ultramafic Intrusion Hosted Cu-Ni-PGE

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1935: Mr. J.E. Rowlandson received, from an Aboriginal trapper, a rock specimen well-mineralized with copper and nickel sulphides collected from Rowlandson Lake. Rowlandson and the trapper visited a point, later termed "Copper Point", in the south bay of Rowlandson Lake. Eighteen claims were staked. The copper-nickel occurrence was trenched, sampled and drilled.

1936: J.E. Rowlandson restaked the occurrence. Prospecting and exploration led to the discovery of a gold occurrence.

1937/1938: Lansdowne Minerals Ltd. was formed to carry out exploration. A total of 100 additional claims were staked and the Lavoie Lake prospect was examined. Winisk River Mines Ltd. was subsequently organized. Trenching and diamond drilling totalling $45,000 were completed north of Springer Lake. The major copper-nickel occurrence discovered was at Springer-Lavoie lakes.

Other copper-nickel occurrences were discovered near Bartman Lake, Rowell Lake, Springer Lake and Lavoie Lake.

1957: A. McKinn staked 27 claims on the northern part of Lavoie Lake. La Corne Lithium Mines Limited optioned or restaked the gold occurrence at the southwest end of Rowlandson Lake, with interest in it as a copper occurrence. The central portion of Rowlandson Lake and an area west of Bartman Lake were staked. Ground magnetic and electromagnetic surveys were performed.

1959/
1960: Pickle Patricia Explorers optioned McKinn's claim and conducted geological mapping and diamond drilling (787 m in 7 drill holes) on claim groups at Lavoie and Bartman lakes. Pyrite, pyrrhotite and chalcopyrite mineralization was noted. Aberdoon Mines Ltd., and Temagami Mining Co. Ltd. undertook ground geophysics and diamond drilling totalling 599 m on mining claims also in the Lavoie Lake-Bartman Lake area (Novak 1992).

1968: Canadian Nickel Co. Ltd. carried out a geological reconnaissance survey in the area.

1969/
1970: Canadian Nickel Co. Ltd. conducted an airborne geophysical survey and staked a large group of claims. Line cutting, HLEM surveys, VLF-EM surveys, magnetic surveys and diamond drilling followed.

1970-
1974: Forty-seven to fifty-five drill holes totalling 5839 m were completed, including the L-11 and M-12 anomalies which are geophysically inferred to strike for 3105 m and make up the copper-nickel deposit (see reserve section). Three main copper-nickel zones were drill-intercepted. Market conditions and metal prices lead to claims being dropped by 1981 (Novak 1992).

1975: Canadian Nickel Co. Ltd. dropped the property.

1983-
1986: Forester Resources Inc. staked over 600 claims in the Lavoie Lake-Rowlandson Lake area. Airborne geophysics, reconnaissance geological mapping, trenching, sampling, diamond drilling and additional claim staking followed in 1984 bringing the land position to 1780 claims. Backhoe trenching, IP and diamond drilling (808 m) continued until 1986. Copper, nickel and gold mineralization were discovered (Novak 1992). Weaco Resources Ltd. conducted line cutting, magnetic surveys, electromagnetic surveys, CEM surveys and diamond drilling on a small claim group.

1991-
1992: Blue Falcon Mines Ltd. undertook claim staking and airborne geophysics (magnetic gradient) in 1991. Blue Flacon Mines Ltd. holds 100%

interest in 6 large claims in two groups covering 1536 hectares and numbered as follows: (a) Lavoie Lake claims TB 1133764, TB 1133765, TB 1133766; (b) Copping Lake claims TB 1189391, TB 1189392, TB 1189393. Blue Falcon Mines Ltd. hold the claims in trust for Horne Fault Mines Ltd.

KWG Resources Inc. optioned the property from Horne Fault Mines Ltd. and can earn a 60% interest in the claims by spending $3 million in exploration within three years. Line cutting, magnetometer surveys, VLF-EM surveys, MaxMin electromagnetic surveys and diamond drilling were completed. Twenty diamond drill holes totalling 3241 m intercepted zone A (M-12 anomaly) and zones C and D (L-11 anomaly).

CURRENT

1995: Blue Falcon Mines Ltd. is the current claim holder (March 8, 1995).

5) LOCATION AND ACCESS:

Lavoie Lake Claims

1) West zone (20)		2) East zone (21)	
N.T.S.	43D05/NE	N.T.S.	43D/5NE
Latitude	52·28'12"	Latitude	52·27'40"
Longitude	87·35'10"	Longitude	87·33'
U.T.M.	Zone 16	U.T.M.	Zone 16
Northing:	5813000	Northing:	5812250
Easting:	460200	Easting:	462500

GENERAL LOCATION: The Lavoie Lake copper-nickel prospect is located 30 km (18 miles) northeast of Lansdowne House at Lavoie and Springer lakes.

ACCESS: The property is accessible by float plane from commercial bases at Pickle Lake or Nakina or may be reached by winter road.

REFERENCES: Chataway (1992)*
Novak (1992)*
Novak (1988)*
Prest (1940)
Thurston and Carter (1970)
Resident Geologist's files, Beardmore-Geraldton District, Thunder Bay

MAP REFERENCES:

49n Rowlandson Lake area (Prest 1940)
2237 Fort Hope-Lansdowne House sheet (Thurston et al. 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Blue Heron project is situated in the Sachigo Subprovince, an arcuate group of mafic to felsic metavolcanic and metasedimentary assemblages and associated synvolcanic plutons which are intruded by younger felsic bodies and larger batholithic complexes. The southeastern portion of the Sachigo Subprovince consists of mafic metavolcanic rocks, migmatized metasedimentary rocks and metavolcanic gneisses. Felsic plutons (trondhjemite to quartz monzonite) form the large batholiths. Quartz diorite, diorite, gabbro and anothositic gabbro have intruded the metavolcanic rocks (Novak 1992).

The eastern portion of the metavolcanic belt is composed of mafic to intermediate tuffaceous pyroclastic units and pillowed metavolcanic rocks striking between 98· and 105· and dipping north at 85·. Mafic intrusive rocks have been interpreted from geophysics at Springer Lake and Lavoie Lake, within flow rocks and tuffs with numerous sulphide lenses. Layered anorthosite is present as a large complex in the Brazeau-Rowell lakes area. A siliceous tuff, mineralized with pyrite and chert, was noted in central Rowlandson Lake.

7) MINERALIZATION:

The property geology is specifically anorthositic gabbro, in places layered, intruding intermediate metavolcanic rocks.

Fifty-three 6 channel INPUT anomalies were noted from the 1984 Questor survey (Novak 1992). Canadian Nickel's diamond drilling (1970-74) outlined copper-nickel mineralization within layered anorthositic gabbro, specifically the Bartman-Lavoie lakes layered complex. The potential for chrome, platinum group element and gold mineralization exists within this intrusion, as well as three additional intrusions which are interpreted from airborne geophysics.

Sulphide mineralization was observed in 18 of 20 diamond drill holes completed in zones A (M-12) and C and D (L-11) in 1992, which represent major geophysical anomalies at Lavoie and Springer lakes. The geophysical

anomalies extend for 3 km and merge in a "wishbone" shaped structure (Novak 1992).

R. Chataway, Project Geologist, KWG Resources Inc. (1992) described the A zone:

> The A - zone is underlain mainly by east-west and SE trending, steeply north and NE dipping mafic volcanic and gabbroic rocks. Minor felsic sediments, felsic volcanics, mafic sediments or mudstones and banded iron formation are intercalated with the mafic volcanics. The gabbros are intruded into the volcanic sequence (mainly basalts) and are texturally and compositionally similar to the basalts, thus inferring a close genetic relationship between the two. The main sulphides are pyrrhotite with minor chalcopyrite, pentlandite, pyrite and arsenopyrite. The sulphides occur as massive, stratabound layers or as disseminated interstial mineralization to the silicates.
>
> The structural interpretation is based on the magnetic and EM survey results correlated with the drill core observations. There are three near-parallel but discontinuous trends representative of the three sulphide zones in the west part of the grid. In the east (L20 to 26 SE) the southern-most trend converges with the main trend while the northern-most trend swings to the NE. These features are well defined on the HLEM Profiles and VLF-EM Profiles. (Geophysical report, JVX Ltd., 1992)
>
> The lithologies of the A - zone are overturned and dipping northerly with tops to the south. This is based on the interpretation of the repetitive sequence of lava, mafic mudstone and chert/ exhalative. The strike direction of the units (E-W true) in the west and NW-SE towards the east is established by the primary bedding of the banded iron formation and the massive sulphides as outlined in many of the holes.
>
> The lithological sequence as encountered in the A - zone from north to south is described below:
> - the most northerly located hole (92-A-4) collared in diorite (Unit 3), a light to medium green-grey to whitish rock with 15-40% amphibolite content and 60-85% feldspar. This grades into a gabbro (Unit 2) which is medium grained to coarse grained with 40-60% amphiboles and 40-60% feldspar. The gabbro varies in composition and texture to mafic gabbro, pegmatitic and anorthositic gabbro and gabbro-

basalt breccia being the more common;
- overlying the gabbro is an ultramafic (?) unit which has a high amphibolite and chlorite content with disseminated sulphides and possibly as a facies change, massive sulphides between holes 92-A-10 and 92-A-4
- next in the sequence is a wide (460') basaltic lave (Unit 4) with some variation in texture as fragmentals, pillow breccias, very fine grained banded volcanic sediment or mudstone (Unit 6) and medium grained basalts were logged in the core. Within the basalts are felsic sediments (tuffs) (Unit 5) and banded iron formation (Unit 7). The felsic sediments are very fine grained with chlorite and biotite streaks and minor accessory disseminated sulphides. The banded iron formation consists of silica, silicates, sulphides and mm - scale beds of magnetite, but not all necessarily occurring together. These sediments are probably exhalitive;
- the structural footwall of the drilled section of the A - zone is a medium grained to coarse grained gabbro which is the host lithology to the main sulphide mineralization. The gabbro varies in composition and texture to a diorite, which has less ferromagnesium minerals and an increase in quartz. The sulphides occur as widespread disseminated mineralization and in places grades into massive sulphides. The main minerals are pyrrohtite and chalcopyrite with the average of all the intersections for subzone A-B being 0.32% Cu and 0.21% Ni over 86.95'. This is over a 700 foot strike length at the west end of the grid.

R. Chataway, Project Geologist, KWG Resources Inc. (1992) described the C and D zones:

The C-D grid is on the west side of Lavoie Lake and is oriented along an east-west base line. Magnetic and VLF-EM survey coverage is complete while MaxMin 11 coverage was more selective.

The C-ZONE, (along BL 36 N), is underlain by a sequence from north to south of gabbro, basalt, mafic sediments/volcanics and felsic sediments/volcanics. Geophysical surveys indicate a wide EM conductor with an associated moderate strength to weak magnetic anomaly. The 1992 drill campaign included 3 holes (92-C-1, 2 and 3) which intersected continuous sulphide mineralization across the sections. However, the intersections of economic interest are in the gabbroic lithologies which correspond to the northern part of the geophysical conductor. Centered over the baseline

is the C - West Zone which is 85-160 feet wide averaging 0.14% to 0.234% Cu and 0.065% Ni and the C - central Zone (L 126 + 20 W) averaging 0.28% Cu and 0.06% Ni over 122 feet.

The mafic and felsic units are cut by numerous copper-rich fractures oriented near-parallel to the core axis. As such, their frequency is not known; it would be necessary to drill north-bearing holes to best document and calculate their economic importance.

The D-zone is a large area of sulphide (copper-nickel) mineralization which remains open in all directions. This is based upon recently completed drilling and on previous (Inco) drill information. Seven holes tested a promising section of the geophysical conductor, with some holes being collared in mineralization due to the deep overburden, approximately 70 feet thick, and others stopped in low grade mineralization.

The area is underlain by gabbro and gabbro-diorite lithologies with minor basalts (to the south) and interbands of mafic sediments (?).

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:
Geological reserves stand at 14.6 million tons averaging 0.58% copper and 0.37% nickel in the L-11 (zones C, D) and M-12 (zone A) anomalies (Novak 1992).

9) CHEMICAL ANALYSES:

Previously known mineralization has been confirmed during the 1992 drill program, with a vertical extension of mineralization to below 150 m. Assay results from selected diamond drill holes were as follows:

Hole No.	Target	Width (M)	Cu (%)	Ni (%)
92A3	A	30.6	0.269	0.198
		6.3	0.46	0.54
92A4	A	28.5	0.323	0.172
92C1	C	45.2	0.269	0.198
		14.5	0.398	0.115
92D2	D	30.6	0.607	0.113
	(of which	11.1	1.05	0.161)
92D3	D (North)	21.5	0.387	0.118
		94.1	0.204	0.049

(KWG Resources Inc., press release, May 25, 1992.)

Further drilling was recommended in 1993 on zones C and D, located west of Lavoie Lake.

A complete listing of drill hole results from 1992 are as follows (Chataway 1992):

TABLE 1

Assay intervals and reference for the LONGITUDINALS

HOLE	SECTION	GRADE	REFERENCE	CuFt.	NiFt.
A-ZONE	(8 SE to 20 SE)				
92-A-1	8+00E	.445 Cu, .17 Ni/17.0'	101, A-B	7.56	0.29
92-A-2	7+00E	.129 Cu, .068 Ni/106.0'	102, A-B	13.67	7.21
92-A-3	9+00E	.30 Cu, .221 Ni/90.0'	103, A-B	27.00	19.89
92-A-10	9+00E	.094 Cu, .115 Ni/33.5'	104, A-A	3.15	3.85
92-A-5	10+50E	.122 Cu, .036 Ni/13.0'	105, A-B	1.59	0.47
		.307 Cu, .185 Ni/52.0'	106, A-B	15.96	9.62
		.141 Cu, .066 Ni/26.0'	107, A-B	3.67	1.72
92-A-4	12+50E	.215 Cu, .26 Ni/55.0'	108, A-A	11.82	14.30
		.323 Cu, .172 Ni/95.0'	109, A-B	30.68	16.34
54002	9+00E	.92 Cu, .73 Ni/59.7'	110, A-B	54.92	43.58
54001	9+00E	.42 Cu, .28 Ni/84.5'	111, A-B	35.49	23.66
54015	10+50E	.34 Cu, .16 Ni/12.3'	112, A-B	4.18	1.97
		.18 Cu, .29 Ni/14.3'	113, A-B	2.57	4.15
		.256 Cu, .22 Ni/100.0'	114, A-B	25.60	22.00
49101	15+00E	.27 Cu, .15 Ni/199.7'	115, A-B	53.92	29.95
		.40 Cu, .04 Ni/11.2'	116, A-C	4.48	0.45

A - ZONE SUMMARY (8 SE to 20 SE)

A - A Zone: AVG. Grade = 0.17 Cu, 0.20 Ni

Avg. Width 11.2'

A - B Zone: Avg. Grade = 0.32 Cu, 0.21 Ni

Avg. Width 86.95'

TABLE 1 (cont'd)

HOLE	SECTION	GRADE	REFERENCE	CuFt.	NiFt.
A-ZONE	(19 SE to 31 SE)				
49101	19+75SE	.27 Cu, .15 Ni/199.7'	115, A-B	53.92	29.95
		.4 Cu, .04 Ni/11.2'	116, A-C	4.48	0.45
92-A-9	20+50SE	.129 Cu, .116 Ni/97'	117, A-B	12.51	11.25
		.106 Cu, .035 Ni/15'	118, A-C	1.59	0.52
49176	22+25SE	.29 Cu, .11 Ni/9.6'	119, A-B	2.78	1.06
49102	23+00SE	.20 Cu, .08 Ni/12.7'	120, A-C	2.54	1.02
92-A-6	24+00SE	.116 Cu, .109 Ni/55.0'	121, A-B	6.38	6.00
		.119 Cu, .083 Ni/22.0'	122, A-C	2.62	1.83
92-A-7	25+00SE	.318 Cu, .101 Ni/28.0'	123, A-B	8.90	2.83
		.115 Cu, .140 Ni/12.0'	124, A-B	1.38	1.68
		.095 Cu, .092 Ni/27.0'	125, A-B	2.56	2.48
		.16 Cu, .067 Ni/27.0'	126, A-C	4.32	1.81
92-A-8	26+00SE	.132 Cu, .046 Ni/13.0'	127, A-B	1.72	0.62
		.10 Cu, .033 Ni/21.0'	128, A-C	2.10	0.69
		.101 Cu, .048 Ni/13.0'	129, A-C	1.31	0.62
		.109 Cu, .059 Ni/11.5'	130, A-C	1.25	0.68
49200	31+00SE	.15 Cu, .07 Ni/21.5'	131, A-B	3.22	1.50
		.16 Cu, .05 Ni/7.7'	132, A-C	1.23	0.38

A - ZONE SUMMARY (19 SE to 31 SE)

A - B Zone: AVG. Grade = 0.15 Cu, 0.10 Ni
Avg. Width 37.6'

A - C Zone: Avg. Grade = 0.13 Cu, 0.06 Ni
Avg. Width 18.6'

TABLE 2

HOLE	SECTION	GRADE	REFERENCE	CuFt.	NiFt.
92-C-1	137+50W	.23 Cu, .06 Ni/162.7'	C West	37.42	9.76
92-C-2	136+50W	.14 Cu, .07 Ni/85.5'	C West	11.97	5.98
92-C-3	126+20W	.28 Cu, .06 Ni/122'	C Central	34.16	7.32

C - ZONE SUMMARY

C - West Zone: AVG. Grade = 0.28 Cu, 0.09 Ni
Avg. Width = 117.8'

C - Central Zone: Avg. Grade = 0.28 Cu, 0.06 Ni
Avg. Width = 122.0'

TABLE 3

Assay intervals and reference for the LONGITUDINALS

HOLE	SECTION	GRADE	REFERENCE	CuFt.	NiFt.
D - ZONE					
54005	124+00W	.27 Cu, .15 Ni/145.0'	1, D_N	39.15	21.75
		.38 Cu, .16 Ni/111.2'	2, D_S	42.25	17.79
		.13 Cu, .066 Ni/24.0'	6, D_S	3.12	1.58
54007	124+00W	.29 Cu, .10 Ni/191.1'	3, D_N	55.42	19.11
		.10 Cu, .05 Ni/71.1'	4, D_N	7.11	3.55
		.30 Cu, .12 Ni/79.0'	5, D_N	23.70	9.48
49197	124+00W	.21 Cu, .045 Ni/56.5'	7, D_S	11.86	2.54
92-D-3	121+50W	.263 Cu, .085 Ni/137.0'	8, D_N	36.03	11.64
		.318 Cu, .072 Ni/133.5'	9, D_S	42.45	9.61
		.267 Cu, .071 Ni/65.0'	10, D_S	17.35	4.61
49108	121+61W	.18 Cu, .08 Ni/118.0'	11, D_N	21.24	9.44
54008	120+00W	.25 Cu, .05 Ni/162.8'	12, D_S	40.70	8.14
92-D-2	120+50W	.173 Cu, .061 Ni/40.0'	13, D_N	6.92	2.44
		.25 Cu, .067 Ni/56.0'	14, D_N	14.00	3.75
		.204 Cu, .047 Ni/23.0'	15, D_S	4.69	1.08
		.512 Cu, .109 Ni/174.0'	16, D_S	89.09	18.97
92-D-6	120+50W	.25 Cu, .028 Ni/121.0'	17, D_N	30.25	3.39
		.20 Cu, .058 Ni/124.0'	18, D_N	24.30	7.19
		.26 Cu, .07 Ni/25.5'	19, D_S	6.63	1.78
		.276 Cu, .112 Ni/148.5'	20, D_S	40.99	16.63
92-D-4	120+00W	.29 Cu, .01 Ni/50.5'	21, D_N	14.64	0.50
		.181 Cu, .076 Ni/20.0'	22, D_N	3.62	1.52
		.19 Cu, .05 Ni/32.0'	23, D_N	6.08	1.60
		.272 Cu, .058 Ni/65.0'	24, D_S	17.68	3.77
		.378 Cu, .146 Ni/74.0'	25, D_S	27.97	10.80
92-D-1	119+50W	.23 Cu, .044 Ni/71.0'	26, D_N	16.33	3.12
		.168 Cu, .062 Ni/102.0'	27, D_N	17.14	6.32
		.196 Cu, .079 Ni/121.0'	28, D_S	23.72	9.56
92-D-7	119+50W	.051 Cu, .028 Ni/37.0'	29, D_N	1.89	1.04
		.162 Cu, .061 Ni/45.0'	30, D_N	7.29	2.74

TABLE 3 (cont'd)

HOLE	SECTION	GRADE	REFERENCE	CuFt.	NiFt.
92-D-5	118+00W	.216 Cu, .05 Ni/38.0'	31, D_N	8.21	1.90
		.236 Cu, .079 Ni/15.0'	32, D_N	3.54	1.18
		.309 Cu, .071 Ni/20.0'	33, D_N	6.18	1.42
		.406 Cu, .133 Ni/81.0'	34, D_S	32.89	10.77
49171	117+90W	.30 Cu, .08 Ni/239.6'	35, D_S	71.88	19.17
54010	116+00W	.22 Cu, .09 Ni/92.4'	36, D_S	20.33	8.32
		.24 Cu, .08 Ni/179.8'	37, D_S	43.15	14.38

D - ZONE SUMMARY (116 + 00W to 124 + 00W)

D_N Zone: Avg. grade = 0.227 Cu, 0.075 Ni

Avg. width 151.27'

D_S Zone: Avg. grade = 0.302 Cu, 0.090 Ni

Avg. width 151.53'

1) PROPERTY NAME: Leitch Cu-Ni prospect (23)

DATE(S) VISITED:

MDI #: n.a.

2) ALTERNATE NAME(S): Shabuskwia Lake (East Shore) prospect
Neil Smith option
Linsey Bay occurrence

3) COMMODITY: MAIN: Cu, Ni SECONDARY: Co

DEPOSIT TYPE: Mafic-Ultramafic Intrusion Hosted Cu-Ni-PGE

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1956: Leitch Gold Mines Ltd. acquired claims KK 15123 - KK 15133, KK 15135 - KK 15138 and KK 15180 - KK 15183, inclusive, east of Shabuskwia Lake and south of the East Arm of Shabuskwia Lake to cover a copper-nickel occurrence discovered by Neil Smith, prospector, Nezah, Ontario on claim KK 15131. *(McIntyre Porcupine Mines Ltd. discovered copper-nickel mineralization north of the Leitch prospect but assays were <0.290 copper/nickel; this is therefore not an occurrence). Line cutting, a vertical loop electromagnetic survey, trenching and diamond drilling were undertaken. Four diamond drill holes tested the surface copper-nickel occurrence and an EM conductor.

1957: A magnetometer survey was conducted on claims KK 15124 - KK 15127 and KK 15130 - KK 15133, inclusive. Seven drill holes were completed, bringing the total number of holes drilled to eleven (totalling 664 m).

1988: Claims TB 951051 to TB 951080 (30 claims) inclusive were staked to cover the Leitch Cu-Ni prospect. Goldpost Resources Incorporated conducted an airborne electromagnetic VLF-EM and magnetic survey using the Dighem III system on several large areas in the Shabuskwia Lake area including the 30 claims covering the prospect. Several possible zones of weak disseminated sulphide mineralization were noted.

CURRENT

1995: Claims are open for staking (March 8, 1995).

5) LOCATION AND ACCESS:

N.T.S.	52P02/NW
Latitude	51·10'30"
Longitude	88·56'31"
U.T.M.	Zone 16
	Northing 5670750
	Easting 364400

GENERAL LOCATION: The Leitch Cu-Ni prospect is located immediately east of Linsey Bay of Shabuskwia Lake, 98 km (61 miles) north of Armstrong, 82 km (51 miles) southwest of Fort Hope First Nation and 90 km (56 miles) southeast of Pickle Lake.

ACCESS: Shabuskwia Lake is accessible by float plane or helicopter. Pickle Lake and Armstrong are the closest air service points for fixed wing aircraft. Helicopter service is available in Pickle Lake.

REFERENCES:
Hallof and Clifton (1956)*
McConnell (1988)*
Smellic (1957)*
Shklanka (1969)
Thurston and Carter (1970)

Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

P.564 Attwood-Caribou Lakes Sheet-Operation Fort Hope (Thurston et al. 1969)
2237 Fort Hope-Lansdowne House Sheet (Thurston et al. 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Shabuskwia Lake area is located in the northern portion of the English River Subprovince. The regional geology is massive biotite- and biotite-hornblende granite and metasedimentary migmatites. The migmatites strike north with concordant pegmatitic dikes present. Dark portions of the migmatite have been described by Thurston and Carter (1970) as garnetiferous biotite-quartz-feldspar gneiss with minor hornblende. Gabbro and anorthositic gabbro intrudes the granite/migmatite (Shklanka 1969).

7) MINERALIZATION:

Disseminated chalcopyrite, pyrrhotite and pyrite occurs in a small outcrop (9 m by 13 m) of anorthositic gabbro (Shklanka 1969). Outcrop density is low.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

Three grab samples taken from the outcrop returned from 0.52% to 2.30% Cu, from 0.38% to 0.62% Ni and from 0.21% to 0.26% Co (Shklanka 1969).

1) PROPERTY NAME: Lilypad Lakes occurrences (24)

DATE(S) VISITED: Aug. 8/86

MDI #: KP0405

2) ALTERNATE NAME(S): Campbell lithium occurrence

3) COMMODITY: MAIN: Li SECONDARY: Ta, W

DEPOSIT TYPE: Pegmatites

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1940-41: V.K. Prest, while mapping the "Geology of the Fort Hope Area", identified: "...three pegmatite dikes north of the Lily Pad lakes, which are shown on the accompanying map are of interest because they carry appreciable quantities of lepidolite and spodumene, much coarse pink tourmaline and some fluorite". (Prest 1944)

1956: Standard Lithium Corporation Limited staked claims Pa 15818 and Pa 15819 to cover the southwestern lithium occurrence and claim Pa 15608 to cover the northwestern lithium occurrence.

Twelve diamond drill holes were completed--7 drill holes totalling 760 m (2500 feet) on claims Pa 15818 and Pa 15819; and 5 holes totalling 208 m (675 feet) on claim Pa 15608. Trenching and channel sampling was also undertaken.

1962: Robert Campbell staked 6 claims covering the southwestern lithium occurrence. Mining numbers include the following: Pa 27167 to Pa 27171 inclusive and Pa 21806. Claim Pa 27166 (former Standard Lithium Corporation Limited claim Pa 15608) was also staked. Three drill holes through an east-trending pegmatite dike were completed on claim Pa 27168, totalling 110 m (366 feet) and one drill hole was drilled to test a second pegmatite dike on claim Pa 27166, totalling 31 m (102 feet).

1966: Claims Pa 27166 to Pa 27167, Pa 27168 and Pa 27169 were brought to lease.

1979-82: The Tantalum Mining Corporation of Canada Limited (Tanco) optioned leased claims Pa 27166, Pa 27167, Pa 27168 and Pa 27169 from Mrs. Margaret (Robert) Campbell. Tanco also held 171 contiguous, unpatented claims. Work was undertaken to evaluate the tantalum potential of the pegmatites, and then later the gold potential.

Updated claims in the group are numbered as follows:

TB 518799 to TB 518807 inclusive
TB 518809 to TB 518837 inclusive
TB 518839 to TB 518844 inclusive
TB 519461, TB 519464, TB 519465
TB 519468, TB 519469
TB 519472, TB 519473, TB 519476
TB 536093 to TB 536095 inclusive
TB 536172

Lithogeochemistry, electromagnetic and magnetic surveys and diamond drilling (52 holes totalling 5367 m) were performed.

1985: The Tanco claims lapsed in 1985.

1986: Gold Fields Canadian Mining Limited staked the following mining claims: TB 892305 to TB 892328, TB 892340, TB 892512, TB 892513, TB 892584 and TB 892585. It is not clear if Gold Fields held, under option from Mrs. Margaret Campbell, leased claims Pa 27167 to Pa 27169 inclusive. Surface prospecting, channel sampling of geophysically anomalous zones, geological mapping and biogeochemical sampling over areas of known gold mineralization were conducted (Cunningham-Dunlop 1988). Gold Fields Canadian Mining Limited assayed previously drilled core from Tanco (1980-81). A total of 1545 samples from 27 drill holes were assayed. Tanco drill hole locations were south, east and north of Pa 27167, Pa 27168 and Pa 27169.

1988: All leased claims were cancelled.

CURRENT

1994: Placer Dome Canada Limited staked a large series of contiguous claim blocks of which TB 1205225 covers the original Lilypad Lakes occurrences (June 22, 1995).

5) LOCATION AND ACCESS: N.T.S.: 52 P 9 /NW
Latitude: 51· 37' 59"
Longitude: 88· 16' 23"
UTM: Zone 16 Northing 5720800
Easting 411650

GENERAL LOCATION: The Lilypad Lake occurrence is located approximately 192 km (120 miles) northwest of Nakina and approximately 18 km (11.0 miles) west-northwest of Fort Hope First Nation.

ACCESS: The property is accessible by helicopter.

REFERENCES:

Burwash	(1930)
Cunningham-Dunlop	(1988)*
Prest	(1944)
Thurston and Carter	(1970)
Trueman	(1980)*
Wallace	(1978)
Wallace	(1981)
Vanstone	(1982)*
Vanstone	(1983)*

Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 38b-1	Fort Hope area (Burwash 1930)
Map 51b	Fort Hope area (Prest 1944)
Map 2237	Fort Hope Lansdowne House Sheet (Thurston et. al. 1972)
Map 2379	Opikeigen Lake area (Wallace 1978)
Map 2417	Wottam Lake (Wallace 1981)

6) GENERAL GEOLOGY AND STRUCTURE:

The geology and structure of the Lilypad Lakes area has been described in summary form by Cunningham-Dunlop (1988):

> The geology of the Tanco/Lilypad region consists predominantly of mafic flow and fragmental units with intercalated intermediate and felsic units. These units have been intruded by lenses and dikes of quarts-and quartz-feldspar porphyry and late-stage pegmatite dikes.
>
> This package is bounded to the north and south by a sequence of metasedimentary rocks which consist primarily of argillaceous wackes and quartz-feldspar-biotite schists:

a) Fg massive mafic volcanic and mafic tuff.
   - massive, pillowed, and tuffaceous phases
   - locally chloritic and amphibolitized
   - local tourmaline alt'n
   - pillows are moderately deformed but one examination revealed tops to the northwest.

b) Intermediate/Felsic tuff
   - tuffaceous phases are the most common
   - typically display small, rounded quartz grains
   - local biotite and sericite alt'n
   - several exposures of felsic tuff may actually represent volcaniclastic sediments or possibly sheared quartz-porphyries.

c) Quartz- and Quartz- feldspar porphyries
   - sills, lenses and dikes which are found both parallel to stratigraphy and cross-cutting.

d) Pegmatite
   - small dikes - 6" to 20' in width - which generally run at right angles to stratigraphy

e) Metasediments
   - interbedded sequence of argillaceous wackes and mudstone and quartz-feldspar-biotite-sericite schist
   - local tour. alt'n

<u>Structure</u>

a) - a major shear zone has been identified in the northern region of the property in the vicinity of the E-zone and F-zone

   - approximate dimensions

     4000 feet long by 1500 feet wide

     (36W to 4E and BLO to 15N)

   - north and south boundaries are inferred while the east and west boundaries are still open.

   - characteristics

     - strong shear fabric 095 to 115 degrees strike and dip that varies from 80N in the north to 75S in the south.
     - mylonitic fabric and the development of a protomylonitic fabric in the adjacent units.
     - small scale folding - plunge typically to the east.
     - boudinage zones

- sigmoidal quartz- and quartz-tourmaline veins
- autoclastic breccia zones
- left-stepping veins and dikes
- cataclastic grains
- rotated clasts with pressure shadows

- all these features indicate a right-lateral sense of shear

b) - late stage quartz- and quartz-tourmaline veins
- parallel to foliation and cross-cutting (050 degrees - 060 degrees/90 degree dip)

c) - pegmatite dikes
- 340 degrees - 030 degrees/90 degree dip
- occasionally offset

7) MINERALIZATION:

Wallace (1978) described the Lilypad Lakes occurrences:

> On claim Pa27166 the main dike investigated by diamond drilling is about 6 m (20 feet) wide and is traceable for at least 50 m (150 feet). It strikes northeast and dips southeast at about 60·. Numerous smaller dikes, of varying strike but mostly sub-parallel to the main dike, were seen in the vicinity. All of these intrude mafic metavolcanic country rock.
>
> Mineralization recorded in drill logs consists of spodumene and lepidolite but no analyses of the core were reported. Grab samples from the surface trenches however gave reported results as high as 4.45 percent Li_2O, and one channel sample 8 m (25 feet) long averaged 1.63 percent Li_2O (Regional Geologist's Files, Ontario Ministry of Natural Resources, Thunder Bay). The pale green and grey spodumene crystals attain dimensions up to 15 by 60 cm (6 inches by 2 feet), but most grains are much smaller, in the order of 1 to 2 cm (1/2 to 1 inch) long. Irregular shaped spodumene-rich zones are concentrated in the centre of the dike, but are rarely continuous along strike for more than a few feet. Toward the margins of the dike the pegmatite is generally finer grained and has a higher feldspar but lower spodumene content. Small scattered flakes of lepidolite occur throughout the dike but are also concentrated in the spodumene-rich zones.

At least one pegmatite dike in this locality contains spectacular crystals of pink tourmaline up to 20 cm (8 inches) long, which in places form 10 to 20 percent of the rock. This pegmatite contains only minor spodumene but lepidolite constitutes 5 to 10 percent. A sample of this material collected by the field party was found to contain only 1.2 percent Li_2O, but 2.54 percent Cs_2O indicating a significant pollucite content (Mineral Research Branch, Ontario Division of Mines, Toronto).

The southwestern property consisting of claims Pa27167, Pa27168 and Pa27169 is predominantly underlain by mafic metavolcanics with felsic pyroclastic rocks to the north and metasediments to the south. Several coarse to medium grained pegmatite intrusions have been explored, mostly intruding the mafic metavolcanics. Most of the intrusions are east-west-trending and dip steeply northward. Some appear to be concordant but others are clearly cross-cutting. At least one major dike strikes north-south. Nearly all of the intrusions contain some spodumene but visible lepidolite and tourmaline are far less common in this area. Spodumene, which forms crystals up to 50 cm (18 inches) long, occurs in concentrations up to 40 percent. The other major constituents of the pegmatites in this area are quartz, white albite, pink to white microcline, which commonly forms crystals as large as spodumene, and white mica. Visible fluorite, scheelite, and beryl are rare but do occur in some intrusions; in fact scheelite contents as high as 10 to 15 percent over 1.3 m (4 feet) were reported in drill logs (Assessment Files Research Office, Ontario Division of Mines, Toronto). Amblygonite, a lithium-bearing feldspar, and pollucite, a cesium-bearing zeolite, are not readily distinguished from white albite in the field, but were subsequently identified by X-ray and quantitative chemical analyses of whole rock and mineral samples. Allanite, apatite, cassiterite and zircon were also identified in thin sections of this material. Although grain size increases across these dikes from the margins to the centre, no consistent mineralogical zonation was observed.

8) ECONOMIC FEATURES:

Wallace (1978) summarized known economic features on the southwestern property claims Pa 27167 - Pa 27169:

The best drill hole intersection reported in this claim group averaged 1.07 percent Li_2O over 10.4 m (34 feet) of mineralized pegmatite. Several grab samples from the main dike, which has been traced in trenches and drill holes for a length of 240 m (800 feet) and varies in width from 1.5 to 7.5 m (5 to 25 feet), ranged in grade between 0.53 and 4.07 percent Li_2O (Regional Geologist's Files, Ontario Ministry of Natural Resources, Thunder Bay).

9) CHEMICAL ANALYSES:

One 8 m-long channel sample from the main dike on claim Pa 27166 averaged 1.63 percent Li_2O (Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay).

1) PROPERTY NAME: NBK zone (25) DATE(S) VISITED:

MDI #: n.a.

2) ALTERNATE NAME(S):

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1971: Cominco conducted airborne electromagnetic and magnetic surveys in the Keezhik Lake area.

1986-88: Severide Resources Inc. acquired the property by staking. Airborne VLF-EM and magnetometer, EM (Max-Min), ground magnetometer, IP and geological surveys were undertaken by Noramco Exploration Inc. for Severide Resources Inc.; this work was funded by Golden Day Mining Exploration Inc.

Prospecting, stripping, trenching, sampling, and diamond drilling (1 hole) were also conducted.

1988: Severide Resources Inc. and Pure Gold Resources Inc. signed a Memo of Agreement.

CURRENT

1995: Pure Gold Resources Inc. (March 8, 1995).

5) LOCATION AND ACCESS:

N.T.S.:	52 P15/SE		
Latitude:	51·46'50"		
Longitude:	88·32'10"		
UTM:	Zone 16	Northing:	5737600
		Easting:	394150

GENERAL LOCATION: On Keezhik Lake 45 km (28 miles) northwest of Fort Hope First Nation and 0.75 km northeast of the North Bay of Keezhik Lake.

ACCESS: The property is accessible by float aircraft, then by foot along claim lines, or by helicopter.

REFERENCES: Barrie (1985)*
Davis (1988)*
Prest (1940)
Thurston and Carter (1970)
Winter (1988)*

Resident Geologist Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 48e	Keezhik-Miminiska Lake Area (Prest 1940)
Map P562	Operation Fort Hope: Lansdowne House-Fort Hope Sheet (Thurston and Carter 1970)
Map 2237	Fort Hope-Lansdowne House Sheet (Thurston, Carter and Riley 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Keezhik Lake area is underlain by east-trending mafic to felsic metavolcanic rocks, including both flow and tuffaceous rocks, that are in turn a portion of the East Uchi Subprovince. Banded magnetite iron formation is intercalated with the metavolcanic rocks. Minor metasedimentary rocks are present. Hornblendite, gabbro, diorite, quartz porphyry and feldspar porphyry intrude the metavolcanic rocks. Precambrian diabase dikes intrude the Archean rocks (Prest 1940).

Davis (1988) described the geology and structure proximal to the NBK Zone:

> Near the NBK Zone the massive and pillowed flows are capped by lean cherty BIF's 5cm to 1m thick. The mafic lavas are dark green and locally porphyritic, with abundant coarse feldspars. The overlying sill of quartz-porphyry has 30% very coarse blue quartz phenocrysts in a strongly foliated sericitic matrix. Several smaller bodies of the porphyry intrude the lavas. The core of the syncline is occupied by similar volcanics, but BIF's are absent.
>
> A diabase dike with minor fault offset, trends NNW, crosscutting all units.
>
> Regional dislocation of BIF's northwest of the NBK Zone may indicate southeast directed block faulting is associated with the Talbot Lake Pluton.

7) MINERALIZATION:

Winters (1988) described the mineralization of the NBK Zone:

> Prospecting and grab samples indicated a broad area of anomalous gold mineralization near the folded contact between mafic flows and foliated quartz porphyry sills. Narrow intervals of banded iron formation separate the mafic flows. Gold is associated with east and northeast trending shears in mafic flows, north-trending, quartz-ankerite veins cutting the feldspar porphyry and the mafic flows, medium to coarse grained pyrite mineralization associated with minor folds and banded iron formation, and dilatent zones near folded contacts between mafic flows and quartz feldspar porphyry. Values in grab samples range from 0.03 to 1.04 grams/ton in sheared mafic flows and up to 3.33 grams/ton in sulphide iron formation.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

Grab samples assayed up to 3.33 g/tonne Au (Winter 1988). Drill hole KL-87-33 tested the "A-3" IP anomaly and intersected anomalous gold values in quartz-carbonate veins.

1) PROPERTY NAME: Niska occurrence (float) (26)

DATE(S) VISITED:

MDI #: n.a.

2) ALTERNATE NAME(S): Niska property
Cominco-Miminiska occurrence

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Float (Lode Gold/Iron Formation)

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1984: A Cominco Ltd. prospecting party discovered two large iron formation boulders, anomalous in gold, along the lake shore of the northern arm of Miminiska Lake. According to Szabo (1986): "A heavy mineral sample from a stream draining two sections of faulted off iron formation in the area returned 2600 ppb Au."

1985: Forty-one claims were staked by Cominco Ltd. to cover an iron formation unit, the possible source of gold mineralization.

Following are the mining claims that made up the Niska occurrence property:
TB 837107, TB 837108, TB 837110, TB 837111-TB 837116, TB 837224, TB 837225, TB 837227-TB 837230, TB 837842, TB 837845, TB 837848-TB 837850, TB 837852-TB 837354 and TB 840294-TB 840297.

Gold values from 11-140 ppb were obtained over 1200 m, over the northern iron formation, but generally less then 10 ppb were obtained from the southern iron formation.

A ground magnetometer survey was performed over flagged lines to delineate the iron formation. Humas and B horizon geochemical sampling was conducted.

1986: The claim block was reduced to 27 claims.

1987: VLF-EM, HLEM and magnetometer surveys were undertaken on two grids totalling 26 line kilometres. Northwest Geophysics Limited carried out the work for Cominco Ltd.

Claims covered by the surveys were as follows: TB 837108, TB 837110, TB 837114, TB 837115, TB 837224, TB 837225, TB 837228, TB 837842, TB 837845, TB 837852, TB 837853, TB 869504 to TB 869506 inclusive, TB 869508 to TB 869510 inclusive, and TB 898570 to TB 898575 inclusive.

The north and south iron formations were defined by these surveys.

1988: Three diamond drill holes were completed totalling 213.5 m. Drill hole N1-88-1 was drilled on claim TB 869504 to test a combined HLEM and soil geochemistry anomaly. Drill hole N1-88-3 was drilled on claim TB 837108 to test a magnetic anomaly. No assay results were submitted with the drill logs for assessment credit.

CURRENT

1995: The area covering the Niska occurrence is currently open for staking (March 9, 1995).

5) LOCATION AND ACCESS:

N.T.S.	52P10/NE		
Latitude	51·37'30"N		
Longitude	88·31'30"W		
U.T.M.	Zone:	Northing:	5720050
		Easting:	395100

GENERAL LOCATION: The Niska gold (float) occurrence is located at the northeast corner of Miminiska Lake, approximately 6.6 km (4 miles) northeast of Miminiska Lodge. The occurrence is approximately 40 km (24 miles) west-northwest of Fort Hope and 118 km (71 miles) east-northeast of Pickle Lake.

ACCESS: Float planes can land on Miminiska Lake, but caution should be exercised as a number of reefs are present. Pickle Lake and Armstrong both have float plane service available. Boat rental is available at Miminiska Lodge. Helicopter service is available at Pickle Lake.

REFERENCES: Prest (1940)
Szabo (1986)*
Thurston and Carter (1970)

Resident Geologist's files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

48e Keezhik-Miminiska Lake area (Prest 1940)
2237 Fort Hope-Lansdowne House sheet (Thurston et al. 1972)
2416 Miminiska Peninsula (Wallace 1981)

6) GENERAL GEOLOGY AND STRUCTURE:

The Niska occurrence is located in the eastern Uchi Subprovince. The regional geology has been described by Wallace (1981) and is summarized by Szabo (1986):

> From south to north a general sequence across the belt consists of a thick metavolcanic sequence composed of predominantly mafic pillow flows, which in turn are conformably overlain by a sequence of intercalated mudstone and wacke units. In places considerable thicknesses of oxide, carbonate and/or silicate facies iron formation occur intercalated with the clastic metasediments. To the north of the metasediments there is a predominantly mafic metavolcanic sequence which appears to be younger than the metasediments.
>
> Major intrusions of quartz monzonite to granodioritic composition occur in the northwest, northeast, and southeast of the area, and minor intrusions including dikes and sills of diabase feldspar and quartz feldspar porphyry, and pegmatites are common.
>
> Low grade metamorphic conditions prevailed in the supracrustal rocks in most of the area.
>
> A number of northeast trending major faults cross the belt.

7) MINERALIZATION:

Szabo (1986) described the property geology:

> The property is 99%+ overburden covered, with only one small area of outcrop. This area, on grid III is described as strongly deformed, possibly sheared magnetite-quartz iron formation striking east west. The regional mapping indicates that the property is located over sediments close to the contact between the sediments with the mafic volcanics to the north. Intercalated with the sediments is an iron formation truncated and offset by at least two major northeast faults on the property.

The source(s) of the two auriferous iron formation boulders and 2600 ppb Au heavy mineral sample discovered in 1984 has not been accounted for. Banded chert-magnetite-graphite iron formation was intersected in the 1987 diamond drill program, but no assays are available. Up to 25% pyrrhotite and minor pyrrhotite is present in the drill core.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

1984 Cominco Ltd. (Szabo 1986):
- 2 iron formation boulders (anomalous in gold)
- heavy mineral sample - 2600 ppb Au

1) PROPERTY NAME: North Wottam Lake occurrence (27)

DATE(S) VISITED: Aug. 9/86
July 19/88

MDI #: KP1454

2) ALTERNATE NAME(S): International Mining Corporation (Canada) Limited occurrence

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold/Iron Formation

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1945: International Mining Corporation (Canada) Limited staked an 18-claim block along and north of Wottam Lake (Pa 6018 to Pa 6033 inclusive and Pa 6984 and Pa 6985).

A grid with 400-foot north-south line spacing was cut over the entire 18-claim property. From August to September, a geomagnetic survey and geological mapping were completed. Following this, a six-hole x-ray diamond drill program totalling 696 feet was done on claims Pa 6028 (holes DDH 1 to DDH 3) and Pa 6026 (Holes DDH 5 to DDH 7). DDH 2, located near the southern boundary of claim Pa 6028, returned the highest gold assay (i.e. 0.21 ounce Au per ton) and is marked as the present day (1992) location for the North Wottam Lake occurrence.

It should be noted that on the geology map submitted by International Mining Corporation (Canada) Limited for assessment work, old trenches were marked, indicating that some exploration activity had taken place over the area prior to 1945.

1974-75: The Miminiska Lake area was mapped by Henry Wallace of the Ontario Geological Survey (Report 214) which covered the Wottam Lake area.

1979: New Jersey Zinc Exploration Company Limited, via Questor Surveys Limited, completed an extensive airborne magnetometer survey (termed

the Seagreen Project) from Howells Lake to Opikeigen Lake, a portion of which covered the Wottam Lake area.

A high intensity magnetic signature was delineated in the area of the North Wottam Lake occurrence, likely tracing the iron formation unit(s) recognized at this location.

1981: In June, Gallion Resources Ltd. staked a 205-claim block centered around Wottam Lake and covering the North Wottam Lake gold occurrence (claims were recorded under Donald James McKay of Don Mills, Ontario).

1982: On March 10, all interests in the claims were transferred to Donald A. Humby.

During the summer season, Gallion Resources Ltd. conducted an HL-EM survey and a magnetometer survey over the area of the North Wottam Lake occurrence (this was done on a cut grid over their entire 205-claim block). A strong magnetic anomaly was delineated in the vicinity of the occurrence.

The actual North Wottam Lake gold occurrence appears to be located on Gallion Resources Ltd. claim TB 613231.

1984: On September 15, all claims held by Gallion Resources Ltd. under Donald A. Humby were cancelled, including claim TB 613231 covering the North Wottam Lake occurrence.

1986: Beginning in February, Gold Fields Canadian Mining, Limited staked several hundred claims in the Miminiska Lake area, including a 160-claim block along and northwest of Wottam Lake. This covered the North Wottam Lake occurrence located on claim TB 874820, 0.5 km north of Wottam Lake.

From June 1 to June 17, Gold Fields Canadian Mining, Limited property holdings were flown by Aerodat Limited. A combined helicopter-borne magnetic, VLF-EM and electromagnetic survey was completed over the area.

Subsequent ground follow-up was done from June to September and consisted of line cutting (58.6 km), geological mapping, biogeochemical sampling, and Max-Min 11 and magnetometer surveys (Foster and Lougheed 1987).

1987: In April, Gold Fields Canadian Mining, Limited completed a 797 foot diamond drill hole on claim TB 874821 which is located one claim south of the North Wottam Lake gold occurrence.

1989: In March, all claims held by Gold Fields Canadian Mining, Limited were cancelled, including claim TB 874826 covering the North Wottam Lake occurrence.

CURRENT

1995: The North Wottam Lake gold occurrence is presently open for staking (March 9, 1995).

5) LOCATION AND ACCESS:

N.T.S.	52P9/SW
Latitude	51·36'30"
Longitude	88·26'30"
U.T.M.	5717100N
	400150E

GENERAL LOCATION: The North Wottam Lake occurrence is located 120 km east-northeast of Pickle Lake and approximately 140 km due north of Lake Nipigon.

ACCESS: The property can be accessed by float-equipped aircraft from Pickle Lake east to Wottam Lake, then by foot, due north for approximately 0.5 km, to the occurrence.

REFERENCES:

Baker	(1946)*
Bazinet	(1982)*
de Carle	(1979)*
Foster and Lougheed	(1987)*
Podolsky	(1986b)*
Wallace	(1981)

MAP REFERENCES:

Map 2417 Wottam Lake (Wallace 1981)
Map 2237 Fort Hope-Lansdowne House (Thurston, Carter and Riley 1970)

6) GENERAL GEOLOGY AND STRUCTURE:

The Wottam Lake area lies entirely within the eastern portion of the Uchi Subprovince, a 35 km wide, predominantly metavolcanic-metasedimentary east-trending belt stretching from Red Lake in the west to the Hudson Bay lowlands.

Wallace (1981) states:

The central and eastern parts of the map-area (Miminiska-Wottam Lake area) are underlain by a thick metasedimentary sequence consisting predominantly of monotonously intercalated wacke and mudstone units and their metamorphic equivalents. In several places considerable thicknesses of oxide, carbonate and/or silicate facies iron formation occur intercalated with the clastic metasediments. This mixed metasedimentary sequence conformably overlies a thick metavolcanic succession, composed predominantly of mafic pillowed flows, that occupies the southern part of the map-area. To the north, there is a second predominantly mafic metavolcanic succession which appears to be younger than the metasediments. A wedge of felsic to intermediate pyroclastic rocks and intercalated volcaniclastic metasediments may directly overlie the lower mafic metavolcanics. This wedge is enclosed in the main wacke-mudstone sequence toward the east.

Four major intrusions of quartz monzonite to granodiorite composition occupy the Miminiska-Wottam Lakes area. To the north of Miminiska Lake, along an east-striking fold axis, is the Cluff Lake Stock, the South Bay Stock and the Troutfly Lake Batholith. The Kawitos Lake Batholith lies just south and east of the Wottam Lake occurrence.

Structural elements are generally northeast-trending lineaments, which are prominent within the Kawitos Lake Batholith. Major faults in the area extend northeastward from Miminiska Peninsula sub-parallel to Ferguson Creek. The Miminiska Lake area appears to lie on the southern flank of an open, regional, east-plunging syncline. The three northern intrusions mentioned above are aligned along the east-west axis of this fold. Other major folds were outlined in the metasedimentary rocks east of Miminiska Lake in the Wottam-Seagreen Lakes area (Wallace 1981).

7) MINERALIZATION:

The most comprehensive description of the local geology and mineralization covering the North Wottam Lake occurrence and the immediate area is given by Foster and Lougheed (1987) of Gold Fields Canadian Mining, Limited:

The C4 grid is underlain by three distinct lithological domains, a northern, central, and southern group respectively. The northern and southern groups are poorly exposed while the central group is moderately to well exposed.

The northern domain is comprised of interbedded argillaceous wackes and banded, oxide facies iron formation. The argillaceous rocks are well bedded to laminated medium gray to greenish. The iron formations are quartz (chert) magnetite chlorite $\pm$ garnet bearing rocks. Banding is given by differing concentrations of these minerals.

The central domain is a generally 500 foot wide northeast - southwest trending zone of highly altered argillaceous wackes. The alteration consists of varying degrees of chloritization, tourmalinization, and quartz $\pm$ feldspar veining. The intensity of alteration decreases to the southwest. Arsenopyrite is abundant, occasionally occurring in narrow, semi-massive to massive bands.

The southern group is comprised of interbedded greywacke and argillaceous wackes. The greywackes are medium gray, medium grained, semi-massive rocks.

The chloritic argillaceous wackes and chlorite schists of the central group are strongly folded. Relatively minor folding occurs in the northern domain. Graded bedding at several locations in the northern domain indicate tops are to the north. A dextral offset occurs in the central rock domain along a east-west trending fault. Shearing is common in many outcrops.

As described by Wallace (1981), a number of small sulphide showings associated with iron formation were originally worked for gold by International Mining Corporation (Canada) Limited in 1945. A summary report submitted by Baker (1946) for the company, discusses the following:

Barren quartz stringers and veins, some pegmatitic in character, are numerous in the infrequent rock outcrops of all sedimentary formations (in the area of the North Wottam Lake occurrence).

Heavy mineralization of arsenopyrite in the sheared sediments occurs near the south line of claim Pa 6022 (located approximately 500 m northwest of the

actual occurrence). This mineralization can be traced along the strike onto the Conwest property to the west.

Similar mineralization with pyrite and pyrrhotite is also observed in the iron formation sedimentary contact on claim Pa 6030 (located approximately 680 m northeast of the actual occurrence).

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

The precise location of the North Wottam Lake occurrence is DDH 2, completed by International Mining Corporation Limited (1945). This drill hole intersected a narrow quartz stringer that yielded 0.21 oz/ton gold over 5 inches (13 cm). This particular drill hole is very close to Gold Fields Canadian Mining, Limited's 1987 hole M87-8 drilled in the north central portion of claim TB 874821.

No further, significant, assay results were reported for the property since the original work completed by International Mining Corporation (Canada) Limited in 1945. This includes Wallace's Ontario Geological Survey work from 1975.

1) PROPERTY NAME: Norton Lake Cu-Ni deposit (28)

DATE(S) VISITED: July 21/88

MDI #: KP0399

KP0433

2) ALTERNATE NAME(S): Wasabi Resources Cu-Ni deposit
Anomaly U Nickel-Copper deposit

3) COMMODITY: MAIN: Cu, Ni SECONDARY: Ag, Fe, Au

DEPOSIT TYPE: Mafic-Ultramafic Intrusion Hosted Cu-Ni-PGE/ Iron Formation

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1970: UMEX (Union Miniere Explorations) and Imperial Oil as joint venture partners contracted Questor Surveys to fly a combined electromagnetic (INPUT) and magnetic survey over the area using the Mark V INPUT system.

1971-72: Three short "Winkie" diamond drill holes were drilled in two localities to test geophysical anomalies.

1980-81: Wasabi Resources Ltd. conducted ground geophysics, geochemistry, geological mapping and diamond drilling on a trend of conductors extending northeasterly. A Questor INPUT Mark VI airborne magnetometer-EM survey was flown east of Norton Lake. A total of 79 INPUT anomalies were tested with ground geophysics. Eighty conductors were located and 31 were drilled. Of 58 drill holes, 38 were reconnaissance holes totalling 4267.3 m and 20 were drilled on Anomaly U (main deposit) for a total of 2708.4 m. Basal till sampling was completed over 3 anomalies and all outcrops were mapped.

Wasabi Resources Ltd. held 1,788 claims.

1986: Duration Mines Ltd.-Locator Explorations Ltd. (Aerodat Ltd.) conducted a helicopter-borne, combined electromagnetic, magnetic and VLF-EM survey. A geological and geophysical survey of the iron formation fold-nose area was undertaken. Drill core from the 1981 Wasabi

Resources Ltd. program was re-logged, re-sampled and assayed. A total of 60 km of line cutting was completed, with 3 baselines parallel to the fold axis (74·) extending for over 9 km.

1987: A total of 16 holes (2481 m) were drilled by Locator Explorations Ltd. on the Duration Mines Ltd. option of the Norton Lake property. A total of 582 core samples was collected and analyzed.

A total of 6 holes (1082 m) were drilled on the Joutel Option. The property consisted of 158 unpatented contiguous claims in two groups:

1) Locator Explorations Ltd. held an option to acquire up to a 40% interest in 110 claims owned 100% by Duration Mines Ltd. (western claims):

   TB 1020761 to TB 1020807 (inclusive)
   TB 1020836 to TB 1020887 (inclusive)
   TB 1011852 to TB 1011862 (inclusive)

2) Locator Explorations Ltd. had an option to acquire up to a 40% interest in the interest which Duration Mines Ltd. could earn on the following 48 claims from Joutel Resources Ltd. (eastern claims):

   TB 841185 to TB 841194 (inclusive)
   TB 841197 to TB 841214 (inclusive)
   TB 841217 to TB 841236 (inclusive)

1989: C. Lance staked mining claims TB 1103336 to TB 1103339 (inclusive) and transferred them to Joutel Resources Ltd.

1990: Joutel Resources Ltd. completed ground magnetometer and VLF-EM surveys.

CURRENT

1995: All mining claims are cancelled with the exception of 4 claims held by Joutel Resources Ltd. on the western portion of the original claim group (March 9, 1995).

5) LOCATION AND ACCESS: N.T.S. 42M14/NW
Latitude: 51·54'54"
Longitude: 87·25'26"

U.T.M. Zone 16
Northing 5751450
Easting 470836

GENERAL LOCATION: The Norton Lake property is located 59 km (37 miles) northeast of Fort Hope First Nation, 50 km (31 miles) southeast of Lansdowne House and approximately 200 km (120 miles) north of Nakina.

ACCESS: The property can be accessed by float aircraft or helicopter from Nakina, Armstrong or Pickle Lake.

REFERENCES:

Canadian Mines Handbook	(1983-84)
Ellingham	(1988)*
Huston	(1970)*
McGuinty and Obradovich	(1990)*
McLeod	(1981a)*
McLeod	(1981b)*
Podolsky	(1986a)*
Thurston and Carter	(1970)

Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map P.563 Operation Fort Hope-Attawapiskat River Sheet (Thurston and Carter 1969)
Map 2237 Fort Hope-Lansdowne House Sheet (Thurston, Carter and Riley 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Norton Lake area is in the northeast portion of the East Uchi-Fort Hope metavolcanic belt. The regional geology consists of mafic to intermediate metavolcanic rocks--specifically massive to foliated or pillowed basalts-andesites--and iron formation. Biotite-quartz-feldspar gneiss and garnetiferous arkose and wacke have been mapped to the south of the metavolcanic rocks. The metavolcanic rocks appear to be folded along an east-northeast trending axis (Thurston and Carter 1969).

Ellingham (1988) described the property geology:

> The claim group is underlain by a sequence of east-west trending, steeply north dipping mafic volcanic flows, pillowed flows, flow top breccias, interflow sediments, and magnetite-facies iron formation.

> This sequence forms a tightly folded, overturned syncline, plunging west. The actual fold closure of the iron formation units is in the eastern part of the property (on the ground optioned from Joutel Resources Ltd.) as clearly seen in the airborne magnetics. Flanking the mafic volcanics through the south-central part of the claims, on the southern limb of the fold, are lenses of felsic pyroclastic. The western part of the claim group is underlain by metagreywacke, and minor conglomerate flanking the mafic volcanics on the outer edges of the fold limbs. Rhyolitic feldspar porphyry intrusives, and pyroxenitic (ultramafic) intrusives are associated with the synclinal axis and the southern limb proximal to the fold closure.
>
> Numerous pegmatitic granites are associated with the metasediments and adjacent volcanics in the west part of the property, along both fold limbs. There are several north-west trending Keweenawan diabase dykes, geophysically interpreted and outcropping throughout the property.
>
> Several geophysically-interpreted, low angle (with respect to the fold limb attitude) structural features are associated with the fold nose and southern fold limb. The airborne magnetics shows displacement of the iron formation along such a cross structure in the proximity of the fold nose.

McLeod (1981a) described the geology in the vicinity of the deposit:

> The mineralization is located in mafic tuffs and iron formation at the contact with an ultramafic flow and is probably controlled by a roll or fold in that contact. The association with iron formation suggests that sulphur released from a sulphide facies of that rock by heat from the ultramafic could have acted as a precipitating agent for the nickel and copper in the silicates of the ultramafic. Remobilization during burial and folding could have localized the mineralization in its present position.

7) MINERALIZATION:

McLeod (1981a) described the mineralization of the Anomaly U on Norton Lake Cu-Ni deposit:

> The mineralization is mainly massive pyrrhotite in irregular stringers, veins and patches forming 10% to 75% of the volume of the rock and averaging 30% to 35%. Chalcopyrite is erratically distributed in grains, patches and seams. Some pyrite is seen locally. Pentlandite and violarite are reported from mineral identification tests.
>
> The matrix of the sulphides is usually a medium-grained dark green often bladed amphibole (tremolite ?) or, less commonly, fine grained bluish-white to white sugary quartz often with some black hornblende. In some intersections the matrix is, in part, iron formation with magnetite and, in others, in part, relatively fresh gabbro. Rarely the ultramafic flow itself acts as host.

McLeod (1981b) described the mineralization on the claims:

> With three exceptions mineralization consists of pyrrhotite and pyrite with small amounts of chalcopyrite, sphalerite and arsenopyrite locally. This assemblage occurs in the form of disseminated grains, conformable seams and stringers and massive veins or beds commonly in the tuffaceous sediments but sometimes in the volcanics.

Ellingham (1988) summarized Duration-Locator's findings regarding the Joutel Option (eastern portion of the property):

> The iron formation fold nose, considered to be a promising exploration target proved to have very minor deformation or alteration. The geophysically interpreted cross-structure through the fold nose was found to correlate to a 20 cm carbonate-quartz cemented fault breccia with trace finely disseminated sulfides. Iron formation in the nose area is up to 26 metres in thickness, consisting of 30% to 40% magnetite and 1% to 2% pyrite laminae. Only weakly anomalous gold values were returned (.002-.003 oz. Au/ton).
>
> The laterally continuous airborne electromagnetic conductor 'D' corresponds to a 14 metre-thick contact zone between mafic and felsic volcanics. The zone is chloritized and sericitized with as much as 80% pyrrhotite, trace to 2% pyrite and trace chalcopyrite.

Further downhole, a similar zone approximately 3 metres thick contains up to 80% pyrrhotite. A closely associated brecciated fault zone (up to 10 metres in width) contains brecciated chlorite-carbonate material with quartz and sericite. The fault zone appears to parallel the conductor axis. All associated samples assayed trace to nil gold.

Drill testing of several airborne electromagnetic conductors across the property shows that most of these conductive horizons are caused by concentrations of pyrrhotite. In general, deformation and alteration are minor although some significant fault structures were encountered.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

1.0 million tons averaging 0.72% Ni and 0.56% Cu (Canadian Mines Handbook, 1994-95, p.215)

944,500 tonnes averaging 0.72% Ni and 0.56% Cu 225 m x 7.1 m (McLeod 1981a)

9) CHEMICAL ANALYSES:

1) PROPERTY NAME: OL-12 (29)
OL-29 (30) zones

DATE(S) VISITED: July 25/89

MDI #: n.a.

2) ALTERNATE NAME(S): Opikeigen Lake occurrence
OL-12/OL-29 occurrence
H-12/H-29 zones

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1927-28: The Fort Hope gold mine and a large block of claims located north of the mine were staked. The claims to the north covered the OL-12 and OL-29 zones, which would be discovered some 60 years later.

1986: Norman McBride, Glen McBride and Donald McLaren staked 340 claims in April.

1986-87: Pure Gold Resources Inc. (Golden Lake Resources Ltd.) optioned 340 claims forming the Opikeigen Lake Project. Noramco Explorations Inc. was placed in charge of exploration.

Aerodat Limited conducted 256 km of helicoptor-borne geophysical surveys consisting of: electromagnetic, magnetic and VLF surveys between August 1 and 3.

The following 145 claims were covered by the survey:

TB 791401 to 791440
TB 854901 to 854952
TB 855101 to 855153

1987-88: Diamond drilling was undertaken by Noramco Explorations Inc. for joint venture partners Golden Lake Resources Ltd. and Pure Gold Resources Inc.

The OL-12 zone is located on claim TB 855107.
The OL-29 zone is located on claim TB 855111.

Both claims occur immediately north of the Fort Hope Mine property. A Certificate of Record was registered on December 23, 1988 on the key claims.

CURRENT

1995: Pure Gold Resources Inc. (March 9, 1995)

5) LOCATION AND ACCESS:

OL-12:	N.T.S.:	52 P9/NE		
	Latitude:	51·37'35"		
	Longitude:	88·02'45"		
	U.T.M.	Zone 16:	Northing	5719050
			Easting	427600
OL-29:	N.T.S.:	52 P9/NE		
	Latitude:	51·37'40"		
	Longitude:	88·03'20"		
	U.T.M.:	Zone 16:	Northing	5719150
			Easting	427000

GENERAL LOCATION: The OL-12 and OL-29 zones are located approximately 9 km northwest of Fort Hope (Eabametoong First Nation) and approximately 145 km east of Pickle Lake.

ACCESS: Zones OL-12 and OL-29 are accessible by float plane to Rond Lake and trail/drill road (~1.0 km) or helicopter to drill pads on the zones. Winter roads from Pickle Lake to Fort Hope (Eabametoong First Nation) are available during some winters.

REFERENCES:

Burwash	(1930)
Mason and White	(1989)
McConnell	(1989)*
Prest	(1944)
Thurston and Carter	(1970)
Wallace	(1978)

Resident Geologists Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 38b-1	Fort Hope Area (Burwash 1930)
Map 51b	Fort Hope Area (Prest 1944)
Map 2237	Fort Hope Lansdowne House Sheet (Thurston et al. 1969)
Map 2379	Opikeigen Lake Area (Wallace 1978)

6) GENERAL GEOLOGY AND STRUCTURE:

The Opikeigen Lake-Fort Hope area has been described by Wallace (1978):

> Alternating units of felsic metavolcanics (including rhyolitic to dacitic, fine to coarse pyroclastic rocks and massive and autobrecciated flows) and metasediments (including wackes, argillite and derived schists, quartzite and conglomerate) with minor bands of mafic metavolcanics are overlain by a thick accumulation of predominately mafic metavolcanics (including basaltic to andesitic, massive and pillow lavas, amphibolite schist agglomerate, autoclastic breccia and Algoma-type iron formation).

Another interpretation is that part of the southern half of the Opikeigen Lake-Fort Hope belt is comprised of a tectonically interleaved assemblage of volcanic and sedimentary strata with stratigraphic tops indicators facing dominantly northward. Interleaved sequences have been previously noted as forming the main Beardmore-Geraldton belt where a similar tectonic setting is present (Devaney and Williams 1989). Interleaved sequences like the Opikeigen Lake-Fort Hope belt and Beardmore-Geraldton belt occur close to the subprovince boundaries, as lensoid terranes.

The Beardmore-Geraldton interleaved sequence has been interpreted as forming part of a fore-arc accretionary prism along the southern margin of a volcanic arc, i.e. the south flank of the Wabigoon Subprovince (Williams 1989). Such a prism records characteristic, upright shallowly-plunging folds formed by north- to northwest-directed regional shortening during the Kenoran Orogeny. The presence of fault zones in contact with lithologies in the Opikeigen Lake-Fort Hope belt and northward-facing stratigraphic top directions suggests similarities with the environment of the main Beardmore-Geraldton belt. Extensive overburden in the eastern Uchi Subprovince prevents continuous observations through large portions of the Opikeigen Lake-Fort Hope belt.

7) DETAILED GEOLOGY AND MINERALOGY:

M. Taylor (Senior Project Geologist, Noramco Explorations Inc.) described the Opikeigen Lake Project (Mason and White 1990):

The property is underlain by a folded sequence of metavolcanics and metasediments trending east along an anticlinal axis. A northern unit of mafic to intermediate tuffs with interbanded iron formations is flanked to the south by a central belt of metasediments. The metasediments are overlain to the south by felsic to intermediate tuffs and mafic pillow lavas. This southern volcanic unit hosts three gold deposits on the Opikeigen Lake property as well as the Fort Hope Gold Mine on an adjoining property. The most significant gold discoveries are zones OL-12 and OL-29.

In zone OL-12, gold is associated with quartz veining and shearing in a sulfide horizon near the contact between mafic tuffs and mafic pillow lavas. Seven holes have tested the zone over a strike length of 25 m and to a depth of 200 m. The best gold intersections include 12.83 g/T gold over 1.5 m in hole 12, 7.57 g/T gold over 5.2 m in hole 42; 3.42 g/T gold over 1.8 m in hole 44 and 6.12 g/T over 7.0 m in hole 46.

Zone OL-29 was tested by nine holes over a strike length of 425 m. Gold occurs with disseminated pyrite in a sericite-carbonate alteration zone near the sheared contact between intermediate tuffs and felsic crystal tuffs.

Quartz-eyes occur as phenocrysts in the crystal tuff, which grades into a lapilli-tuff. Lapilli are up to 8 cm long and exhibit a 245· foliation.

8) CHEMICAL ANALYSES:

The average drill-intersected gold values are summarized below:

GOLD INTERSECTIONS	**ZONE OL-29**
Hole No.	**Au Averaged Interval**
OL-29	1.91 g/T Au over 6.0m
OL-30	1.97 g/T Au over 2.0m
OL-31	1.17 g/T Au over 5.9m
OL-32	0.36 g/T Au over 1.5m
OL-35	1.83 g/T Au over 1.5m
	1.09 g/T Au over 4.8m
OL-36	1.74 g/T Au over 9.1m
OL-37	2.24 g/T Au over 15.1m
OL-38	1.54 g/T Au over 4.8m
OL-43	1.25 g/T Au over 2.1m

(Mason and White 1990)

1) PROPERTY NAME: Pioneer Lake occurrence (31)

DATE(S) VISITED:

MDI #: n.a.

2) ALTERNATE NAME(S): Pioneer Gold Mines of B.C. Limited occurrence
Dempster occurrence
Pioneer Creek occurrence
Lornjack Lake occurrence

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1940: A total of 36 mining claims were staked in August by Lorne and Jack Dempster, for Pioneer Gold Mines of B.C. Limited, following the discovery of rusty mineralized zones on the south side of Pioneer Lake. Termed the No. 1 Discovery, the occurrence produced gold on panning. The No. 2 Discovery was found independently by the Dempsters and a survey party of the Ontario Department of Mines approximately one claim north of No. 1 Discovery (Prest 1944). Stripping, trenching, sampling, and prospecting were undertaken. Three new gold discoveries were made by the fall (The Northern Miner, October 24, 1990, p.146).

1941: Further stripping, trenching and sampling, were conducted by the Dempster brothers. Very high gold assays were reportedly obtained from sampling narrow quartz stringers (Prest 1944).

1942-47: Pioneer Gold Mines of B.C. Limited held 36 claims.

CURRENT

1995: The Pioneer Lake occurrence is located on Reserve #64. Eabametoong First Nation (Reserve #64) Lands, Eabamet Lake (Fort Hope), Ontario P0T 1L0. (June 22, 1995)

5) LOCATION AND ACCESS: N.T.S: 42 M 12/SW
Latitude: 51·35'30"
Longitude: 87·51'20"
UTM: Zone 16: Northing 5715700
Easting 440700

GENERAL LOCATION: The Pioneer Lake occurrence is located north of Eabamet Lake on Reserve #64 and northeast of the community of Fort Hope (Eabametoong First Nation).

ACCESS: The Pioneer Lake occurrence is accessible by aircraft. Prior permission to access the occurrence must be obtained from the Eabametoong First Nation.

REFERENCES:
Burwash (1930)
Prest (1944)
Thurston and Carter (1970)

Resident Geologist Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 51b Fort Hope area (Prest 1944)
Map 2237 Lansdowne House Sheet (Thurston et al. 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

Reserve No. 64 is underlain by metasedimentary rocks termed the Miminiska Series (Prest 1944); this author states that these include "impure quartzite, mica schist, garnet schists and gneisses and a second metasedimentary unit composed of conglomerate, quartzite and siliceous argillite". Reserve No. 64 is also underlain by mafic metavolcanic rocks, including massive and pillowed basalts and tuffs, and by felsic metavolcanic rocks, including felsic tuffs and breccias. Felsic intrusives include: microline granite, pegmatite, quartz diorite, granodiorite, quartz monzonite and porphyritic albite granite dikes (Prest 1944). East-trending diabase dikes and gabbros intrude the metavolcanic rocks.

Northeast-trending faults were documented by Prest (1944) as occurring in the Lornjack Bay, Lornjack Lake and Pioneer Lake areas.

7) MINERALOGY:

The No. 1 Discovery, located on the south side of Pioneer Lake, was poorly documented. Prest (1944) noted "very favourable assays were obtained from samples" assumed to be quartz vein material. The No. 2 Discovery, situated

one claim north of Pioneer Lake, is a vein having, according to Prest (1944): "a maximum width of 12 feet and a length of over 300 feet, the full length of the outcrop. Additional mineralized zones and quartz stringers were found by the Dempsters from which gold could readily be panned".

Prest (1944) described the sulphide-gold mineralogy:

> The values are usually associated with arsenopyrite. The typical vein material is a mixture of quartz, carbonate, arsenopyrite, and altered rock. Pyrite is frequently present, and traces of pyrrhotite were seen in places. Extensive carbonization preceded the vein mineralization, altering both Keewatin and Timiskaming lavas and tuffs over large areas. The carbonate is iron-bearing and weathers a rusty red. This masks the mineralized zones to some extent, but the gossan is always heavier in these places. Gold could not be panned from veins lacking arsenopyrite, even where carbonization was extensive and pyrite present. This is particularly true in the area north of Lornjack lake.
>
> A small porphyry dike with blue quartz eyes and a fine-grained granitic dikelet carrying crystals of ilmenite are associated with the veins occurring one claim north of the central part of Pioneer lake. The granitic rock causes an appreciable magnetic disturbance.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

1) PROPERTY NAME: Reserve Creek occurrences (32)

DATE(S) VISITED: Aug. 6/86
July 20/88
July 26/89

MDI #: KP0003
KP0004

2) ALTERNATE NAME(S): Veekay Lake occurrence (east)
Dome occurrence (west)
Pricemore occurrence
Pridemore occurrence
Goldpost occurrence
Willamson zone (A zone)
Muir or Tungsten zone (D zone)
Bachmann zone (E zone)
Zones A, B, C and D

3) COMMODITY: MAIN: Au SECONDARY: Ag, W, Cu, Mo

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1940: According to Prest (1944), J.D. Williamson, on behalf of Dome Mines Limited, "discovered a gold-bearing rusty zone on the north side of Reserve Creek close to the east boundary of the Indian Reserve". One claim was staked and the occurrence became known as the Zone A.

1941: Dome prospectors performed prospecting and chip sampling on Zones A, B and C. A shear zone 12 m (40 feet) wide by 90 m (300 feet) long hosting quartz stringers, pyrite, pyrrhotite, chalcopyrite, scheelite and gold was discovered. Additional claims were staked. H. Muir discovered Zone D (Muir or Tungsten zone).

1942: Dome Mines Limited diamond-drilled one hole on Zone A and nine holes on Zone D located in the central part of claim Pa 5783. Zone E (Bachmann zone) was discovered near the east boundary of claim Pa 5780.

1943: Dome Mines Limited diamond-drilled 20 holes totalling 575 m (1917 feet) into Zone E.

1945: Dome Mines Limited diamond-drilled 24 holes on Zones A, B and C.

1961: Lun-Echo Gold Mines Limited diamond-drilled 12 holes on the A and C zones. Mining Corporation held 36 claims east of Lun-Echo (Pa 28386 to Pa 28421 inclusive) and conducted geological and geophysical surveys and diamond drilling.

1970-72: Selco Exploration Co. Ltd. completed ground magnetometer and VLF-EM surveys and diamond-drilled at least 4 holes including Zone E (Bachmann zone) to test an electromagnetic anomaly noted in ground and airborne electromagnetic surveys.

1981: J. Williamson staked, Canterrex Limited optioned, and Pridemore Resources Inc. acquired 110 mining claims covering zones A to E. Prospecting, linecutting and magnetometer and electromagnetic surveys were carried out.

Pridemore Resources Inc. changed its name to Pricemore Resources Inc. in September.

Mining claims held were as follows:

TB 582438 to TB 582446 (inclusive)
TB 600407 to TB 600410 (inclusive)
TB 577199
TB 577206, TB 577207
TB 577213 to TB 577224 (inclusive)
TB 577226
TB 596363 to TB 596412 (inclusive)
TB 596313 to TB 596343 (inclusive)

1982: Pricemore Resources Inc. completed a 26 hole diamond drill program totalling 1954 m (6514 feet), 19 of which were completed on the A zone (Williamson zone). The D zone (Muir zone) was tested by 5 holes and 2 holes tested magnetic anomalies north of the D zone (Muir zone).

1983: Pricemore Resources Inc. granted Geddes Resources Limited an option to earn a 50% interest in the Reserve Creek claims. MPH Consulting Limited, on behalf of Geddes Resources Limited, conducted a humus geochemical survey for gold and tungsten. An IP survey was carried out on the southwest portion of the property.

1984: Pricemore Resources Inc.'s name was changed to First China Investment Corp. Diamond drilling was undertaken.

1985: Geddes Resources Limited assigned its interest to Goldpost Resources Inc.

1986: First China Investment Corp. transferred all interest to Goldpost Resources Inc. Seventy-six claims were staked to the east of the main zones.

All claims were held by Goldpost Resources Inc. An airborne geophysical survey was flown by Dighem Surveys and Processing Inc. (Dighem III) totalling 520 km (325 miles).

1987: Ground magnetic, VLF-EM and electromagnetic surveys were completed.

1988: A total of 15 diamond drill holes totalling 1336 m (4454 feet) was drilled. Eight holes were drilled in the A zone, 3 in the B zone and 4 to test geophysical anomalies.

1989: Seventy-one claims remained of the 110 claim block. The following are the claim numbers:

TB 582438 TO TB 582443 (inclusive)
TB 582444
TB 582445, TB 582446
TB 596316, TB 596317
TB 596319 to TB 596337 (inclusive)
TB 600407 to TB 600410 (inclusive)
TB 880938 to TB 880974 (inclusive)

1992: Goldpost Resources Inc. held the following claims:

west claims - TB 582438 to TB 582446 (inclusive)
east claims - TB 880938 to TB 880974 (inclusive)

1993: In March, Noranda Exploration Company, Limited staked 11 contiguous claim blocks (TB 1196461 to TB 1196467 and TB 1196532 to TB 1196535) covering an east-trending area adjoining the Eabametoong First Nation. This followed the release of a large group of key claims (TB 582438 to TB 582446) by Goldpost Resources Inc. along the western portion of their property in the same year, where most of the occurrences are located.

In August and September, Noranda (under Hemlo Gold Mines Inc.) cut a 24.5 km control grid and conducted preliminary mapping and a magnetometer survey.

1994: In June, Hemlo Gold Mines Inc. conducted a detailed geological mapping and sampling program. Much of this work, including a three-hole (522 m) drill program was concentrated along the boundary on claim TB 1196463. Two holes (RC-94-1 and RC-94-2) were drilled on what is known as the A zone and the third hole (RC-94-3) was drilled approximately 2 km to the east.

CURRENT

1995: The main portion of the original Reserve Creek property is held by Hemlo Gold Mines Inc. (June 22, 1995).

5) LOCATION AND ACCESS:

N.T.S.:	42M12/SE		
Latitude:	51·34'30"		
Longitude:	87·44'20"		
U.T.M.:	Zone 16:	Northing	5714050
		Easting	448900

GENERAL LOCATION: The Reserve Creek occurrences are located immediately east of the Fort Hope First Nation, 166 km (104 miles) east of Pickle Lake, 170 km (106 miles) northeast of Armstrong and 174 km (109 miles) northwest of Nakina.

ACCESS: Helicopter from Pickle Lake or Thunder Bay is the recommended means of access.

REFERENCES:

Auston	(1971)*
Bergmann	(1961)*
Burwash	(1930)
Horner	(1989)*
Irbe	(1961)*
Jones and Siriunas	(1983)*
Kidd	(1981c)*
Kidd	(1982c)*
Kilty	(1986)*
MacLeod	(1981)*
Prest	(1944)
Reed	(1971)*
Thurston and Carter	(1970)

Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 51b Fort Hope Area (Prest 1944)
Map 2237 Fort Hope-Lansdowne House Sheet (Thurston et al. 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Reserve Creek occurrences are hosted within an east-trending metavolcanic-metasedimentary assemblage, the Fort Hope portion of the East Uchi belt. Extensive granitic terranes bound the metavolcanic-metasedimentary sequence on the north and south. A 0.8 km wide, elongated granite intrusive cores the volcanic belt, with the occurrence located north of the intrusion. (Horner 1989)

Horner 1989 noted: "a narrow elongated sill-like diorite intrusive extends parallel and a short distance north of the central granite". Diabase dikes cross cut the Archean rocks.

Prest (1944) observed the following lithologies on surface: "andesite pillow lava, andesite breccia or agglomerate, tuff, and a coarse-grained, fairly basic carbonated lava. In drilling, two diabase dikes were intersected cutting the lavas. The flows dip 75·N and strike approximately N70·E."

Outcrop frequency is very low on the property.

7) MINERALIZATION:

The Reserve Creek occurrences (Zones A to E) have been described by MacLeod (1981) for Pridemore Resources Inc.:

> The A, B and C Zones are gold occurrences originally located by J.D. Williamson in 1940...
>
> Gold is found in two settings; narrow high grade veins with free gold and associated with sulfides in sheared altered zones. The shears occur in pillowed lavas and felsic tuffs which strike N70E and dip 70N. The shear zones contain quartz stringers and mineralized rock carrying pyrite, pyrrhotite, chalcopyrite, scheelite, ilmenite and small amounts of visible gold. The gold appears to be mainly associated with the pyrite. In the following description of the zones assays are in ounces per ton of gold.

The A Zone consists of a 40 foot wide shear zone exposed in a single outcrop 80 feet by 150 feet located 850 feet east of the east boundary of Indian Reserve No. 64 and 150 feet north of Reserve Creek. A sample across 30 feet of this shear assayed 0.12 Au and 20 feet west another trench sample assayed 0.35 over 12 feet. Dome drilled 9 short holes and Lun Echo 4 holes under this zone. Three or four lenses of mineral grading 0.1 to 0.2 are suggested by the intersections in these holes. Hole 10A, the first hole drilled in the gold zones, gives an idea of the values encountered; 20' to 27' - 0.13 over 7.0 feet, 33.8' to 35.0' - 0.34 over 1.2 feet and 52.5' to 59.5' - 0.38 over 7.0 feet. Considerably more drilling will be required to establish continuity and the tonnage potential of these sulfide zones.

Two of the holes drilled by Lun Echo under the A Zone cut a vein carrying visible gold 100 feet south of the A Zone. The vein in L-8 assayed 2.45 over 1.0 foot and L-12 assayed 0.99 over 2.7 feet.

Zone B is an isolated pit located 750 feet west of the A Zone. Here a pit sample assayed 0.18 over 9.0 feet. Drilling of 7 holes by Dome and three by Lun Echo in this area indicates the presence of mineralization similar to the A Zone. Of three holes drilled in one section, two (L-1 and Dome 10) show correlation of 4 lenses which grade between 0.10 and 0.20, the deeper hole, L-2, intersected mineralization from 110 to 180 feet a core length of 70 feet which averages 0.053.

Horner (1989) described the mineralization of A & B zones:

Most of the gold in the A and B Zones occurs in a distinct magnetic sulphide zone within basalt (which is commonly foliated). The magnetic character of the zone is due to the presence of scattered magnetite crystals and pyrrhotite. Pyrrhotite and pyrite occur in varying amounts (up to 30%) throughout the zone and are present either as massive aggregates or disseminated grains. Quartz and calcite veinlets are common. The zone is usually a dark grey to greenish colour. Specks of visible gold were frequently noted usually within a quartz or quartz-calcite veinlet which also contained pyrite and pyrrhotite. Most of the higher gold values are associated with silicification within the magnetic sulphide zone.

The magnetite-pyrrhotite-pyrite zone has the following outline:

	Width (feet)	Dip	Strike
A-Zone	25 to 55	80· to 88·N	69·
B-Zone	12 to 68	76· to 86·N	71·

The gold values of 0.1 oz/ton or greater tend to define "shoots" which commonly have the same dip as the enclosing alteration envelope (are conformable within the magnetite-sulphide zone). The position of the anomalous gold "shoots" within the magnetite-sulphide envelopes varies from section to section.

Along strike the magnetite-sulphide zone pinches and swells, however, down dip the width of the zone is fairly constant with some minor pinching and swelling.

MacLeod (1981) described Zone C:

Zone C is a quartz vein located 220 feet east of A Zone. A surface sample here assayed 0.79 over 7 inches. Of 5 holes drilled in this area Dome hole 22 cut a vein that assayed 2.12 over 0.5 feet and L-9 assayed 0.54 over 1.0 feet. Hole L-9 also cut two sulfide type zones, 0.105 over 4.8 feet and 0.057 over 19.0 feet.

MacLeod (1981) described Zone D and Zone E:

The D Zone consists of a steeply dipping shear in andesitic volcanics. The shear is terminated at its easterly end by a diabase dike. The surface exposure consists of one small outcrop where quartz stringers in the shear are mineralized with pyrite, pyrrhotite and scheelite. A sample from a pit assayed 1.78% WO_3 over 3.0 feet. Nine holes totaling 809 feet were drilled here in 1942. The holes were drilled at -30· and designed to cut the zone 35-40 feet below surface. Only hole 3 which intersected 1.99% WO_3 over 2.5 feet returned results comparable to the surface values.

The E Zone consists of scheelite along fractures and disseminated in a coarse grained andesitic flow close to the flow top. The flow top is well defined by a narrow band of agglomerate and a few inches of tuff. The stratabound nature of the mineralization has tonnage implications. The flows and mineralization strike N70E and dip 75·N.

A fault terminates the zone at the east end of the exposure.

Channel sampling of surface trenches averaged 0.355% WO_3 over a width of 7.12 feet for a length of 105 feet whereas a bulk sample assayed 0.936% WO_3. In 1943, 20 holes totalling 1,917 feet were drilled in this zone. Most of these were shallow holes but in one section continuity of the zone was established down dip for 200 feet by four holes. These holes returned values between 0.3 and 0.35% WO_3 or close to the channel sample results.

The authors noted that fine-grained pyrite and pyrrhotite, and magnetite (ilmenite) appear related to earlier fluids because pyrite and pyrrhotite zones are deformed, boudinaged and host strongly-deformed quartz veins with visible gold. Coarse-grained biotite alteration (as "books" in places) overgrows all deformation, and may be evidence of late movement and/or fluids and creation of later coarse-grained pyrite.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

(Kidd 1982c) - Williamson zone:

A-Zone - 271,886 tons averaging 0.0411 ounce Au per ton
strike length - 380 feet
depth - 280 feet
average true width - 31.4 feet

B-Zone - 129,045 tons averaging 0.0469 ounce Au per ton
strike length - 200 feet
depth - 250 feet
average true width - 38.9 feet

9) CHEMICAL ANALYSES:

(Kidd 1982c) - Williamson zone (A & B)

A-Zone - Hole 1-82

74.6 feet grading 0.1245 ounce Au per ton

Hole 4-82

73.0 feet grading 0.1256 ounce Au per ton

(Horner 1989) - Williamson zone (A & B)

Hole 88-1

13 feet grading 0.25 ounce Au per ton

Hole 88-2

7 feet grading 0.17 ounce Au per ton

14 feet grading 0.12 ounce Au per ton

Hole 88-3

15.4 feet grading 0.15 ounce Au per ton

Hole 88-4

10 feet grading 0.22 ounce Au per ton

According to Smith (1995), exploration drilling by Hemlo Gold Mines Inc. in June 1994 consisted of 3 holes totalling 522 m and returned the following results:

> A 3-hole (522m) drill program was also completed in June 1994 to test the A zone at depth and an IP anomaly along strike to the east-northeast. Hole RC-94-1, drilled to test the Au-bearing horizon 50m below P82-4 (4.66 g/t/20.73m) intersected 19.5m of mineralized host. A 5.3m section of this returned 2.34 g/t Au including 4.75 g/t Au/2.0m. Hole RC-94-2, testing for an east plunge to the A Zone, intersected 25.8m of host magnetite tuff with 1-2% disseminated sulphides. Au values up to 2.19 g/t were returned. Hole RC-94-3 tested a coincident IP chargeability - magnetic high anomaly situated 1.4 km east of and along strike with the A-Zone. The hole intersected 22.9m of magnetite tuff with very patchy disseminated sulphides. No significant assays were returned.

1) PROPERTY NAME: Rich Lake occurrence (33) DATE(S) VISITED:

MDI #: KP0402

2) ALTERNATE NAME(S): Irish Wording claims
Rich Lake Patricia Scheelite deposit
Rich Lake Gold-Scheelite showing
Randa-Bernier Au-W property

3) COMMODITY: MAIN: W, Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1928: Burwash (1930), while mapping for the Ontario Department of Mines, reported a gold discovery on a group of unsurveyed claims located southwest of Opikeigen Lake and north of Rich Creek. A sample collected from an irregular quartz vein assayed 0.15 ounce Au per ton over 1 m (3 feet).

The group was known as the Irish Wording claims, likely after the prospectors who staked them.

1941: Prest (1944), also while mapping for the Ontario Department of Mines, reported that work was carried out during the summer of 1941 by the Rich Lake Patricia Syndicate over a large group of unsurveyed claims formerly known as the Irish Wording Claims.

In addition to gold, scheelite had been recognized in the quartz vein system on the property and extensive exploration work at this time included surface stripping, trenching and diamond drilling. No details of this work are available in the government assessment files.

1981: Ken Bernier of Sioux Lookout staked a group of 22 claims (TB 569485 to TB 569502, TB 569751 to TB 969754) covering the Rich Lake Gold-Tungsten occurrence. The actual showing was located on claims TB 569751 and TB 569752.

Extensive sampling of existing trenches returned assays up to 0.35 ounce Au per ton and 6.36% W.

The property was named the Randa-Bernier Au-W property by Canadian Occidental Petroleum Ltd. who briefly looked at the ground during a 1981 reconnaissance program.

It should be noted that assessment work completed at this time indicates the existence of a sulphide showing in the southern portion of the claim group (TB 569494). However, there was no detailed information given on this showing.

1982: A beneficiation study was filed for assessment work on claims TB 569751 and TB 569752.

1983: All interests in claims TB 569751 and TB 569752 were transferred to Ty Randa.

1984: Kerr Addison Mines Limited staked a 69-unit claim group adjoining the Rich Lake occurrence in March of this year (TB 739921 to TB 739944, TB 739946 to 739970, TB 739986 to TB 739995 and TB 740011 to TB 740020). Initial work consisted of detailed geological mapping at 1:5000 scale and grid-controlled rock geochemistry.

On April 10, the key claims (TB 569751 and TB 569752) covering the Rich Lake Gold-Tungsten occurrence were cancelled.

As a result of the initial survey, an additional 20 claims were added to the 69 claim group (TB 816530 to TB 816539 and TB 818656 to TB 818665) for a total of 89 unsurveyed claims.

1985: In February, ground magnetometer and VLF-EM surveys were conducted over a grid covering the entire 89 claim group by Kerr Addison Mines Limited.

1986: In April, Glen McBride of Notre Dame du Nord, Quebec staked a large group of claims in the area including TB 855152 and TB 855153 which in turn covers the Rich Lake Gold-Tungsten occurrence.

In July, Kerr Addison Mines Ltd. drilled two diamond holes in the northwest corner of claim TB 739925 totalling 62.14 m. The main horizon

of interest intersected in both holes was a banded sulphide-facies iron formation (this claim is located approximately 1 km southwest of the Rich Lake occurrence).

In August, Aerodat Limited flew a combined airborne magnetic, electromagnetic and VLF-EM survey over a 145-claim group which covered the Rich Lake occurrence, for Pure Gold Resource Inc.

1987: All interests in Glen McBride's claims were transferred to Pure Gold Resources Inc.

1987-89: A diamond drill program was initiated by partner-operator Noramco Explorations Inc. in January. During the three-year period, a total of 48 drill holes were completed over the claim group.

Initially (January 1987), a 6-hole program (OL-87-1 to OL-87-6) totalling 291.03 m was drilled on claim TB 855153 covering the Rich Lake Gold-Tungsten occurrence.

In June, a second phase of drilling was initiated. One hole (OL-87-07) totalling 249 m was completed on TB 855152 and two holes (OL-87-15 and OL-87-16) totalling 412.3 m were drilled on claim TB 855153.

CURRENT

1995: Claims TB 855152 and TB 855153 covering the Rich Lake Gold-Tungsten occurrence are presently held by Pure Gold Resources Inc. (March 9, 1995).

5) LOCATION AND ACCESS:

N.T.S.:	52P/9SE	
Latitude:	51·37'50"	
Longitude:	88·08'10"	
U.T.M.:	Northing	5719500
	Easting	421200

GENERAL LOCATION: The Rich Lake occurrence is located 145 km east northeast of Pickle Lake and approximately 150 km due north of Lake Nipigon.

ACCESS: Best access into the property is by float-equipped aircraft from Pickle Lake, to the southwest end of Opikeigen Lake, then by foot south for 1 km to the actual occurrence.

An alternative would be to fly into the Fort Hope First Nation on a scheduled flight, then travel by waterway to the occurrence, 14 km the northwest.

REFERENCES:

Burwash	(1930)
Mannard and Wahl	(1984)*
Prest	(1944)
Thurston and Carter	(1970)
Wallace	(1978)

MAP REFERENCES:

Map No. 38b-1	Fort Hope area (Burwash 1930)
Map No. 51b	Fort Hope area (Prest 1944)
Map 2379	Opikeigen Lake (Wallace 1978)
Map 2237	Fort Hope-Lansdowne House (Thurston, Carter and Riley 1970)

6) GENERAL GEOLOGY AND STRUCTURE:

The regional geology and structure is described by Wallace (1978) in his report on the geology of the Opikeigen Lake area:

> The map-area lies completely within the Uchi Belt, a major east-west-trending subdivision of the Superior Province, dominated by Early Precambrian metavolcanics. This belt is bounded several miles to the north and south of the map-area by the Gods Lake and the English River Belts, which are predominantly gneissic areas derived in large part from sedimentary and intrusive granitic rocks (Ayres et al. 1971).
>
> The major structural elements in the eastern part of the Uchi Belt are tight east-west-trending isoclinal folds. Such structures are well documented in the Frond Lake-Miminiska Lake area, just west of the present map-area, where a complex series of folds plunge moderately eastward (Prest 1942; Thurston and Carter 1970). On the eastern side of the map-area the Rond Lake Fault effectively separates local structures from those in the area north of Eabamet Lake.

7) MINERALIZATION:

A detailed description of the property geology is given by Wallace (1978):

> Scheelite-bearing quartz veins which intrude mafic metavolcanics and felsic to intermediate pyroclastic rocks northeast of Rich Lake, were originally examined for their gold potential in 1928 (Burwash, 1929). Before Prest's mapping in 1942, scheelite had been recognized in these veins. The field party located four trenches (1973) along the principal vein and several smaller pits on that vein and smaller parallel veins to the north. The mineralized quartz veins strike east-west and appear to dip steeply southward. The principal vein, which can be traced for about 150 m (500 feet) on a prominent outcrop of mafic metavolcanics, pinches and swells and bifurcates irregularly along strike. Several pods up to 2 m wide by 5 m long (6 by 15 feet) are present but over most of its length it is only 15 to 20 cm (6 to 8 inches) across. The dull white translucent scheelite, which fluoresces a pale bluish-white under ultraviolet radiation, is coarse grained and irregularly distributed in the quartz vein as small pods from a few mm to a few cm across.

Mineralization within the vein material includes pyrite, pyrrhotite; some visible gold was reported by Prest (1944). He indicates that the gold was found in one of many small quartz stringers near the main scheelite-bearing vein. Prest also states that these stringers are related to crosscutting shear zones, fractures and the noses of drag folds. Arsenopyrite is also abundant but is not correlative with the gold content (Prest 1944).

9) CHEMICAL ANALYSES:

A sample collected by Burwash (1929) was reported to contain 0.15 ounce Au per ton over 1 m (3 feet) width of quartz vein.

Wallace (1978) states:

> Assays of three composite samples collected by the field party from trenches along the principal vein gave an average of 0.65 percent WO_3 and 0.13 ounce of gold per ton. Assays of three grab samples of vein material reported by Thurston and Carter (1970) gave results of 0.50, 0.80, and 1.50 percent WO_3.

1) PROPERTY NAME: Rowlandson Lake occurrence (34)

DATE(S) VISITED:

MDI #: KP0408

2) ALTERNATE NAME(S):

3) COMMODITY: MAIN: Au SECONDARY: Cu

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1937-
1938: Winisk River Mines discovered gold in two quartz veins at the southwest end of Rowlandson Lake. Prospecting and diamond drilling were undertaken.

1983-
1991 Forester Resources Inc. staked over 600 claims and conducted a multi-disciplinary, integrated exploration program mainly over copper-nickel prospects (see Lavoie Lake Cu-Ni Prospect); however this included the Rowlandson Lake gold occurrence.

Airborne magnetic and electromagnetic surveys, power stripping, manual work, geological surveys and diamond drilling were recorded.

CURRENT

1995: Forester Resources Inc. is the current claim holder of the following claims (March 10, 1995):

TB741245	TB741373	TB743460	TB749234
TB741368	TB742865	TB749230	TB749235
TB741369	TB742866	TB749236	TB741370
TB742876	TB749231	TB749237	TB741371
TB742877	TB749232	TB749250	

5) LOCATION AND ACCESS:

N.T.S.	43 D 5/NE
Latitude	52·27'54"
Longitude	87·45'58"
U.T.M.	Zone 16
	Northing 5812600
	Easting 447800

GENERAL LOCATION: The Rowlandson Lake gold occurrence is located 28 km (17 miles) north-northeast of Lansdowne House at the southwest end of Rowlandson Lake.

ACCESS: The property is accessible by float plane from commercial bases at Pickle Lake, Armstrong or Nakina.

REFERENCES: Prest (1940)

Resident Geologist's files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

49n	Rowlandson Lake area (Prest 1940)
2237	Fort Hope-Lansdowne House sheet (Thurston et al 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

Rowlandson Lake is situated in the Sachigo Subprovince, an arcuate group of mafic to felsic metavolcanic and metasedimentary assemblages and synvolcanic plutons which are intruded by younger felsic bodies and larger batholithic complexes. The southeastern portion of the Sachigo Subprovince consists of mafic metavolcanic rocks, migmatized metasediments and metavolcanic gneisses. Felsic plutons (trondhjemite to quartz monzonite) form the large batholiths. Quartz diorite, diorite, gabbro and anothositic gabbro have intruded the metavolcanics (Novak 1992).

The eastern portion of the metavolcanic belt is composed of mafic to intermediate, tuffaceous pyroclastic units and pillowed metavolcanic rocks striking between 98· and 105· and dipping north at 85·. Mafic intrusive rocks have been interpreted from geophysics at Springer Lake and Lavoie Lake within flow rocks and tuffs with numerous sulphide lenses. Layered anorthosite, mineralized with pyrite and chert, was noted in central Rowlandson lake.

7) MINERALIZATION:

Prest (1940) described the mineralization at the Rowlandson Lake gold occurrence:

> The eastern volcanic belt has been quite thoroughly prospected and diamond drilling done at two places where auriferous veins were found. Values were obtained from two veins on the property of the Winisk River Mines at the southwest end of Rowlandson Lake. The vein on the northwest side of

the diorite dike is roughly 300 feet long and 6 feet wide. The dip rolls from 65· N.W. to 75· S.E. as seen in the prospect pits. Over 5 feet of the vein width consists of quartz mineralized with arsenopyrite, the remainder being included lenses or bands of chlorite schist, representing volcanic materials altered and sheared to a soft friable mass. Chip samples taken by the writer across 8 inches of this schist gave 0.05 ounces in gold. Chip samples across the 2½ feet of mineralized quartz west of this schist band assayed 0.03 ounces in gold, and the 2½ feet of quartz on the east side of the schist gave no values.

A shear zone with a maximum width of 6 feet on the southeast side of the dike contains quartz stringers up to 1 foot in width mineralized with pyrite and chalcopyrite. Quartz stringers of appreciable size are present in the shear zone over a length of about 150 feet, in one direction pinching out close to the dike contact and in the other direction becoming very small and discontinuous. The diorite dike trends across the N. 65· E. strike of the vein at a small angle. Chip samples taken by the writer across a 1 foot width of vein gave 0.79 ounces in gold.

9) CHEMICAL ANALYSES:

Prest (1940) chip sampled a 1 foot width of quartz vein that assayed 0.79 ounce Au per ton.

1) PROPERTY NAME: Schist Lake occurrence (35)

DATE(S) VISITED:

MDI #: KP0147

2) ALTERNATE NAME(S): J. Kenty occurrence
Brett occurrence
Joe McDonough and Bill Knox Group
Hoey Grubstake (1964) Syndicate

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1929: Jay Kenty discovered an angular piece of gold-bearing quartz float "along a small creek north of the Albany River" 14.5 km (9.0 miles) east of Frenchman's Rapids on the Albany River. Claim Pa 1832 was staked to cover the occurrence. Prospecting activity increased and Bill Dennis supervised many of the prospectors working in the area.

1937-38: V.K. Prest, Ontario Department of Mines, mapped the Fort Hope area and recommended exploration in the Washi Lake belt which included the Schist Lake area.

1940: A prospector by the name of Brett followed-up the recommendation. Brett discovered some large angular boulders of gold-bearing quartz at the edge of a small stream just south of the patented claim Pa 1832. Trenching was undertaken, but Brett died in the same year.

1959: Joe McDonough and Bill Knox held the following claims:

1 patented claim - Pa 1832
53 unpatented claims - Pa 21177 to Pa 21229 inclusive

Dr. W.L. Brown had expressed initial interest in optioning the property from Joe McDonough and Bill Knox through Bill Elliot but in a May 8 memorandum stated he would not be interested. Linecutting, boulder tracing,

magnetometer surveys, electromagnetic surveys, detailed prospecting and diamond drilling had been proposed by Brown.

1964-66: Frank Hoey located more gold-bearing quartz float and made an "in-place" discovery, possibly the source of the initial "float" discovery of 1929. The Hoey Grubstake (1964) Syndicate was formed and financed by a group of mining companies including McIntyre and Conwest. The Syndicate held 53 claims including patented discovery claim Pa 1832. F. Hoey staked claims Pa 33597 to Pa 33614 inclusive. B.M. Morgan staked claims Pa 34336 to Pa 34345 inclusive. J. Dileo staked claims Pa 34041 to Pa 34058 inclusive.

A total of 10 diamond drill holes were completed between 1964 and 1966 on claim Pa 33597 (formerly claim Pa 1833) and two holes were drilled immediately to the north on claim Pa 1832 for a total of 566 m (1887 feet). Low gold assays, up to 0.05 ounce Au per ton, were obtained from the core. Trenching was completed in 1965. The Northern Miner (July 8, 1965) reported Mining Corporation staked a group of claims west of the Hoey Syndicate and K. Ellard staked a group east of the claims. Ellard's claims were numbered Pa 33381 to Pa 33398 inclusive.

1986: Gold Fields Canadian Mining Limited held the following mining claims: TB 925279 to TB 925284 inclusive, TB 925587, TB 939133 to TB 939137 and patent Pa 1832. Re-assaying of drill core from the Hoey Grubstake (1964) Syndicate drilling of 1964-65 was undertaken by Gold Fields.

CURRENT

1995: Pa 1832, surface and mining rights patent, is owned by Frank Hoey by transfer from Brian P. McDonough (June 22, 1995). All other claims are cancelled.

5) LOCATION AND ACCESS:

N.T.S.:	42 M5/SE		
Latitude:	51·21'20"		
Longitude:	87·34'50"		
UTM:	Zone 16:	Northing	5688800
		Easting	459700

GENERAL LOCATION: The Schist Lake occurrence is located approximately 143 km (90 miles) northwest of Nakina, 35 km (22 miles) southeast of Fort Hope First Nation and 14 km (9 miles) east-southeast of Frenchman's Rapids on the Albany River. The Asarco gold occurrence is located approximately 3 km (2 miles) southwest of the Schist Lake occurrence.

ACCESS: The property is accessible by either helicopter or float plane to Schist Lake or Abazotikichuan Lake and then by foot.

REFERENCES: Prest (1944)
Thurston and Carter (1970)

Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 51c Eastern Extension of Fort Hope Area (Prest 1944)
Map 2237 Lansdowne House Sheet (Thurston et. al. 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Schist Lake-Makokibatan Lake area is underlain by an east-trending, narrow belt, approximately 90 km long, of mafic to intermediate metavolcanic rocks described by Prest (1944) as: "including porphyritic facies and pillow horizons, some gneisses". The narrow metavolcanic belt is flanked by felsic intrusive rocks consisting of, according to Prest (1944): "granite, granodiorite, quartz diorite, diorite, gabbro and pegmatites".

7) MINERALIZATION:

Prest (1944) stated:

> ...The Washi Lake belt should be favourable prospecting ground, as a wide variety of rocks are present and some mineralization was noted. There is an abundance of rock, although it is frequently covered by a thin drift mantle. The old Brett claim at the western end of the belt, where rock exposures are scarce, is reported to have veins that carry appreciable gold values.

Prest (1944) also reported:

> The Washi Lake section offers the best opportunities for prospecting in view of the exposures, variety of rocks present, and the width of the volcanic belt. Small amounts of mineralization were noted in many places, but intensive prospecting might well reveal mineralized zones of some importance. Westward toward Frenchman's rapids gold bearing mineralization has been found on what is now the Brett claim but the rocks in this vicinity are poorly exposed. The area between Frenchman's Rapid and Washi Lake should receive further attention.

Jay Kenty (1929) discovered an angular piece of gold-bearing quartz float along a small creek at what was to become known as the Schist Lake gold occurrence. Brett (1939-40) discovered several large angular boulders of gold-bearing quartz south of Pa 1832. L. Dempster and a Mr. Joseph reported the floats assayed at several ounces of gold per ton. Chip samples of the same floats assayed by W.L. Brown (1958) averaged 1.32 ounce Au per ton. Only one narrow quartz vein was found in place and was interpreted as being too narrow to be the source of the float.

Drill logs from the Hoey Grubstake (1964) Syndicate indicate pyrite and pyrrhotite are associated with porphyry and quartz stringers; chalcopyrite, pyrrhotite and pyrite can be associated with mafic metavolcanic rocks.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

Chip samples of floats assayed by W.L. Brown (1958) averaged 1.32 ounce Au per ton (Assessment Files, Beardmore-Geraldton District, Thunder Bay). Gold Fields Canadian Mining Limited assayed drill core in 1986, previously drilled by the Hoey Grubstake (1964) Syndicate in the period 1964-66. Several assays over 0.02 ounce Au per ton and up to 0.052 ounce Au per ton, over unknown footages, were reported by Gold Fields. Gold Fields Canadian Mining Limited reported one core assay from the Hoey Grubstake drilling (1964) of 0.15 ounce Au per ton and 3.0 ounce Ag per ton over 1.5 m (5 feet) (Bill Bond, Gold Fields Canadian Mining Limited, personal communication, 1988). The highest assays that Hoey

Grubstake (1964) Syndicate obtained was 0.51 ounce Au per ton "across 20 inches at a depth of 41 feet" (The Northern Miner, July 8, 1965).

1) PROPERTY NAME: Sheridan Lake Zinc occurrence (36)

DATE(S) VISITED:

MDI #: n.a.

2) ALTERNATE NAME(S): Conwest Exploration Company Limited - Drill Hole #7

3) COMMODITY: MAIN: Zn SECONDARY: Cu

DEPOSIT TYPE: Sedimentary Exhalative Massive Sulphide

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1970: Conwest Exploration Company Limited staked 667 claims and undertook an airborne magnetic and electromagnetic survey (McPhar Geophysics) over the eastern portion of the Wunnummin Lake Belt in the Peeagwon Creek area. A total of 7070 km of line was flown and 116 anomalies identified. A total of 10 diamond drill holes totalling 998 m were subsequently drilled by Conwest in the Peeagwon Creek area.

Drill hole #7 intersected the zinc occurrence. Note: There is no known surface expression of the occurrence.

Claim Pa 255383 is part of a group of 13 claims listed as follows:

Pa 255376 - Pa 255382 inclusive
Pa 255386 - Pa 255389 inclusive
Pa 255393
Pa 268341

(Thurston et al. 1979.)

CURRENT

1995: Claims are open for staking (March 8, 1995).

5) LOCATION AND ACCESS: N.T.S.: 53 A10/SE
Latitude: 52·34'50"
Longitude: 88·39'20"
U.T.M.: Zone 16: Northing 5825100
Easting 387800

GENERAL LOCATION: The Sheridan Lake zinc occurrence is located 5 km (3 miles) northwest of Sheridan Lake. Sheridan Lake is approximately 59 km (36 miles) northwest of Lansdowne House and 160 km (96 miles) northeast of Pickle Lake.
ACCESS: Sheridan Lake is accessible by float plane. Pickle Lake or Lansdowne House have fixed wing float plane service. Pickle Lake is the closest helicopter base.

REFERENCES: Thurston et al. (1979)

Resident Geologist's files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

P.715 Wapikopa Lake-Operation Winisk Lake (Thurston et al. 1971)
2287 Winisk Lake Sheet (Thurston et al. 1974)

6) GENERAL GEOLOGY AND STRUCTURE:

The Sheridan Lake zinc occurrence is situated in the Sachigo Subprovince, an arcuate group of mafic to felsic metavolcanic and metasedimentary assemblages and synvolcanic plutons which are intruded by younger felsic bodies and larger batholithic complexes.

In detail, the Sheridan Lake zinc occurrence is within the Peeagwon Assemblage of the Wunnummin Lake Greenstone Belt. Pillowed and massive mafic flows, minor units of oxide-and sulphide-facies iron formation and interbeds of quartzite and felsic tuff make up the assemblage (Thurston et al. 1992). The regional Stull Lake-Wunnummin Lake fault zone strikes northwest, traversing north of the Sheridan Lake zinc occurrence.

7) MINERALIZATION:

The property geology and mineralization of the ten holes was described by Thurston et al. (1979):

> Metavolcanics, predominantly mafic in composition, account for 80.6 to 95.5 percent of the rocks intersected by holes 1, 2, 3, 6, and 9, and for 48.8 to 63.6 percent of the rocks intersected by holes 4a, 5, 7, and 8; metasediments, and subordinate amounts of felsic metavolcanics account for the balance.

One band of iron formation consists of sulphide-rich layers, essentially pyrrhotite and pyrite, interbedded with chert. Minor chalcopyrite is present in the form of local disseminations and occasional specks within the iron sulphide minerals. The concentration of sulphide minerals in the sulphide-rich bands varies from 45 to 100 percent (massive) over a width of 1.1 m in hole 1, from 20 to 30 percent in hole 4a, and from 20 to 50 percent in hole 5.

Variable concentrations of pyrrhotite and pyrite with minor chalcopyrite in places occur also as fracture-fillings, and/or stringers, blebs, and disseminations within metavolcanics, and metasediments other than iron formation.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

Drill hole number 7 assayed 0.51% Zn and 0.07% Cu over 1 m (3.2 feet). The mineralization is associated with 50 to 60% coarse-grained pyrrhotite occurring as fracture fillings in a black shale which is in turn a portion of an iron formation unit. The drill intercept was between 56.3 m (187.8 feet) and 57.3 m (191 feet) in hole #7, which has a 320· azimuth and a 45· plunge.

1) PROPERTY NAME: Szetu-Bayne occurrence (37)

DATE(S) VISITED: July 19/88

MDI #: KP0412

2) ALTERNATE NAME(S): Ymir occurrence
Keezhik Creek occurrence
Boylen occurrence
Szetu-Bayne Gold occurrence
Trench zone
Trench occurrence

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1937: Prest (1940) reported: "The claims drilled along the lower part of Keezhik Creek show that low values are contained in some veins". There is no record of who performed the drilling. Evidence of the 1930's work was supported by findings of Baker (1961).

1959: M.J. Boylen staked mining claims Pa 26043 to Pa 26060. Hugh Setton staked mining claims Pa 26079 to Pa 26096. A total of 36 claims was recorded on November 9. M.J. Boylen Engineering conducted an airborne magnetic and electromagnetic survey.

1959-60: M.J. Boylen Engineering carried out a ground magnetometer survey.

1961: J.C. Baker located one old trench and two old diamond drill hole locations, perhaps by referring to the 1930's work reported by Prest (1940). Gold was detected by panning.

1962: J.C. Baker collected a 2.7 m (9 foot) wide sample from the northeast end of the trench.

1973: J.C. Baker staked 15 claims numbered Pa 369957 to Pa 369971 inclusive and conducted prospecting.

Claims Pa 369972 to Pa 369982 inclusive were staked. Ymir Mining and Exploration Limited acquired the 26 claims that covered the occurrence.

1974: J.C. Baker undertook detailed prospecting. The main discovery trench on claim Pa 369957 was opened up by plugger and the northeast end was widened to 4.1 m (13.5 feet). The trench was sampled, and the previously blasted mineralized rock on the trench edge was bulk sampled. The claim group was geologically mapped and some reconnaissance sampling completed by A.J Bayne and Company.

1976: J.S. Koski completed a ground magnetometer survey on mining claims Pa 369957 to Pa 369971 inclusive.

1979: C. Black staked claims TB 489588, TB 489589 and TB 489590.

1980: Sui Shing Szetu acquired claims by transfer. Mechanical work was recorded.

1982: S.S. Szetu held claims TB 489588, TB 489589 and TB 489590 and conducted trenching. A.S. Bayne and Company completed a ground electromagnetic survey and ground magnetic survey over claims TB 489588 to TB 489590 inclusive.

1984-85: A.S. Bayne and Company completed a soil geochemical survey of claims TB 489588, TB 489589 and TB 489590. S.S. Szetu was the recorded claim holder.

T. Cardinal staked claims TB 817518 to TB 817530 and and transferred all interest to A.S. Bayne.

Anaconda Canada Exploration Ltd. optioned 16 mining claims from S.S. Szetu, A.S. Bayne, and 484177 Ontario Limited. These were TB 489588, TB 489589, TB 489590 and TB 817518 to TB 817530 inclusive.

Alain Patry and Roger Alland staked an additional 40 mining claims for Anaconda Canada Exploration Ltd.

These were TB 816070 to TB 816100 inclusive and TB 828601 to TB 828609 inclusive. Two grids totalling 25 line km were cut. Geological, lithogeochemical, magnetometer and VLF-FM surveys were undertaken.

1985: Anaconda completed 6 diamond drill holes totalling 300.9 m. Drill holes numbered 1 and 2 were drilled to test the down-dip extension of the main occurrence (trench zone) on claim TB 489588. Holes numbered 3 through 6 were drilled to test for the possible west extension of the main occurrence.

In August, Anaconda transferred interest in claims TB 816070 to TB 816100 inclusive and TB 828601 to TB 828609 inclusive to A.S. Bayne.

Darius Gold Mine Inc. acquired the Anaconda and Szetu-Bayne claims by option in September. VLF-EM, magnetometer and HLEM surveys were completed.

1986: Aerodat Limited, for Gold Fields Canadian Mining Limited and Darius Gold Mine Inc., carried out an airborne geophysical survey between April 7 and April 11 for a total of 742 line km. Line spacing was 100 m. Survey equipment included a magnetometer, a VLF-EM system and a radar positioning system. The area flown covered a large area north of Miminiska Lake including the Szetu-Bayne Occurrence. The western portion of the area was flown in a 305· flight direction. The main or larger portion of the area was flown at 0·.

1986-88: Diamond drilling was undertaken on the occurrence claim (TB 489588) and on surrounding contiguous claims.

1988: Gold Fields Canadian Mining Limited obtained 100% ownership from Darius Gold Mine Inc. in January.

In October, a Release of Agreement between Anaconda, 484177 Ontario Limited, A.S. Bayne, S.S. Szetu and P.K. McWilliams for claims TB 489588 to TB 489590 inclusive and TB 817518 to TB 817530 inclusive was recorded.

In December, Gold Fields Canadian Mining Limited transferred 100% ownership to S.S. Szetu.

1989: On May 1, a 21-year surface and mining rights lease (#105307) was issued for claims TB 489588, TB 489589 and TB 489590.

1991: On November 14, A.S. Bayne died leaving the leased claims in his name.

CURRENT

1995: Sui Shing Szetu is the holder of a 21-year lease (from May 1, 1989) covering the original occurrence (June 22, 1995).

5) LOCATION AND ACCESS: N.T.S.: 52 P10/NE
Latitude: 51·39'25"
Longitude: 88·34'50"
U.T.M.: Zone 16: Northing 5722500
Easting 390800

GENERAL LOCATION: The Szetu-Bayne occurrence is located between Miminiska Lake and Keezhik Lake on Keezhik Creek. The Szetu-Bayne occurrence is located 40 km (25 miles) west-northwest of Fort Hope First Nation and 109 km (68 miles) east-northeast of Pickle Lake.

ACCESS: A widening in Keezhik Creek south of the occurrence is large enough for float aircraft to land. Otherwise, a helicopter would be the best method of access.

REFERENCES:

Bayne	(1974)*
Bayne	(1982)*
Bayne	(1984)*
Boustead	(1985)*
Boylen and Seeber	(1960)*
Burwash	(1930)
Koski	(1976)*
Mann	(1984)*
Prest	(1940)
Thurston and Carter	(1970)
Troup	(1986)*

Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 38b	Fort Hope Area (Burwash 1930)
Map 48e	Keezhik-Miminiska Lake (Prest 1940)
Map P.562	Operation Fort Hope: Lansdowne House-Fort Hope Sheet (Thurston and Carter 1970)
Map 2237	Fort Hope Lansdowne House Sheet (Thurston et al. 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

Mann (1984) described the geology:

> The regional geology of the western portion of the Ft. Hope greenstone belt has been described by Prest (1939), (1941) and Wallace (1981). In this region the belt can be subdivided into three major lithological groups; a southern metavolcanic sequence, a central metasedimentary sequence, and a northern metavolcanic sequence.
>
> Both of the metavolcanic sequences consist predominately of pillowed and massive mafic metavolcanics rocks. A major accumulation of felsic metavolcanic rocks, located along the northwest boundary of the southern sequence, consists of fragmental rocks and their epiclastic derivatives. Smaller accumulations are present along the southern boundary of the northern metavolcanic sequence adjacent to their contact.
>
> The central metasedimentary sequence consists primarily of turbiditic greywacke-shale. In the central portion of the sequence a major accumulation of banded magnetite iron formation is present. A thin (<600 m) unit of conglomeratic and arkosic metasediments occurs between the turbiditic metasediments of the central metasediments and the northern metavolcanics.
>
> The Keezhik Creek property covers a six-kilometer strike length along the contact between the northern metavolcanic and the central metasedimentary sequences. The northern metavolcanic rocks are exposed at the southwest and northeast extremities of the property, and consist predominately of pillowed mafic flows and interflow tuffaceous horizons. Minor amounts of felsic to intermediate metavolcanic rocks are exposed at the mouth of Keezhik Creek. Mafic fragmental units also occur in this area.
>
> Mafic metavolcanic flow units are medium green weathering, fine grained rocks forming resistant rock ridges. All observed flows are pillowed with one flow being approximately 20 meters thick. Pillows are well formed and range in maximum dimension from .25 to greater than 1 meter with selvedges from 1 to 3 cm thick. No vesicles or amygdules were observed although locally the pillows appeared to be variolitic. The variolitic units are up to a couple of meters thick and consist of dense aggregates of spherical to

moderately elongated, dark grey coloured varioles from 1 to 2 mm in diameter. Tuffaceous interflow horizons range up to 3 meters in thickness and can occasionally be seen to contain lapilli sized fragments.

Fragmental units are poorly exposed. Where observed, these rocks consist of "mixed" lapilli and ash tuffs. Clast lithologies include felsic to mafic metavolcanic rocks. Rounded pyrite clasts(?) up to one centimeter diameter are also present. The matrix to the lapilli tuffs is a dark green weathering, chloritic material which forms an ash tuff where lapilli are absent. Magnetite is abundant and occurs as disseminated euhedral crystals. Minor disseminated pyrite is also present.

An unusual mafic breccia is present in the section adjacent to the "mixed" fragmental unit. This breccia is medium green to brownish white weathering and consists of fragments of mafic metavolcanics set in a chlorite-epidote matrix. The matrix makes up no more than 5% of the rock. The fragments are angular in cross-section but are quite elongated perpendicular to this direction. The overall appearance is that of a tectonically produced breccia rather than a pyroclastic or volcaniclastic rock. Locally areas up to 1 meter in diameter seem to have been slightly silicified resulting in a bluish colour. Near the mouth of Keezhik Creek the silification becomes more intense and selective with the mafic fragments being preferentially silicified. This has resulted in a rock which has light gray, siliceous patches, perhaps representing the original mafic fragments, in sharp contact with a soft, dark green chloritic groundmass.

A subcropping mafic fragmental unit was observed to contain a massive, fine grained pyrite band approximately 10 centimeters wide. The band is brecciated and quartz veined with recrystallization of the pyrite adjacent to the quartz veins. Disseminated pyrite also occurs in the adjacent fragmentals.

Felsic metavolcanic units occur interbedded with argillaceous clastic metasedimentary rocks. The felsic rocks are light yellow-white to gray coloured and consist of lapilli, quartz-eye, and ash tuffs. Lapilli fragments are mainly felsic in composition and are angular to subrounded.

Quartz-eyes are present in most of the felsic rocks exposed. They are angular to subrounded and range from .5 to 2 millimeter diameter.

Pyritic felsic quartz-eye lapilli tuffs and argillaceous metasediments occurs as subcrop and float in Keezhik Creek. The lapilli tuffs are similar to those described above but contain a higher proportion of quartz-eyes and lithic fragments. In addition they contain up to 5% disseminated pyrite with the occasional occurrence of a medium green coloured mineral ("fuchsite"?). The argillaceous metasediments are gray coloured, very fine grained foliated rocks consisting of sericite, clays and up to 5% disseminated pyrite. They may represent a mixture of fine grained felsic ash and clastic sediments. Numerous massive pyritic boulders, similar to the pyrite horizon which occurs in the mafic fragmental unit, were found in Keezhik Creek closely associated with the lapilli tuff and argillaceous metasedimentary rocks.

Metasedimentary rocks are interpreted to underlie most of the property. There are two main lithologies exposed, lithwacke and argillite.

The lithwackes are a buff to medium green coloured, medium grained to pebbly rock. Framework grains consist of granular quartz aggregates (recrystallized chert?), quartz, feldspar, and felsic to intermediate rock fragments, with the granular quartz pebbles predominating. These grains range from .25 to 5 millimeters in diameter, are equant to elongated, and angular to subrounded. Also present is the occasional pebble up to one centimeter diameter. The matrix is composed of silt and smaller sized grains of quartz and feldspar, chlorite, and muscovite. Accessory minerals include trace to 2% pyrite, trace biotite, and trace to 1% rutile(?). Bedding is parallel to wavy, continuous, and tabular on outcrop scale with bedding thickness ranging from .1 to greater than 1 meter. Graded bedding is relatively common and some beds exhibit what appears to be scouring, with a pebbly basal fill.

The argillites are black to gray in colour and consist of variable proportions of clay minerals, sericite, and chlorite with a trace disseminated pyrite. Some outcrops contain a much higher proportion of sericite than others and would be more properly termed phyllites. Bedding is parallel, continuous, and tabular with bedding

thickness ranging from less than 1 to 10 centimeters. Bedding contacts are sharp. Some beds possess a colour gradation from black to gray that seems to correspond to top directions in the graying direction.

The paucity of outcrop on the property does not permit a definitive structural interpretation. Wallace (1981) has proposed a simplistic interpretation based on meagre structural data. He proposes that the western portion of the Mimimiska Lake area forms a homoclinal, north facing sequence.

Very little contradictory information was discovered. A possible south facing pillow top was found in the metavolcanics at the mouth of Keezhik Creek. To the southeast of the trench area on the south side of Keezhik Creek, assessment data, filed by New Jersey Zinc, states that a south facing graded bed was intersected in drilling. These data indicate that the structure of the area is more complex than shown on O.G.S. maps. Bedding attitudes swing from N50 E in the southwestern part of the property, to east in the central and northern part with foliations parallel to bedding. No major fold closures are indicated and the south facing directions are probably the result of minor drag folding related to a more regional structure.

7) MINERALIZATION:

Mann (1984) described the mineralization:

To date there are two areas of economic interest, the trench zone and the mouth of Keezhik Creek. The trench zone is located at L775E/125S of the North Grid. Exposure of the zone is limited as it occurs on the flank of a low drift-covered outcrop and extends to the southwest into a low area where it is obscured by drift. Stripping has exposed the northwest termination of the zone on surface but it is open to the southwest.

The trench zone consists of rusty weathering, pyritized argillites and wackes cut by foliation-parallel quartz veins and stringers which strike N55 E/85 NW and appear to plunge steeply (80-85) to the southwest. The zone has a width of approximately 3.5 meters and lenses out over a distance of 3 meters towards the northeast with an abrupt decrease in the amount of quartz veining and a gradual narrowing of the surrounding pyritized wall-rocks.

Rock chip samples were collected by Anaconda from the northeast end of the trench and from the adjacent stripped outcrop. A random grab sample of loose rock fragments from the side of the trench was also collected.

The weighted assay value across the end of the trench is 18.1 g/t Au (0.53 oz/t) over 3.8 meters, cut to 31.1g (1.0 oz). Results from previous sampling by A.S. Bayne showed 15.8g/t Au (0.5 oz/t) over 4.1 meters. The random grab sample, which was collected along a 10 meter length of the trench, contains 3.1g/t Au (0.09 oz/t).

Arsenic ranges from 150 to 350 ppm in association with the high gold values. Pyritized wall-rock, without quartz veining, contains gold in the 30 to 250 ppb range with arsenic concentrations ranging from 70 to 180 ppm.

Mapping in the area has revealed that the trench zone outcrop lies in a zone of locally rusty weathering, pyritized argillites with foliation-parallel quartz stringers. The zone has a minimum width of 50 to 60 meters and appears to trend approximately N80 E, but, due to a lack of outcrop in the area, both the overall extent and orientation of the zone is unknown. Geochemically, these rusty weathering zones are characterized by gold and arsenic in the 30 to 135 ppb and 20 to 440 ppm ranges respectively. Outside of this zone the sediments contain less that 30 ppb Au and 20 ppm As.

The second area of interest lies near the mouth of Keezhik Creek. Here a variety of felsic metavolcanic and argillaceous metasedimentary rocks is exposed along the contact between the northern metavolcanic and central metasedimentary sequences. Pyritic massive sulphide horizons occur within both "mixed" mafic and felsic fragmentals and the argillaceous metasedimentary rocks.

Disseminated pyrite is abundant within many of the units. Silicification and quartz-carbonate veining occurs in the immediate area surrounding the mouth of Keezhik Creek. Arsenic values range from 30 to 330 ppm. Gold results are not as encouraging. Only one sample was above background at 240 ppb. No base metal sulphides were observed in the pyritic sulphide horizons.

The rocks on the Keezhik Creek property are very similar to those found at this same stratigraphic horizon on the property of Felmont Oil & Gas (formerly held by New Jersey Zinc) on which a drill program, of approximately 3,000 meters, was conducted in early 1984. Results of this program are not known.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

At the northeast end of the trench, chip samples gave the following gold assays (Mann 1984):

0.53 ounce per ton (18.1 g/t) over 3.8 m. - Anaconda (1984)

0.502 ounce per ton (15.8 g/t) over 4.1 m - Bayne (1974)

Anaconda Canada Exploration Ltd. intersected the trench's main zone in two drill holes (Assessment Files, Resident Geologist's Office, Beardmore-Geraldton District, Thunder Bay):

DDH #1 - 1.1 m assaying 4.86 g/t Au
DDH #2 - 2.0 m assaying 4.32 g/t Au

1) PROPERTY NAME: Talbot Lake Gold prospect (38)

DATE(S) VISITED: July 21/88
July 25/89

MDI #: KP0398

2) ALTERNATE NAME(S): Project 232B, Placer-Dome Inc. Main zone, Talbot Lake project

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1984: Placer-Dome Inc. staked 39 claims to cover a magnetite iron formation anomalous in gold. Claims were numbered TB 818210 to TB 818227 inclusive and TB 818256 to TB 818276 inclusive.

1985: Linecutting, magnetometer surveys, electromagnetic surveys and geological mapping were conducted. A quartz-feldspar porphyry was observed near the north boundary of the claim group. A sampling program revealed "strongly anomalous" gold values (Laudrum 1990).

1986: Additional claims were staked, numbered TB 836135 to TB 836149 inclusive. Ground magnetometer and HLEM surveys were completed on the new claims. A VLF-EM survey was conducted covering a portion of the area previously surveyed and a portion of the new extension area. Further geological mapping was performed.

1987: Placer-Dome Inc. contracted Dighem Surveys and Processing Inc. to fly the DIGHEM III EM system over a large area from Keezhik Lake west to Talbot Lake, including the Talbot Lake gold prospect (Project 232B). A total of 1119 line km were flown. Additional claims were staked during the year.

Claim holdings were as follows:

TB 818210 to TB 818227 inclusive
TB 818256 to TB 818276 inclusive
TB 836135 to TB 836149 inclusive
TB 911058 to TB 911073 inclusive
TB 911075 to TB 911100 inclusive

1987-89: Linecutting, geological mapping (in 1987-89), lithogeochemical sampling (in 1989), ground magnetometer surveys (in 1988), ground HLEM surveys (in 1988), mechanized stripping/ sampling (in 1989) and diamond drilling (in 1987-89) were completed.

By January 1988 the claim group totalled 258 contiguous claims:

Claim Numbers		**Total**
TB 818120 to TB 818227	inclusive	18 claims
TB 818256 to TB 836276	inclusive	21 claims
TB 836135 to TB 836149	inclusive	15 claims
TB 911058 to TB 911073	inclusive	16 claims
TB 911075 to TB 911100	inclusive	26 claims
TB 911198 to TB 911200	inclusive	3 claims
TB 912018 to TB 912045	inclusive	28 claims
TB 912105 to TB 912136	inclusive	32 claims
TB 912954 to TB 913959	inclusive	6 claims
TB 913054 to TB 913072	inclusive	19 claims
TB 913132 to TB 913161	inclusive	30 claims
TB 913204 to TB 913238	inclusive	35 claims
TB 950500 to TB 950502	inclusive	3 claims
TB 1006882 to TB 1006887	inclusive	6 claims

By the end of 1989, 60 drill holes totalling 9666 m (15,466 feet) had been drilled. According to Loudrum (1990): "An auriferous feldspar-phyric quartz structure" termed the Talbot Lake gold prospect was the main target of 41 holes. Other geophysical and geological targets on the claim group were also drilled.

1992: According to Laudrum (1990): "Ownership of claims is 100% PDI (Placer-Dome Inc.), subject to the terms of the 1989 venture agreement between PDI and Golden Crescent Resources Corp.".

CURRENT

1994-95: Placer Dome Inc. transferred 100% ownership to Placer Dome Canada Limited (March 8, 1995).

5) LOCATION AND ACCESS: N.T.S.: 52 P/15SW
Latitude: 51·47'
Longitude: 88·51'25"
U.T.M.: Zone 16: Northing 5737760
Easting 371888

GENERAL LOCATION: The Talbot Lake Prospect is located 97 km (61 miles) east-northeast of Pickle Lake and 64 km (38 miles) west-northwest of Fort Hope.

ACCESS: Talbot Lake is accessible by fixed-wing aircraft from Pickle Lake. The Placer-Dome Inc. camp is located on the southeast shore of Talbot Lake. Skidder trails traverse from the camp to the Talbot Lake gold prospect.

REFERENCES:

Kilty	(1987)*
Laudrum	(1990)*
Prest	(1948)
Racic	(1986)*
Racic	(1988b)*
Thurston and Carter	(1970)
Woodard	(1985)*

Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 48e Keezhik-Miminiska Lakes area (Prest 1940)

Map P.562 Operation Fort Hope: Lansdowne House-Fort Hope Sheet (Thurston and Carter 1970)

Map 2237 Fort Hope-Lansdowne House Sheet (Thurston, Carter and Riley 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Keezhik Lake area, a portion of the East Uchi Subprovince, is underlain by east-trending mafic to felsic metavolcanic rocks, including both flow and tuffaceous rocks. Banded magnetite iron formation is intercalated with the metavolcanic rocks. Minor metasedimentary rocks are present. Hornblendite, gabbro, diorite, granite, quartz porphyry and feldspar porphyry intrude the metavolcanics. Precambrian diabase dikes intrude the Archean rocks (Prest 1940).

Laudrum (1990) described the geology of the Keezhik Lake area:

The oldest rocks in the Keezhik Lake section are interbedded dark green to black volcanics which border granitic plutonic rocks to the north. These volcanics vary from intermediate to mafic in composition and include pillowed lavas, massive flows, tuffs and breccias, (Prest, 1940).

Using aeromagnetic data, a unit of iron formation composed of several bands can be interpreted to exist within these volcanics. The eastern end of this magnetite iron formation unit is located approximately two kilometres north of the northeast corner of East Arm, Keezhik Lake. From that location the unit trends at 300· for 17 kms. At this point, the iron formation is isoclinally folded and trends at 120· for 8 kms, at which point it is again isoclinally folded and then trends 230 - 270· and forms an arcuate band which appears to terminate in the vicinity of Talbot Lake. Within the isoclinally folded portions of the iron formation the fold structures appear to be near vertically dipping and plunging to the east.

Overlying this mafic to intermediate volcanic sequence with its enclosed iron formation are a mixed series of fresher looking volcanic flows, bedded tuffs and sediments which are younging southwards. A band of magnetite iron formation within these volcanics trends at 105· for seven kilometres along the north shore of East Arm, Keezhik Lake.

Overlying this volcanics is a band of conglomerate containing quartz, iron formation and volcanic boulders, younger greenstones of andesitic composition overlie this conglomerate. This volcanic series consists of fine grained massive lavas, coarser grained phases, pillowed lavas and pyroclastics. These rocks have a vertical to steeply southward dip.

Only minor mafic intrusions of gabbroic composition occur in the Keezhik Lake section. One is an elongated dyke-like intrusion cutting the East Arm of Keezhik Lake. The other occurs as a small oblate mass just east of Nesting Lake.

The Troutfly Lake Batholith, located south of Talbot Lake and the South Bay stock, located south of Keezhik Lake are the principal felsic intrusions cutting the volcanic sequence. Both felsic intrusions are aligned along a major east-west fold

axis about which the volcanic belt outlined above forms the north limb of an eastward plunging syncline.

Faulting is noted within the belt. It is most pronounced where it cuts and offsets units of iron formation. The most obvious faults are southwest of Waghorn Lake, west of the North Arm, Keezhik Lake and west of Keezhik Lake. These major faults either have a north-south or east-west trend and a horizontal displacement in the order of hundreds of meters.

Laudrum (1990) described the property geology:

The north and eastern portion of the Talbot Lake property is underlain by foliated dark green, chloritic and nonmagnetic mafic to intermediate volcanics with one prominent unit of magnetite iron formation. The general trend of foliation is 070· to 110· with a vertical dip. The main phase of deformation is caused by the sandwiching of this narrow east-west trending band of volcanics between two large felsic intrusions. Tops, determined from pillowed flows, indicates the sequence is southward facing. This volcanic stratigraphy has been cut by a number of narrow, coarse to fine crystalline dykes and sills of at least four different ages. These dykes and sills are of granite to granodiorite to locally dioritic composition, trend sub-parallel to foliation and appear to be related to a felsic batholithic complex to the south and west of Talbot Lake.

The south and southwest portion of the property is underlain by the contact between a felsic intrusion and mafic to intermediate volcanics.

This contact is not sharp and distinct but rather occurs as a band several hundred metres wide, where there is a mixture of granite and what appears to be rafted blocks of variably amphibolitized mafic volcanic. The principal intrusion underlying the western portion of the property is coarse crystalline, generally pink, variably magnetic, probably of granodioritic composition.

The narrow band of volcanics to the southeast and in contact with the above intrusion is fine to medium crystalline dark green and variable metamorphosed mafic to intermediate flows and tuffs. Foliation is well developed, trends

southwest and is near vertically dipping. A magnetic anomaly within the volcanics thought to be caused by a unit of magnetite iron formation was shown by detailed mapping to be caused by a magnetite rich flow unit.

7) MINERALIZATION:

The mineralization of the Talbot Lake gold prospect or "Main Zone" was described by Laudrum (1990):

> The zone strikes east-west, dips vertically to steeply south and plunges roughly 80· east. The deepest drill hole intersection of the zone to date is 194 meters vertical.
>
> The Main Zone is a translucent white to light grey quartz structure with 5-25% 1mm opaque white feldspar phenocrysts. Associated with the quartz are variable amounts of sheared chloritic/sericitic basalt. Minor accessory minerals noted in the 'vein' include pyrrhotite, pyrite, sphalerite, chalcopyrite, native gold, +/- tourmaline. Pyrrhotite is the most common sulphide encountered in the quartz (up to 3%) and is often in direct contact with grains of visible gold.
>
> A parallel zone of sulphidized basalt up to several meters wide is often encountered beside the quartz structure. This sulphide zone contains up to 15% pyrrhotite and minor pyrite, chalcopyrite and sphalerite. The sulphide zone often contains anomalous gold, particularly when it contains minor quartz veining.
>
> Syn- and Post mineralization faulting is a significant factor in the geometry of the auriferous zones known to date. A major NNE trending fault at 1+60E (intersected in holes 232B-010 and 041) occurs near the known eastern limit of the Main Zone. On the east side of the fault another zone (the "East Zone") has been encountered in drill holes 232B-018, 26 and 52. Differences in the geology of the host rocks of the main and east zones indicate these are not part of the same structure.
>
> Background values for gold in the vicinity of the showing for mafic volcanics are less than five ppb. In the vicinity of the showing a geochemical halo for gold is present in all pre-mineralized rocks. The volcanics within this halo generally have values up to 100 to 200 ppb but usually in the

10 ppb to 50 ppb range. Felsic dikes within this halo are also anomalous for gold with values up to 100 ppb. A post mineralization coarse crystalline felsic dyke with this halo has only background values of less than one ppb Au.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

The following is a summary of significant drill core intersection on the Talbot Lake gold occurrence (Project 232B) to 1989 (Laudrum 1990):

Drill Hole	Location	Width	Grade (gm/t)
232B-07	L0+20E, 3+50N	2.52m	37.19
232B-18	L2+15E, 3+45N	2.00m	2.01
232B-20	L0+20E, 4+10N	2.13m	31.85
232B-21	L0+45E, 4+05N	1.00m	16.80
232B-22	L0+45E, 3+80N	1.73m	2.86
232B-26	L2+15E, 3+45N	1.64m	8.75
232B-30	L0+45E, 3+80N	1.00m	2.06
232B-31	L0+70E, 3+80N	7.57m	16.36
232B-048	L0+70E, 3+80N	2.90m	1.02
232B-050	L0+70E, 3+50N	2.70m	1.97
232B-052	L2+15E, 3+85N	6.50m	7.04
232B-053	L0+20E, 3+80N	2.90m	26.86
232B-055	L1+90E, 3+75N	6.35m	5.74
232B-058	L0+70E, 3+20N	7.50m	7.53

1) PROPERTY NAME: Thompson occurrence (39) DATE(S) VISITED:

MDI #: KP0409

2) ALTERNATE NAME(S): Central Patricia Mines Limited occurrence

3) COMMODITY: MAIN: Au SECONDARY:

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1951: R. Thompson staked claims Pa 11544 and Pa 11546. Trenching and diamond drilling totalling 257 m in 9 holes were completed to test quartz veining.

1978: M. Culliton and D. Marcotte staked claims (TB 510785, TB 510786 and TB 510804-TB 510807 inclusive) to cover the occurrence; these were part of a larger claim group. The claims were transferred to New Jersey Zinc Exploration Company (Canada) Ltd. The larger group of claims included the following claims: TB 523364 to TB 523373, TB 510782 to TB 510787, TB 510804 to TB 510807 and TB 510825 to TB 510828.

1978-1982: Diamond drilling and magnetometer, electromagnetic, VLF-EM and IP surveys were completed. Drilling was completed in 1978 on claim TB 510805; it totalled 169 m in 5 holes which were apparently drilled southwest of the occurrence.

1984: New Jersey Zinc Exploration Company (Canada) Ltd. transferred 50% interest to Felmont Oil Corporation as part of the Howell's Lake property.

Notice of Agreement was filed between New Jersey Zinc Exploration Company (Canada) Limited, Felmont Oil Corporation and Case-Pomeroy Oil Corporation.

Drill holes 13, 14 and 15 were diamond-drilled on claims TB 510785, TB 510786 and TB 510805. These totalled 427 m, and were part of a larger 1075 m drill program.

1985: Felmont Oil Corporation transferred 50% interest to Homestake Mineral Development Company.

1989: Application for Lease (Mining and Surface Rights) and Land Survey Plan was filed.

1990: New Jersey Zinc Exploration Company (Canada) Ltd. transferred 50% to the Homestake Mineral Development Company.

A Release of Agreement notice was filed between New Jersey Zinc Exploration Company (Canada) Limited, Case Pomeray Oil Corporation and Felmont Oil Corporation.

CURRENT

1995: Leases were issued for claims TB 510785, TB 510786 and TB 510804 to TB 510807 in 1990 and are held by Homestake Mineral Development Company (March 8, 1995).

5) LOCATION AND ACCESS:

N.T.S.:	52 P10/SE		
Latitude:	50·35'45"		
Longitude:	88·44'20"		
U.T.M.:	Zone 16:	Northing	5717050
		Easting	379500

GENERAL LOCATION: The Thompson occurrence is located 1.2 km (0.7 miles) northwest of Miminiska Lake and 3.7 km (2.3 miles) north of the point where the Albany River enters Miminiska Lake. The Thompson occurrence is approximately 56 km (34 miles) west of Fort Hope First Nation and approximately 100 km (60 miles) east-northeast of Pickle Lake.

ACCESS: Miminiska Lake is accessible by float plane. Pickle Lake provides the closest air service.

REFERENCES:
Fraser and Dvorak (1980)*
Prest (1940)
Thurston and Carter (1970)
Wallace (1981)

MAP REFERENCES:

48e Keezhik-Miminiska Lakes area (Prest 1940)
2237 Fort Hope-Lansdowne House Sheet (Thurston et al. 1972)
2416 Miminiska Peninsula (Wallace 1981)

6) GENERAL GEOLOGY AND STRUCTURE:

According to Wallace (1981), the area surrounding Howells and Miminiska Lakes is:

> ...underlain by a thick metasedimentary sequence consisting of intercalated wacke and mudstone units and in places oxide, carbonate and/or silicate facies iron formation. This sequence conformably overlies a thick metavolcanic succession of predominantly mafic pillowed flows to the south. To the north, there is a second mafic metavolcanic succession. A wedge of felsic to intermediate pyroclastic rocks and intercalated volcanoclastic metasediments appear to directly overlie the lower mafic metavolcanics. This wedge is enclosed in the main wacke-mudstone sequence toward the east in the main portion of Miminiska Lake.

A major intrusion of quartz monzonite to granodiorite, known as the Troutfly Lake Batholith, occupies a large area northwest of Howells Lake.

Regarding structure, Wallace (1981) states:

> Structural elements are generally east-northeast-trending in the east, and northeast trending in the western part of the area. Major folds can be outlined only in the metasediments east of Miminiska Peninsula. The major faults in the area extend northeastward from Miminiska Peninsula sub-parallel to Ferguson Creek.

A 1977 unpublished report by J. Scott (Geologist, Ministry of Northern Development and Mines, Thunder Bay), indicates:

> New Jersey Zinc's interpretation is that the mafic volcanic/clastic metasedimentary contact (which traces through Howells Lake) is actually an unconformity. Gabbro sills are large and more numerous than mapped by Wallace.

Although these gabbroic units are not directly related to the antimony-gold mineralization, they may be important for structural determinations in that all are cut off by this unconformity (J. Scott, Geologist, Ministry of Northern Development and Mines, personal communication, 1992).

7) MINERALIZATION:

The Thompson occurrence occurs immediately north of the contact or unconformity between clastic metasedimentary rocks to the south and mafic metavolcanic rocks to the north. Metasedimentary rocks consist of mudstone, phyllite, slate, quartz-sericite schist, arenite and wacke. Pillowed flows and related breccias make up the metavolcanic assemblage to the north; these are the host of the Thompson occurrence. Foliation in the metavolcanic rocks is 45· to 50· (Wallace 1981).

Gold mineralization is associated with fine-grained, disseminated pyrite occurring in the foliation parallel to grey to white quartz and/or carbonate veins.

New Jersey Zinc Exploration Company (Canada) Ltd. in a 1978 diamond drill program described felsic tuff and chlorite (± graphite) schist as the main lithologies intersected. Pyrite and pyrrhotite were observed in disseminated, stringer and massive form.

New Jersey Zinc Exploration Company (Canada) Ltd. - Felmont Oil Corporation's 1984 diamond drill program, which tested IP and HLEM anomalies intersected the following:

Hole No.	**Claim No.**	**Main Lithologies**	**Sulphides**
M84-13	TB 510786	arenite, mudstone, wacke, BIF, argillite	2-35% py, po, rare cpy
M84-14	TB 510785/ TB 510805	mafic flow rocks (carbonatized)	1-8% py, po, asp, cpy
M84-15	TB 510805	mafic flow, quartz sericite schist, wacke, BIF, arenite argillite *(south of 84-14 and through contact)	1-70% py, po, asp, cpy

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

Sampling collected from diamond drill core from the R. Thompson occurrence (Central Patricia Mines Limited) in 1951 returned the following results (assessment files, Resident Geologist's office, Beardmore-Geraldton District, Thunder Bay):

Hole No.	Claim	Sample No.	Width of Sample (ft.)	Footage	Assay (ounce Au per ton)
H1	Pa 11544	H 1-17	1.0	67-68	0.58
H2	Pa 11533	H 2-9	1.0	37-38	0.16
H3	Pa 11544	H 3-18(s)	1.2	68.5-69.7	0.18
H4	Pa 11544	H 4-8(s)	3.6	30.7-34.3	0.08
H5D	Pa 11546	H5D-4(s)	0.8	14.4-15.2	0.14
H5C	Pa 11546	H5C-8	5.0	30.7-35.7	0.16
		H5C-12(s)	0.5	48.5-49.0	0.12
H6	Pa 11544	H6-19(s)	0.9	89.9-90.8	0.08
		H6-35(s)	1.9	140.1-142	0.08

1) PROPERTY NAME: Weese Lake occurrence (40) DATE(S) VISITED:

MDI #: TB0119

2) ALTERNATE NAME(S): Weese Lake prospect
Weese Lake copper occurrences

3) COMMODITY: MAIN: Cu SECONDARY: Au, Ag, Ni

DEPOSIT TYPE: Mafic-Ultramafic Intrusion Hosted Cu-Ni-PGE

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1960: Prospectors Jim Cryderman and Tom McNaughton made the first discovery in the Weese Lake area, known as the "Cryderman Showing". This consisted of a quartz-filled shear carrying 4% to 6% chalcopyrite over 2 to 3½ foot widths.

No claims were staked at this time, but it was this discovery that interested New Jersey Zinc Exploration Company (Canada) Limited in the area.

1961: During the summer, J.A. McNamee of New Jersey Zinc Exploration Company (Canada) Limited discovered a high-grade chalcopyrite boulder on the west short of Weese Lake.

In September and October, New Jersey Zinc Exploration Company (Canada) Limited initiated claim-staking along the western shoreline of Weese Lake. This was based on the abundance of copper (chalcopyrite) mineralization found in anorthosite from earlier reconnaissance prospecting (McNamee 1962).

1962: From February to April, additional claims were staked by New Jersey Zinc Exploration Company (Canada) Limited, to bring the total package to a 56-claim block along the west side of Weese Lake (TB 23964 to TB 23973, TB 24054 to TB 24058, TB 24060 to TB 24064, TB 24069, TB 24380, TB 24387 to TB 24416 and TB 24438 to TB 24441).

By the end of March, ground magnetometer and electromagnetic surveys were completed over the property using 400 foot line spacings. This was followed-up from June to August by geological mapping, trenching and prospecting.

1963: From January 14 to 23, a detailed ground electromagnetic survey was done by New Jersey Zinc Exploration Company (Canada) Limited over the anomalous areas outlined during the previous winter, in order to relocate the zones.

From January 28 to March 20, Boyles Bros. completed 9 diamond drill holes (W-1-63 to W-9-63) totalling 2,714.8 feet for New Jersey Zinc Exploration Company (Canada) Limited. The holes were drilled along the western shore of Weese Lake; the majority were located on the lake surface.

New Jersey Zinc Exploration Company (Canada) Limited indicated that no mineralization of ore grade was intersected during the drill program and, as a result, the claims were cancelled in October.

1970: Canadian Onex Mines Limited, through McPhar Geophysics Limited, conducted a combined airborne magnetic and electromagnetic survey over area covering Weese Lake, Attwood Lake and part of Hurst Lake.

An anomalous zone (Zone 2) was identified in the southwestern portion of Weese Lake, however, no follow-up work was reported.

1972: Imperial Oil Enterprises Ltd. conducted ground magnetometer and electromagnetic surveys over 8 separate grids on claims in the Attwood Lake area. Two of these were located just northwest and northeast of Weese Lake. No further work was reported for these areas.

1976: The Attwood Lake area, including Weese and Hurst Lakes, was mapped in detail by Henry Wallace of the Ontario Geological Survey at a scale of 1:15 840.

CURRENT

1995: The entire ground covering the Weese Lake copper occurrences is open for staking (March 8, 1995).

It should be noted that the actual location of the Weese Lake occurrence is given as the Cryderman showing where the original discovery of copper was made in 1960. As indicated by McNamee (1962) of New Jersey Zinc Exploration Company (Canada) Limited and reported by Wallace (1981) of the Ontario Geological Survey, the Cryderman showing and two additional copper occurrences to the south comprise a mineralized "zone" approximately 2300 feet long.

5) LOCATION AND ACCESS:

N.T.S.	52 P07/SE	
Latitude	51·17'25"	
Longitude	88·38'30"	
U.T.M.	Zone 16:	Northing 5682350
		Easting 386500

GENERAL LOCATION: The property is located approximately 100 km east southeast of Pickle Lake along the west-central shore of Weese Lake. Weese Lake is just northwest of Attwood Lake.

ACCESS: Access is via float plane from Pickle Lake.

REFERENCES:
McNamee (1962)*
Thurston and Carter (1970)
Wallace (1981)
Newman (1963)*
McMurry (1962)*

MAP REFERENCES:

2237 Fort Hope-Lansdowne House Sheet
(Thurston et al. 1972)
2436 Attwood Lake (Wallace 1981)
2199 Ontario Geological Map-West Central Sheet

6) GENERAL GEOLOGY AND STRUCTURE:

The Weese Lake occurrence is located within a metavolcanic unit in the southern part of the eastern Uchi Subprovince. It consists of a copper-rich zone along a narrow unit of anorthositic gabbro on the western edge of the metavolcanic rocks. Wallace (1981) describes the general geology of the region as follows:

> Most of the map area is underlain by a northeast-trending belt of metavolcanics and metasediments which extends northeastward to connect with the main regional supracrustal belt of the Uchi Subprovince about 16 km north of Atwood

> Lake. Except for this narrow connection, the local supracrustal rocks, which have been metamorphosed under amphibolite facies conditions, are in contact on all sides with extensive masses of felsic to intermediate plutonic and migmatitic rocks.

In the area close to the occurrence, surrounding Weese Lake, Wallace (1981) describes the following:

> Just west of Weese Lake, a mafic sill, some 600 to 700 m thick, consisting of anorthosite to anorthositic gabbro, intrudes the supracrustal rocks. This sill has been interpreted to extend for at least 25 km to the southwest through Luella and Shabuskwia Lakes (McNamee 1962), but exposure is very poor over much of the intervening area.
>
> Immediately to the east of the sill's sheared contact, there is a thin, poorly exposed sequence of metasediments, 100 to 150 m thick, which parallels the western shore of Weese Lake. These metasediments, which are mostly metawackes and interbedded polymictic pebble conglomerates, appear to pinch out to the north where mafic to intermediate metavolcanics are in contact with the anorthositic body on both sides. Contacts with the supracrustal rocks are sharp, and both metavolcanic and metasedimentary inclusions up to several meters long are common within the sill.
>
> For most of its length within the map-area, the anorthositic rocks on the western side of the sill are probably in contact with gneissic biotite trondhjemite of the Shabuskwia Lake Batholith. Their mutual contact occurs along a swampy depression, and their age relationship was not established with certainty. Minor gabbro and diorite dikes which cut the anorthositic body and which are probably related to it, also intrude the granitoid rocks. This suggests that either the sill is younger than the trondhjemite or their age difference is small. The conformable nature of the body, especially around the northern part of Weese Lake would suggest that it is pre-tectonic, and probably older than the batholith.

The structural elements (i.e. faults, shears and lineaments) of the Uchi Subprovince generally trend east to east-northeast. The Attwood Lake-Weese Lake supracrustal sequence diverges from the general subprovince trend in that structural elements are oriented north-south to northeast-southwest (Wallace 1981).

7) MINERALIZATION:

The most detailed description of mineralization related to the Weese Lake occurrence(s) is given by McNamee (1962) in a report for New Jersey Zinc Exploration Company (Canada) Limited; it is also quoted by Wallace (1981):

> Three, and possibly five occurrences, carrying quantities of up to 40 percent chalcopyrite have been discovered along the east flank of the bytownite anorthosite on claims 23966, 23967, and 23968. They are not ore: they are too narrow, too dispersed, and too erratically mineralized. Taken together, however, they form a mineralized zone 2300 feet long that contains almost all of the economic sulfide encountered on the claim block and constitute with disseminated chalcopyrite in the anorthosite a low grade copper zone whose overall tenor is presently well below the economic limit.
>
> The first of these zones is the "Cryderman Showing", discovered by prospectors Jim Cryderman and Tom McNaughton shortly before New Jersey Zinc [Exploration Company (Canada) Limited] moved into the area. It is essentially a quartz filled shear, striking 160· to 138· across anorthosite and gabbro (offsetting the latter) carrying 4 percent to 6 percent chalcopyrite cover 2 to 3¼ foot widths. Exposures outcrop along strike for 100 feet, then pass, on both ends, into gravel. Assays for gold and silver made in 1961 returned trace and 0.7502 respectively.
>
> Chalcopyrite accompanied by "arrow-head" shaped clusters of pyrite crystals fills shearing planes in the quartz and replaces sheared anorthosite and gabbro outward from the vein. Unsheared rocks are not mineralized. The amount of quartz diminishes rapidly to the southwest, tailing out to ½ inch wide stringers, and increase apparently to the northwest, where the last exposure in a shallow pit shows nearly 3 feet of quartz.
>
> On the northeast side of the zone small gabbro outcrops and rubble blocks contain considerable quartz and a little chalcopyrite. Scattered chalcopyrite-bearing float, obviously derived from the showing occurs in the immediate vicinity.
>
> Fairly extensive drift cover, particularly to the southeast prevents any expansion of the mineralized area beyond its present confines.

The second zone is one of chalcopyrite bearing anorthosite rubble and quartz float.

Drift and rubble cover obscures the orientation and configuration of this zone necessitating the use of float and a single outcrop for geological information. From these, it appears that the mineralization - chalcopyrite - is confined to a zone of slight fracturing and shearing, in the anorthosite crossed by a few quartz veins probably 6 inches to 2 feet in width, the whole possibly oriented along the regional strike, i.e. 165·-180·. The one mineralized outcrop has a 10 foot x 10 foot "burnt" patch of sparsely disseminated chalcopyrite and a mildly sheared spot 1' x 5' carrying about 10 percent chalcopyrite. Most of the chalcopyrite - bearing rubble is also slightly sheared - enough to shatter and rudely align the feldspars, but insufficient to produce schistosity or recrystallization. Chalcopyrite percentages vary from 0.5 percent to 8 percent with an average content of 2 percent to 3 percent. Within the quartz float this percentage is less constant, ranging from practically nothing to the almost total sulfide replacement of the massive 30 lb. chalcopyrite boulder found here by the writer in 1961 (assay 10.80 percent Cu, 0.09 oz Au, 1.55 oz silver).

Similar mineralization - the third zone - is repeated further south on claims 23967 and 23968, again through float and rubble rather than outcrop. One small outcrop on the control line shows a 2 foot width of quartz vein and slightly sheared anorthosite, striking 120· erratically mineralized with chalcopyrite. Quartz and anorthosite float in the immediate vicinity, probably derivatives of the outcropping zones, carry 2 percent to 30 percent chalcopyrite, and some native copper. A large outcrop also contains a quartz vein, 6 inches wide, striking 165·, carrying 2 percent to 6 percent chalcopyrite.

More quartz-sheared anorthosite-chalcopyrite float some of which is tourmaline bearing (black radiating clusters in the quartz) occur intermittently along the rubble ridge south of the small quartz-chalcopyrite outcrop. Most, maybe all of this comes form the outcropping zone - however 60 feet and 360 feet south of that zone the mineralized float is so arranged, approximating the 120· strike, to suggest that it represents additional non-outcropping chalcopyrite bearing

> veins. This is particularly true of tourmaline-bearing float from the second (360 feet south) occurrence.

In another section of that report, McNamee (1962) described disseminated sulphide mineralization in the anorthositic sill as follows:

> Apart from its association with the quartz-chalcopyrite veins, sparsely disseminated chalcopyrite and pyrrhotite (sometimes nickeliferous-dimethyglyoxime test) also form small erratic "burnt" patches through the anorthosite. These usually attain dimensions only in the 10's of feet and never contain more than 1 percent - 2 percent sulfides. A selected sample from a large float block of such mineralization found just south of line 56 gave 0.63 percent copper and this is considerably above the average metal content of these zones. The quantity of nickel, judged from the percentage of pyrrhotite within the zone is insignificant.

McNamee (1962) summarizes up the economic potential of the Weese Lake occurrence(s) as follows:

> A very low grade copper zone has been outlined along the west side of Weese Lake, in the vicinity of the high grade chalcopyrite boulder found in 1961, composed of sparsely disseminated chalcopyrite - slightly nickeliferous patches, intermittently crossed by narrow quartz-chalcopyrite, occasionally tourmaline bearing veins whose copper content varies from nil to nearly 50%. Three such veins have been definitely recognized: two more may exist.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

The best diamond drill section reported by New Jersey Zinc Exploration Company (Canada) Limited in 1963 underlies the Cryderman showing and returned 1.75% Cu over a core length of 2.4 feet. Other drill hole sections contained 0.12% to 0.38% Cu (Assessment files, Resident Geologist's office, Beardmore-Geraldton District, Thunder Bay).

Additional surface sample assays are reported by McNamee (1962) as follows:

Location	Assays	Description
1) Cryderman showing	4 to 6% Cu over 2 to 3¼ ft.	quartz filled shear
2) 500 m due south of Cryderman showing along west shore of Weese Lake	10.8% Cu 0.09 oz/ton Au 1.55 oz/ton Ag	30 lb. chalcopyrite boulder
3) 800 m south of Cryderman showing along Weese Lake shoreline	2 to 30% chalcopyrite and native copper	quartz and anorthosite float
4) Outcrop (same location)	2 to 6% chalcopyrite	6-inch quartz vein

1) PROPERTY NAME: Wottam Lake occurrence (41)

DATE(S) VISITED:

MDI #: KP1453

2) ALTERNATE NAME(S): South Wottam Lake occurrence

3) COMMODITY: MAIN: Au SECONDARY: Ag

DEPOSIT TYPE: Lode Gold/Iron Formation

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1938: Prest (1939) of the Ontario Department of Mines mentions the discovery of a quartz-arsenopyrite showing south of Wottam Lake, while mapping the Keezhik-Miminiska Lakes area.

1941: Prest (1942) in his report on the geology of the Fort Hope area mentions that diamond-drilling was done south of Wottam Lake by Coin Lake Gold Mines, Limited. However, no record of this work was available in the assessment files.

1974-75: The Miminiska Lake area was mapped by Henry Wallace of the Ontario Geological Survey (Report 214). This covered the Wottam Lake area and the area to the east.

1979: New Jersey Zinc Exploration Company Limited contracted Questor Surveys to fly an extensive airborne magnetometer survey (termed the Seagreen Project) from Howells Lake; to Opikeigen Lake; a portion of this covered the Wottam Lake area. A high-intensity magnetic feature was delineated over the occurrence, likely representing the iron formation unit that traverses the area.

1981: In June, Gallion Resources Ltd. staked a 205 claim block centered around Wottam Lake.

In September, a 25 claim block (TB 613252 to 613255, TB 613258 to 613261, TB 613263 to 613266, TB 613268 to 613271, TB 613273 to 613276 and TB 613278 to 613281) was gridded at 400 foot line spacings and geophysically

surveyed by Gallion Resources Ltd. Magnetic, HLEM and VLF-EM surveys were completed over the block.

1982: In March, all interests in claim TB 613264 were transferred to Donald A. Humby.

1983: From July 1 to July 12, Donald A. Humby completed a single Winkie diamond drill hole in the southeast corner of claim TB 613264. This appears to be on or near the actual Wottam Lake Occurrence, however, no further details were available in the assessment files.

1985: In August, claim TB 613264, which contains the Wottam Lake Occurrence, was cancelled.

1986: In April, Noranda Exploration Company Limited and joint venture partner Exploration Mirandor Inc. staked a contiguous 128 claim block over a large area south of Wottam Lake, which included the Wottam Lake Occurrence.

During the same year, two additional large claim blocks were staked north and northeast of Wottam Lake by Gold Fields Canadian Mining Limited and Noramco Explorations Inc. (Golden Band Resources Inc.) respectively.

1987: In May, an airborne magnetometer and VLF-EM survey was flown by Dighem Surveys and Processing Inc. for Noranda Exploration Company, Limited over the entire 128 claim block.

During the same year, extensive exploration work on the surrounding properties of Gold Fields Canadian Mining Limited and Noramco Explorations Inc. included airborne EM and magnetometer surveys, ground VLF-EM and magnetometer surveys, geological mapping and diamond drilling.

1988: Ground VLF-EM and magnetometer surveys were completed over two areas of the claim block to the west and north of the Wottam Lake Occurrence by Exploration Mirandor Inc.

1991: From May 1989 to February 1991, all staked claims in the immediate area, including those covering the Wottam Lake Occurrence (TB 886639 and TB 886644), were cancelled due to lack of work.

CURRENT

1995: The Wottam Lake Occurrence south of Wottam Lake is presently open for staking (March 9, 1995).

5) LOCATION AND ACCESS:

N.T.S.:	52 P/9SW
Latitude:	51·34'25"
Longitude:	88·26'30"
U.T.M.:	5714650 N
	400150 E

GENERAL LOCATION: The Wottam Lake Occurrence is located 120 km east-northeast of Pickle Lake and approximately 140 km due north of Lake Nipigon.

ACCESS: The property can be accessed by float-equipped aircraft from Pickle Lake to Wottam Lake, then by foot due south for 1 km to the occurrence.

REFERENCES:

de Carle	(1979)*
McConnell	(1987)*
Prest	(1939)
Prest	(1942)
Rennick	(1981)*
Thurston and Carter	(1970)
Wallace	(1981)

MAP REFERENCES:

Map No. 48e	Keezhik-Miminiska Lakes area (Prest 1939)
Map No. 41b	Fort Hope area (Prest 1942)
Map 2417	Wottam Lake (Wallace 1981)
Map 2237	Fort Hope-Lansdowne House (Thurston, Carter and Riley 1970)

6) GENERAL GEOLOGY AND STRUCTURE:

The Wottam Lake area lies in the eastern portion of the Uchi Subprovince, a 35 km wide, predominantly metavolcanic-metasedimentary east-trending subprovince traversing from Red Lake in the west to the Hudson Bay lowlands.

Wallace (1981) states:

> The central and eastern parts of the map-area (Miminiska-Wottam Lake area) are underlain by a thick metasedimentary sequence consisting predominantly of monotonously intercalated wacke and mudstone units and their metamorphic equivalents. In several places considerable thicknesses of oxide, carbonate and/or silicate

> facies iron formation occur intercalated with the clastic metasediments. This mixed metasedimentary sequence conformably overlies a thick metavolcanic succession, composed predominantly of mafic pillowed flows, that occupies the southern part of the map-area. To the north, there is a second predominantly mafic metavolcanic succession which appears to be younger than the metasediments. A wedge of felsic to intermediate pyroclastic rocks and intercalated volcaniclastic metasediments may directly overlie the lower mafic metavolcanics. This wedge is enclosed in the main wacke-mudstone sequence toward the east.

Four major intrusions of quartz monzonite to granodiorite composition occur in the Mimininska-Wottam Lakes area. To the north of Mimininska Lake, along an east-west fold axis is the Cluff Lake Stock, the South Bay Stock and Troutfly Lake Batholith. The Kawitos Lake Batholith occurs just south and east of the Wottam Lake Occurrence.

Lineaments are generally northeast-trending; these are prominent within the Kawitos Lake Batholith. Major faults in the area extend northeastward from Mimininska Peninsula subparallel to Ferguson Creek. The Mimininska Lake area appears to lie on the southern flank of an open, regional, east-plunging syncline. The three major northern intrusions described above are aligned along the east-striking axis of this fold. Other major folds were outlined in the metasediments east of Mimininska Lake in the Wottam-Seagreen Lakes area (Wallace 1981).

7) MINERALIZATION:

Wallace (1981) describes the Wottam Lake Occurrence in his report on the geology of the Mimininska Lake area as follows:

> Approximately 1000 m south of Wottam Lake, the field party located an old gold showing worked in the early 1940s by Coin Lake Gold Mines Limited (Prest 1942). The workings included nine closely spaced trenches up to 6 m long and 1.5 m deep and several diamond drill holes along a zone of amphibole-biotite-garnet iron formation and banded chert. Over a width of about 5 m these rocks contain 1 to 5 percent disseminated arsenopyrite. In the centre of the zone massive pods and blebs of arsenopyrite and pyrite and/or pyrrhotite occur within the amphibole-biotite-garnet rock and adjacent lenses of quartz up to 0.5 m wide. The quartz lenses are parallel to the northeasterly structural trend of the outcrop.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

9) CHEMICAL ANALYSES:

Wallace (1981) indicates the following:

> Grab samples of mineralized quartz vein material and adjacent wall rock were collected by the field party and analyzed by the Geoscience Laboratories, Ontario Geological Survey, Toronto. Only one sample of mineralized wall rock contained more than trace amounts, and that contained 0.04 ounce of gold per ton and 0.14 ounce of silver per ton. Prest (1939) also reported only low gold values from this occurrence.

1) PROPERTY NAME: Zulapa prospect (42) DATE(S) VISITED:

MDI #: KP0242

2) ALTERNATE NAME(S): Lac-Reserve prospect
Zulapa deposit
Little Long Lac prospect
Reserve Lake prospect
Reserve No. 2 property (A & B zones)

3) COMMODITY: MAIN: Au SECONDARY: Ag

DEPOSIT TYPE: Lode Gold

4) DEVELOPMENT, HISTORY AND OWNERSHIP:

PAST

1942: Prest (1944), while mapping the Fort Hope area for the Ontario Department of Mines, reported an assay of 0.01 ounce Au per ton from a grab sample of quartz taken from a vein on the north shore of Reserve Lake.

1960: Stan Johnson and P.H. (Bud) Read, prospecting for Little Long Lac Gold Mines Limited, examined quartz veins on the north shore of Reserve Lake. Following a trenching program, gold was detected by panning and was seen as visible gold in places. A program of hand stripping and further "blasting revealed visible gold in quartz veins at numerous locations and in an area roughly 1000' long by 400' wide" (Darling 1962). Assay values up to 10 ounce Au per ton were recorded (Oja 1963a). Little Long Lac staked the property and a staking rush commenced. Competitors included Zulapa Mining Corporation Ltd., Lun-Echo Gold Mines Ltd., and The Mining Corporation of Canada Ltd.

Little Long Lac Gold Mines Limited held 62 staked mining claims covering the north shore of Reserve Lake on what was known as Reserve No. 64. These were numbered as follows (all inclusive):
Pa 721-736
Pa 751-763
Pa 836-853
Pa 858-859
Pa 871-873
Pa 883-892

Zulapa staked the Reserve No. 1 group, which consisted of 17 claims numbered as follows (all inclusive):

Pa 800-805
Pa 807-809
Pa 813-816
Pa 960-962
Pa 964

Little Long Lac and Zulapa (located west and south of the Little Long Lac ground) undertook ground magnetometer surveys.

1961: According to Darling (1962), twenty-seven AXT holes totalling 7087 feet were drilled on the mineralized zones on the Little Long Lac ground as follows:

18 holes tested the "A" zone
3 holes were drilled outside of the "A" zone
6 holes tested the "B" zone
Core was racked on site.

Detailed geological mapping (1"=10' and 1"=40') was conducted and ore deposit modelling from drill holes was completed on the Little Long Lac claims (Darling 1962).

Zulapa Mining Corporation Ltd., whose claims were located west of Little Long Lac Gold Mines claims, increased their holdings to 48 claims.

1963: Zulapa Mining Corporation Ltd. acquired the Little Long Lac Gold Mines' claims north of Reserve Lake. Lac received 200,000 escrowed shares as vendor (The Northern Miner, June 20, 1963). The claim group was termed "Reserve No. 2" (Oja 1963a) and consisted of the following claims (all inclusive):

Pa 721-728
Pa 730
Pa 731
Pa 751-763
Pa 871
Pa 883
Pa 885-892

Twelve of the claims were surveyed and application for lease was filed for 11 of the claims, numbered:

Pa 722
Pa 724
Pa 726
Pa 751-753 (all inclusive)
Pa 762
Pa 763

(Oja 1963a)

A total of 10 000 feet of diamond drilling was planned, using two rigs, on the A & B zones of the Reserve No. 2 property; 3,000 feet of drilling was planned on Reserve No. 1 group. The No. 1 claim group, located west of, and adjacent to, Reserve No. 2, was increased to 39 claims.

1968: Zulapa Mining Corporation Ltd. stated that more exploration work would be carried out on the 33-claim property. An exploration shaft was recommended (The Northern Miner, March 14, 1968).

Zulapa's 33 claims were listed as leased (Canadian Mines Handbook, 1968-69, p.352).

1976: Zulapa Mining Corporation Ltd. went into receivership.

CURRENT

1992: The Zulapa Prospect is located on Eabametoong First Nation (Reserve #64) lands, Eabamet Lake (Fort Hope), Ontario.

5) LOCATION AND ACCESS:

N.T.S.:	42 M12/SW
Latitude:	51·33'50"
Longitude:	87·47'55"
U.T.M.:	Zone 16
	Northing 5711650
	Easting 444650

GENERAL LOCATION: The Zulapa Prospect is located on Eabametoong First Nation lands (Reserve #64) 163 km (102 miles) east of Pickle Lake, 163 km (102 miles) northeast of Armstrong, 170 km (106 miles) northwest of Nakina and 11 km (7 miles) east-southeast of the community of Eabametoong (Fort Hope First Nation).

ACCESS: The Zulapa Prospect is located on Eabametoong First Nation (Reserve #64).

REFERENCES:

Burwash	(1930)
Darling	(1962)*
Horner	(1989)*
Oja	(1963a)*
Prest	(1944)
Thurston and Carter	(1970)

Resident Geologist's Files, Beardmore-Geraldton District, Thunder Bay.

MAP REFERENCES:

Map 51b Fort Hope area (Prest 1944)
Map 2237 Fort Hope-Lansdowne House Sheet (Thurston et al. 1972)

6) GENERAL GEOLOGY AND STRUCTURE:

The Zulapa occurrences are hosted within an east-trending metavolcanic-metasedimentary assemblage which is the Fort Hope portion of the East Uchi belt. Regionally extensive granite terranes bound the metavolcanic-metasedimentary sequence on the north and south (Horner 1989).

Darling (1962) described the Zulapa prospect as "underlain by a series of acid and basic Keewatin rocks striking about N70·E and dipping to the north at about 60·. This series lies just north of the main Reserve Lake granite tongue."

Oja (1963a) interpreted the geology in the area of the Zulapa prospect as follows:

> The Reserve No. 2 group, in the immediate vicinity of the gold showings, is underlain primarily by metamorphosed biotite-garnet quartzite striking N70·E and dipping vertically to 70 degrees north...Intruded into the quartzite are sericitized quartz porphyry bodies...

7) MINERALIZATION:

Gold is hosted in felsic metavolcanic rocks and, to a lesser degree, in interbanded basalt flows. According to Darling (1962) the mineralization is:

> ...usually occurring in an altered, sericitized, porphyritic dacite. This altered material has a characteristic pale-cream appearance in the drill core and is usually well mineralized and silicified. Two main fracture systems are thought to be important as ore-shoot controls. The 'A'

> systems strike EW and dip at about 55· to the north while the 'B' fracture systems strike 80·W and dip almost vertically. The converging planes of these two systems might be responsible for a NW plunge of the ore shoots...Mineralization consists of magnetite, pyrrhotite, pyrite, chalcopyrite, sphalerite and galena. Gold occurs associated with pyrite and chalcopyrite in the 'A' zones of sericitic alteration. Gold occurs associated with pyrite, chalcopyrite and also sphalerite and galena in the 'B' zones of sericitic alteration. Pyrrhotite and magnetite occur predominantly outside the auriferous, sericitic zones. Drilling shows that ore shoots lie "en echelon" along the 'A' Zone. Gold values are erratic and sometimes difficult to correlate.

One high-grade, narrow quartz vein makes up the `B' Zone.

8) ECONOMIC FEATURES:

TONNAGE AND GRADE ESTIMATES:

- 170,000 tons (drill-indicated) grading 0.28 ounce Au per ton to 300', plus additional tonnages to 700' (Zulapa Mining Corporation Ltd., Annual Report, 1970)

- Oja (1963a) reported that W. Maybank, Little Long Lac Gold Mines Limited calculated reserves of 1041 tons per vertical foot grading 0.28 ounce Au per ton on the "main zone". "To a depth of 300 feet, this indicates a total of some 300,000 tons, and 700,000 tons to a depth of 700 feet" (Oja 1963a).

- Oja (1963a) described the "north zone" as possibly representing additional tonnage to the "main zone".

9) CHEMICAL ANALYSES:

Zulapa Mining Corporation Ltd. published the following drill hole results (Oja 1963a):

Hole	Width	Oz/ton
Z-1	6.0	0.46
Z-2	1.5	1.11
	2.5	0.56
Z-3	4.0	0.42
Z-4	2.0	1.83
	5.5	0.62
Z-5	7.5	0.86
Z-9	5.0	0.70
Z-14	2.5	4.70
	2.5	0.65
Z-16	1.0	2.11
	2.0	0.70
Z-20	1.5	0.63
	5.0	0.41
Z-23	1.0	0.54
Z-24	2.0	0.62
	1.5	0.73
A-3	2.5	0.71
A-4	1.0	2.76
A-5	1.5	1.31
A-7	5.3	0.99
A-8	1.8	0.80
A-9	1.5	0.55
A-10	5.4	0.80
	2.2	1.74
	1.3	2.06
	1.3	1.27
A-11	0.8	0.87
A-12	1.8	0.70
A-15	1.2	4.15
	3.4	0.68
A-17	0.5	5.05
A-18	0.5	9.67
	1.3	0.96
A-19	0.3	0.96
A-24	2.0	0.95
A-25	1.5	7.89
	0.9	1.48
A-26	1.6	1.01
	1.0	1.77
	1.2	1.33
A-29	2.0	1.16

Forty-one percent of drill holes (21 of 55) intersected visible gold (Oja 1963a).

REFERENCES

Auston, J.S. 1971. Geophysical report - Selco Exploration Company Limited - grids L-M-N, Fort Hope area; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay.

Baldwin, A.B. 1961. Geologist's and geophysical reports, M.J. Boylen Engineering offices, Attwood Lake area, Ontario, project 343; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 8p.

-----1962. Geologist's and geophysical reports, M.J. Boylen Engineering offices, Attwood Lake area, Ontario, project 343 - Seeber group; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 7p.

-----1962. Geologist's and geophysical reports, M.J. Boylen Engineering offices, Attwood Lake area, Ontario, project 370-371; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 5p.

Baker, J.M. 1946. Report of a geomagnetic survey on the Wottam Lake group, Miminiska Lake area, Ontario, for International Mining Corporation (Canada) Limited; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay.

Barrie, C.Q. 1985. Report on airborne magnetic and VLF-EM survey, Keezhik Lake area, Thunder Bay mining division, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 6p.

Bayne, A.S. 1974. Report to Ymir Mining and Exploration Ltd. on Keezhik Creek gold property, District of Kenora - Patricia portion, Thunder Bay mining division, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 19p.

-----1982. Report on geophysical surveys, claims TB-489588, TB-489589, TB-489590, Keezhik Creek gold property, Nesting Lake area, Thunder Bay mining division, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 2p.

-----1984. Report on geochemical survey, claims TB-489588, TB-489589, TB-489590, Keezhik Creek gold property, Nesting Lake area, Thunder Bay mining division, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 3p.

Bazinet, E.W. 1982. Report on geophysical surveys on property of Gallion Resources Ltd., Frond Lake area; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 7p.

Bergmann, H.J. 1961. Report on magnetometer survey on the property of Mining Corporation of Canada Ltd., Fort Hope area; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 10p.

-----1972. Report on geophysical surveys on the property of Conwest Exploration Company Ltd.; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 7p.

Bourdages, H. 1982. Fort Hope Gold Mine (compilation); mineral deposit files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 12p.

Boustead, G.A. 1985. Report on combined helicopter-borne magnetic and VLF-EM survey, Miminiska Lake area, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 9p.

Bowdidge, C.R. 1979. Spanex Resources Ltd., geological report on the Fort Hope gold prospect, District of Kenora (Patricia portion), North-west Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 21p.

Boylen, M.J. and Seeber, O.A. 1960. Report of magnetometer and electro-magnetic surveys, mining claims Pa 26043-26060 incl., Pa 26079-26096 incl., Miminiska Lake, District of Patricia, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 7p.

Brown, P.A.R. 1980. Report on diamond drilling (1980) for Mountainview Explorations, Rich Lake property; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 7p.

Burwash, E.M. 1928. Fort Hope gold area; Canadian Mining Journal, November 1928, p.893-895.

-----1930. Geology of the Fort Hope gold area, District of Kenora (Patricia portion); Ontario Department of Mines, 38 Annual Report, 1929, v.38, pt.2, p.1-48.

Card, K.D. and Ciesielski, A. 1986. DNAG #1. Subdivisions of the Superior Province of the Canadian Shield; Geoscience Canada, v.13, p.5-13.

Chataway, R. 1992. Report on the Lavoie Lake copper-nickel deposit, drilling and geophysical surveys in the Pickle Lake area of Northwestern Ontario; mineral deposit files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 26p.

Cruickshank, P. 1988. Geophysical report on a magnetometer survey over the James Reid property, Rond Lake area, Thunder Bay mining division, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 13p.

Cunningham-Dunlop, I. 1988. Gold Fields Canadian Mining Limited, geological, biological survey report, Miminiska Lake project, Tanco grid; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 5p.

Currie, J.A.G. 1939. The Currie occurrence; mineral deposit files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 5p.

Darling, G.B. 1962. Summary report Lac-Reserve prospect, Little Long Lac Gold Mines Limited, Fort Hope area; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 11p.

Davis, J.H. 1988. Report on the Keezhik Lake property, District of Kenora (Patricia portion), Ontario, Noramco Explorations Inc. 1987 exploration program for Severide Resources Inc.; assessment file, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 61p.

de Carle, R.J. 1979. Report on airborne magnetometer survey, New Jersey Zinc Exploration (Can.) Ltd., Miminiska Lake area, Ontario, Seagreen project; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 11p.

Dent, T.W. 1972. Report on Golden Hope Mines Limited, Rich Lake area, District of Kenora - Patricia portion, Patricia mining division, Ontario; unpublished report for Golden Hope Mines Limited, 12p.

Devaney, J.R. and Williams, H.R. 1989. Evolution of an Archean subprovince boundary: A sedimentological and structural study of part of the Wabigoon-Quetico boundary in northern Ontario; Canadian Journal of Earth Sciences, v.26, p.1013-1026.

Edwards, M.D. 1991. Report of the 1991 summer mapping and diamond drilling programs, Parent option, Patawauga Lake area, Northwestern Ontario, Falconbridge Limited; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 16p.

Ellingham, E. 1988. Locator Explorations Ltd. (Duration Mines Ltd.), Norton Lake property, OMEP OM87-4-L-112, geological report; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 13p.

Foster, J.R. and Lougheed, P.J. 1987. Geological, biogeochemical survey report, Mimininska Lake project - CH grid, Gold Fields Canadian Mining Limited; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 40p.

Fraser, D.C. and Dvorak, Z. 1980. Dighem II survey of Mimininska Lake area, Ontario for the New Jersey Zinc Exploration Company (Canada) Ltd. by Dighem Limited; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 30p.

Gagan, E.W. 1959a. Golden Hope Mines; mineral deposit files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 2p.

-----1959b. Report on Golden Hope Mines Limited, Patricia District, Ontario; mineral deposit files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, p.8-12.

Gledhill, T. 1983. Report on geophysical surveys (magnetics and VLF-EM), Frond Lake property, Keezic Resources Limited; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 6p.

Goldsmith, L.B. 1988. Geology and soil geochemistry, James Reid property, Rond Lake, Fort Hope area, Thunder Bay mining division, Ontario, latitude 51·37'N, longitude 88·02'W, NTS 52P9, prepared for Ohio Resources Corp.; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 11p.

Graham, J.C. 1989. Exploration program report on the James Reid property, Fort Hope area, Ontario, Thunder Bay mining division; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 13p.

Halet, R.A. 1956. Report on the property of Golden Hope Mines Limited, Patricia District, Ontario; mineral deposit files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 3p.

Hallof, P.G. and Clifton, F.T. 1956. Leitch Gold Mines Limited, Report on the electromagnetic survey, Shabuskwia Lake, Kowkash mining division, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 2p.

Hinzer, J.B. 1984. Preliminary report on the Keezhik Lake gold property, for J.E. Ternowesky; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 4p.

Hodges, D. 1991. Magnetometer and VLF surveys, Kawitos Lake area, Falconbridge Limited; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 21p.

Hodges, D. and Fournier, J.D. 1991. Geology and geophysics programs, Ryley-Cormac area, Falconbridge Limited, assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 11p.

Horner, C. 1989. Report on the 1988 diamond drilling program on the Reserve Creek property of Goldpost Resources Inc.; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 21p.

Howey, L.B. 1928. The Howey-Smith Fort Hope gold discovery; Canadian Mining Journal, January 6, 1928, p.12-13.

Huston, C.C. 1970. Questor Surveys Limited, airborne electromagnetic survey report, area 1970-4, Fort Hope, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 7p.

Irbe, J.G. 1961. Geological report on Reserve Creek property, Fort Hope area, Ontario, Mining Corporation of Canada Limited; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 6p.

Jones, D. and Siriunas, J.M. 1983. Report on induced polarization surveying, Reserve Creek project, Fort Hope, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 26p.

Kidd, R. 1981a. Report on test program of humus sampling, Keezic Resources Limited, Fort Hope area, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 16p.

-----1981b. Report on gold property, Keezic Resources Limited, Fort Hope area, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 13p.

-----1981c. Report on geophysical surveys, Pricemore Resources Inc., Reserve Creek, Fort Hope area, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 9p.

-----1982a. Report on diamond drilling, February-March 1982, Keezic Resources Limited, Fort Hope area, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 9p.

-----1982b. Report on geophysical surveys, Keezic Resources Limited, Fort Hope area, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 9p.

-----1982c. Report on diamond drilling, Pricemore Resources Inc., Reserve Creek, Fort Hope area, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 107p.

Kilty, S.J. 1986. Dighem III survey of the Reserve Creek area, Ontario, for Goldpost Resources Inc. by Dighem Surveys & Processing Inc.; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 30p.

-----1987. Dighem III survey for Dome Exploration (Canada) Limited, Keezhik Lake west, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 27p.

Koski, J.S. 1976. Report of ground magnetometer survey, mining claims Pa 369957 to Pa 369971 incl., area of Nesting Lake, District of Kenora - Patricia portion, Thunder Bay mining division, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 6p.

Laederer, C.L. 1938. Report on property of Hopa-Tricia Gold Mines Limited, District of Kenora-Patricia portion, Ontario; unpublished report of Hopa-Tricia Gold Mines Limited; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 38p.

Laudrum, D. 1990. Placer Dome Inc., Project 232B report on stripping and drilling programs, Talbot Lake, Ontario; mineral deposit files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 12p.

Londry, J.E. 1985a. Report on 1984 field work on claims TB 651376, TB 651377, TB 651378 and TB 651379, area of Rich Lake, Thunder Bay mining division, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 6p.

-----1985b. Report on 1985 field work on mining claims TB 651376, TB 651377, TB 651378, TB 651379, TB 740028 and TB 740029, area of Rich Lake, Thunder Bay mining division, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 6p.

MacLeod, J.W. 1981. Report on the Pridemore Resources Inc., Reserve Creek property; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 23p.

Mann, J.L. 1984. Anaconda Canada Exploration Ltd., geological, geochemical and geophysical report, Keezhik Creek project, lat. 57·39' north, long. 88·34' west, Thunder Bay mining division; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 23p.

Mannard, G. and Wahl, J.L. 1984. Report on Opikeigen project geology, Kerr Addison Mines Limited; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 22p.

Mason, J.K., White, G.D., Speed, A.A. and Gaudino, S. 1989. Beardmore-Geraldton Resident Geologist District--1988; in Report of Activities 1988, Resident Geologists, Ontario Geological Survey, Miscellaneous Paper 142, p.111-132.

Mason, J.K., White, G.D., Speed, A.A., Gaudino, S., Sarvas, P. and Stott, G. 1990. Beardmore-Geraldton Resident Geologist District--1989; in Report of Activities 1989, Resident Geologists, Ontario Geological Survey, Miscellaneous Paper 147, p.115-137.

McCombe, R.J. 1962-1961. Report on Gould Lake property (prospectus), Shabuskawia Lake area, District of Thunder Bay, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 4p.

McConnell, D.L. 1988. Dighem III survey for Goldpost Resources Inc., Ficht Lake area, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 30p.

-----1989. Dighem III survey for Noramco Explorations Inc., Opikeigen Lake project (Project 1493), Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 19p.

McConnell, T.J. 1987. Report on Dighem III survey for Noranda Exploration Company, Limited, Miminiska Lake area, Ontario, Dighem Surveys and Processing Inc.; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 69p.

McGuinty, W.J. and Obradovich, T. 1990. Geophysical survey report on the Norton Lake property, Norton Lake area, Thunder Bay mining division, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 11p.

McLeod, H.D. 1981a. Report on anomaly U nickel-copper deposit, Norton Lake area for Wasabi Resources Ltd.; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 13p.

-----1981b. Interim report on the Norton Lake area for Wasabi Resources Ltd.; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 19p.

Miller, K. 1987. Operations report on the 1987 summer diamond drill program on the Frond Lake property, Kenora District, Northwestern Ontario, for Tandem Resources Ltd.; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 7p.

Mongeau, R.J. 1968. A summary report on the follow-up geophysical and drilling programs conducted in the Washi Lake area in the summer of 1963; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 9p.

Neal, H.E. and Miller, K. 1987. Frond Lake diamond drilling project for Tandem Resources Ltd. and Ayrex Resources Ltd. in Pickle Lake area, Geraldton District, Northwestern Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 38p.

Novak, Neil 1988. Geologic evaluation on the Lansdowne House project, Ontario, prepared for Forester Resources Inc.; mineral deposit files, Resident Geologist office, Beardmore-Geraldton district, Thunder Bay, 16p.

-----1992. The Blue Heron project, geological evaluation report prepared for Blue Falcon Mines Ltd. covering Springer-Lavoie Lake anomaly and Copping Lake anomaly; mineral deposit files, Resident Geologist office, Beardmore-Geraldton District, 19p.

Oja, R.V. 1963a. Zulapa Mining Corporation Limited, Reserve Lake properties, Fort Hope area, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 18p.

-----1963b. Preliminary report on Golden Hope Mines Limited, Fort Hope Mines Limited, Fort Hope area, Patricia mining division; unpublished report for Golden Hope Mines Limited, assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay.

Patterson, G.C., Mason, J.K. and Schnieders, B.R. 1983. Report of the Thunder Bay Resident Geologist--1982; in Report of Activities, Regional and Resident Geologists 1982, Ontario Geological Survey, Miscellaneous Paper 107, p.47-81.

Patterson, G.C., Scott, J.F., Mason, J.K., Schnieders, B.R., MacTavish, A.D., Dutka, R.J.A., Kennedy, M.C., White, G.D. and Hinz, P. 1987. Thunder Bay Resident Geologist Area, North Central Region--1986; in Report of Activities 1986, Regional and Resident Geologists, Ontario Geological Survey, Miscellaneous Paper 134, p.72-127.

Podolsky, G. 1986. Report on combined helicopter-borne magnetic, VLF and electromagnetic survey, Attwood Lake area, project, Northwest Ontario, for Gold Fields Canadian Mining, Limited by Aerodat Limited; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 12p.

-----1986a. Report on combined helicopter-borne magnetic and VLF survey, Norton Lake area project, Patricia mining division, Northwestern Ontario, for Duration Mines Ltd. by Aerodat Limited; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 15p.

-----1986b. Report on combined helicopter-borne magnetic, VLF and electromagnetic survey, Miminiska Lake area project for Gold Fields Canadian Mining Limited by Aerodat Limited; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 33p.

Prest, V.K. 1940. Geology of the Keezhik-Miminiska lakes area; Ontario Department of Mines, 48th Annual Report, v.48, pt.6, p.1-21.

-----1944. Geology of the Fort Hope area; Ontario Department of Mines, 51 Annual Report, 1942, v.51, pt.3, p.1-28.

Racic, L. 1986. HLEM, VLF and magnetic surveys for Dome Exploration (Canada) Limited on Project 232-B, Talbot Lake area, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 5p.

-----1988a. Electromagnetic and magnetic surveys by Geosearch Consultants Limited for Placer Dome Inc. on Project 282, Keezhik Lake, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 8p.

-----1988b. Electromagnetic and magnetic surveys by Geosearch Consultants Limited for Placer Dome Inc. on Project 232B, Talbot Lake, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 6p.

Reed, C. 1960. The C.K. Hansen gold prospect, Keezhik Lake area, Patricia mining division, Ontario; mineral deposit files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 3p.

Reed, L. 1971. Geophysical report - Selco Exploration Company Limited - grids I-J-K, Fort Hope area; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay.

Rennick, M.W. 1981. Report on geophysical surveys for Gallion Resources Ltd., Frond Lake and Miminiska Lake areas; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 14p.

Scott, J.F. 1977. The Howells Lake Au-Sb deposits, New Jersey Zinc Exploration Company (Canada) Limited; mineral deposit files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay.

Smellie, D.W. 1957. Report on a magnetometer survey of the Shabuskwia Lake option, Kowkash mining division, Ontario, for Leitch Gold Mines Limited; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 2p.

Stott, G.M. and Corfu, F. 1991. Uchi Subprovince; in Geology of Ontario, Ontario Geological Survey, Special Volume 4, Pt.1, p.145-236.

Taylor, M.R. 1988. Noramco Explorations Inc., 1987 exploration program, Hinzer option claims - Keezhik Lake, Fort Hope area, Ontario, for Severide Resources Inc. and Pure Gold Resources Inc.; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 30p.

Thurston, P.C., Sage, R.P. and Siragusa, G.M. 1979. Geology of the Winisk Lake area, District of Kenora, Patricia Portion; Ontario Geological Survey, Report 193, 169p.

Thurston, P.C., Osmani, I.A. and Stone, D. 1991. Northwestern Superior Province; Review and Terrane Analysis in Geology of Ontario, Ontario Geological Survey, Special Volume 4, Pt.1, p.81-142.

Tough, S. 1981a. Report on preliminary examination of Keezic Resources Limited, Fort Hope area, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 3p.

-----1981b. Progress report - Keezic Resources Limited, Goss Lake property, Fort Hope area; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 3p.

-----1983. Report on prospecting on Keezic Resources Limited, Fort Hope area, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 2p.

Thurston, P.C. and Carter, M.W. 1970. Operation Fort Hope; Ontario Department of Mines and Northern Affairs, Misc. Paper 42, 64p.

Troup, W.R. 1986. Darius Mines Ltd., Keezhik Creek property, geological and geophysical report; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 6p.

Trueman, D.L. 1980. Report on the lithogeochemical survey of the Lilypad Lake pegmatite area; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 5p.

Vanstone, P.J. 1982. Lilypad Lake, report on the magnetometer and max min II surveys; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 8p.

-----1983. Lilypad Lake claim group, report on the magnetometer survey; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 7p.

Wallace, H. 1978. Geology of the Opikeigen Lake area, District of Kenora (Patricia portion); Ontario Geological Survey, Report 1985, 58p.

-----1981. Geology of the Miminiska Lake area, Districts of Kenora (Patricia portion) and Thunder Bay; Ontario Geological Survey, Report 214, 96p.

Williams, H.R. 1987. Structural studies in the Wabigoon and Quetico subprovinces; Ontario Geological Survey, Open File Report 5668, 163p.

-----1989. Geological studies in the Wabigoon, Quetico and Abitibi-Wawa subprovinces, Superior Province of Ontario, with emphasis on the structural development of the Beardmore-Geraldton belt; Ontario Geological Survey, Open File Report 5724, 189p.

-----1990. Subprovince accretion tectonics in the south-central Superior Province; Canadian Journal of Earth Sciences, v.27, p.270-581.

Winter, L.D.S. 1988. Exploration update on the Keezhik Lake property, Fort Hope area, for Severide Resources; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 17p.

Woodward, J.A. 1985. Electromagnetic and magnetic survey for Dome Exploration (Canada) Limited on Project 232B, Talbot Lake area, Ontario; assessment files, Resident Geologist office, Beardmore-Geraldton District, Thunder Bay, 4p.

MAP REFERENCES

Burwash, E.M. 1930. Geology of the Fort Hope area; Ontario Department of Mines, Map No. 38b-1, scale 1 inch to 3 miles.

Ontario Department of Mines-Geological Survey of Canada 1960a. Grace Lake Sheet, Thunder Bay and Kenora Districts, Ontario; Ontario Department of Mines-Geological Survey of Canada, Map 953G, scale 1 inch to 1 mile.

-----1960b. Kawitos Lake Sheet, Thunder Bay and Kenora Districts, Ontario; Ontario Department of Mines-Geological Survey of Canada, Map 963G, scale 1 inch to 1 mile.

-----1960c. Kilbarry Lake Sheet, Thunder Bay District, Ontario; Ontario Department of Mines-Geological Survey of Canada, Map 952G, scale 1 inch to 1 mile.

-----1960d. Miminiska Lake Sheet, Kenora and Thunder Bay Districts, Ontario; Ontario Department of Mines-Geological Survey of Canada, Map 954G, 1 inch to 1 mile.

-----1960e. Opikeigen Lake Sheet, Kenora and Thunder Bay Districts, Ontario; Ontario Department of Mines-Geological Survey of Canada, Map 964G, scale 1 inch to 1 mile.

-----1960f. Sim Lake Sheet, Thunder Bay District, Ontario; Ontario Department of Mines-Geological Survey of Canada, Map 962G, scale 1 inch to 1 mile.

Prest, V.K. 1940. Geology of the Keezhik-Miminiska Lakes area; Ontario Department of Mines, Map No. 48e, scale 1 inch to 1 mile.

-----1944. Geology of the Fort Hope area; Ontario Department of Mines, Map No. 51b, scale 1 inch to 1 mile.

-----1944. Eastern Extension of the Fort Hope area; Ontario Department of Mines, Map No. 51c, scale 1 inch to 4 miles.

-----1963. Red Lake-Lansdowne House area, Northwestern Ontario Surficial Geology; Geological Survey of Canada Paper 63-6. Accompanied by Maps 4-1963 (bedrock-drift), 5-1963 (surficial geology), scale 1 inch to 8 miles.

Stott, G.M., Brown, G.H., Coleman, V.J., Green, G.M. and Reilly, B.A. 1989a. Precambrian geology of the Pickle Lake area, western part; Ontario Geological Survey, Preliminary Map P.3056, scale 1:50 000.

-----1989b. Precambrian geology of the Pickle Lake area, eastern part; Ontario Geological Survey, Preliminary Map P.3057, scale 1:50 000.

Thurston, P.C. and Carter, M.W. 1969. Operation Fort Hope, Lansdowne House-Fort Hope Sheet, Kenora (Patricia Portion) District; Ontario Department of Mines, Preliminary Geological Map P.562, scale 1 inch to 2 miles.

Thurston, P.C., Carter, M.W. and Riley, R.A. 1969. Operation Fort Hope: Attwood-Caribou Lakes sheet, Kenora (Patricia Portion) and Thunder Bay Districts; Ontario Department of Mines, Preliminary Geological Map P.564, scale 1 inch to 2 miles.

-----1972. Fort Hope, Lansdowne House Sheet, Cochrane, Kenora and Thunder Bay Districts; Ontario Department of Mines and Northern Affairs, Geological Compilation Series, Map 2237, scale 1:253 440 or 1 inch to 4 miles.

Thurston, P.C., Sage, R.P. and Siragusa, G.M. 1971. Operation Winisk Lake: Wapikopa Lake sheet, District of Kenora (Patricia Portion); Ontario Department of Northern Affairs, Preliminary Map P.715, Geological Series, scale 1 inch to 2 miles.

-----1974. Winisk Lake sheet, Kenora District; Ontario Geological Survey, Geological Compilation Series, Map 2287, scale 1:253 440 or 1 inch to 4 miles.

Wallace, Henry. 1974. Opikeigen Lake area, District of Kenora (Patricia Portion); Ontario Division of Mines, Preliminary Map P.926, Geological Series, scale 1 inch to 1/2 mile.

-----1976. Miminiska Lake area, District of Kenora (Patricia Portion); Ontario Division of Mines, Preliminary Map P.992, Geological Series, scale 1:31 680 or 1 inch to 1/2 mile.

-----1977a. Attwood Lake area (western half), District of Thunder Bay; Ontario Geological Survey, Preliminary Map P.1241, Geological Series, scale 1:15 840 or 1 inch to 1/4 mile.

-----1977b. Attwood Lake area (eastern half), District of Thunder Bay; Ontario Geological Survey, Preliminary Map P.1242, Geological Series, scale 1:15 840 or 1 inch to 1/4 mile.

-----1978a. Miminiska Peninsula, Kenora and Thunder Bay Districts; Ontario Geological Survey, Map 2416, scale 1:31 680 or 1 inch to 1/2 mile.

-----1978b. Opikeigen Lake area, District of Kenora (Patricia Portion); Ontario Geological Survey, Map 2379, scale 1:31 680 or 1 inch to 1/2 mile.

-----1978c. Wottam Lake, Kenora and Thunder Bay Districts; Ontario Geological Survey, Map 2417, scale 1:31 680 or 1 inch to 1/2 mile.

-----1981. Attwood Lake area, District of Thunder Bay; Ontario Geological Survey, Map 2436; scale 1:31 680 or 1 inch to 1/2 mile.

CONVERSION FACTORS FOR MEASUREMENTS IN ONTARIO GEOLOGICAL SURVEY PUBLICATIONS

Conversion from SI to Imperial			Conversion from Imperial to SI		
SI Unit	*Multiplied by*	*Gives*	*Imperial Unit*	*Multiplied by*	*Gives*
		LENGTH			
1 mm	0.039 37	inches	1 inch	**25.4**	mm
1 cm	0.393 70	inches	1 inch	**2.54**	cm
1 m	3.280 84	feet	1 foot	**0.304 8**	m
1 m	0.049 709 7	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	**1.609 344**	km
		AREA			
1 cm^2	0.155 0	square inches	1 square inch	**6.451 6**	cm^2
1 m^2	10.763 9	square feet	1 square foot	**0.092 903 04**	m^2
1 km^2	0.386 10	square miles	1 square mile	2.589 988	km^2
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
		VOLUME			
1 cm^3	0.061 02	cubic inches	1 cubic inch	**16.387 064**	cm^3
1 m^3	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m^3
1 m^3	1.308 0	cubic yards	1 cubic yard	0.764 555	m^3
		CAPACITY			
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	**4.546 090**	L
		MASS			
1 g	0.035 273 96	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 75	ounces (troy)	1 ounce (troy)	**31.103 476 8**	g
1 kg	2.204 62	pounds (avdp)	1 pound (avdp)	**0.453 592 37**	kg
1 kg	0.001 102 3	tons (short)	1 ton (short)	**907.184 74**	kg
1 t	1.102 311	tons (short)	1 ton (short)	**0.907 184 74**	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	**1016.046 908 8**	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	**1.016 046 908 8**	t
		CONCENTRATION			
1 g/t	0.029 166 6	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

1 ounce (troy) per ton (short)	20.0	pennyweights per ton (short)
1 pennyweight per ton (short)	0.05	ounces (troy) per ton (short)

Note: Conversion factors which are in bold type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries, published by the Mining Association of Canada in co-operation with the Coal Association of Canada.

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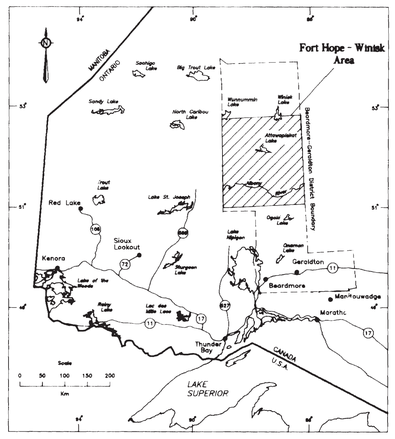
MINERAL OCCURRENCES AND PROSPECTS IN THE FORT HOPE - WINISK AREA
BEARDMORE - GERALDTON RESIDENT GEOLOGIST'S DISTRICT

OFR BASE MAP
FORT HOPE-WINISK AREA



CREDITS AND SOURCES OF INFORMATION

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Base map derived from Department of Energy, Mines and Resources maps 42M, 43D, 52P and 53A.
Geology compiled and simplified from Ontario Geological Survey maps 51b, 51c, 2218, 2237, 2287, 2292, 2541 and 2542.

Mineral occurrence location data obtained from several sources including Ontario Geological Survey maps 2237, 2287, 2379, 2416, 2417 and 2436, the mineral deposit files of the Beardmore–Geraldton Resident Geologist, the assessment files for the Beardmore–Geraldton District, and the Ontario Geological Survey Mineral Deposit Inventory (MDI) database.

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 liability. Users should verify critical information.

LEGEND

PROTEROZOIC

- Diabase

ARCHEAN

- Late Felsic Intrusive Rocks (Massive Granodiorite to Granite)
- Foliated to Gneissic Tonalite Suite
- Mafic Intrusive Rocks (Anorthosite/Gabbro/Diorite)
- Migmatized Supracrustal Rocks
- Metasedimentary Rocks (I.F. : Iron Formation)
- Felsic to Intermediate Metavolcanic Rocks
- Mafic to Intermediate Metavolcanic Rocks

SYMBOLS

- Geological Contact (defined and assumed)
- Fault (defined and assumed)
- Winter Road
- First Nation Community
- Surveyed Line
- MINERAL OCCURRENCE/PROSPECT

Commodity Abbreviations

Ag	– Silver	Li	– Lithium
Au	– Gold	Pd	– Palladium
Co	– Cobalt	Pt	– Platinum
Cu	– Copper	Ta	– Tantalum
Fe	– Iron	W	– Tungsten
Mo	– Molybdenum	Zn	– Zinc
Ni	– Nickel		

LIST OF OCCURRENCES/PROSPECTS

1. Asarco (Abaz Lake) Occurrence
2–7. Boylen Occurrence
8. Canico DDH 49115
9. Currie Occurrence
10. Fort Hope Gold Mine
11. Goss Lake (Frond Lake) Prospect
12. Gould Lake Occurrence
13. Hansen Gold Occurrence
14. Howells Lake (NJZ) Prospects
15. KL–12 Zone
16. KL–L18 Zone
17. KL–27 Zone
18–20. KL–30 Series Drill Holes (3)
21–22. Lavoie Lake Cu–Ni Prospects
23. Leitch Cu–Ni Prospect
24. Lilypad Lakes Occurrence
25. NBK Zone
26. Niska Occurrence
27. North Wottman Lake Occurrence
28. Norton Lake Cu–Ni Prospect
29–30. OL 12/29 Zones
31. Pioneer Lake Occurrence
32. Reserve Creek Occurrence
33. Rich Lake Occurrence
34. Rowlandson Lake Gold Occurrence
35. Schist Lake Occurrence
36. Sheridan Lake Zinc Occurrence
37. Szetu–Bayne Occurrence
38. Talbot Lake Gold Prospect
39. Thompson Occurrence
40. Weese Lake Occurrence
41. Wottam Lake Occurrence
42. Zulapa Prospect

Fort Hope - Winisk Area

THUNDER BAY MINING DIVISION

Scale
0 10 20 30 40 km